

NYS Thruway Exit 26 & I-890 Land Use and Transportation Study

May 2008

Town of Rotterdam
Capital District Transportation Committee





Executive Summary

The Exit 26 Land Use and Transportation Study is intended to help further refine the Town of Rotterdam's future land use vision for the corridor study area and to develop the necessary tools to help shape this vision and the associated multi-modal transportation system. Funded through the Capital District Transportation Committee's (CDTC) Linkage Program, this study was submitted to CDTC because of the potential for future growth within the corridor and the implications that this growth could have on land use and transportation infrastructure in the area.

In an area like this with growing development pressure and land uses ranging from agricultural to residential and heavy industrial, a well-defined corridor-level land use plan is necessary to ensure appropriate development and infrastructure is provided in the future. This plan provides the framework for refining and integrating land use and transportation within the corridor. Recommendations have been proposed that should assist in maintaining the quality-of-life in the corridor while providing for future growth and the infrastructure necessary to support it.

Recommendations herein are planning-level only, meaning that some, such as those specifically tied to transportation improvements, safety, and management, will be required to undergo further engineering-level analysis to ensure that the changes implemented are consistent with current engineering principles and guidelines.

- For such a geographically small and constrained study area, it is somewhat notable that there are many different land use types and significant natural and man-made features. These features include the Mohawk River, freight rail lines, floodplain lowlands bordered by steep slopes and hillsides, and I-890. Based on these existing conditions, it was determined that assessing land use from a more micro-level of assessment of obstacles/barriers/opportunities within the context of the corridor-wide analysis and vision, was appropriate. As such, the General Development Areas were formed. These areas were derived using existing conditions, including existing land use, transportation infrastructure and natural features. This analysis resulted in the creation of unique potential development areas and new zoning district boundaries that combined, provide for the corridor vision.
- There are two notable land use changes within the corridor study area. First, the existing Lower Rotterdam Junction area is proposed to be expanded into the immediate surrounding area to create a mixed-use office and residential district in a "village-type" concept. The second notable land use change is the Baan Farm area immediately west of I-890. This area has the greatest access to I-890, would likely require the smallest investment in transportation infrastructure expansion of all potential development sites within the corridor, and is immediately adjacent to NYS Thruway Exit 26. For this reason, the area is proposed to be rezoned into a Planned Business Development District (PBDD). This new district is envisioned to permit several types of uses including agricultural, warehousing, transportation, freight and distribution facilities.

- Two corridor-wide land use recommendations are presented. One provides for a river shoreline buffer which is intended to provide an undisturbed area along the riverbank for natural features to remain and also potentially provide for public access along the riverfront. The second corridor-wide land use recommendation option would create a “Green Ribbon” along the riverfront from the eastern end of the corridor study area to the western end. This area could be used for programmed or un-programmed open space enhancing the riverbank buffer area by extending the acreage left undeveloped adjacent to the Mohawk River.

- The connection between transportation infrastructure and land use within the corridor study area is significant. In any study of this type, the relationship between land use and transportation is considered as a cohesive set of conditions, not as independent elements. For this corridor, the relationship between land use and transportation is undeniable and well understood by residents and those who traverse the corridor regularly. For this reason, significant emphasis was placed on transportation infrastructure and the relationship it has to land use. Proposed transportation recommendations include smaller projects such as increasing signage to large projects such as re-designing the intersection of Lower Gregg Road and Route 5S. The following is just a sample of the many transportation-related recommendations provided in this document:
 - Close the western intersection of Lower Gregg Road at Route 5S and realign the eastern intersection to a 90’ angle with Route 5S.
 - Narrow the curb-cut of Old Crawford Road at Route 5S and move the road intersection west to improve the sight-line onto Route 5S.
 - Provide crossing improvements for the Mohawk Hudson Bike-Hike Crossing over Route 5S.
 - Replace/fix the existing deteriorating railroad crossing on Route 5S.
 - Add a 5’ concrete sidewalk and 5’ grass strip to both sides of Route 5S between Mabie Lane and the Mohawk Hudson Bike-Hike Trail.
 - Place a weave-pattern of bollards, or similar element, just outside the right-of-way of Route 5S on both approaches of the trail crossing over Route 5S.
 - Work with NYSDOT to ensure vegetation is cleared from clear sight triangles on a regular basis.

This plan provides an outline to enhance and further integrate land use and transportation within the corridor. To assist in implementation, a matrix detailing the proposed improvements, order-of-magnitude cost estimates, and the general implementation timeframe has been provided. Further study and design is required for many of the recommended elements. Progress will be dependent on the priority given to the needs outlined in this plan and the availability of funds to complete them. In addition, implementation will require the Town and its residents to continually discuss the options, work with private stakeholders, Schenectady County, CDTC and NYSDOT, and keep this plan in the forefront of work being undertaken throughout the Town of Rotterdam.

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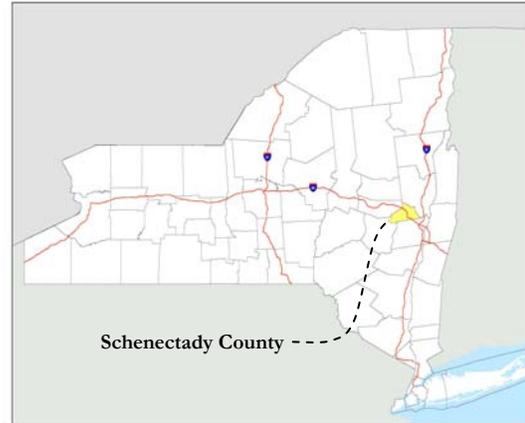
I. INTRODUCTION

Overview

The purpose of this study is to help further refine the Town of Rotterdam's future land use vision for the corridor study area and to develop the necessary tools to help shape this vision and the associated multi-modal transportation system.

The Exit 26 & I-890 Land Use and Transportation study area includes approximately 475 acres of land located along the southern shore of the Mohawk River in the Town of Rotterdam, Schenectady County, New York. Figure I-1 shows the limits of the corridor study area. Land uses include agricultural, residential, office/retail and industrial. While the development pattern of this area is generally consistent with current zoning and desired land use pattern, increasing development pressure has brought about concern regarding the future land use pattern and the implications of additional development. Currently, certain regulations permit some zoning districts to use the regulations of the less intense zoning districts. For the most permissive districts, this allows for several different development options which in many cases are not compatible with the land features and transportation infrastructure in the corridor study area.

Statewide Context Map



This potentially incompatible land use mix permits everything from heavy industrial to low-density residential and agricultural uses that may not be compatible with each other or the environmental and/or physical constraints and conditions in the area.

The significantly different potential land use types also generate different amounts of traffic which affects the traffic patterns and flows for the Study Area and possibly the larger region. The Town of Rotterdam recognizes that increased development potential in the corridor study area could have a significant impact on both the landscape and the transportation system.

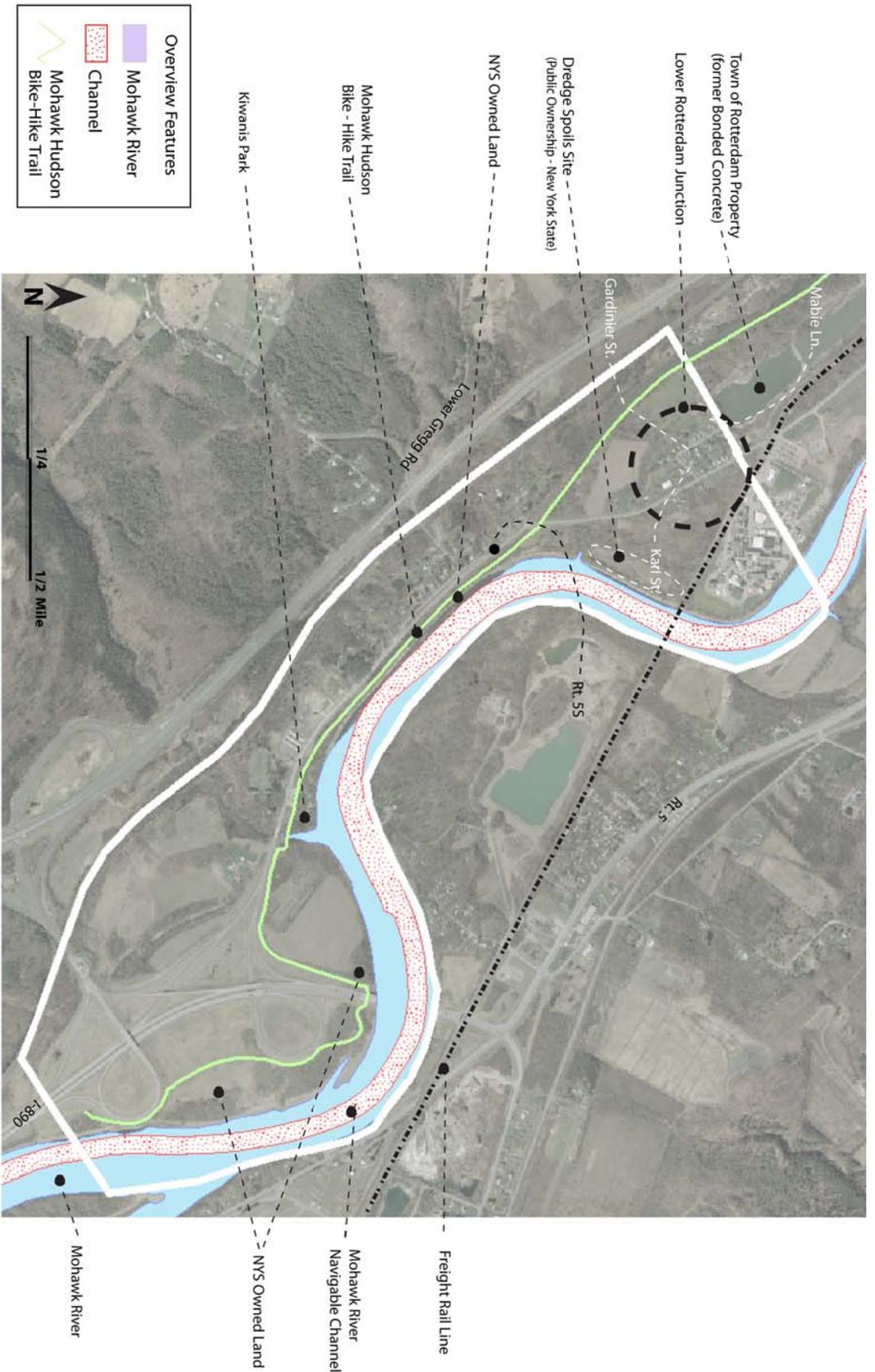
Study Area Limits



Route 5S @ Mabie Lane



NYS Thruway Exit 26 Bridge



Corridor Study Area Overview

NYS Thruway Exit 26 & I-890
Land Use & Transportation Plan
March 2008

Figure I-1
Wilbur-Smith
INCORPORATED



tem. This impact could be felt within the corridor along State Route 5S, the Route 5S/I-890/NYS Thruway interchange area, the Mohawk-Hudson Bike Hike Trail crossing over Route 5S, existing residents, businesses, and neighborhoods in and adjacent to this corridor study area.

Furthermore, in 2004 the Town of Rotterdam extended public water into the corridor study area which has brought increased development interest in the area and thus, the rationale for development of this Study. The Town is also considering replacing an existing water tower that serves the area and the potential magnitude of future development is an important consideration for assessing needed capacity of a future water tower.

To ensure that future growth in the corridor study area is consistent with the desired potential future development pattern, this study focuses on recommendations related to the following topic areas:

- Land Use
- Access Management, including Driveway Consolidations
- Bicycle and Pedestrian Accommodations
- Traffic Calming
- General Zoning and Subdivision Regulation Recommendations

Study Process

This study was submitted to the Capital District Transportation Committee (CDTC) by the Town of Rotterdam for the Linkage Program because of the potential for future growth within the corridor study area and the implications that this growth could have on the areas land use and transportation infrastructure.

The Town of Rotterdam, in conjunction with CDTC, contracted with Wilbur Smith Associates (WSA) to assist in developing the study. A Study Advisory Group (SAG) was created that included the Town of Rotterdam, CDTC, Schenectady County, the NYS Canal Corporation, the NYS Thruway Authority, the NYS Department of Transportation, the Capital District Transportation Authority (CDTA), and the local bicycle/pedestrian advocacy group. This group refined the project timeline, discussed potential opportunities, constraints, and consid-



Trail
Crossing
Over
Route 5S
Looking
East

erations for the corridor study area, and held public meetings to solicit input from residents and individuals interested in helping to develop the future vision for the corridor.

In an area consisting of land uses ranging from agricultural to residential and heavy industrial, a well defined, corridor-level land use plan was determined to be necessary to ensure appropriate development patterns into the future. This plan provides the framework for refining the land use and transportation network within the Study Area Corridor.

Corridor Study Area Limits

The CSX rail line serves as the southern boundary of the corridor study area essentially cutting-off the area from adjacent areas just to the south of the rail line. The NYS Thruway creates an additional barrier between the corridor study area and the remainder of the Town of Rotterdam. In addition, to the north and east, the Mohawk River creates a natural barrier which separates the corridor study area from the Town of Glenville, across the river to the north. In the eastern portion of the corridor study area, I-890 and the associated highway ramps are the dominant feature.

Goals and Objectives

Goal:

The goal of this study is to further refine the future land use vision for the corridor study area and develop the tools needed to shape this vision in anticipation of increasing development interests. By pro-actively planning for the likely future, Rotterdam Town Officials will adequately plan for, and maximize the opportunities provided by the transportation connections in and near the study area which include the NYS Thruway Interchange Exit 26, Interstate 890, State Route 5, and State Route 5S, and the close proximity to the City of Schenectady.

Objectives:

The two objectives of this study are to provide a springboard from which the Town can work to implement new zoning classifications and to provide a more sustainable land use and transportation pattern, as detailed below:

- Provide a future land use plan, and related zoning ordinance recommendations that are more reflective of the environmental and physical constraints in the area
- Ensure that the Mohawk-Hudson Bike-Hike Trail is retained as a significant transportation and recreation resource with an eye toward significantly improving safety for the trail crossing of State Route 5S.

II. EXISTING CONDITIONS

The existing conditions in the corridor study area, and existing plans and regulations, have played a significant role in land use, transportation and infrastructure within the study area. Route 5S is the main transportation route through the area. A short-haul freight rail line cuts through the northwest end of the corridor study area; I-890 cuts through the mostly undeveloped agricultural areas in the southern portion of the corridor study area; the Mohawk River bounds the area to the east and the CSX line bounds the corridor study area to the west, with the NYS Thruway just west of the CSX line. I-890 has effectively cut-off potential vehicular access to land adjacent to the Mohawk River and, in conjunction with the property being owned by New York State, as a result, access to the river is only provided via the Mohawk Hudson Bike-Hike Trail and the area remains undeveloped.

Constraints, opportunities, and elements affecting existing and potential future land use and transportation within the corridor study area are provided in more detail in this section.

Comprehensive Plan & Future Land Use

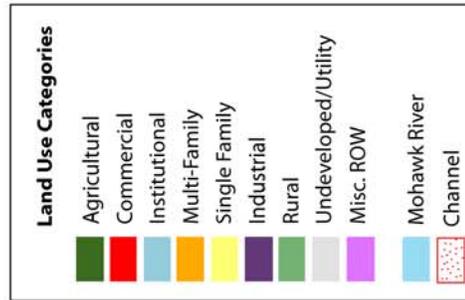
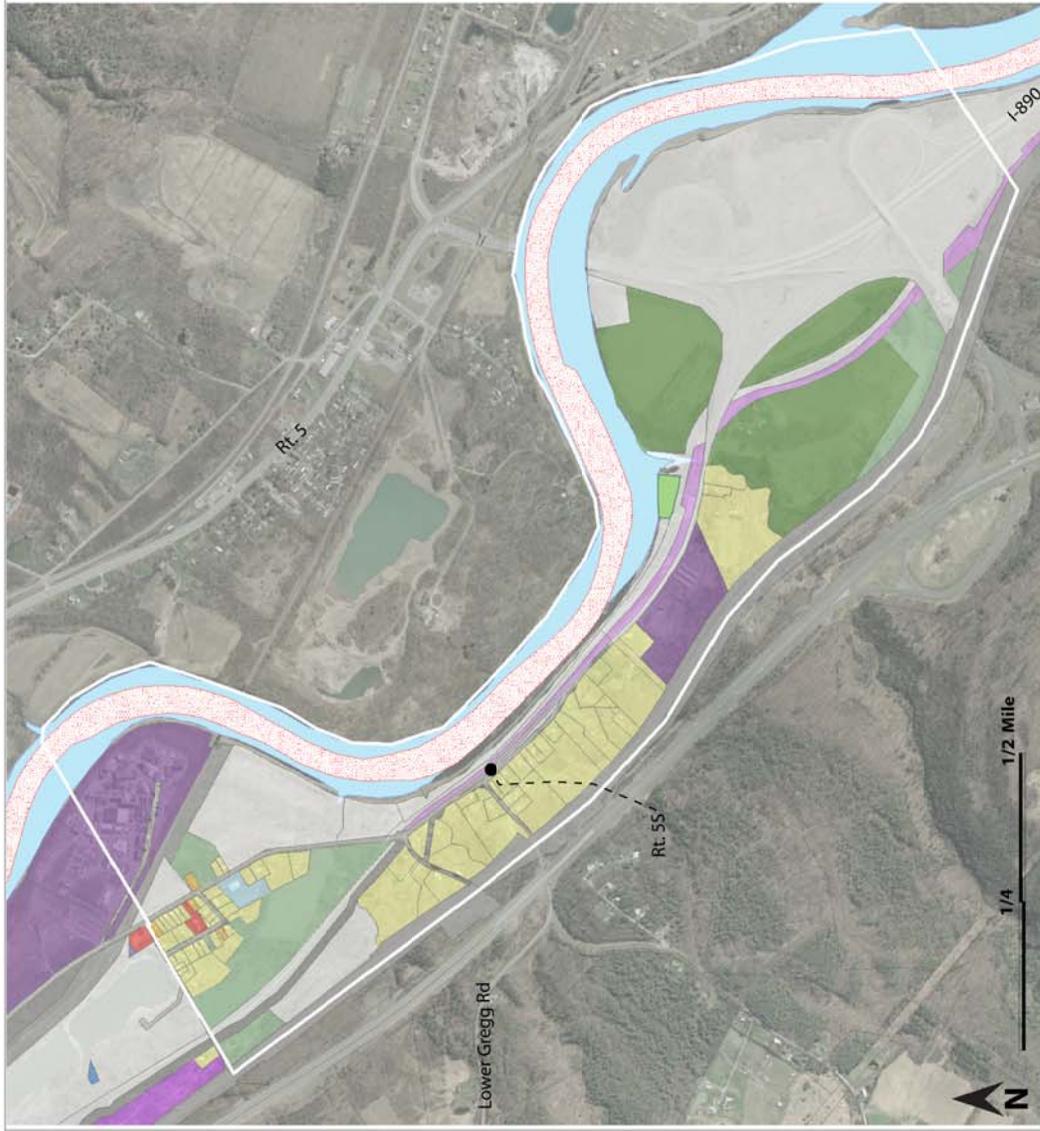
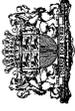
In 2001, the Town of Rotterdam updated its Comprehensive Plan to reflect existing and desired future land use and provide a process to “...identify and establish overall community development goals and objectives, as well as the strategies to implement them.” The Vision Statement of the Comprehensive Plan states the following:

“The Vision of the Town of Rotterdam, a friendly, historic, thriving community is to provide for the health, safety, and well-being of its citizens through the wise management of its diverse resources. The Town of Rotterdam shall undertake measures needed to implement the Comprehensive Plan to maintain the character and integrity of neighborhoods, while providing areas of economic and business development as well as ensure that future growth and development are compatible with the Town’s natural environment.”

In the 2001 Comprehensive Plan, the Development Plan Map - Study Area #3 encompasses this corridor study area. The map shows future potential land use within this area. The following text provides a general breakdown of the potential Future Land Use as detailed in the Plan:



Lower Rotterdam Junction



NYS Thruway Exit 26 & I-890
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Existing Land Use

Figure I-2
WilburSmith

- For the land located between I-890 and the Mohawk River, the Comprehensive Plan calls for Land Conservation. Land Conservation is also shown on the former Bonded Concrete property at the northern end of the corridor study area that is now owned by the Town of Rotterdam.
- The property bordered by the NYS Thruway, the I-890 Exit 26 ramps and Route 5S is labeled as Industrial. Industrial land is also shown where the existing SI Group use is located.
- The property bordered by I-890, the Mohawk River and Route 5S is zoned/designated as commercial, along with parcels fronting on Rt. 5S where the existing non-residential uses are currently located.
- Residential land use is located where Lower Gregg Road meets Route 5S and in Lower Rotterdam Junction. The remaining land in the corridor study area is shown as an Agricultural Use.

A summary of the 2001 Comprehensive Plan assessment of land use in the area relevant to this study is included in Appendix A. This study is built on the 2001 Plan elements and the SAG used these as the basis for considering land use and transportation recommendations, however, this study takes into consideration new issues and opportunities and reflects the desired enhanced future vision for the corridor study area.

Existing Land Use

The corridor is a mix of uses ranging from undeveloped land and agricultural operations, to residential and heavy industrial uses, Figure I-2. There are also significant barriers, obstacles and opportunities, depending on the point-of-view, that are created by the Mohawk River to the east of the study area, the CSX rail line and the New York State Thruway to the west of the corridor study area, I-890 to the south.

Starting in the south, the land between I-890 and the Mohawk River is vacant, owned by the State of New York, and has the Mohawk Hudson Bike-Hike Trail running through it. Land between the I-890 off-ramp to Route 5S west and the Route 5S - NYS Thruway Exit 26 on-ramps is also vacant and owned by the State of New York. At the beginning of Route 5S, the land is agricultural and is actively farmed. Between Route 5S and the Mohawk River, from Kiwanis Park to approximately where the Mohawk Hudson Bike-Hike Trail crosses Route 5S,

the land is used by the trail but is otherwise vacant and undeveloped. On the south side of Route 5S, the land use is mainly residential, but a few industrial parcels are located along Route 5S.

From the crossing of the Mohawk Hudson Bike-Hike Trail to Lower Rotterdam Junction, the land use between Route 5S and the Mohawk River is undeveloped, with NYS Canal Corporation Upland Dredge Spoils occupying a portion of one of the larger parcels in this area. On the southern side of Route 5S, the land use is primarily rural/undeveloped.

Lower Rotterdam Junction is a mixed-use area containing a few non-residential uses, including an institutional use in the former school property, however it is primarily residential. Outside of Lower Rotterdam Junction, the land use pattern is best described as rural mixed-use and includes residences, agriculture and rural-type industrial uses, such as SI Group, the Mabie Lane junkyard and the former Bonded Concrete site.

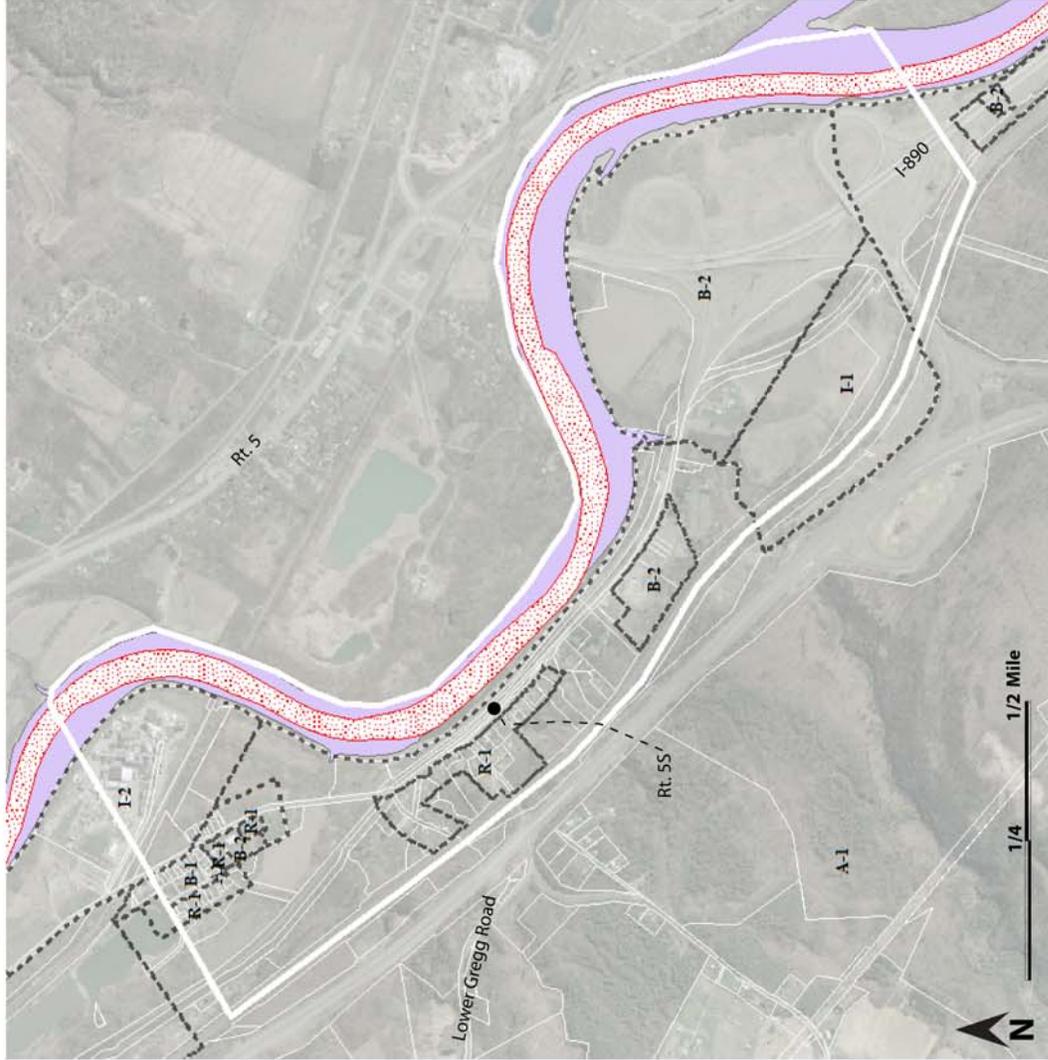
North of the Corridor study area, the land use consists of a heavy industrial user, SI Group, cultural uses, the Mabie Farm and Native American Cultural Center, a railroad line, the former Bonded Concrete site which is slated to become a town park, and some amount of undeveloped land sandwiched between the rail line and Route 5S. Further north is the Hamlet of Rotterdam Junction with a commercial/mixed-use area along Route 5S prior to entering the primarily residential village-center.

Existing Zoning

Current zoning districts within the corridor study area include the following and are depicted in Figure I-3:

- A-1 Agricultural
- R-1 Single Family Residential
- I-1 Light Industrial
- I-2 Heavy Industrial
- B-1 Retail Business District
- B-2 General Business District

Zoning for many districts within the Corridor study area falls into the code allowance for “cumulative zoning” meaning that what is allowed in the one district is then also allowed in the next less restrictive zoning district. For instance, what is permitted in the R-1 residential



Zoning Districts	
A-1	Agricultural
R-1	One Family Residential
R-2	Two Family Residential
I-1	Light Industrial
I-2	Heavy Industrial
B-1	Retail Business
B-2	General Business
	Mohawk River
	Channel

NYS Thruway Exit 26 & I-890
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Existing Zoning

Figure I-3
WilburSmith
ARCHITECTS

Table 1: High Accident Rate Segments

Roadway	From	To	Length (Miles)	Total*	Fatalities	Injuries	Property Damage	Not Reported	Average Accident Rate	Calculated Accident Rate
I-890	East of NYS Thruway Exit 26 Bridge	Route 5	0.9	24	0	5	15	4	0.79	1.44
Route 5S	PARKIS ST (Post Office)	MABIE LANE	0.7	8	0	2	4	2	1.11	1.30
Route 5S	MABIE LANE	L. GREGG RD	0.6	10	1	4	1	4	1.11	1.63

Number of Crashes over a 3 year period. Accident Rate is calculated as Accidents/Million Vehicle Miles

district is also permitted in the R-2 residential district. This means that a use permitted in the R-1 can be constructed in the R-2 zoning district, though it may not be as sustainable and reasonable a use in such a district. With the cumulative zoning in place, there is a potential for incompatible or undesirable uses to be located within a particular district or located adjacent to one another. Since this wide variety of uses is permitted, the Town has little ability to stop development of potentially incompatible uses.

Transportation Network

Roadways in the corridor study area include I-890, Route 5S, Mabie Lane, Karl Street and Gardinier Street, as shown in Figure I-1. Route 5S in this area includes a shoulder, generally 4' in width, which can be used by bicyclists and pedestrians.

The Mohawk Hudson Bike Hike Trail is the main bicycle/pedestrian feature in the corridor study area, running from south of the corridor study area parallel to the Mohawk River along a former towpath/railroad line, until it crosses Route 5S just south of Lower Rotterdam Junction, Figure I-4. At this point, Route 5S makes a turn generally following the Mohawk River while the trail follows the former towpath/railroad line to Mabie Lane. At Mabie Lane, the trail continues approximately 1/2 mile further,

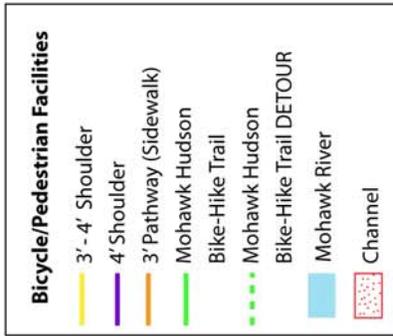
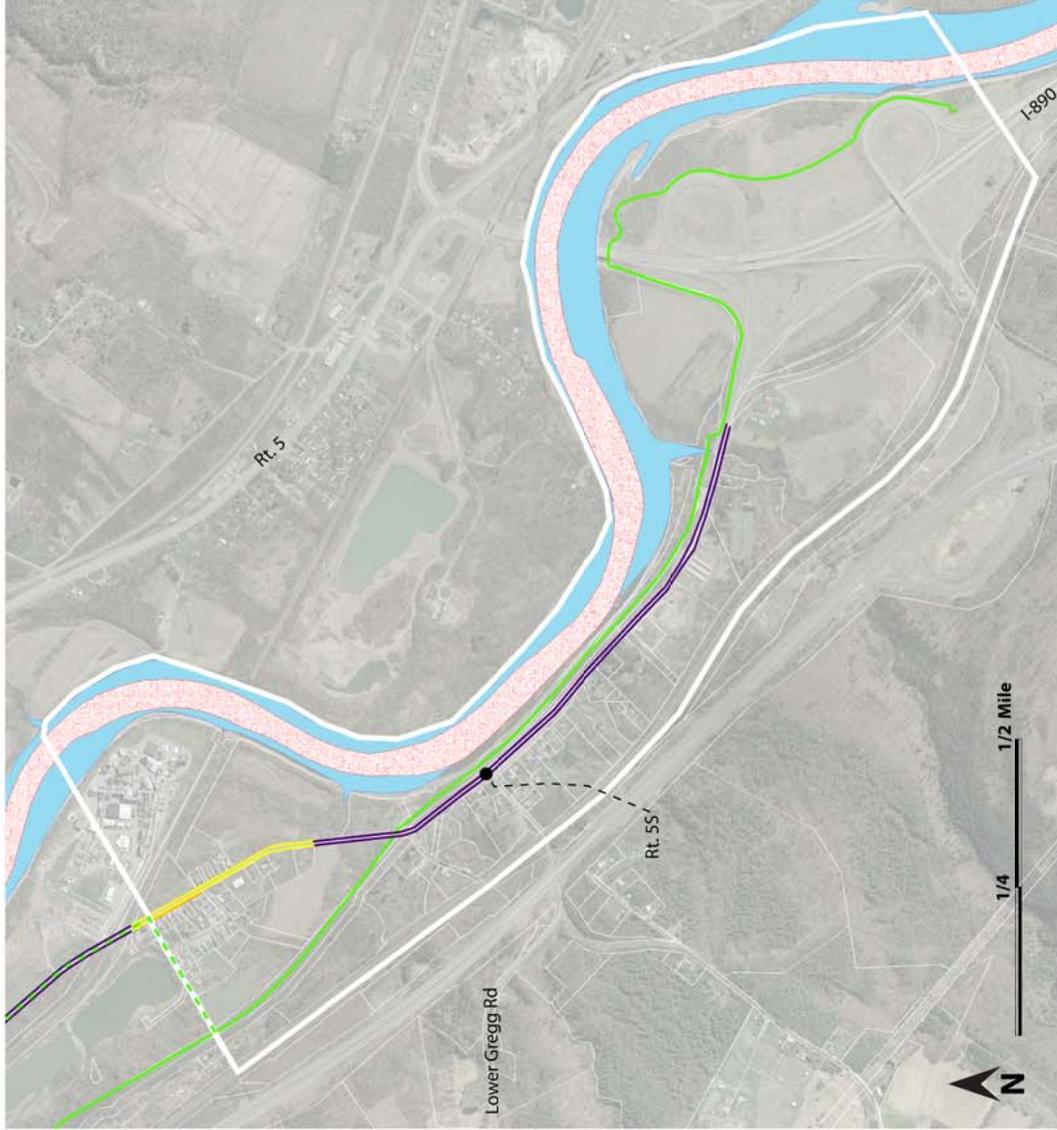
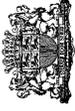
but terminates at the CSX rail line. Consequently, trail users wanting to continue west must use Mabie Lane to reach Route 5S and then continue along Route 5S into Montgomery County.

From Mabie Lane south to Karl Street, an approximately 3-foot paved footpath (sidewalk, though it is not ADA compliant) is located adjacent to Route 5S in front of the homes. This provides the ability to walk through this area without having to use Route 5S, however with the short segment length, it only serves people living along Rt. 5S between Mabie Lane and Karl Street, Figure I-4.

Crash data from the corridor study area revealed that crash rates for some segments of the roadway network are higher than average rates. The only listed fatality is related to a crash between a vehicle and bicyclist that occurred at the Route 5S trail crossing. Looking at the time of day, the data shows that the number of crashes during the day is about the same as those at night, so there is no statistically significant assumption that can be made relating time of day as being a cause of the crashes. The same information also shows that approximately 27% of crashes occurred on wet roads. Table 1 summarizes the crash types and rate (calculated as accidents/million vehicle miles).

Table 2: Level of Service Explanation

Level of Service	Traffic Operations
LOS A	Free-flow conditions, vehicles are completely unimpeded, minimal delay at intersections
LOS B	The ability to maneuver in a traffic stream is only slightly restricted and there are insignificant delays at intersections
LOS C	Traffic flow is stable, but the ability to maneuver and change lanes is more restricted than LOS B. Vehicles begin to back-up at intersections.
LOS D	A small increase in traffic may cause substantial increases in delay at intersections and decreases of travel speeds on road segments.
LOS E	Significant delays at intersections with road segment travel speeds at approximately 1/3 of the posted speed.
LOS F	Extremely slow travel speeds, high delays, and extensive vehicle back-ups at intersections.



Existing Bicycle & Pedestrian Facilities

Figure I-4
WilburSmith

Table 3 : Route 5S Capacity Analysis

Route 5S	Existing Condition	Congestion Threshold	Full Build-Out
Two-Way AADT (vehicles per hour)	5,400	10,600	17,900
Two-Way Peak Hour Volume (vehicles per hour)	540	1,060	1,790
Level of Service	LOS B	LOS C	LOS E

Proposed improvements outlined in the Route 5S Potential Improvement Options maps, as well as improvements specifically targeted toward improving safety at the Mohawk Hudson Bike-Hike Trail crossing, are intended to improve both vehicular and pedestrian safety within the corridor.

The level of service (LOS) for Route 5S under the existing condition was calculated to be LOS B, meaning that there is no capacity issue at the current time. A general description of Level of Service can be found in Table 2 on the previous page. Further analysis was done to determine the number of vehicles needed to reach the typical congestion level for this type of road, at LOS C, and the potential future full build-out LOS condition. The results of this analysis can be found in Table 3 . The general potential future AADT, based on future land use recommendations, is discussed later in the Recommendations Section of this study.

Public Transit

The Capital District Transportation Authority runs bus #78 through the southern portion of the corridor study area, but the route does not stop within the study limits. The closest bus stop is located at the southwest corner of Route 5 and I-890 in the Town of Glenville, Figure I-5.

Utilities

The corridor study area is served by municipal

water, but not municipal sewers. Public water was brought to the area in 2004. This system provides public water to both residential and non-residential uses. Currently, there are residential, commercial and industrial users in the corridor using the public water system. SI Group, the largest single user in the corridor, uses a well for manufacturing/processing water but uses the public water system for drinking water and related uses.

There is no public sewer within the corridor study area. All parcels in the use on-lot sewage disposal systems.

Stormwater is handled by allowing it to sheet-flow off the road into ditches and drainage ways located along the side of the road.

Overhead high-tension power lines extend from the NYS Thruway Exit 26 interchange and run north to the northern side of Route 5S at approximately Rotterdam Kiwanis Park, where the lines then turn west and parallel the Mohawk Hudson Bike-Hike Trail through the entire corridor study area. Residential overhead utility lines are found along the west side of Route 5S and along Karl Street, Gardinier Street, and Mabie Lane at the edge of the roadway.

Gas lines run along the Mohawk Hudson Bike-Hike Trail in the eastern half of the study limits and along the eastern side of Route 5S from the trail crossing at Rt. 5S westward.

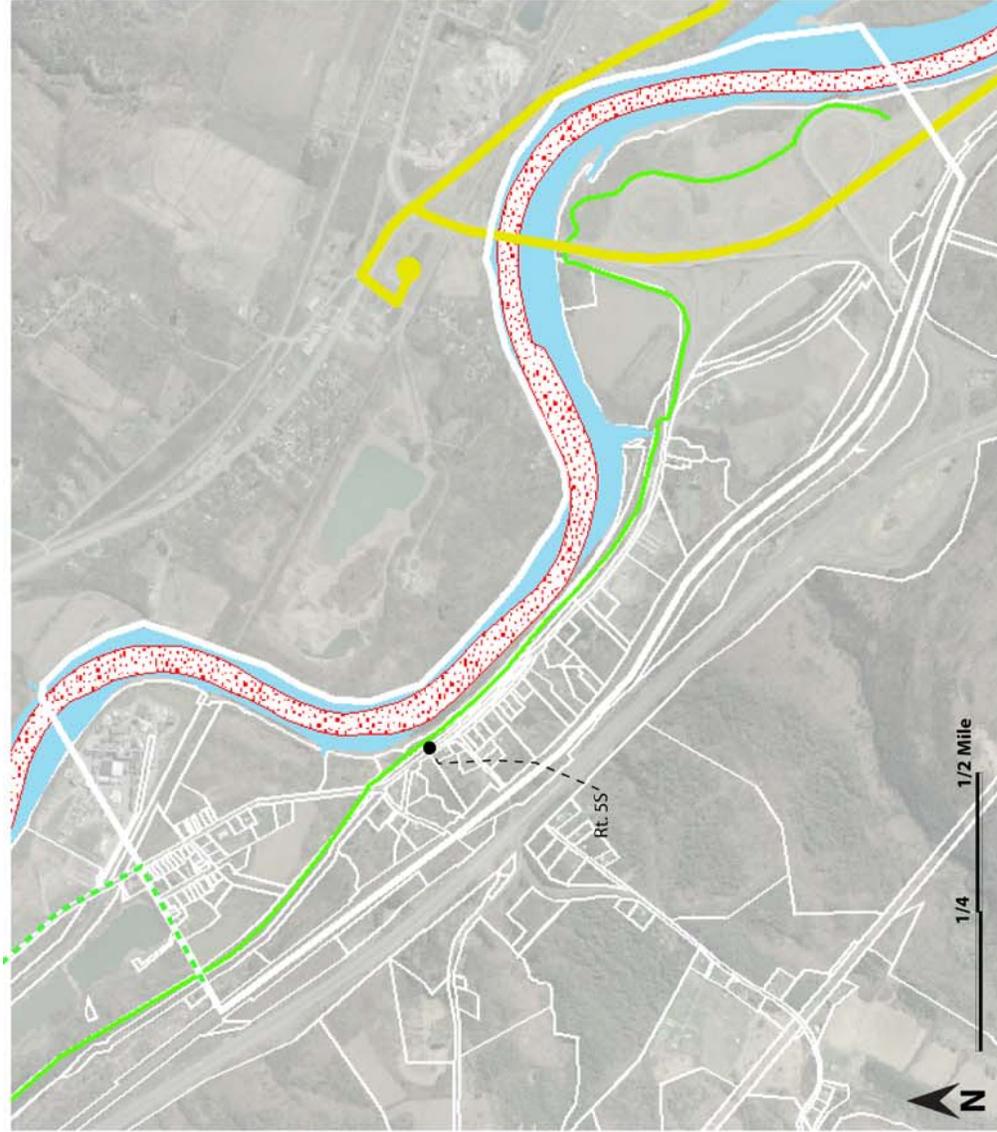
Historic Resources

According to the 2001 Comprehensive Plan, there are 4 resources listed on the Historic Inventory within the corridor study area. All resources are located along Route 5S. The only named resource is the Van Slyck House, shown in Table 4.

The Comprehensive Plan lists three additional unnamed historic resources. These include Map ID#’s R3Z417P, R3Z415P and R3X415. The Comprehensive Plan provides information on the time period of the resource, construction material, building number and land use.

Table 4: Identified Historic Resource Within the Study Area

Map ID #	Historic Resource Name	Resource Date
R3Z418A	The Van Slyck House	1823



- Transportation Service**
- CDTA Bus Route 78
 - CDTA Park & Ride Lot
 - Mohawk Hudson
 - Bike-Hike Trail
 - Mohawk Hudson
 - Bike-Hike Trail DETOUR

Hydrology

The corridor study area is located within an aquifer protection zone. The Comprehensive Plan specifically discusses aquifer protection zones in Section 2.1.2. This section states the following:

“Large portions of the wellhead protection zones for the aquifer are found within Rotterdam. The aquifer serves as the source of potable water for the majority of Schenectady County residents and businesses. However, due to its hydro geologic characteristics, the aquifer is vulnerable to contamination.”

From this vulnerability, the Comprehensive Plan concludes that *“...the aquifer is critical to the environmental and economic health of the Town and surrounding municipalities.”* Implementation of the aquifer protection zones is listed as being dependant on continuing to implement the Watershed Rules and Regulations and to participate in the Intermunicipal Watershed Rules and Regulations Board.

Just north of the corridor study area, though not within the limits of this study, is Overlay Area #1 which is the most restrictive aquifer zone within the Town of Rotterdam. The Study area is in Overlay Area #3 which permits development of the general use and intensity that is being considered in this study.

Floodplain

A floodplain is commonly a flat or lowland area adjoining a waterway that is susceptible to partial or complete inundation by water during a flood event.

The entire corridor study area is at one of the lowest elevations in the Town of Rotterdam by being located within the Mohawk River valley. Much of the land is flat and is just a few feet above the average level of the Mohawk River. As such, floodplain is a significant feature in this area. With a significant flood event, much of the low-land area is subject to flooding and as such, these lands are mostly undeveloped, Figure I-7.

Floodway

Within a floodplain area lies the floodway. This area is defined by the Town of Rotterdam Zoning Ordinance as Regulatory Floodway and is “the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation

more than a designated height as determined by the Federal Emergency Management Agency...”

Adjacent Areas

Partially within, but mainly to the west of the study limits is SI Group and two cultural resources, the Mabee Farm and Native American Cultural Center, which have increasing visibility and tourism draw every year. These uses occupy significant land acreage north of the corridor study area and south of Rotterdam Junction. Rotterdam Junction is a mostly residential hamlet, with some mixed-use and commercial uses located along Route 5S on the eastern end.

Vehicular access to the south is only available via Lower Gregg Road. This area is generally rural, agricultural and somewhat undeveloped with steep slopes resulting from the increasing elevation out of the Mohawk River valley.

East of the corridor study area is additional relatively undeveloped land that consists of lowland valley surrounding the Mohawk River and steep upland areas to the southwest climbing out of the valley. Further east is the City of Schenectady which is easily accessible to the corridor study area via I-890.

Finally, to the north, the Mohawk River bounds the corridor study area. On the opposite bank of the Mohawk River is the Town of Glenville, which in this area is bisected by the 4-lane Route 5, and is only accessible via I-890 or Bridge Street in the Hamlet of Rotterdam.

Pedestrian and bicycle access across the Mohawk River is possible via a 10 foot wide walkway along the western side of I-890 or a sidewalk on Bridge Street in Rotterdam Junction.



SI Group Entrance



III. RECOMMENDED LAND USE ALTERNATIVES

Overview

The following potential land use/transportation infrastructure scenarios were developed based on existing land use and transportation conditions and issues, the 2001 Town of Rotterdam Comprehensive Plan, comments received from the Study Advisory Committee (SAG), and input from the public collected throughout the process. With this information and the use of common planning considerations, a “No Action” alternative and three potential land use/transportation options were developed.

The following alternatives were considered in the context of how well they protect and maintain the general rural character of the corridor study area, preserve, and in some specific instances improve, the functionality of the transportation system, provide for economic development, and create a sustainable land use pattern.

The preferred land use alternative provides for growth and development that is consistent with the general characteristics of the area. Implementing new zoning districts will help to retain the general character of the area and minimize the public costs related to new development. The changes recommended will also potentially lower lot coverage limits from what is permitted now, promoting more compact development and assisting in preserving important open space areas and enhancing the existing character of Lower Rotterdam Junction.

Land Use Alternatives Considered

Alternative 1 – Predominantly Residential

Consideration was given to looking at this area from a strictly residential land use perspective, but it was quickly dismissed as inappropriate for the area given the existing conditions, floodplain area, desired future economic development and the consideration of appropriate uses adjacent to existing elements such as the two freight rail lines, the NYS Thruway, I-890 and SI Group. From meeting with town officials, the SAG, and the public, there was a clear desire to retain the existing general character of the area, but develop some potential economic development tax-base through retail/light industrial uses and to build on Lower Rotterdam Junction as a hamlet by working to enhance the hamlet “feel” and

land uses, thus this alternative was not chosen in developing the future land use scenario.

Alternative 2 – Primarily Non-Residential/Industrial

Consideration was given to developing a land use scheme that tended to provide mainly non-residential uses, but again, from meeting with town officials, the SAG, and the public, it was evident that a mix of uses that retained the existing character of the area, existing Lower Rotterdam Junction residential area, but provided for some potential economic development was the desirable vision of the corridor. Consequently, this alternative was not chosen in developing the future land use scenario.

Alternative 3 – Mixed Use (Preferred Alternative)

This option provides for a mix of the uses described above that can potentially create a more sustainable and economically feasible land use pattern that is consistent with the current general land use pattern of the study area. This alternative provides for additional growth in the corridor by encouraging mixed-use development that is complementary to existing land uses and considers potential future build out and its impact on the transportation system in the future. This alternative includes:

- Retaining and expanding the residential/mixed-use pattern currently found in Lower Rotterdam Junction
- Providing a mixed-use residential and office-type uses on existing A-1 zoned land adjacent to Lower Rotterdam Junction,
- Permitting town-wide or regional retail scale shopping and or distribution facilities on the I-1 zoned land and possibly the B-2 zoned land adjacent to I-890. This area has the most traffic growth capacity and potential for expanded capacity in the corridor study area.

Alternative 4 – No Action

Maintaining the existing zoning currently provided in the Town Code is a potential option. This alternative would:

- Retain the existing industrial development potential (HI and LI – Industrial) over much of the undeveloped land,
- Continue to provide low-density residential uses through the (A – Residential) District over much of the existing residential land and undeveloped land west of the Mohawk-Hudson Bike Hike Trail,
- Provide business zoning in limited areas, and
- Residential zoning throughout most of the Lower Rotterdam Junction area.

This development pattern would not change the potential traffic generation from what exists today and the potential impacts and prospective benefits are those that can be created under the current zoning regulations. This alternative was not chosen in developing the future land use scenario due to its not being consistent with the goals and vision of the corridor in the future.

Recommended Alternative

Alternative 3 – Mixed Use

This recommended alternative preserves the existing general land use pattern, removes potentially inconsistent uses, builds on the existing positive attributes of the corridor study area, and is most likely to bring about a sustainable land use pattern, which in turn will minimize potentially expensive, lengthy, and difficult roadway capacity issues that could result from a general allowance of over-growth.

Many of the recommended zoning district changes utilize work already being undertaken as part of the 2004 Exit 25 study. Many of these districts are consistent with the general desired uses in this study and by utilizing existing zoning efforts, this study will incorporate as much of the similar regulations as possible to minimize creating additional zoning districts, complicating the review process, and requiring the Town to take on the additional burden of writing, approving, and codifying additional codes.

The preferred alternative recommendation for a future mixed-use land development pattern supports the existing industrial uses, protects the



Mixed-Use Office/Educational Use along Rt. 5S

viability and quality-of-life of Lower Rotterdam Junction, attempts to retain the rural-suburban-agricultural character of the corridor study area, and does not require significant transportation infrastructure improvements.

This alternative provides for a regional or community-level retail/light industrial/distribution facility growth area which is consistent with the economic development goals and objectives of this study as well as the general public opinion that non-residential uses are generally desirable, if properly placed and designed. These uses are no more intensive than some of the potential industrial uses that are currently permitted through zoning.

The area adjacent to I-890 and the NYS Thruway interchange provides access that is not found elsewhere in this area. This location provides access for local and regional traffic, has the least potential to require significant, costly, future roadway capacity improvements, and is therefore consistent with the desired outcome to preserve the existing transportation system, and minimize the need for future capacity improvements.

The following zoning districts are proposed for implementation within each of the nine mapped General Development Areas shown in Figure I-6.

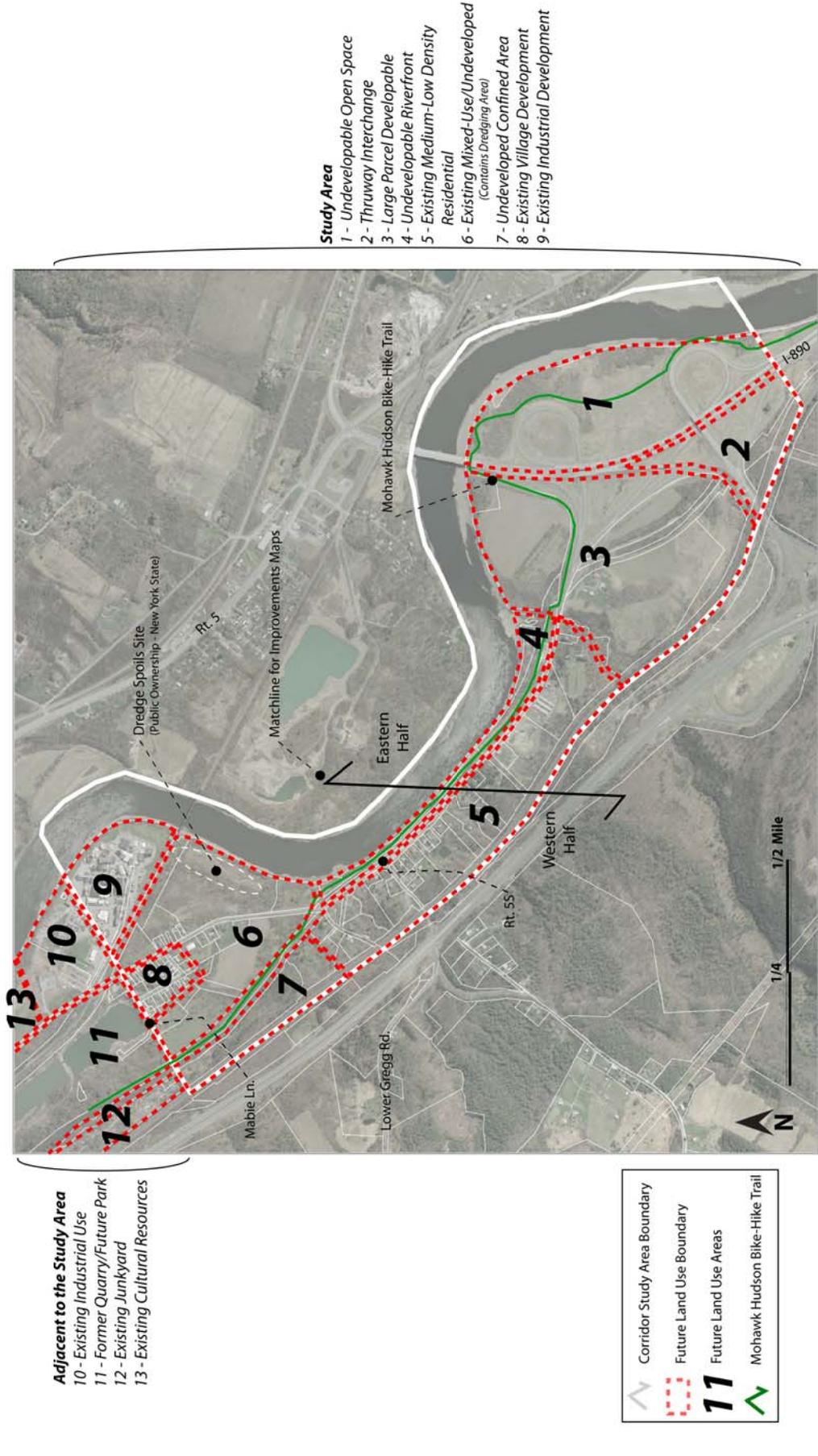


Figure I-6
WilburSmith

Planning Analysis - Existing General Development Areas



General Development Area 1

Recommendation:
Retain the underlying existing Zoning Classification A1 and add the LC—Land Conservation Overlay District to this area.

Purpose:
To provide for the preservation of recreation, open space or environmentally sensitive lands, protect the aquifer area, and facilitate the preservation of wetlands and other lands unsuitable for development.

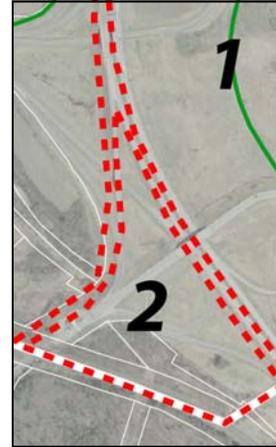
Description:
The uses permitted in the LC Overlay District include conservation easements, public parks and recreation areas, pumping and/or treatment of public water supplies, wetland mitigation areas.

Rationale:
This portion of the corridor study area is intended to remain as open space and has little ability to be easily developed. It is recommended that the LC Overlay zoning be provided to assist in preserving the area as open space and minimize potential future development pressure, despite private development of the area being highly unlikely due to access restrictions related to I-890.

Envisioned Potential Development: 0 Acres



General Development Area 1



General Development Area 2

Recommendation:
Change existing B-2 Zoning Classification in this area to Planned Business Development District (PBDD), a modified version of the C-PUD

Recommended Zoning:
Planned Business Development District (PBDD)
– Modify the existing C-PUD – Commercial

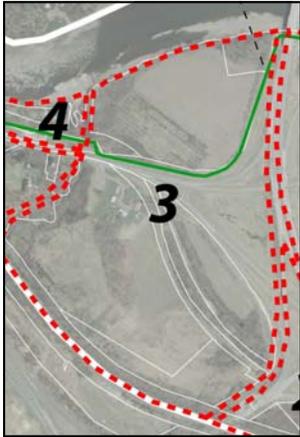
Planned Unit Development District, to permit agricultural uses, warehousing and transportation, freight and distribution facilities.

Purpose:
To create cohesive zoning with the adjacent large undeveloped land are so that any potentially developable land in this area is consistently designed and incorporated into future potential development plans for the adjacent property in General Development Area 3.

Description:
Zoning this area to be consistent with the General Development Area 3 will help promote a cohesive design for the area should development occur within the adjacent area and need to include or consider impacts on this area. By providing the same regulations, non-direct development project issues such as streetscape elements, drainage, potential connectivity issues, etc can be more easily considered in an attempt to create a cohesive gateway and comprehensive development plans should property be proposed for development.

Rationale:
This area comprises the NYS Thruway Interchange area and the associated I-890 interchange ramps to State Route 5. There is little likelihood that land in this area will be developed, however, with the adjacent General Development Area 3 being rezoned to PBDD, if future development potential or conditions warrant inclusion of this area into the design/development of the adjacent district, it is logical to include it now under a comprehensive rezoning scheme.

Envisioned Potential Development: 0 Acres



General Development Area 3

Recommendation:
Change existing B-2 General Business District & I-1 Light Industrial District Zoning Classifications in this area to create a Planned Business Development District (PBDD), a modified version of the C-PUD.

Recommended Zoning:
Planned Business Development District (PBDD) – Modify the existing C-PUD – Commercial Planned Unit Development District, to permit agricultural uses, warehousing and transportation, freight and distribution facilities.

Purpose:
To create a planned business-type development in the portion of the corridor with the largest undeveloped land area and the most accessibility to regional and inter-state roadways.

Description:
This district will encourage retaining the existing agricultural use, but provides guidance for the future should the land be sold for development. Should development occur, the vision for this area is to become a gateway to the corridor study area through development of a mix of uses that can take advantage of the transportation infrastructure that exists, namely I-890, Route 5S, Route 5 and the NYS Thruway.

Rationale:
There is a call from the public and local officials to consider economic development uses in the corridor study area, however there is also a need to try and retain the existing character of the area. This site has some of the best accessibility in the region for an undeveloped site and with I-890 and the NYS Thruway just a few hundred feet from the parcel(s). Regional retail, warehousing and trucking-related businesses could provide the desired economic development while minimizing the potential impact on the existing character of the area, quality-of-life and just as important, minimize the potential transportation infrastructure improvements and associated costs that could be

required should this type of development located further north along Route 5S. With the roadway system now in place and other features such as the CSX rail line, it is also not the best location for residential uses, and as such, the area lends itself to be considered for non-residential, higher traffic type uses.

Envisioned Potential Development:
96 Acres of developable land, approximately 50% is within the floodplain on the east side of Route 5S. Therefore, approximately 48 acres is considered to be easily developable.

Under the proposed zoning, the following conceptual buildout is estimated:

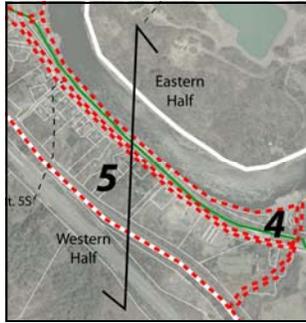
48 Acres
x 0.8 (20% typical reduction - roads, parking
stormwater management, etc)
38.4 Ac
x 0.6 (Assume 60% lot coverage)
23 Ac (Developable Land)

= Approx. 300,000 s.f. non-residential building area & associated parking

Assume 100,000 s.f “big box” store
Approximately 7,100 trips/hour peak-Saturday
Approximately 5,600 trips/hour peak-Weekday

Assume 200,000 s.f. distribution facility
Approximately 1,394 trips/hour –Weekday

(Note: trips calculated using the ITE Trip Generation Manual—7th Edition)



General Development Area 4

Recommendation:
Retain the underlying existing Zoning Classification A1 and add the LC—Land Conservation Overlay District to this area.

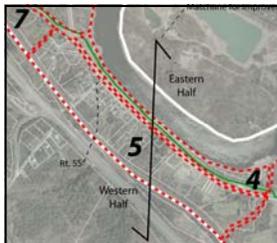
Purpose:
To provide for the preservation of recreation, open space or environmentally sensitive lands, protect the aquifer area, and facilitate the preservation of wetlands and other lands unsuitable for development.

Description:
The uses permitted in the LC Overlay District include conservation easements, public parks and recreation areas, pumping and/or treatment of public water supplies, wetland mitigation areas.

Rationale:
This portion of the corridor study area is intended to remain as open space and has little ability to be easily developed. It is recommended that the LC Overlay zoning be provided to assist in preserving the area as open space and minimize potential future development pressure, despite private development of the area being highly unlikely due to access restrictions related to I-890.

Envisioned Potential Development: 0 Acres

General Development Area 5



Recommendation:
Retain and expand the R-1 Residential District to replace the A – Agricultural District Zoning Classification to provide R-1 throughout this area.

Purpose:
To permit single-family dwellings, and typical medium-density uses on lots of no less than 15,000 square feet.

Description:
This existing zoning district covers just less than 50% of area 5. The district permits me-

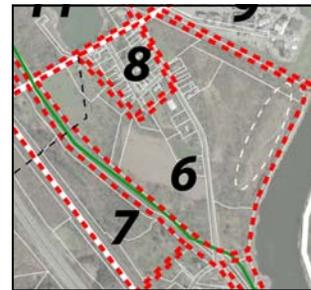
diu-density residential and related uses such as churches, schools, parks and special uses such as golf courses, care homes, and day-care centers. It provides for medium-density type lot coverage of 45 percent, and larger minimum lot sizes (20,000 square feet) for residential lots served by individual water and sewer systems.

Rationale: Much of the area is currently developed in a manner generally consistent with the R-1 zoning regulations. Three existing lots are significantly larger than that required by the R-1 providing the potential for subdivision of the larger lots, but only if adequate street frontage is available. Given the nature of the area currently, retaining the medium-density zoning district is consistent with the vision of the corridor for this area.

Envisioned Potential Development:
21 Acres
x 0.8 (typical reduction - site constraints, roads)
16.8 Ac
- 3 Ac (land for existing residential structures)
13.8 Ac

If adequate road access is available, there is the potential for up to 30 single family homes. This would produce approximately 280 weekday Trips.

General Development Area 6



Recommendation:
Change existing R-1 Residential, B-2 General Business District and A – Agriculture Zoning Classifications in this area and implement the NC-1 Small Neighborhood Center District.

Recommended Zoning:
NC-1 Small Neighborhood Center District

Purpose:
To create a mixed-use office and residential district that allows a mixture of complementary uses, provides flexibility in the siting and design of new developments and redevelopment.

Description:
This district is intended to retain the quality-of-life of Lower Rotterdam Junction and build on



it with transition-area type uses that buffer the existing homes from the adjacent industrial use, the NYS Canal Corporation Upland Disposal Site for Dredge Spoils (which is being retained for on-going dredging activities), and to provide economic development in a manner consistent with retaining the general character of this section of the corridor study area. Consideration of the minimum set-back for new buildings should be made to ensure that adequate area is retained for providing sidewalks and a grass strip, as well as minimal potential road widening for an on-street bicycle lane.

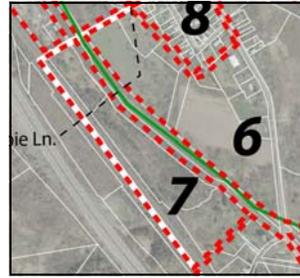
Rationale:

Lower Rotterdam Junction is an existing residential hamlet that provides a good foundation to consider expanding the “village concept.” Taking cues from the existing area, it should be relatively easy to create complementary new development and entice developers to build the mixed-use village design. This zoning designation is consistent with the rezoning needed to permit new economic development opportunities and to provide cohesive and complementary uses that support the existing residents. Development within this District will reinforce streets as public places that encourage bicycle and pedestrian travel, provide connections between the development and existing areas, work to maintain mobility along State Route 5S, encourage efficient land use by facilitating more compact development, connected streets and minimal off-street parking, and facilitate development that supports the potential extension of CDTA bus service.

Envisioned Potential Development:

52 Acres
x 0.8 (typical reduction - site constraints, roads)
41.6 Ac
x 0.5 (approximate floodplain area)
20.8 Ac

Given the mixed-use nature of this district, it is difficult to approximate the potential future build-out, however assuming first-floor non-residential and second floor residential uses in all cases, there is the potential for up to 60 residential units (calculated as needing 15,000 s.f. of land area per unit), and 60 non-residential businesses (calculated as needing 15,000 s.f. of land area per business, and providing 5,000 s.f. of floor area per business). This would produce approximately 400 weekday trips from the 2nd floor apartments and 3,300 trips from the businesses .



General Development Area 7

Recommendation:
Retain and expand the R-1 Residential District to replace the A – Agricultural District making R-1 throughout this area.

Recommended Zoning:
R-1 Residential

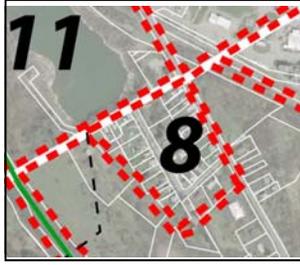
Purpose:
To permit single-family dwellings, and typical medium-density uses on lots of no less than 15,000 square feet.

Description:
This existing zoning district would be expanded from General Development Area 5. The district permits medium-density residential and related uses such as churches, schools, parks and special uses such as golf courses, care homes, and day-care centers. It provides for medium-density type lot coverage of 45%, and larger minimum lot sizes (20,000 square feet) for residential lots served by individual water and sewer systems.

Rationale: Much of the area is currently developed in a manner generally consistent with the R-1 zoning regulations. Some existing lots are significantly larger than that required by the R-1 providing the potential for subdivision of the larger lots, but only if adequate street frontage is available. Given the nature of the area currently, the transportation improvements recommended, and the desire to minimize potential capacity improvements, which along Route 5S in this location would be very expensive due to natural constraints, retaining the medium-density zoning district is consistent with the vision of the corridor for this area.

Envisioned Potential Development:
18 Acres
x 0.8 (typical reduction - site constraints, roads)
14.4 Ac
- 1 Ac (land for existing residential structures)
13.4 Ac

If adequate road access is available, there is the potential for up to 29 single family homes. This would produce approximately 277 weekday Trips.



General Development Area 8

Recommendation:
Change existing R-1 Residential, B-2 General Business District and A – Agriculture Zoning Classifications in this area and imple-

ment the NC-1 Small Neighborhood Center District.

Recommended Zoning:
NC-1 Small Neighborhood Center District

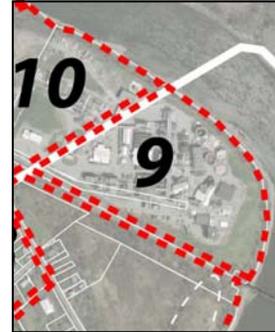
Purpose:
To retain the existing character and residential uses in Lower Rotterdam Junction, but provide the flexibility to be part of the potential economic development of the corridor study area.

Description:
For undeveloped or underdeveloped parcels, this zoning designation will be consistent with that being recommended for area 6, and thus, will help to create a single mixed-use office and residential district that is built off of the existing uses and character of Lower Rotterdam Junction. This district will permit a mixture of complementary uses, provide flexibility in the siting and design of new developments and redevelopment, though it is likely that the zoning regulations will be mainly be used only to convert existing residential homes to mixed-use, and this will likely be on a somewhat limited scale.

Rationale:
This area is currently a mix of three different zoning districts. In trying to expand Lower Rotterdam Junction into adjacent undeveloped areas and maintain the hamlet feel, it is important to create a cohesive zoning district designation for the entire hamlet area (that will include Lower Rotterdam Junction and the adjacent area (Area 6)), instead of providing several small zoning districts. By rezoning this district to NC-1, it will also provide economic development opportunities to existing residential property owners by providing them with the opportunity to convert their existing homes to mixed-use (subject to the regulations of the NC-1 Zoning District, of course).

Envisioned Potential Development:
There is no measurable development potential given the essentially built-out nature of this area.

Most changes will consist of infill of existing over-sized residential lots, of which there are only a few, or more likely changes in the use(s) within existing residential structures if they are converted to mixed-use.



General Development Area 9

Recommendation:
Retain existing zoning classification

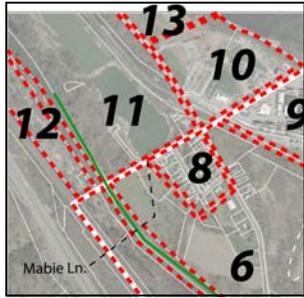
Recommended Zoning:
I-2 Heavy Industrial District

Purpose:
To permit heavy industrial uses

Description:
This district provides for heavy-industrial uses such as dry-cleaning facilities, car washes, bottling plants, kennels, lumberyards, electronic manufacturing, laboratories, machine shops, landfills, and by special use manufacturing and processing uses, junk and salvage yards and commercial extraction uses.

Rationale:
SI Group utilizes the area of this entire zoning district and is a viable use that is expected to remain. The zoning for this district is to remain “as-is”, however the existing I-2 zoning line will be moved to the southern edge of the railroad right-of-way since the railroad creates a rational edge for the industrial zoning district. This additional land adjacent to the railroad tracks is recommended to be rezoned as General Development Area 6. This will create a larger buffer use between SI Group and Lower Rotterdam Junction and provide more potential area for mixed-use development focused on State Route 5S.

Envisioned Potential Development: 0 Acres



General Development Areas 10-13

For the east, south and north boundaries of the corridor study area, there were logical physical breaks that established the boundaries. General Development Areas 10-13 were considered in the context of this planning study because of their proximity to the corridor study area and the potential impacts and considerations of these areas.

- Area 10 contains SI Group, which is partially within the study area. The main curb-cut to Route 5S is located just outside the study area, but because of its location and design, a recommendation was made to narrow the curb-cut.
- Area 11 is a former quarry owned by the Town of Rotterdam. A recommendation was made to connect the Mohawk-Hudson Bike-Hike Trail to the property when the park in the former quarry is opened.
- Area 12 contains a junkyard which is potentially viable passive open space if the property is remediated in the future.
- Area 13 contains cultural attractions, such as the Mable Farm and Native American Center, which both have a regional presence. For this reason, this Study recommended providing an off-street pedestrian and/or bicycle link to the sites for current and future residents and visitors to Lower Rotterdam Junction.

The Town of Rotterdam was recently awarded a Brownfield Opportunity Area (BOA) grant from the New York State Department of State to develop a Land Use plan for this area.

There was no detailed study of these areas other than the recommendations made above, which are intended to enhance conditions for Lower Rotterdam Junction. The inclusion of these areas was done to ensure that recommendations made in this plan are not inconsistent with the adjacent area, and as part of the larger geographic review of the region.



Route 5S west of the corridor study area



Beginning of 55mph speed zone west of the corridor study area

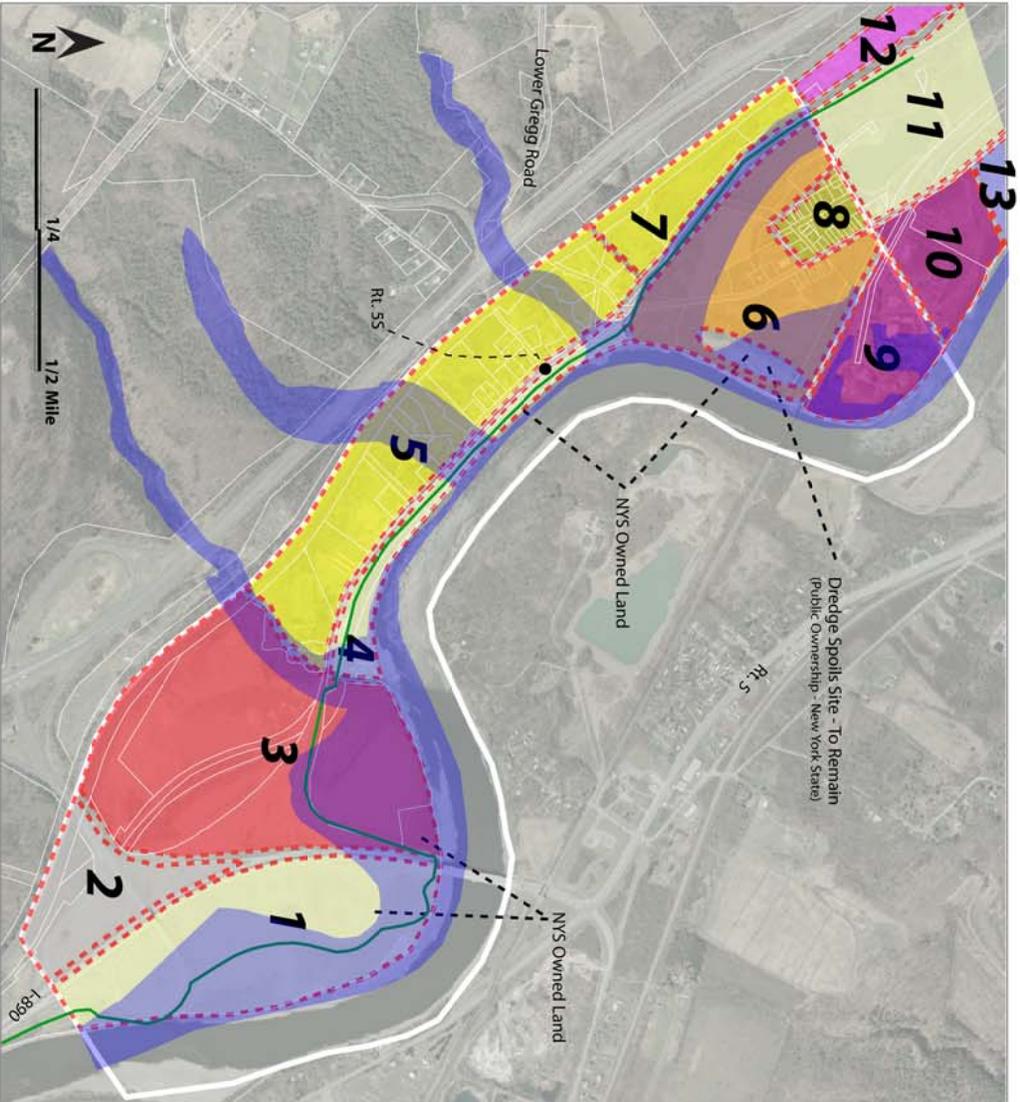


- Study Area Adjacent Uses**
- 10 Heavy Industrial
 - 11 Vacant - Public Open Space
 - 12 Junkyard/Light Industrial
 - 13 Cultural Resource

Corridor-Wide Policy:
Future access to Rt. 55 shall be through shared driveways, controlled intersections or via access to a lower classification road. Any individual non-residential access to Rt.55 shall be right-in/right-out only.

Any Land Development Along the Mohawk River must Provide a 50' Natural Area Buffer That Permits Public Access: for Potential Use as a Riverside Pathway or Trail.

- Floodplain
- Future Land Use Boundary
- 11 Future Land Use Areas
- Mohawk Hudson Bike-Hike Trail



- Study Area Proposed Uses**
- 1 Vacant - Public Open Space
 - 2 Utility - No Development Potential
 - 3 Agriculture/Farming Light Industrial - Distribution Uses Community/Regional Retail
 - 4 Vacant - Public Open Space/Park
 - 5 Medium Density Residential & Rural Light Industrial
 - 6 Agriculture/Farming Mixed-Use Office/Residential (Contains Dredging Area)
 - 7 Medium Density Residential
 - 8 Residential/Secondary Mixed-Use
 - 9 Heavy Industrial

Conceptual Future Land Use Plan - Preferred Alternative



Mohawk River Shoreline Looking West from the I-890 Bridge

Corridor-Wide River Shoreline Buffer Recommendation

Recommendation:

Require developers to provide a minimum 50' foot natural riverfront shoreline area buffer adjacent to the shoreline that also provides a public access easement as far from the river edge, but within the buffer area, as possible. The Town may want to consider at least doubling the buffer area width to 100 foot to provide greater protection of the shoreline area.

Description:

The corridor study area contains significant sensitive natural features such as floodplain areas, streams and creeks, wetland areas and undeveloped land. This study recognizes that with potential future development, encroachments into sensitive areas could occur. The Town currently has standards protecting natural features, however, an area of concern is the Mohawk River shoreline which provides significant benefits for cleaning stormwater runoff entering into the River, assists in preventing erosion of the shoreline, provides animal habitat, and would be altered or changed with future development.

Within the 50 foot buffer, it is recommended that a certified landscape architect be used to undertake a site visit to determine existing vegetation that should be retained and to prepare a plan showing the future buffer area design, potential public footpath location and other relevant buffer considerations.

It has been shown that shoreline edge areas are critical natural areas that filter contaminants in runoff water, thus assisting in keeping waterbodies such as the Mohawk River clean, provide animal habitat, and these areas help contain

floodwaters. This recommendation is a minimum buffer width protection area.

Riverfronts are valuable natural resource areas and if designed properly, can provide minimally-invasive public access that promotes the preservation of these areas by educating people on the benefits of preserving natural buffers adjacent to waterways. The need to preserve the riverbank can be integrated with the desire to provide public access. It is for these reasons that the Open Space & Green Ribbon Option is proposed as a potential future land use option.

Rationale:

The Town should work with landowners and developers to protect valuable open space before, or as part, of land development. It is cheaper to work at preserving areas prior to, or as part of, development than to try and re-create it in the future after a site has been developed.

The undeveloped natural shoreline area along the Mohawk River is somewhat unique given the built-up nature of the river in many adjacent communities. Protecting the existing vegetation and habitat, and re-creating the necessary minimal natural buffer elements, if they don't exist, should be a high priority.



**Proposed
Shoreline
Buffer
Area**

Corridor-Wide Open Space & Green Ribbon Option

Recommendation

Consider creating a “Green Ribbon” of preserved open space along the riverfront, Figure I-8.

Description

The corridor study area currently has significant acreage owned by NYSDOT, the NYS Canal Corporation and the Town of Rotterdam. This includes the large area east of I-890 between I-890 and the Mohawk River, the narrow strip of land between State Route 5S and the Mohawk River from Kiwanis Park to approximately the trail crossing of Route 5S, and just outside the study limits, the former Bonded Concrete site. With some key purchases of land, easements or development rights, this section of Rotterdam could become an open space preservation node in the Town. In addition, retaining key parcels will help to retain the general character of the area as new development is built and, with the right purchases, retain existing vital floodplain area.

Depending on the particular location, the open space could have many different uses including active recreation such as soccer or baseball fields, passive un-programmed open space, nature trails, extension loops off of the Mohawk Hudson Bike-Hike Trail, connections to the future expanded Lower Rotterdam Junction which may have small shops or stores useful to trail users or recreation field users, and connections to a potential future Town Park at the former Bonded Concrete Site. As shown on Figure I-8 with select purchases, the “Green Ribbon” concept could connect most open



**Mohawk Hudson Bike-Hike Trail
Parallel to Route 5S**

space areas via the existing Mohawk Hudson Bike-Hike Trail.

Rationale

With the amount of land already owned by public agencies, there is the potential to acquire the land between the existing publicly owned parcels and create the “Green Ribbon” of open space shown on Figure 1-8. This green ribbon would run along the riverfront and generally along or adjacent to the existing Mohawk Hudson Bike-Hike Trail, incorporating two of the somewhat unique aspects of the corridor study area. The specific use of the open space would need to be considered further, but potential uses have been outlined in Figure I-8. Completion or partial completion of this system along with additional nature trails, the riverfront buffer area, and potential active or passive park lands would make this corridor an “Open Space Node” within the Town of Rotterdam and a real potential destination for residents and visitors.

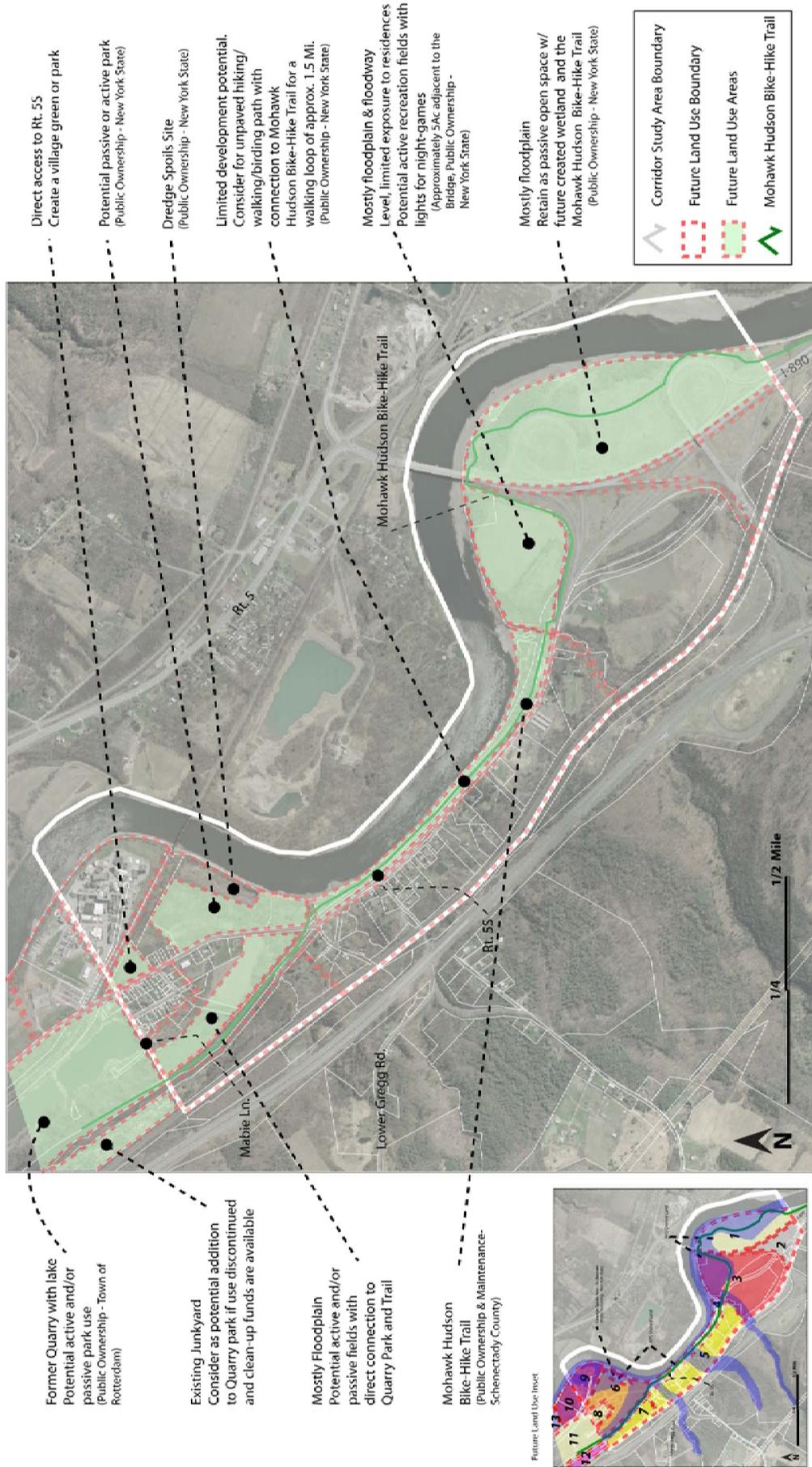


Former Bonded Concrete Site - Potential Future Town Park

Exit 26 & I-890
Land Use and Transportation Study



Town of Rotterdam
Schenectady County, NY



Open Space & Recreation Green Ribbon Option - Conceptual Alternative

Figure I-8
WilburSmith
ARCHITECTS

NYS Thruway Exit 26 & I-890
Land Use & Transportation Plan
March 2008

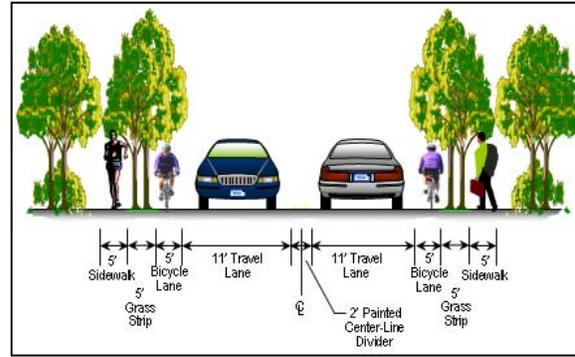
IV. RECOMMENDED TRANSPORTATION ALTERNATIVES

It was evident from discussions with Town officials, the SAG, and at public meetings that the land use form desired was mixed use that minimizes the potential need for future transportation infrastructure expansion or improvements, incorporates development patterns that make expanding bus service to the area feasible, and generally retains the character of the corridor study area. The improvements proposed in this study assist in maintaining an acceptable transportation level of service, but are also intended to help mitigate potential issues that may be factors leading to the higher than normal crash rates (See Table 1) and prevent additional potential new corridor safety issues from developing. This study should not, however, be interpreted as being the definitive answer to Route 5S crossing issues. A closer engineering/design examination with the input of NYSDOT will help further refine and justify some of the proposed improvements.

The recommendations proposed for this study were divided into two geographic regions - east and west. The improvements assume that current level of service is acceptable, that the preferred land use plan will be implemented, and that as a result, the level of service along Route 5S will be considered generally acceptable at build-out because the number of trips along Route 5S will not exceed the congestion threshold of the road for an unacceptable amount of time (i.e. peak hour times may experience unacceptable congestion, but the cost-benefit does not dictate expensive expansion options to Route 5S).



Undeveloped Land East of Lower Rotterdam Junction



Conceptual 2-lane Cross-Section for Route 5S

Conceptual Transportation Improvements - Corridor Study Area Eastern Half

The eastern half of the corridor study area is less developed, has direct access to I-890 and the NYS Thruway Interchange, the beginning of Route 5S, and also has the most undeveloped land providing for significant potential future development.

The recommendations include the following and are found in Figure I-9:

- Access Management for Kiwanis Park to better define the one-way entrance and exit circulation.
- Ensure that vegetation is cleared at the Kiwanis Park Driveway crossings of the Mohawk Hudson Bike-Hike Trail, and add signage for both vehicles and bicyclists/pedestrians warning of the crossing.
- Consolidate driveways for the two existing light industrial uses on the west side of Route 5S with future development and/or construction of a roundabout if deemed appropriate.
- Work with CDTA to determine if re-routing the Route 78 bus along Route 5S is feasible and if so, locating a bus pull-off in Lower Rotterdam Junction (Note: CDTA is currently evaluating routes in Schenectady County).
- Continue inspection and maintenance of the pedestrian facilities on the I-890 bridge over the Mohawk River.
- Provide access from the large potential development parcels to a roundabout or other access management intersection only, with other Route 5S access points being permitted as right-in/right-out only.
- Create a stopping area along the Mohawk Hudson Bike-Hike Trail at the future NYSDOT wetland mitigation project.



- Corridor-Wide Policies:
 - Future access to Route 5S shall be through shared driveways, controlled inter sections, or via access to a lower classifica tion road. Any individual non-residential access to Route 5S shall be right-in/right-out only.
 - Any land development along the Mohawk River must provide a 50' natural area buffer and Public access easement for potential use as a river-side pathway or trail.
 - Work with NYSDOT to ensure vegeta tion is cleared from clear sight triangles on a regular basis.

Conceptual Transportation Improvements - Corridor Study Area Western Half

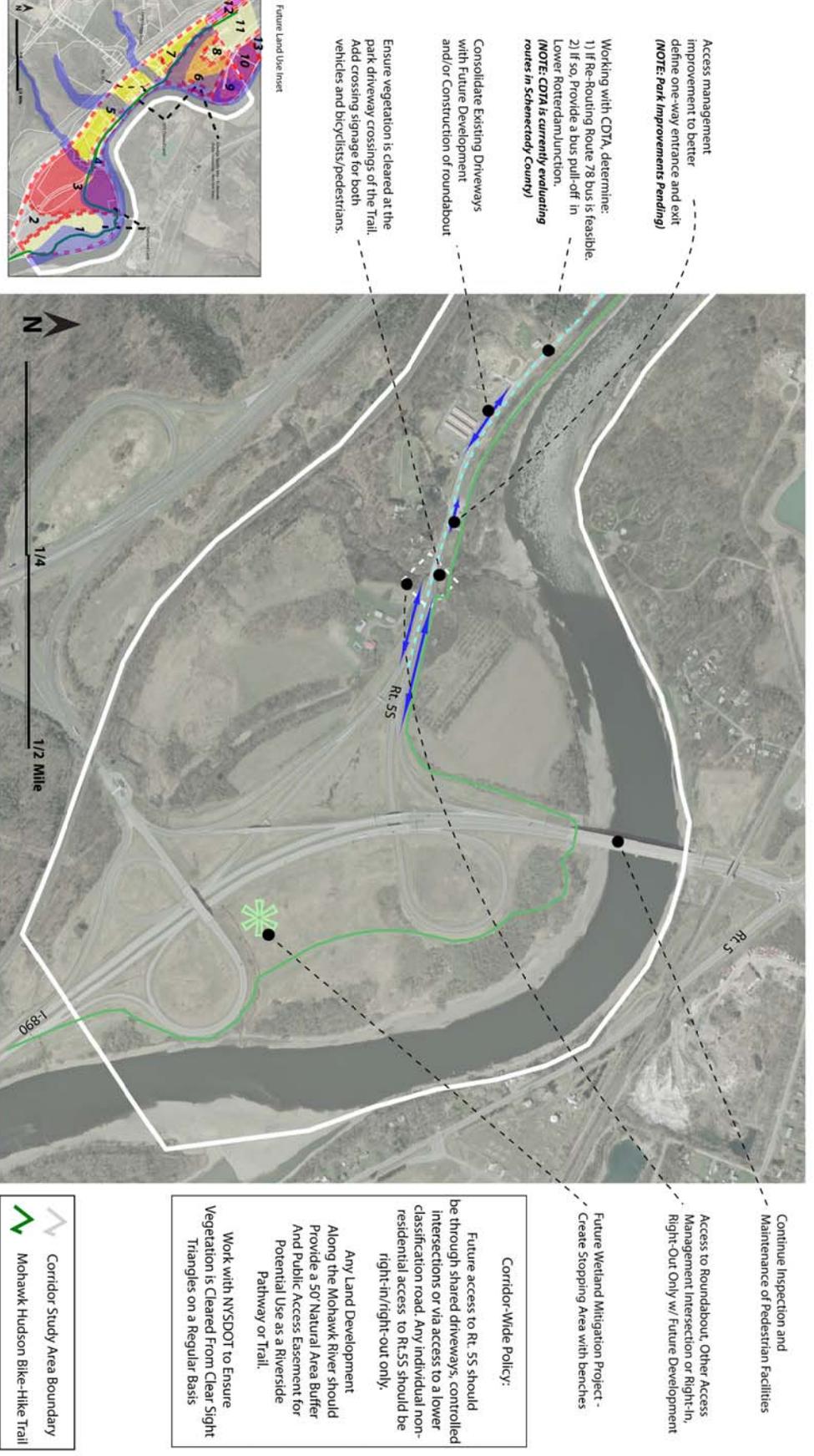
The western half of the corridor study area is more developed, with a mix of uses in Lower Rotterdam Junction, though there is significant undeveloped land with frontage along Route 5S south of Lower Rotterdam Junction.

The recommendations include the following and are found on Figure I-10:

- Close the western intersection of Lower Gregg Road at Route 5S and realign the eastern intersection to a 90' angle with Route 5S.
- At the Lower Gregg Road "T" intersection, place directional signage to improve safety of turning movements by preventing vehicles from crossing over the centerline of Route 5S to make a turn (interim step until road intersection improvements above are implemented).
- Narrow the curb-cut of Old Crawford Road at Route 5S and move the road inter section west to improve the sight-line onto Route 5S (narrow by choking-down the existing pavement on the eastern side).
- Provide crossing improvements for the Mohawk Hudson Bike-Hike crossing over Route 5S (See Crossing Improvements Map).
- Retain the existing dredging area for future dredging activities. Buffer this area from any future adjacent uses.
- Require access for any development between Old Crawford Road and Mabie Road on both roads (density minimum may need to be considered for this requirement).
- Add street trees and pedestrian scale lighting along Route 5S where sidewalk is proposed. Consider potential lighting and tree design and require similar design for new

development. Consider the potential to provide large street trees on the east side of Route 5S where overhead utility poles and lines do not exist, and shorter trees that will not interfere with the overhead utility poles and lines on the western side of Route 5S.

- Add the following along Route 5S:
 - 5' concrete sidewalk with a 5' grass strip to both sides of Route 5S between Mabie Lane and the Mohawk Hudson Bike-Hike Trail. Construct the west side improve ments now, east side improvements with future development.
 - Curbing and shoulder striping to create a feel of a narrower roadway.
- Provide a 5' bicycle lane along Route 5S west of the Mohawk Hudson Bike-Hike Trail crossing.
- Ensure adequate signage is provided at Mabie Lane and Route 5S to direct trail users.
- Narrow the existing SI Group driveway curb-cut. Provide a main entrance with parking area access from an internal drive way only.
- Ensure vegetation is cleared at the Mabie Lane crossing of the Mohawk Hudson Bike-Hike Trail.
- Improve trail crossing signage on Mabie Lane and on the Trail for users of the Trail and Mabie Lane.
- Repave Mabie Lane.
- Create a direct connection from the future park to the Mohawk Hudson Bike-Hike Trail.
- Replace/fix the existing deteriorating rail road crossing on Route 5S.
- Work with CDTA to determine if re routing the Route 78 bus along Route 5S is feasible and if so, locate a bus pull-off in Lower Rotterdam Junction (Note: CDTA is currently evaluating routes in Schenectady County).
- Corridor-Wide Policies:
 - Future access to Route 5S shall be through shared driveways, controlled inter sections, or via access to a lower classifica tion road. Any individual non-residential access to Route 5S should be right-in/right-out only.
 - Any land development along the Mohawk River must provide a 50' natural area buffer and Public access easement for potential use as a river-side pathway or trail.



Conceptual Transportation Improvement Alternatives - Study Area Eastern Half

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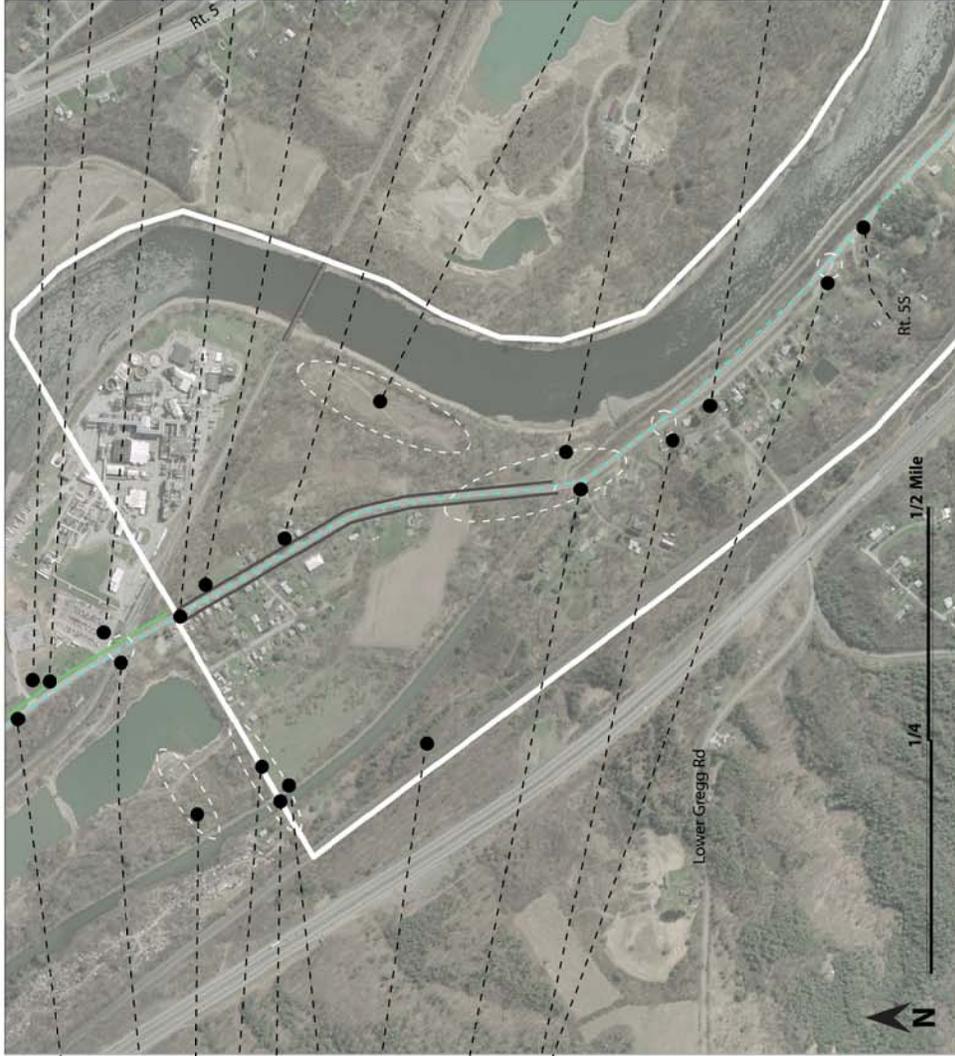
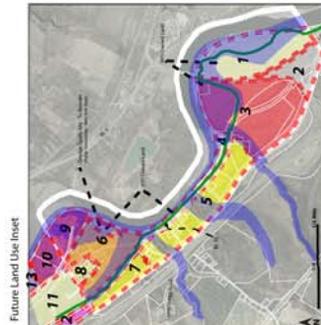
Figure I-9
WilburSmith



- Working with CDTA, determine:
 - 1) If Re-Routing Route 78 bus if feasible.
 - 2) If so, Provide a bus pull-off area in Lower Rotterdam Junction

(NOTE: CDTA is currently evaluating routes in Schenectady County)
- Replace/Fix Existing Deteriorating Railroad Crossing
- Create Direct Connection from Future Park to Trail
- Repave Mabie Lane
- Improve Trail Crossing Signage on Mabie Lane and on Trail.
- Ensure Vegetation is cleared at the Mabie Ln. Crossing of the Trail.
- Require access to both Mabie Ln and Old Crawford Road for development (density minimum to be determined)
- Narrow curb-cut and move remaining road west to improve sight-line onto Route 55
- Close western intersection and realign eastern intersection to a 90° angle with Route 55.

Corridor-Wide Policies:
See Eastern Half Map



- Evaluate LU/Trans. for Rt. 55 corridor west of the study area.
- Provide Pedestrian Connections to Cultural Sites and Rotterdam Junction
- Narrow SI Group Driveway Curb-Cut. Parking area access from internal driveway only.
- Ensure adequate signage is provided at Mabie Ln and Rt. 55 to direct trail users.
- Provide a 5' bicycle lane along Route 55 west of the Mohawk Hudson Bike Hike Trail Crossing.
- Add the following:
 - 1) 5' Concrete Sidewalk w/5' grass strip to Both Sides of Route 55 Between Mabie Lane and the Mohawk-Hudson Bike-Hike Trail.
 - Construct west side now, east side with future development.
 - 2) Curbing and shoulder striping to create the feel of a narrower roadway.
- Retain Area for Dredging Activities. Buffer from any future adjacent uses.
- Mohawk Hudson Bike-Hike Trail Crossing Improvements (See Crossing Improvements Map)
- At the Lower Gregg Road "T" Intersection, Place Directional Signage to improve safety of turning movements -
 - Rt. 55 West
 - Rt. 55 East

Conceptual Transportation Improvement Alternatives - Study Area Western Half

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Figure I-10
WilburSmith

- Work with NYSDOT to ensure vegetation is cleared from clear sight triangles on a regular basis.

Mohawk Hudson Bike-Hike Trail Crossing of Route 5S - Conceptual Alternatives

Particular attention was given to studying the crossing of the Mohawk Hudson Bike-Hike Trail over Route 5S just south of Lower Rotterdam Junction. This crossing has been a safety concern for town residents, officials, and trail users for years and some changes were made in recent years.

Safety at this crossing is still a significant concern and as a result, detailed analysis and consideration of potential measures that could make the crossing safer were considered for this study, Figure I-11. The result is a detailed planning-level outline of recommendations that could be implemented. In some cases additional engineering work is most likely necessary, to ensure that the proposed improvements are designed appropriately at this crossing location and along the approaches of Route 5S to the crossing. Some of these recommendations may not be consistent with current NYSDOT practices and designs, but it was agreed that it was appropriate to recommend all potential safety improvement options in this document and then work with NYSDOT, and utilize Chapter 9 of the MUTCD, during implementation to consider and implement all feasible and acceptable options.

- Re-angle the road crossing to shorten the crossing distance and create a sharp deflection angle in the trail, forcing bicyclists to slow-down. This may require the purchase or an easement on adjacent property.
- Provide a light-colored textured crosswalk across Route 5S
- Retain the existing high visibility trail crossing signs

- Place a weave-pattern of bollards, or similar element, just outside the right-of-way of Route 5S on both approaches of the trail crossing over Route 5S.
- Relocate the existing trail user stop signs to the area approaching the proposed weave pattern of bollards.
- Work with the adjacent property owner on the east side of Route 5S to create a design that discourages trail users from using the existing driveway and instead stay on the trail and use the crosswalk, but that still permits access to the property for the owner.
- Replace all wooden bollards with knock-down type bollards or a similar element.
- Place pavement paint warning trail users of the road crossing.
- Retain the existing Route 5S curve chevrons for eastbound traffic. Add additional chevrons for eastbound traffic and provide chevrons for westbound traffic.
- Consider a flush or raised median as a pedestrian refuge island - with any future road widening.
- Consider relocating the trail crossing to the Lower Rotterdam Junction Residential Area. This is a long-term recommendation that would require significant coordination with local property owners.
- Place signs, roadside poles, and/or landscaping on the west side of Route 5S at the crossing to prevent illegal parking.
- Retain the existing pavement paint and signs on the approaches to the crossing.

Mohawk Hudson Bike-Hike Trail Crossing - Eastern & Western Approach Alternatives

In addition to modifications to the crossing, changes to the approaches of Route 5S leading up to the crossing area are recommended to



Eastern Approach at the Trail Crossing of Rt. 5S



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Mohawk Hudson Bike-Hike Trail Crossing - Conceptual Alternatives

Figure I-11
WilburSmith

increase vehicle driver awareness of the crossing and enhance safety at the crossing include:

- Ensure vegetation is maintained to provide for the maximum sight-distance for trail users and vehicle drivers approaching the crossing.
- Retain the existing Route 5S curve chevrons for eastbound traffic. Add additional chevrons for eastbound traffic and provide chevrons for westbound traffic.
- Retain the existing bicycle crossing sign and pavement paint if two warnings are warranted or move signs to the proposed sign/pavement marking locations.
- Place high visibility bicycle crossing ahead signs further from the crossing. Consider providing trail user activated flashing crossing lights on these signs.
- Ensure significant enforcement of speed limits within the lower speed areas. Work with NYSDOT to determine if extending the lower speed zone to begin further from the crossing location, in conjunction with design changes, is warranted to mitigate speeding issues.
- Ensure that future access to proposed development sites near the crossing provide the maximum distance from the trail possible to prevent potential trail crossing/vehicle turning movements, unless a new access is permitted on the curve of Route 5S through some type of access controlled intersection, in which case the trail crossing should be incorporated into the intersection design.



Western Approach to the Trail Crossing of Rt. 5S



Eastern Approach to the Trail Crossing of Rt. 5S at Lower Gregg Road



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Mohawk Hudson Bike-Hike Trail Crossing - Eastern Approach Alternatives

Figure I-12
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Place High-1/2 Bicycle Crossing Ahead Sign. Consider ability to provide trail user activated flashing crossing lights

Relocate Existing and/or Place Additional Bicycle Crossing Ahead Pavement Paint

Retain Existing Bicycle Crossing Sign and Pavement Paint



Future Access to Undeveloped Land, if developed, should be designed with significant consideration of the trail crossing to minimize the potential to add additional conflict points. Any opportunity to use enhance safety at the crossing should be considered with future development on the adjacent land.



Potential Future Capacity Improvement Considerations

If development in the area causes the AADT to cross the congestion threshold of 10,600 vehicles per hour (two-way AADT), the Town will need to consider the cost/benefit and need for capacity improvements to State Route 5S. It is likely that the AADT along Route 5S from I-890 to a new potential Professional Business Development District (PBDD) development will create increased traffic, but depending on the type of development, the effects could be contained in the area between I-890 and the development access, thus minimizing potential future capacity improvements in this area.

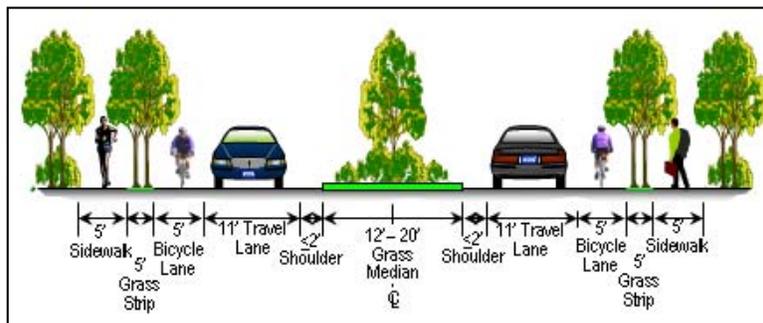
Further north the effects of development in the PBDD District are likely to be much less, again depending on the types of uses provided. The main effects in this area will come from development within General Development Areas 5, 6 and 7, and the town should be aware as development comes in what the potential increase in traffic will be so that the appropriate improvements can be negotiated with developers as development is proposed. Currently, the AADT could almost double from current counts before the congestion threshold is met and for the two-way peak hour volume to also almost double before the congestion threshold it met.

There are many considerations to make when deciding if capacity improvements are necessary. CDTC’s New Visions 2030 lists eight congestion management planning and investment principles which basically state that management of demand and operational actions are preferable to capacity expansion, and capacity expansion is only appropriate under certain conditions. If it is determined that capacity improvements are needed, further study and evaluation will likely be needed.

Environmental Justice

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

The CDTC staff undertook a review of civil rights/environmental justice impacts of transportation actions proposed under this study. Based on a review of the latest socioeconomic data available, the CDTC staff determined that there are a total of zero TAZ’s in the Corridor Study Area that are identified as Environmental Justice Target Population Areas. All of the transportation recommendations for the study would provide fair access and do not result in negative impacts to any minority or low-income residents. However, additional information gathered through the public review process could suggest a different outcome. In addition, examination of regional equity impacts would be necessary if any transportation action is considered for inclusion in the CDTC’s Transportation Improvement Program.



Conceptual Potential Future 2-lane Cross-Section

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

Environmental Justice Target Population Areas are defined as any TAZ with low income, minority, or Hispanic populations equal to or greater than the regional average.

The regional averages are as follows:

Populations	Regional Averages
Minority Population	11.2%
Hispanic Population	2.6%
Low Income Population	8.9%

V. IMPLEMENTATION

Implementation of this study is vital to the success of creating the vision for the corridor study area. Much of the implementation of this study will come through the efforts of the Town of Rotterdam through zoning changes and working with property owners and future developers.

It will be important for the Town to work closely with CDTC, Schenectady County, NYS-DOT and CDTA to ensure efforts are efficient, coordinated, and consistent with activities and actions being considered or undertaken by these other agencies. It is mainly the responsibility of the Town, through residents, community groups, the Planning Commission, and Town Board to continue to promote the ideas and recommendations contained herein and ensure that the appropriate agencies are undertaking the work that needs to be done to implement this study.

The recommendations of this study have been prioritized into near-term (2008—2013), mid-term (2013-2018), and long-term (beyond 2018). This prioritized list is intended only as a guide to implementation and is based on current known funding opportunities, current needs, and priorities of the community. All project partners realize that as opportunities arise they will need to re-evaluate the recommendations and act accordingly to further the goals of this Study.

The implementation matrix, Table 5, lists the recommended actions and concepts (found within this study and detailed on the recommendations maps), the implementing agency and the order of magnitude cost for each improvement. The order of magnitude costs are estimates only and do not include engineering/design costs, potential Right-of-Way acquisition costs, or installation costs.

Table 5: Implementation Matrix

Recommendation/Action	Description	Order of Magnitude Cost Estimate*	Potential Funding Source	Implementation Entity	Timeframe
					2008 _____ 2018
Land Use/Zoning					
Rezone 9 General Development Areas	Draft regulations to rezone land within the corridor study area to the proposed new zoning classifications	\$15,000	Municipal Funds. Consider using municipal staff where feasible.	Town of Rotterdam	
Develop a land use/transportation plan for Route 5S west of the study area	Conduct a study similar to this to analyze conditions west of the Study Area	\$20,000	Municipal Funds & CDTC Linkage Study Program	Town of Rotterdam	
Refine & implement Open Space & Green Ribbon Plan	Work toward preserving undeveloped land along the river and trail corridor	\$10,000 Planning \$15,000/acre acquisition	Municipal or County Funds, Regional Open Space Program or Lands Trust	Town of Rotterdam, Schenectady County	
Transportation					
Access Management for Kiwanis Park Driveways	Further improve/define one-way entrance and exit circulation with signage and brush clearing at trail crossing	\$8,000	Municipal or County Funds, CDTC Spot Improvements Program, Schenectady County	Town of Rotterdam &/or Schenectady County	
Re-Route Bus Route 78	Work with CDTA to re-route the 78 bus up Route 5S to Rotterdam Junction	Depends on work needed	n/a	CDTA	
Consolidate Existing Driveways for Light Industrial Uses west of Kiwanis Park	When development or redevelopment occurs or the need exists, work with property owners to modify existing access	Depends on work needed	n/a	Town of Rotterdam	
Continue Inspection and Maintenance of Pedestrian Facilities	Continue to ensure that the pedestrian facilities do not deteriorate	Depends on work needed	NYSDOT	NYSDOT	
Access to a roundabout or other access management intersection type for future development in General Development Area 3	Ensure that future development provides adequate access management through a well-designed intersection concept	Depends on work needed	Provided with Future Development	Developers, with coordination/review by the Town of Rotterdam	
Future Wetland Mitigation Project	Create Stopping Area with benches at the mitigation project	\$500 per bench	Municipal or County Funds, NYSDOT as part of mitigation project, community funding	Town of Rotterdam, NYSDOT	 (With wetland development)
Corridor-wide: Future Access to Rt. 5S shall be through shared driveways, controlled intersections or access to a lower classification road, right-in or right-out	With future development, ensure that the appropriate intersection design is used to facilitate flow on Route 5S and allow safe ingress/egress for new development	\$0.5 - \$5.0M depending on design and site constraints	Provided by developers, municipal funds, NYSDOT and TIP	Developers, with coordination/review by the Town of Rotterdam	
Corridor-wide: Land Development along the Mohawk River must provide buffer and access easement	Future development along the riverbank should provide a 20' natural area buffer and a 20' public access easement for use as a riverside pathway or trail	Depends on work needed	Provided with Future Development	Developers, with coordination/review by the Town of Rotterdam	
Corridor-wide: Work with NYSDOT to ensure vegetation is cleared from the roadside	Ensure that clear sight triangles are cleared and that adequate sight distances are maintained at intersections	Primarily labor expense	NYSDOT	NYSDOT	
Provide Pedestrian Connections west of the corridor study area	Provide pedestrian connections such as a sidewalk or pathway to the cultural sites, eventually potentially connecting with Rotterdam Junction	\$125,000/Mile-sidewalk \$700,000/Mile-Pathway	Municipal or County Funds, TIP, CMAQ Bike/Ped set-aside funds	Town of Rotterdam	 (With additional study)
Narrow Schenectady Industries Driveway curb-cut	Work with Schenectady Industries to narrow the existing curb cut and provide parking area access from internal driveway only	Depends on work needed	Schenectady Industries	Schenectady Industries	 (With additional study)
Ensure adequate signage at Mabie Ln and Route 5S.	Ensure that adequate signage is provided for trail users on the detour route from the Trail to Route 5S	\$500 per sign	Municipal or County Funds, CDTC Spot Improvements Program	Town of Rotterdam	
5' Bicycle Lane along Route 5S	Provide a bicycle lane along Route 5S west of the Mohawk Hudson Bike-Hike Trail	\$250,000/Mile	NYSDOT with road repaving, TIP, CMAQ Bike/Ped set-aside funds	Town of Rotterdam	
5' Concrete Sidewalk w/5' grass strip	Provide a concrete sidewalk and grass strip along both sides of Rt. 5S between Mabie Lane and the Mohawk Hudson Bike-Hike Trail	\$125,000/mile for sidewalk, unknown cost for ROW acquisition	Municipal Funds, TIP, CMAQ Bike/Ped set-aside funds	Town of Rotterdam	
Curbing and Shoulders	Provide curbing and shoulders with development or with road upgrades	Depends on work needed	NYSDOT with road repaving, TIP	Town of Rotterdam	
Retain Dredge Spoils Area	Retain the existing dredging area for future activities	\$0	NYS Canal Corporation	NYS Canal Corporation	
Lower Gregg Road "T" Intersection Improvements	Place directional signage to direct traffic headed east or westbound on Rt. 5S	\$1,000	Municipal Funds	Schenectady County	
Lower Gregg Road Intersection Re-alignment	Close the western intersection and realign the eastern intersection to a 90' angle with Route 5S	Depends on work needed and ROW costs	TIP, NYSDOT Funds	Town of Rotterdam, Schenectady County, & NYSDOT	
Old Crawford Road Improvements	Narrow the existing curb cut and move the remaining roadway west to improve sight distance	Depends on work needed	Municipal Funds, CDTC Spot Improvements Program	Town of Rotterdam & NYSDOT	
Access to Mabie Lane and Old Crawford Road for new development	New development between the RR tracks and Trail should have two access points provided when developed	Depends on work needed	Provided with Future Development	Town of Rotterdam	
Vegetation Clearing at Mabie Lane	Ensure vegetation is cleared at the Mabie Lane Trail Crossing to ensure adequate sight distances for vehicle drivers and trail users	Primarily labor expense	Municipal or County Funds	Town of Rotterdam &/or Schenectady County	
Improve Trail Crossing Signage at Mabie Lane	Improve signage warning of the trail crossing for both Mabie Lane and trail users	\$2,000	Municipal Funds or County Funds, CDTC Spot Improvements Program, CMAQ Bike/Ped set-aside funds	Town of Rotterdam &/or Schenectady County	
Repave Mabie Lane	Repave the existing rough pavement on Mabie Lane	\$165,000 for .10 mile repaving work	Municipal Funds, Developer or TIP	Town of Rotterdam	
Create Connection to Future Park from Trail	Connect the Mohawk Hudson Bike-Hike Trail to the future park with a paved trail	\$50,000 for .05 mile (does not account for potential unknown envr. issues)	Municipal or County Funds, CMAQ Bike/Ped set-aside funds	Town of Rotterdam & Schenectady County	
Replace/Fix Railroad Crossing	The existing crossing is deteriorating and needs to be repaired or replaced	Depends on work needed	Railroad, NYSDOT, TIP	NYSDOT	

Table 5: Implementation Matrix

Recommendation/Action	Description	Order of Magnitude Cost Estimate*	Potential Funding Source	Implementation Entity	Timeframe
					2008 — 2018
Bicycle & Pedestrian					
Retain Existing Route 5S Signage and Pavement Paint	Retain the existing elements if two sets are appropriate, otherwise move to location further from crossing	\$0	NYSDOT funds	NYSDOT	
Place signs, poles or landscaping to prevent illegal parking	Prevent illegal parking off of Route 5S at the trail crossing	\$500 for reflector-type poles to \$5,000 for landscaping	Municipal or County Funds, NYSDOT funds	Schenectady County &/or NYSDOT	
Place Pavement Paint Warnings on Trail	Place pavement paint in the shape of a car to warn of the upcoming crossing of Route 5S	\$1.0 per linear foot for paint	Municipal or County Funds, CDTC Spot Improvements Program	Schenectady County	
Place Knock-Down Type Bollards	Place 2 knock-down bollards or similar element at least 50' from the ROW on each approach to warn of the upcoming crossing	\$3,000	Municipal or County Funds, CDTC Spot Improvements Program	Schenectady County	
Add Pedestrian Activated Flashing Beacons	Add flashing beacons in the pavement at the crossing	\$15,000	NYSDOT funds, CDTC Spot Improvements Program	Schenectady County, NYSDOT	
Relocate the trail crossing to Lower Rotterdam Junction	Construct new trail on the east side of Route 5S from the crossing area to a point within Lower Rotterdam Junction	Depends on work needed	Provided with Future Development, TIP, CMAQ Bike/Ped set-aside funds	Town of Rotterdam	
Relocate Existing Trail Stop Signs	Move existing stop signs at each approach	Primarily labor expense	Municipal or County Funds - Public Work Department	Schenectady County	
Replace Existing Bollards with weave pattern of bollards near ROW	Install a weave pattern of bollards to deflect trail users but permit emergency vehicle access	\$7,500 per approach (2 approaches)	Municipal or County Funds, CDTC Spot Improvements Program	Schenectady County	
Median Island in Route 5S	Consider applicability of placing a pedestrian refuge island on Route 5S at the crossing	\$15,000	Municipal or County Funds, NYSDOT, CDTC Spot Improvements Program, CMAQ Bike/Ped set-aside funds	Schenectady County, NYSDOT	
Retain High-Visibility Trail Crossing Signs and Existing Curve Chevrons	Retain existing signage	\$0	None Needed	n/a	n/a
Narrow the Travel Lane to 11'	In conjunction with other improvements, narrow the lane width, where necessary, to provide a consistent 11' lane	\$1.0 per linear foot for paint striping	NYSDOT Funds	NYSDOT	
Consider expanding lower speed limit area and/or lowering speed limit	In conjunction with other improvements, consider the applicability of expanding the lower speed zone east and possibly reducing the speed limit, if warranted	Costs may include materials but are primarily labor expense	None Needed	Town of Rotterdam, NYSDOT	
Re-Angle Crosswalk and provide a lighter colored, textured crosswalk	Re-angle the crosswalk to shorten the distance traveled over Route 5S	\$15,000 for crosswalk, unknown land acquisition cost	Municipal or County Funds, NYSDOT Funds, CMAQ Bike/Ped set-aside funds	Schenectady County, NYSDOT	
Place Solar Powered (non-cobra type) Light Poles at the Trail Crossing	Place 1 street light on each side of Route 5S where the trail meets the roadway to illuminate the crossing at night	\$7,000	Municipal or County Funds, CDTC Spot Improvements	Schenectady County	
Minimize Potential Use by Trail Users of the Driveway Adjacent to the Trail Crossing	Work with the adjacent property owner to discourage use of the driveway by trail users, but still provide access to the property.	Depends on work needed	Municipal or County Funds, Property Owner/Future Developer	Schenectady County	
Place Permanent Speed Radar Signs	Place radar speed signs on or near the trail crossing warning signs furthest from the Trail	\$5,000	Municipal or County Funds, NYSDOT Funds, CDTC Spot Improvements	Schenectady County, NYSDOT	
Place Second Set of High Visibility Crossing Warning Signs Further from the Crossing for Both Approaches	Place a second set of crossing signs to alert drivers earlier of the upcoming trail crossing, consider adding user activated flashing crossing lights	\$2,000	NYSDOT Funds	NYSDOT	
Future Access to Land Adjacent to Trail	Work with the property owner/future developer on design and location for future access to property adjacent to the crossing	Depends on work needed	Provided with Future Development	Town of Rotterdam	

* - Costs are planning-level estimates of average cost for materials only. Detailed engineering plans, installation (labor) costs and cost estimates for each element may be needed, and discretion should be used when calculating estimates for work, but generally the following should be added to the costs detailed above: Contingency - 30%, Engineering - 12%, Construction - 8% and other costs, such as right-of-way acquisition. Magnitude cost estimates were calculated using NYSDOT cost estimates, recent projects in the region with similar elements, and online research.



Funding Options

Uncertain funding times combined with the demands and needs of aging infrastructure, and other project needs, makes available funds for projects extremely competitive. Municipal budgets are stretched as far as they can be to provide the services and infrastructure expected by residents and businesses.

Financial realities bring about genuine concern regarding the fundability of future projects and needs. Transportation professionals generally agree that under current funding allocations, fiscal constraint regulations, and inflation, if current highway spending levels were to be projected out into future years, available funds will not provide adequate investment to fully maintain and enhance the transportation system that exists today.

The 2008 NYSDOT publication *Multimodal Investment Needs & Goals For the Future* states that "The dilemma facing New York State's transportation infrastructure is being replicated across the country...A new policy framework for investing in our transportation infrastructure is needed to preserve the vital transportation network and to improve it for meeting the new demands of competing in the global economy. This new policy framework should allow us to overcome the deficiencies in our transportation assets and, more importantly, to make cost-effective investments that will support our transportation system."

The potential sources of funding for future transportation projects are largely unknown. Nevertheless, project recommendations and actions must be moved forward with the expectation that there will be available funding in the future.

This financial plan provides details on potential funding sources listed in the implementation matrix.

CDTC Transportation Improvements Program & NYSDOT – Statewide Transportation Improvement Program (STIP)

Description

The CDTC is the designated Metropolitan Planning Organization (MPO) tasked with fulfilling federal laws related to transportation planning in Albany, Rensselaer, Saratoga and Schenectady counties. A significant part of this responsibility includes development of the Transportation

Improvement Program (TIP) for this region. The TIP is a staged multi-year program of proposed transportation improvements projects. MPOs, and in this case CDTC, are responsible for programming federal transportation funds for local highway and transit projects through the TIP. The TIP includes projects programmed for a 5-year period and is updated every 2 years. The CDTC receives and reviews applications from local municipalities for potential TIP projects ranging from preliminary engineering studies to right-of-way acquisition and construction. Placement in the TIP is highly competitive and local municipalities must provide a 20% local match. The current TIP covers the period 2007—2012 and will be updated in 2008 for the 2009—2014 time period.

Current Funding Allocation

Approximately \$716M for all projects listed in the current TIP.

CDTC Spot Improvement Program

Description

A funding set-aside to establish a program for projects whose scopes are too small for other funding sources. Spot Improvements are actions that address problems at specific locations such as intersections, short lengths of roadway or single destinations.

Funding

This is a competitive funding program and only solicits project applications every 2 years. Current funding is allocated at \$100,000 per year. Projects are funded 80% federal funds, 20% local match.

Transportation Enhancements Program (TEP)

Description

The TEP is a federally funded program administered by NYSDOT that provides funding for transportation projects of cultural, aesthetic, historic, and environmental significance. Eligible projects using TEP funds must be consistent with one of the following twelve FHWA categories:

- Provision of Facilities for Bicycles and Pedestrians
- Provision of Safety and Educational Activities for Pedestrians and Bicyclists
- Acquisition of Scenic Easements and Sce-

nic or Historic Sites (Including Historic Battlefields)

- Scenic or Historic Highway Programs (including Provision of Tourist and Welcome Center Facilities)
- Landscaping and Other Scenic Beautification
- Historic Preservation
- Rehabilitation and Operation of Historic Transportation Buildings, Structures, or Facilities (including Historic Railroad Facilities and Canals)
- Preservation of Abandoned Railway Corridors (including Conversion and Use for Pedestrian and Bicycle Trails)
- Inventory, Control, and Removal of Outdoor Advertising
- Archeological Planning and Research
- Environmental Mitigation to Address Water Pollution Due to Highway Runoff or Reduce Vehicle-caused Wildlife Mortality while Maintaining Habitat Connectivity
- Establishment of Transportation-Related Museums

Funding

This is a competitive funding program provided every few years. Requests for funding must be at least \$200,000, with federal funding reimbursement capped at \$2.5M per project. Funding is limited to the amount provided in each application cycle and is typically very competitive.

Congestion, Mitigation, Air Quality (CMAQ)

Description

The CMAQ program supports the air quality improvement and congestion relief goals of the USDOT and was developed to fund transportation projects and programs that will assist in reaching attainment or maintenance of the national ambient air quality standards for ozone, carbon monoxide and particulate matter. There are two categories of funding, diesel retrofits, which are not part of the planning effort of this study, and cost-effective congestion mitigation activities that provide air quality benefits, which is consistent with several of the recommendations in this study. All projects funded by CMAQ must reduce ozone, carbon dioxide and particulate matter from the transportation system and thus, contribute to the overall clean air strategy. Eligi-

ble projects must fall into one of the following general categories:

- Capital investment in new or expanded transportation projects or programs that reduce emissions, including infrastructure, congestion relief efforts, diesel engine retrofits or other capital projects
- Operating assistance for new transit services, intermodal facilities, travel demand management strategies, and incremental costs of expanding existing transit services
- Studies that are part of project development, such as preliminary engineering, under NEPA as well as FTA Alternatives Analyses.

Funding

Funding for the CDTC region totals \$24M for the current 5-year TIP program. Allocations are currently split into five categories and can change with each TIP update.

Transportation, Community and System Preservation Program (TCSP)

Description

This program provides grant funding to states, MPOs, local governments and tribal governments to develop projects that integrate transportation, community and system preservation plans and practices that provide the following:

- Improve the efficiency of the transportation system in the U.S.
- Reduce environmental impacts of transportation
- Reduce the need for costly future public infrastructure investments
- Ensure efficient access to jobs, services, and centers of trade
- Examine community development patterns and identify strategies to encourage private sector development patterns and investments that support these goals

Funding

The TCSP program is currently funded through FY 2009, with a total of \$270M being available during the 2005-2009 program period.



Recreational Trails Program

Description

This is a matching grant program administered by the Office of Parks, Recreation, and Historic Preservation. Funds are available to non-profit organizations, municipal state and federal agencies, Indian tribal governments, and other public agencies and authorities for the acquisition, development, rehabilitation, and maintenance of trails and trail-related projects.

Applicability

Corridor-Wide

Funding

Allocations change periodically. For FY 2008, there is approximately \$1.93M allocated state-wide.

High Risk Rural Roads

Description

This program funds construction and operational improvements on roadways that have accident rates for fatalities and incapacitating injuries that exceed the statewide average on rural major or minor collectors or rural roads, or that will likely have increases in traffic volume that are likely to create an accident rate above the statewide average for the respective roadway functional classification. Funds are allocated through FY 2009.

Applicability

Corridor-wide if increases in traffic are likely to create an accident rate above the statewide average. Specific accident rate studies will need to be analyzed to assess the ability to apply for these funds.

Funding

Funding levels for this program are not yet determined

New York Main Street Program

Description

New York Main Street is a state-run program operated by the Housing Trust Fund Corporation – New York State Division of Housing and Community Renewal. The program provides financial and technical assistance and resources to communities to help with efforts to preserve and revitalize the main street/downtown business districts. The program requires that the Main Street program be carried out in a concentrated area, typically no more than three contiguous blocks, that has experienced sustained physical deterioration, decay, neglect or disinvestment, and has a number of substandard buildings or vacant residential or commercial units. With the fu-

ture potential build-out of Lower Rotterdam Junction, the area may become eligible for this program, but if not, it is possible to use and develop standards for future construction that are consistent with this program and promote development/redevelopment of a cohesive Main Street.

Applicability

Villages and Hamlets meeting the following criteria: Eligible applicants include not-for-profit community based organizations, business improvement districts, and other entities pursuant to the not-for-profit corporation law that will serve as Local Program Administrators.

Eligible funding activities for designated Main Street areas include façade renovation, building renovation, downtown anchors (expand cultural or business anchors), and streetscape enhancements. Designated areas must meet the target area income standards.

Funding

Program funds are awarded on a competitive basis.

Safe Routes to School

Description

The Safe Routes to School Program is a federal-aid program developed as part of SAFETEA-LU and administered by the Federal Highway Department (FHWA) and the New York State Department of Transportation.

Eligibility

The Program provides funding for projects providing public access and use that directly or indirectly incorporate five categories: Engineering, Education, Enforcement, Encouragement, and Evaluation. A municipality or public school or district are eligible to submit for funding. The project location must be within 2 miles of a primary or middle school (Approximately 50% of the study area corridor is potentially eligible because it is within a 2 mile proximity of the Woestina Elementary School in Rotterdam Junction).

Funding:

For the 2008 funding round, the cost of a project or activity funded was covered 100% by federal funding. There was no local match required, however it is a reimbursement program. All projects must have requested a minimum of \$25,000, with a maximum cost of \$150,000 for non-infrastructure projects or \$400,000 for infrastructure projects, and a \$550,000 maximum total project cost.

Appendix A

2001 Town of Rotterdam Comprehensive Plan land use in Study Area #3 Summary

Section 2.6.22 – Rotterdam Junction

Recommendation: The most significant land use issue in this sub-area is the proximity of the public well fields to the center of the hamlet, and the high density and intensity of uses surrounding this important public water source. Rezone Zone 1 wellhead protection zone to Residential. Remove business and propose residential A-RA zoning, permit limited commercial development and implement the appropriate measures and zoning restrictions that can be imposed to minimize the threat of contamination to the hamlet's groundwater supply. The area east of the well field, from Parkis Street which is currently zoned commercial and containing several residences and a vacant parcel is recommended to be rezoned to Rural Agricultural, RA, depending on the protection zone delineations. The former Bonded Pit, now owned by the Town, is presently zoned industrial, should be rezoned to LC-2, Land Conservation Zoning for the possible development of a park. The Area includes what is commonly known as Rotterdam Junction, as well as Pattersonville, west of the Junction.

Natural Constraints: A majority of this area is located within the Mohawk River 100-year floodplain. The section of land south of NYS Route 5S contains soils generally categorized as "severe" by the County Soil Survey. A New York State designated wetland is situated south of Route 5S, running parallel to the old Erie Canal.

Existing Zoning: Zoning in this area contains an assortment of districts reflecting the mix of uses found in the hamlet. Industrial zoning is located in Lower Rotterdam Junction, on either side of Route 5S. A segment of commercial zoning is located on the south side of Route 5S, across from the SI Group site. Another strip of commercial zoning is found further west on either side of Route 5S, in the vicinity of the Rotterdam Junction well field. This strip is surrounded on all sides by R-1, Residential or A- Agricultural districts. Some industrial zoning is located south of the residentially zoned area below Route 5S. Between Rotterdam Junction and Pattersonville, the majority of land is zoned A-Agricultural. A commercial district is located along either side of Route 5S in Pattersonville. R-1 districts abut this commercial district to the northwest and southwest.

Existing Land Use: The most prominent land use in Lower Rotterdam Junction is the SI Group facility, located adjacent to the Mohawk River. According to the 1999 tax assessment database, several commercial uses are located across from the plant on the south side of Route 5S. The former Bonded Concrete gravel pit is situated north and west of the SI Group property, on the south side of Route 5S. This parcel was conveyed to the Town for use as a park.

Section 2.6.25 – Route 5S east of Marie Lane, Including Gardinier and Karl Streets, east to the Mohawk Hudson Bike-Hike Trail.

Recommendation: Rezone to R-1 Residential to reflect the existing land use which is residential except where Progressive Insurance is located in the former School and Myers Tavern at the western edge.

Natural Constraints: Property is in a wellhead protection area of the aquifer recharge area for the Rotterdam Junction Well Field.

Existing Zoning: Currently zoned retail business.

Existing Land Uses: Residential with limited business, tavern, insurance and small automotive repair.

2.6.27 Exit 26 Bridge Area

Recommendation: Between Route 5S and the Mohawk River in the floodplain area, it is recommended that the land use category be changed to LC-2, Land Conservation. This designation would preserve this area for public recreational uses, and address the limitations of this land for development due to its loca-



tion within the floodplain.

Due to the recent construction of the Exit 26 bridge, the area south of Route 5S presently zoned Commercial and Industrial should be rezoned to Industrial. Such a rezoning would encourage various commercial and/or industrial uses that locate here because of the prime access to both Rotterdam and areas across the river.

Furthermore, it may be appropriate to extend the Commercial district situated west of this area to the floodplain and east to the area to be rezoned Industrial. The area east of the Exit 26 bridge, currently zoned Industrial and Commercial, but with no public access, should be rezoned to A, Agricultural. Such a rezoning would provide consistency within the zoning map due to the fact that this area is not appropriate for commercial or industrial use (other than the existing Niagara Mohawk facility) because of the lack of access.

Natural Constraints: None

Existing Zoning: Zoning districts located here include industrial, commercial, and agricultural zones. The two commercial districts are separated by a section of land zoned A, Agricultural.

In the eastern portion of this area an industrial district and commercial district area adjacent to I-890. These districts do not have any access to any public roads. Lands within the industrial district are used by Niagara Mohawk, with access provided by a private utility-owned road.

Existing Land Use: Tax parcels in this area consist of lands owned by the New York State Department of Transportation, an orchard, a warehouse facility, and several residences.

2.6.32 Route 5S North side from proposed Residential (R-1) Boundary to the SI Group site.

Recommendation: Changes from B-2 to A(Agricultural) to be consistent with abutting zoning of parcels owned by the County and the Historical Society sites of the Native American Cultural Center and the Mabee House, respectively.

Natural Constraints: The Mohawk River is the predominant natural constraint in this area.

Existing Zoning: A strip along Route 5S is zoned General Business (B-2), the rest is already zoned Agriculture.

Existing Land Uses: Historical

2.6.34 Auto Salvage Yard at the end of Mabie Lane

Recommendation: Change the zoning of the auto salvage yard at the end of Mabie Lane from Industrial to Agricultural due to its location abutting state regulated wetland and proposed LC zone for the former Bonded Concrete site.

Natural Constraints: Property is abutting State regulated wetland and proposed LC zone for the former Bonded Concrete site.

Existing Zoning: Heavy Industrial

Existing Land Uses: Junkyard

Appendix B

Public Outreach Summary

Public Meeting #1 – Existing Conditions Presentation

The first public meeting for this project was held at the Rotterdam Junction Fire District #1 building on December 5, 2007. The purpose of this meeting was to present the existing conditions found during field review(s) of the study area and solicit input from the public regarding the accuracy of the existing conditions analysis.

The findings from the public meeting suggested that the conditions found in the field review(s) by the consultants were accurate and comprehensive. Some changes to the land use map were found to be needed and discussions about the impact of the potential build-out, and future zoning or rezoning, on water (and possibly sewer) infrastructure were discussed and recommended for additional review and consideration.

Public Meeting #2 – Presentation of Draft Conceptual Land Use & Transportation Concepts

The second public meeting was held at the Rotterdam Junction Fire District #1 Building on February 11, 2008. The purpose of this meeting was to present the proposed land use and transportation alternative concepts and solicit input from attendees regarding the proposed changes.

The comments from the public meeting suggested that the attendees were generally accepting of the proposed future land use categories and the related Rt. 5S and Mohawk-Hudson Bike-Hike trail improvement alternative concepts.

Specific comments on changes needed from the presented material included the need to keep the existing driveway from Rt. 5S at the Mohawk-Hudson Bike Hike Trail open for access to the property and to ensure that the document mentioned the need to keep tall vegetation from growing to the point that it reduces visibility around the bend in Rt. 5S at the trail crossing creating a safety concern.

Public Meeting #3 – Presentation of Study to Town Board

The final meeting for this project was a presentation of the Plan, plan concepts and recommendations to the Town Board.