

Saugerties Area Mobility Analysis



FINAL Report

January 2007

Study Participants:



Town of Saugerties



Village of Saugerties



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Executive Summary

The Saugerties Area Mobility Analysis (SAMA) was a collaborative process involving a variety of stakeholders. The goals and objectives of the study were to:

- preserve and manage the highway system (minimize congestion)
- maintain and improve the quality of life and community character
- improve the economic well-being of the area, and
- improve alternative travel modes such as walking, bicycling and transit.

A significant focus of the study involved how truck movements impact the Village transportation system and quality of life. A truckers' workshop was conducted, machine counts of trucks as a percent of total traffic volume were done, and NYSDOT with the assistance of volunteers, conducted an Origin and Destination Survey. The SAMA Study recommendations will aid in diverting truck movements from the Village as well as help ensure that those that do enter the Village have less of an impact by improving the Main and Partition Street intersection (for both pedestrians and vehicles), designating loading zones, installing signs to prohibit the use of noisy "jake brakes", and continuing to investigate solutions that offer truck drivers practical alternatives to avoid traveling through the Village of Saugerties when not conducting business there.

A total of over 40 individual projects and policies were recommended as a result of the SAMA study with a mix of local, public and agency support. The improvements should be context sensitive to support and enhance the character of the community. The recommendations are summarized in a detailed matrix at the end of the full report, which includes order-of-magnitude cost estimates. The report also includes a plan for pedestrian accommodations within the Village and an access improvement concept for Route 9W south of the Village. Based on input from the study Advisory Committee, ten priority projects were identified. These ten projects were generally received well by the community at the second public meeting, and include the following:

1. Main Street/Partition Street traffic signal and intersection improvements.
2. Increased parking fees, improved parking enforcement, and establishment of truck loading zones.
3. Enhancements within the Village including high visibility crosswalks, period street signs and street lights, benches, and street trees.
4. Adoption of access management overlay zoning for Route 32 and Route 9W south and improved road design including pedestrian/bicycle accommodations and landscaping complementing the Gateway Zoning ordinance for Routes 32 and 9W south and Route 32 north of the Village.
5. Bridge location analysis and improvements to east-west connection south (Glasco Turnpike).
6. Improve east-west connection north (Malden Turnpike).
7. Reduction of at-grade rail crossings.
8. Prioritized pedestrian linkages.
9. Capacity improvements (possible roundabout) and park-and-ride at the NYS Thruway Exit 20 southbound ramps.
10. Route 9W/Route 32 intersection and pedestrian improvements (possible roundabout).

Priority projects 5 and 6 could provide a complete truck bypass of the Village.

The SAMA study was designed in three phases including: origin-destination study (Phase I), existing conditions needs assessment (Phase II), and future needs and alternatives analysis (Phase III). Based on the analyses of future build-out potential and future transportation system operations, it was concluded that in lieu of Phase III of the study, development work on the priority projects should move forward to ensure implementation.

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1 Introduction

The Village of Saugerties provides a unique and attractive Village setting with neighborhoods and small scale business and retail linked by walkable streets and sidewalks. The area's proximity to the NYS Thruway (Interstate 87), US Route 9W, State Route 32, and State Route 212 provides excellent regional accessibility. The very elements that add character to the Village also serve to impede traffic flow. These include narrow streets, on-street parking, limited turning radii, certain roadway and intersection geometry characteristics, limited capacity, and at-grade railroad crossings.



High traffic volumes within the Village and the Town make it difficult for pedestrians to cross certain streets. Several of the traffic signals lack pedestrian accommodations. Railroad crossings add significant vehicular delay. Through traffic and truck traffic add to the congestion, while the noise from truck traffic detracts from the quality of life. Large trucks also have difficulty negotiating certain Village intersections causing damage to Village streets, curbs, and sidewalks.



The Saugerties area also hosts several popular special events including the world class Horse Shows in the Sun (HITS), and the annual Hudson Valley Garlic Festival. Meanwhile, the Village, the Town and surrounding areas are continuing to see development pressure and increased traffic, and there has been recent speculation about a possible gaming casino on the Winston Farm site.



The combination of these factors necessitated a study of existing conditions and solutions to minimize traffic disruption in the community, provide a balanced transportation system, and maintain the unique character of the Village and the Town of Saugerties. The need for this Study is outlined in the Ulster County Long Range plan and funded through the Ulster County Transportation Council as part of the County's Transportation Improvement Program.

The study area includes the easterly portion of the Town of Saugerties and the northerly portion of the Town of Ulster and is generally defined on the west by Kings Highway and NYS Route 32, on the north by the Greene County line, on the east by the Hudson River and on the south by US Route 209/NY Route 199 (Kingston Bypass).

1.1 Methodology and Public Outreach

The overall approach to the study was a collaborative process involving stakeholders at many levels to facilitate effective decision-making. The goal was to achieve consensus by agencies, study participants, residents and business interests in the area. The advisory committee actively involved the public during two workshops on January 25, 2006 and July 20, 2006 to obtain feedback on area problems, needs and solutions.

A DRAFT report was published, announced by press release, posted on Ulster County Transportation Council's (UCTC) web site and circulated for a 30-day comment period. Additional comments were solicited, and reviewed and incorporated into the final report. Overall, there was high level of public interest and involvement, resulting a number of consensus areas that provide a basis for the Goals and Objectives of the study, as well as the possible projects defined at the end of the study.

2 Goals and Objectives

Vision Statement

In the 21st Century, the Saugerties area will continue to be a vibrant and historical Hudson River community with a multi-modal and environmentally sensitive transportation system that is safe, convenient, efficient, visually attractive, and that provides reliable transportation choices for local and regional travelers.

The goals and objectives of the Saugerties Area Transportation Study are to:

- Preserve and Manage the Highway System (Minimize Congestion), by
 - Developing an access management plan for Route 9W south of the Village
 - Identifying non-standard intersection and roadway geometry and corresponding improvements to enhance safety and mobility.
 - Examining the need for highway/rail grade crossing improvements.
 - Improving intersection congestion and safety (improved traffic signal technology or roundabouts).
 - Determining the need for highway network expansion (expanding the Village grid system, one-way system or developing new truck routes).
- Maintain and Improve the Quality of Life and Community Character, by
 - Coordinating future land-use decisions and transportation strategies to maximize opportunities for smart growth.
 - Improving pedestrian friendliness.
 - Creating opportunities for streetscape and landscape improvements.
 - Minimizing the traffic nuisances in most sensitive areas (residential, historic Village area) such as congestion, air quality, and noise from heavy vehicles.
- Improve the Economic Well-being of the Area, by
 - Improving parking conditions within the Village
 - Providing an efficient Special Event traffic management plan
 - Encouraging and continuing public/private partnerships to incorporate new transportation linkages into planned development.
- Improve Alternative Travel Modes, by
 - Recommending new transportation linkages for bicycles and pedestrians.
 - Integrating transit with new and existing development.
 - Improving pedestrian and bicycle safety and accessibility within the area with the addition of facilities such as crosswalks, mid-block crossings, sidewalks, landscaped medians, and well-marked bike lanes and advanced traffic signal technologies.

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3 Existing Conditions, Problems and Needs

3.1 Land Use

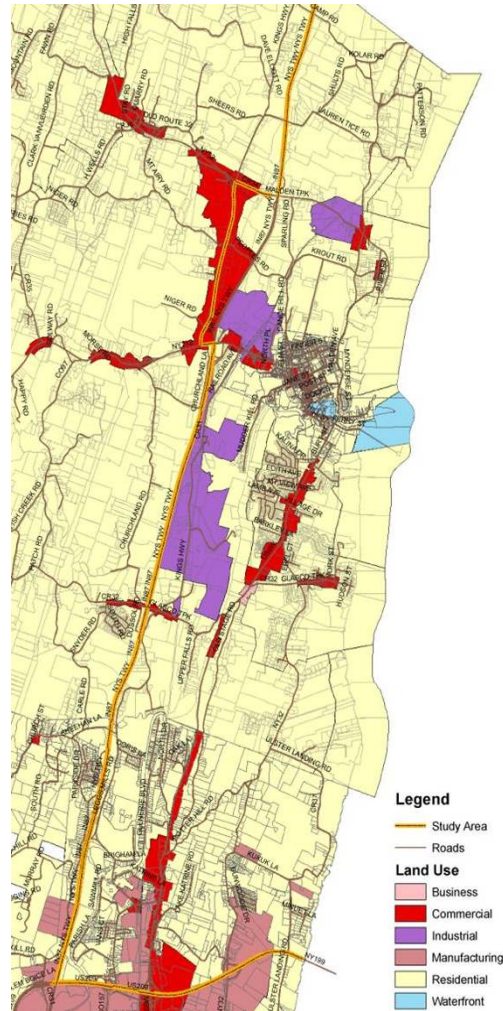
A typical mix of land uses exists within the Town and Village of Saugerties, yet the form of development varies by location. Suburban strip type development exists along both sides of Route 9W, south of the Village and scattered along the Route 212/32 overlap entering the Village from the west. There are also a few single parcel small scale retail developments along Route 9W south of the Village with individual points of access. These forms of development are typically auto oriented lacking architectural continuity or visual appeal.

The Village itself supports a variety of independent and small scale retail and office uses. Older buildings located closer to the road present an overall consistent eye line with more pleasing aesthetic results.

Industrial land use is present along North Street, Malden Turnpike and Kings Highway.

The bulk of the residential land use is off the main corridors, with the exception of Route 9W north of the Village where predominantly residential land parallels both sides of the Road.

There are still large tracts of vacant developable land and underutilized land within the study area. There is a desire to develop the lower section of the Village, and a need to coordinate future land-use decisions and transportation strategies to maximize opportunities for smart growth.

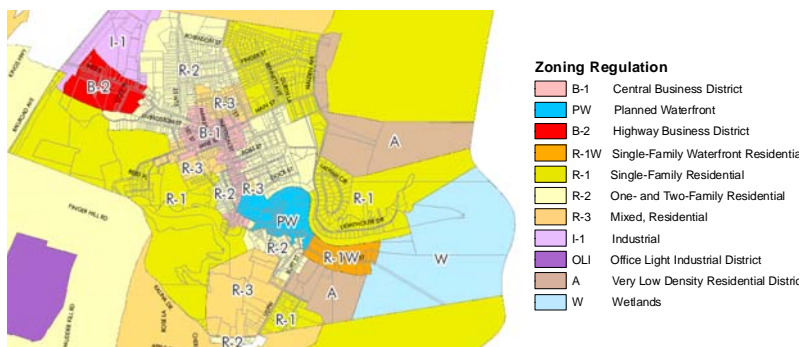
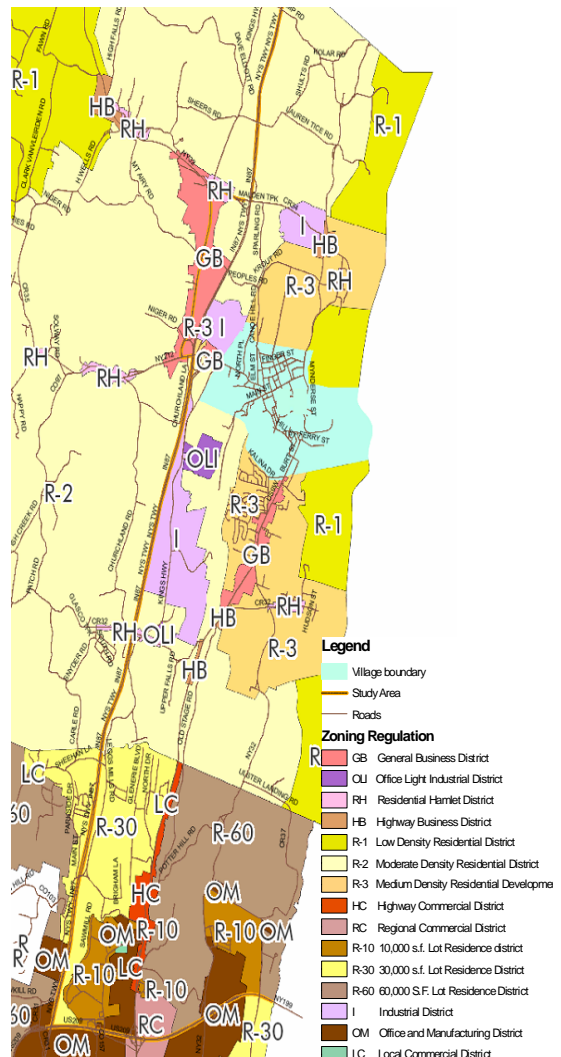


3.2 Zoning

Under current regulations, strip development along major north south roadways is planned within the study area, as shown in the zoning map. The land use and zoning maps show that development of industrial and commercial corridors are developing as envisioned in the zoning regulations. These corridors of development are largely surrounded by low density housing. Within the Village, there is a much more dense cluster of commercial, industrial and residential regulations.

There is a need to develop policies and guidelines that reinforce good access management, site development and architectural principles including shared access between uses and shared parking.

It is critically important that these guidelines and policies be implemented at the project level. There is a direct link between local land use decision-making, and the ability to preserve and maintain the transportation system.

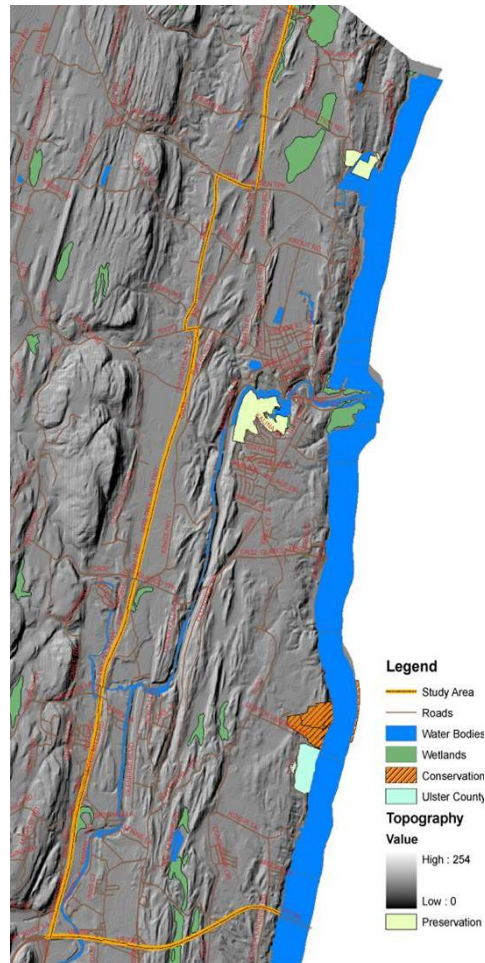


3.3 Environmental Features

The adjacent map illustrates portions of the project area containing steep slopes, floodplains, wetlands and waterways and County owned park land. These natural resources can be important amenities that, if protected, can add value to a community.

The transportation network within the study area was defined by the surrounding topography. The topographic map shows that the majority of roadways and railways travel in a north-south direction. This is due to a large extent to the rivers and ridges which run from north to south. This factor inhibited the development of east-west linkages. These constraints continue to make improvements to east-west travel difficult.

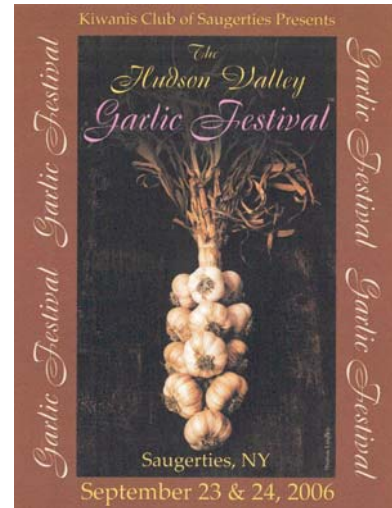
There is a need to maintain, preserve and enhance the natural features and views within the study area, while providing reasonable access so that these amenities can be enjoyed. Improvements to existing east-west travel routes should be explored



3.4 Historical and Recreational

The Village Business District itself is an attraction, being on the National Register of Historic Places, and supporting various inviting shops, a public library, a Village movie theater, restaurants and businesses. There is also an indoor skating rink and outdoor recreational and trails opportunities at the Cantine-Veterans Memorial Complex, Seamon Park and the Esopus Bend Nature Preserve. In addition to these amenities, there are a number of recurring special events including:

- Annual Hudson Valley Garlic Festival held annually during the last full weekend in September.
- Between the Tides Festival at the Saugerties Lighthouse.
- Horse Show in the Sun (HITS) with competitions on various weekends.
- Other community and holiday events including seasonal weekly Farmers Market, parades, and the Mum festival among others.



Traffic operations during special events are reported to be fairly good. Nevertheless, there is a need to optimize transportation operations and parking associated with special events, and to provide multimodal linkages between and among key recreational, historic and civic attractions including schools and the library.

3.5 Market Pressures / Census Review

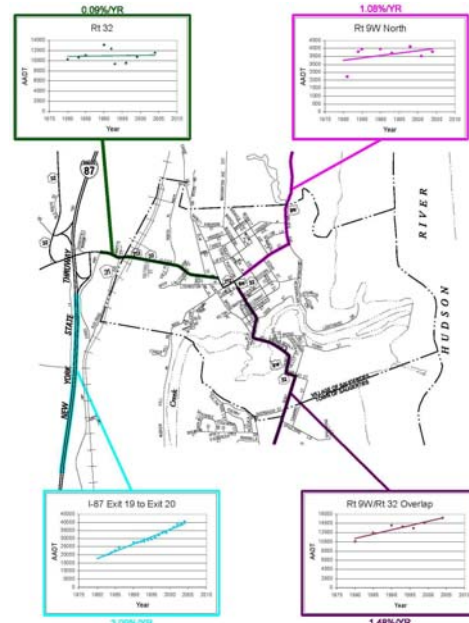
Portions of the Town and Village of Saugerties are included in the Kingston Ulster Empire Zone (EZ). This NYS tax incentive program identifies certain areas to encourage development, attract new business and fuel job growth. A concentration of EZ parcels is located along Kings Highway and around the Ulster Business Park.

The area is also positioned within the southerly portion of the New York State's Tech Valley region, which encompasses 18 counties along the Hudson River and sees strong government and private support for expanding development. Tech Valley supports numerous software and high-technology companies in the Hudson Valley region and recent National rankings have consistently placed Tech Valley among the top 25 regions to do business¹. The project area's relative proximity to the Thruway and Ulster Business Park makes it attractive to these companies and support organizations needing office space.

¹[http:// www.techvalleyhigh.org/about_techvalley.htm](http://www.techvalleyhigh.org/about_techvalley.htm)

Historical traffic volumes offer can lend a tangible perspective to the discussion of market pressure.

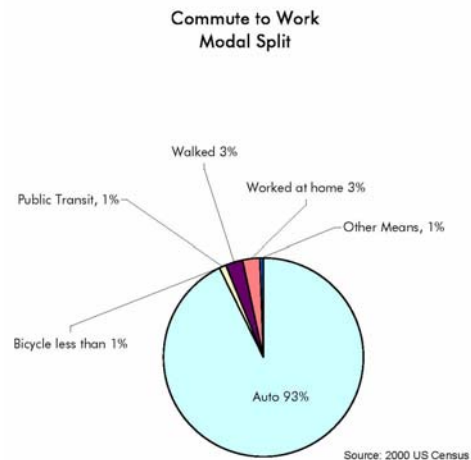
- Traffic volumes have essentially doubled on the Thruway over the past 20 years from approximately 20,000 vehicles per day in the early 1980s to 40,000 vehicles per day today.
- Over the last 20 years, traffic volume growth on State highways entering the Village of Saugerties has been variable – with little growth to/from the north on Route 9W (an increase of one percent per year), and steady growth on Route 9W south of the Village (an increase of 1.5 percent per year).
- Traffic volumes on the Route 212/32 overlap have been stable with a noticeable drop in traffic occurring in the early 1990’s apparently coinciding with the closing of the IBM facility in the Town of Ulster. Since that time, traffic increases have been strong.
- Tourist and recreational opportunities in the Hudson Valley area cause moderate seasonal variations in travel. Travel during certain Friday afternoons, weekends and special events can be higher than normal. The highest traffic volume days coincide with the Hudson Valley Garlic festival.



According to the 2000 US Census, 16,650 people live within the SAMA study area. Of those, 6,671 live in the Town of Saugerties, 5,024 live in the Town of Ulster with the remainder (4,955) in the Village of Saugerties. Within the study area, 93% of the people commuting to work traveled by automobile, showing a high degree of car dependence.

Regarding place of work 14% of employed residents of the Town of Saugerties work in the Village of Saugerties. The corresponding figures for the Town of Ulster and the Village of Saugerties are 5% and 30%, respectively. These figures show that it may be possible to encourage greater use of alternative means of transportation, given the proper infrastructure and incentives.

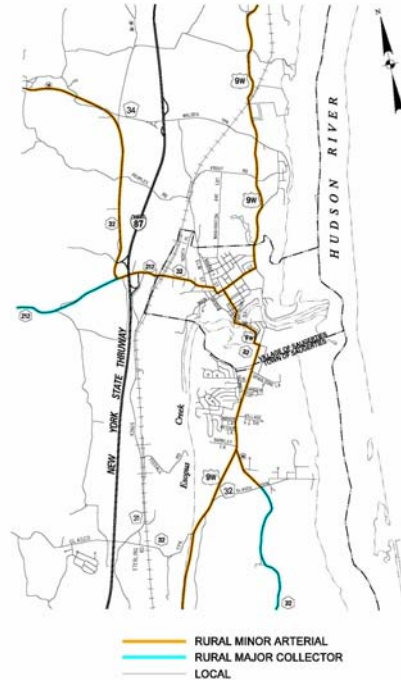
Taken together, this information suggests that there will be continued demand for quality housing, jobs, and the resulting travel in and around Saugerties. There is a need for the community to offer walkable streets and sidewalks, provide opportunities to bike to work and stores as well as recreational trails which will contribute to the quality of life of the families and workforce in the area



3.6 Functional Classification

Area roadways are classified by their relative importance of vehicular movement versus access to adjacent land. Interstate highways and arterials are characterized by higher speeds, longer trip lengths and more controlled access, whereas collectors and local streets are characterized by decreasing mobility function and increasing access function. The following conclusions are evident regarding the functional classification of area roadways.

- Route 9W is classified as a Rural Minor Arterial. As Route 9W passes through the Village, the Arterial classification is in conflict with the Village Setting.
- There are a total of 78 driveways intersecting Route 9W along the one-mile section between the Junction of Route 32 and the Village line (Barclay Heights). This section is also delineated with a passing zone. The numerous driveways are in conflict with the Arterial classification and passing zone.
- Glasco Turnpike, Kings Highway and Malden Turnpike are all county maintained roads that are classified as local roads, yet they function more like collector facilities accommodating travel between Route 9W and the Thruway. Recognizing this function, changes are pending to designate these roadways and a few Village streets as “collector” facilities.



There is a need to provide the proper balance between access and mobility on area roadways. Too many driveways can compromise the mobility and safety of area roadways. Good arterial management calls for properly spaced driveways, channelization, and ample opportunities for travel outside the main corridors, on parallel roads. The UCTC acknowledges these needs and was proposing changes to the functional classification of several area roadways during the course of this study.

3.7 Existing Highway Network

The existing highway network was documented during several field visits and through research of record plan information. Detailed measurements, photo inventories, field notes and sketches were prepared. Information on signing, lane widths, shoulder width, traffic control, signal timing and phasing, speed limits, roadway alignment and grades, and pedestrian accommodations were documented along area roadways and intersections. The following conclusions are evident from this investigation.

- Roadway Segments -

- Some sections of area roadways have lane widths, shoulder widths, steep grades, and horizontal curves that do not necessarily conform to desirable design standards. However, the very features that impede efficient traffic flow, lend a traffic calming effect to area roadways.
- There are a number of 90 degree turns posted with 10 mile per hour advisory speed signs on the Route 9W/32 overlap within of the Village (These curves comprise all of portions of Hill, Church, Barclay and Burt Streets.)
- Lane widths on Partition Street are as narrow as 9 feet approaching the Main Street intersection.
- Malden Turnpike provides 10 foot wide travel lanes with little or no shoulders.



- Intersections - Specific locations of concern include:

- Main Street / Partition Street intersection - Stop lines are set back 60 to 85 feet to accommodate the turning path of large trucks passing through the intersection, which translates into operational inefficiencies at this critical study area intersection.
- The Hill Street/Partition Street/West Bridge Street intersection is another area where the turning path of large trucks is an issue. The lack of pedestrian crossing accommodations in this area is also a concern.
- Narrow lane widths along Partition Street, curb side parking, and double parked delivery vehicles along Main Street can make these roads temporarily impassable until the blockage is removed.



The presence of these limiting geometric features by themselves is not justification for improvement. There is a need for context sensitive roadway and intersection improvements in some areas that balance the safety and efficiency requirements of area roadways, with the character of the community.

3.8 Existing Traffic Volumes and Truck Traffic

The NYS Thruway makes the area attractive from a regional accessibility standpoint. The section of Route 32 that overlaps with Route 212 in the vicinity of the NYS Thruway Exit 20 interchange accommodates the highest traffic volumes in the study area with daily traffic volumes on the order of 18,000 vehicles per day. The section of Route 9W south of the Village accommodates moderately high traffic volumes on the order of 16,000 vehicles per day. Traffic volumes on other area roadways are less.

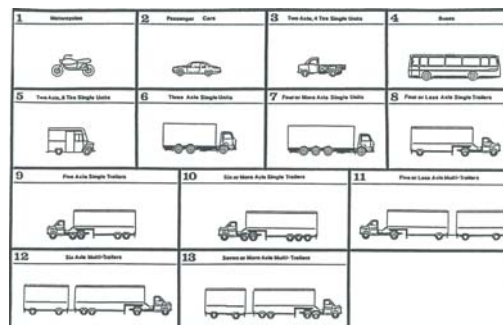
The following conclusions are evident regarding typical *daily, peak hour, and vehicle mix* (cars versus trucks) of traffic on area roadways based on a review of NYSDOT, Ulster County, and NYSTA count information.

- In terms of *hourly* variations, study area roadways typically have two distinct peak periods coinciding with the morning and afternoon weekday commuting hours. Traffic volumes during the afternoon peak period are consistently higher than during the morning peak.
- While many of the area’s roadways accommodate truck volumes on the order of 5 to 6 percent of the total, there are a few notable exceptions with higher than average truck percentages including:
 - Route 9W north of Malden Turnpike
 - Malden Turnpike
 - Kings Highway

A concern was raised by the SAMA committee regarding heavy trucks that traverse through the Village, specifically, the intersection of Main Street and Partition Street. To address this concern, origin-destination data was collected to determine what heavy trucks traversed through the Village without conducting business. For the origin-destination survey, heavy trucks were defined as any vehicle having three or more axles (FHWA class 6 and above). Heavy trucks that passed through the intersection of Route 212 at North Street, Route 9W at Washington Avenue, Route 9W at Route 32, Route 9W at Route 209, and Route 9W at Leggs Mills Road were

Roadway Segment	Daily Traffic	
	Volume	Percent Trucks
US Route 9W		
- North of Malden Tpk *	3000	8%
- South of Malden Tpk	3800	6%
- South of Village Line	16000	6%
- South of Spaulding Ln *	14,000	2%
- South of Rt. 32	12300	6%
- South of Glasco Tpk *	12830	3%
Route 32		
- at I-87 Overpass	18100	6%
- West of CSX RR crossing	11600	6%
- North of Rt. 212	11300	6%
- South of Peoples Rd *	9600	4%
- South of Route 9W *	4330	3%
Kings Highway		
- South of 32/212 OLAP *	5900	9%
Malden Tpk.		
- West of I-87 Overpass *	2100	9%
- West of Route 9W *	1300	16%
Glasco Tpk.		
- Kings Hwy. to Route 9W *	4600	5%

*Truck percentages based on counts conducted for this study, otherwise from NYS Highway Sufficiency Ratings. Trucks are defined as any vehicle having six tires or more (FHWA class 4 and above) which includes busses and some small vans.



FHWA Vehicle Classifications

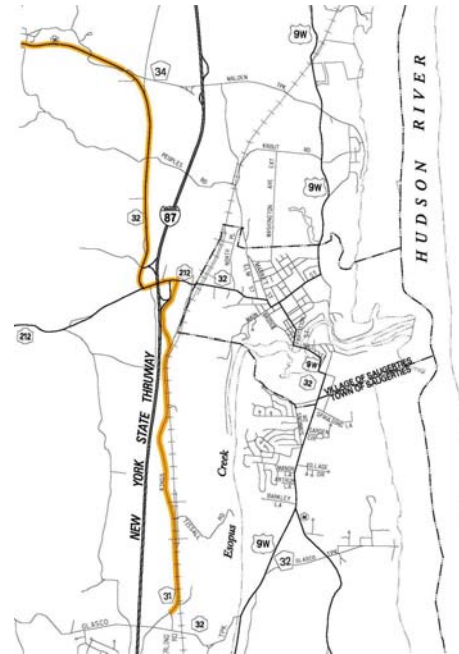
identified and recorded for a four hour period on June 7 and June 27, 2006. Additionally truck volumes and identifiers were recorded at the intersection of Main Street and Partition Street on November 30, 2005. Analysis of this information revealed the following:

- Of thirty three heavy trucks observed traveling eastbound on Route 32/212 overlap at North Street, eight were observed on US Route 9W at Washington Avenue, two were observed on Route 9W at Leggs Mills Road and two were observed on Route 32 at Route 199.
- Of twenty heavy trucks observed traveling northbound on US Route 9W at Leggs Mills Road, three were observed on 9W at Washington Avenue and one was observed on the Route 32/212 overlap at North Street.
- Of twenty six heavy trucks observed traveling northbound on Route 32 at Route 199, two were observed on US Route 9W at Washington Avenue and none were observed on the Route 32/212 overlap at North Street.
- Of twenty one heavy trucks observed traveling westbound on US Route 9W at Washington Avenue, eight were observed on the Route 32/212 overlap at North Street, one was observed on Route 9W at Leggs Mills Road, and none were observed on Route 32 at Route 199.

In summary, the data indicates that approximately seven through trucks traverse the Village on an hourly basis during business hours, typically from 0700 to 1500.

There are several businesses/industries in the area that rely on trucking for product distribution. Sections of Route 32 and Kings Highway are currently designated as Truck Access Highways for Large Dimensioned Vehicles, by the NYSDOT (see image right).

Through truck traffic volumes are low, but perceptible. It is the combined effect of adjacent land use, community setting, narrow travel lanes with adjacent parking, and a number of 90 degree turns in certain areas that cause operational difficulties and quality of life impacts as trucks pass through the Village. There is a need to minimize the negative effects of truck traffic within the Village.



NYSDOT Designated Truck Access Highways for Large Dimensioned Vehicles

3.9 Existing Capacity and Level of Service

Given the dominant role of the automobile, maintaining traffic flow and limiting congestion are primary transportation issues of this study. Traffic congestion is inconvenient and translates into reduced quality of life, increased fuel consumption, and diminished air quality.



Intersection operation is characterized by level of service (LOS). The *Highway Capacity Manual* defines intersection LOS in terms of average delay per vehicle and quantifies LOS results with grades A through F. LOS A operation is characterized by little or no delay, whereas LOS F operation reflects very long delay with operations approaching capacity. Intersection delay is based upon several factors including approach volume, geometry, traffic control, heavy vehicle percentage, number of pedestrians, and several other factors. Sixteen study area intersections were analyzed to determine existing operational conditions. The following conclusions are evident:

- Overall, the system currently operates fairly well on a recurring basis. All key signalized intersections operate at LOS C or better during the weekday morning and afternoon peak commuter hours.
- The Main Street/Partition Street intersection operates at LOS C overall, with the northbound Partition Street approach operating at LOS D. An occasional parallel parking maneuver or heavy vehicle negotiating the intersection can cause longer delays, requiring several signal cycle lengths before the system recovers.
- Three of the study area signalized intersections operate under a coordinated signal timing plan. This includes the Route 32/212 intersections with the Thruway's northbound ramps, Kings Highway and the Grand Union Plaza. These intersections operate very well on a day to day basis. The remaining traffic signals operate independently.
- There are a few unsignalized intersection locations approaching capacity (operating at LOS E/F). These include:
 - Washington Avenue approaching Route 9W during the AM peak hour
 - NYS Thruway southbound ramps approaching NYS Route 32 during the PM peak hour

There is a need to implement additional signal coordination as appropriate throughout the study area, and to identify and implement capacity and operational improvements focusing on circulation improvements within the Village. The possibility of new traffic signals and roundabouts at high volume intersections should be explored.

Table 3.1 – Level of Service Summary

Intersection Approach	Control	AM Peak Hour	PM Peak Hour
		2005 Existing	2005 Existing
Malden Turnpike/Old Kings Highway	A		
Malden Turnpike EB LTR		A (7.8)	A (8.2)
Malden Turnpike WB LTR		A (8.1)	A (8.9)
Old Kings Highway NB LTR		A (7.7)	A (9.1)
Old Kings Highway SB LTR		A (8.0)	A (8.2)
Overall		A (7.9)	A (8.8)
US Route 9W/Malden Turnpike	U		
US Route 9W NB L		A (1.7)	A (1.3)
US Route 9W SB L		A (0.1)	A (0.3)
Malden Turnpike EB LTR		A (9.7)	B (10.7)
Malden Turnpike WB LTR		B (10.4)	B (10.9)
US Route 9W/Krout Road	U		
US Route 9W NB L		A (1.6)	A (1.2)
Krout Road EB LR		B (10.1)	B (10.7)
NYS Route 32/I-87 Southbound ramps	U		
I-87 Southbound ramps WB L			F (73.5)
			B (13.3)
NYS Route 32 SB L			A (9.9)
Augusta Savage Road EB LTR			D (30.1)
Ulster Avenue/NY Route 32/Hess Gas Station	S		
Ulster Avenue EB L		B (10.9)	B (11.2)
		B (11.3)	A (8.4)
Ulster Avenue WB LT		B (17.3)	B (16.6)
		A (0.2)	A (0.5)
Hess Gas Station Drwy NB LTR		A (8.8)	B (12.0)
NY Route 32 SB LT		C (21.7)	C (23.7)
		A (6.2)	A (8.9)
Overall		B (12.7)	B (10.5)
Ulster Avenue/I-87 Exit 20 NB Ramp/McDonald's	S		
Ulster Avenue EB L		A (4.0)	A (8.1)
		A (6.8)	B (13.1)
		A (1.9)	A (2.0)
Ulster Avenue WB L		A (8.6)	A (9.9)
		A (8.3)	B (11.8)
I-87 Exit 20 NB Ramp NB L		D (47.7)	D (38.8)
		D (45.5)	D (36.5)
McDonald's Driveway SB L		D (47.5)	D (42.4)
		D (45.8)	D (40.8)
Overall		B (12.4)	B (18.5)
Ulster Avenue/Kings Highway/Getty Gas Station	S		
Ulster Avenue EB L		A (2.4)	B (12.1)
		A (3.3)	B (14.7)
		A (1.9)	B (12.6)
Ulster Avenue WB LTR		A (5.6)	C (21.0)
Kings Highway NB LT		D (46.2)	C (23.6)
		D (37.8)	B (16.0)
Getty Gas Station SB LTR		D (37.7)	B (15.7)
Overall		A (8.7)	B (18.4)
Ulster Avenue/Grand Union Driveway	S		
Ulster Avenue EB L		A (1.5)	A (4.7)
		A (2.0)	A (5.6)
Ulster Avenue EB T		A (1.1)	A (2.2)
		A (1.0)	A (2.0)
Grand Union Driveway SB L		D (49.2)	D (40.6)
		D (46.9)	D (38.1)
Overall		A (4.9)	A (9.2)

Key: U = Unsignalized; A = All-Way Stop; S = Signalized
 X (Y.Y) = Level of Service (Delay, seconds per vehicle); L = Left, T = Through, R = Right
 NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Table 3.1 – Level of Service Summary (Continued)

Intersection Approach	Control	AM Peak Hour	PM Peak Hour
		2005 Existing	2005 Existing
Ulster Avenue/North St/Price Chopper			
Ulster Avenue EB	L	A (2.8)	A (4.0)
	TR	A (3.7)	A (6.0)
Ulster Avenue WB	L	A (3.0)	A (4.8)
	TR	A (3.5)	A (5.1)
Price Chopper Driveway NB	LT	B (19.0)	B (17.5)
	R	B (17.7)	B (14.8)
North Street SB	LTR	B (18.3)	B (15.5)
Overall		A (6.3)	A (7.8)
Ulster Avenue/Market Street			
Ulster Avenue EB	L	A (4.2)	A (4.6)
	R	A (4.6)	A (5.1)
Market Street NB	LT	A (4.8)	A (5.4)
Market Street SB	LR	B (14.2)	B (15.1)
Overall		A (6.5)	A (7.0)
Main Street/West Bridge Street			
Main Street WB	L		A (6.7)
West Bridge Street NB	LR		B (13.4)
Main Street/Market Street			
Main Street EB	LT	A (9.0)	B (15.1)
Main Street WB	T	A (7.4)	A (9.3)
	R	A (1.0)	A (0.9)
Market Street SB	LR	A (9.6)	B (13.1)
Overall		A (7.0)	A (9.5)
Main Street/Partition Street			
Main Street EB	LTR	B (14.8)	B (14.9)
Main Street WB	LTR	B (16.7)	C (19.0)
Partition Street NB	LTR	B (18.2)	D (43.3)
Partition Street SB	LTR	B (12.4)	B (12.7)
Overall		B (15.8)	C (26.3)
Main Street/Washington Avenue			
Main Street EB	L	A (5.6)	A (1.4)
Main Street WB	L	A (2.1)	A (2.2)
Washington Avenue NB	LTR	E (37.1)	C (16.5)
Washington Avenue SB	LTR	C (20.3)	C (18.5)
Partition Street/West Bridge Street			
Partition Street EB	L		A (5.4)
West Bridge Street SB	LR		C (22.1)
US Route 9W/NYS Route 32			
US Route 9W NB	TR		C (21.6)
US Route 9W & NYS Route 32 SB	defL		C (24.3)
	T		A (3.2)
NYS Route 32 WB	LR		D (36.3)
Overall			C (20.9)

Key: U = Unsignalized; A = All-Way Stop; S = Signalized
 X (Y.Y) = Level of Service (Delay, seconds per vehicle)
 NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
 L = Left, T = Through, R = Right



3.10 Existing Parking

To determine the extent of the parking shortage, two parking surveys were performed, one on Saturday October 29th, 2005 and one on Saturday July 8th, 2006. Each survey was nine hours in length, taking place from 9:30AM to 6:30PM. On both survey days the Farmers Market was in operation. The study area included on-street metered and non-metered spaces, and public and private parking lots.



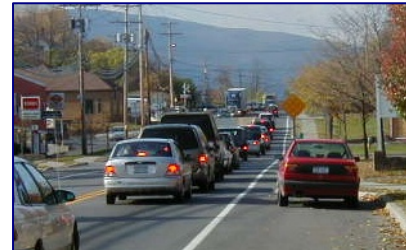
The surveys determined that parking occupancy was higher in October than July. Parking within the Village was found to be operating at capacity along the curbside in the downtown core (Main Street and Partition Street), but with significant excess capacity on the urban fringe and in municipal and private off-street parking lots. Overall parking demand peaked at 55% at the time of our October survey. In addition, the Village lacks commercial loading/unloading zones for commercial vehicles.

There is a need for improved loading zones and parking regulations, enforcement and signing to improve overall parking conditions in the Village.

3.11 Existing Rail

On average, there are 35 CSX trains per day passing through the study area. Primary at-grade railroad crossings exist at:

- Malden Turnpike
- Peoples Road
- NYS Route 212/32 Overlap
- Glasco Turnpike



There are also a number of uncontrolled at-grade rail crossings along the section of the CSX line between Railroad Avenue and Glasco Turnpike, some public and some private.

The NYS Route 212/32 crossing is the only at-grade rail crossing of the CSX rail line with a State highway in Ulster County. There are concerns about emergency vehicles being delayed at the tracks. This location was previously considered for grade separation by the NYSDOT and local officials during the 1980s. Four (4) grade separation alternatives were considered. It was determined that although a grade separation project would address vehicular delays involving trains, accidents at the grade crossing were not considered a problem and vehicular delays were expected to continue at adjacent intersections. Grade separation was rejected by both the Town, Village and State officials due to the extensive impacts to properties east of the railroad tracks².

² Design Report/Environmental Assessment – Route 32/212 Improvements From Route 32, Town of Saugerties to Main Street, Village of Saugerties, Ulster Co, NYSDOT Project ID 8460.26, July 1993.

There is a need to understand the feasibility of grade separating Route 212 and the CSX railroad in the context of previous studies, and/or other improvements at the crossing such as pedestrian wait stations and vehicular queue detectors for improved safety.

3.12 Existing Pedestrian Accommodations

Sidewalks and safe pedestrian crossings are important study area features. Adequate sidewalks can link residential areas to commercial areas, link transit stops to surrounding areas, and can provide improved overall circulation as a viable alternative to the motor vehicle.

- The sidewalk network within the Village is extensive, but not comprehensive. The commercial corridors along Main and Partition Streets have excellent sidewalks.
- Within the neighborhoods, the sidewalk network is adequate, with fair conditions and widths generally less than 4'. The most notable deficiencies of the network are the lack of sidewalks on High Street to connect with Saugerties Town Hall and in the northern portion of the Village along Washington and Market Streets.
- Pedestrian crossing improvements are needed at the following specific locations:
 - Route 9W/Route 32 intersection near Stewarts
 - Within the Village on Main Street and Partition Street



Saugerties Village Sidewalk Condition BfJ Planning CME
Saugerties Area Mobility Analysis February 2005

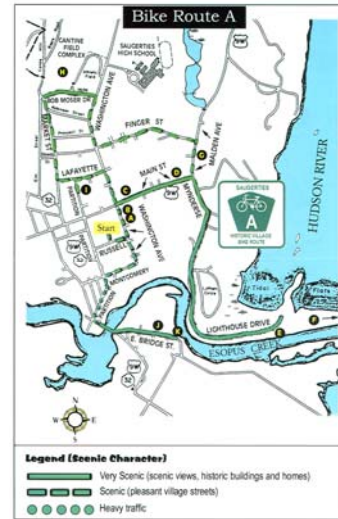
There is a need for sidewalks along Route 9W south of the Village and sidewalk extensions within the Village connecting key land uses. Pedestrian crossing improvements including high visibility cross walks and count down pedestrian signals should be identified.

3.13 Existing Bicycle Accommodations

The Governor’s Quality Communities initiative calls for designing land development and transportation projects to support and proactively create vibrant communities. Substantial benefits can be realized from pedestrian and bicycle improvements within common areas to improve travel choices and the overall quality of life.

- Bicycle routes were developed by local bicycling enthusiasts, in cooperation with the Village and Town governments. One route travels mostly within the Village (bike route A), while a second travels primarily within the study area (bike route B). Cycling conditions vary greatly throughout the Village. The compact nature of the Village encourages cycling, but most roads do not make provisions for cyclists.
- Route 9W has been designated as a future bike route by the NYSDOT.

There is a need to identify desirable typical cross sections and segment improvements to accommodate cyclists along the entire length of Route 9W. The installation of bicycle racks in strategic locations would also improve the cycling environment.



3.14 Existing Vehicular Safety

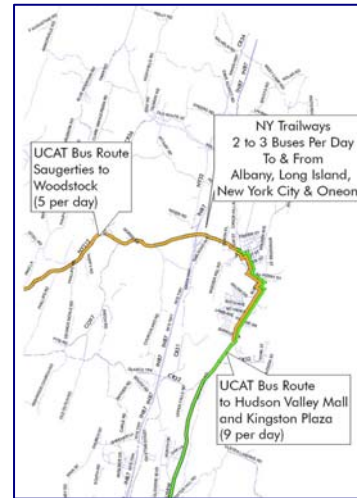
The following conclusions are evident based on a review of crash data for the most recent three-year period available

- Glasco Turnpike and Malden Turnpike experienced higher than average crash rates as compared to similar facilities.
- Route 9W in the Barclay Heights area between Route 32 and the Village line also experienced higher than average crash rates.
- There was a high incidence of side swipe type accidents on Partition Street.

There is an apparent need for physical improvements on these roadway segments such as lane and shoulder widening on the County Roads, access management improvements on Route 9W in the Town, and possible single side of street parking or one-way designation on Partition Street in the Village to provide a wider travel lane.

3.15 Existing Transit

Bus service within the area is provided by Ulster County Area Transit (UCAT) for regional service to Woodstock and Kingston. UCAT's routes travel through the Village. Long distance service is provided by NY Trailways, which stops at a gas station at the intersection of the NYS Thruway and Route 32. There is concern regarding the limited transit service provided within the study area and that Trailways does not actually stop within the core of the Village. There are also concerns about the lack of features such as posted maps and schedules, and lighting at stops. The extent of existing transit service and potential improvements are discussed in the Draft Final Report Ulster County Fixed Route Public Transportation Coordination and Intermodal Opportunities Analysis, prepared by Abrams-Cherwony and Associates, dated August 2005.



There is a need to make transit a viable alternative to the personal automobile by improving pedestrian connections to transit stops, providing amenities at transit stops and delivering a schedule and service that serves primary travel desires.

3.16 Community Input and Summary of Existing Problems and Possibilities

Two community meetings were held. The purpose of the first meeting was to introduce the Saugerties Area Mobility Study to the public, and to receive input on existing problems and needs. Various existing conditions material was prepared to communicate the character, unique features, and constraints in the area.

Common themes at this initial public meeting included quality of life issues; concerns about truck traffic, truck noise, and the lack of truck loading zones; public parking sufficiency; the desire for operational improvements at the Main Street/Partition Street intersection and the Ulster Avenue/Market Street intersection, and the Price Chopper intersection, the need for pedestrian crossing improvements near Stewarts, consideration of one-way circulation within the Village, and gateway landscaping improvements among others.

A field walk was also conducted with members of the Advisory Committee to elicit more detailed input on problems and ideas for improvements within the Village. The results of the field walk are summarized on the following diagram (Figure 3.1).









Collectively, the input from the public and the Advisory Committee supplements the existing conditions information and provides insight into the important issues that affect area residents and businesses.

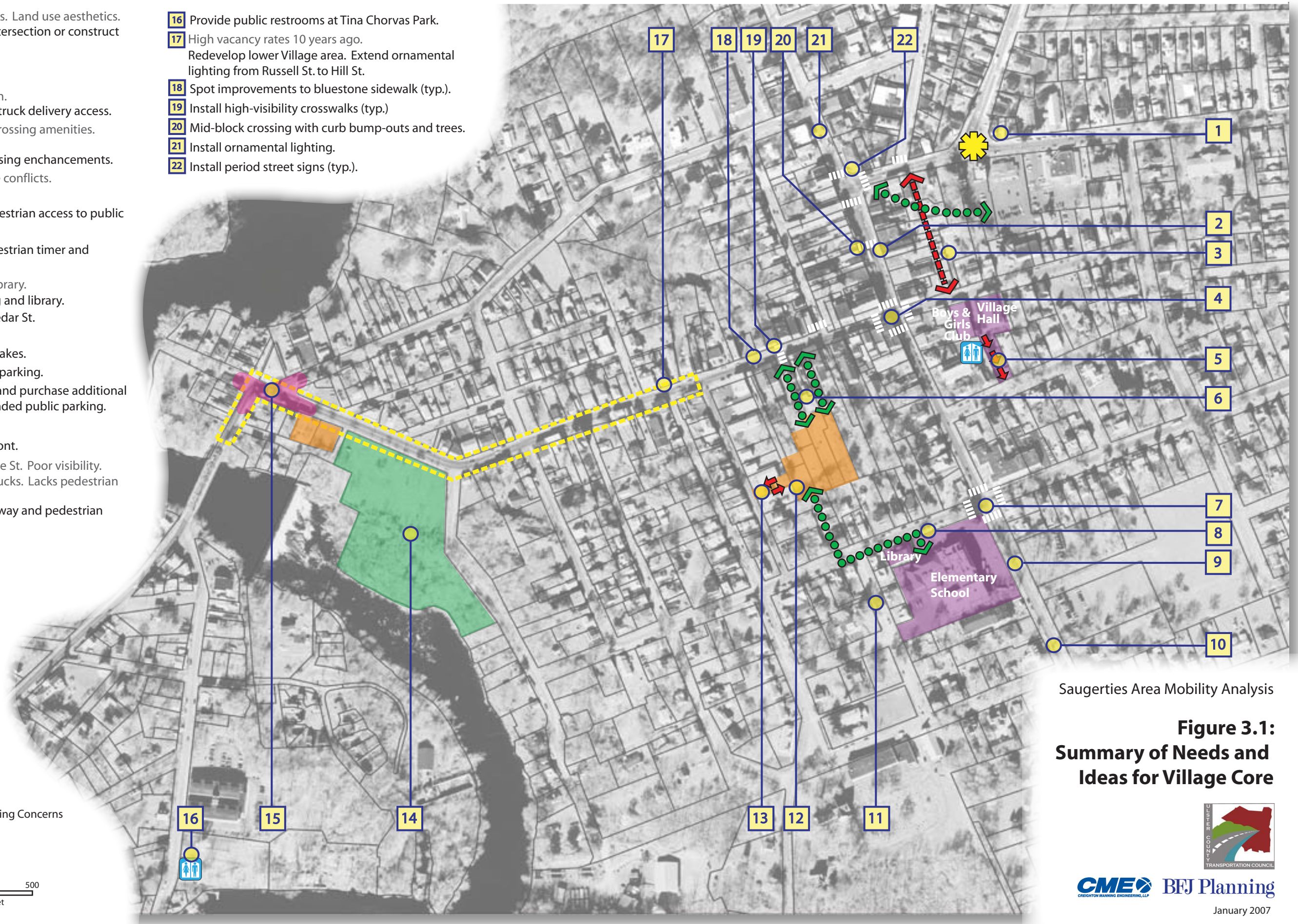
Notes:

- 1** Left turn visibility. Merge conflicts. Land use aesthetics. Channelize existing signalized intersection or construct single-lane roundabout.
- 2** Main St. aesthetics. Utilities underground.
- 3** Inefficient parking and circulation. Improve parking circulation and truck delivery access.
- 4** Tight geometry. No pedestrian crossing amenities. Truck traffic. Traffic signal and pedestrian crossing enhancements.
- 5** Narrow traveled way with vehicle conflicts. Designate as one-way.
- 6** Improve alley aesthetics and pedestrian access to public parking lot.
- 7** New signal with countdown pedestrian timer and high visibility crosswalk.
- 8** Lack of parking connectivity at library. Walkway between public parking and library.
- 9** Extend ornamental lighting to Cedar St.
- 10** Noise from truck brakes. Install sign requesting No Jake Brakes.
- 11** Street closure. Convert to public parking.
- 12** Improve existing public parking and purchase additional property in Village core for expanded public parking.
- 13** Allow two-way traffic flow.
- 14** Improve public access to waterfront.
- 15** Left turn maneuver onto W. Bridge St. Poor visibility. Insufficient geometry for large trucks. Lacks pedestrian crossings. Remove on-street parking. Roadway and pedestrian crossing improvements (TBD).

- 16** Provide public restrooms at Tina Chorvas Park.
- 17** High vacancy rates 10 years ago. Redevelop lower Village area. Extend ornamental lighting from Russell St. to Hill St.
- 18** Spot improvements to bluestone sidewalk (typ.).
- 19** Install high-visibility crosswalks (typ.).
- 20** Mid-block crossing with curb bump-outs and trees.
- 21** Install ornamental lighting.
- 22** Install period street signs (typ.).

Key:

-  Roundabout
-  Pedestrian Connections
-  Vehicle Connections
-  Redevelopment Area
-  Existing Land Uses
-  Existing Parking
-  Underutilized Land
-  Roadway Geometry and Parking Concerns



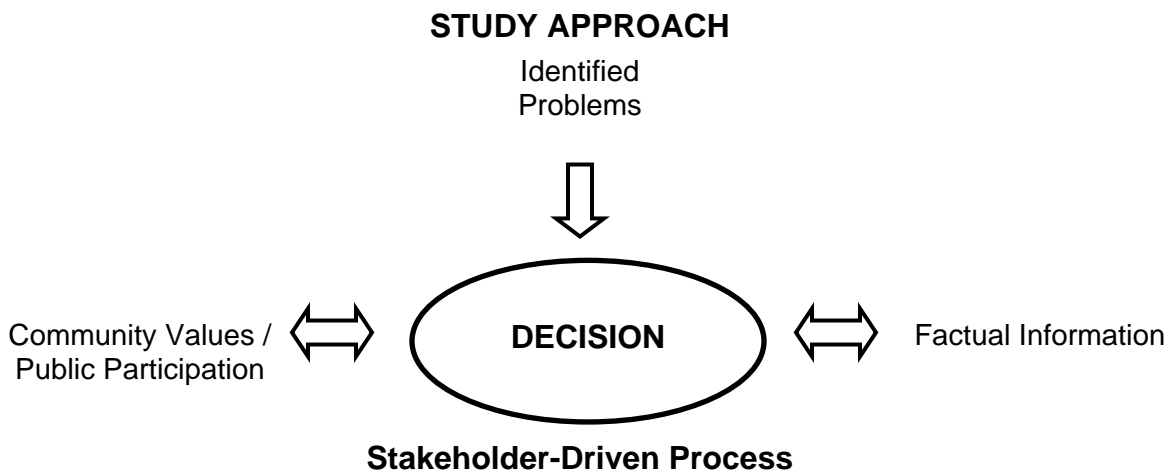
Saugerties Area Mobility Analysis

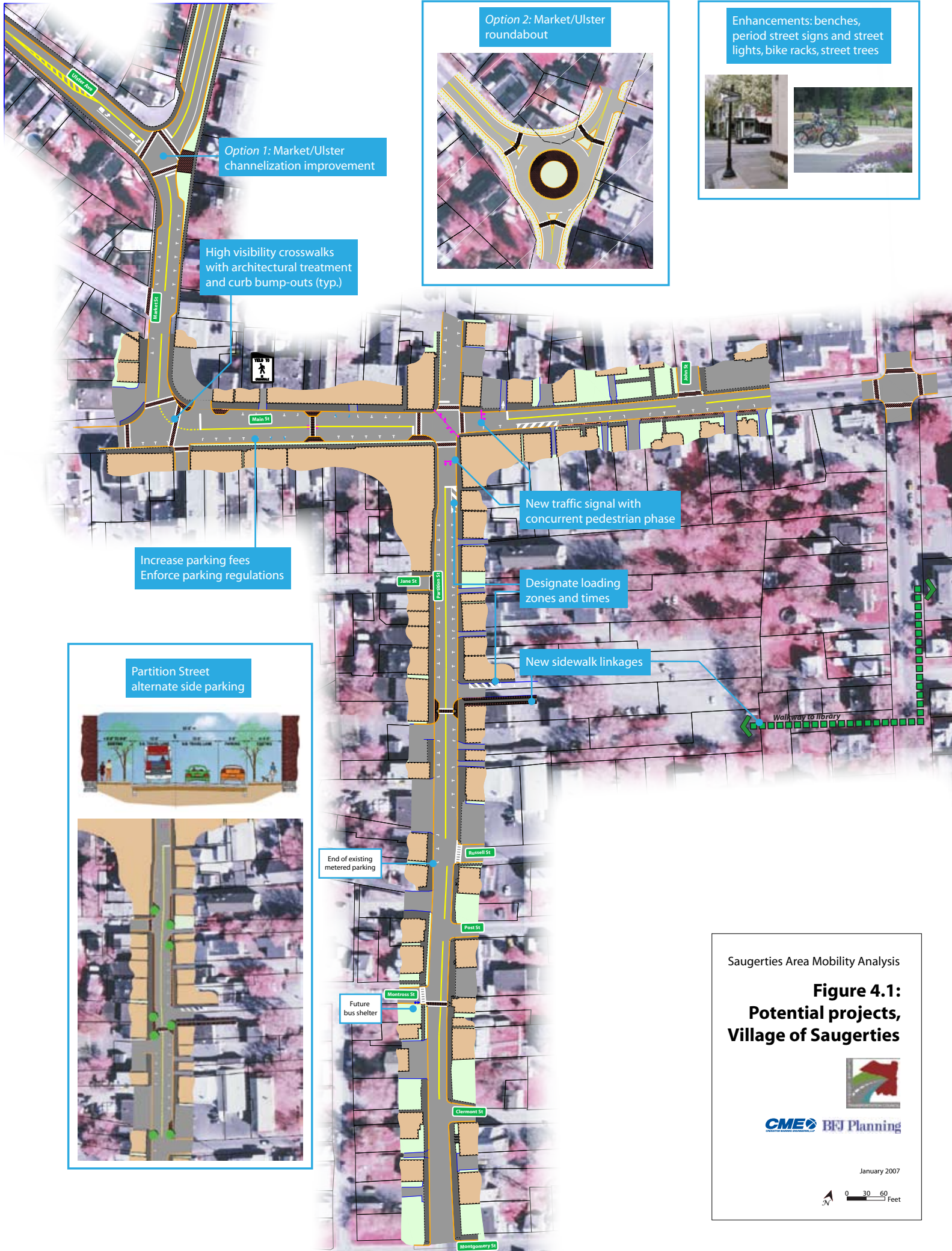
Figure 3.1:
Summary of Needs and Ideas for Village Core

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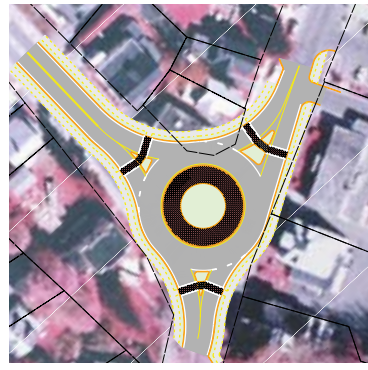
4 Possible Improvement Projects

Various potential projects were identified to address the full range of study area needs, meet the project’s goals and objectives, and reflect the community values represented over the course of the study. The possible projects evolved out of a collaborative decision-making process involving technical analyses, and stakeholder and community input. Possible projects range from “big ticket” items such as new interchanges with the NYS Thruway, and/or construction of a new east-west connector road; multi-modal improvements to improve bicycle and pedestrian travel; to smaller enhancements projects such as street trees, ornamental lighting, benches and other amenities. The conceptual improvements are shown on Figures 4.1 and 4.2 and are described on the following pages. Planning level cost estimates are provided for many of the improvements and represent order-of-magnitude costs. These planning level cost estimates should be refined and verified before programming specific improvements.





Option 2: Market/Ulster roundabout



Enhancements: benches, period street signs and street lights, bike racks, street trees



Option 1: Market/Ulster channelization improvement

High visibility crosswalks with architectural treatment and curb bump-outs (typ.)

New traffic signal with concurrent pedestrian phase

Designate loading zones and times

New sidewalk linkages

Increase parking fees
Enforce parking regulations

Partition Street alternate side parking



End of existing metered parking

Future bus shelter

Walkway to library

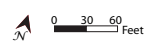
Saugerties Area Mobility Analysis

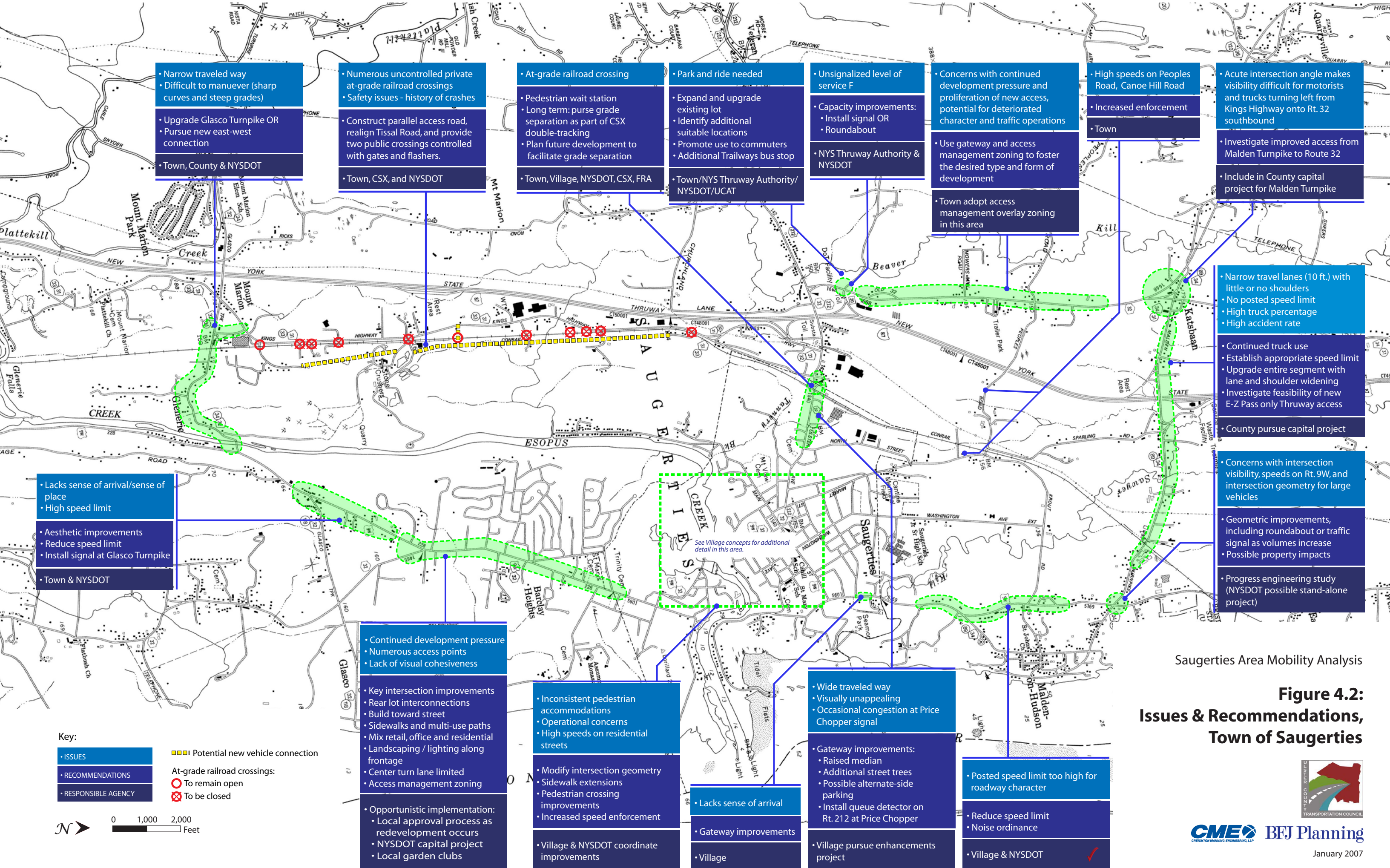
**Figure 4.1:
Potential projects,
Village of Saugerties**



CME BFI Planning

January 2007





Saugerties Area Mobility Analysis

Figure 4.2:
Issues & Recommendations,
Town of Saugerties

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4.1 Regional Access & Mobility Concepts – “Big-Ticket” Items

4.1.1 Malden Interchange

The creation of an E-Z Pass only Thruway interchange at Malden Turnpike was suggested at the community workshop and the trucking workshop, and the concept received moderate support from the Advisory Committee. The benefit of such an interchange is that it would improve access to/from the NYS Thruway particularly for truck traffic and freight originating within and north of the Village of Saugerties. There are no existing E-Z Pass only plazas on the Thruway. The NYS Thruway Authority has indicated that the Malden E-Z Pass only plaza may be a possibility if an outside group, such as a municipality, is willing to fund operations and maintenance of the facility.

A new interchange could cost on the order of \$25 Million dollars. In lieu of programming such a significant project, it is recommended that a Conceptual Access Modification Proposal be developed to initiate the scoping stage for consideration of interstate and other freeway access control modifications by the NYS Thruway Authority, the NYSDOT and the Federal Highway Administration, per the NYSDOT Design Procedures Manual. Preliminary design and detailed environmental analysis would be funded separately, and only with sufficient support and feasibility determined from scoping phase. A fee of \$300,000 is estimated for such a study.

4.1.2 Route 209 (Kingston Bypass) Interchange

The idea for a new NYS Thruway interchange with Route 209 was raised by study participants as a way to provide improved regional access between the Town of Ulster and other points east on Route 199, and the NYS Thruway in both directions. An interchange in this location could also eliminate or reduce some unnecessary trips through the Town and Village of Saugerties and improve regional freight and commuter mobility. Currently motorists in the Town of Ulster destined for points north on the NYS Thruway must travel south to Exit 19 or north through the Town and/or Village of Saugerties along State and County roads with numerous non-standard features including several 90 degree turns, narrow lanes and steep grades.

This possibility of a new interchange at this location received little agency and public support, and the environmental issues are not fully known. A Conceptual Access Modification Proposal could be conducted as a stand-alone project with the objective of improving regional commuter traffic and freight movements between Route 199 and the NYS Thruway, and to determine if the proposed access modification “appears feasible”. The expected fee for the study is \$300,000. If the NYS Thruway Authority, the NYSDOT and the FHWA determine that the access modification does “appear feasible”, then an Access Modification Report could be completed and included in the Design Approval Document.

4.1.3 Route 9W Bridge

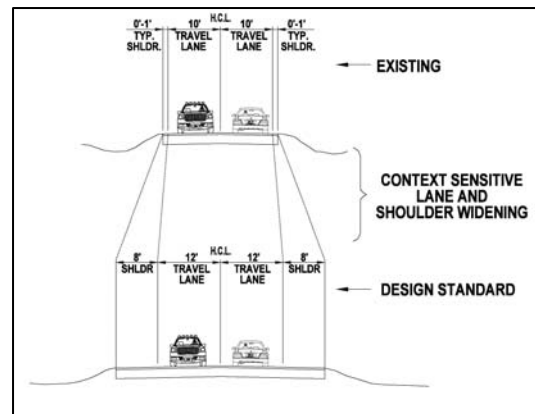
A bridge over the Esopus Creek connecting Lighthouse Drive to Burt Street was suggested at the trucking workshop. The concept for this connection has been discussed in the Village for more than 50 years with no consensus, and very real construction and environmental obstacles. The connection, if provided, would allow truckers and motorists traveling along Route 9W to bypass the Village core. There are concerns that a bridge would impact the property currently occupied by the Knights of Columbus. The proposed alignment also passes through the Village's historic district and has little support from the community. No further study is recommended.

4.2 Roadway Segment Improvements

4.2.1 East-West Connection North - Malden Turnpike

Malden Turnpike is classified as a local road, although it functions more like a collector facility accommodating travel between Route 9W and the Thruway (via Route 32).

Malden Turnpike has narrow travel lanes (10 feet) with little or no shoulders, no posted speed limit, a high truck percentage, and a high accident rate. The road should be upgraded with context sensitive lane and shoulder widening through a County capital project and an appropriate speed limit should be established. Wider shoulders will also serve bicycle traffic. Care should be taken to protect the historic character of Katsbaan, an 18th century community at the intersection of Malden Turnpike and Old Kings Highway (Kaufmann's Corners).



Comparison of existing typical section vs. design standard for Malden Turnpike, and recommended context sensitive widening in between.

The total length of the project is approximately 1.85 miles from Route 32 on the west end, to Route 9W on the east end. The estimated cost of the project is between \$5 and \$6 Million dollars including intersection improvements on both ends. The feasibility of the Malden turnpike interchange discussed under section 4.1.1 could be explored with additional funding as part of this project. Intersection improvements are discussed separately under section 4.3 because they have independent utility and could be progressed separately or combined with the Malden turnpike segment project described here.

4.2.2 East-West Connection South - Glasco Turnpike

Similar to Malden Turnpike, Glasco Turnpike functions as an east-west collector facility even though it is classified as a local roadway.

Glasco Turnpike between Kings Highway and Route 9W is narrow with several non-standard horizontal curves and steep grades that make navigating this roadway difficult. The road traverses a deep ravine and passes by approximately 30 residences. There is also a significant embankment between the road and the Esopus Creek. These constraining features make a shoulder widening project difficult.

Nevertheless, there is a need for an improved east-west connection south of the Village of Saugerties that can adequately accommodate all modes of traffic. Combined with Kings Highway and Sterling Road, it could form a by-pass of the Village for north-south traffic. Improvements to Kings Highway south of Glasco Turnpike, and Leggs Mills Road to Route 9W have been suggested as an alternative to Glasco Turnpike but this route is approximately four times longer, passes by approximately 100 residences and crosses two bridges. The improved east-west connection should be designed to accommodate large dimensioned vehicles and could be built on the existing or new alignment. The improved east-west linkage could also satisfy the same regional mobility and freight movement goals described under the Route 209 Interchange Study (section 4.1.2). It should be noted that the existing Glasco Turnpike bridge over the Esopus Creek (B.I.N. 3346850) was built in 1962 and is currently ranked as one of the 25 worst bridges by condition in Ulster County, so an improved east-west connection could be coordinated with a new or rehabilitated bridge project. It is recommended that a preliminary design, bridge location and environmental evaluation be conducted to identify and select a preferred alternative for an improved east-west connection. The study could be combined with the Route 209 interchange evaluation. A study fee of \$800,000 is assumed to complete design phases I through IV.



Glasco Turnpike curvilinear alignment



Bridge over Esopus Creek (B.I.N. 3346850) and rock face on far side.

4.2.3 Route 9W

Route 9W north of the Village

Upon entering the Village from the north, the character of Route 9W transitions from a rural arterial on rolling terrain, to a Village street with sidewalks and more roadside development. This transition occurs in the vicinity of the Sawyer Kill and Seamon Park which provides a natural gateway. Additional gateway improvements are recommended on the bridge over the Sawyer Kill, and immediately north of the bridge where the proliferation of signs detracts from visual aesthetic and sense of arrival into the Village. Ornamental lamp posts on the bridge and/or a more distinctive feature near the bridge (such as an architectural welcome sign) would complement and extend the attractive corridor appearance from Seamon Park up to the bridge and to the Village line.

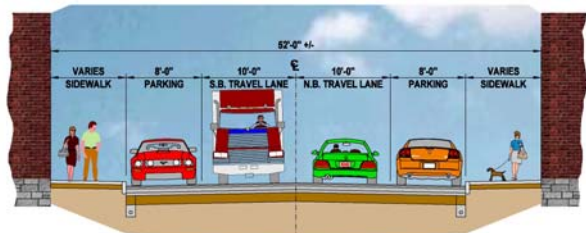


Existing view of Route 9W at the Sawyer Kill bridge.

The estimated project cost is \$150,000

Route 9W within the Village (Partition Street)

The section of Route 9W south of Main Street is characterized by narrow lanes, parking on both sides and a high incidence of crashes involving sideswipes and opening doors from parked cars. The narrow lanes also contribute to a low vehicular flow rate at the Main Street/Partition Street traffic signal. Provision of single-side parking on Partition Street would have several benefits. It would allow the travel lanes to be widened improving vehicle flow, and reducing side-swipe crash frequency. It would also create an opportunity for wider sidewalks, additional street trees, and pedestrian amenities such as benches. Bicyclists would also have more room to maneuver. Approximately 18 on-street parking spaces would be lost if alternate side parking were provided between Main Street and Russell Street. South of Russell Street, alternate side parking already exists, so the proposed



Existing typical section on Partition Street



Typical section with single side parking

project would match existing conditions. Parking spaces lost could be replaced through improvements at the nearby public parking lot.

The community was asked to rank the single-side parking alternative during the second public meeting and support was low. Concerns have been expressed about the potential loss of the natural traffic calming in the area, increased vehicle speeds, and the high value of on-street parking. An improvement though this area will need to balance traffic flow, pedestrian needs, safety, community character, and business interests. The SAMA committee recommends a re-evaluation of this area in the future, when/if the Main St / Partition Street intersection operations become unacceptable.

The project length is approximately 800 feet with an estimated cost of \$1.6 million dollars assuming total reconstruction.



Alternate side parking on Partition St.

It should be noted that the Village is interested in redeveloping the lower section of Partition Street from Russell Street to the Hill Street Bridge. Federal funds from the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A legacy for Users (SAFETEA-LU)*, have been designated for sidewalk repairs, additional street trees, and ornamental lighting to improve the streetscape along this section. Improved pedestrian crossings are also desired near West Bridge Street and Allen Street and should be pursued as part of developer mitigation as mixed use redevelopment is encouraged in the area.

A one-way street pair was also considered within the Village. Under this alternative, Partition Street would be designated as one-way northbound from the West Bridge Street intersection to the Main Street intersection. West Bridge Street would be designated as one way southbound from Main Street to Partition Street, creating a one-way pair for north-south traffic flow within the Village.

Analysis of the existing traffic flow pattern in this section of the Village revealed that a significant number of vehicles currently use West Bridge Street northbound to bypass Partition Street. Designating West Bridge Street as one-way southbound would direct additional vehicles to use Partition Street northbound. While operations at a few of the intersections would improve slightly, operations at the critical Main Street/Partition Street intersection remain essentially unchanged (see section

MOE	Existing w/ Actuated Signal	One-way Alternative
Total delay / veh	13	14
Total delay (hr)	15	18
Avg speed (mph)	25	24
Fuel consumed (gal)	112	117
CO Emissions (kg)	7.81	8.20

4.3.6). Overall, several measures of effectiveness (MOE) would degrade slightly with the one-way alternative. While the analysis did not show an overall operational benefit within the Village, several SAMA committee members still support the idea, and it is recommended that the alternative be retained for future consideration.

For the section of Route 9W/32 from the Hill Street bridge to the Town line, improved bicycle accommodations are recommended along with sidewalks on at least one side as discussed in the sections 4.5 and 4.6.

Normal maintenance of the traveled way (mill and fill) is scheduled for Route 9W during 2007 as part of the Department's Preventative Maintenance Initiative.

Route 9W/32 overlap in Barclay Heights

The Route 9W/32 overlap in the Barclay Heights area from the Route 32 intersection to the southern Village line experiences a higher than average crash rate. It also has numerous existing commercial driveways and the potential for further commercial and mixed-use development, making it an ideal location for implementing access management. The access improvement concept recommended for this section of Route 9W incorporates a number of access management principles.

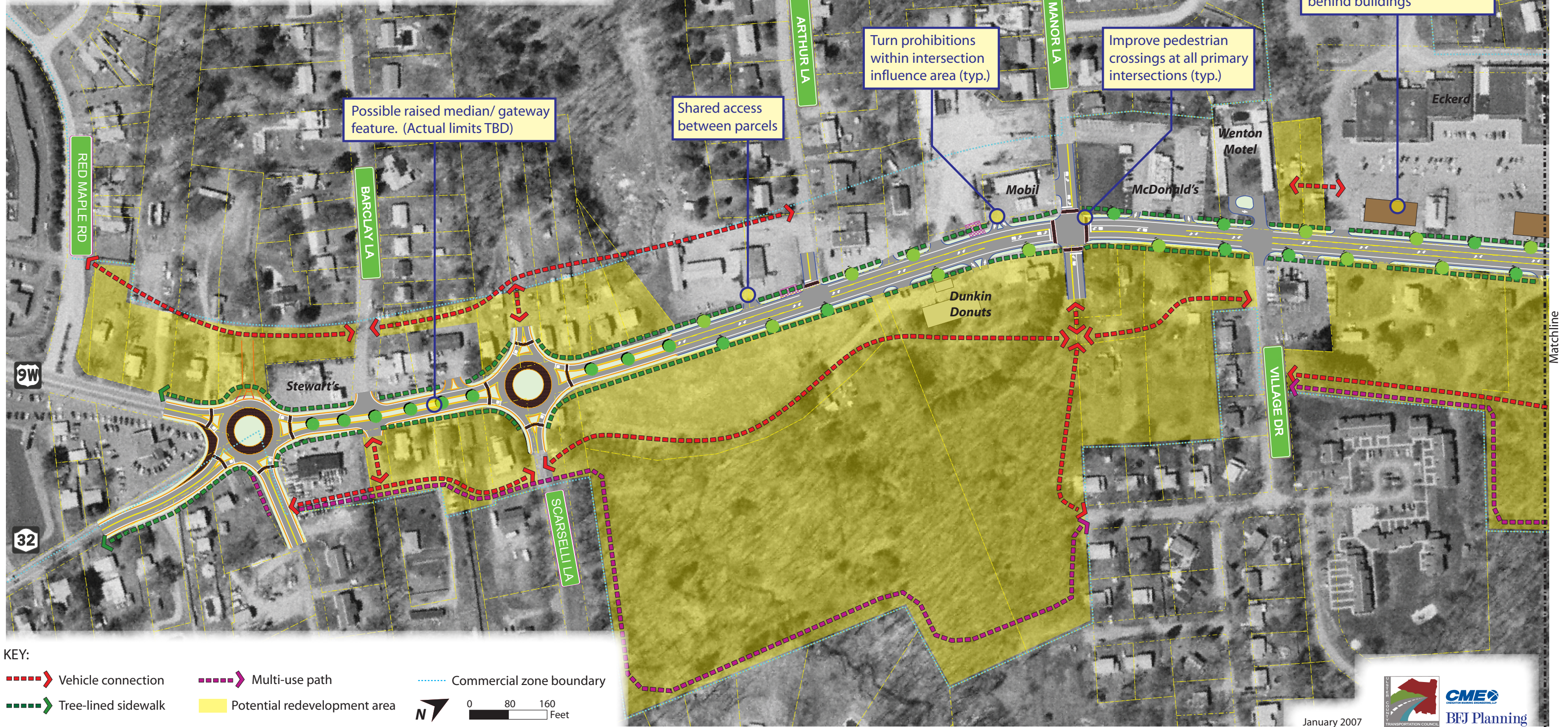
Good access management preserves mobility on major arterials and reduces conflicts by establishing primary intersections, encouraging access to the arterial at the primary intersections, encouraging cross-access between parcels, and limiting driveway conflicts near the primary intersections. Parallel or frontage roads may be used to provide access to multiple parcels while removing traffic from the arterial. The access improvement concept also includes pedestrian accommodations and landscaping.

In order to support an access management project, the NYSDOT requires that an access management plan be adopted by the Town board and included in the Town's master plan, and that the principles of the access management plan be consistently applied by the planning board when reviewing development proposals. Accordingly, it is recommended that the access improvement concept (or a refined version) be adopted by the Town and included in the Town's Master Plan and zoning law. The Town Planning Board can then implement connections between parcels, outside of the Route 9W right-of-way, through the development review process. This commitment to preserve the corridor by the Town could leverage a future capital improvement project within the right-of-way by the NYSDOT.

The cost to reconstruct the one-mile segment of Route 9W in Barclay Heights between Route 32 and the Village line would be several million dollars. Right-of-way acquisition (strip takings) would be expected for an estimated 30 to 40 properties.

Within the access management concept, two individual intersection projects could have independent merit and could be progressed as stand-alone projects. These intersection improvements are discussed under section 4.3

Figure 4.3-1:
Route 9W Access Improvement Concept
 Section 1 (south)



KEY:

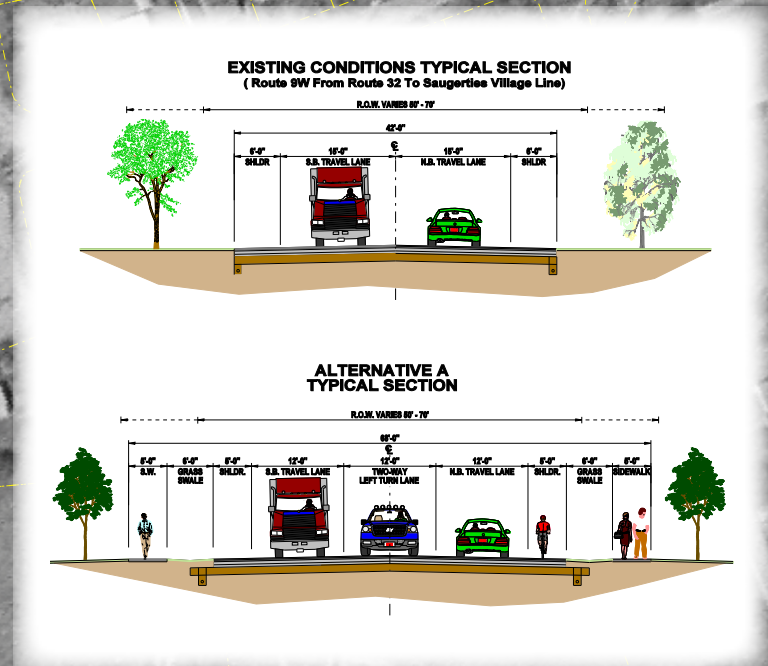
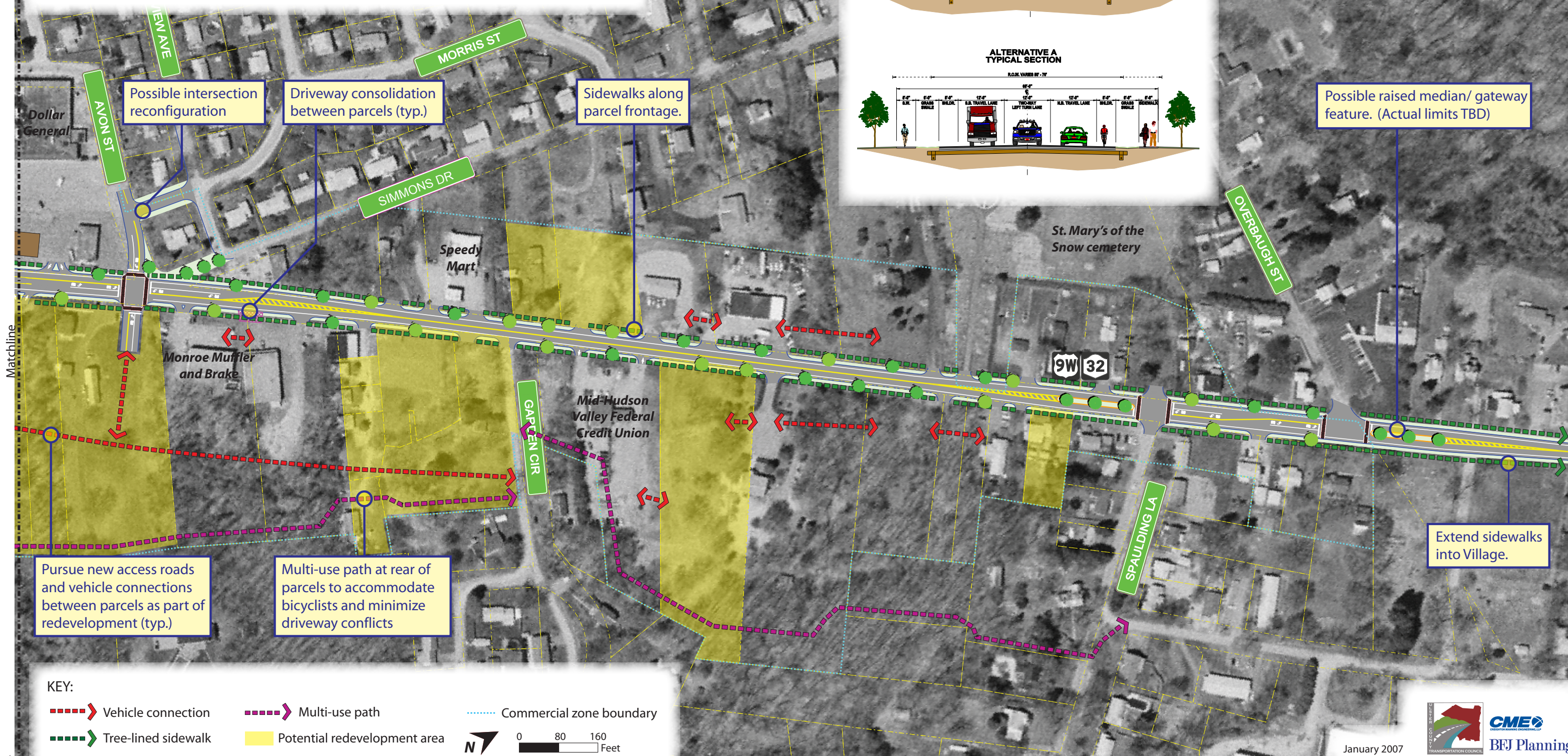
- - - - - Vehicle connection
- - - - - Tree-lined sidewalk
- - - - - Multi-use path
- Potential redevelopment area
- - - - - Commercial zone boundary

N
0 80 160
Feet

January 2007

Intentionally blank

Figure 4.3-2:
Route 9W Access Improvement Concept
 Section 2 (north)



Possible raised median/ gateway feature. (Actual limits TBD)

Extend sidewalks into Village.

KEY:

- - - - - Vehicle connection
- - - - - Tree-lined sidewalk
- - - - - Multi-use path
- Potential redevelopment area
- - - - - Commercial zone boundary

0 80 160 Feet

Intentionally blank

4.2.4 Route 32/212 Overlap (Ulster Avenue)

Route 32/212 between the CSX at-grade rail crossing and the traffic signal at the Price Chopper/North Street intersection was reconstructed during 1999 and is reported to be in overall good condition according to the 2004 NYS Highway Sufficiency Ratings. There is an ample shoulder along the south side for the entire segment, and along the north side on the east end. Sidewalks are also present along both sides, yet the corridor lacks visual appeal and it represents the primary gateway into the Village from NYS Thruway interchange 20. Based on community input received during the public outreach and supported at the advisory committee level, there is a desire to improve the look of the corridor. The immediate recommendation for Route 32/212 (Ulster Avenue) is to create an improved entrance into the Village from the west with a raised median, street trees and possible alternate-side parking all within the existing right-of-way by reallocating the pavement area and eliminating or significantly reducing the expansive shoulder area, while not negatively impacting one of the few bicycle friendly roads on Saugerties.

The length of the project is approximately 1500 feet. It would include new curb and corresponding drainage improvements, as well as additional street trees, benches and ornamental lighting. The estimated cost of the project is \$1.5 million dollars.



Existing view of Route 32/212



Simulated view of Route 32/212 with median, ornamental street lights, and street trees.



Example of landscaped median. (Kingston, NY)

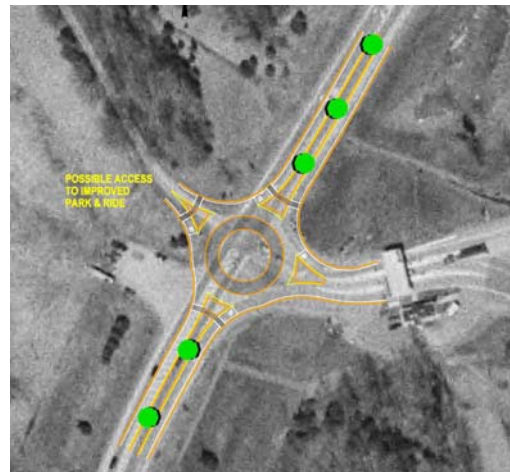
4.2.5 Route 32

There are concerns with continued development pressure and proliferation of new access points leading to deteriorated character and traffic operations on the section of Route 32 between the Exit 20 southbound ramps and Malden Turnpike. Similar to the discussion under section 4.2.3 for the section of Route 9W south of the Village, gateway and access management zoning should be used to foster the desired type and form of development in this area. This would require the Town to adopt access management overlay zoning along this section of Route 32.

4.3 Intersection Improvements

4.3.1 Rt. 32/Exit 20 Southbound ramps and adjacent Park-and Ride Lot

The existing conditions analysis showed that the Exit 20 southbound ramp intersection with Route 32 is one of the few unsignalized study area intersections that experiences unacceptable traffic delays during peak periods. Specifically, vehicles turning left from the ramp onto Route 32 southbound operate at level-of-service F during the PM peak hour. The vehicle queuing distance between the stop sign and the toll booths is also limited. Accordingly, a capacity improvement is recommended such as a demand responsive traffic signal or a roundabout. The idea of a capacity improvement and the possibility of a roundabout was supported by the advisory committee, and received a ranking of B+ when graded by the community during the second public work shop.



*Conceptual single lane roundabout –
Route 32/Exit 20 southbound ramps*

There is an existing park-and-ride lot on the west side of Route 32 immediately opposite the Route 32/Thruway ramp intersection. Improvements to this park-and-ride facility are described in section 4.10 and could be combined with the proposed intersection improvement project.

The total estimated construction cost of the intersection capacity improvement project (assuming a roundabout) and the expanded park-and-ride facility is \$1.5 million dollars, not including property acquisition.

4.3.2 Route 32/Old Kings Highway (Katsbaan)

The acute angle of this intersection makes visibility difficult for motorists and trucks turning left from Kings Highway onto Route 32 southbound. Realignment of the intersection is recommended to create a more standard T-intersection

configuration at near 90 degrees, thereby improving visibility particularly for trucks traveling to and from Malden Turnpike.

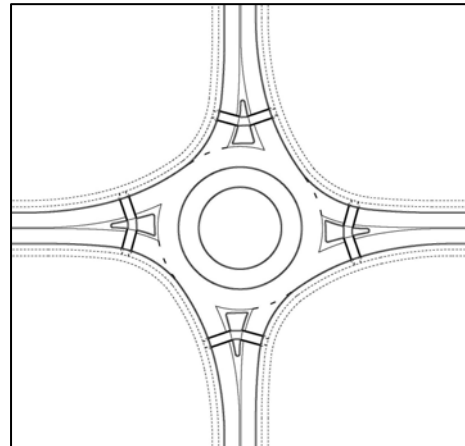
The cost of the intersection realignment project is estimated to be on the order of \$300,000, not including property acquisition. This project could be combined with the Malden Turnpike improvements described under section 4.2.1.

4.3.3 Route 9W/Malden Turnpike

There are concerns with poor intersection sight distance, speeds on Route 9W, and intersection geometry to accommodate large vehicles at this location. Looking north from Malden Turnpike, there is an embankment on the inside of the curve that limits the visibility along Route 9W. Improvement options include clearing, horizontal and vertical roadway realignment, and larger radii to accommodate the turning path of larger vehicles. There is also the possibility of a roundabout or traffic signal. There may be property impacts related to geometric improvements. Further engineering study/preliminary design is recommended to confirm the extent and type of improvement. A study fee of \$15,000 to \$20,000 is proposed and should include ground survey, approximate right of way, and development of plan and profile conceptual improvements so that potential property impacts can be identified and a more accurate design and construction fee can be developed. Alternatively, improvements to this intersection could be combined with the Malden Turnpike project described under section 4.2.1.



Looking left from Malden Tpk.



Four-way roundabout concept.

4.3.4 Route 9W/Krout Road

The Krout Road approach to Route 9W is on a moderate upgrade within close proximity to its intersection with Route 9W, which affects the overall operations at the intersection. This intersection is a primary travel route to and from the ice arena and Cantine Field used by attendees during the annual Hudson Valley Garlic Festival. It also provide access to the HITS area during numerous horse show events over the course of the summer.



View of Krout Road upgrade

In general, motorists should approach an intersection at less than three (3) percent within 50 feet of an intersection. Raising the profile of Krout Road would extend several hundred feet along Krout Road and should be pursued. The cost of the project is highly variable depending on the extent of the final improvements. More than \$1M is assumed for total reconstruction which could include the possibility of relocating the intersection to the north. Funding a scoping study for approximately \$20,000 would allow better understanding of potential improvements and costs.

Recognizing the importance of providing a satisfactory northerly route to and from the Village of Saugerties, an additional alternative was discussed by the Advisory Committee. The idea is that an expanded grid system would provide an alternative route choice and could also serve additional development. Specifically, extending an additional north-south roadway between Krout Road and Malden turnpike should be considered. The roadway could involve a realignment of the north end of Washington Avenue to intersect Krout Road a short distance west of its current location, then extend north possibly crossing over the CSX railroad tracks, and intersecting with Malden Turnpike. A stream crossing (Sawyer Kill) and adjacent wetlands would need to be considered. Nevertheless, as development proposals arise in this area, the Town should pursue a continuous north-south connector road constructed primarily through developer mitigation.

4.3.5 Main Street/Washington Avenue

The northbound approach at this unsignalized intersection is approaching capacity (level-of-service E) during the morning peak hour. School children from the Washington Avenue Elementary School are often present at the intersection and their crossings are facilitated by a crossing guard. There is universal support for pedestrian improvements including high visibility architectural cross walks. A new traffic signal was also requested by the Village and is being programmed by the NYSDOT.



*Crossing guard at work at Main St/
Washington Avenue intersection.*

4.3.6 Main Street/Partition Street

Improvements at this intersection must balance the competing objectives of moving traffic, versus calming traffic and providing improved pedestrian crossings. A number of options were considered and studied with a detailed traffic simulation model developed for the Village.

The intersection currently operates at a relatively good overall level of service (LOS C) during the PM peak hour. Yet, long delays are experienced periodically, when illegally parked vehicles (often delivery trucks), double park near or within the intersection. While the narrow lane widths and adjacent parking on Partition Street also limit the flow of traffic through the area, they do provide a traffic calming benefit.

Alternatives considered at this intersection included modifications to the signal phasing (pedestrian phase and westbound left-turn phase), a westbound left-turn prohibition, single-side parking on Main Street (to provide wider travel lanes and wider sidewalks), one-way traffic flow, and pedestrian and parking improvements. The analysis showed that the intersection would continue to operate at an acceptable level of service under all of these alternatives. The preferred options tended to be less intrusive rather than large scale changes with peripheral impacts. The recommendations for this intersection include:

- Replace the existing pre-timed traffic signal with a traffic-actuated signal.
- Provide a concurrent pedestrian phase at the new traffic signal.
- Provide a curb bump-out on Main Street.
- Provide high visibility crosswalks
- Eliminate two or three of the parking spaces on Partition Street near the stop line, and designate this area as a loading zone.
- Re-evaluate one-way and single side parking alternatives in the future

The cost of the improvements is estimated to be \$300,000 and is proposed to be completed in phases. SAFETEA-LU funds have been allocated for the crosswalk and curb bump-out work. NYSDOT should program the signal replacement as part of their signal maintenance program.

Alternative	2005 PM Peak Level-of-Service	
	Worst -case approach	Overall
Main St/Partition Street		
- Existing - pretimed	D (43.3)	C(26.3)
- Concurrent ped phase	C (26.4)	B(19.3)
- Exclusive ped phase	D (41.0)	C(34.8)
- Ped phase & WB LT phase	D(52.9)	D(40.6)
- Alternate side parking	C23.4)	B(17.4)
- WB LT prohibition	C(20.9)	B(15.9)
- one-way circulation	D(39.7)	C(27.1)



Improved pedestrian accommodations, new signal, channelization and bump-out at Main St/Partition St intersection.

4.3.7 Ulster Avenue/Market Street

Although this intersection operates at a high level of service, there are concerns about the existing geometry. Motorists turning left from Ulster Avenue onto Market Street have difficulty seeing oncoming traffic. The intersection also has a painted divisional island on Market Street which creates a traffic conflict at the merge point. These specific concerns were raised by the public and the Advisory Committee. Two basic alternatives were studied –

1. Channelization option which eliminates the painted median and shortens pedestrian crossing distances.
2. Single lane roundabout alternative with possible gateway feature.

While both alternatives are considered feasible, the channelization option received more support from the Advisory Committee and was ranked higher by the community. The roundabout option has greater property impacts and the area is also part of the Villages historic district which makes it less practical. It is acknowledged that additional alternatives could be identified and studied during the preliminary design phase of the project, and that the ultimate improvement could look different than represented in the concept above. Protected signal phasing could be considered with or without geometric improvements. The intent of the improvement should be to make the intersection more pedestrian friendly, reduce conflicts, improve driver guidance, and provide adequate visibility. There is also a large tree on the east side of Market Street south of the intersection, which should be preserved.

The channelization option is recommended. Addition of a pocket park, and/or transit shelter on the former gas station property is also supported by the community.



Channelization Alternative.



Roundabout Alternative.

4.3.8 Partition Street/West Bridge Street/Hill Street

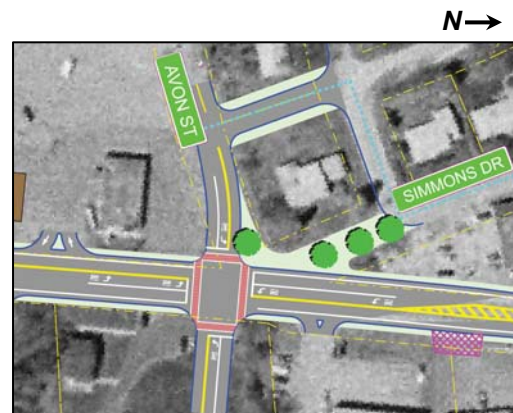
This intersection has several undesirable features. Route 9W turns 90 degrees. There is poor visibility for the left turn maneuver onto West Bridge Street. The intersection geometry is insufficient for large trucks and there are no pedestrian crossings. In the short term, it is recommended that on-street parking along the east side of Partition Street up to and opposite West Bridge Street should be removed. Three future alternatives were discussed:

1. Maintenance of the existing geometry and installation of a pedestrian activated traffic signal.
2. Realignment of West Bridge Street to intersect Partition Street north of the laundry business. This improvement could include transfer of the abandoned portion of West Bridge Street to the laundry for parking. The concept increases the separation from Hill Street to allow development of a left turn lane on Partition Street.
3. Installation of a traffic signal and increasing the Hill Street to Partition Street radius to reduce off-tracking.

Improved pedestrian crossings would accompany all of the alternatives. Property acquisition is expected for alternatives 2 and 3. A planning level cost estimate for Alternative 1 is \$150,000. A \$1M+ dollar intersection reconstruction fee is assumed for Alternatives 2 and 3 not including property acquisition.

4.3.9 Route 9W/Avon Street

Currently, Simmons Drive intersects Route 9W at an acute angle that, along with the proximity to Avon Street, creates a K-shaped intersection and a difficult situation for drivers. This study recommends closing Simmons Drive at Route 9W and extending Morris Street to Avon Street to provide access to Route 9W at a new signalized intersection. The conceptual realignment is included in the Route 9W access management plan discussed under section 4.2.3 and is shown here because the intersection project is believed to have independent utility. A \$1M dollar intersection reconstruction fee is assumed not including property acquisition.



*Improvement Concept:
Route 9W / Simmons Drive*

4.3.10 Route 9W/Route 32

The junction of Route 9W and Route 32 within the Town of Saugerties operates at overall level-of-service C, but there is a need to provide pedestrian accommodations, and the possibility of a roundabout was suggested by a member of the community during the first public meeting. Similar to the Avon Street intersection project, this concept is included in the Route 9W access management plan discussed under section 4.2.3 and is shown here because it could be progressed as a stand-alone project. The cost to construct a project of this nature could be on the order of \$1M to \$3M.



*Roundabout Improvement Concept:
Route 9W/Route 32 intersection.*

4.3.11 Route 9W/Glasco Turnpike (east)

A traffic signal is proposed for the intersection of Route 9W and Glasco Turnpike. A signal, along with a reduced speed limit, will help to slow vehicles approaching the more developed section of Route 9W just south of the Village. For planning purposes, the cost of a new traffic signal (including survey, engineering and design) is expected to be on the order of \$150,000.

4.3.12 CR31 (Leggs Mills Road/Sawkill Ruby Road/Old Kings Highway)

The junction of these three roadways forms an unconventional triangular-shaped intersection with numerous conflict points. A modern single lane roundabout would fit easily within the existing right-of-way and is recommended. The roundabout would reduce speeds and conflict points, and would improve overall safety at the intersection. The estimated construction cost for this project is on the order of \$500,000.

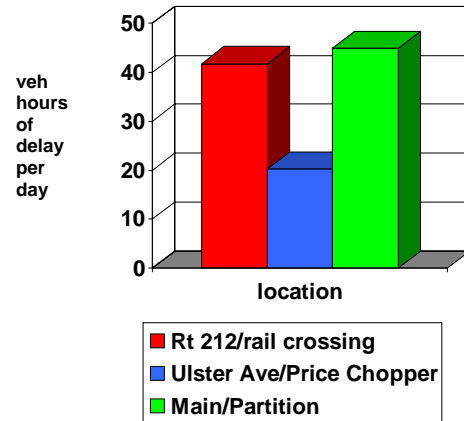


*Roundabout improvement concept:
Old Kings Highway / Leggs Mills Road*

4.4 Rail Crossing Safety Improvements

4.4.1 Route 32/212/CSX at-grade rail crossing

A vehicular delay study was conducted in response to numerous concerns regarding the recurring delay experienced by motorists at this rail location. The study found that 35 high speed CSX trains pass through the study area each day and approximately 12,000 vehicles per day traverse the grade crossing. More than 92 percent of the vehicles experience no delay, with the remaining eight percent delayed an average of about 2 minutes and 20 seconds. As shown in the bar chart, the overall average daily vehicular delay experienced at the Route 32/212 grade crossing is comparable to the average daily vehicular delay experienced at the Main Street/Partition Street intersection (40 to 45 vehicle hours of delay per day).



The NYSDOT performed a grade separation analysis approximately 20 years ago, which considered four grade separation alternatives in detail. All four alternatives were rejected by Town, Village and State officials due to extensive property impacts. The Village is interested in revisiting the grade separation issue now that traffic volumes have increased in the corridor, and there are concerns regarding emergency vehicle response times.

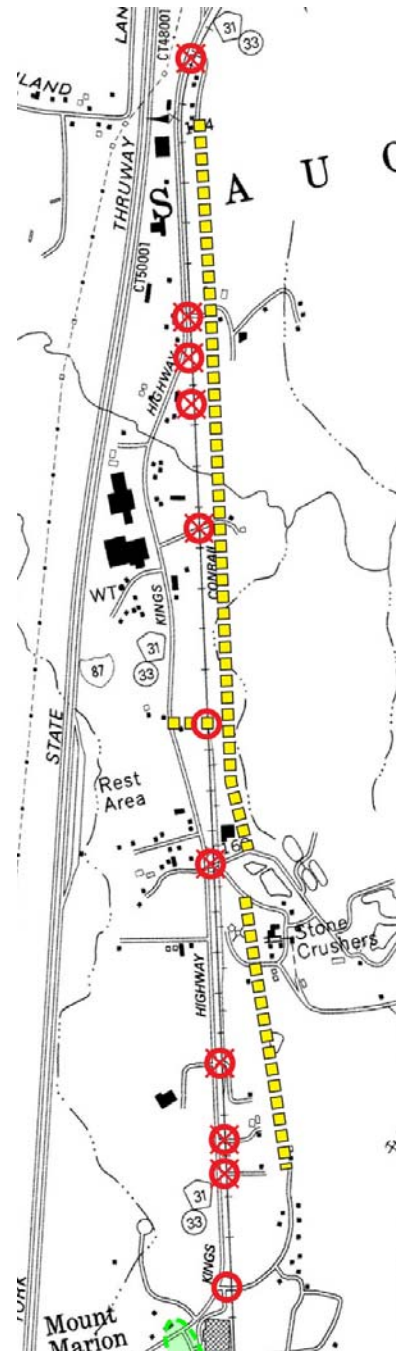
In the short-term, any proposed land development near the rail crossing should be planned with adequate setbacks to accommodate a potential future grade separation project. A pedestrian wait station has also been suggested as a possible improvement.

Freight traffic is expected to continue increasing over the next 10 to 20 years, and a second set of rail tracks is a real possibility in this corridor in the future. It is recommended that the planning for a future long term grade separation project coinciding with the possible double tracking of the CSX line should begin. The scope of the study should be coordinated with the Village, the Town, the UCTC, CSX, the NYSDOT, and FRA.

4.4.2 Reduction of at-grade rail crossings

There are currently ten uncontrolled at-grade rail crossings on driveways (7) and public roads (3) along Kings Highway between Glasco Turnpike and the Village line. The public road crossings are Sack's Road, Tissal Road and Warrant Myers Road. There is a history of crashes in the area, which continue to present safety concerns. A new, parallel roadway on the east side of Kings Highway should be constructed and the majority of the existing at-grade crossings eliminated, with a few (possibly 3) access points remaining. The plan would result in the closure of Sack's Road and realignment of the Tissal Road crossing. Warren Myers Road would be extended. All crossings to remain would be equipped with safety gates and flashers. This new parallel road would be approximately two miles and could be extended to Glasco Turnpike.

Related improvements could include establishment of a Quiet Zone for trains passing through the area. A Quiet Zone is a section of rail line that contains one or more public crossings at which locomotive horns are not routinely sounded. The U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) sets forth the requirements for establishment of Quiet Zones which should be evaluated as part of the at-grade rail crossing consolidation project. It should be noted that SAFETEA-LU funds have been earmarked for improvements to the Tissal Road crossing, which would need to be augmented for the larger project described here. The estimated cost is \$10M to \$15M dollars.



- ■ ■ Potential new vehicle connection
- At-grade railroad crossings:
- To remain open
- ⊗ To be closed

4.5 Bicycle Improvements

To increase the share of non-motorized travel in the region, efforts should be made to improve bicycle conditions and upgrade the infrastructure for bicycles. Bike lanes should be built, or at a minimum, shoulders should be upgraded, along key corridors such as:

- Malden Turnpike from Route 9W to Old Kings Highway
- Old Kings Highway from Malden Turnpike to the Greene County line
- Route 9W from Route 209 to the Green County line
- Route 32 from Route 209 to Route 9W
- Peoples Road from Route 32 to Canoe Hill Road



Example of good bicycle accommodation

Bicycle racks should be installed at key locations to provide secure bicycle storage. Suggested locations are the Municipal, Village and Town Hall Parking lots, at least one rack on Main, Market and Partition Streets, as well as racks at the Saugerties Public Library, Seamon Park and the Saugerties Lighthouse. For planning purposes, the cost of each bike rack is assumed to be \$500, and the cost of a shoulder widening project can be estimated at \$100,000 to \$500,000 per shoulder mile depending on roadside constraints and drainage.



Example of covered bike rack.

4.6 Pedestrian Improvements

In an effort to improve the pedestrian experience in the Village of Saugerties and vicinity, a pedestrian plan was developed. As shown on the “Plan for New Pedestrian Facilities,” the plan recommends extending the network by creating new pedestrian connections and extending the existing sidewalk network beyond the Village boundaries. Table 4.1 shows the proposed improvements (with order-of-magnitude costs).

In addition, curb bump-outs, high visibility architectural crosswalks, pedestrian crossing signs, and pedestrian actuated traffic signals with count-down timers are recommended.

The network extensions and upgrades will improve the safety of pedestrians and encourage more pedestrian activity. Improved pedestrian conditions will divert some vehicle trips to walking trips, leading to reduced vehicular congestion. As walking is a healthful activity, both for transportation and recreation, all reasonable accommodations for pedestrian improvements should be made.

Table 4.1 – Proposed Pedestrian Improvements and Costs

	Name of Improvement	Location	Units (feet)	Unit Cost	Estimated Cost
1	Multi-Use Path	Washington Avenue from Krout Road to Washington Ave	5,500	\$200	\$1,100,000
2		Krout Road / Canoe Hill Road / Bob Moser Drive	7,500	\$200	\$1,500,000
3	Sidewalk Improvements	North Street	3,250	\$175	\$568,000
4		High Street	1,000	\$175	\$175,000
5		Bennett Avenue	400	\$175	\$70,000
6		Warren Street	625	\$175	\$109,000
7		Center Street	375	\$175	\$65,000
8		Montgomery Street	525	\$175	\$91,000
9		Dock Street	1,350	\$175	\$236,000
10		Hilton Place	350	\$175	\$61,000
11		Lighthouse Drive	2,100	\$175	\$367,000
12		East Bridge Street	700	\$175	\$122,000
13		Church Street	625	\$175	\$109,000
14		Barclay Street	425	\$175	\$74,000
15		Burt Street	2,000	\$175	\$350,000
16		Overbaugh Street	1,100	\$175	\$192,000
17		Hill Street and Route 9W to Village Ln	2,700	\$175	\$473,000
18	Simmons Drive	600	\$175	\$105,000	
19	New Pedestrian Connections	From the corner of Main and Market Streets to the mid-block parking lot	450	\$300	\$135,000
20		Connection between Dock Street and Lighthouse Drive	2,100	\$300	\$630,000
21		From Municipal parking lot to the Saugerties Public Library	300	\$300	\$90,000

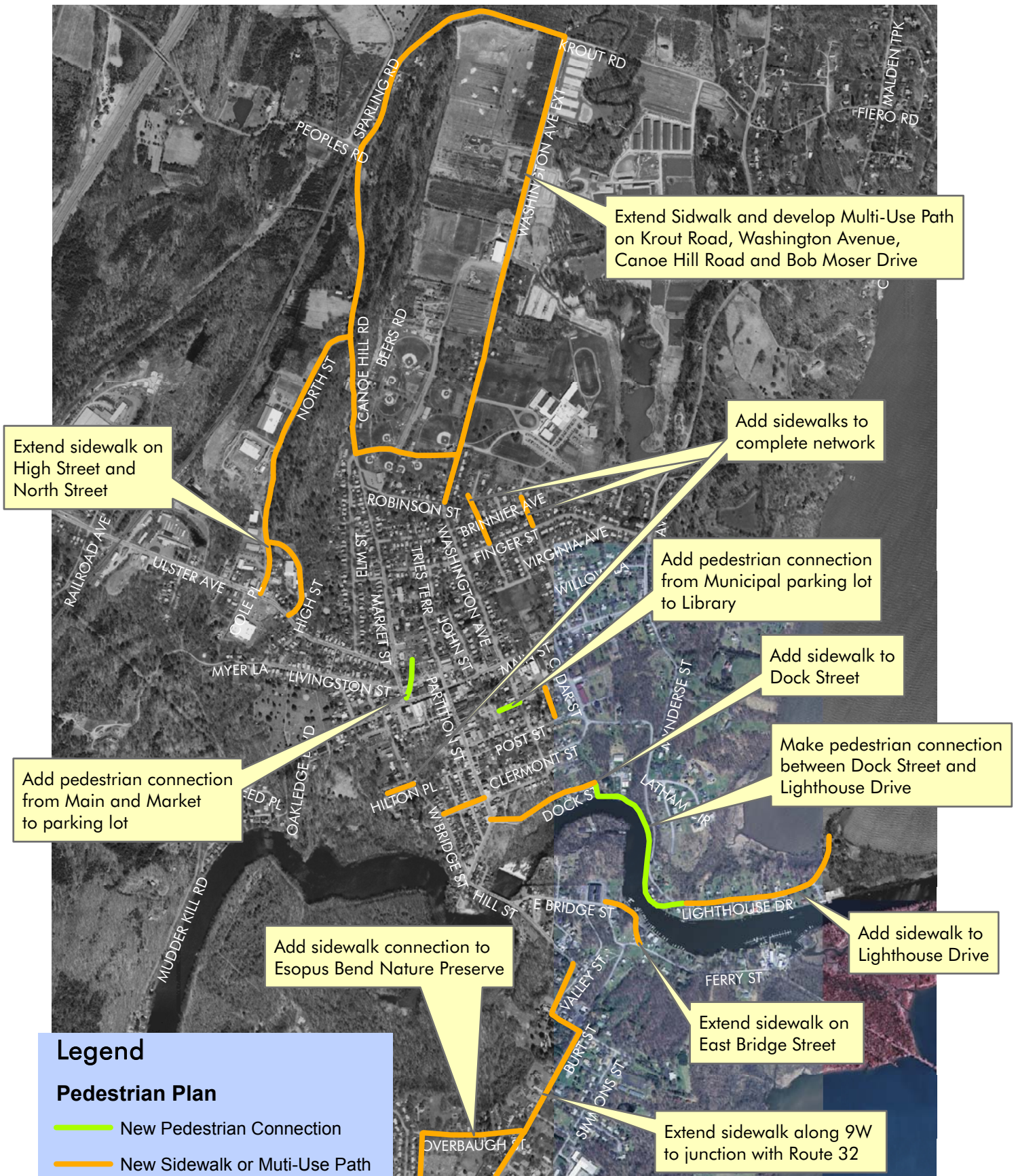
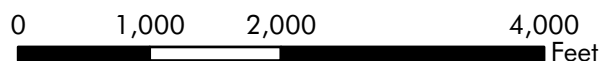


Figure 4.4
 Plan for New Pedestrian Facilities



4.7 Parking Improvements

Parking conditions in the Village of Saugerties were surveyed and analyzed. There was concern regarding the parking capacity and the ease of parking in the Village.

There is no shortage of parking spaces in the Village of Saugerties. At the peak level of demand there were still 235 available spaces (45% of parking supply). On the other hand, metered parking in the Village core is operating at capacity. The problem appears not to be lack of supply, but rather the management of the parking supply. The rate for on-street metered parking is 10¢ per hour, while parking off-street or at non-metered spaces is free. The low on-street parking fee, combined with minimal enforcement and inexpensive fines for expired meters (\$5) does not act as a deterrent to those wishing to "feed the meter" and park for long periods of time. For example, someone who works in the Village may be willing to pay 80¢ (8 x 10¢) per day for the privilege of parking in front of their place of work.



Saugerties parking meter.

The effect of on-street metered spaces operating at capacity gives the appearance that there is no parking available in the Village core. As people drive through the Village core, they may notice all visible spaces full, but not realize that parking is available a short walk away. Efforts should be made to encourage turnover of the spaces in the most desirable locations. The best way to encourage turnover is through enforcement and pricing.

1. First, there should be greater enforcement of the two-hour parking limit. Authorities should use chalk or record license plates, and ticket vehicles that overstay the two-hour limit.
2. Second, fines for parking tickets should increase in price with each successive ticket. The first ticket issued to a vehicle in a 12-month period should remain \$5; the fee for subsequent tickets should increase gradually. Perhaps the 3rd ticket could be priced at \$20, 4th ticket at \$30 until a fee of \$50 per ticket is reached.
3. Third, the parking rates at on-street spaces should be increased to 50¢/hour. (It is noted that the community generally supports a 25¢/hour fee, but there are concerns that this would not be sufficient to produce the parking benefit.) In the absence of greater enforcement, parking all day (8 hours) at a meter would correspond to a rate of \$4/day.

Efforts should be made to improve off-street parking lots in the Village by working with private land owners. Two private lots (M&T Bank and Sawyer Bank) were included in the parking survey. Both of these lots allow parking by the general public during non-banking hours. This practice should be encouraged further. The lot owners should be encouraged to post signs stating, "This lot is available for public parking in the evening and weekends courtesy of M&T Bank / Sawyer Bank". The Village could offer to install these signs.

Finally, consideration should be given to expanding the municipal parking lot east of Partition Street. This lot should also be maintained better and kept free of debris. Currently, the central and eastern portion of the lot is open for public parking, while portions of the northern and southern edges are privately owned. To expand the supply, and improve the quality of public parking in the Village, attempts should be made to consolidate the entire lot for public parking. By offering a reduction in property taxes, permitting increased density and/or shifting maintenance and liability costs to the Village, it may be possible to persuade the property owners to convert their private parking for public use. The Village would in effect lease these parcels from the property owners. The property owners could be provided with special permits which would allow overnight and long-term parking in the lot. By providing the right incentives, both the supply and the quality of public parking in the Village can be improved.

4.8 Trucking

The number of trucks traveling via Route 9W and Route 32 is reported to have a negative effect on the quality of life in the Village and the surrounding areas, and is one of the key issues of this study. Questions were raised by the public on why trucks are using these routes instead of using the NYS Thruway.

4.8.1 Trucking Workshop

A trucking workshop was organized to determine how truckers choose their routes. It was pointed out that Kings Highway, Glasco Turnpike and Malden Turnpike all contain physical features which make them unsuitable for use by large trucks. On Kings Highway and Glasco Turnpike, there are two bridges with weight restrictions. Difficulties turning from Route 9W onto Glasco Turnpike due to the hills and the tight curves make the use of that route difficult. The intersections of Malden Turnpike with Route 32 and Route 9W has limited visibility and tight turning radii.

In addition, the NYSDOT can issue some vehicles special Divisible Load Permits, which allows them to drive on State Highways at weights over the posted limits, even when their load could be divided and transported within existing weight limits. An example of this type of load is a fully loaded water truck. The NYS Thruway does not issue divisible load permits, which could then potentially force these trucks to travel on State Highways through the Village. State permits do not cover travel on roads of different jurisdictions. Individual permits are required from each jurisdiction, so truckers may tend to obtain a single permit and travel exclusively on State Roads for convenience. The truckers suggested changing the designation of Route 32 from the 212 overlap to Malden Turnpike. A similar suggestion was proposed during the review of the DRAFT report to



Participants in the Saugerties trucking workshop.

designate Kings Highway as Route 32. The UCTC could explore these suggestions which would involve improved permitting processes with the NYSTA, and other jurisdictions to allow truckers to more easily travel on viable alternate routes.

4.8.2 Engine Brakes/Signing/Noise Ordinance

A 1999 opinion from the New York State Attorney General's Office stated that a Village is not authorized to enact a local law prohibiting the use of Jake Brakes, except in cases of emergency. This is due to the fact that the legislature has not delegated authority to the Villages to regulate this subject. As it cannot be prohibited, it is recommended that signs be installed, which read, "Please No Engine Brakes". Based on input from members of the trucking industry, this may be an effective alternative.

Weight Limit	Maximum Allowable Decibels (dB)
Over 10,000 lbs	86 dB
Over 10,000 lbs w/ engine speed governor	88 dB
Less than 10,000 lbs	76 dB
Motorcycle	82 dB

As far as regulating noise, NYS Vehicle and Traffic Law § 375 already regulates noise levels. The table (above right) shows the maximum allowable volumes permitted by vehicles. In order to determine sound levels, measurements are made at a distance of fifty feet from the center of the lane in which the motor vehicle is traveling. All measurements based on 35MPH or lower speed limit.

As there is already a noise ordinance in New York State, the issue is one of enforcement, which can be difficult. Equipment is available which would permit manual and automatic recording of sound levels. The automatic equipment is expensive (reported to be \$15,000 to \$20,000) and the manual meters require significant amounts of manpower to determine which vehicles are exceeding the limits. It is also noted that there is no existing case law for standardization of decibel meter equipment. Therefore, violations of noise ordinances are difficult to prosecute.



Examples of signs discouraging use of engine brakes.

4.9 Transit Improvements

At the current time, the Village of Saugerties is only served by Ulster County Area Transit (UCAT) which provides local bus service to neighboring communities. Improvements are suggested at two locations:

- A transit shelter, posted schedule, and lighting, along with a crosswalk is proposed for bus stop located on Partition Street at the intersection with Montross Street.
- There is also the possibility of relocating the bus stop from the post office to the former gas station site at the intersection of Ulster Avenue and Market Street. This transit improvement should be combined with the intersection improvement described under section 4.3.7

For long distance travel, Adirondack Trailways serves the Village with a bus stop location just off the NYS Thruway at the intersection with Route 212/32. While there is strong local desire for Adirondack Trailways bus to serve the center of the Village, this is expected to add about 10 minutes travel time to the bus, and additional ridership is uncertain. This study recognizes the more comprehensive evaluation of the subject as contained in the Draft Final Report Ulster County Fixed Route Public Transportation Coordination and Intermodal Opportunities Analysis, prepared by Abrams-Cherwony and Associates, dated August 2005. It is proposed that UCAT coordinate schedules with Adirondack Trailways to enable the local bus to act as a feeder to Adirondack Trailways for long distance travel.

4.10 Park and Ride

There is an existing (informal) park-and-ride lot on the west side of Route 32 immediately opposite the Route 32/Thruway ramp intersection that provides approximately 12 parking spaces on a gravel surface. An expanded and upgraded lot should be promoted to travelers to encourage ride sharing. An additional Trailways bus stop at the park-and-ride lot is recommended to encourage transit use. Suitable locations for additional lots should also be identified.

It should be noted that the need for improvements and expansion to this park-and-ride facility, (or an improved park-and-ride facility at an alternate location), was identified in the Draft Final Report Ulster County Fixed Route Public Transportation Coordination and Intermodal Opportunities Analysis, prepared by Abrams-Cherwony and Associates, dated August 2005. Expansion to 40 to 50 spaces, and a bus shelter served by Adirondack/Pine Hill Trailways and UCAT is recommended.

Park-and-ride lot upgrades should be pursued as a joint project of the Town, the NYS Thruway Authority, NYSDOT, and UCAT.

4.11 Community Character Enhancements

The concept plan created for the Village includes high visibility crosswalks with architectural treatment and possible curb bump outs at the Main Street/Partition Street intersection and on Partition Street at the access to the public parking area.

Other amenities that will enhance the Village character include:

- Sidewalk repairs – Not to be undervalued, repairs to root heaves and provision of ADA compliant sidewalks and ramps provide a real benefit to walkers who might otherwise chose to walk in the street seeking a level walking surface.
- Period street signs – Approximately 90 signs throughout the Village.
- Period street lights – Approximately 28 lights predominantly along lower Partition Street.
- Benches – Seven (7) benches decorated by local artists.
- Bike Racks – At key public destinations as described in section 4. 5.
- Street trees and landscaping – As enhancements incorporated into transportation investment projects.
- Public restrooms – Suggested at Tina Chorvas Waterfront Park, the Village Hall, and possibly at the Market Street/Ulster Avenue intersection as part of a transit/kiosk/pocket park improvement.



Community character enhancements include items such as bike racks and period street signs.

Locations for signs, lights, benches, and street trees, bike racks are being refined by the Village and should be pursued by local groups, such as the beautification committee.

4.12 Land Use Policy

There is a strong link between land use and transportation. As roadway improvements are made, they increase the value of nearby properties, which encourages development. This new growth then adds vehicles to the road, partially nullifying the roadway improvement by introducing more congestion. For this reason, reducing congestion on a roadway is a moving target. Roadway improvements induce more people to travel along the corridor. The Village and Town should coordinate their comprehensive planning efforts in an attempt to reduce sprawl and auto dependency. Future growth should be concentrated as much as possible within walking distances of the Village center and other retail nodes, and densities should be reduced in outlying areas. Greater densities and land-use mixes can be allowed in the Village.



Example of mixed-use compact development supporting walkability.

Access management strategies aim to alleviate the inherent conflicts between the function of through traffic on an arterial and the local function of access to abutting properties. As traffic volumes increase along these types of roads, conflicts become more and more problematic in terms of congestion and crashes, and will eventually hamper the economic well being, as well as the quality of life along the corridor. Access management attempts to group some of the turning movements in and out of properties, or shift them to side streets or service roads or to minimize the more problematic turns, i.e. the left turns. Left turns in and out of driveways account for about 75% of all crashes.

A policy of adopting an access management overlay zone along Route 9W south of the Village and along Route 32 is necessary to improve the traffic flow. By implementing access management techniques such as controlling access to Route 9W and Route 32, these roads can provide a higher level of service while also reducing the number of crashes. The crash rate along a corridor is directly related to the number of driveways and curb cuts. Adjacent properties should be interconnected, or connected via an access road at the rear of the property.

The Town of Saugerties should adopt a zoning amendment in the form of an overlay district that requires all commercial properties to interconnect or at least provide easements for future connections (See Appendix D for Model Access Management Zoning Ordinances). Graphic examples should be included in the zoning text.

4.13 Community Input on Improvement Projects

Two public workshops were held as part of the SAMA project. The main purpose of these workshops was to obtain feedback from the community. The first workshop was held on Wednesday, January 25, 2006, and the second on Thursday, July 20, 2006. Both workshops were held at the Frank D. Greco Memorial Senior Center in Saugerties, NY. The purpose of the first workshop was to explain the goals of the study to the public, present data collected and receive feedback regarding issues and opportunities within the study area as described in section 3.16. The purpose of the second workshop was to receive input from the community on the conceptual improvements and proposed projects.

Most of the proposed improvements received high grades, with 13 of 20 projects presented, receiving a grade B+ or better, and only one receiving a grade below C. The projects receiving the highest grades were considered in the prioritization discussed in Section 6.

5 Future Build-Out Analysis

5.1 Introduction

This transportation plan was designed as a three-phase study:

- Phase I – Origin destination study
- Phase II - Existing conditions needs assessment
- Phase III – Future needs and alternatives analysis

Chapter 4 represents the completion of Phase II (the existing conditions needs assessment) and identifies a number of possible projects to address existing deficiencies and improve the multi-modal transportation system in the Town and Village of Saugerties. The need for Phase III was to be determined at the completion of Phase II through an analysis of the potential build-out in the study area, and an evaluation of the proposed improvements to accommodate the long-term growth of the area. Additional deficiencies identified through the build-out analysis, would suggest that Phase III of the study is warranted. Section 5 of this report summarizes the potential future build-out, and future transportation operations, and concludes that Phase III of the study is not needed, however additional project level work is recommended.

5.2 Land Use Forecasts

The build out potential for the Saugerties Area was assessed under current zoning regulations. Several factors were taken into consideration to determine the build out:

- Current zoning
- Non-buildable areas (wetlands, steep slopes...)
- Set-asides for infrastructure
- A "Reality" factor based on the fact that due to institutional, legal and personal reasons, not all properties are built up to their limit.

For complete methodology details please refer to the technical appendix.

The results from the SAMA build out were compared with the forecasts by the Ulster County Transportation Council (UCTC) for the years 2020 and 2030. The SAMA build out projections are expected to be higher than the UCTC forecasts because they attempt to determine a reasonable build out, rather than expected growth over a given time period.

Table 5.1 displays the comparison between the UCTC 2020 and 2030 forecasts with the SAMA build-out projections. A review of the numbers reveals that the Village of Saugerties is approaching full build out. The SAMA figures are roughly the same as the UCTC numbers for the Village both for 2020 and 2030. The figures for total employment are nearly identical between the UCTC and SAMA forecasts, the differences for 2020 and 2030 are less than one (1) percent.

Table 5.1 – Comparison of UCTC Forecasts with Build-Out Projections

Municipality	Dwelling Unit Forecast								
	UCTC			SAMA		2020	%	2030	%
	2000	2020	2030	Buildout	Diff.	Diff.	Diff.	Diff.	
Village of Saugerties	1,527	1,871	1,800	1,708	-164	-8.7%	-92	-5.4%	
Town of Saugerties	3,081	3,777	4,150	4,982	1,205	31.9%	832	16.7%	
Town of Ulster	1,917	2,264	2,650	3,749	1,485	65.6%	1,099	29.3%	
TOTAL	6,525	7,912	8,600	10,439	2,527	31.9%	1,839	17.6%	
Municipality	Retail Employment Forecast								
	UCTC			SAMA		%	2030	%	
	2000	2020	2030	Buildout	Diff.	Diff.	Diff.	Diff.	
Village of Saugerties	373	530	555	492	-38	-7.2%	-63	-12.8%	
Town of Saugerties	366	620	540	809	189	30.5%	269	33.2%	
Town of Ulster	152	385	385	739	354	92.0%	354	47.9%	
TOTAL	891	1,535	1,480	2,040	505	32.9%	560	27.4%	
Municipality	Other Employment Forecast								
	UCTC			SAMA		%	2030	%	
	2000	2020	2030	Buildout	Diff.	Diff.	Diff.	Diff.	
Village of Saugerties	843	1,105	1,075	1,150	45	4.0%	75	6.5%	
Town of Saugerties	1,990	2,695	2,475	3,979	1,284	47.6%	1,504	37.8%	
Town of Ulster	1,272	2,015	2,355	2,704	689	34.2%	349	12.9%	
TOTAL	4,105	5,815	5,905	7,832	2,017	34.7%	1,927	24.6%	

On the other hand, the SAMA build out projections for the Towns of Saugerties and Ulster are higher than UCTC forecasts for both 2020 and 2030. The SAMA build out for the Towns of Saugerties and Ulster predicts 15 percent greater growth than the UCTC forecast for housing and 30 percent greater growth for employment.

The large differential between the SAMA forecast over the UCTC forecast for the Towns of Saugerties and Ulster is due to the large amount of open space and agricultural land that currently exists. This analysis shows that under current zoning the future growth in the study area may mean greater sprawl than the current conditions.

5.3 Traffic Forecasts

The two sets of land use projections (SAMA forecast and UCTC forecasts) were used to develop future 2030 Design Year traffic projections within the study area. The UCTC TransCAD traffic model for Ulster County was updated and modified and run to produce horizon year traffic volume scenarios. Traffic volumes on major roadways were documented for each design year to determine an overall growth rate in the project area. The following table summarizes the growth rate for each design year.



Table 5.2 – Traffic Forecast Growth Rates

Design Year	Total Trips	Growth Factor	Annual Growth Rate
Base Year 2000	2172		
2020 Base	2629	1.21	1.0% per year for 20 years
2030 UCTC	3087	1.42	1.2% per year for 30 years
2030 SAMA	3197	1.47	1.3% per year for 30 years

The table shows that traffic volumes in the study area will increase by approximately 1.2 to 1.3 percent per year through the year 2030. Accordingly, the 2005 existing traffic volumes at the study area intersections were increased by 1.3 percent per year to determine the 2030 Design Year traffic volumes. These 2030 Design Year traffic volumes represent traffic volumes that would exist in the project area with additional traffic from potential future land uses and general background growth. This growth rate accounts for the radiating effect of regional growth pressure from New York City into the Hudson Valley area.

5.4 Future Traffic Analysis

Horizon year intersection Level of Service evaluations were made using the traffic simulation model developed for the project (Synchro Software (ver. 6.14) which automates the procedures contained in the *2000 Highway Capacity Manual* (HCM)). The relative impact of future development can be determined by comparing the changes in level of service from 2005 Existing conditions to 2030 Design Year conditions. Also, the ability of the conceptual improvement projects to accommodate future traffic was tested. Table 5.3 (following pages) summarizes the results of this analysis.

The table indicates that the conceptual improvement projects are capable of accommodating the future growth in the area for the foreseeable future. No new problem locations are expected to develop. Traffic delays will continue to increase within the Village and especially at the Main Street/Partition Street intersection, but the proposed signal and pedestrian improvements will allow the intersection to function at its highest possible level. Similarly, the capacity improvements (possible single lane roundabouts) at the Exit 20 southbound ramps, and at the junction of Route 9W and Route 32 are capable of accommodating future traffic levels. In addition, the improvements to the east-west connections outside the Village will provide improved alternate route choices. No additional mitigation is necessary for future traffic volumes at the remaining study area intersections.

5.5 Study Phase III Recommendation

Based on the future traffic analysis, no new level-of-service issues will emerge within the study area. The possible improvement projects identified in section 4 of this report are capable of serving the long-term transportation needs of the area. Accordingly, a study phase III involving future alternatives analysis is not recommended, but further project level analysis is recommended. The Town and Village of Saugerties should work collectively with the UCTC, NYSDOT, NYS Thruway Authority, UCAT and other stakeholders to progress the priority projects identified in this study. These priority projects are described in the following section and include:

1. Main Street/Partition Street traffic signal and intersection improvements.
2. Increased parking fees, improved parking enforcement, and establishment of truck loading zones.
3. Enhancements within the Village including high visibility crosswalks, period street signs and street lights, benches, and street trees.
4. Adoption of access management overlay zoning for Route 32 and Route 9W south, and improved road design including pedestrian/bicycle accommodations and landscaping complementing the Gateway Zoning ordinance for Routes 32 and 9W south and Route 32 north of the Village.
5. Bridge location analysis and improvements to east-west connection south (Glasco Turnpike).
6. Improved east-west connection north (Malden Turnpike).
7. Reduction of at-grade rail crossings.
8. Prioritized pedestrian linkages.
9. Capacity improvements (possible roundabout) and park-and-ride at the NYS Thruway Exit 20 southbound ramps.
10. Route 9W/Route 32 intersection and pedestrian improvements (possible roundabout).

Table 5.3 – Level of Service Summary

Intersection Approach	Control	AM Peak Hour			PM Peak Hour		
		2005 Existing	2030 Design Year	2030 Design Year w/ Imp.	2005 Existing	2030 Design Year	2030 Design Year w/ Imp.
Malden Turnpike/Old Kings Highway							
Malden Turnpike EB LTR	A	A (7.8)	A (8.2)	--	A (8.2)	A (8.9)	--
Malden Turnpike WB LTR		A (8.1)	A (8.6)	--	A (8.9)	B (10.4)	--
Old Kings Highway NB LTR		A (7.7)	A (8.1)	--	A (9.1)	B (10.9)	--
Old Kings Highway SB LTR		A (8.0)	A (8.5)	--	A (8.2)	A (8.9)	--
Overall		A (7.9)	A (8.4)	--	A (8.8)	B (10.3)	--
US Route 9W/Malden Turnpike							
US Route 9W NB L	U	A (1.7)	A (1.8)	--	A (1.3)	A (1.4)	--
US Route 9W SB L		A (0.1)	A (0.1)	--	A (0.3)	A (0.3)	--
Malden Turnpike EB LTR		A (9.7)	B (10.4)	--	B (10.7)	B (12.1)	--
Malden Turnpike WB LTR		B (10.4)	B (11.3)	--	B (10.9)	B (12.4)	--
Overall		A (1.6)	A (1.6)	--	A (1.2)	A (1.3)	--
US Route 9W/Krout Road							
US Route 9W NB L	U	A (1.6)	A (1.6)	--	A (1.2)	A (1.3)	--
Krout Road EB LR		B (10.1)	B (11.0)	--	B (10.7)	B (12.1)	--
NYS Route 32/I-87 Southbound ramps							
I-87 Southbound ramps WB L	U	--	--	--	F (73.5)	F (704.5)	--
TR		--	--	--	B (13.3)	C (17.2)	--
NYS Route 32 SB L	S	--	--	--	A (9.9)	B (12.1)	--
Augusta Savage Road EB LTR		--	--	--	D (30.1)	F (62.1)	--
I-87 Southbound ramps WB L		--	--	--	--	--	C (25.9)
TR		--	--	--	--	--	C (22.4)
NY Route 32 NB LT		--	--	--	--	--	C (20.1)
R	--	--	--	--	--	A (6.1)	
NYS Route 32 SB L	--	--	--	--	--	B (15.2)	
TR	--	--	--	--	--	A (3.4)	
Augusta Savage Road EB LTR	--	--	--	--	--	C (22.3)	
Overall	--	--	--	--	--	B (15.5)	
NYS Route 32 SB							
LTR	R	--	--	--	--	--	A (4.8)
Augusta Savage Road EB LTR		--	--	--	--	--	A (3.6)
NY Route 32 NB LTR		--	--	--	--	--	C (16.8)
I-87 Southbound ramps WB LTR		--	--	--	--	--	A (5.4)
Overall	--	--	--	--	--	B (11.9)	
Ulster Avenue/NY Route 32/Hess Gas Station							
Ulster Avenue EB L	S	B (10.9)	B (19.6)	--	B (11.2)	C (20.7)	--
TR		B (11.3)	B (18.6)	--	A (8.4)	B (11.5)	--
Ulster Avenue WB LT		B (17.3)	D (46.0)	--	B (16.6)	C (33.6)	--
R		A (0.2)	A (0.3)	--	A (0.5)	A (0.9)	--
Hess Gas Station Drwy NB LTR		A (8.8)	A (8.7)	--	B (12.0)	B (11.8)	--
NY Route 32 SB LT	C (21.7)	D (53.2)	--	C (23.7)	D (43.7)	--	
R	A (6.2)	A (5.7)	--	A (8.9)	A (8.7)	--	
Overall	B (12.7)	C (28.0)	--	B (10.5)	B (18.7)	--	
Ulster Avenue/I-87 Exit 20 NB Ramp/McDonald's							
Ulster Avenue EB L	S	A (4.0)	A (5.1)	--	A (8.1)	B (11.0)	--
T		A (6.8)	B (10.9)	--	B (13.1)	C (22.2)	--
R		A (1.9)	A (2.1)	--	A (2.0)	A (2.1)	--
Ulster Avenue WB L		A (8.6)	B (12.0)	--	A (9.9)	C (26.7)	--
TR		A (8.3)	A (8.1)	--	B (11.8)	B (13.3)	--
I-87 Exit 20 NB Ramp NB L		D (47.7)	D (45.9)	--	D (38.8)	D (43.5)	--
LTR		D (45.5)	D (43.7)	--	D (36.5)	D (42.9)	--
McDonald's Driveway SB L		D (47.5)	D (47.5)	--	D (42.4)	D (42.7)	--
TR	D (45.8)	D (45.3)	--	D (40.8)	D (40.5)	--	
Overall	B (12.4)	B (14.2)	--	B (18.5)	C (23.6)	--	

Table 5.3 – Level of Service Summary (Continued)

Intersection Approach	Control	AM Peak Hour			PM Peak Hour		
		2005 Existing	2030 Design Year	2030 Design Year w/ Imp.	2005 Existing	2030 Design Year	2030 Design Year w/ Imp.
Ulster Avenue/Kings Highway/Getty Gas Station							
Ulster Avenue EB	L	A (2.4)	A (4.8)	--	B (12.1)	B (18.2)	--
	T	A (3.3)	A (6.1)	--	B (14.7)	C (31.3)	--
	R	A (1.9)	A (8.6)	--	B (12.6)	B (19.8)	--
Ulster Avenue WB	LTR	A (5.6)	A (8.5)	--	C (21.0)	D (54.3)	--
Kings Highway NB	LT	D (46.2)	D (42.0)	--	C (23.6)	C (22.4)	--
	R	D (37.8)	C (33.3)	--	B (16.0)	B (11.9)	--
Getty Gas Station SB	LTR	D (37.7)	C (33.2)	--	B (15.7)	B (11.5)	--
Overall		A (8.7)	B (11.6)	--	B (18.4)	C (34.4)	--
Ulster Avenue/Grand Union Driveway							
Ulster Avenue EB	L	A (1.5)	A (2.3)	--	A (4.7)	A (6.0)	--
	T	A (2.0)	A (3.7)	--	A (5.6)	A (9.0)	--
Ulster Avenue EB	T	A (1.1)	A (1.5)	--	A (2.2)	A (2.8)	--
	R	A (1.0)	A (1.2)	--	A (2.0)	A (2.4)	--
Grand Union Driveway SB	L	D (49.2)	D (47.5)	--	D (40.6)	D (40.0)	--
	R	D (46.9)	D (45.2)	--	D (38.1)	D (36.9)	--
Overall		A (4.9)	A (5.8)	--	A (9.2)	B (10.6)	--
Ulster Avenue/North St/Price Chopper							
Ulster Avenue EB	L	A (2.8)	A (2.8)	--	A (4.0)	A (5.1)	--
	TR	A (3.7)	A (4.1)	--	A (6.0)	B (10.4)	--
Ulster Avenue WB	L	A (3.0)	A (3.0)	--	A (4.8)	B (19.3)	--
	TR	A (3.5)	A (3.7)	--	A (5.1)	A (7.1)	--
Price Chopper Driveway NB	LT	B (19.0)	C (21.5)	--	B (17.5)	C (23.3)	--
	R	B (17.7)	B (18.8)	--	B (14.8)	B (16.5)	--
North Street SB	LTR	B (18.3)	B (19.9)	--	B (15.5)	B (17.5)	--
Overall		A (6.3)	A (6.9)	--	A (7.8)	B (12.4)	--
Ulster Avenue/Market Street							
Ulster Avenue EB	L	A (4.2)	A (4.3)	--	A (4.6)	A (9.1)	--
	R	A (4.6)	A (4.8)	--	A (5.1)	A (7.5)	--
Market Street NB	LT	A (4.8)	A (5.2)	--	A (5.4)	A (9.0)	--
Market Street SB	LR	B (14.2)	B (14.8)	--	B (15.1)	B (15.9)	--
Overall		A (6.5)	A (6.8)	--	A (7.0)	A (9.8)	--
Main Street/West Bridge Street							
Main Street WB	L	--	--	--	A (6.7)	A (7.1)	--
West Bridge Street NB	LR	--	--	--	B (13.4)	C (22.8)	--
Main Street/Market Street							
Main Street EB	LT	A (9.0)	B (14.1)	--	B (15.1)	C (34.0)	--
Main Street WB	T	A (7.4)	A (9.7)	--	A (9.3)	B (12.3)	--
	R	A (1.0)	A (0.9)	--	A (0.9)	A (0.8)	--
Market Street SB	LR	A (9.6)	B (12.1)	--	B (13.1)	C (28.7)	--
Overall		A (7.0)	A (9.4)	--	A (9.5)	C (20.3)	--
Main Street/Partition Street							
Main Street EB	LTR	B (14.8)	B (17.3)	B (18.6)	B (14.9)	B (17.6)	B (17.8)
Main Street WB	LTR	B (16.7)	C (24.5)	D (53.8)	C (19.0)	D (38.8)	E (62.0)
Partition Street NB	LTR	B (18.2)	C (24.1)	B (15.8)	D (43.3)	F (173.9)	E (72.4)
Partition Street SB	LTR	B (12.4)	B (13.2)	A (8.6)	B (12.7)	B (13.7)	B (12.0)
Overall		B (15.8)	C (20.2)	C (24.5)	C (26.3)	F (81.3)	D (47.8)
Main Street/Washington Avenue							
Main Street EB	L	A (5.6)	A (6.4)	--	A (1.4)	A (1.6)	--
Main Street WB	L	A (2.1)	A (2.3)	--	A (2.2)	A (2.4)	--
Washington Avenue NB	LTR	E (37.1)	F (394.3)	--	C (16.5)	D (31.3)	--
Washington Avenue SB	LTR	C (20.3)	F (99.0)	--	C (18.5)	E (35.4)	--
Main Street EB	LTR	--	--	B (17.1)	--	--	B (11.6)
Main Street WB	LTR	--	--	A (4.8)	--	--	A (9.2)
Washington Avenue NB	LTR	--	--	B (19.4)	--	--	A (7.0)
Washington Avenue SB	LTR	--	--	B (17.8)	--	--	A (6.6)
Overall		--	--	B (14.3)	--	--	A (9.3)

Table 5.3 – Level of Service Summary (Continued)

Intersection Approach	Control	AM Peak Hour			PM Peak Hour		
		2005 Existing	2030 Design Year	2030 Design Year w/ Imp.	2005 Existing	2030 Design Year	2030 Design Year w/ Imp.
Partition Street/West Bridge Street	U	--	--	--	A (5.4)	B (10.1)	--
Partition Street EB L West Bridge Street SB LR		--	--	--	C (22.1)	F (165.5)	--
US Route 9W NB	S	--	--	--	--	--	B (14.9)
West Bridge Street SB R		--	--	--	--	--	A (1.5)
Partition Street EB LT		--	--	--	--	--	B (17.8)
Partition Street EB LR		--	--	--	--	--	B (15.2)
Overall		--	--	--	--	--	B (10.6)
US Route 9W/NYS Route 32	S	--	--	--	--	--	--
US Route 9W NB TR		--	--	--	C (21.6)	F (122.4)	F (115.7)
US Route 9W & NYS Route 32 SB defL		--	--	--	C (24.3)	F (152.0)	E (59.7)
NYS Route 32 WB T		--	--	--	A (3.2)	A (7.3)	A (5.1)
NYS Route 32 WB LR		--	--	--	D (36.3)	D (50.3)	E (57.6)
Overall		--	--	--	C (20.9)	F (89.0)	E (72.3)
US Route 9W & NYS Route 32 SB LT	R	--	--	--	--	--	A (9.2)
US Route 9W NB TR		--	--	--	--	--	C (21.8)
NYS Route 32 WB LR		--	--	--	--	--	B (12.2)
Overall			--	--	--	--	--

Key: U = Unsignalized; A = All-Way Stop; S = Signalized; R = Roundabout
 X (Y.Y) = Level of Service (Delay, seconds per vehicle)
 NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
 L = Left, T = Through, R = Right

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6 Implementation Plan

Table 6.1 summarizes the projects and recommendations described in section 4 of this report, and is intended as a guide for future projects and policies. Cost estimates represent order-of-magnitude costs, and require additional review before programming specific improvements. These recommendations were developed to facilitate a multi-modal future, and preserve and improve the capacity of area roadways, through arterial management service roads, and context sensitive improvements, along with promoting compact land development that supports pedestrians, bicyclists and transit.

Implementation of the projects will occur in different stages and will take commitment and coordinated effort on the part of the various agencies and land owners in the study area.

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**Table 6.1 - Implementation Matrix
Saugerties Area Mobility Analysis**

No.	Project Title/ Description	Summary of Issues / Analysis & Discussion	Preliminary Recommendation/ Next Step	Cost	Funding Source	Responsible Agency/ Party(ies)	Timing	Priority
Regional Access & Mobility Concepts								
1.1	Malden E-Z Pass Only Thruway Interchange	Would provide improved access to/from the NYS Thruway particularly for truck traffic and freight originating within and north of the Village of Saugerties. There are no existing E-Z Pass only plazas on the Thruway. NYSTA has indicated that the Malden E-Z Pass only plaza may be a possibility if an outside group provides funding. A new interchange could cost on the order of \$25 Million dollars.	Conduct preliminary design and environmental analysis	\$300,000 for study	TBD	Town of Saugerties, Ulster County, NYSTA, NYSDOT	long-term	low
1.2	Route 209 Thruway Interchange	Benefits: provide improved regional access to the Town of Ulster and other points east on Route 199, eliminate or reduce some unnecessary trips through the Town and Village of Saugerties, improve regional freight and commuter mobility.	Conduct preliminary design and environmental analysis	\$300,000 for study	TBD	Town of Ulster, NYSDOT, NYSTA	long-term	low
1.3	Route 9W Bridge	A bridge over the Esopus Creek connecting Lighthouse Drive to Burt Street has been suggested and has a long history. Strong support for the project is lacking. There are concerns with impacts to properties, including the historic district.	Dismiss this alternative. No further action.	NA				
Roadway Segment Improvements								
2.1	East-West Connection North - Malden Turnpike	Currently has narrow travel lanes, little or no shoulders, no posted speed limit, a high truck percentage, high accident rate.	Progress County capital project to upgrade with context sensitive lane and shoulder widening and establish appropriate speed limit. Wider shoulders will also serve bicycle traffic	\$4M	TIP	Town of Saugerties, Ulster County, NYSDOT	long-term	moderate
2.2	East-West Connection South - Glasco Turnpike	An improved east-west connection is desired between Route 9W and Kings Highway. Narrow lanes, non-standard curves, and steep grades exist. Physical constraints will make a widening Glasco Turnpike difficult.	Conduct project level preliminary design and environmental evaluation and select a preferred alternative for an improved east-west connection. Could be combined with the Route 209 interchange evaluation.	\$500,000 for study	TIP	Town of Saugerties, Town of Ulster Ulster County, NYSDOT	short-term	high

No.	Project Title/Description	Summary of Issues / Analysis & Discussion	Preliminary Recommendation/Next Step	Cost	Funding Source	Responsible Agency/Party(ies)	Timing	Priority
Roadway Segment Improvements Cont'd....								
	Route 9W north of Village							
na	Speed limit reduction	Done. This makes the 40 mph zone consistent (eliminating 55 mph zone between the two 40 mph zones).	monitor and determine if there has been a reduction in noise complaints.	na	na	Village	immediate	low
2.3a	Gateway feature near Seamons Park Entrance	Character of Route 9W transitions from a rural arterial on rolling terrain, to a Village street with sidewalks and more roadside development when entering the Village from the north. There is a desire for gateway improvements.	Install ornamental lamp posts on the bridge and/or a more distinctive feature near the bridge (such as an architectural welcome sign)	\$150,000	Village	Village, NYSDOT	long-term	low
	Route 9W within Village (Partition St.)							
2.3b	Alternate side parking on Upper Partition Street	Allows wider travel lanes. Improved signal operation because of improved saturation flow rate. Wider sidewalks. additional street trees. Mitigates high crash experience.	Consider Alternate side parking as part of reconstruction project on Partition Street from Main Street to Russell Street.	\$1.6M	TIP	Village, NYSDOT	long-term	low
2.3b alt	Lower Partition Street	Previously identified as location with geometry issues. Possible pedestrian crossing on Partition at Allen Street.	Pursue improvements through the development review process	unk	private	Village	as needed	high
	Route 9W south of Village							
2.3c	Route 9W Access Improvement Concept	Higher than average crash rate, numerous existing commercial driveways, passing zone, and the potential for further commercial and mixed-use development, make this an ideal location for implementing access management.	Town should adopt Access Improvement Concept. Town Planning Board can then implement recommendations of the concept.	na	Town	Town, NYSDOT	short-term	high
2.4	Route 212 (Ulster Ave)	Corridor is the primary gateway into the Village from NYS Thruway interchange 20 but lacks visual appeal.	Create an improved entrance into the Village from the west with a raised median, street trees and possible alternate-side parking within the existing right-of-way.	\$1.5M	TIP	Village/NYSDOT	long-term	low
2.5	Route 32	Concerns with continued development pressure and proliferation of new access points leading to deteriorated character and traffic operations.	Town adopt access management overlay zoning along this section of Route 32.	na	Town	Town, NYSDOT	short-term	high

No.	Project Title/ Description	Summary of Issues / Analysis & Discussion	Preliminary Recommendation/ Next Step	Cost	Funding Source	Responsible Agency/ Party(ies)	Timing	Priority
Intersection Improvements								
3.1	Route 32/NYS Thruway Exit 20 Southbound Ramps	Unsignalized LOS F, limited queuing distance between stop sign and toll booths, adjacent park-and-ride facilities needs upgrading.	Install traffic signal or roundabout, upgrade park-and-ride	\$1.5M (assumes roundabout)	TIP	Town, NYSDOT, NYSTA	medium	high
3.2	Route 32/Kings Highway/Malden Turnpike	Acute angle makes visibility difficult for motorists and trucks turning left from Kings Highway onto Route 32 southbound.	Realign intersection to create a more standard T-intersection configuration at near 90 degrees.	\$300,000	TIP	Town, NYSDOT	medium	moderate
3.3	Route 9W/Malden Turnpike	Concerns with poor intersection sight distance, speeds on Route 9W, and intersection geometry to accommodate large vehicles at this location. Improvement options include clearing, horizontal and vertical roadway realignment, larger radii to accommodate the turning path of larger vehicles, or a roundabout or traffic signal. There may be property impacts related to geometric improvements.	Further engineering study/ preliminary design to confirm the extent and type of improvement, followed by programming the improvement.	\$15,000 to \$20,000 for study.	Planning funds	UCTC	short-term	high
3.4	Route 9W/Krout Road	Intersection operations are affected by moderate upgrade of Krout Road approach. This intersection is a primary travel route to and from Cantine Field used by attendees during the annual garlic fest and also provides access to HIITS.	Raise profile or realign Krout Road.	\$1M	TIP	Town, NYSDOT	long-term	low
3.5	Main/Washington	Northbound approach near capacity during the morning peak hour.	Install high visibility architectural cross walks and traffic signal.	\$150,000	NYSDOT	Village, NYSDOT	short-term	high
3.6	Main Street/ Partition Street	Currently operates at LOS C. Low flow rate due to narrow lanes with adjacent parallel parking. Trucks off-track. Lacks sufficient pedestrian accommodations.	Upgrade signal to a traffic-actuated signal and include curb-bump-out, pedestrian actuated signal with count down timers, high visibility cross walks and STOP here on Red signs.	\$300,000	NYSDOT	Village crosswalk improvements, NYSDOT signal improvements	short-term	high
3.6 alt		Durathem type treatment through entire intersection.						
3.7	Market Street/Ulster Avenue	Current intersection configuration is confusing to drivers. Channelization improvement preferred over roundabout alternative. Addition of pocket park and transit shelter desired.	Village work with NYSDOT to correct operational concerns. Implement spot improvements in phases.	ranges	NYSDOT	Village/NYSDOT	on-going	moderate
3.8	Partition Street/West Bridge Street	Poor visibility for the left turn maneuver onto West Bridge Street, geometry is insufficient for large trucks, no pedestrian crossings.	short-term: on-street parking near this intersection should be removed. long-term realignment of the intersection and installation of a traffic signal is recommended. This improvement would require property acquisition.	\$1M+	TIP	Village/NYSDOT	short and long term	moderate

No.	Project Title/Description	Summary of Issues / Analysis & Discussion	Preliminary Recommendation/Next Step	Cost	Funding Source	Responsible Agency/Party(ies)	Timing	Priority
Intersection Improvements Cont'd....								
3.9	Route 9W/Avon Street	Sharp intersection angle at Route 9W/Simmons Dr. and proximity to Avon Street create a K-shaped intersection.	Close Simmons Drive at Route 9W and extend Morris Street to Avon Street to provide access to Route 9W. Install traffic signal.	\$1M	TIP	Town/NYS DOT, or developer mitigation	long-term	high
3.10	Route 9W/Route 32	Gateway opportunity. Single lane roundabout will accommodate horizon year traffic volumes. Pedestrian improvements desired.	Construct roundabout, or include in a Route 9W corridor project	\$1M to \$3M	TIP	Town, NYSDOT	long-term	high
3.11	Route 9W/Glasco Turnpike (east)	Desire to slow vehicles approaching the more developed section of Route 9W just south of the Village. Nearby development on Glasco Turnpike	Install traffic signal when warranted.	\$150,000	Developer mitigation	Town, private	as needed	moderate
Rail Crossing Safety Improvements								
4.1a	Route 212/CSX at-grade crossing - Pedestrian wait station	Delay analysis shows that the average daily delay at the grade crossing is comparable to the average daily delay experienced at a traffic signal.	Install pedestrian wait station	two at \$10,000 ea.	Village	Village	short-term	low
4.1b	Grade Separate Route 212	Has been studied previously; all potential alternatives rejected based on extensive property impacts.	Beginning planning for grade separation to accommodate future CSX double track through the area	\$500,000 study. Multi-million dollar construction.	TIP	Village, Town, County, NYSDOT, CSX, FRA	short-term	high
4.2	Reduction of private at-grade rail crossings	Numerous uncontrolled private crossings. There is a history of crashes with fatalities. On-going safety and queuing concerns exist at the Tissal Road crossing.	Close several private crossings. Constructed a parallel road. Relocate the Tissal Road crossing. Provide controlled crossings at a few locations (Glasco Tpk, Myers Lane, Rt 212, Tissal Rd.) with lights and gates installed.	\$10M to \$15M	TIP plus possible spot private participation	Town, CSX, County, NYSDOT, FRA, Tissal Road facility	long-term	high
Bicycle Improvements								
5a	Bike racks	Suggested locations for bike racks include: Municipal, Village and Town Hall Parking lots; Main, Market and Partition Streets; Saugerties Public Library; Seamon Park; Saugerties Lighthouse.	Install bike racks at key locations	\$500 ea	Village	Village	as needed	moderate
5b	Bike lanes	Many area roadways have narrow travel lanes and little or no shoulders for bicycle traffic. There is a desire to increase the share of non-motorized travel in the region.	Bike lanes should be built, or at a minimum, shoulders should be upgraded, along key corridors.	\$100,000 to \$500,000 per shoulder mile	TIP	Village, Town, County, NYSDOT	medium	high

No.	Project Title/Description	Summary of Issues / Analysis & Discussion	Preliminary Recommendation/Next Step	Cost	Funding Source	Responsible Agency/Party(ies)	Timing	Priority
Pedestrian Improvements								
6a	Multi-use path	Better linkage to HITS site desired. Washington Ave, Krout Road / Canoe Hill Road / Bob Moser Drive	purchase construction of multi-use path through logical segments.	\$2.6M	Village/TIP	Village	long-term	low
6b	Sidewalk improvements and repairs to bluestone sidewalks.	Over three miles of sidewalk improvements are identified	Village prioritize and seek public private cooperation for implementation.	\$3M total \$250/SY for bluestone repair	Village/private/TIP	Village	long-term	low
6c	New ped connections	Desire to connect key land uses.	negotiate local agreements.	\$0.85M	Village	Village	variable	variable
Parking Improvements								
7a	Parking enforcement	Parking beyond limits has been observed. Higher parking turn-over rates are desired to improve opportunities for patrons of the business district.	Greater enforcement of 2 hour limit, progressively increase fines	na	Village	Village	short-term	high
7b	Public parking consolidation	Remove individual restrictions on parking spaces in public lots. Adjacent business owners would receive parking passes.	Unify the public parking lots	unk	Village	Village/private	medium	moderate
7c	Fee increase	Inexpensive on-street rates do not encourage turn-over.	Increase on-street parking rate to \$0.50/hr.	unk	Village	Village	short-term	high
7d	Establish loading zones	Restrict deliveries to 7-11 AM. Possible locations include: entry to public parking lot, driveway next to Boys & Girls Club, alley behind Jennifer Collections. Jane St. is used currently and works well.	Designate truck loading zone on Partition Street as part of Main Street/Partition Street intersection improvement project.	na	Village/NYS DOT	Village/NYS DOT	short-term	high
Trucking								
8.2	Engine Brake signs	Villages do not have the authority to regulate Jake Brakes. The State has the authority to regulate through noise ordinance. Speed-sensitive cameras may be used to enforce noise ordinances. There is no existing case law for standardization of decibel meter equipment. Therefore, violations of noise ordinances are difficult to prosecute.	Install signs requesting truckers not to use engine brakes in the Village.	\$250/sign	Village	Village	short-term	low

No.	Project Title/ Description	Summary of Issues / Analysis & Discussion	Preliminary Recommendation/ Next Step	Cost	Funding Source	Responsible Agency/ Party(ies)	Timing	Priority
Transit Improvements								
9a	Bus routes	Refer to UCTC/Abrams-Cherwonoy Public Transportation Study for comprehensive transit assessment. There is desire for Adirondacks Trailways bus to serve the center of the village, but this is expected to add about 10 minutes travel time to the bus, and additional ridership is uncertain.	Progress recommendations from UCTC/Abram-Cherwonoy study. UCAT coordinate schedules with Adirondacks Trailways to enable the local bus to act as a feeder.	na	na	Village/UCAT	medium	moderate
9b	Bus shelters	New shelter is already programmed at the Partition Street/Montross Street intersection. Desire to relocate the existing bus stop in front of the post office to the Market and Ulster intersection.	Bus shelter and crosswalk at the Partition St/Montross St UCAT stop, and at Ulster Ave/Market intersection.	\$10,000 ea	Village/ UCAT	Village / UCAT	variable	moderate
Park and Ride								
10	Park and ride lot	An expanded and upgraded park-and-ride facility at the Exit 20 southbound ramps on Route 32 is needed.	Upgrade lot at Exit 20 southbound ramps; add an additional Trailways stop at this location. Include in Exit 20 capacity improvement project.	\$250,000	TIP	Town, NYSTA, NYSDOT, UCAT	short-term	high
Community Character Enhancements								
11	Enhancements	Desire to increase local amenities such as: crosswalks, sidewalk repairs, period street signs and lights, benches, bike racks, street trees.	Install high visibility crosswalks with architectural treatment. Curb bump outs and mid-block pedestrian crossings. Implement as part of Downtown enhancements project.	\$1.2M	TIP application pending.	Village / NYSDOT, plus on-going enhancements by local beautification committee	short-term	high
Land Use Policy								
12	Policy	There is a strong link between transportation investments and land use changes. There are concerns about increasing auto dependency and sprawl.	Coordinate Village and Town comprehensive planning efforts. Concentrate future growth as much as possible within walking distances of the village center and other retail nodes. Allow greater densities and land-use mixes within the Village.	na	na	Village/Town	on-going	high