

Patroon Greenway Project

A Community and Transportation Linkage Planning Project



Task 1 Report:

Existing Conditions, Opportunities and Constraints

Prepared for:

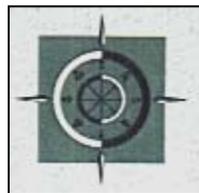


Capital District Transportation Committee

Albany, New York

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Patroon Greenway Project

Task 1 Report:

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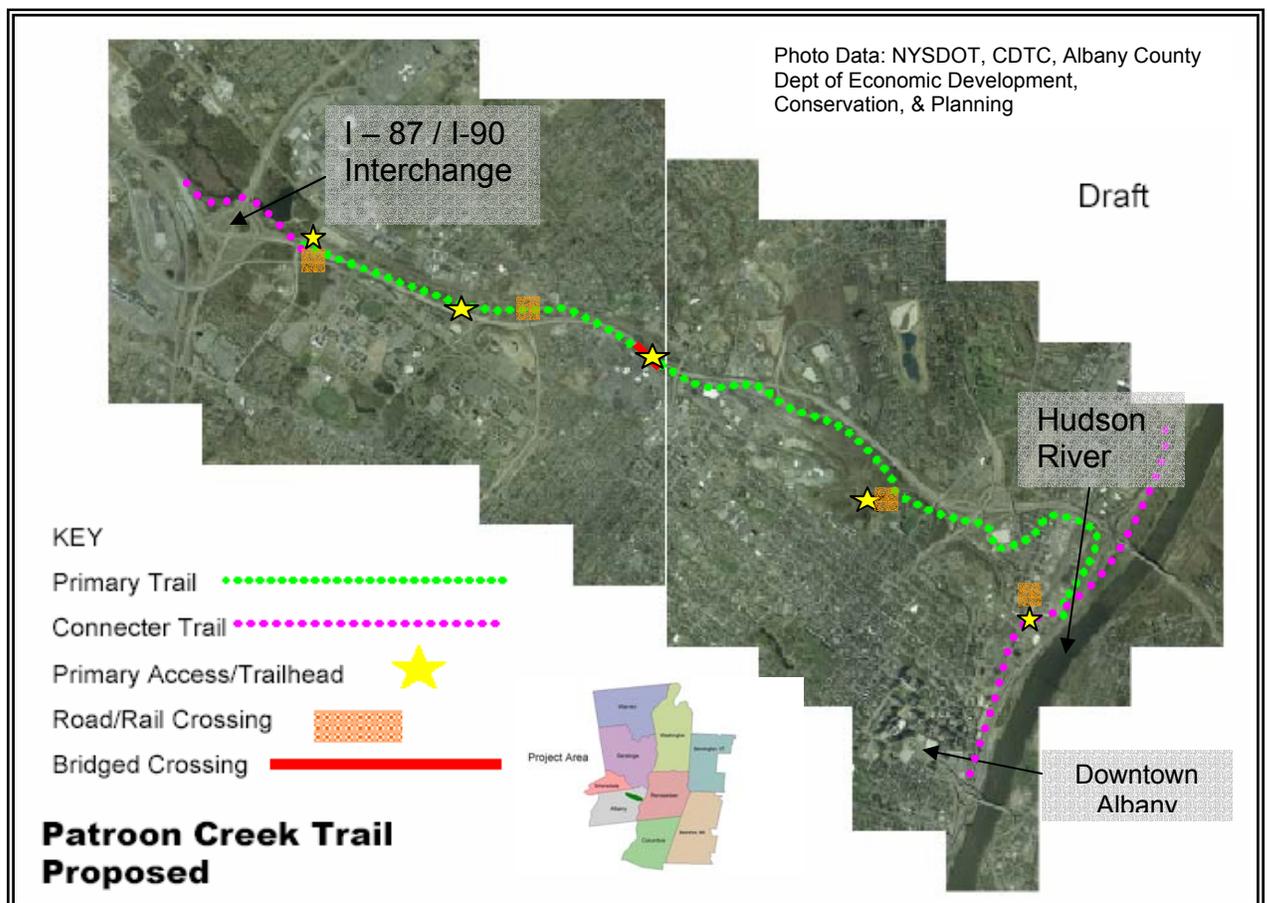
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This project is funded through the Capital District Transportation Committee's (CDTC) Community and Transportation Linkage Planning Program.

1. Overview of the Study Area

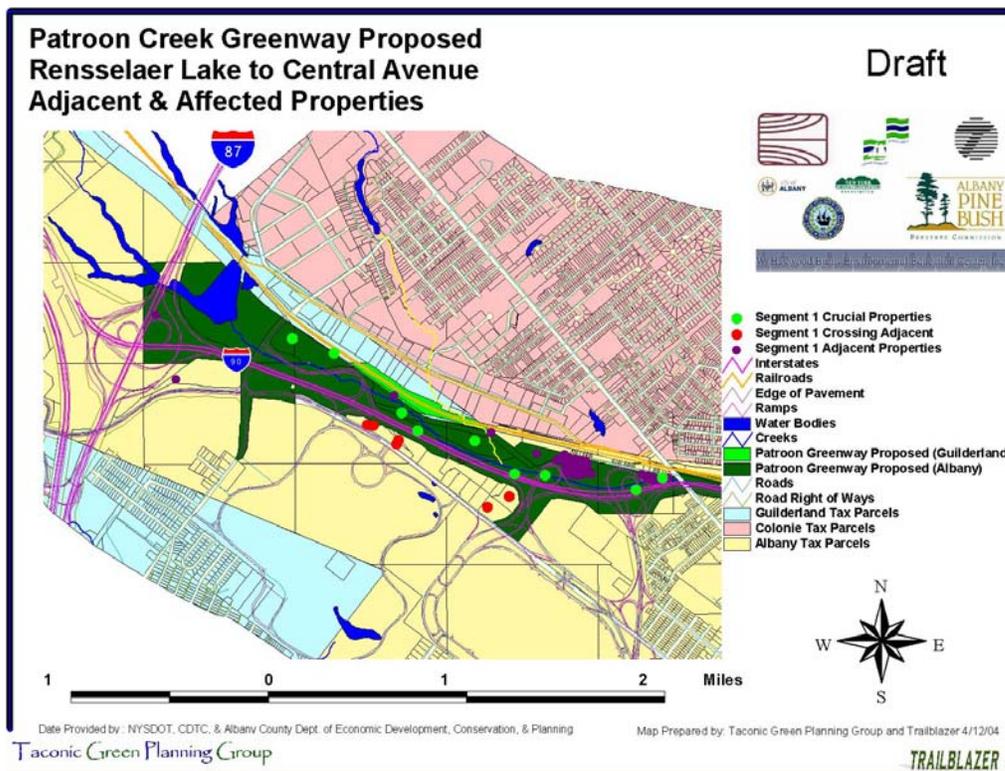
The Patroon Greenway is a project being developed to connect the communities and resources along the I-90 corridor in Albany, New York. This study is funded through the Capital District Transportation Committee's (CDTC) Community and Transportation Linkage Planning Program.

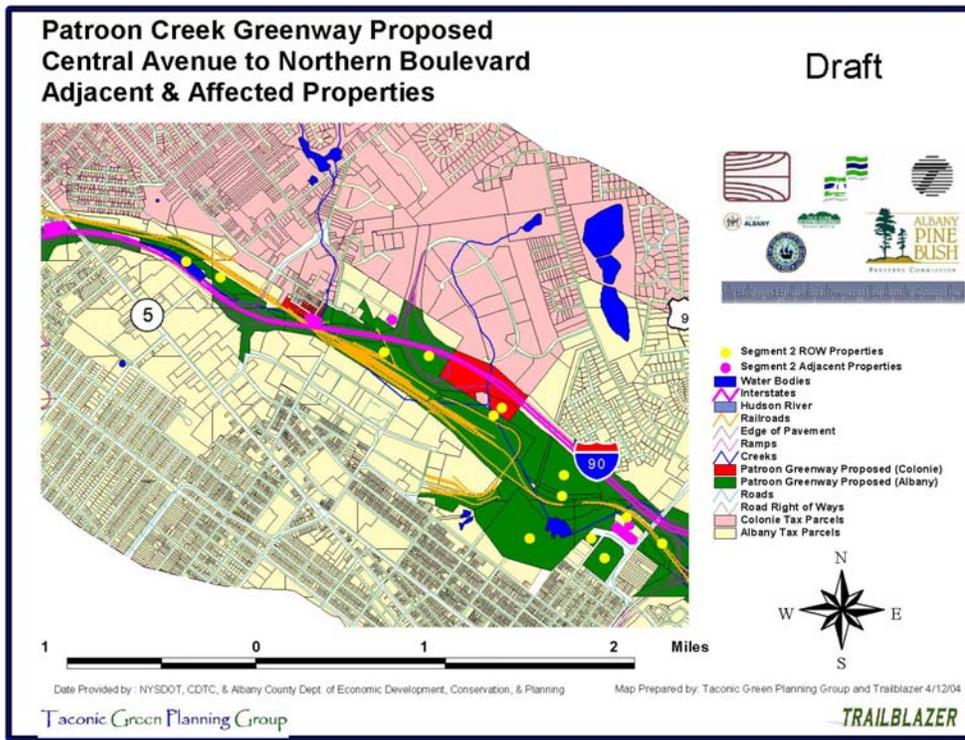
The proposed Patroon Creek Greenway Trail will be a 6 +/- mile path between the Albany Pine Bush Preserve at the interchange of I-90 / I-87 and the Corning Preserve along the Hudson River. A preliminary concept for the trail corridor was developed by NYSDOT during the preliminary planning for upcoming reconstruction in the I-90 corridor. This general concept is illustrated below.



2. Maps of Tax Parcel Ownership

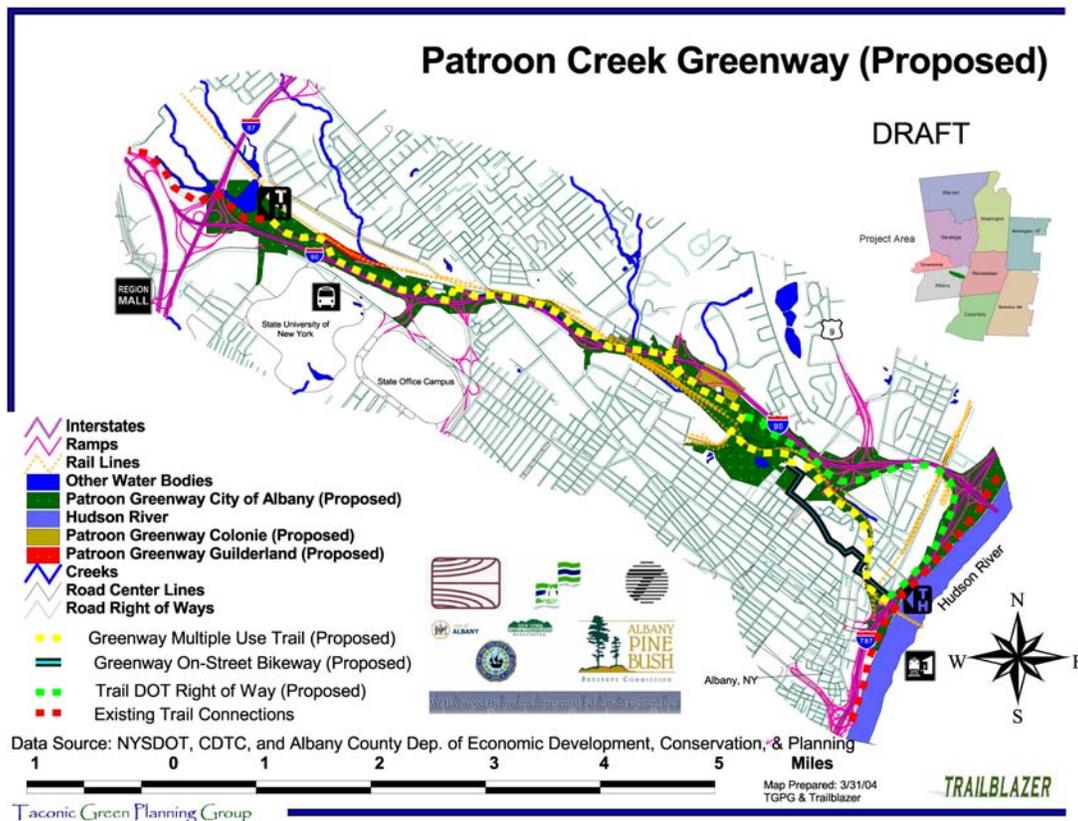
The Patroon Greenway corridor includes the NYSDOT I-90 highway right-of-way, multiple railroad tracks, the Patroon Creek (visible at the surface in some locations, diverted into underground culverts in others), sections of Albany County Sewer rights-of-way, power lines and public open spaces including the Albany Pine Bush and Tivoli preserves. Since most of the trail corridor is identified within these land holdings, there are only a few locations where private properties would be involved in developing the trail, and these are generally parcels related to connector trails which provide access to the proposed trail corridor. In the initial NYSDOT analysis which proceeded this study, the trail route was developed entirely within State-owned rights-of-way, although other alignments may potentially provide better access and connectivity for adjacent communities. The following maps illustrate land ownership along the Greenway Corridor.





3. Trail Alignment

Based on land use and ownership, a conceptual trail alignment within the Patroon Greenway corridor can be identified parallel to the Patroon Creek between Rensselaer Lake and the Tivoli Preserve. This alignment is on the north side of I-90 west of Everett Road, utilizing NYSDOT and Albany County Sewer / NIMO rights of way and an enhanced at-grade crossing of Central Avenue. East of Everett Road, the trail would cross under I-90 onto an abandoned railroad line on the north side of the main CSX track, and then utilize an abandoned trestle to cross the tracks into the Tivoli preserve. Note that detailed negotiations will need to be conducted with all land owners as part of the trail development process.



4. Route Opportunities and Constraints

There are a number of key issues related to the Patroon Creek Greenway Trail. These include physical, financial and organizational concerns as outlined below:

Opportunities:

Non-Motorized traffic connection between Albany Pine Bush Preserve at Rensselaer Lake with Tivoli Preserve utilizing existing NYSDOT and Albany County / NIMO and abandoned railroad corridor.

Congestion relief / air quality enhancement for the I-90 corridor, especially in combination with CDTA Bike on Bus service.

Access to recreation, physical fitness and nature for Arbor Hill and other urban neighborhoods.

Connection between West Albany Recreation center / athletic fields and the trail.

Potential to connect the Mohawk-Hudson Bike-Hike Trail at Schenectady and Corning Preserve.

Historic preservation of the abandoned railroad trestle and interpretation of the 'cut' east of Everett Road.

Restoration and environmental education along the Patroon Creek, including potential sections to daylight the creek.

Mitigation from the cleanup of the adjacent NL industries superfund site.

Corporate partnership with adjacent developments along the corridor to 'adopt' trail sections, including healthcare facilities, retail centers, hotels, technology companies, etc.

Potential 'connector' trails to the Hudson River waterfront, Arbor Hill, Corporate Woods, UAlbany / State Office Campus, and the new high tech facilities.

A first phase project linking Rensselaer Lake and Tivoli Lake is possible, utilizing the existing Albany County right-of-way / service road, and adding in additional connections in future phases

Educational / interpretive opportunities exist for environmental, historic and cultural resources in the corridor.

Constraints:

Potential right-of-way issues for utility right-of-way (surface access rights will have to be negotiated)

Crossings of Fuller Road, Central Avenue, and other sections will require challenging design solutions, including cantilever sections and narrow 'pinch' points along I-90. "Rail with Trail" sections may need to be considered, along with appropriate safety and security design features.

Access to the trail from a North-South direction will require pedestrian bridges and / or accommodations on existing spans to maximize use from adjacent communities and destinations.

Project timing of current NYSDOT and NYS Thruway Authority I-90 reconstruction projects may not allow for trail solutions to be integrated.

Project funding will need to compete with other regional priorities.

Public interest, support, and advocacy for the project are necessary.

Existing 'Patroon Creek' development sites between Washington Avenue and I-90 have occurred without ped/bike/trail connections, and retrofitting these facilities will be a challenge.



View of the Patroon Creek and potential trail right-of-way from the abandoned railroad trestle. Photo: J.Thomas

5. Current Land Uses

The Patroon Creek corridor includes a complex mix of land uses including single family residential, industrial, transportation, utility, commercial and institutional uses.

Major linear properties include the NYSDOT I-90 highway corridor, the CSX railroad, the former NL Industries superfund site (which is in the cleanup process), Niagara Mohawk power company properties including power lines and a new substation. Industrial properties include the NIMO site at the I-90 / I-787 junction, and a variety of industrial buildings along the railroad corridor. Freihoffer's Bakery is located in the corridor, west of Tivoli preserve.

Large scale land uses along the corridor include the State University of New York at Albany Campus (17,000 students and faculty), the State Office Campus (which is in the process of redevelopment into a high-tech center) and Corporate Woods office park.

Health care facilities within proximity to I-90 include The Albany Memorial hospital, as well a number of medical office facilities located in the "Patroon Creek" strip development along Washington Avenue.

Park and Recreation uses include the Tivoli preserve and park adjacent to Livingston Middle School, Rensselaer Lake / Albany Pine Bush preserve at Fuller Road, the West Albany recreation fields located on the north of the Corridor west of Everett Road, and the Corning Preserve along the Hudson River.

Retail and commercial uses are found along Central, Everett and Fuller Roads, Washington Ave and Northern Boulevard, including hotels and restaurants. Potential re-development of the North Albany Waterfront may be a future asset.

Residential neighborhoods include Arbor Hill, the community between Central Avenue and the Route 85 / I-90 ramps.

The redevelopment of a number of tax parcels between Broadway and Van Woert Street in North Albany, including the development of a large Asian Market, provide potential resources and connections for the Greenway corridor.

The Patroon Creek is a potentially significant environmental resource, and opportunities exist to enhance the waterway as a linear park with creek, pond and wetlands sections along the corridor.

6. Land Ownership / Right of Way Issues

The largest land owners along the corridor are NYSDOT (I-90 and related parcels), Niagara Mohawk Power Company (utility rights-of-way, substation and maintenance site), Albany County Sewer Authority (right-of-way and substations), CSX Railroad (active and abandoned lines) and the D&H / CN Railroad (active line parallel to I-787). Key issues are as follows:

1. 'Pinch Points' Along I-90 – NYSDOT: Adjacent to the I-85 / State Office Campus Ramps, adjacent to the Fuller Road I-90 westbound ramp, and between Northern Boulevard and the Hudson River.
2. Access to Bridges / I-90 Crossings – NYSDOT: The initial concept plan includes several proposed cantilever sections on existing bridges, plus possible use of existing wide shoulders in some locations.
3. Albany County Sewer / NIMO Right-of-Way: Albany County will need to arrange surface use of this easement with NIMO, who owns the property.
4. Abandoned Trestle: Critical for access across the active CSX lines north of the Freihoffer's Bakery and west of Tivoli Lake.
5. Inactive Rail Lines: Potential use of the inactive CP Rail Line parallel to I-787 between Corning Preserve Boat Launch and I-90.
6. D&H Freight Line Crossing - Access to Corning Preserve Boat Launch from Erie Street west of I-787 below the New Asian Market site.



New construction and service roads provide examples of possible trail alignments in the I-90 corridor. (Photo: J. Thomas)

7. Alignment Analysis

Based on field reviews and data collected during this phase of the project, it is possible to develop a continuous non-motorized greenway trail along the Patroon Creek Corridor between the Albany Pine Bush Preserve and the Tivoli Lake Preserve. It is also possible to connect this linear facility with adjacent land uses north and south of the I-90 corridor, and to extend the trail to the Hudson River waterfront in Albany. Key elements of this potential alignment include:

1. Development of the trail within the NYSDOT lands along the I-90 corridor, including some cantilever sections and challenging designs at several 'pinch points.'
2. Utilizing the Albany County Sewer / NIMO right-of-way.
3. Restoring the abandoned railroad trestle over the CSX tracks for pedestrian and bicyclist connections to the Tivoli Lake preserve.
4. Extending the trail between Tivoli Preserve and the Hudson River via three complimentary routes: an on-street Boulevard utilizing existing streets, a rustic footpath on the hillside behind the new Hope VI housing and a long-term multi-use path using the I-90 and/or a rail-with-trail section.

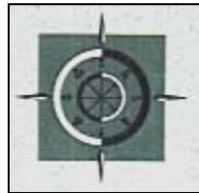
This combination of alternatives is identified in the maps shown on the following pages. These options will be developed in more detail during the alternatives analysis phase of this planning study.



The existing trestle structure over the CSX tracks is a historic resource and a potential safe crossing for the Patroon Greenway Trail. (Photo: J. Thomas)

8. Next Steps

Using the baseline information developed in this document, the next phases of the Patroon Greenway project will develop more detailed planning-level alternatives for the potential alignment of the primary trail route, produce a regional impact report, and proposed project costs. Public involvement meetings will be conducted, as well as ongoing discussions with participants on the project advisory committee. As always, comments, suggestions and ideas are welcome. For additional information, please contact CDTC, or the project consulting team at the following address:



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The mobile bicycle repair shop in Albany is an indication of the potential for community oriented business and facilities supported by Greenways in the Capital Region. The next phase of the Patroon Greenway plan will develop additional support for these kinds of opportunities. (Photo: J. Thomas)

9. Appendix

9.1 NYSDOT Concept Plan

9.2 Project Base Map

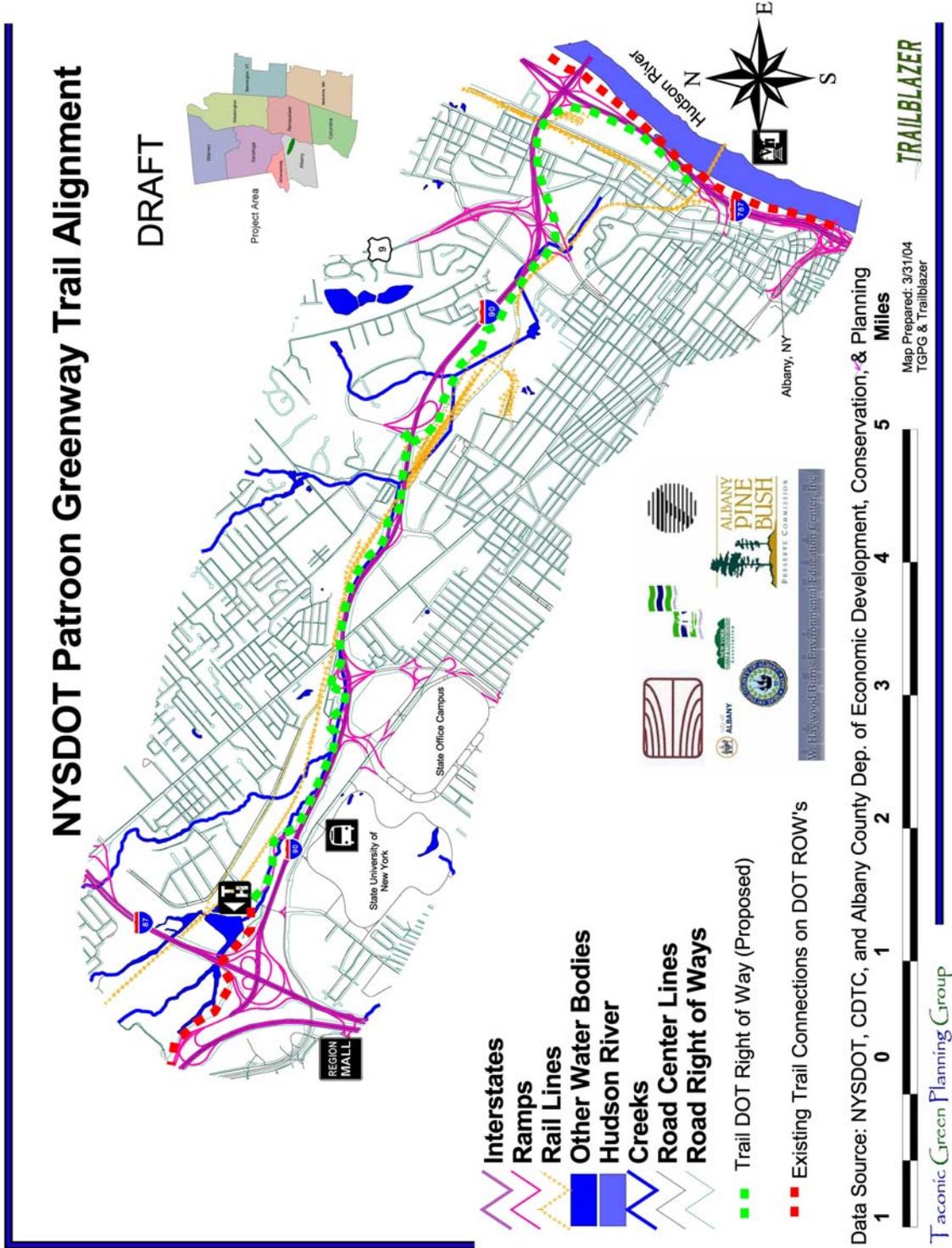
9.3 Existing Conditions Photos

9.4 Aerial Photos with Field Notes

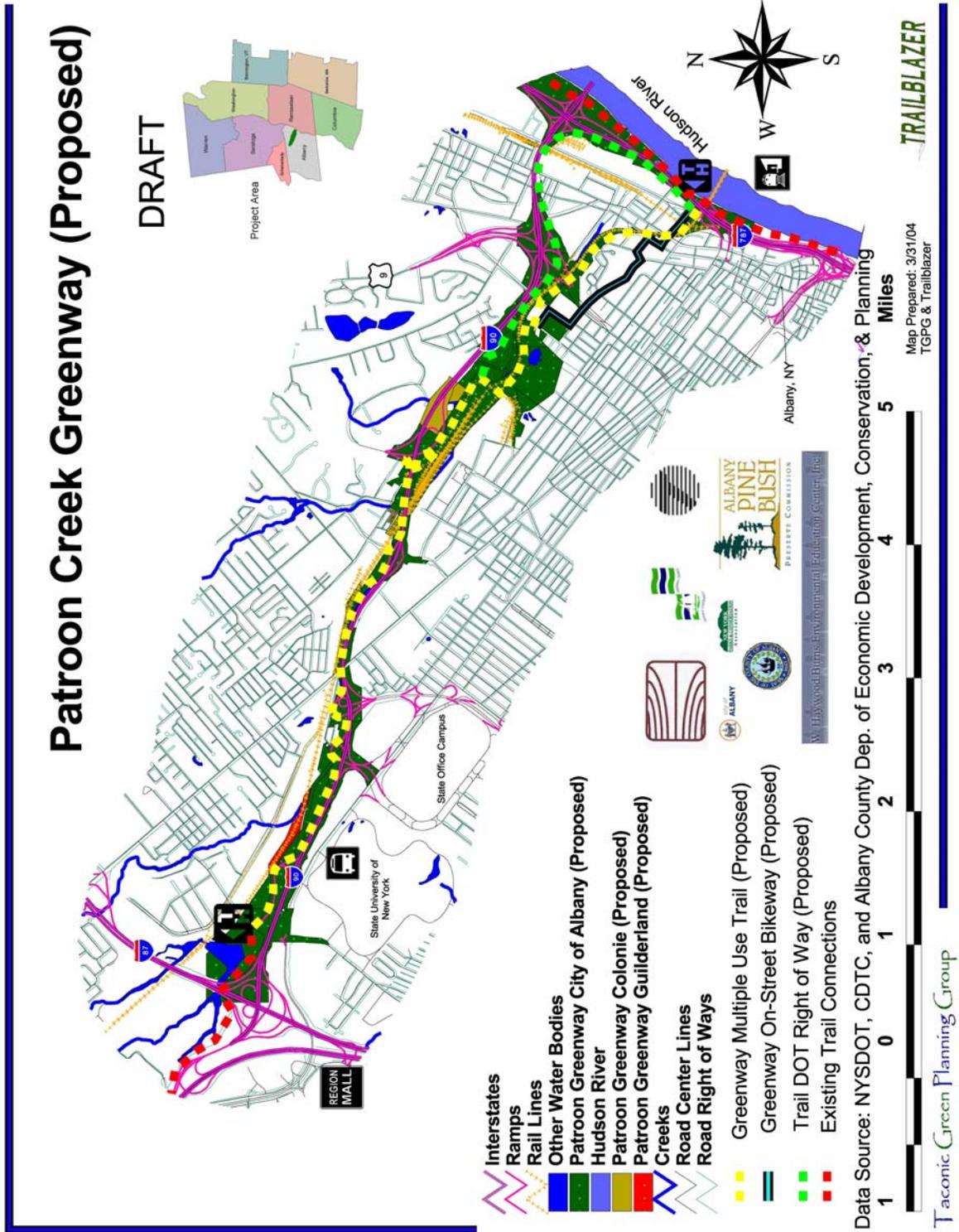
9.5 Patroon Creek Waterway Map

9.6 Adjacent & Affected Property Maps

Appendix 9.1: NYSDOT Concept Plan



Appendix 9.2: Project Base Map



Appendix 9.3.1: Existing Conditions Photos



I-90 Construction Shows what trail construction might look like



Rensselaer Lake, Western Terminus of Patroon Trail



Rail Trestle to be converted to important crossing



Tivoli Preserve, a key piece of the Patroon Greenway

Appendix 9.3.2: Existing Conditions Photos



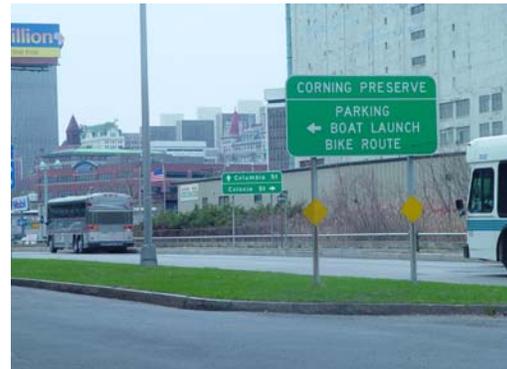
Aerial View of Corporate Woods & CSX Rail Yard



Example of a Bike/Ped Crossing of a busy Street



Amtrak Train illustrates Property Use Challenges



Corning Preserve, Eastern Terminus of Patroon Trail

Appendix 9.3.3: Existing Conditions Photos



I-90 Bridge/Corridor Crossing of CSX Rail line



Arbor Hill Elementary School Area



I-90 Construction showing Concrete Lane Supports

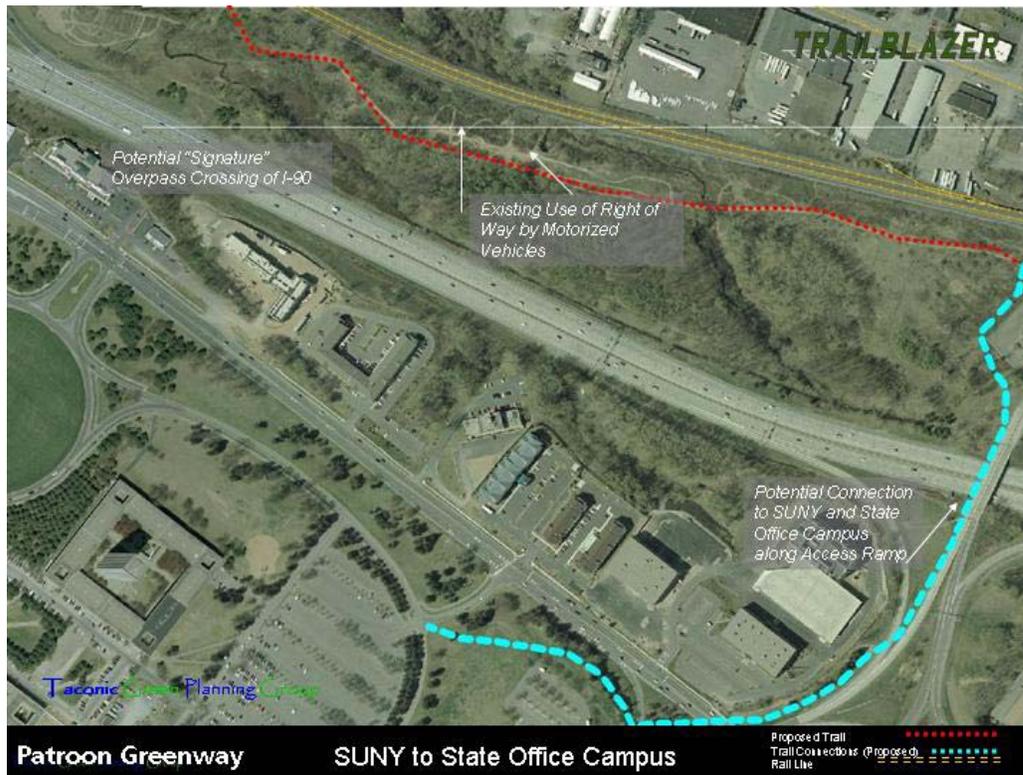


Corporate Sponsorship Opportunities to be explored

Appendix 9.4.1: Aerial Photos with Field Notes



Appendix 9.4.2: Aerial Photos with Field Notes



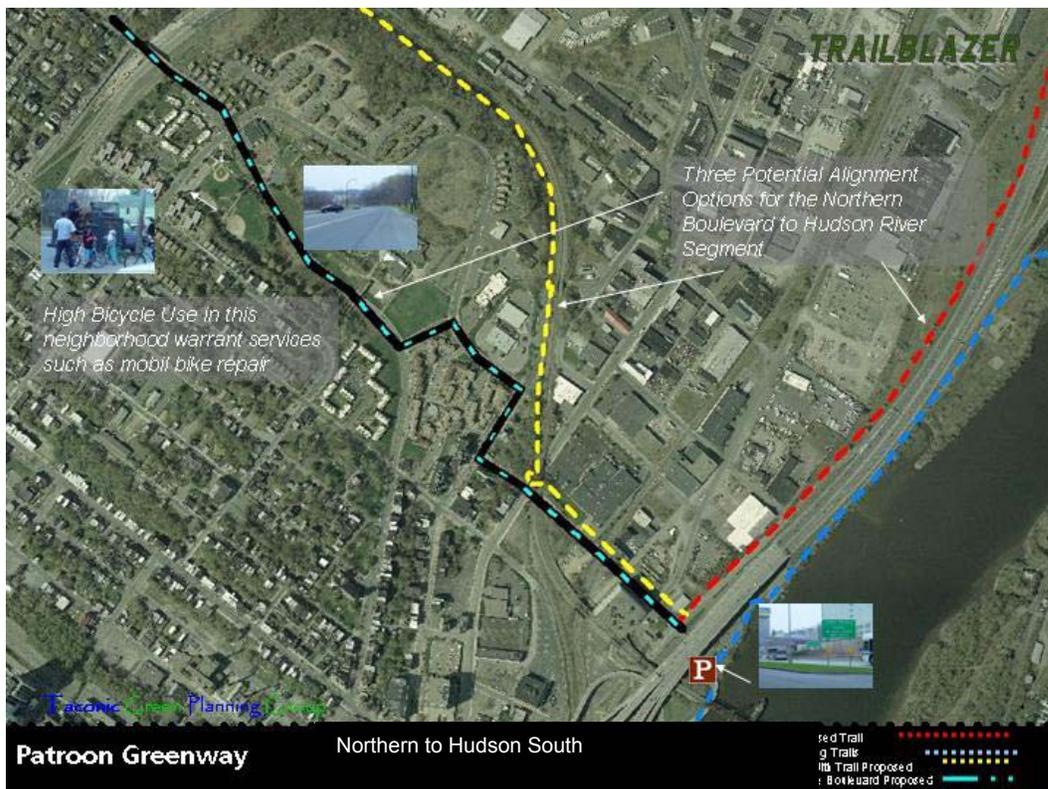
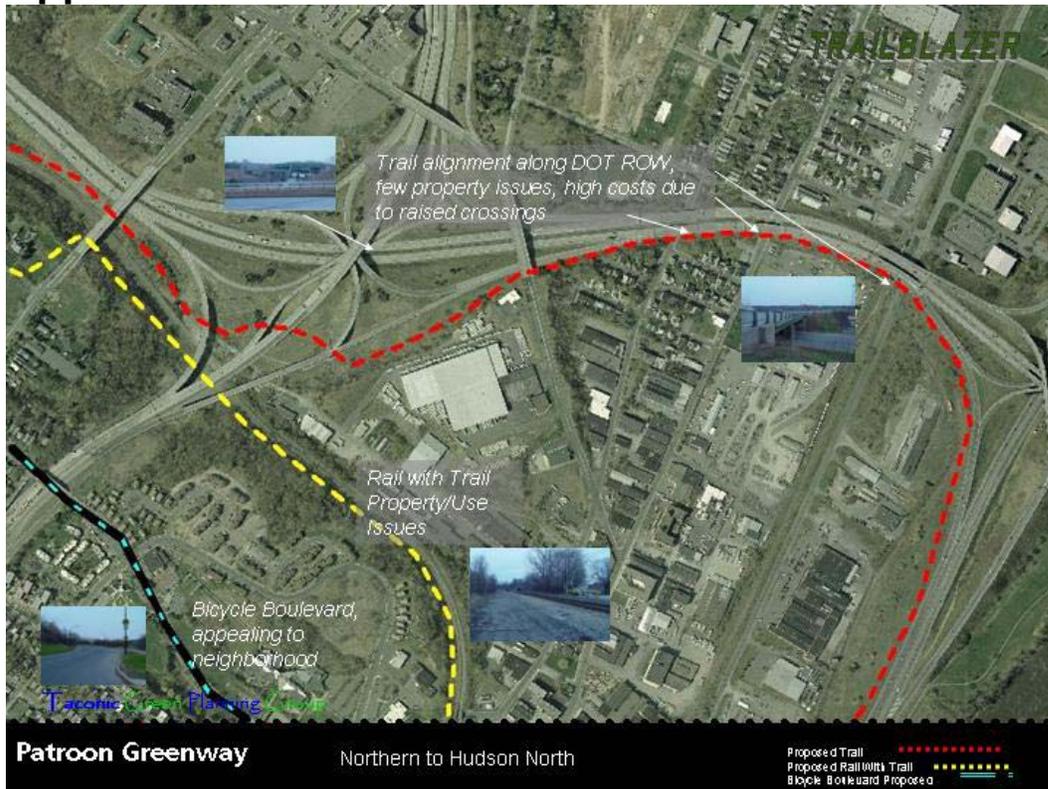
Appendix 9.4.3: Aerial Photos with Field Notes



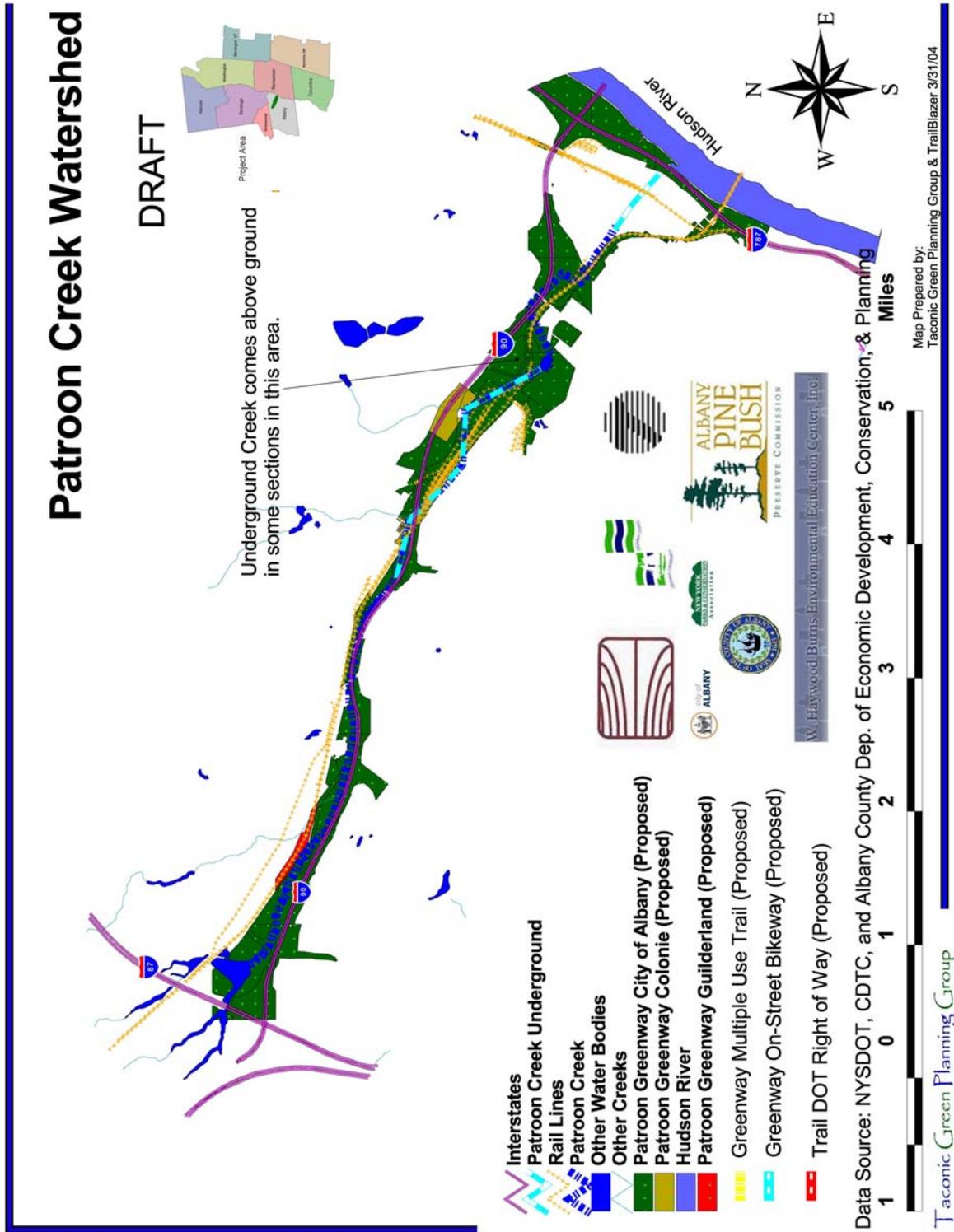
Appendix 9.4.4: Aerial Photos with Field Notes



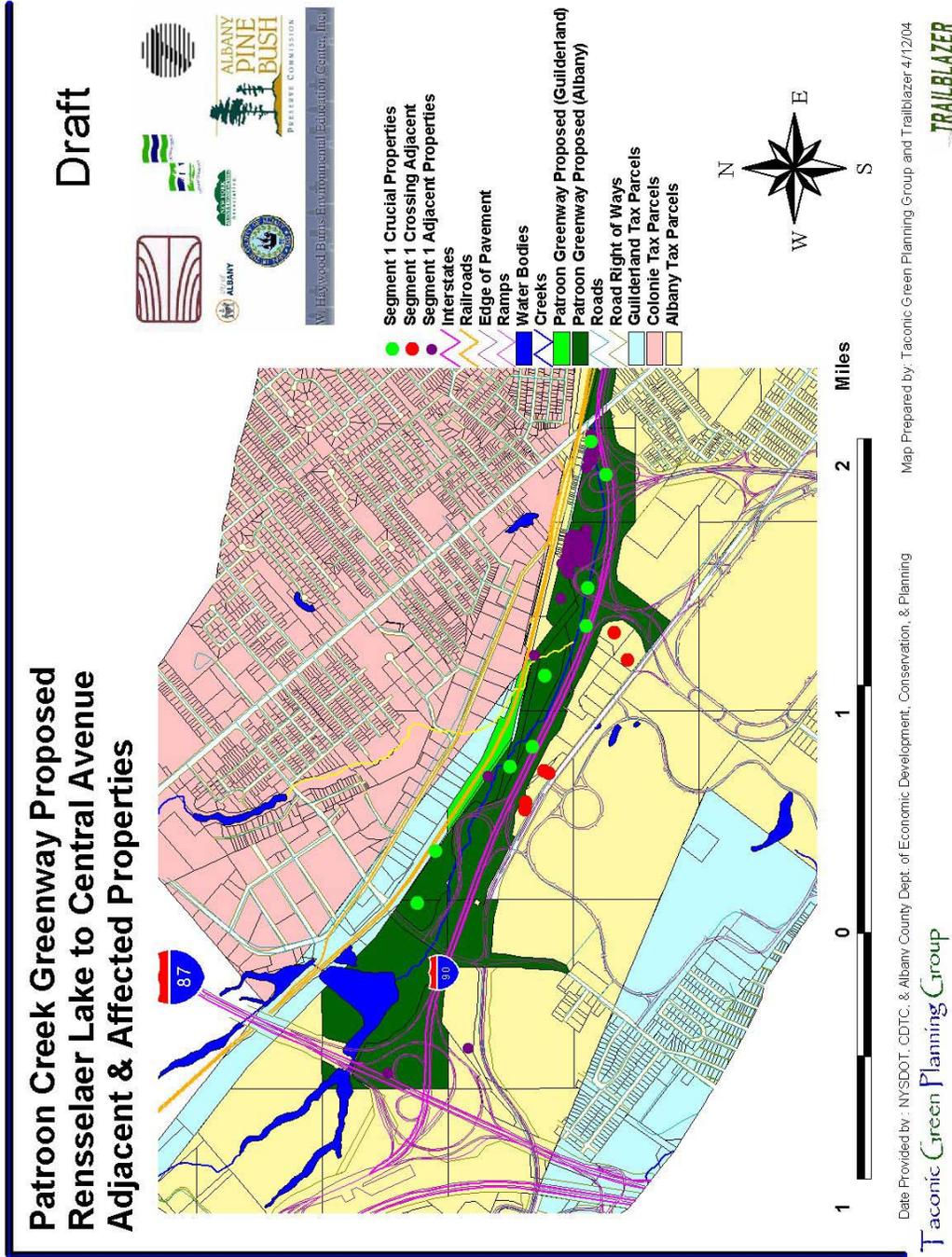
Appendix 9.4.5: Aerial Photos with Field Notes



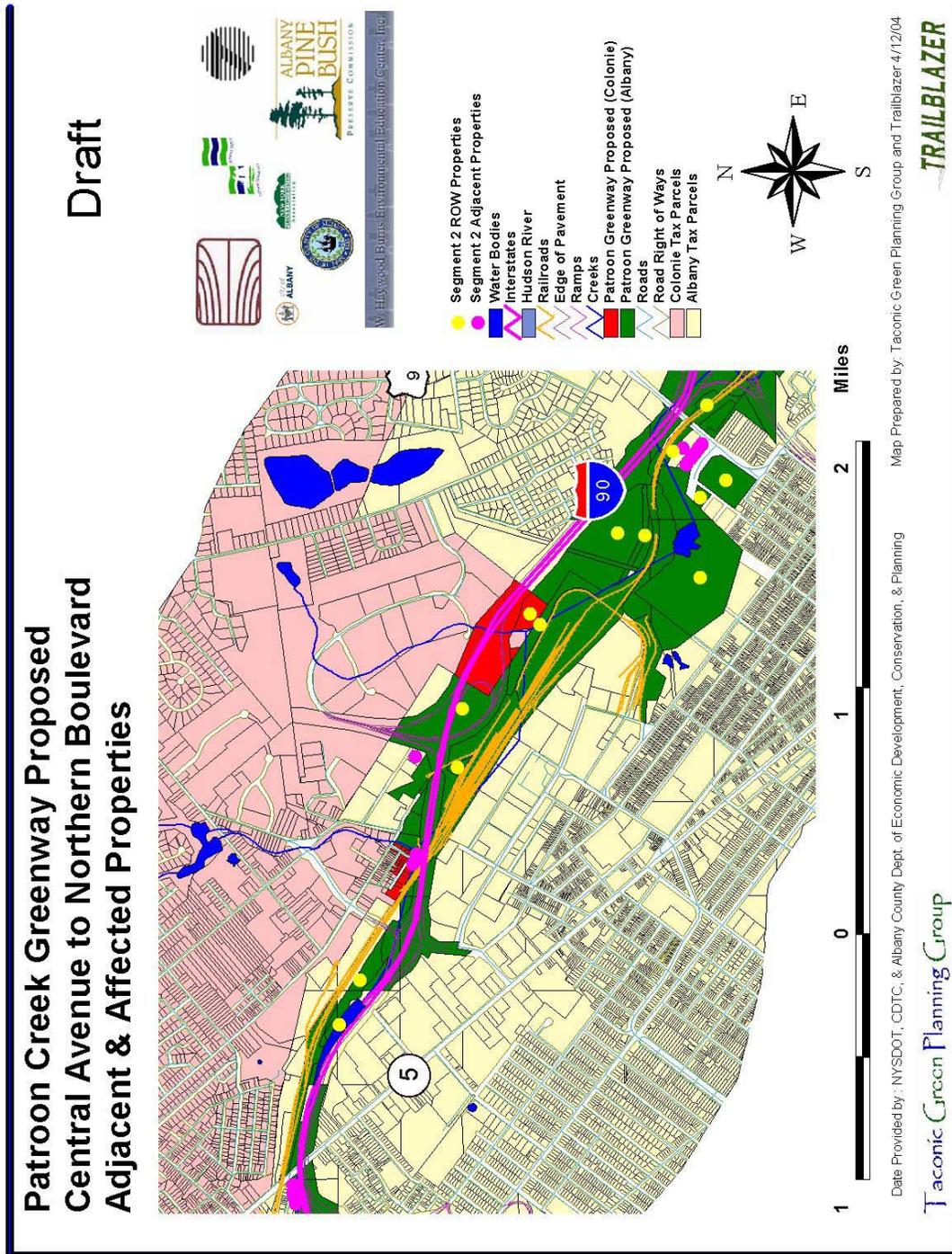
Appendix 9.5: Patroon Creek Waterway Map



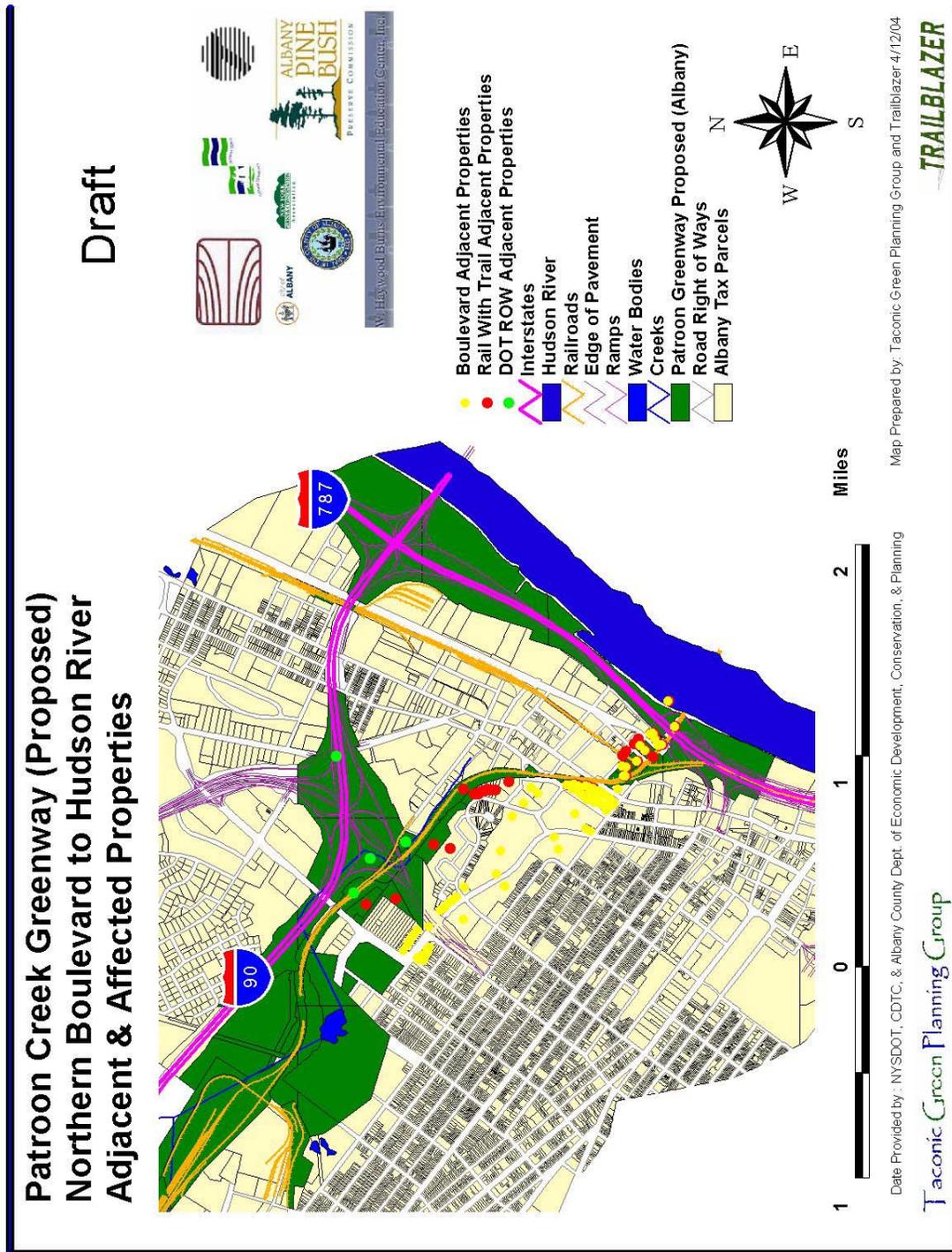
Appendix 9.6.1: Adjacent & Affected Properties



Appendix 9.6.2: Adjacent & Affected Properties



Appendix 9.6.3: Adjacent & Affected Properties

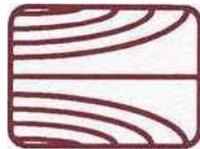


Patroon Greenway Project

A Community and Transportation Linkage Planning Project

Task 2 :

Regional Impact Report



Prepared for:

Capital District Transportation Committee

Albany, New York



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Patroon Greenway Project

Regional Impact Report

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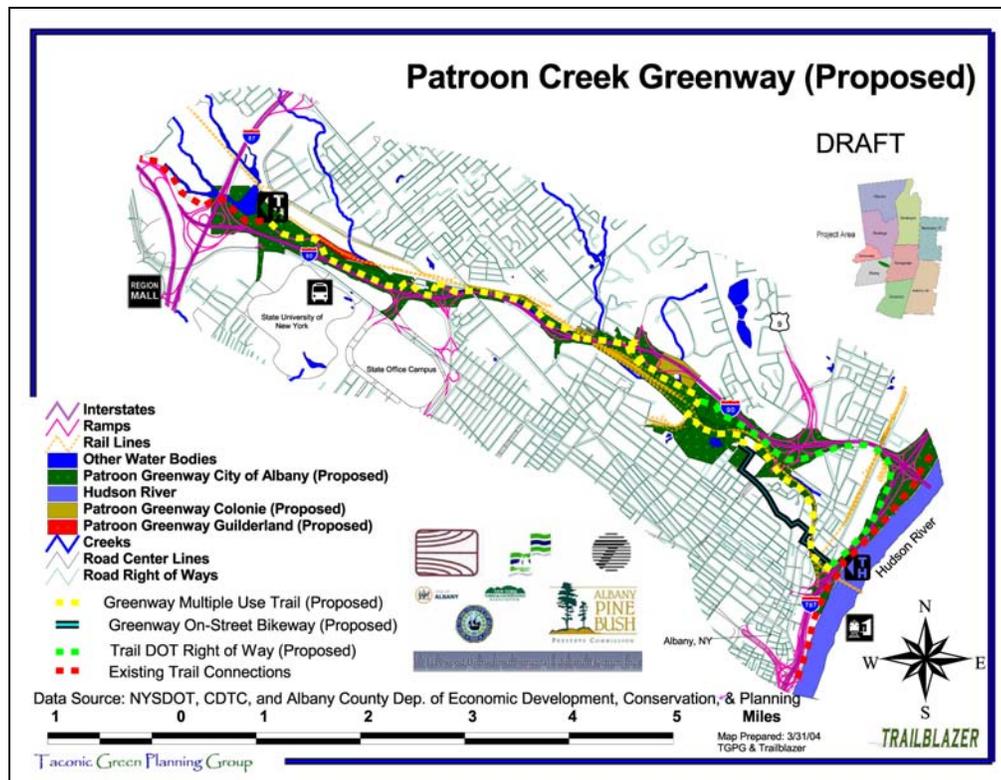
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This project is funded through the Capital District Transportation Committee’s (CDTC) Community and Transportation Linkage Planning Program.

1. Introduction

The Patroon Greenway Project is being developed to connect The Pine Bush, Tivoli and Corning Preserves in Albany, New York. The first phase of the project involved establishing a proposed alignment for a trail along the Patroon Creek from Rensselaer Lake at Fuller Road to the Hudson River. This 6.5 mile corridor includes a diverse range of land uses including residential, commercial, institutional and recreational assets. The defining feature is currently I-90 between I-87 and I-787; but the creek and the adjacent preserves create a rare opportunity to create a new definition of this corridor as a linear resource connecting local communities and regional assets.

This document examines four areas of concentration for the potential for the Patroon Greenway Trail: 1) Value to the Regional Transportation System, 2) Environmental Justice, 3) Economic Development, and 4) Potential High-Tech Connections. Each of these topics highlights the potential of the new urban greenway to serve as a catalyst for reconnecting people and the environment, and for creating a positive future for the corridor. One of the advantages of creating greenways and trails is their unique ability to solve multiple problems in a cost effective and community-oriented way. The map below provides an overview of the proposed greenway corridor.

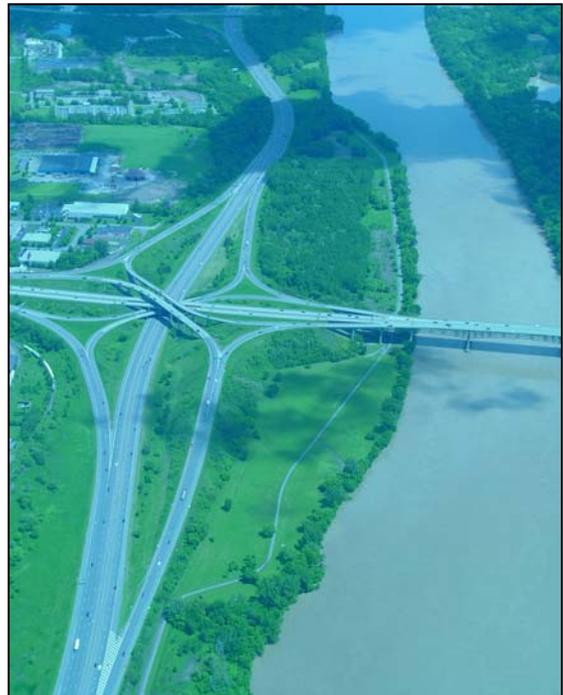


2. Value to the Regional Transportation System

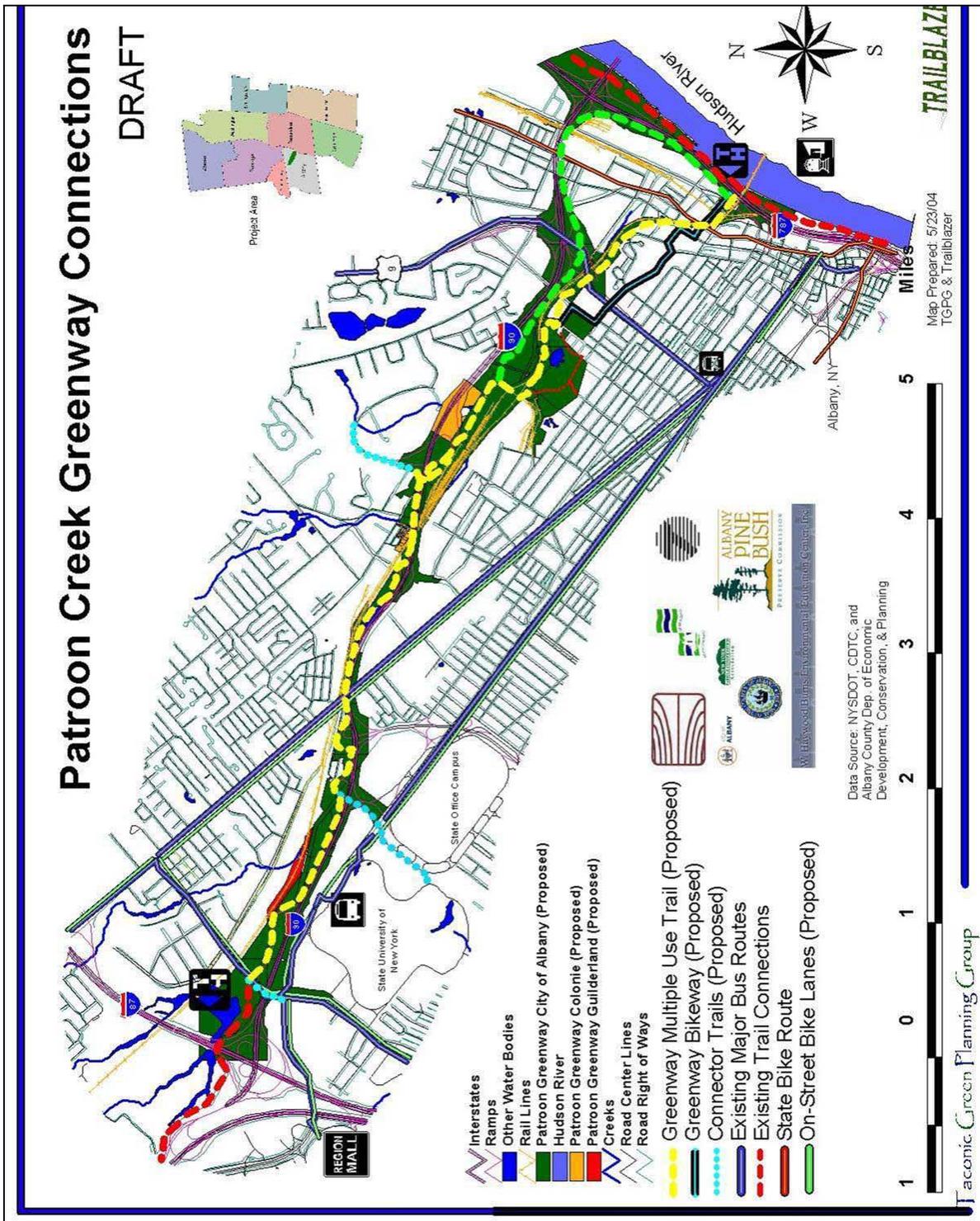
Albany County and the Capital Region of New York State are experiencing a decline in the amount of people bicycling and walking to work. From 1990 through 2000, U.S. Census data show a more than 30% decline in pedestrian and bicyclist commuting. During the same period, public transportation and carpooling experienced similar declines, and single occupant motor vehicles increased by a relatively modest 4.4%. While the Census data only represents travel to work and does not count recreation or other travel purposes, these numbers could be seen as critical indicators for the region's future.

It has often been said that bicyclists are the 'canary in the coal mine' for quality of life – and that less people walking and bicycling are a sign that quality of life is declining. The one potential bright spot in the past decade's Census data is a more than 23% increase in people working at home. As technology makes it possible for more people to work at home, key issues include whether or not those people will live in walkable communities where less motorized transport is necessary, or whether the ability to live and work anywhere will result in more sprawl and more trips by single occupant motor vehicles.

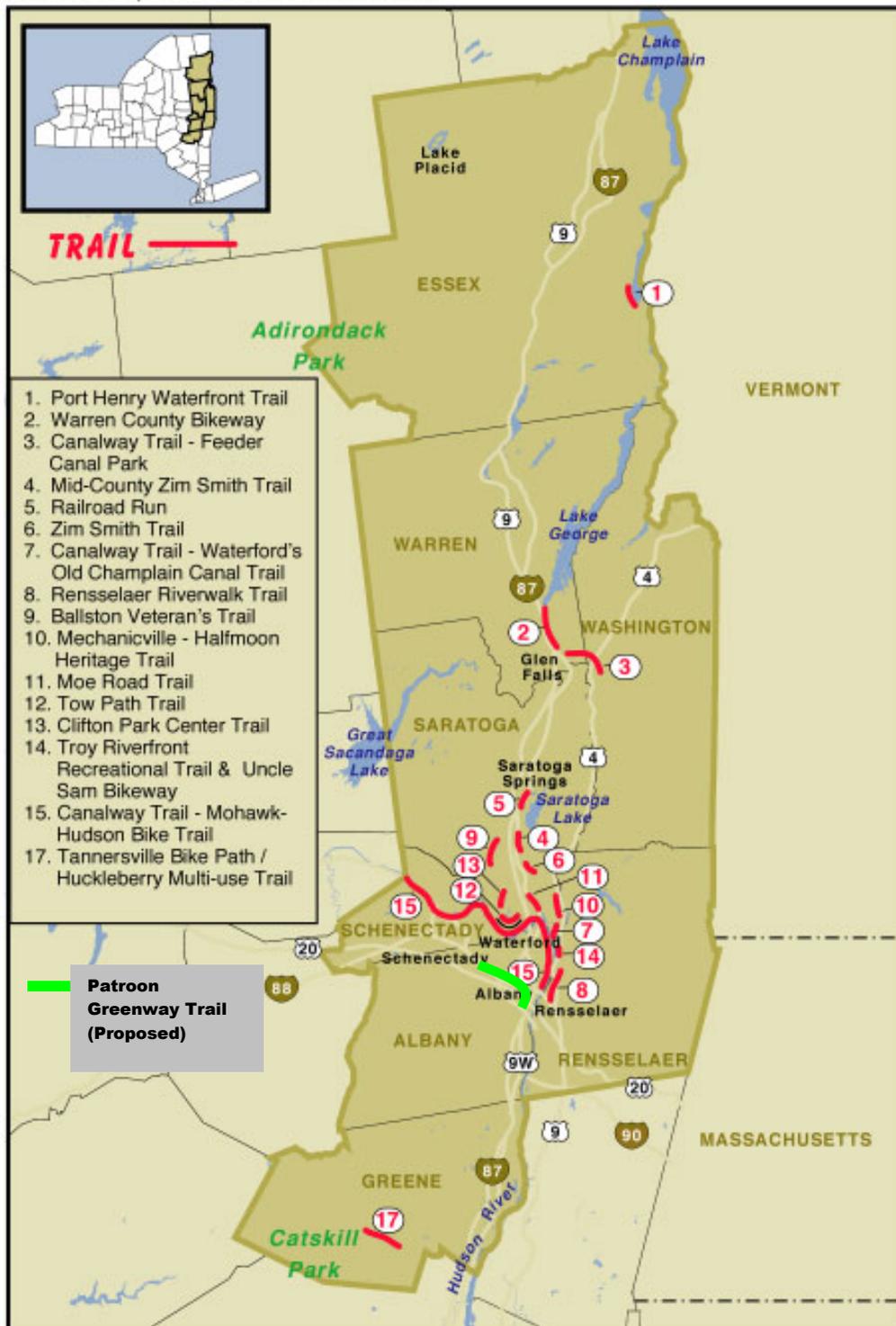
The Patroon Greenway Trail will create a logical connection to the existing regional system for walking and bicycling. While initially conceived as a connection between the Tivoli Preserve in Arbor Hill and the Pine Bush Preserve west of Fuller Road, the potential exists for this facility to connect at a larger scale from the Hudson River to the Erie Canalway Trail in Schenectady. At this scale, the trail becomes a connector for a new regional loop trail system along with the existing 42 mile Mohawk Hudson Bike-Hike Trail. It is worth noting that the Mohawk-Hudson trail was built in the 1970s as one of the nation's first demonstration projects using offshore oil revenues. The facility was constructed for an original budget of approximately \$600,000, and it currently carries an estimated 400,000 trips a year – a very favorable long-term return on the initial investment. The maps on the following pages show potential connections to provide access between the Patroon Creek trail, the region, and adjacent destinations.



*Photo: Aerial View of the Mohawk-Hudson Bikeway, Hudson River, and the Intersection of I-787/I-90
Source: John Thomas*



Map: Patroon Greenway Connections to the corridor's major destinations and to the region's transportation system.



Map: Patroon Greenway as a Part of the Capital Region's trail system
 Base Map Source: Parks and Trails New York, www.ptny.org

As the maps indicate, there are significant potential benefits to the regional transportation system. These benefits can be summarized as follows:

Major Destinations:

The New York State Harriman Office Campus, State University of New York at Albany, the Albany Nanotech / Sematech Research site, Corporate Woods Office Park and Freihoffers' Bakery are examples of major employment sites along the corridor. The former First Prize meat packing site and the NL industries Superfund site are potential brownfield redevelopment locations. The Patroon Creek commercial development zone between Washington Avenue and I-90 includes a number of new office and commercial properties, many of which are healthcare businesses, which could be connected to the Greenway.

Intermodal Access and Connectivity:

As shown on the map, there are a number of existing Capital District Transportation Authority (CTDA) bus stops along the corridor. CDTA is promoting its 'Catch a Bikeable Bus' program and it is logical to connect the proposed trail with bike rack equipped public transit buses. The proposed Bus Rapid Transit system between Albany and Schenectady will be near the trail route. The corridor also includes the main Amtrak route between Buffalo and New York City, and provides a connection to the new Albany/Rensselaer train station via the Mohawk Hudson Bike Hike Trail

On-Street Connections to Sidewalks and Bicycle Facilities:

There are several key north-south connections to the local street system that will extend the trail into adjacent neighborhoods and destinations. Fuller Road is an important sidewalk connection between the Albany Nanotech site and the entrance to Rensselaer Lake Park. The linkage between the trail and the sidewalks at Central Avenue will provide access to local business. Extending the trail into the University and Harriman Campus will enable access for both transportation and recreation.

Neighborhoods and Local Corridors:

The Trail will provide an important asset to adjacent neighborhoods including Arbor Hill and West Albany. Local mixed-use corridors include Central Avenue, the new North Pearl Street Asian Market and other businesses in North Albany. The Arbor Hill School and Livingston Magnet Academy will benefit from access to the trail corridor, providing a potential 'Safe Routes to School' project. For local trips within these neighborhoods, the enhanced provision of bicycle and pedestrian facilities, especially in combination with improved transit access, is a cost-effective public works investment.

Case Studies

In a report presented at the 2004 Transportation Research Board annual meeting, entitled “*Commute Rates On Urban Trails: Indicators From The 2000 Census*” Hugh Morris concludes that, “...2000 Census journey-to-work data suggests that trails in urban areas may induce bike commuting by people who live in close proximity to the trail.” Among the factors Morris cited as elements for encouraging alternative transportation on trails are the following:

“Number of people living/working within proximate distance of the facility and mix of land uses around the facility...if the trail also connects to employment centers, schools, libraries, and shopping areas, then trip makers can use the trail for accessing those land-use types as well.

Number of access points to the facility. ...Trails such as the Custis Trail in suburban Washington, D.C. have access points into the surrounding neighborhood roughly every 100 yards.

Trail system/network vs. single facility: ...A network of interconnecting trails is substantially more useful for trip making because it has the ability to connect people to more places.

Trail surface, signs, sight lines, and maintenance: ...Design characteristics of the trail itself are important. Bike commuters like to go fast and that is best achieved on an asphalt trail with minimal grade and gentle curves.

Facilities at destinations to secure bikes and change attire: ...A chain is only as strong as its weakest link and the use of a trail for trip making is no exception. If there is no place to safely park one’s bike at the end of the trip then the trip won’t be made. “

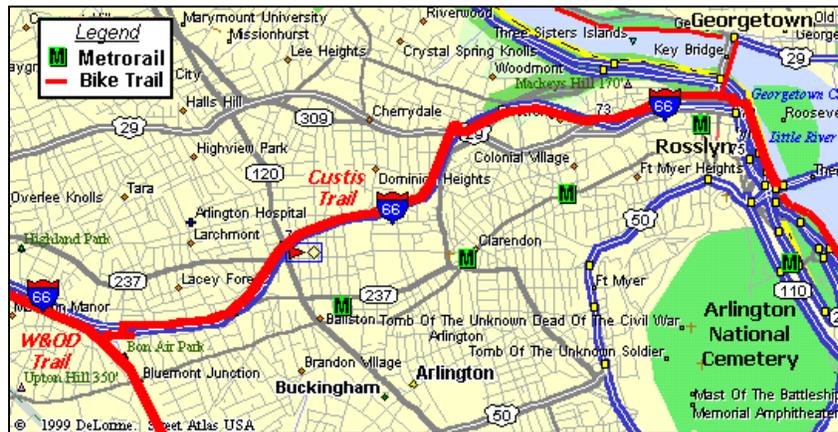
Source: Morris, Hugh, “*Commute Rates On Urban Trails: Indicators From The 2000 Census,*” Transportation Research Board 83rd Annual Meeting, Compendium of Papers, Paper # 000650, Washington, D.C. 2004.

These factors are consistent with anecdotal evidence and personal experience of trails in the Albany, New York region. In order to provide a more detailed review of corridors similar to the I-90 / Patroon Greenway, the following sections present case studies of the I-66 / Custis Trail in Arlington, Virginia, and the I-90 / Mountains to Sound Greenway in Seattle, Washington.

I-66 Corridor / Custis Trail - Arlington, Virginia

Arlington, Virginia is a county that is quickly becoming a great place for walking and bicycling. In the 2000 Census, Arlington had a 6.3% mode share for walking and bicycling, which was just a 2% decline from 1990. With the recent addition of significant new urbanist redevelopment projects, 50 miles of new bike lanes, and the substantial completion of a perimeter loop trail around the county, mode share is expected to increase in the next decade. The League of American Bicyclists recently honored Arlington as a Bronze Bicycle Friendly Community.

The I-66 / Custis Trail is a 6 mile shared-use path built as an integrated element of the highway, and is a model for innovative design within an interstate right-of-way. The facility is completely separated from the freeway through extensive construction of retaining walls, bridges and landscaping. There are entrances to the trail at every street crossing and neighborhood. Connections are provided to Metro rail transit and the regional bus system, both of which have excellent bicycle accommodations.



Map of the I-66 / Custis Trail.
Source: <http://bikewashington.org/trails/wad/custis.htm>



Photo showing the Custis Trail, I-66 and a neighborhood connector.
Source: <http://spoke.compose.cs.cmu.edu/fwe/trips/constr.htm#RetainingWall>

3. Environmental Justice

The need to consider environmental justice is already embodied in many laws, regulations, and policies such as: Title VI of the Civil Rights Act of 1964, National Environmental Policy Act of 1969 (NEPA), Section 109(h) of Title 23, and the Transportation Equity Act for the 21st Century (TEA-21). The US Department of Transportation, New York State Department of Transportation (NSYDOT), CDTC, and local communities are all part of the Environmental Justice process. The USDOT document *“An Overview of Transportation and Environmental Justice,”* provides the following background information:

“Safety and mobility are two of the U.S. Department of Transportation's (DOT's) top priorities. Achieving environmental justice is another undeniable mission of the agency...A 1994 Presidential Executive Order directed every Federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on "minority populations and low-income populations." The DOT's environmental justice initiatives accomplish this goal by involving the potentially affected public in developing transportation projects that fit harmoniously within their communities without sacrificing safety or mobility. “

“There are three fundamental environmental justice principles:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.”

Source: <http://www.fhwa.dot.gov/environment/ej2000.htm>

The Patroon Greenway Project is an interesting case from an Environmental Justice (EJ) perspective because it addresses past, present and future issues. These can be described as follows:

Past Environmental Justice Issues:

The construction of the interstate system created significant barriers to communities living along the highway rights-of-way. I-90 provides access to the region's east-west commuters and long distance travelers, but at the local level it is often a north-south barrier between neighborhoods and nearby resources. The highway separates residents of Arbor Hill, students at SUNYA and employees at Corporate Woods, giving little opportunity to cross in a north-south direction unless traveling by car. The West Albany recreation fields are isolated from the rest of the City in a similar way.

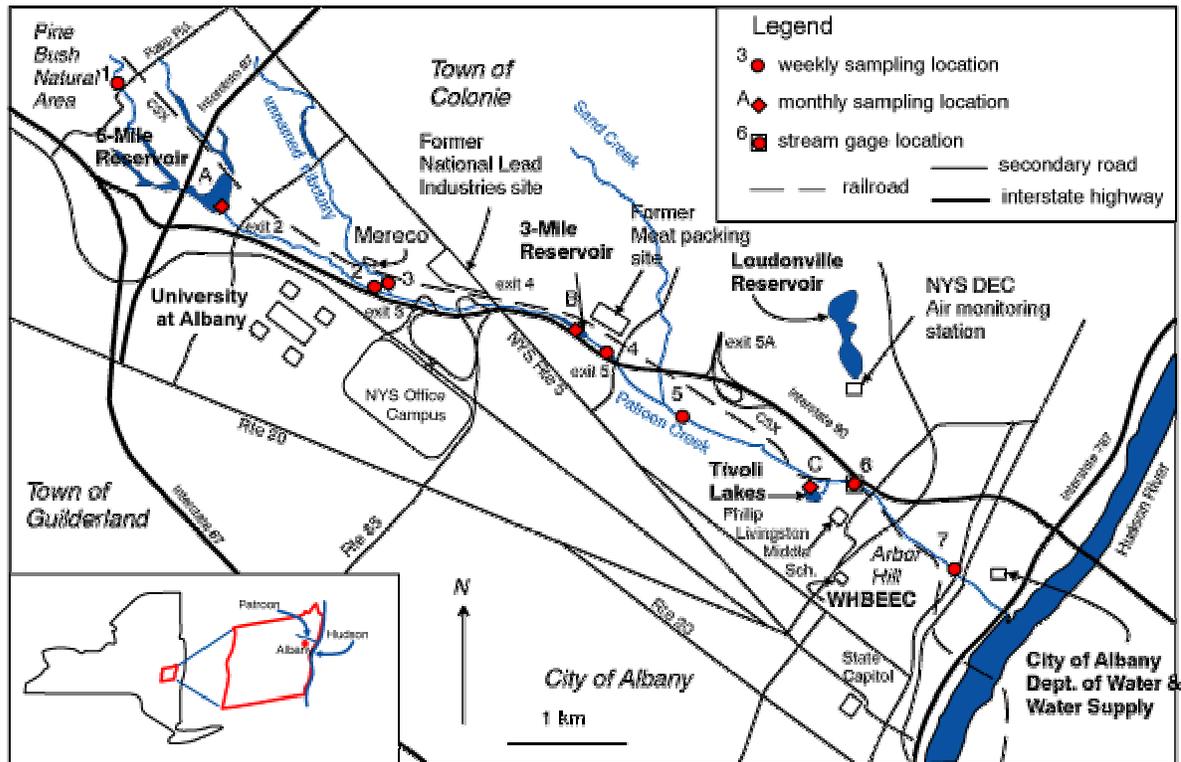
The Patroon Creek watershed was once a free-flowing series of lakes, wetlands and streams. Railroad and highway construction has turned this natural resource into a discontinuous series of culverts and retaining structures that were designed to enhance the man-made environment by reducing flooding and facilitating construction of the transportation system. This process has compromised the natural habitats for flora and fauna, as well as the water quality of the creek, over the past century. The W. Haywood Burns Environmental Education Center describes these conditions as follows:

“Once a water supply for the City of Albany, the Patroon Creek is today one of the ten most severely impacted in New York State, as a result of years of sewage discharge, urban runoff, and industrial pollution. Portions of the watershed have also been designated Areas of Concern by the New York State Department of Environmental Conservation. Two Superfund sites are located within the watershed: the National Lead Industries (NLI) site and the Mercury Refining Inc (Mereco) site, both severely contaminated by heavy metals. In an effort to monitor, manage, and eventually restore the creek, the University at Albany is collaborating with the W. Haywood Burns Environmental Education Center and the City of Albany to monitor water quality in the creek as part of a 2-year program funded by the US Environmental Protection Agency (EPA).”

Source: <http://www.w-haywoodburns.org/Main.html>

Present Environmental Justice Issues:

Air quality and noise pollution from the I-90 corridor and the railroads have an adverse effect on residents and businesses in the adjacent neighborhoods. Studies have shown correlations between these conditions and increased levels of asthma and respiratory illness in adjacent low-income communities. The current national epidemic of obesity and related cardiovascular disease is increasingly being linked to a lack of access to physical activity, especially walking and bicycling. In addition, high-speed traffic accessing the interstate system often passes through local neighborhoods, creating traffic safety concerns for pedestrians – especially children, seniors and people who do not have access to private automobiles. All of these conditions are present within the existing I-90 Patroon Creek Greenway corridor.



Map of the Patroon Creek Watershed and water quality monitoring system developed as part of the EPA / UAlbany / W.H. Burns collaborative project.

Source: <http://pyrite.atmos.albany.edu/Patroon>

Future Environmental Justice Issues:

The future Environmental Justice issues along the Patroon Creek can optimistically be viewed as a potential model for integrated solutions. Providing facilities for walking and bicycling can enhance public health, provide access to jobs, support environmental restoration and address the full range of Environmental Justice solutions. However, this can only occur with continuous community involvement throughout all infrastructure programs in the project area. Opportunities will include ongoing I-90 reconstruction projects, railroad system upgrades, local street improvements, CDTA bus system plans and other services. In some cases, local neighborhoods can take control of their own actions, such as providing bicycle racks designed by local artists, 'adopting' local trails for routine maintenance and planting community gardens. All of this requires being organized as a community and working in partnership with public agencies to achieve a common vision. Two excellent examples of this kind of partnership are described in the ongoing work of the W. Haywood Burns Environmental Education Center:

***"The Tivoli Preserve**, which is close to the Arbor Hill Elementary School, is an 80-acre park of wetlands, a lake, fields, forest and upland habitat that has been badly damaged by pollution. The Arbor Hill Environmental Justice Corporation, working closely with the W. Haywood Burns Environmental Education Center aims to clean up the Tivoli Preserve and replant areas devastated by decades of pollution and neglect. Often referred to as a "living classroom", the Environmental Education Center encourages young students to visit and study the preserve, to chronicle its strength and its problems throughout and to become involved in its better future....Walking trails through the preserve are being constructed in addition to trash bins and informational kiosks. Work is ongoing to identify and eliminate pollution sources into the Patroon Creek watershed and Tivoli Lake. Tivoli Preserve is a "gem" in the urban landscape that can offer respite from the hardscape of the city environs and a peaceful place to observe a myriad of wildlife.*

***Inner City Outings (ICO)** gives low-income, urban youth the opportunity to explore the forests, wetlands, mountains, beaches, and preserves surrounding their urban homes. For many youth, city streets are the only environments they know. Through Albany ICO, we seek to help broaden their horizons. The program is designed to foster leadership and appreciation of the environment through hands-on interaction with nature. It teaches youth how to become active in protecting their urban environment from pollution and neglect. The ICO also includes a mentoring program for older teens to introduce career choices in natural resources and hard sciences. The program involves outdoor education and on-site visits to professionals at their work sites.*

The Inner City Outings program is a joint effort of the W. Haywood Burns Environmental Center and the Sierra Club, which provides funding grants for transportation, supplies and equipment. The concept of engaging youth in nature teaches them to be good stewards of our natural resources and connects them to the earth. The focus for the W. Haywood Burns Environmental Education Center is the urban environment and how to recognize signs of contamination and take action to address them.”

Source: <http://www.w-haywoodburns.org/>

These efforts and other works in progress represent significant potential for the development of the Patroon Greenway Trail. It should be noted that there can be perceived negative effects of trail development. In this corridor there will be a need to address concerns of adjacent landowners in segments with limited right-of-way, especially adjacent to the I-85 ramps. In these cases, the trail can be shown to be an amenity for these neighborhoods, with the ability to create new public space in underserved communities. With cooperative community involvement and the support of transportation, environmental and resource agencies, the potential exists to establish a 6.5 mile interconnected corridor along the Patroon Creek that addresses the full range of Environmental Justice issues. Public health, physical fitness, transportation, recreation, access to nature, clean air and water, and neighborhood quality of life can all be part of the future for the I-90 / Patroon Greenway Trail.



Two photos illustrate the potential for achieving Environmental Justice in the I-90 Patroon Creek Corridor: (L) Winter trails would bring the experience of skiing to neighborhoods along the trail and (R) in downtown Buffalo, local artists recycle bicycles and bicycle parts into bicycle racks and public art – a concept that could be developed in Albany as part of the Patroon Greenway.

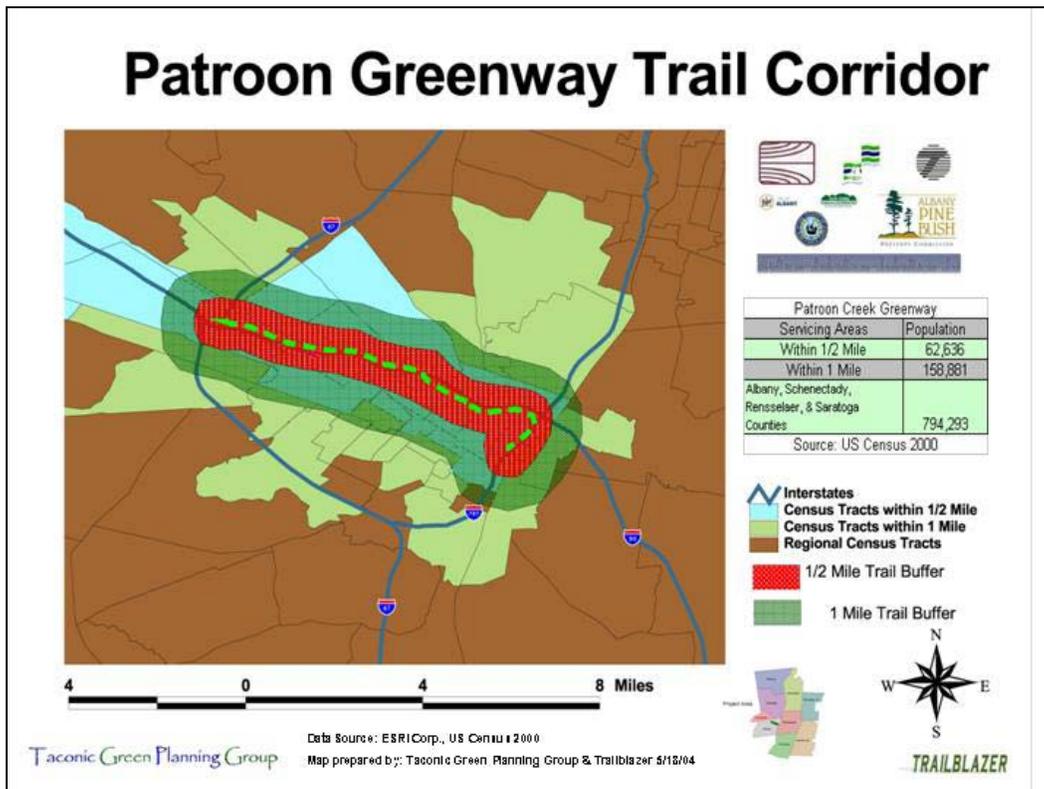
Photo Sources: (L): <http://www.w-haywoodburns.org/Main.html> (R): J. Olson, Trailblazer

4. Economic Development

The Patroon Greenway Project can provide significant economic development opportunities at the local and regional levels. The map below shows the potential population located within walking and bicycling distance of the proposed trail. There have been numerous studies and reports on the economic benefits of greenways and trails. In 1999, the Trust for Public Land (TPL) issued a national report summarizing many of these prior studies, entitled: *The Economic Benefits of Parks and Open Space: How Land Conservation Helps Communities Grow Smart and Protect the Bottom Line*. The TPL report includes the following statement, which frames this issue in the context of the Patroon Greenway:

“...As the nation moves toward a mixed economy based on services, light industry, consumer goods, and new technologies, businesses and their employees are no longer tied to traditional industrial centers. Today, businesses are free to shop for an appealing location, and they clearly prefer communities with a high quality of life, including an abundance of open space, nearby recreation, and pedestrian-friendly neighborhoods.”

Source: http://www.tpl.org/tier3_cdl.cfm?content_item_id=1145&folder_id=727



There are more than 150,000 residents within 1 mile of the proposed Patroon Greenway trail.

The following section is based on the TPL report and highlights references that are relevant to the potential benefits of the Patroon Greenway Trail.

The Trust for Public Land Economic Benefits of Open Space Index

Rank of open space/parks/recreation among factors used by small businesses in choosing a new business location: *One*¹

Percentage of Denver residents who in 1980 said they would pay more to live near to a greenbelt or park: 16 percent

Percentage who said so in 1990: *48 percent*³

Estimated gross increase in residential property value resulting from proximity to San Francisco's Golden Gate Park: *\$500 million to \$1 billion*

Increased property taxes resulting from this value: *\$5-\$10 million*⁴

Estimated value of outdoor recreation to the U.S. economy in 1996: *\$40 billion*⁶

Income from the 10,000 jobs supported by these visitors: *\$162.9 million*⁸

Amount spent to maintain Maryland's Northern Central Rail Trail in 1993: *\$191,893*

State and local taxes generated by Maryland's Northern Central Rail Trail in 1993: *\$304,000*¹¹

Front Royal, VA: A developer who donated a 50-foot-wide, seven-mile-long easement along a popular trail *sold all 50 parcels bordering the trail in only four months.*²⁴

Seattle, WA: Homes bordering the 12-mile Burke Gilman trail sold for *6 percent more than other houses of comparable size.*²⁵

Notes to the TPL Index:

¹John L. Crompton, Lisa L. Love, and Thomas A. More, "An Empirical Study of the Role of Recreation, Parks and Open Space in Companies (Re) Location Decisions," *Journal of Park and Recreation Administration*, 15:1 (Champaign, IL: American Academy for Park and Recreation Administration, 1997), 37-58.

³National Park Service, Rivers, Trails and Conservation Assistance Program, "Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors," 4th ed. (Washington, DC: National Park Service, 1995), 1–8.

⁴, "The Value of Parks," Testimony before the California Assembly Committee on Water, Parks, and Wildlife, May 18, 1993.

⁶Outdoor Recreation Coalition of America, "Economic Benefits of Outdoor Recreation," State of the Industry Report (1997)

⁸Andrew Laughland and James Caudill, "Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation," (Washington, DC: U.S. Fish and Wildlife Service, Department of Economics, July 1997), v.

¹¹Maryland Greenways Commission, "Analysis of Economic Impacts of the Northern Central Rail Trail," (Annapolis, MD: Maryland Greenways Commission, Maryland DNR, June 1994).

²⁴ National Park Service, Rivers, Trails and Conservation Assistance Program, "Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors," 4th ed. (Washington, DC: National Park Service, 1995)

²⁵ Elizabeth Brabec, "On the Value of Open Spaces," Scenic America, Technical Information Series, Vol. 1, No. 2 (Washington, DC: Scenic America, 1992),

To further state the economic case in support for greenways and trails, the following information from the San Francisco region indicates that not only can trails generate tax base, business and increased property values, but they also enjoy significant support for public sector investments:

“A large majority of voters in the East Bay Regional Park District (88%) agree that the system of regional parks and trails is a "valuable public resource." Most voters also recognize the need to properly maintain this public resource (86%). When asked directly whether they would support or oppose a special benefit assessment of \$5 per year on parcel owners in the district "in order to provide funds to operate and maintain a safe and aesthetically attractive system of trails and related facilities, which would include funds for park ranger services, safety patrols, fire suppression, and weed abatement,

- 77% indicated support for a \$5 assessment,
- 5% indicated that they were unused, and
- 18% indicated opposition to a \$5 assessment.”

Source: <http://www.americantrails.org/resources/economics/EBayTrailsEcon.html>

In terms of trail-user based economic expenditures, the following table indicates levels of spending by trail users on a range of facilities from throughout the U.S.

Table 1: Trail Usage And Expenditures

TRAIL NAME & LOCATION	LENGTH (Miles)	ANNUAL VISITORS	TOTAL EXPEND. BY USERS	EXPEND. PER VISITOR	PAVEMENT TYPE
Heritage Trail Dubuque, Iowa	26	135,000	\$1,571,400	\$11.64	Compacted Limestone
St. Mark's Trail Tallahassee, Florida	16	170,000	\$2,368,100	\$13.93	Paved
Lafayette/Moraga Trail Berkeley Hills, CA.	7.6	400,000	\$2,008,000	\$5.02	Paved
Little Miami Warren County, OH	27	162,000	\$2,268,000	\$14.00	Paved
Northern Central Rail Trail Baltimore Co., MD.	20	450,000	\$4,027,930	\$8.95	Crushed Stone
Elroy-Sparta Trail Western Wisconsin	32	60,000	\$2,183,432	\$36.39	Crushed Stone
Katy Trail East-West across Missouri	225	250,000	\$3,575,087	\$14.30	Crushed Stone

NOTE: All Expenditures in Constant 2000 Dollars

Source: 2001 Schenectady Bicycle Master Plan, Edwards & Kelcey/Trailblazer

While the Capital Region is not currently experiencing the levels of economic growth found in other parts of the country, local data show that existing trails in the region show similar economic benefits. The Schenectady County Planning Department prepared a report in 1998 entitled "*Mohawk-Hudson Bike Hike Trail, Analysis of Trail Use, Regional Benefits, and Economic Impact.*" The study concluded there are approximately 458,000 trail visits a year by an estimated 29,000 distinct users. Based on the survey results by user type, the report estimated that direct spending by trail users totaled over \$533,000.

Based on the above information from national and regional sources, the Patroon Greenway can potentially have significant economic benefits in the following categories:

Property Values: Trails have generally shown to have a neutral or positive benefit on property values, depending upon the proximity of adjacent properties, access to the trail, quality of design, and other factors. The Patroon Greenway can help offset some of the negative values associated with adjacent brownfield and transportation infrastructure facilities.

Business Location: Trails are a potential asset to employers as a way to provide recreation and fitness for employees, and as a quality of life enhancement to the region as a whole in attracting new businesses.

Tourism Expenditures: If the trail serves local, regional and long-distance destinations, tourism related businesses can include hotels, bed and breakfasts, cultural and historic sites and other services. The corridor's railroad, highway and transportation history are potential tourism attractions.

Small Business. Trails can serve as generators for local businesses including equipment sales and repair, retail and restaurants catering to trail users, especially if the trail supports significant amounts of use. The local 'mobile bicycle repair van' operating on the Mohawk-Hudson Bike Hike Trail is an example of this kind of entrepreneurial opportunity.

Transportation history can become a part of heritage tourism along the Patroon Greenway. This sign marks the location where Engine 999 was built – 'the first creation of man to travel more than 100 miles per hour.

Photo: J.Thomas

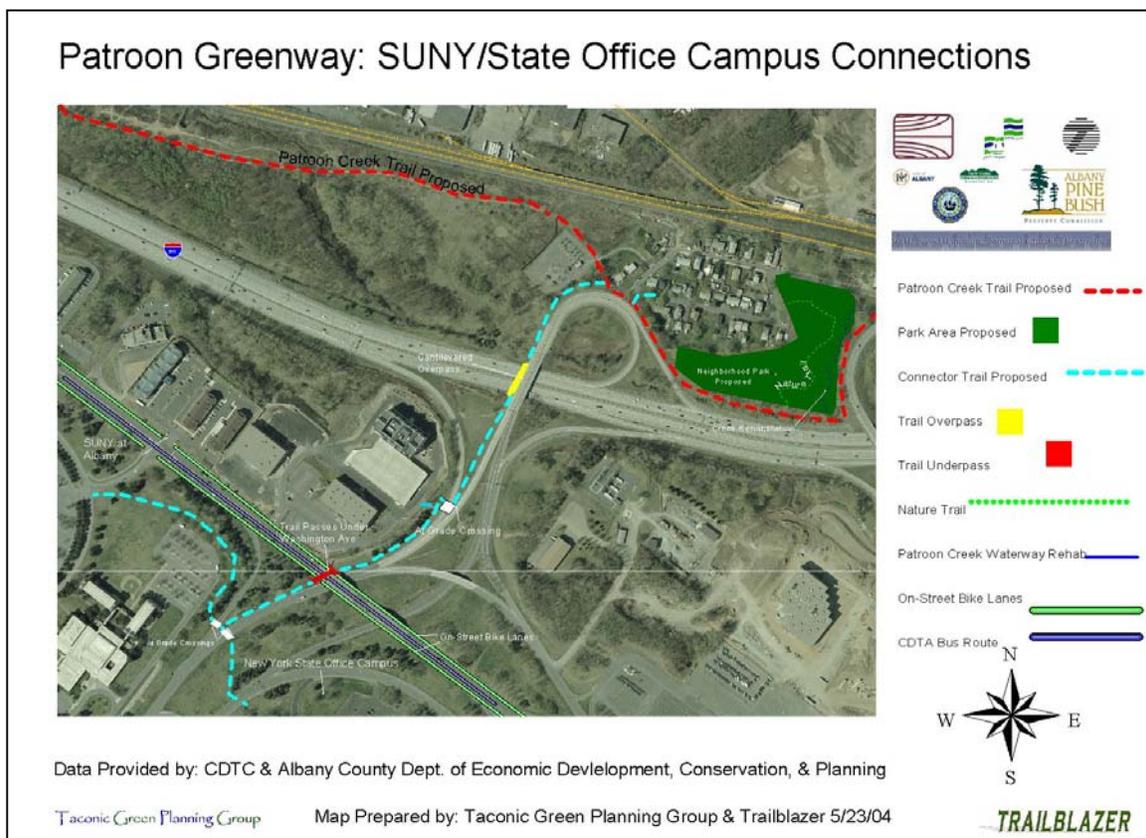


5. Potential High-Tech Connections

Attracting and maintaining high-tech jobs has become a major issue in the Capital Region. As the region redefines itself as part of New York State's 'Tech Valley,' Albany has entered the national and international market to bring in more high technology jobs. With the cooperation of the region's universities, the State Capital and private sector business interests, several high-profile projects are emerging, including:

The Nanotechnology Center / Sematech North at the State University at Albany
The Redevelopment of the Harriman State Office Campus
Malta Technology Park / Luther Forest

Both of the first two sites are located in the I-90 / Patroon Greenway corridor. The third is located in Saratoga County, near the new Zim Smith / Saratoga County Heritage Trail, which is currently under construction. In Saratoga County, the local economic development agency has featured the trail in its promotional materials for the project.



A detailed example of one of the potential High Tech Connections with the Harriman NYS Office Campus and the State University of New York.

There are many trail advocates and transportation professionals who support this connection between trails and high-tech facilities. However, it is important to listen to the professionals in the real estate site location industry for their perspective on the relationship between high tech and trails. The following excerpts are from *Development On-Line*, the journal of the National Association of Industrial and Office Properties, <http://www.naiop.org/developmentmag>.

The Developer's New Roles in Nurturing High Tech Companies

by Jim Long

"In today's competitive real estate and business environment, developers of master planned business parks must provide services and programs that reach beyond the role of traditional developments. They must not only create and protect the value of a tenant company's physical assets; they must also strive to provide an employee-friendly working environment that encourages productivity, creative thought and a sense of job satisfaction for employees. It must also provide support for company programs designed to enhance the recruitment and retention of employees. This is especially true for developments catering to the needs of companies involved in the application of advanced technologies.

In this new environment, successful developments center around five key elements, in addition to the traditional requirements. They are: the physical setting, community involvement and leadership, social interaction, educational support and recreational opportunities.

Interlocken, in Broomfield, Colorado, is a self-contained working environment whose amenities, facilities and services are easily accessible and centrally located within the park or immediately adjacent to the park. Transportation infrastructure - streets and parkways, bike and pedestrian trails, running paths, Park-n-Ride facilities - are all designed to accommodate mass transit or future light rail service at Interlocken. They extend through the development to connect each parcel and building within the park to the rest of the park and the surrounding areas. As a result, employees can enjoy the park's amenities without having to get into a car or cross a major street or highway."

Source: <http://www.naiop.org/developmentmag/pastissues/winter99/story9.htm>

Attracting the New Generation of Tenants:

How a City/Developer Partnership Works

by Scott McAfee

"Businesses today are trying to fit into the lifestyle of employees, to allow their associates to live near where they work and have access to top recreational, educational and health care services, regardless of business size or activity... More employees want to work in an area that has an area to exercise, where they can grab a sandwich and live in a comfortable nearby setting.

...To adapt to this new generation of clientele, Daimler has had to act promptly to meet their needs, aided by an in-place infrastructure at Westar, Ohio. Moreover, Westar's bike paths, ball fields, nearby parks and new community center offer employees a variety of recreational opportunities and affordable housing is nearby for a short commute. The company recognizes that all tenants now require fiber-optic telecommunications, favorable environmental conditions in building interiors, green space, recreation and supportive businesses in the area.

...Nationwide, developers cannot simply rely on what has worked in the past. With many factors other than real estate costs playing a role in determining where to expand or relocate, developers and communities must work even more closely in the future to provide the best overall quality of life for prospective employers.”

Source: <http://www.naiop.org/developmentmag/pastissues/winter01/article1.htm>

Live-Work-Play" Facilities

Seen As Path to Economic Revival in NJ Town

by John Maddocks

“In order to revitalize the community, the team suggested enhancing the already-existing infrastructure and attracting a younger residential population, along with pedestrian and residential development with accompanying parking, walkways and bike lanes.”

Source: <http://www.naiop.org/developmentmag/pastissues/fall00/article7.htm>

“In a 2002 survey of recent home buyers sponsored by the National Association of Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices.”

Consumer's Survey on Smart Choices for Home Buyers, National Association of Realtors and National Association of Home Builders, April 2002.

“Realizing the selling power of greenways, developers of the Shepherd's Vineyard housing development in Apex, North Carolina added \$5,000 to the price of 40 homes adjacent to the regional greenway. Those homes were still the first to sell.”

Don Hopey, “Prime Location on the Trail,” Rails-to-Trails, Fall/Winter 1999, p.18.

While these statements and statistics make a strong case for the Patroon Greenway Trail as a key element of High Tech Connections along the I-90 corridor, this has not been the case for many recent developments. The State University and Harriman Campus are both sprawling sites with auto-oriented perimeter ring roads and large parking lots. Most of the new development along Washington Avenue in the Patroon Creek Office Park is typical suburban development with generic office buildings set behind spacious parking. In spite of the fact that many of these new buildings house tenants that are healthcare and medical facilities, there are few connections for pedestrians, bicyclists and transit access. The new Nanotechnology / Sematech North complex west of Fuller Road is a similar isolated set of buildings which are not integrated into the University Campus or adjacent neighborhoods.

These projects are the result of 20th Century zoning ordinances, site development techniques and transportation planning. They are automobile dependent and do not build on the kinds of 21st Century concepts discussed in the preceding pages. While the Patroon Greenway Project cannot single-handedly change the entire corridor or retrofit all of these locations, it will provide a major step towards connecting the residential, commercial, institutional and natural environments. As a long-term investment, it is possible to envision the I-90 corridor of the future as a place where jobs, residences, parks, schools and neighborhoods coexist along a restored waterway connected by the trail system. Making this connection will require a considerable change in perspective. This change is not only possible; it is essential for the region's future.



Photo: An example of New Housing built along the Erie Canalway trail in Rochester, New York. The trail and waterway have become a focus for redevelopment and economic development efforts in the region. This is a potential model for the Patroon Greenway trail corridor. (Source: J. Olson)

6. Conclusion

The Patroon Greenway Trail has significant potential to be an important new asset to the Capital Region of New York State. These benefits can be summarized as follows:

Transportation: The trail will provide an important east-west connector for non-motorized transportation in a corridor that is currently a barrier to walking and bicycling. With well-planned north-south connector routes to local roads, sidewalks, on-street bikeways, transit access enhancements and pathway linkages, the Patroon Greenway Trail will create a new means of travel between neighborhoods, the State University, high tech development, schools and commercial centers along the I-90 corridor.

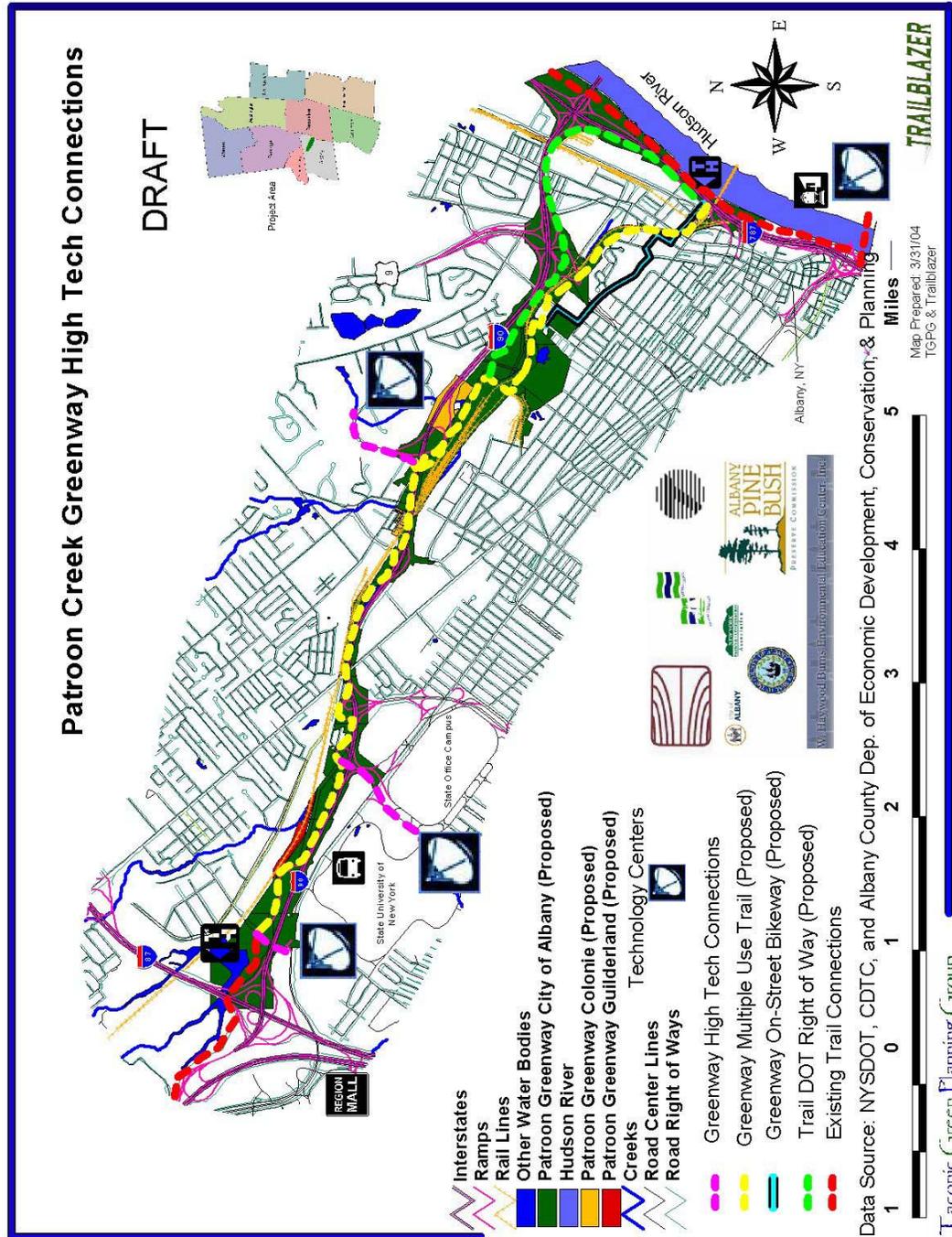
Environmental Justice: The Patroon Greenway offers the unique opportunity to connect three of the region's most significant public open spaces: the Albany Pine Bush, Tivoli and Corning Preserves. Access to these urban natural areas will help provide environmental justice to inner city and low-income neighborhoods that have been cut off from these places by I-90, have suffered the adverse affects of two Superfund sites, and have had to live with air and noise pollution associated with the highway corridor.

Economic Development: While the Greenway has the potential to generate economic development in the form of retail and tourism related services, its primary economic potential is as a quality-of-life benefit for the region. If the trail is ultimately connected to the Erie Canalway Trail between Rensselaer Lake and Schenectady, this potential will increase.

High Tech Connections: With the growth of 'Tech Valley' and the new nanotechnology center under development at the SUNYA / State Office Campus complex, the Patroon Greenway Trail can be seen as an integral part of this new high tech development. With knowledge-based employers and employees looking to locate to places that offer the ability to live, work, walk and bike, the trail has a direct connection to the region's high-tech development goals.

The Patroon Greenway will achieve these benefits through partnership and cooperation between community, business, agency and non-profit leadership. The trail is a way of organizing the combined energy of a diverse range of interests to achieve a common project that meets multiple goals and helps redefine the I-90 corridor into a regional gateway, a new experience connecting the city and nature, and a positive legacy for future generations.

Appendix 7.1: Map – Patroon Greenway High Tech Connections



Appendix 7.2: Albany County Transportation Census Data



CENSUS TRANSPORTATION PLANNING PACKAGE (CTPP 2000)

Table 1. Profile of Selected 1990 and 2000 Characteristics

Geographic Area: Albany County, New York

Subject	1990 Census		Census 2000		Change 1990 to 2000	
	Number	Percent	Number	Percent	Number	Percent
POPULATION						
Total population	292,594	100.0	294,565	100.0	1,971	0.7
In households	278,472	95.2	278,990	94.7	518	0.2
In group quarters	14,122	4.8	15,575	5.3	1,453	10.3
HOUSEHOLD SIZE						
Total households	115,901	100.0	120,645	100.0	4,744	4.1
1-person household	34,886	30.1	39,794	33.0	4,908	14.1
2-person household	36,920	31.9	38,682	32.1	1,762	4.8
3-person household	19,308	16.7	18,632	15.4	-676	-3.5
4-person household	15,411	13.3	14,807	12.3	-604	-3.9
5-or-more-person household	9,376	8.1	8,730	7.2	-646	-6.9
Mean number of persons per household	2.40	(X)	2.31	(X)	-0.09	(X)
VEHICLES AVAILABLE¹						
Total households	115,901	100.0	120,645	100.0	4,744	4.1
No vehicle available	17,019	14.7	17,142	14.2	123	0.7
1 vehicle available	43,710	37.7	46,816	38.8	3,106	7.1
2 vehicles available	41,150	35.5	43,167	35.8	2,017	4.9
3 vehicles available	10,558	9.1	10,503	8.7	-55	-0.5
4 vehicles available	2,584	2.2	2,342	1.9	-242	-8.7
5 or more vehicles available	900	0.8	675	0.6	-225	-25.0
Mean vehicles per household	1.49	(X)	1.47	(X)	-0.02	(X)
WORKERS BY SEX¹						
Workers 16 years and over	147,258	100.0	141,840	100.0	-5,418	-3.7
Male	75,665	51.4	72,910	51.4	-2,755	-3.6
Female	71,593	48.6	68,930	48.6	-2,663	-3.7
MEANS OF TRANSPORTATION TO WORK						
Workers 16 years and over	147,258	100.0	141,842	100.0	-5,416	-3.7
Drove alone	104,394	70.9	108,966	76.8	4,572	4.4
Carpooled	18,103	12.3	13,902	9.8	-4,201	-23.2
Public transportation (including taxicab)	11,022	7.5	7,956	5.6	-3,066	-27.8
Bicycle or walked	9,928	6.7	6,929	4.9	-2,999	-30.2
Motorcycle or other means	837	0.6	411	0.3	-426	-50.9
Worked at home	2,974	2.0	3,678	2.6	704	23.7
TRAVEL TIME TO WORK						
Workers who did not work at home	144,284	100.0	138,164	100.0	-6,120	-4.2
Less than 5 minutes	4,764	3.3	4,481	3.2	-283	-5.9
5 to 9 minutes	16,502	11.4	15,171	11.0	-1,331	-8.1
10 to 14 minutes	28,106	19.5	25,797	18.7	-2,309	-8.2
15 to 19 minutes	32,228	22.3	30,084	21.8	-2,144	-6.7
20 to 29 minutes	35,164	24.4	34,544	25.0	-620	-1.8
30 to 44 minutes	20,039	13.9	19,489	14.1	-550	-2.7
45 or more minutes	7,481	5.2	8,598	6.2	1,117	14.9
Mean travel time to work (minutes)	18.6	(X)	20.3	(X)	1.7	(X)
TIME LEAVING HOME TO GO TO WORK						
Workers who did not work at home	144,284	100.0	138,164	100.0	-6,120	-4.2
5:00 a.m. to 6:59 a.m.	22,864	15.8	24,737	17.9	1,873	8.2
7:00 a.m. to 7:59 a.m.	48,648	33.7	44,838	32.5	-3,810	-7.8
8:00 a.m. to 8:59 a.m.	37,709	26.1	33,868	24.5	-3,841	-10.2
9:00 a.m. to 9:59 a.m.	7,971	5.5	8,689	6.3	698	8.8
10:00 a.m. to 11:59 a.m.	4,844	3.4	4,739	3.4	-105	-2.2
12:00 p.m. to 11:59 p.m.	20,274	14.1	18,807	13.6	-1,467	-7.2
12:00 a.m. to 4:59 a.m.	1,974	1.4	2,506	1.8	532	27.0

¹ See the entry for this item in the Technical Notes in the root directory or state subdirectories (filename: tech_notes.txt).
(X) Not applicable.
Source: U.S. Census Bureau. Census of Population and Housing, 1990 and 2000 long-form (sample) data.

Data from the 2000 U.S. Census that shows population and transportation data for Albany County. Note that approximately 53% of households have only one vehicle or less.

Appendix 7.3: Project Area Data & Background

Annual Average Daily Traffic Data: Albany, New York

Interstate 90-Albany County: 2002 AADT: 120,700

Source: NYS DOT Traffic Volume Report

Central Avenue AADT: 25,000 to 30,000

Functional Classification: Principal Urban Arterial

Source: CDTC Traffic Volume Report, 1999-2002

<http://www.cdcmpo.org/tvr/data/ny5.htm>

Percentage of Albany County Households that have no vehicle available: 14.2%

Source: 2000 Census

Resident Populations in the City of Albany:

Grade School Students	8,559
High School Students	4,292
College Students	16,882
Veterans	7,347
Seniors (65+)	11,581
Disabled	18,802

Source: CDRPC Profile of Selected Characteristics, 2000

http://cdrpc.org/Census2000/DP2_CDR.pdf

Health and Physical Activity Data:

Percent of New York State Adults who are Overweight or Obese: 56%

Percent of New York State Residents who don't get enough physical activity:
73%

Source: NYSDOH, BRFSS 2000 data

Percent of Albany County Deaths Due to Cardiovascular Disease: 33% (924)

Percent of Albany County Deaths Due to Homicides: .003% (8)

*Source: New York State Department of Health
County Health Indicator Profiles (1997 - 2001)*

<http://www.health.state.ny.us/nysdoh/cfch/palban.htm>

Project Area Jobs Data:

Albany County NY Employed Citizens over the age of 16:	144,480	(2000)
Albany County, NY Median Family Income	\$56,724	
State University at Albany Employees	3,585	
NYS Office Campus Employees	9,000 (approx.)	

Unemployment Rates	(April, 2004)
Capital District	4.1%
New York State	6.0%
United States:	5.4%

Source: Capital District Regional Planning Commission, US Census 2000, NYS Office of the Governor, State University of New York at Albany

...

Background from the CDTC New Visions Regional Planning Process:

Pursuing Quality in the Capital Region

A Discussion Paper for Use in the Capital District Transportation Committee and Capital District Regional Planning Commission's Quality Region Initiative

CDTC Quality Region Task Force, September 2002

"...Building upon the current strong set of facilities and services is a great opportunity for the region to distinguish itself from other areas, but will be particularly challenging in an era of strong growth. It will be necessary to accelerate investment in information infrastructure, address funding shortfalls for both highway and transit modes (especially regarding transit service outside traditional commuting times), address the inadequate supply of safe bicycling facilities and accommodation along major transportation corridors, improve the integration of various transportation modes and improve integration of land use decisions with transportation considerations. In short, it will be necessary to more fully implement the key strategies of the current New Visions plan."

Source: <http://www.cdtempo.org/qualreg.htm>

Patroon Greenway Project

A Community and Transportation Linkage Planning Project

October, 2004

Tasks 3 & 4:

Refinement of Cost Estimates and Funding Opportunities



Prepared for:

Capital District Transportation Committee

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Patroon Greenway Project

Refinement of Cost Estimates and Funding Opportunities

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This project is funded through the Capital District Transportation Committee's (CDTC) Community and Transportation Linkage Planning Program.

1. Introduction

The proposed Patroon Greenway Trail, if developed, will connect The Pine Bush, Tivoli and Corning Preserves in Albany, New York. This 6.5 mile corridor includes a diverse range of land uses including residential, commercial, institutional and recreational facilities. The corridor's defining feature is currently I-90 between I-87 and I-787. The Patroon Creek Trail and the adjacent preserves can provide a rare opportunity to re-define this corridor as a linear resource connecting local communities and regional assets.

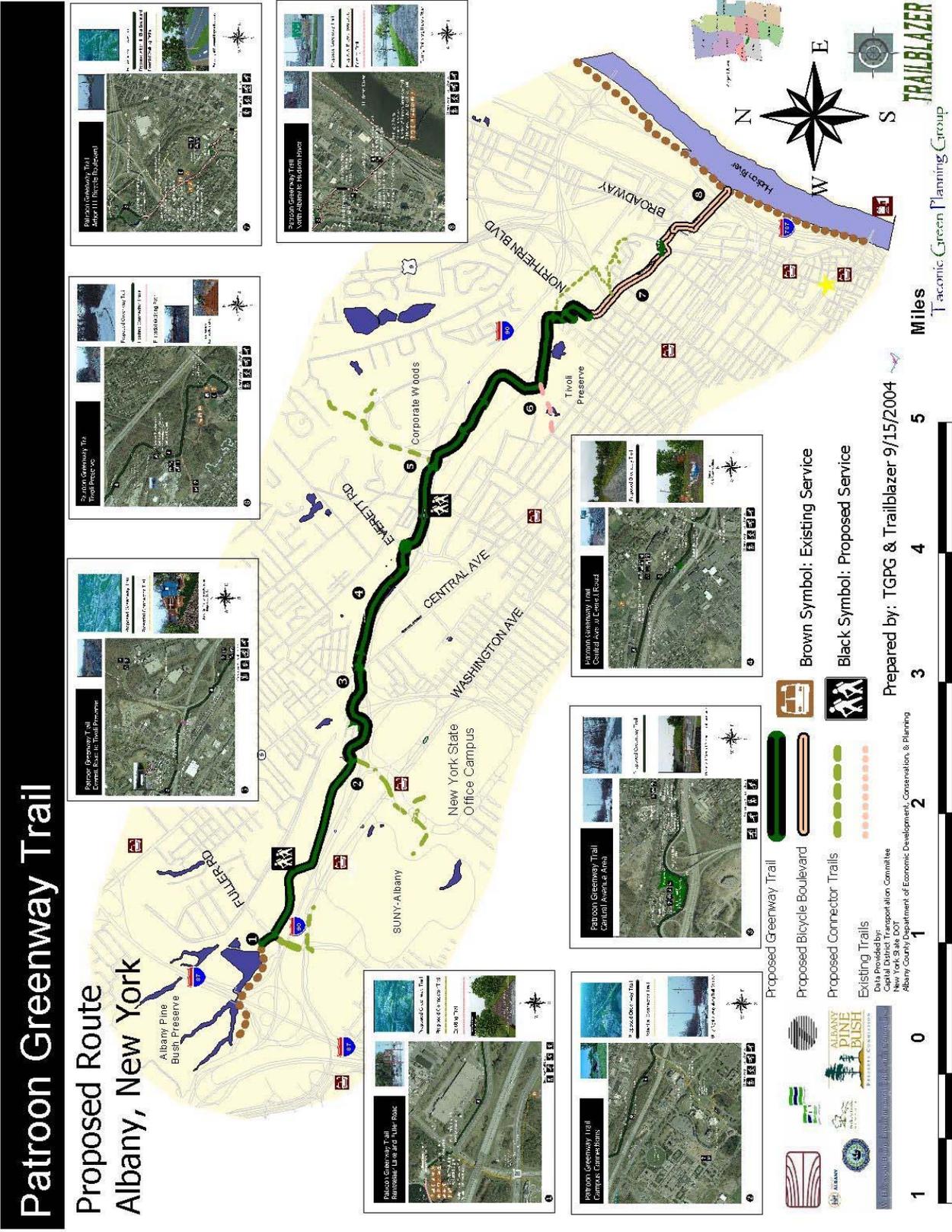
The first task of this study involved establishing a proposed alignment for the trail along the Patroon Creek from Rensselaer Lake at Fuller Road to the Hudson River. Task 2 was the development of a Regional Impact Report, and Task 3 was the development of Planning Level Conceptual Designs. Task 4, the final phase identified in the current scope of work, is the Refinement of Cost Estimates and Funding Opportunities. This document combines mapping and graphics developed in Task 3 with the cost and funding information developed for Task 4.

Please note that the information provided in this report is the result of a planning study, and does not represent final agreement or consent from landowners, agencies and other organizations regarding the proposed Patroon Greenway Trail. During this project a Study Advisory Committee, (SAC) was convened by the Capital District Transportation Committee, (CDTC). Two public information meetings were held to gather input. As this document states, this is the beginning of a long-term effort, and additional outreach, partnerships and agreements will need to be worked out as the project develops.

The map on the following page provides an overview of the proposed greenway corridor.

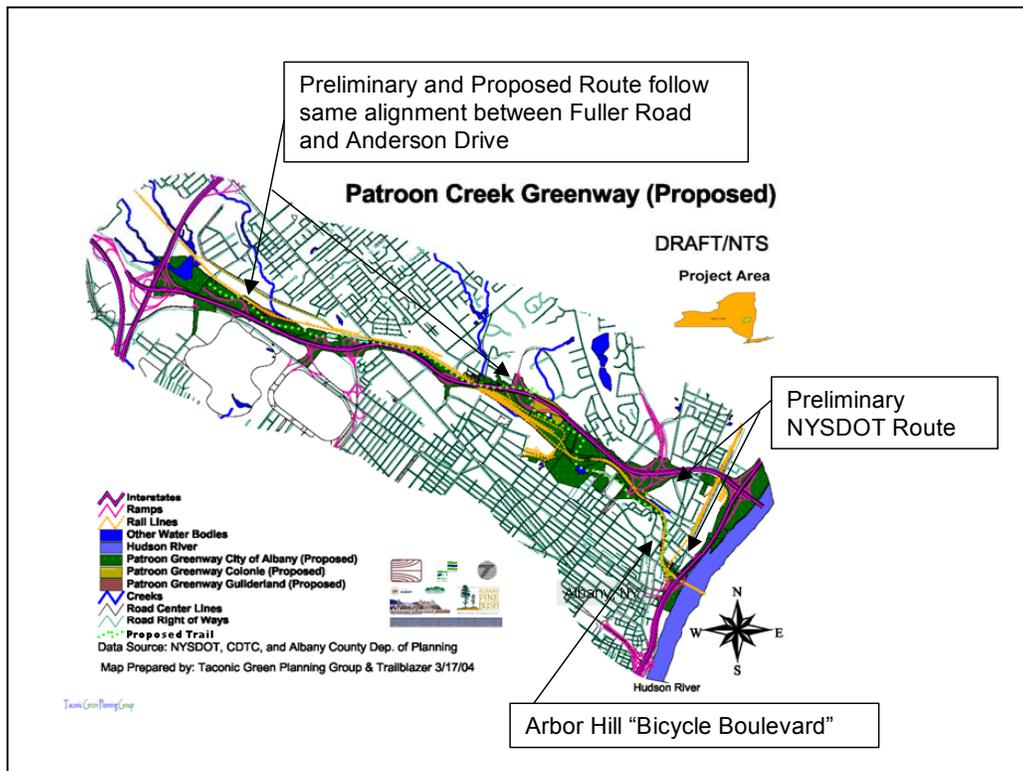


Aerial view of the I-90 / Patroon Greenway Corridor.
(J.Olson photo)



2. Proposed Route Feasibility Summary

The proposed Patroon Greenway Trail route has been evaluated to ensure connectivity, potential for implementation and cost effectiveness. This task began with a preliminary route proposed by NYSDOT as a starting point, and reviewed each segment to identify the recommended route. The initial NYSDOT alignment followed the I-90 corridor to utilize lands owned by the State. The proposed route closely follows this alignment between Rensselaer Lake at Fuller Road and the Anderson Drive crossing under I-90. However, the preliminary route did not provide good connections into the Arbor Hill community below Tivoli Preserve and required a challenging cantilever section adjacent to I-90 over the Niagara Mohawk property in North Albany. As a result, the proposed route was aligned to cross under I-90 at Anderson Drive, cross the historic double trestle over the rail yards, and cross through Tivoli Lake to Livingston Academy. From this point, a “Bicycle Boulevard” concept was developed for the route between Livingston Academy and the Hudson River. This direct route provides a new type of urban streetscape within the Arbor Hill neighborhood, and brings the trail directly into the community and to the Corning Preserve. The map below identifies the key components of this route selection. The individual segment maps on the following pages provide additional details for development of the Patroon Greenway Trail.



Segment 1: Rensselaer Lake and Fuller Road

Traveling from west to east, the Patroon Greenway Trail begins at the southeastern edge of Rensselaer Lake Park and the Six Mile Waterworks. From Rensselaer Lake, a small section of new shared-use path should be added within Rensselaer Lake Park to connect the existing path along the lake with Fuller Road. From this point, the proposed trail crosses Fuller Road at the existing signalized intersection for the I-90 ramps. Enhancements to the crossing would include a refuge island and a pedestrian signal phase. The proposed trail proceeds east through a 'pinch point' between the I-90 ramp and the parking lot of an adjacent commercial property, and another narrow section between the railroad and the highway ramp. Adjacent landowners should be consulted to consider property boundary adjustments in this section to accommodate the trail.

It is important to note that from Rensselaer Lake Park going west, an existing paved path crosses under the I-87 / I-90 interchange to connect along the south end of the Albany landfill site to the Albany Pine Bush preserve. West of Rapp Road, it is possible that a future connection to Schenectady could be established along the north side of the I-90 right-of-way in the Town of Guilderland. This future section could connect the Erie Canalway Trail in Schenectady with the Hudson River Greenway in Albany via the proposed Patroon Greenway Trail. This would make the Patroon Greenway an integral part of the Capital Region's trail system.

The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



The trail corridor includes nationally significant railroad history, including the site where the first man-made machine traveled more than 100 miles per hour. (J.Thomas photo)



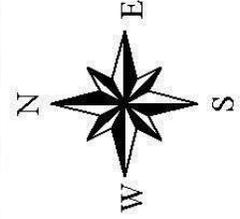
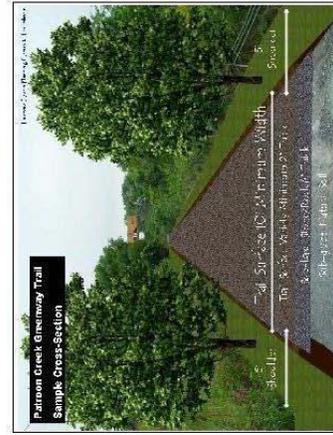
Proposed Greenway Trail



Proposed Connector Trail



Existing Trail



Patroon Greenway Trail Rensselaer Lake and Fuller Road



1

Segment 2: Campus Connections

Just past the I-90 ramp, the proposed trail crosses the first visible above-grade section of the Patroon Creek on a small footbridge / culvert. The trail proceeds along existing dirt and gravel paths that are apparently the result of existing ATV and unofficial trail use, and then continues along unpaved utility and service roads parallel to the railroad tracks. The proposed alignment proceeds through a wooded section between the railroad and I-90, with substantial buffers between the trail and both facilities. This section provides an opportunity to utilize the existing dirt surfaces as the base for new trail construction. Separation between active railroad lines and the trail would be in compliance with the recent USDOT 'Rails with Trails' study, which is available on-line at:

http://www.altaplanning.com/focus/rails_lessons.html

As the trail approaches the southbound ramp to Washington Avenue from the I-90 / State Office Campus loop, the opportunity exists to utilize the shoulder space on the ramp for a trail connection to the State University and the Harriman Office Campus. This connection would continue along the ramp to the Outer Loop Road between the two campuses in the vicinity of the existing New York State Police training center.

The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



Connector trails to nearby high-tech jobs, the State University, neighborhoods and business will be among the many benefits of the Patroon Greenway Trail. (1-66 Custis Trail, Arlington, VA, photo: <http://spoke.compose.cs.cmu.edu/fwe/trips>)



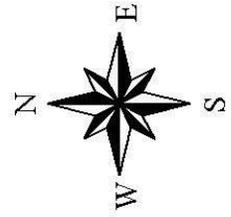
Proposed Greenway Trail



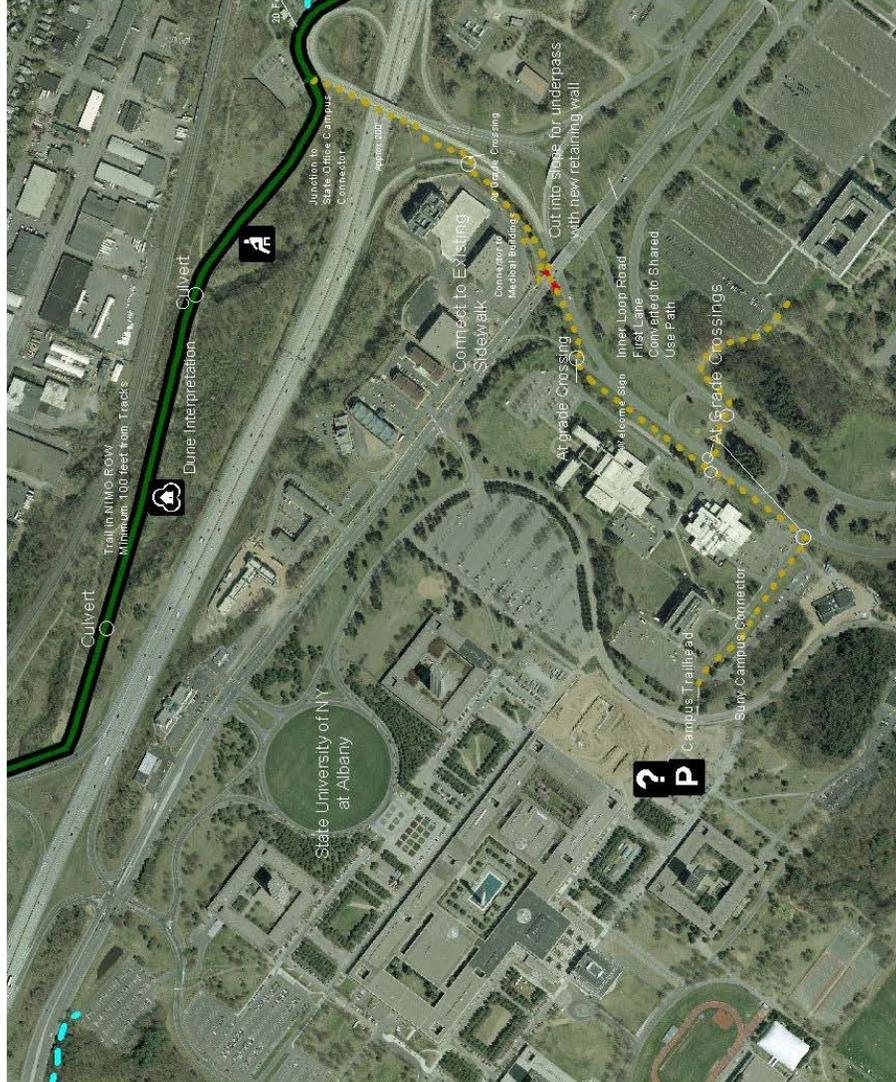
Potential Connector Trail



Utility Right of Way along Trail Corridor



Patroon Greenway Trail Campus Connections



2

Segment 3: Central Avenue Area

East of UAlbany, the proposed trail runs between the small residential section south of the railroad and the Interstate. At Central Avenue, the trail approaches an at-grade crossing location between the elevated sections of the railroad and I-90. This crossing should be upgraded to include a median refuge and flashing safety beacons activated by trail traffic. Future investments in bicyclist and pedestrian facilities on Central Avenue would enhance connections between the trail, commercial destinations, adjacent neighborhoods and CDTA transit services.

In this section, the Patroon Greenway offers potential amenities and benefits to the residential neighborhood adjacent to I-90. Sidewalks and streetscape improvements would enhance safety and quality of life, and improve access to Central Avenue businesses and transit stops. In addition, there is a parcel of State owned land along the proposed trail route that could become a park with playgrounds, trails and picnic areas accessible to local residents.

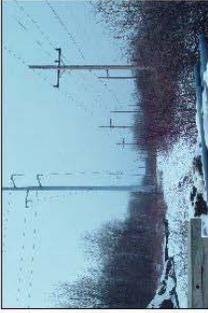
An informal trailhead exists on the east side of Central Avenue in this section, and this site would be enhanced with an information kiosk and a bike parking area. A “Bike and Ride” trailhead could be added to utilize the existing CDTA ‘Bikeable Bus’ service on this route, providing the opportunity for people to travel by a combination of transit and trail.

The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



The Central Avenue section provides an opportunity to connect the CDTA ‘Bikeable Bus’ with the Patroon Greenway Trail. (J.Olson photo)

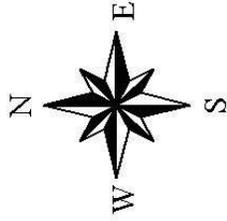
Patroon Greenway Trail Central Avenue Area



Proposed Greenway Trail



Proposed Central Avenue Trail Crossing



Greenway Trail Users

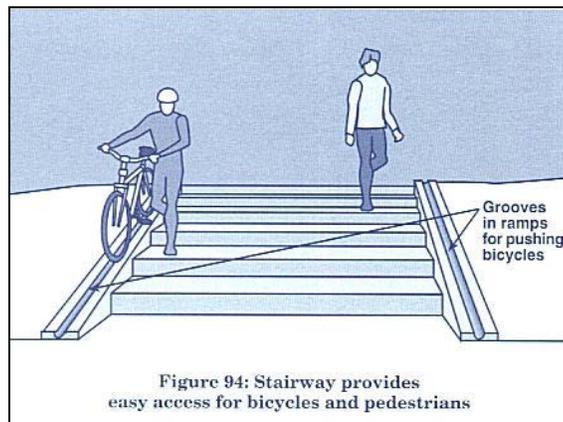
Segment 4: Central Avenue to Everett Road

The segment between Central Avenue and Everett Road includes an existing service road / trail that runs between an above-grade section of the Patroon Creek and the railroad tracks. This section is a NIMO-owned property that includes the Albany County Water / Sewer right-of-way. This is a very attractive section of trail, with level grades, good visibility, and the reservoir pond just west of Everett Road. These water features can be developed into a signature destination along the trail route, with excellent opportunities for environmental education and interpretation of the Patroon Creek's past, present and future.

An important destination in this vicinity is the West Albany recreation complex – access to which will require either a pedestrian bridge over the railroad tracks or an on-street connection through the neighborhood between the park and Central Avenue.

The most significant technical challenge in this section is providing access between the trail and Everett Road. In this section, Everett Road is elevated to cross over the railroad, creating a more than 20' difference in grade above the trail corridor. In addition, Everett Road is not pedestrian or bicyclist friendly, with a wide cross section, limited sidewalks, no bike lanes and high traffic volumes. Options for access include a) continuing under the road without trail access, b) providing a ramp along the north side of the I-90 eastbound ramp, and c) providing a 'Dutch staircase' with pedestrian access and a grooved track for walking bicycles up the stairs.

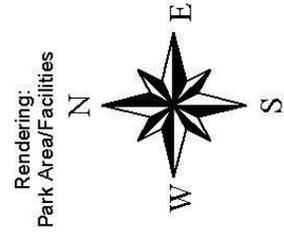
The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



Example of a stairway designed for bicyclists.
(Graphic: Oregon DOT Bicycle and Pedestrian Plan)



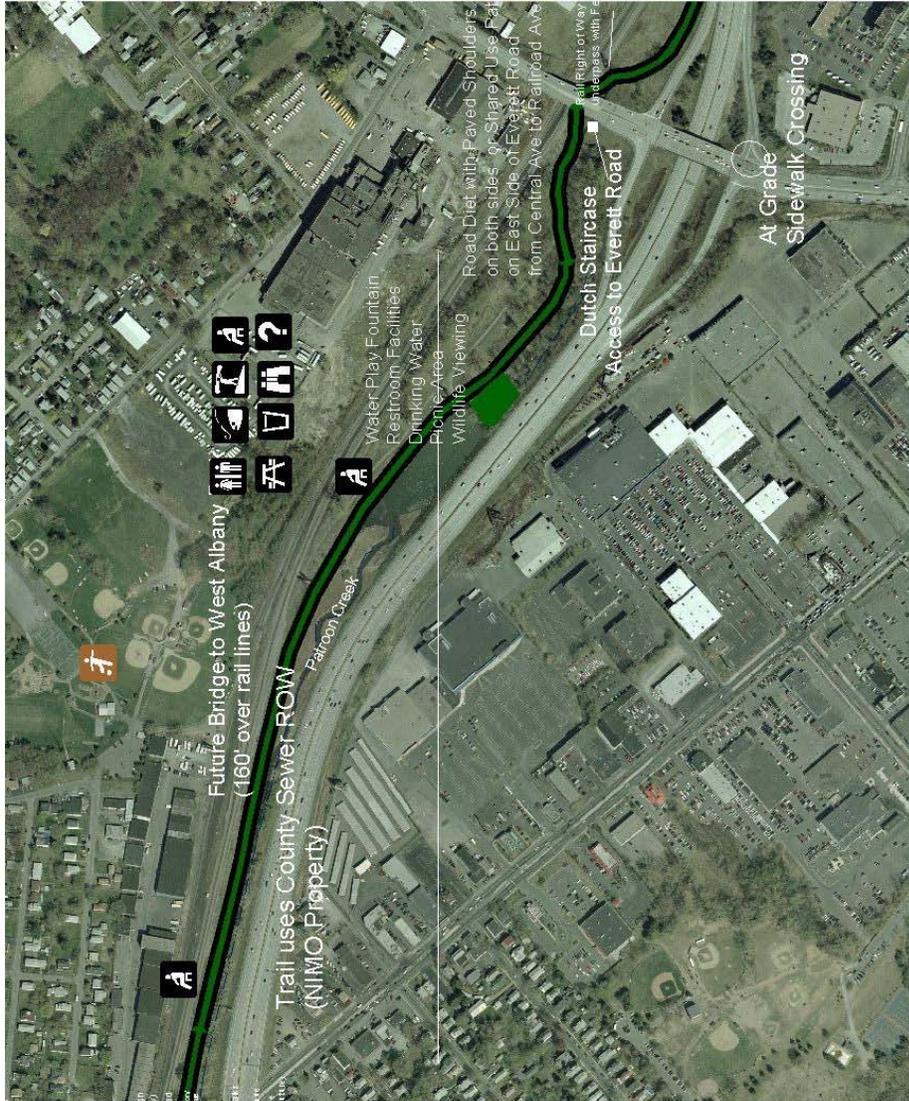
Proposed Greenway Trail



Rendering:
Park Area/Facilities



Patroon Greenway Trail
Central Ave to Everett Road



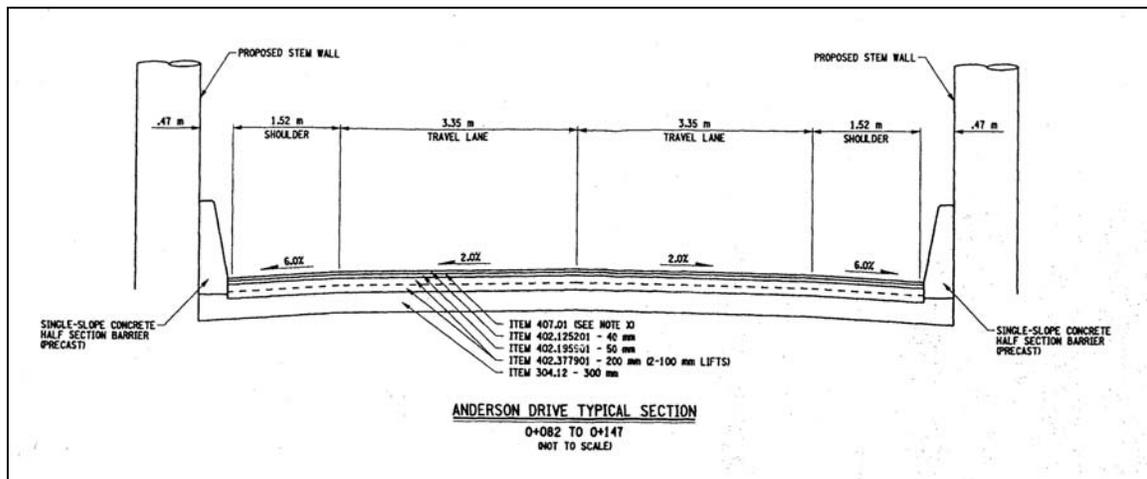
Greenway Trail Users



Segment 5: Everett Road to Tivoli Preserve

East of Everett Road the trail will follow the northern edge of I-90 and extend on a cantilevered section over the railroad to the north side of the tracks. This is the most technically challenging structural section of the trail. NYSDOT has included footings in the new bridge piers during the current reconstruction project to allow for this cantilever in the future. The trail will continue east of the bridge along the highway embankment, tapering to grade behind a series of industrial properties. At Anderson Drive, the trail will utilize the 1.5 meter shoulders provided by NYSDOT in the new culvert under I-90. After the culvert, the trail will continue north of the railroad yards along a former section of railroad track to the double trestles over the tracks. The trestles will require a structural evaluation, new decks and railings. The trail would then ramp down to grade on the south side of the tracks behind the Freihoffer's Bakery. The bakery and trestles would create another significant focal point along the trail.

The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



The new culvert built by NYSDOT under I-90 at Anderson Drive provides paved shoulders that could be used by pedestrians and bicyclists. (Graphic: NYSDOT)

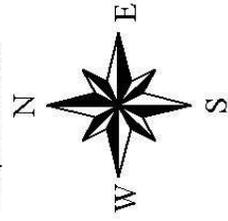


Proposed Greenway Trail

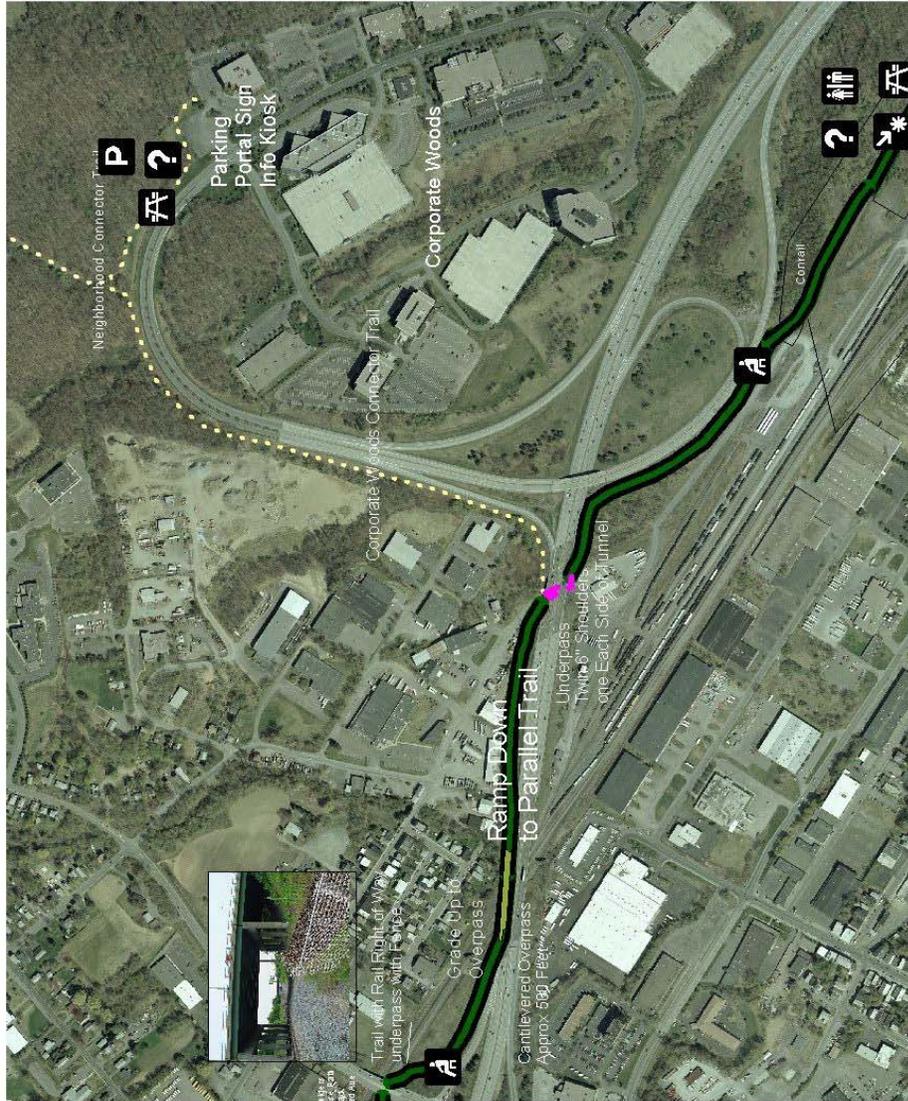
Potential Connector Trail



Historic Rail Car to be restored as Interpretive Center



Patroon Greenway Trail
Everett Road to Tivoli Preserve



5

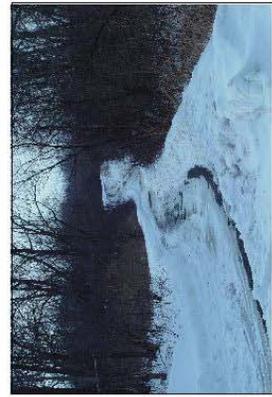
Segment 6: Tivoli Preserve

At Tivoli Preserve, the trail joins the existing preserve trail system. This is a rare opportunity for an experience of nature in an urban setting. The trail can amplify existing programs run by the W. Hayward Burns Environmental Center, the Sierra Club and other partners. This section of trail is relatively straightforward, with substantial separation from the railroad and access to Tivoli Lake. Care should be taken to differentiate between higher speed 'through' travel on the Patroon Greenway Trail and slower speed footpaths within the preserve. At the east end of the Preserve, the trail follows the existing path up to the north end of the Philip Livingston Magnet Academy property. The trail would then cross along the perimeter of the lawn in front of the school to the existing signalized intersection at Northern Boulevard.

The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



The Patroon Creek and the existing railroad service road between the trestles and Tivoli Preserve. (J.Thomas photo)



Proposed Greenway Trail



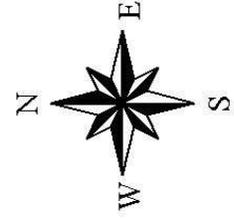
Existing Connector Trails



Potential Walking Path



Renderings
Rail Trestle Bridge



Patroon Greenway Trail
Tivoli Preserve



6

Segment 7: Arbor Hill Bicycle Boulevard

From the Livingston Academy to the Hudson River, the trail is proposed to follow a new “Bicycle Boulevard” developed on existing city streets. This alternative is preferred to other options along the railroad or I-90 corridors due to cost, access and safety concerns.

The railroad corridor is in a deep cut with little opportunity for egress and separation between a potential trail and the tracks. This section of track is part of the proposed New York State High Speed Rail Corridor, and is also a major freight corridor. While rail-with-trail projects are possible and the railroad’s gentle grade is well-suited for bicycle traffic, the availability of other alternatives with better access to local neighborhoods make the railroad Right-of-Way a low priority alternative in the near term.

The I-90 corridor goes far north of the city’s residential neighborhoods and would require a costly, cantilevered section on the steep embankment above the Niagara Mohawk property in North Albany. This option was outlined in the initial NYSDOT proposal for the trail, but primarily as an attempt to show that the whole project could be accomplished on State-owned property. However, due to potential cost of the cantilevered section, the lack of access to neighborhoods and services, and the increased trail distance along this route, the I-90 Corridor is also not a preferred option in the near term.

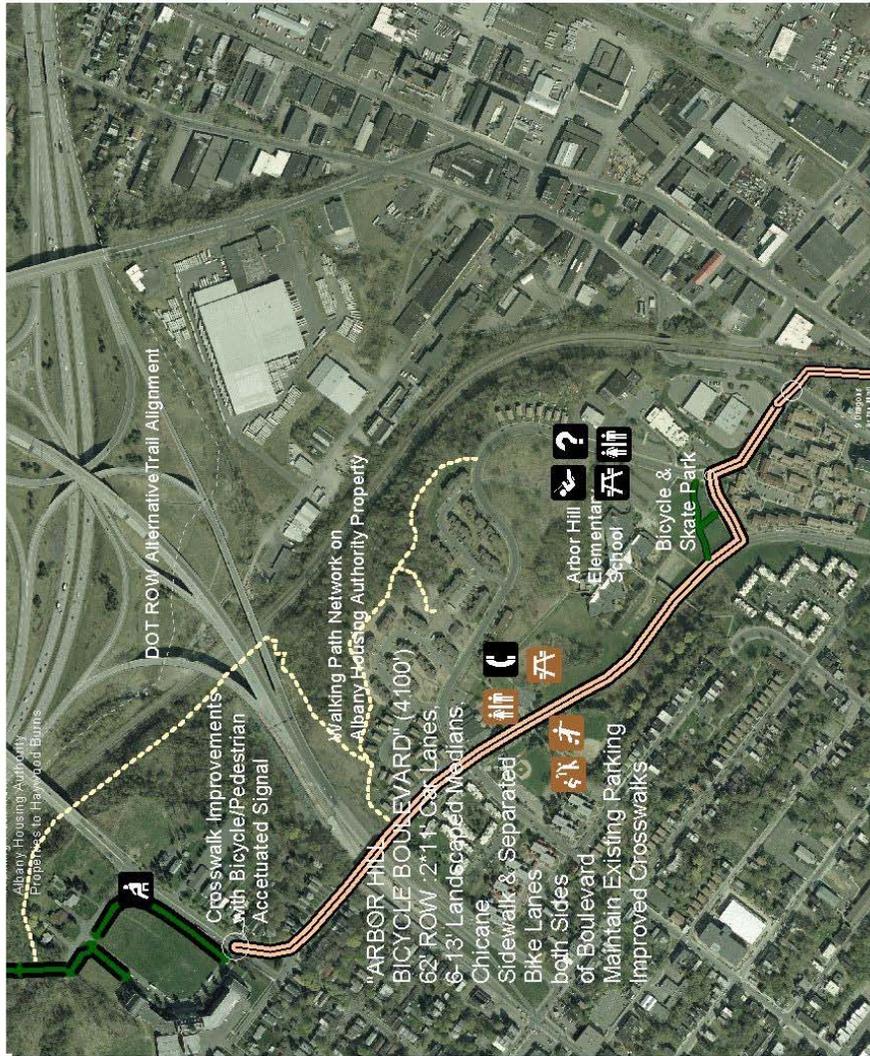
The Bicycle Boulevard alternative would use the existing width of Northern Boulevard through Arbor Hill to create a new urban street section with built-in bicycle lanes, pedestrian walkways and a canopy of trees and landscaping. Traffic calming and safety improvements would be provided at intersections, encouraging additional walking and bicycling in the neighborhood and creating improved access to the Arbor Hill School and parks

The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



This mobile bicycle repair shop is an example of local initiative at work along the Capital Region’s existing trails. (J.Thomas photo)

Patroon Greenway Trail Arbor Hill Bicycle Boulevard



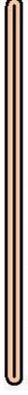
7



Proposed Greenway Trail



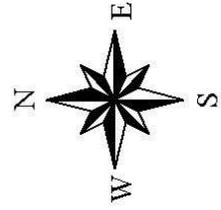
Proposed Arbor Hill Bike Boulevard



Potential Walking Paths



Rendering of Proposed Bicycle Boulevard



Segment 8: North Albany to Hudson River

At North Pearl Street, the trail would cross behind the proposed new Asian Market site, follow the south side of the railroad tracks, and then cross under the tracks via a new ramp and staircase at the retaining wall above the west end of Colonie Street. The key to maintaining the most direct and safe route in this section is coordinating the trail with the proposed Asian Market site plan, and developing an appropriate design for the change in elevation between North Pearl Street and North Broadway and the railroad retaining wall which forms the west end of Colonie Street.

From this point, the route would continue along Colonie Street to a proposed at-grade crossing of the freight railroad tracks. The street in this section is an urban remnant with only local access car traffic. There is significant potential for redevelopment along the street, and the trail could provide an important focus for this effort. Careful coordination will be required to work with the railroad in this section, since the tracks currently prohibit access between Colonie Street and the Corning Preserve at this location. The final segment of the trail would then cross into the Corning Preserve at the existing signalized crossing for the boat ramp and parking area below I-90. A new junction with a kiosk would mark the intersection of the Patroon Greenway Trail with the Mohawk- Hudson Bike-Hike Trail.

A more complex option in this section is to develop an elevated trail facility from the existing Livingston Avenue railroad bridge over the freight tracks to connect with the proposed Bicycle Boulevard at North Broadway. This would be a more costly and technically challenging alternative than the proposed at-grade crossing on Colonie Street. However, there have been proposals to use the walkway on the south side of the Livingston Avenue bridge as part of a loop trail connecting the cities of Albany and Rensselaer. If this trail system does develop, extending the elevated trail to North Broadway would be worth considering in the future.

The map on the following page shows the proposed alignment of the Patroon Greenway Trail in this section.



Opportunities exist for trail-related businesses, especially in Arbor Hill and in North Albany near the Hudson River and Corning Preserve. (J.Olson photo)



3. Planning Level Costs

In the past decade, more than a billion dollars in bicycle, pedestrian and trail projects have been developed in the United States. Federal ISTEA and TEA-21 legislation has provided the majority of this funding, with local and state matching funds providing a significant share. Data from national and regional sources can be used to identify planning level costs based on typical sections and unit costs for key features and amenities. A variety of websites display bike/ped project costs from Florida, Iowa, Oregon, North Carolina and other states. While New York State does not currently provide this type of resource, a review of available national data provides sufficient information to develop planning level costs for the proposed Patroon Greenway Trail.

The Ohio Department of Transportation provides a website section called “*How much do bicycle and pedestrian facilities cost?*” This section is prefaced with a useful introduction that says,

”The answer depends a lot on whether the project involves purchasing additional right of way, major drainage and ditch work, and other important factors. The Oregon state bicycle and pedestrian plan, for example, notes that “Bike lane striping can cost as little as \$2,000 per mile, but reconstructing a roadway requiring right-of-way and drainage improvements can cost as much as \$2 million per mile.”

This statement serves as a reminder that, while it may seem that a trail project which costs more than a million dollars is “expensive,” the reality is that other transportation projects that cost millions (or billions) of dollars are common. A goal for developing infrastructure for non-motorized transportation is to create projects that have a significant cost-benefit relationship relative to the funding invested in other highway and transit projects. The Ohio DOT site goes on to provide benchmark project costs for trails as follows:

Ohio DOT Trail Construction Unit Cost Data – (Updated July 15, 2002)

Projects built between 1998 and 2002 have these average construction costs per mile*

Shared use paths	\$519,895
Rail-trail	\$157,721
Paved Shoulders	\$258,166 (added on to existing roadway)
	\$132,682 (as part of roadway reconstruction)

* Costs are calculated by dividing the construction cost by the distance. Costs do not differentiate between simple and complex projects; complex projects include items such as bridges, tunnels, retaining walls and other topographical difficulties.

Source: “Funding for Bicycle Facilities” Ohio Department of Transportation
<http://www.dot.state.oh.us/bike/New%20Downloads/FAQ's%20-%20Funding%20.doc>

Patroon Greenway Project - Task 3 & 4 Report

Recent data provided by the New York State Canal Corporation indicates costs in the range of \$ 175,000 per mile for construction along the Erie Canalway Trail. This cost is for the trail surface only, exclusive of bridges, retaining structures, trailhead facilities, etc.. Data collected by the New York Bicycling Coalition identified the following 2001 NYSDOT, Vermont and Florida bicycle / pedestrian / trail project costs:

Construction Costs - NYSDOT 2001		
SURFACE MATERIAL	COST PER MILE	LONGEVITY
Soil Cement	\$60,000 - \$100,000	5-7 years
Granular Stone	\$80,000 - \$120,000	7-10 years
Asphalt	\$200,000 - \$300,000	7-15 years
Concrete	\$300,000 - \$500,000	20+ years
Boardwalk	\$1,500,000 - \$2,000,000	7-15 years
Resin Stabilized	Cost varies depending on type of application	7-15 years
Native Soil	\$50,000 - \$70,000	Depends on local use and conditions
Wood Chips	\$65,000 - \$85,000	1-3 years

Virginia Department of Transportation (2000)

Construction Costs		
CONSTRUCTION TYPE	COST	
Bike Path (10 foot wide)	\$92,000 per mile	
Bike Lanes (4 foot each side w/curb and gutter)	\$270,300 per mile	
Bike Lane Stripe, four inch line	\$.60 per linear foot	
Wide Curb Lane (2 feet each side)	\$48,600	
Paved Shoulders (4 feet each side)	\$69,200	
Bike Locker (for 2 bikes)	\$670 - \$930	
Bike Rack (10-12 bikes)	\$325 - \$730	

Florida Department of Transportation (1999)

Construction Costs		
CONSTRUCTION TYPE	COST	
Bike path (12 foot wide, railroad conversion)	\$128,000 per mile	
Bike lanes (5 foot each side, pavement extension)	\$189,000 per mile	
Paved Shoulders (5 foot each side, rural)	\$102,000 per mile	
Bike Lockers	\$1,000	
Sidewalks (both sides, 5 feet in width)	\$46,000 per mile	
Sidewalks (both sides, 6 feet in width)	\$54,000 per mile	
Walk/Don't Walk Signal System (four corners)	\$3,700	

This data is consistent with other national sources, which identify typical costs for an urban, multi-use, paved surface trail designed to meet AASHTO Guidelines.

For the Patroon Greenway Trail, a range of cost factors can be defined using the available data and the proposed route alignment as follows:

Land Acquisition / Easements

A significant portion of the proposed trail route is on land owned by the Niagara Mohawk / National Grid power company, with existing subsurface easements managed by the Albany County Water / Sewer Authority. The proposed route is based on preliminary interpretations that the use of these rights-of-way could accommodate trail use and potentially enhance maintenance access for the utilities. Negotiations will be required to ensure that all parties agree to this concept, and that an agreement can be arrived at without requiring additional land purchase costs. The remaining lands along the proposed route are properties owned by NYDOT, the disused Conrail / NY Central railroad tracks from Anderson Drive across the twin trestles to Tivoli Preserve, the Livingston Academy property and local streets. There are also a few locations (such as the 'pinch points' east of Fuller road between the I-90 ramp and adjacent industrial properties and near the Asian Market site in North Albany) where minor right-of-way adjustments may be required after more detailed designs are developed.

Right of Way Cost Factor: Low

Engineering / Construction

At a planning level, a number of key technical issues will need to be resolved through more detailed design and engineering. These include the cantilever section between Everett Road and Anderson Drive, structural evaluation of the historic twin trestles west of Tivoli Preserve, several retaining wall and culvert sections, and design of the "bicycle boulevard" through Arbor Hill. These challenging sections are offset along the corridor by long stretches, (such as between Central Avenue and Everett Road) where the existing gravel service roads will require minimal upgrades to establish the trail. There are no major new bridges required in the corridor and most of the at-grade crossings can use conventional details, with the exception of the proposed freight railroad crossing between the Corning Preserve and North Pearl Street.

Engineering Cost Factor: Medium - High

Amenities / Access Points

The Patroon Greenway Trail will require significant investments in access trails to destinations north and south of the I-90 corridor. These improvements will expand the trail's potential for both utilitarian and recreational use. In addition, there are a series of amenities and interpretive features that will provide interest and destinations along the route. These are identified in the detailed map sections, and include the historic trestles, a proposed water feature, small parks / playgrounds, and enhancements to the Tivoli and Pine Bush preserves.

Amenities Cost Factor: High

Probable Cost Range

The initial NYSDOT proposal for Patroon Greenway anticipated greater use of the NYSDOT R.O.W., especially between Tivoli Park and the Hudson River. The initial DOT estimate for the project was for between \$ 4.9 and \$ 7.6 million. Note that this included a longer trail length and additional cantilevered sections in order to maintain the route within the DOT right-of-way.

Based on the land acquisition, engineering and amenities ranges identified in the prior section, and using the data available for similar project costs, it is possible to apply probable cost factors to the proposed 6.5 mile length of the Patroon Greenway Trail. These factors are based on the amount of the proposed route that will utilize the existing service road base, the potential complexity of the engineered segments, and the identified amenities. Specific segments that will require higher-than average per-mile costs include the cantilever section over the rail lines west of Everett Road, the restoration of the two trestles west of Tivoli Preserve, and the ramp and grade crossing on Colonie Street. Taking these factors and the available data into account, the following cost range can be established for the project:

Patroon Greenway Trail – Probable Costs			
Cost Range	Trail Length	Cost / Mile	Cost
Low	6.5 miles	\$ 400k	\$ 2.600m
Medium	6.5 miles	\$ 500k	\$ 3.250m
High	6.5 miles	\$ 600k	\$ 3.900m

Note that these amounts do not include the proposed connector trails to destinations north and south of the corridor. These facilities would add an additional 1.5 miles of trails. Based on the above cost value range, this would amount to an additional \$ 600,000 to \$ 900,000. Also, the Bicycle Boulevard section through Arbor Hill could include alternatives for improvements to the urban street system along with improvements to the trail system. Alternatives would range from a simple re-striping of the current roadway to a complete street reconstruction project. This section is approximately 1.25 miles long. Specific designs for changes to curbs and drainage and intersection treatments will impact the costs for this section.

While these numbers provide planning level costs, more detailed estimates will be developed during future project design phases. To facilitate this process, the spreadsheet on the following page was developed using existing G.I.S. project data. It can serve as a baseline for cost estimating during design development.

Patroon Greenway Trail										Prepared by: Trailblazer & Taconic Green Planning Group	Date: 8/31/2004	Approximate Costs		
	Rensselaer Lake/Fuller Road	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8	Total	Units	Unit Cost	Total Cost	
		3775	3560	2980	4335	4400	5275	900	North Albany to Hudson River	25285	Feet			
Trail Length		3775	3560	2980	4335	4400	5275	900	0	25285	Feet			
Bicycle Boulevard Length		0	0	0	0	0	0	4196	2321	6617	Feet			
Connector Trails (Improved)		2400	5668	120	0	4048	0	715	0	12949	Feet			
Connector Trails (Unimproved)		0	0	800	0	1256	1575	4294	0	7925	Feet			
Amenities														
Benches		2	3	3	3	1	3	3	2	20	#			
Picnic Tables		0	2	4	4	2	4	2	2	20	#			
Restroom Facilities		0	0	0	1	1	1	0	1	4	#			
Drinking Fountains		1	0	1	1	1	1	1	1	7	#			
Information Center		1	0	0	1	1	1	0	0	4	#			
Recreation Area		0	0	1	1	0	1	1	0	4	#			
Shelter		1	0	1	1	1	1	0	0	5	#			
Signage														
Information Boards		1	1	1	2	1	3	1	1	11	#			
Mile Markers		2	2	2	2	2	3	2	1	16	#			
Enforcement Signs		2	6	2	2	2	2	6	4	26	#			
Crossing Signals		1	5	1	0	1	0	3	3	15	#			
Portal Signs		2	2	3	2	3	2	2	2	18	#			
Interpretive Displays		1	1	1	2	1	3	1	1	11	#			
Security														
Lighting										0	#			
Emergency Phones		1	0	1	1	0	1	1	1	6	#			
Engineering Features														
Culverts		90	60	120	0	0	0	0	0	270	Feet			
Canilever		0	0	0	0	475	0	0	0	475	Feet			
Bridge (Rail Trestle Restoration)		0	0	0	0	0	240	0	0	240	Feet			
Overpass (Rail)		0	0	0	0	0	0	0	150	150	Feet			
Underpasses/On-Street Facilities		0	600	1000	120	320	0	0	0	2040	Feet			
Access Improvements		n/a	n/a	n/a	1 curb cut/curb	grade issues	grade issues	n/a	n/a	3	Type			
Parking Areas										0	Area			
Intensification Improvements		1	5	1	0	0	0	4	3	14	#			
Physical Traffic Control Features		2	0	2	0	0	0	4	3	11	#			
Landscaping														
Trees										0	#			
Other Plantings										0	#			
Water Features		0	0	1	1	0	0	0	0	2	#			
											Total Project Cost estimate	0	Total Length	0

4. Project Implementation

Implementing the Patroon Greenway Trail will require a public-private partnership between state agencies, local government, non-profit organizations, the business community and individuals. Please note that the concepts presented in this document are the beginning of the process, and that detailed discussions, public involvement and agreements by landowners, managing agencies and organizations are required to move the project forward. Essential to this process is identification of a 'champion' who will have the vision, persistence and leadership skills to make the project happen over the long term. This champion can be an individual or an organization. In many successful projects, a 'friends of the trail' group is formed to share this responsibility, with an individual serving as the group's leader. This model is developing in a variety of projects along the New York State Canalway Trail System.

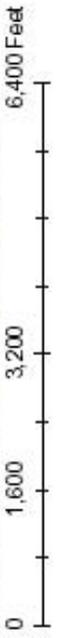
Sponsorship / Ownership

The initial leadership for the Patroon Greenway came through cooperation with the W. Hayward Burns Environmental Center, the City of Albany, NYSDEC, and OPRHP. This effort was motivated by environmental remediation efforts in the corridor. The Patroon Greenway Trail Project was given momentum by NYSDOT, which did an initial review as part of the preliminary planning for ongoing I-90 reconstruction. The current planning study is funded through CDTC with a task force representing a variety of state, regional and local partners. Following this study, it is recommended that a "Friends of Patroon Greenway" organization be established. This group can include current task force members and other leadership who can raise funds, provide technical skills and ensure access to key partners and resources.

Ownership and maintenance responsibility for the trail once it is built can follow a number of models. Currently, other multi-use trails in the Capital Region are usually maintained by local communities and built with locally matched State and Federal funding. This has been the case for the Mohawk-Hudson Bike-Hike Trail, which was built on land owned by NYSDOT, OPRHP and local jurisdictions with Land and Water Conservation Funds in the late 1970s, and enhanced with local efforts and NYSDOT funding as part of the construction of I-787. Since Albany County / NIMO right-of-way makes up a majority of the proposed route, and the City of Albany manages the existing Corning, Tivoli, and Pine Bush preserves, an interagency partnership agreement could be developed for County ownership and City maintenance of the trail project. This would be facilitated by funding support by NYSDOT for capital improvements to the trail using state and federal aid, as well as use of the I-90 right-of-way. Again, this is only a recommended concept pending detailed discussions with the appropriate agencies and organizations. To facilitate this process, a parcel ownership map for the proposed trail corridor is provided on the following page.

Patroon Creek Greenway Proposed Adjacent and Right of Way Properties

Data Provided by: CDTC, & Albany
County Department of Economic Development,
Conservation, & Planning
Map Prepared by: Taconic Green &
Trailblazer 10/12/2004



Legend

Patroon Greenway Trail Proposed	DOT & Rail Properties
Arbor Hill Boulevard Proposed	Rail Properties Only
Water Bodies	Albany Tax Parcels
Hudson River	CITY OF ALBANY
Creeks	CONSOLIDATED RAIL CORP
Edge of Pavement	COUNTY OF ALBANY
Rail Lines: Active & Inactive	NIAGARAMOHAWK POWER CORP
Road Rights of Way	Colonial Tax Parcels
Road Center Lines	Guildford Tax Parcels

Logos: Taconic Green Planning Group, Albany County Department of Economic Development, Conservation & Planning, City of Albany, Consolidated Rail Corp, Niagara Mohawk Power Corp, Guildford Tax Parcels, Trailblazer.

Maintenance and Operations

There is a range of maintenance and management systems available for the Patroon Greenway Trail. There have been discussions about establishing a State Park along the Patroon Creek. Community volunteer programs can help with labor-intensive projects, including litter removal, tree planting, trail patrols and 'adopt a trail' projects. However, there is still a need to have a core responsibility for the facility. Potentially this role could be filled by either the City or the County, in cooperation with the adjacent neighborhoods and destinations. For example, the Philip Livingston Magnet Academy could adopt the maintenance of the trail near the school, the employees of Corporate Woods could adopt maintenance of their connector trail, and the Burns Environmental Center could be responsible for educational outreach along the corridor. A local 'trail patrol' could enhance public safety and security along the corridor. The local Arts Council could get involved by providing benches and bike racks designed by local artists. These kinds of partnerships would expand the potential for developing and funding the trail beyond the limited resources of local government.

Issues and Opportunities

The key issue for implementing the trail will be assembling the resources for facility construction. With the majority of the I-90 reconstruction already in progress, the opportunity for integrating the trail within freeway construction is limited. Since the TEA-21 federal transportation reauthorization process is currently unresolved, it is possible that an opportunity will present itself once the new federal aid program is approved. In the meantime, the next year will provide a good time for the community to organize around the trail vision. The current study has initiated a public outreach effort, but this should only be seen as the start of that process. The formation of a friends organization and steering committee is essential, and one of its first tasks will be to present this concept to leadership at the state and local levels. Once a base of support is built, that core can be expanded to begin implementation. In the short term, some 'early wins' will be needed – for example, officially 'opening' the existing service road trail at the Central Avenue trailhead, or conducting a walk along the corridor with the local media.



As part of the current I-90 reconstruction, a new ramp lane is being added between I-787 south and I-90 west near the Corning Preserve. The estimated cost of this earthwork and the new bridge section is more than \$1.5 million dollars. The new section is approximately 1,800 feet long. (J.Thomas photo)

5. Potential Funding Sources

Each greenway and trail project has unique opportunities to raise funds for its construction, operation and maintenance. In some cases, a single source of funds provides for the development of the entire project. On the other hand, it is often necessary to capitalize on a wide variety of public, foundation and private fundraising sources to build a trail. It is important to recognize that there are sources of funding that provide capital funding, and others that provide organizational and program funding. Some sources will require matching funds, while others will provide 100% funding.

The most commonly used trail funding source for the past decade has been the Transportation Enhancements program, which was a required set-aside of funding from the federal ISTEA and TEA-21 legislation. At this time, this legislation is pending reauthorization, so it is not known if this funding source will be renewed and how much funding will be made available. However, the success of this program to date and the public support it enjoys are indications that there will be Transportation Enhancements funds in the near future. Another factor is that the Patroon Greenway Trail is located within an interstate highway corridor, so sections of the project may be eligible for a wide variety of State and Federal transportation funding resources. Also, it is possible that a new Safe Routes to Schools program will be created at the state and federal level, and the trail could clearly benefit from this source of funding.

In the Capital Region, the CDTC develops the Transportation Improvement Program (TIP) for federal aid transportation projects. The TIP is developed through a public process, and the Patroon Greenway would need to be included on the TIP in order to receive federal transportation funding. In addition, CDTC prepares an annual work program for studies to be developed. Both documents are developed as part of an open public process involving the region and its elected officials. The CDTC work program and TIP can be viewed on-line at:

[2004-05 Unified Planning Work Program \(UPWP\)](#)

[2003-08 Transportation Improvement Program \(TIP\)](#)

CDTC's funding programs include a regional "Spot Maintenance" program for low-cost bike/ped improvements, as well as funding for Community and Transportation Linkage studies, including the Patroon Greenway project. In addition, there are a wide variety of other state, federal and local funds available for bicycle/pedestrian and trail projects. The chart on the following pages is a modified version of a document produced by the New York Bicycling Coalition and available at www.nybc.net. This provides a cross section of potential resources, along with information and links to the application process.

Potential Funding Sources for Bicycle and Pedestrian- Related Projects

Funding Source	Stipulations	Contact Information
<p>TEA-21</p> <ul style="list-style-type: none"> • Transportation Enhancements Program 	<ul style="list-style-type: none"> • Project must relate to surface transportation and meet one of the 12 eligible activities) 	<ul style="list-style-type: none"> • http://www.fhwa.dot.gov/environment/te/index.htm • http://www.fhwa.dot.gov/environment/te/teas.htm (12 activity requirements) • http://www.fhwa.dot.gov/environment/te/relate.htm (Surface transportation requirements) • http://www.enhancements.org/profile.asp (NYS Program)
<p>TEA-21</p> <ul style="list-style-type: none"> • Congestion Mitigation and Air Quality Improvement (CMAQ) Program 	<ul style="list-style-type: none"> • Projects and Programs to meet the requirements of the Clean Air Act [NYS DOT 1997:33] 	<ul style="list-style-type: none"> • http://www.fhwa.dot.gov/environment/cmaqpgs/ • http://www.fhwa.dot.gov/environment/cmaq/cmaqbroc.pdf (Brochure) • http://ntl.bts.gov/data/energy-env/air/00489.html (Guide for program)
<p>TEA- 21</p> <ul style="list-style-type: none"> • Hazard Elimination Program 	<ul style="list-style-type: none"> • Funds activities to resolve safety problems at hazardous which may constitute a danger to motorists, pedestrians, and bicyclists 	<ul style="list-style-type: none"> • http://www.fhwa.dot.gov/tea21/factsheets/isfty.htm • http://www.fhwa.dot.gov/tea21/index.htm
<p>Governor's Traffic Safety Committee</p> <ul style="list-style-type: none"> • Section 402 	<ul style="list-style-type: none"> • Funds for Local traffic safety projects 	<ul style="list-style-type: none"> • http://www.nhtsa.dot.gov/people/outreach/safedige/Fall1998/n5-111.html
<p>Consolidated Local Street and Highway Improvement Program (CHIPS)</p>	<ul style="list-style-type: none"> • Local highway and bridge capital improvements • Assists localities in matching federal funds for projects 	<ul style="list-style-type: none"> • http://www.dot.state.ny.us/chips/index.html • http://www.dot.state.ny.us/chips/guide.pdf (Guidelines) • http://www.osc.state.ny.us/localgov/muni/releases/marchise.htm

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<p>Environmental Protection Fund (EPF)</p> <ul style="list-style-type: none"> • Title 7 • Title 9 	<ul style="list-style-type: none"> • Allocates funds to DEC and OPRHP for land purchases • Funds to local government and not-for-profit organizations to purchase, develop, and preserve park lands and historic resources 	<ul style="list-style-type: none"> • http://www.dec.state.ny.us/website/opensp/oepfl4.html
<p>Land and Water Conservation Fund/ Municipal Parks Matching Grant Program</p>	<ul style="list-style-type: none"> • Allocates funds for walking and biking projects, and those protecting open spaces 	<ul style="list-style-type: none"> • http://www.nysparks.com/grants/ • http://nysparks.state.ny.us/grants/info.html • http://nysparks.state.ny.us/grants/ProgramInfoLWCF.htm • http://www.nysparks.state.ny.us/grants/ProgramInfoPKS.htm
<p>Hudson River Valley Greenway</p>	<ul style="list-style-type: none"> • Allocates funds for planning and project implementation for those located within the geographic area of the Greenway, including efforts that support trails and bicycling 	<ul style="list-style-type: none"> • http://www.hudsongreenway.state.ny.us/funding/funding.htm • http://www.hudsongreenway.state.ny.us/funding/commgrant.pdf • http://www.hudsongreenway.state.ny.us/funding/compgrant.pdf
<p>NYS Canal Corporation</p>	<ul style="list-style-type: none"> • Offer funds to communities along the canal system to facilitate the construction of local trails and other amenities 	<ul style="list-style-type: none"> • http://www.canals.state.ny.us/busdevel/index.html • http://www.canals.state.ny.us/busdevel/doingbus.html • http://www.canals.state.ny.us/busdevel/doingbus.html#dobusine
<p>Empire State Development Corporation (Metropolitan Economic Revitalization Funds MERF)</p>	<ul style="list-style-type: none"> • Encourages private investment to create new development 	<ul style="list-style-type: none"> • http://www.nylovesbiz.com/default.asp • http://publications.budget.state.ny.us/fy0405app1/esdc.pdf

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<p>Empire State Development: Economic Development Fund</p>	<ul style="list-style-type: none"> • Funding to large and small businesses for economic development 	<ul style="list-style-type: none"> • http://www.awib.org/content_frames/articles/empire.html • http://publications.budget.state.ny.us/fy0405app1/esdc.pdf
<p>Division of Housing and Community Renewal (Community Development)</p>	<ul style="list-style-type: none"> • Provides funds to develop housing, for housing preservation, and development activities within communities 	<ul style="list-style-type: none"> • http://www.dhcr.state.ny.us/ocd/pubs/pdf/cpm03.pdf • http://www.dhcr.state.ny.us/ocd/ocd.htm • http://www.dhcr.state.ny.us/ocd/progs/ocdprogs.htm • http://www.dhcr.state.ny.us/ocd/nofas/ocdnofas.htm
<p>NYS Department of Health, Healthy Neighborhoods Program</p>	<ul style="list-style-type: none"> • Provide funds to promote environmentally healthy, safe neighborhoods (NYC, Clinton, Erie, Niagara, Cayuga, Onondaga, Rockland, Westchester pilot projects) 	<ul style="list-style-type: none"> • http://www.co.clinton.ny.us/departments/health/PR020715.htm (Clinton County) • http://www.ongov.net/Health/environmental.html#neighborhood (Onondaga County) • http://www.co.westchester.ny.us/health/Healthy%20Neighborhod.htm (Westchester County) • http://www.erie.gov/health/offices/eh_healthy_homes.asp (Erie County) • http://www.co.cayuga.ny.us/healthdept/directory.html (Cayuga County)
<p>NYS Department of Health, Healthy Heart Program Rivers, Trails and Conservation Assistance Program (RTCA)</p>	<ul style="list-style-type: none"> • Funds programs that make it easier for New Yorkers to choose healthy lifestyles • National Park Service program provides resources to local projects 	<ul style="list-style-type: none"> • http://www.health.state.ny.us/nysdoh/heart/healthy/healthy.htm • http://www.health.state.ny.us/nysdoh/heart/heart_disease.htm ◆ http://www.nps.gov/rtca/

5. Conclusion / Next Steps

Developing a major project like the Patroon Greenway Trail requires extensive cooperation, leadership and vision. This planning study identifies the potential for developing the trail along the I-90 corridor between the Hudson River and the Pine Bush Preserve. This project is possible, and there are similar successful projects that have been created in the U.S. and here in New York State. To advance the project, a series of key next steps can be outlined as follows:

1. Identify project leadership: A project champion needs to take the critical step of becoming the 'owner' of the project
2. Project Advisory Group: An ongoing interagency, public-private forum can be established to develop the working relationships and partnerships critical to the success of the project.
3. Establish 'Friends of the Trail' organization: An existing non-profit could host this entity, or a new organization can form to advocate on behalf of the trail.
4. Meetings with landowners: One-on-one meetings should be held with NIMO, CSX, Albany County, the City of Albany, NYSDOT and adjacent landowners to confirm their support for the proposed trail.
5. Identify "early wins": Find some short-term successes that can be achieved in less than a year – a trail cleanup event, a new kiosk with a map of the proposed route, a website for the project.
6. Expand public outreach: Work with local community organizations, schools and local media to get the word out about the project and expand involvement in its ongoing development.
7. Develop cooperative agreements: Negotiate access rights and maintenance responsibilities for the proposed trail, so that these elements are part of the trail development process.
8. Initiate Project Funding: Utilize all available public, private and non-profit resources, and leverage multiple funding opportunities to advance the project.
9. Design Development: Develop detailed phases of the trail plan to advance the project to construction.
10. Environmental (SEQRA) Review: Ensure that the project meets all required environmental permit and review requirements, including cultural, historic and natural resources.

11. Construction & Operation: As the project is built, integrate community activities into ongoing operation of the trail, so that it becomes a part of every neighborhood it passes through, and so that residents, visitors and agencies care for the trail long into the future.

These steps will not necessarily happen in a linear fashion. It is not uncommon for opportunities to present themselves, such as the availability of a new funding program or a local leader becoming a champion for the project. Note that it is also possible that some of the elements of the trail could be provided as integrated elements of larger projects, such as through ongoing roadway or rail infrastructure projects, or as part of an environmental remediation effort.

It is important to keep in mind that this planning study is only the first of many steps towards creating the Patroon Greenway Trail. This study has established a vision of how the project could enhance the lives of the Capital Region's residents and visitors. It is now possible to see the full potential for the trail. Connecting the Corning, Pine Bush and Tivoli Preserves can become a reality. It may take time, resources and a lot of hard work, but future generations will benefit from their ability to walk and bike from the Hudson River to Rensselaer Lake along the Patroon Greenway Trail.

For Additional Information, Please Contact:



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