

City of Glens Falls, NY Pedestrian and Bicycle Connectivity Study Final Report

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Prepared with assistance from Saratoga Associates

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Pedestrian and Bicycle Connectivity Study

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Section 1 Project Introduction and Overview



SECTION 1 Project Introduction and Overview

The City of Glens Falls has prepared the Pedestrian and Bicycle Connectivity Plan to develop a balanced multimodal, transportation system that will improve the efficiency and safety of walking and biking within and around the City of Glens Falls for people of varying abilities.

The primary planning area includes the City of Glens Falls with a concentration on the downtown business district as well as the pedestrian and bicycle networks; surrounding parks and recreational resources; and schools and other destination areas. The Plan also evaluates existing regional connections in portions of neighboring Saratoga, Warren and Washington Counties.

1.1 Objectives of the Plan

The Connectivity Study addresses numerous aspects of walking and biking within and around downtown Glens Falls. The following are key objectives the study has set out to consider:

1. Improve connections into and around Downtown Glens Falls. A key element to the Plan was to identify certain connection improvements that could positively support downtown housing and improve the quality of life for businesses and residents throughout the City.
2. Identify gaps and safety issues on the City's various paths, trails and recreational resources. The Plan has evaluated the Feeder Canal Trail, the Warren County Bikeway and existing designated on-street bike routes to determine their existing conditions and need for potential improvements.
3. Improve connections to and from schools. In addition to downtown connections, it is critical that connections to and from schools are safe and promote increased walking and biking opportunities.
4. Improve connections to and from parks. Similar to schools, the City would like to promote increased use of neighborhood and regional parks by people walking and biking. A safe connection for each park relative to the neighborhood it serves is critical.



1.2 The Importance of Pedestrian and Bicycle Connectivity

Prior to the rapid rise of automobile use in the early 20th Century, bicycling and walking were common modes of transportation in the United States. As the dominant mode of transportation, walking guided the pattern of development and associated transportation infrastructure. As a result, communities were compact and well connected, allowing people to walk to most destinations.

Today, most development is automobile-oriented: drive first, walk second. This type of development is primarily seen in our suburban communities and new developments in some cities. Most agree that jumping in a car or other form of motorized transportation is convenient. However, it is important to note that in an urban environment, automobiles are not the most efficient mode of travel for many types of trips. Walking and biking can be significantly more efficient when making short urban trips. In addition, walking and biking has numerous positive community and health benefits.

Despite the shift in transportation priorities over the last 100 years, bicycling and walking remain integral components of an efficient transportation network. Appropriate bicycle and pedestrian accommodations provide the public including the disabled community, with access to the transportation network, connectivity with other modes of transportation, and independent mobility regardless of age, physical constraint, or income.

Effective bicycle and pedestrian accommodations enhance quality of life and health, strengthen communities, increase safety for all modes of transportation, reduce congestion, offer recreational benefits, and benefit the environment. Safe bicycling and walking facilities can also have positive impacts on local tourism industries. Bicycling and walking are successfully accommodated when travel by these modes is efficient, safe, and comfortable for the public

While some urban and suburban communities have essentially turned their backs on walking and biking, the City of Glens Falls retains significant walk/bike oriented infrastructure with sidewalks along most every road, numerous City parks and two separated trails – the Warren County Bikeway and the Feeder Canal Trail. The City is also one of only a handful of communities



considered a “walking school district” with bus service provided only for students with disabilities or for field trips, athletic events, and other extracurricular activities.

Despite the overall walkability and bicycle-friendly nature of the City, additional improvements could be made to ensure the long-term viability of Glens Falls as a walking and biking community. In addition, there are opportunities to increase access into the City’s downtown business district and result in positive economic impacts to the local economy.

1.3 Public Outreach and Coordination

The Pedestrian and Bicycle Connectivity Study employed a variety of tools to obtain input from the general public along with stakeholder groups, City Departments and regional planning agencies. A Steering Committee was established by the City of Glens Falls and met with Project Team members on several occasions to receive progress reports and provide feedback on the evolving analysis.

Stakeholder Meetings were held with the Greater Glens Falls Transit Authority (GGFTA) and the Adirondack/Glens Falls Transportation Council (A/GFTC) to identify issues they would like addressed. A meeting with the Feeder Canal Alliance was also conducted to identify their recommendations and issues. In addition, a meeting with the Warren County Safe and Quality Bicycling Organization (WCS&QBO) was conducted to discuss the group’s issues and identify necessary improvements for bicyclists within the city. A public workshop and two public open houses were held during the duration of the project to obtain feedback and provide updates on the evolving recommendations. A sub-committee made up of representatives from the City’s Police Department, the A/GFTC, the GGFTA and the WCS&QBO met on two occasions to review the Draft Report, provide input and finalize the recommendations. Finally, the City of Glens Falls hosted a public forum during which city planner and architectural designer Jeff Speck, AICP gave a presentation on the importance of proper urban design to increase walkability and the economic health of downtown.



Section 2 Existing Conditions and Recommendations



Section 2 Current Conditions and Recommendations

2.1 The Walking and Biking Environment

2.1.1 Downtown Business District Pedestrian Connectivity

The City of Glens Falls is a “Walker friendly” community and one of only a handful of “walking school districts” in the nation which alone highlights the pedestrian friendly nature of the city. The pedestrian connectivity is a product the city’s compact development pattern, a healthy network of sidewalks, pedestrian-oriented alleyways, and multiple crosswalks downtown, along with the separated trail networks: the Feeder Canal Trail and the Warren County Bikeway which provide opportunities for pedestrians to walk on multi-use paths devoted to non-motorized travel.

Walking Distances

Based upon a walkshed analysis, there are no two locations within the city that are more than 2 miles apart using sidewalks. As shown on *Figure 1 Walking Distances to Downtown*, the majority of the city residents are located within $\frac{1}{2}$ to 1 mile from the downtown business district. This demonstrates how quickly most residents can either walk or ride their bicycle from their homes to Downtown Glens Falls.

Referencing *Figure 2 Walking Distances to Parks*, the majority of city residents are also located within $\frac{1}{4}$ to $\frac{1}{2}$ mile from a park of recreational field. Given the close proximity of residents from downtown and City Parks, Glens Falls is uniquely positioned to capitalize on its compact urban form and highlight the connectivity for pedestrians as well as bicyclists.



Sidewalk – Glens Falls Business District



Current Conditions and Recommendations

According to Walk Score[®] (www.walkscore.com) the City of Glens Falls receives a score of 94 and classified as a “Walker’s Paradise” where daily errands do not require a car. Walk Score is an organization whose mission is to promote walkable neighborhoods and is routinely used by Realtors and buyers looking to identify communities that offer a walking lifestyle.

Within Downtown Glens Falls, pedestrians are able to navigate from one end to another using sidewalks and pedestrian-oriented alleyways. For those traveling downtown in a vehicle, there are three public parking lots and four permit parking lots located within the downtown business district from which people can easily walk to a variety of services, businesses and attractions.



South Street Public Parking Lot

Sidewalks

The sidewalks along many downtown streets vary in width from approximately 8 feet to almost 30 feet in some locations. This width allows for a variety of pedestrian amenities including benches, shade trees, trash receptacles as well as bike racks. In addition, the sidewalk width allows for outdoor dining and sidewalk displays by downtown businesses.

On-street parking is permitted on most city streets and especially within downtown. While on-street parking provides drivers with convenient access to their destination, parked cars also provide a significant barrier for pedestrians on sidewalks separating them from moving vehicles in the travel lanes. It is important to maintain the on-street parking, particularly in downtown where a significant number of people walk,



View of Glen Street – on-street parking and travel lanes



meet, dine and enjoy the amenities of the City's downtown business district.

Without on-street parking, sidewalks adjacent to high volume roads feel inherently less safe. People are not as likely to feel comfortable sitting at a sidewalk café or enjoying conversations on a public bench immediately adjacent to moving vehicles.

In addition to on-street parking, sidewalk trees, planters, lighting and other sidewalk amenities provide added separation and buffer between pedestrians and moving vehicles as depicted in the photograph to the far right.

Crosswalks

Based upon an evaluation of all the crosswalks within the downtown business district, the vast majority of intersections including the roundabout have highly visible (zebra striped) crosswalks. There is also a mid-block crossing on Glen Street northwest of the roundabout which provides pedestrians a convenient location to cross Glen Street.

The crosswalk evaluation also identified locations which are not marked and are recommended to have crosswalks installed. In addition, the use of one or more highly visible crosswalk patterns to enhance pedestrian safety and connectivity is also recommended in certain locations.



Example of combined barriers for sidewalk pedestrians



Mid-Block Crossing on Glen Street



2.1.2 Walking and Bicycling as Alternatives to Driving

According to the U.S. Census 2011 5-Year American Community Survey, approximately 37% of Glens Falls residents work within the city with around 6.3% walking to work. This compares with 10% for residents of the City of Albany, 8.8% for Saratoga Springs, 1.1% for the Town of Queensbury, 1.4% for South Glens Falls and 6.4% for New York State. In addition, only 0.8% of Glens Falls residents rode a bicycle to work. Given the compact development pattern and close proximity to downtown, Glens Falls should be able to increase the percentage of workers that walk and ride their bikes to work.

As previously mentioned, the City of Glens Falls is a walking school district where the vast majority of students are not bused to school. Based upon surveys conducted by the Warren-Washington County Healthy Heart Program, approximately 39% of students walked to school in 2008 compared to 32% in 2006. Bicycling to school remained at 2% of students. According to the same survey, the percentage of students that were driven to school increased from 65% to 68% between 2006 and 2008. Car pooling dropped from 2% to 0% and other modes of transportation dropped from 3% to 0%. When parents were asked why their children do not walk or ride a bike to school, crime was given as the number one concern. Additional significant reasons given include traffic, vehicle speed, sidewalk conditions, weather and traveling alone.

While the schools participate in National Walk to School Day, there are no other school or city-wide programs that directly encourage increased walking and bicycling to and from school and work. Nor are there programs with a goal to encourage increased walking and bicycling for daily errands and physical activity. As a starting point, two new surveys should be completed. The first could be an update of the 2006 and 2008 Warren-Washington County Healthy Heart Program to measure current travel choices for students to and from school.

There are no data available on the number of residents that walk or bike instead of drive to run their daily errands, shop, or go out to eat whether that may be in downtown or elsewhere in the city. Therefore, the second survey could be conducted to better understand city residents' travel habits and to identify additional connection issues that may increase walking and biking



for daily errands and other trips within reasonable distances. This survey may also look to obtain current data on the number of residents that walk and bicycle to and from their place of business.

2.1.3 Pedestrian Connectivity Recommendations

The following are proposed recommendations to improve pedestrian connectivity into and around the City of Glens Falls downtown business district.

1. Pedestrian Crossing Improvements.

Based upon the intersection analysis completed in the fall of 2012, twenty three intersections are recommended to have crosswalks installed as depicted on *Figure 3 Downtown Pedestrian Crossing Improvement Map*. All intersections requiring crosswalks are located along Warren, Maple and Lawrence Street. In this section of the city especially, it is important to have adequately marked intersections for pedestrians due to their proximity to the Warren County Bikeway and the Feeder Canal trailhead at Shermantown Road. Additional crossings in need of crosswalks include the intersections of Hunter Street with Ridge, Wing and Sagamore Streets to facilitate safer pedestrian connectivity to Sagamore Street Park.

In addition, the World Awareness Children's Museum and The Hyde Collection are located on Warren Street, both of which can generate significant foot traffic requiring properly marked crossings. With these and other destination along Warren Street, two midblock crossings over Warren Street are proposed.



World Awareness Children's Museum

The first is between Jay and Center Streets and the second at Fredella Avenue. These locations are important due to the presence of the World Awareness Children's Museum, newly renovated office space next door and the close proximity to the



Current Conditions and Recommendations

city's core downtown. The closets marked crossing over Warren Street is located approximately 500 feet to the west at Church Street and approximately 600 feet to the east at Oak and Oakland Avenue.



Jay and Center Streets are off-set and do not form a standard “T” intersection with Warren Street. Therefore, the crosswalk is recommended to connect the east side of Center Street with the west side of Jay Street. The second crossing over Warren Street should be located at Fredella Avenue. Due to the fact that these are both unsignalized intersection for drivers traveling on Warren Street, it is recommended that freestanding stop for pedestrian signs (MUTCD R1-6a) with a fluorescent yellow background be placed in each crosswalk. In addition, a highly visible crosswalk styles are strongly recommended to be installed in each location.

The city uses a combination of continental markings and parallel markings throughout most of downtown. The Federal Highway Administration (FHWA) recommends the use of continental markings for all pedestrian crossings as research has determined that they are most visible to motorist.

Of the 59 intersections evaluated within downtown, 34 had marked crosswalks, 20 of them were continental markings while 14 where the standard parallel markings. The continental markings are used at the intersection of Church and Warren, the roundabout, the midblock crossing on Glen Street and most of the crossings for roads intersection Glen Street in the core downtown area. Continental markings are also found at the intersection of Glen, Horicon and Oakland Streets, as well as on Hudson Avenue and South Street.





Current Conditions and Recommendations

For certain highly used intersections and crossings it is recommended that the city consider the use of a more visible and unique crosswalk design to increase awareness by drivers. Two primary locations to start would be the midblock crossing on Glen Street just west of the roundabout and the proposed new crossings over Warren Street as noted above and at the expansive Glen, Mohican and Oakland intersection where Feeder Canal Trail users must cross amid heavy car and truck traffic.

To achieve a more highly visible crosswalk, using long-lasting Streetprint Duratherm Textured Asphalt Paving (or similar), which imprints the look of bricks or pavers into the existing asphalt. This textured surface provides an additional reminder to drivers to slow down. An example of this type of marking is depicted in photograph to the right.

2. Street Trees.

The City of Glens Falls has a Tree Commission whose responsibilities include the care and management of all trees, shrubs and plants existing on city streets and public places within Glens Falls. It is important to maintain this commission to ensure street trees are properly managed and replaced as necessary. A tree inventory was completed in 2009 with assistance from Glens Falls High School students and Warren County. The inventory is available as a layer visible with Google Earth. When funding is available, the city could work with Warren County and other organizations as well as local schools to ensure the inventory is kept up to date.



Example of Crosswalk Alternative



Southwestern corner of roundabout



Current Conditions and Recommendations

In addition to managing existing trees, the city should identify additional locations in need of trees whether they may be for shade or aesthetics. Four locations in need of trees include the five corners surrounding the roundabout which are currently void of trees. The addition of trees in these locations will help frame the roundabout, improve aesthetics, and provide shade and another barrier for pedestrians and people sitting on public benches and at sidewalk cafes. Each corner gets direct sunlight for a good portion of the day in the summer.

Both sides of Glen Street from the roundabout to Bay Street are also in need of additional trees. Specifically, the northern side of Glen Street which gets extended periods of direct sunlight in the summer. There are very long stretches of Glen Street in this location where awnings are not able to provide sufficient protection from the sun and additional street trees would improve the quality of the sidewalk.

3. Maintain On-street Parking in Downtown Glens Falls. As previously mentioned, on-street parked cars provide pedestrians and people enjoying the sidewalks with additional barriers from moving vehicles. For this reason alone, it is strongly recommended on-street parking remain throughout downtown as it is current permitted.

2.2 Bicycling in Glens Falls

What makes the city pedestrian friendly: narrow streets with wide sidewalks throughout downtown, on-street parking and periods of high traffic volumes, also presents challenges for bicyclists. While most neighborhood streets have reasonably low traffic volumes allowing many bicyclists to ride in the travel lane comfortably, cycling Downtown Glens Falls can be more intimidating for the average rider. Once you



Glen Street depicting limited space for cyclists



account for the wide sidewalks, on-street parked cars and moving vehicles, bicyclists must ride within the travel lanes.

As a general rule of thumb, it is not a good idea to encourage bicycling on sidewalks. According to the Pedestrian and Bicycle Information Center, nationwide crash data shows that bicyclists are not safer on sidewalks. The reason is that bicyclists become almost invisible to the motorists. When a driver makes a either a right or left turn, or into a driveway or alley, they are not generally looking for, or expecting to encounter a bicyclist. In addition, even if they see the bicyclist, they may underestimate the speed a rider is traveling on the sidewalk as they are much faster than pedestrians.

According to the City of Glens Falls City Code, bicycling on public sidewalks is not prohibited. As in most communities, children can be seen riding on the sidewalks, which may be safer for them when traveling at lower speeds. However, as noted above, the concern for collisions with turning vehicles as well as pedestrians remains. A major goal of the Glens Falls Pedestrian and Bicycle Connectivity Study is to identify opportunities to increase the number of bicyclists that ride on the road and with traffic and enhance the overall safety of riding to and from Downtown Glens Falls. The following recommendations are intended to begin increasing the safety of bicycling in the City of Glens Falls with an emphasis on downtown.

2.2.1 Bicycle Connectivity Recommendations

1. Designated Bike Routes and Shared-Lane Markings

Many communities have chosen to install bike lanes on busy streets which provide a designated area for bicyclists. These can either be separated by a curb from the travel lane or delineated with pavement markings. With limited room on Glens Falls downtown streets due to narrow travel lanes, on-street parking and wide sidewalks, there is insufficient room to create designated bike lanes. In addition to high construction costs, it would be necessary to remove on-street parking and reduce the width of the sidewalks, both of which would reduce the safety of pedestrians and detract from the quality Glens Falls downtown streetscape.





Based upon discussions with stakeholders and the general public during the public outreach meetings, a reasonable alternative is to designate specific bike routes throughout downtown and the remainder of the city that would link up with designated bike routes in the Town of Queensbury.

To signify the designated bike routes, “Bike Route” signs will be placed at the beginning and end of each route. In addition, shared-lane markings or sharrows would also be deployed on each road along with “Bicycle” and “In Lane” signs in accordance with the NYSDOT Shared-Lane Markings (SLMs) Policy (current draft is dated 12/31/12 and attached as Appendix A) and the Manual for Uniform Traffic Control Devices.

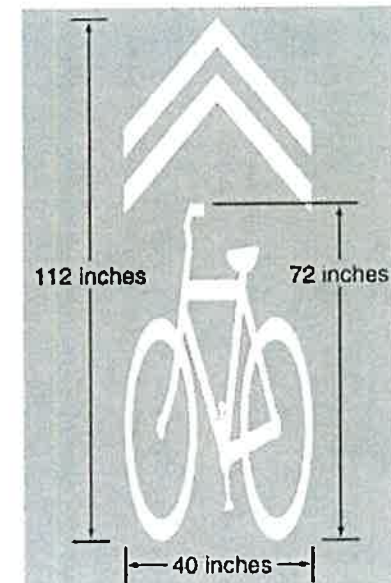


Shared-Lane Marking (Sharrow)

Sharrows are pavement markings on streets that indicate a bicyclist may use the full lane. While they are not intended to designate the location within the travel lane where a bicyclist should ride, it can be very effective in alerting drivers of the need to share the road. This may in turn increase the separation distance between motor vehicles and encourage cyclists to ride outside the door zone (the space were on-street parked cars doors open into). In addition, the sharrows may also reduce wrong-way cycling and sidewalk cycling, both of which is associated with increased crash risk.

To properly deploy the sharrows and designated bike routes, it is recommended that initially, the following four roads (as depicted on *Figure 4 Proposed Bike Routes and Pilot Study*) within the city be designated as bike routes under a 12-month pilot program:

- > Warren Street from Shermantown Road to the roundabout;
- > Glen Street (entire length within the city);
- > Bay Street from Glen Street to the city line; and



Shared-Lane Marking “Sharrow”
Source: MUTCD



- > Dix Avenue from the Ridge Street to the city line.

The 12-month pilot program for Warren, Glen, Bay and Dix will be conducted to allow for a public informational campaign to educate drivers and cyclists about the sharrows and bike routes. The pilot program will also provide an opportunity for the city in partnership with the A/GFTC to evaluate both cyclists' and driver's behavior before and after the route designations and sharrow deployment. Evaluation of the existing conditions is expected to begin in August 2013. The designation of the four initial bike routes and deployment of sharrows and signage is expected to occur in the spring of 2014.



The remaining roads as identified below and depicted on *Figure 4 Proposed Bike Routes and Pilot Study* are proposed to be designate as bike routes upon the completion of the 12-month pilot study:

- > Ridge St. from the roundabout to the city line;
- > Lawrence St. from Platt St. to Ridge St.;
- > Sherman Ave. from Glen St. to Western Ave.;
- > Broad St. from South St. to S. Western Ave.;
- > South St. from Hudson Ave. to Knight St.;
- > Bush St. from Knight St. to Haviland's Cove Park;
- > Western Ave. from Coolidge Ave. to Sherman Ave.;
- > S. Western Ave. from Sherman Ave. to Broad St.;
- > Sanford St. from Glen St. to Ridge St.;
- > Grant St. from Western Ave. to Glen St.;
- > Hudson Ave. from Glen St. to Broad St.;
- > Knight St. from South St. to Thomas St.;
- > Thomas St. from Knight St. to Broad Street; and



- > Murray St. from Broad St. to Murray Street Trailhead.

2. Bike Racks

There are currently numerous bike racks scattered throughout the business district along with larger bike racks located adjacent to the Crandall Public Library and the Glens Falls City Park. To supplement the existing bike racks and provide a more secure location for cyclists traveling into downtown, covered bike racks are recommended. At least one covered bike rack could be installed at the library with a second one near the GGFT bus terminal across from City Hall. A third could be located near the Civic Center. The covered racks can also include free air for maintaining the bicycles.

In addition to the covered racks, the city should encourage business owners to locate temporary bike racks in front of their businesses which can be moved indoors at night. This recommendation will require additional coordination to ensure the racks are properly placed and maintained. The goal of these temporary racks are to provide even more convenient locations for cyclists to park their bikes and visit local businesses.

3. Bike Share Program

A bike share program is a service in which bicycles are made available for shared use to individuals on a short term basis. Bicycle sharing allows users to check out bikes from publicly accessible stations and return them to other locations within the service area. These programs are becoming increasingly



Bike rack located in the Glens Falls business district



Example of a covered bike rack with informational kiosk and air for inflating tires



popular in North America with successful programs in Washington D.C., Boston, Minneapolis, and Montreal. New programs have been established in New York City and San Francisco. While the City of Glens Falls is significantly smaller than these major cities, the idea for a bike share program has come up on several occasions while meeting with the public and stakeholders. The program could be established with a targeted group of potential riders, primarily downtown employees and residents as well as visitors. Bike stations could be located in downtown, near the hospital to provide an alternative for hospital employees to visit downtown. Overall, a bike share program is another step towards better integrating cycling as a viable alternative to driving into and around downtown Glens Falls. It is recommended that the city evaluate the feasibility of operating such a program and begin identify potential funding sources.

4. Implement the Recommendations from the Dix Avenue/Sagamore Street Intersection Evaluation Study.

The A/GFTC commissioned a study of the Dix Avenue and Sagamore Street Intersection. This study recommended modifications to this intersection to improve pedestrian and bicycle safety at this location and the Warren County Bikeway crossing. The Pedestrian and Bicycle Connectivity Study strongly endorses the proposed intersection enhancements.

5. Identify Needed Improvements at Fire and Kensington Roads and Horicon and Jerome Avenues.

Fire and Kensington Roads as well as Horicon and Jerome Avenues all experience high levels of bicycle and pedestrian traffic along with high automobile traffic due the presence of Crandall Park, the YMCA and the Kensington Road School. The A/GFTC and the City of Glens Falls are currently undertaking a study to determine what improvements could be made to benefit cyclists and pedestrians. The Connectivity Plan endorses the completion of this study.



Looking west on Fire Road with no marked shoulders or sidewalks



Many of the preceding recommendations are intended to facilitate easier and safer pedestrian and bicycle access into the Glens Falls business district from both the Feeder Canal Trail and the Warren County Bikeway. Additional enhancements within the business district are necessary to provide sufficient pedestrian and bicycle infrastructure and accommodations.

2.3 Separated Trail Networks

Within the City of Glens Falls there are two separated trail networks, the Glens Falls Feeder Canal Trail and the Warren County Bikeway. Both trails are multi-purpose, meaning they are intended for both bicycle and pedestrian use. The trails are separated from automobile traffic with the exception of necessary road crossings. Refer to *Figure 5 – Separated Trail Networks and Bicycle Facilities* which depicts the route of the Feeder Canal Trail and the Warren County Bikeway within the City of Glens Falls.

The Feeder Canal and Warren County Bikeway provide pedestrian and bicycle access into and out of Downtown Glens Falls, from City neighborhoods as well as neighboring and nearby communities. Enhancing the existing trails and their accessibility with to business district are critical components of this Study. The following is an overview of each trail, relevant trailheads and proposed recommendations to enhance trail safety and improve connectivity with the Glens Falls business district.

2.3.1 Feeder Canal Trail

The Glens Falls Feeder Canal Trail is a 9 mile multi-purpose trail that runs from the Feeder Dam in the Town of Queensbury to McIntyre Park in Fort Edward. The trail occupies the original towpath running along the canal. Construction of the canal began in 1817 and opened to boat traffic in 1822.



Along the Towpath of the Feeder Canal Trail



Current Conditions and Recommendations

When originally constructed, the canal provided direct access for freight and passenger boats from Lake Champlain at Whitehall to Fort Edward on the Hudson River, allowing for the completion of an inland route from the St. Lawrence River to the docks of New York City. Over the years the canal was widened and deepened to accommodate additional traffic and larger barges. To capitalize on this transportation resource, numerous factories and mills were constructed along the canal. As railroads and then better roads were built, use of the canal for shipping commerce decreased. The present-day Champlain Barge Canal replaced the Feeder Canal in the early 1900's.¹

In 1928, the canal was abandoned, and soon the canal and towpath became overgrown and littered with trash. Today, the canal and towpath provide recreational and educational opportunities to residents of each community it navigates through along with surrounding communities and visitors. The canal continues to carry water to its summit level between Fort Edward and Smith's Basin in the Town of Kingsbury and provides water to the Champlain Canal. The Feeder Canal is part of New York State's 524 miles of canals and is under the responsibility of the Canal Corporation, a division of the New York State Thruway Authority.²

Additional maintenance and promotion of the canal trail is provided by The Feeder Canal Alliance, a not-for-profit organization created in 1987 to preserve, promote and maintain the historic Feeder Canal. The Alliance's plans for the canal's future development and use are supported by the New York State Office of Canals³.

As depicted on *Figure 6 – Feeder Canal Trailhead Locations*, there are four formal access points/trailheads within the City of Glens Falls: Haviland Cove Park, Murray Street Crossing, the Finch Paper parking lot at Glen Street, and Shermantown Road. In the Town of Queensbury, trail users can gain access at the western terminus of the trail at Feeder Canal Park along Richardson Street.

¹ <http://www.feedercanal.com/FeederCanalAlliance1.htm>

² <http://www.feedercanal.com/FeederCanalAlliance2.htm>

³ <http://www.feedercanal.com/>



Haviland's Cove Park

Existing Conditions

Haviland's Cove Park is located in the southwest corner of the city and accessible by vehicles, bicycles and pedestrians via Bush Street. The park is situated between the Hudson River and Feeder Canal and provides for picnicking and swimming during the summer months along with parking and access to the Feeder Canal Trail. The park is closed after Labor Day, although Bush Street remains available for pedestrian and bicycle access to the trail.

Bush Street crosses over the Feeder Canal to access Haviland's Cove. The bridge, which provides approximately 8 ft driving lanes and no designated shoulders, is required to accommodate auto, pedestrian and bicycle traffic to the Feeder Canal and Haviland's Cove Park. There is currently a Bicycle Warning sign (W11-1 according to the Federal Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways) at both the north and southbound bridge approaches intended to alert the road users to entries into the roadway by bicyclists at the Feeder Canal crossing. There is also a Children at Play sign (MUTCD W9-12) at the southbound bridge approach. Neither sign formally indicates to drivers that the road and narrow bridge must accommodate all three modes of transportation (driving, walking and riding). In addition, the Bicycle Warning sign could be more informative if located at the actual trail crossing. Addressing the safety of all users is recommended and discussed below.



Haviland Cove Park



Current Conditions and Recommendations

The Feeder Canal Trail experiences erosion where it crosses Bush Street. During major rain events, the erosion has been severe enough to require repairs to the trail. Stormwater runs off the bridge and is directed across the trail causing the erosion. To limit the need for ongoing repairs to this section of the trail, stormwater runoff needs to be properly redirected.

During summer weekends, the parking lot usually full and the park well utilized in good weather. While trail and park users may compete for space at Haviland's Cove Park, there are sufficient other locations within and just outside the city available for trail users to gain access including the Feeder Canal Park in the Town of Queensbury, NY.

Feeder Canal Park is accessible via Richardson St. located approximately ½ miles west of Haviland's Cove Park. The park is approximately 5 acres in size and is made possible by an agreement between Erie Blvd. Hydropower, the Feeder Canal Alliance and the Town of Queensbury. There is also a designated on-road bike lane along both sides of Richardson Street from Main Street to the Park.

Between the Haviland Cove Park trailhead and the Murray Street Crossing, the trail abuts a lumber yard and other light industrial uses. There is currently sufficient buffer between the trail and these uses. Given the industrial history of the



Trail Erosion at Bush Street Crossing



Locations of Feeder Canal and Haviland Cove Parks



Current Conditions and Recommendations

canal and this part of the City, the presence of these types of uses is expected. Maintaining sufficient buffers and ensuring there is no encroachment by these light industrial uses is critical in maintaining the safety and overall character of the trail.



Light industrial uses along Feeder Canal Trail



Bike lane along Richardson Street.



Feeder Canal Park – Town of Queensbury, NY

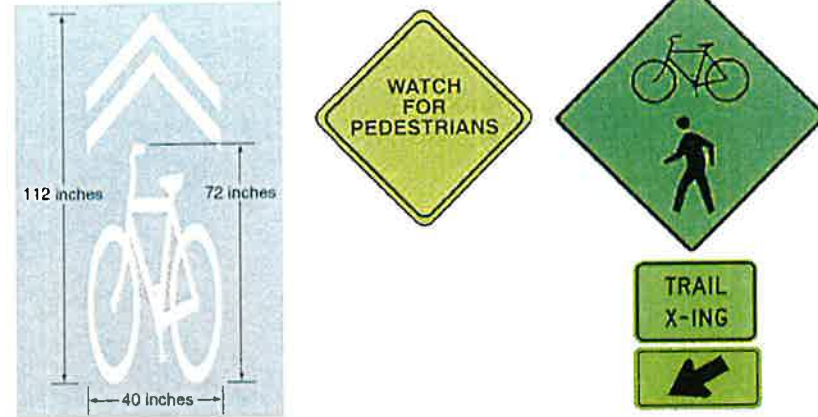
Proposed Recommendations

1: Address Feeder Canal Trail Erosion. Stormwater runoff from Bush Street appears to be damaging the Feeder Canal Trail. To mitigate potential long-term damage from runoff, it is recommended that the city evaluate this situation in coordination with the Feeder Canal Alliance and the Canal Corporation to determine what improvements can be made.

2: Consider Enhanced Signage for Bush Street Bridge.

The bridge carrying park goers and trail users over the Feeder Canal is narrow with approximately 8ft. travel lanes and no designated shoulders. The existing Bicycle warning sign at the southern bridge approach is designed to alert drivers that they may encounter bicycle traffic in the roadway due to the Feeder Canal Trail crossing. The sign does not inform drivers that the road and bridge needs to be shared with all three modes of transportation, driving, walking and riding and does not identify the actual location of the trail crossing.

Figure 9C-9. Shared Lane Marking



- 2a At the southbound approach, a green fluorescent Watch for Pedestrian sign is recommended to alert drivers that pedestrians may be walking along the roadway.
- 2b At the point where the Feeder Canal Trail crosses Bush Street, a trail crossing sign with arrow (MUTCD W11-15, W11-15P and W16-7P) should be placed in both directions combined with a new highly visible crosswalk. Trail crossing ahead signs will also need to be placed approximately 100 ft. from the trail crossing in both directions.
- 2c Repaint and properly maintain the “Slow” pavement markings at the southbound bridge approach.

3: Maintaining Adequate Buffers. Sufficient buffers between the light industrial uses and the Feeder Canal Trail should be maintained between Haviland’s Cove Park and the Murray Street Trailhead. Instances of encroachment should be addressed as soon as possible to maintain safety for trail users and the character of the trail itself.



Murray Street Crossing

Existing Conditions

Approximately $\frac{3}{4}$ of a mile north of Haviland's Cove Park, the Feeder Canal Trail crosses Murray Street. North of Murray Street, there is a trailhead and parking area.



Crossing at Murray Street



Approach to Murray Street Crossing

Murray Street provides access to the light industrial uses to the south and as a result, logging and other large trucks frequently cross the Feeder Canal Trail. The trail crossing over Murray Street is located at a sharp corner.

For oncoming traffic in both directions, there is a Feeder Canal Trail Sign with a two-way arrow to signify the trail crossing. In addition, there is Bicycle Warning sign (MUTCD W11-1) located before the trail on the northbound lane intended to alert drivers of the upcoming trail crossing. There is no Bicycle Warning sign in the southbound lane. The Feeder Canal Trail Sign located at both approaches may be too small to be read by a passing driver. In addition to the high volume of truck traffic and reduced sight distances due to the tight corner, there is no crosswalk for trail users crossing Murray Street and no signs along the trail indicating an upcoming crossing either.

Proposed Recommendations

Refer to *Figure 7 – Feeder Canal Trail Murray Street Trailhead Improvements* for additional information on the following recommendations.



Current Conditions and Recommendations

1: Enhance the Murray Street Trail Crossing. Due to the high volume of truck and other vehicle traffic along with limited signage to alert drivers of the trail crossing on Murray Street, the following recommendations are proposed.

1a. Locate Combination Bike and Ped Crossing signs (MUTCD W11-15) with an Ahead Plaque (MUTCD W16-9P) at a specific distance from the trail crossing in both approaches as recommended by Table 2C-4 of the MUTCD. These signs will alert motorists that they are approaching a trail crossing. The existing Feeder Canal Sign can be relocated elsewhere for way finding purposes to inform pedestrians and bicyclists of the trailhead location.



1b. Locate Combination Bike and Ped Crossing signs (MUTCD W11-15) with a Diagonal Arrow sign (MUTCD W16-7P) at the crossing of the Feeder Canal Trail.

1c. Install a highly visible crosswalk at the crossing of Murray Street as an additional indicator for motorists of the crossing and to direct trail users to the correct location for crossing.

1d. In addition to the crosswalk, signage to alert trail users of the upcoming road crossing is recommended to be placed along the trail approximately 25 ft. from the crossing. Since bicyclists riding in a crosswalk are not afforded the same protection as pedestrians (drivers are not required to yield to bicyclists in a crosswalk) and the fact that bicycles generally travel at higher rates of speed than pedestrians, signage directing cyclists to dismount before crossing are recommended.



Access to Murray Street Trailhead

Existing Conditions

Vehicle access to the Murray Street trailhead appears sufficient with room to park and adequate directional signage for trail users. Pedestrians walking to the trailhead from nearby neighborhoods are required to walk along the shoulder of Murray Street for approximately 850 feet before reaching the trailhead due to a lack of sidewalk. Once reaching the bridge over the canal, pedestrians are required to walk along the shoulder of the bridge which is approximately 4 feet. Often times, the northern shoulder is covered by bark and wood that has fallen from the numerous logging trucks that pass over the bridge. In addition to the wood covering the northern shoulder, the white pavement marking is very worn and hard to distinguish. West of the bridge, there are no shoulder markings along Murray Street indicating an area for pedestrians or bicyclists. All of these conditions combined present challenges to pedestrians and bicyclists entering or exiting the trailhead.



Murray Street Trailhead

Proposed Recommendations

Refer to *Figure 7 – Feeder Canal Trail Murray Street Trailhead Improvements* for additional information on the following recommendations.

1: Consider restriping travel lane markings on the Murray Street Bridge. The travel lanes on the Murray Street Bridge are 12 feet wide. In an effort to increase the shoulder width for pedestrians and bicyclists, it is recommended the city consider narrowing the travel lanes and widening the shoulders.



Current Conditions and Recommendations



Narrow Shoulder with debris



Missing sidewalk along Murray St.
(Looking east towards trailhead)



Murray St. – lack of designated shoulders
(Looking west towards Murray St. Park)

2. Ensure debris along the Murray Street Bridge is routinely cleaned. The logging trucks tend to deposit wood debris while making the corner over the Murray Street Bridge. This debris covers the northern shoulder of the bridge adding to challenges pedestrians and bicyclists have when traversing the bridge. To limit this issue, it is recommended the city and companies responsible implement a plan to maintain the bridge appropriately.

3: Extend Sidewalk to bridge. As previously stated, the existing sidewalk on the northern side of Murray Street ends approximately 850 feet from the Murray Street trailhead while the southern sidewalk ends approximately 1,000 feet from the trailhead. In addition to recommendations above, the sidewalk along Murray Street could be extended to the existing bridge. The northern side of Murray Street has telephone poles, a residential fence and landscaping associated with the Finch Pruyn warehouse east of Henry Street all of which may present challenges to extending the sidewalk. The southern side of Murray Street appears to have more room with no telephone poles or other barriers for a sidewalk extension. To avoid adding additional crossings of Murray Street, the sidewalks on both sides of the street could be extended to provide pedestrians access to and



from the trailhead. If only the southern section could be extended, a crosswalk will be necessary at the intersection of Murray and Willis Streets. This will also require another crossing on the west side of the bridge to allow pedestrians to cross to the north side to walk along the bridge shoulder.

5: Conduct a detailed study of Murray Street to evaluate the safety of all modes of transportation. Much like Glen Street, Murray Street provides less-than-comfortable bicycling access to the Feeder Canal Trail and is not considered an attractive alternative to the Glen Street access for similar reasons. Existing challenges include grade, a multi-lane profile, designation as a truck route (once intended so that heavy trucks would bypass the pre-roundabout downtown area) with a heavy truck volume percentage (7% in 2007), and traffic volumes (estimated at over 7,500 vehicles per day).

Even with the implementation of the above recommendations to increase Feeder Canal connectivity, there will remain a variety of challenges with respect to pedestrian and bicycle use. Therefore, it is recommended the city conduct a detailed study of Murray Street for all modes of transportation to identify additional improvements that can be made for the entire length of the road.

6: Evaluate the feasibility of constructing a pedestrian and bicycle bridge over the canal. To determine if a bridge devoted to pedestrians and bicyclists is needed at the Murray Street crossing, it is recommended that the city coordinate with the Feeder Canal Alliance and Canal Corporation to conduct an analysis of the need for a separate bridge. Depending upon the results of the analysis, a bridge for pedestrian and bicycle traffic crossing the canal may be necessary. During the period of analysis, the city and its partners may begin evaluating funding opportunities should a bridge be recommended. If a bridge is recommended, the south side of the existing bridge would be the preferred location due to limited space on the northern side of Murray Street.



Glen Street Trailhead

Existing Conditions

Approximately 1/3 of a mile north of the Murray Street trailhead, there is a break in the off-road section of the Feeder Canal Trail. The trail ends at the Finch Paper Company employee parking lot near the intersection of Glen, Mohican and Oakland Streets. Finch Paper allows trail users to park in the lot.

The end of the trail is designated and separated from the parking lot by several metal bollards. A small Feeder Canal Trail sign is located on a chain link fence that separates the trail from the dam and associated equipment along the Hudson River.



View of trailhead from parking lot



View of parking lot from Feeder Canal Trail



Feeder Canal signage at Glen St. trailhead



Narrow sidewalk at Glen St. trailhead



Current Conditions and Recommendations

For trail users heading east (towards the Glens Falls business district and the Shermantown Road trailhead), the current lack of signage presents safety issues. Trail users are dumped right out into the parking lot with no directional signage. Conflicts may occur between trail users and vehicle traffic in the parking lot. There is a narrow sidewalk that runs parallel to the river and connects to the sidewalk along Glen Street. This sidewalk however, is normally hidden by parked vehicles unless trail users are already aware of its existence. Improved directional signage to the sidewalk is recommended to direct trail users away from the parking lot. The sidewalk, which is the recommended route around the parking lot to Glen Street, is narrow and may result in conflicts between pedestrians and bicyclists. Widening of the sidewalk is also recommended.

On several occasions when observing this trailhead, a garbage can and equipment cabinet was seen blocking the sidewalk near Glen Street. In addition, bicycles are normally seen chained to the iron fence further limiting access.

Once reaching the Glen Street sidewalk, trail users that intend on continuing along the Feeder Canal need to navigate City streets to reach the Shermantown Road trailhead. A key element to this study is to identify opportunities to enhance trail users ability to safely and efficiently access downtown. At the Glen Street trailhead, there exists no directional signage with respect to accessing downtown or reaching the Shermantown trailhead. It is recommended that clearly visible directional signage to downtown and the next trailhead be displayed in this location.



Proposed Recommendations

Refer to *Figure 8 – Feeder Canal Glen St. Trailhead Improvements* for additional information on the following recommendations.

1: Create a Direct Connection from the Trail to the Sidewalk. To help avoid user conflicts with vehicle movement in the parking lot, a direct trail connection to the existing sidewalk or the use of highly visible directional pavement markings are proposed.

2: Widen sidewalk. It is important to guide trail users away from using the parking lot and to the sidewalk. Since the existing sidewalk is narrow, widening is recommended to accommodate both pedestrian and bicycle traffic.

3: Directional signage. In an effort to increase the safety and efficiency of trail user access to the business district and the Shermantown Road trailhead, directional signage should be located at the Glen Street trailhead. The signage may consist of a simple map depicting the recommended route to the business district and the location of bike parking facilities. In addition, the map should identify the preferred route to reach the Shermantown Road trailhead.

Feeder Canal Trail – Downtown Connections

Existing Conditions

As discussed above, the off-road portion of the Feeder Canal Trail temporarily ends at the



Photo Courtesy of LADOT

Example of unique pavement markings for trail connections



Example Directional Signage



Current Conditions and Recommendations

Glen Street trailhead. The original towpath is not accessible from the intersection of Glen and Mohican Streets and Oakland Avenue east to Shermantown Road due to industrial uses that line the canal in this location. Water access on the canal is open through the area via kayaks and canoes. To reach the Shermantown Road trailhead located slightly over one mile to the east, trail users are guided through downtown streets and intersections.

Currently, the use of sidewalks along Glen and Warren Streets has been encouraged as an alternate route for reaching Shermantown Road. As noted above, this report strongly discourages the use of sidewalks by cyclists. These sections of Glen and Warren Streets are proposed to be designated bike routes with sharrow deployment as part of the 12-month pilot program with a goal of increasing cyclists use of the travel lanes and not sidewalks. Glen and Warren Streets are still being recommended as the preferred route to travel between the Shermantown and Glen Street Trailheads over the use of Oakland Avenue.

To make these connections, trail users are required to cross Glen Street at the intersection of Oakland, Glen and Mohican Streets. This is a very busy intersection, especially during weekdays. Several large tractor trailers enter and exit Oakland Avenue on a regular basis. Combined with regular high volume vehicle traffic, this intersection can be difficult to navigate by pedestrians and bicyclists.

Proposed Recommendations



Feeder Canal Sidewalk Route at the Civic Center



**Glen and Oakland Intersection
(Looking east)**



Refer to *Figure 8 – Feeder Canal Glen St. Trailhead Improvements* and *Figure 5 – Feeder Canal Trail – Alternate Sidewalk Route and Enhancements* for additional information on the following recommendations.

1: Glen/Mohican/Oakland Intersection Enhancements. Trail users who are heading to the Shermantown Road trailhead must first navigate the busy Mohican/Glen/Oakland intersection. Trail users have the option of first crossing Glen Street at southern portion of the intersection and then head north crossing Oakland Avenue. Glen Street in this location is four lanes wide. Once across Glen Street, the sidewalk is narrow with a guardrail at the back edge of the sidewalk further restricting movement. Tractor trailer trucks frequently turn right from Glen onto Oakland and sometimes jump the curb causing a safety issue for sidewalk users in this area.



Intersection of Glen, Mohican and Oakland

Given this safety issue, it is recommended that trail users first cross Mohican Street and then cross Glen Street which is only three lanes wide at the northern portion of the intersection. There is more room for pedestrians and trail users to keep out of the path of traffic using this route. To clearly signify the preferred route and to alert drivers of the potentially high volume of



Crosswalk treatment examples



pedestrians and cyclists, highly visible crosswalk markings are suggested across the entrance to the Glen Street trailhead parking area and across Mohican and Glen Streets. There is a variety of colors and designs for the markings. It is recommended that a consistent color scheme be identified and used that denotes the Feeder Canal route.

2: Bring Trail Users into the Glens Falls business district. Many separated trail users enjoy being able to avoid busy streets, a major attraction to the trails. In the case of the Feeder Canal, the industrial uses require a detour – a benefit to the City as it provides an opportunity for trail users to enter downtown instead of bypassing it. The City needs to take advantage of this situation and make the detour more attractive and look to keep trail users downtown for a meal, shopping or just to relax before continuing on to the Shermantown trailhead. Additional discussions on attracting trail users into the business district are provided later on in this report.

The first step will be to formally re-route the Feeder Canal bypass route up to the roundabout and then east on Warren Street instead of through the Civic Center driveway. This alternative will bring trail users into the heart of downtown. A cost effective method to guide trail users through the City would be to utilize pavement markings in addition to the current Feeder Canal signage placed on existing sign posts. It is recommended that a standardized design be developed and the markings spaced at reasonable distances throughout along Glen and Warren Streets.



Example of a sidewalk trail marking

Feeder Canal Trail – Shermantown Road Trailhead



Existing Conditions

Shermantown Road provides access to the Feeder Canal Trail from eastern sections of Glens Falls. Walking or cycling on Shermantown Road presents some safety concerns. There are no sidewalks or marked shoulders. Before reaching the trailhead there is a concrete plant with regular truck traffic. In addition, Shermantown Roads provides access to the City's wastewater treatment plant, with its own associated large truck traffic.

Without sidewalks or marked shoulders, there is the potential for trail user conflicts with truck and other automobile traffic. Enhancements to the road to improve safety for trail users are recommended to help alleviate this situation.

At the trailhead, there is limited room for vehicle parking with no designated spaces. Vehicles pull off the road wherever there is room available which further narrows the road and creates safety issues for trail users and automobile traffic. A larger and more organized vehicle parking area is recommended to improve safety and access to the trail and canal.



Shermantown Road
(Looking south towards trailhead)

Proposed Recommendations

Refer to *Figure 9 – Feeder Canal Trail Shermantown Road Trailhead Improvements* for additional information on the following recommendations.

1: Enhance safety for trail users along Shermantown Road. Due to the lack of sidewalks and road shoulders, there are opportunities for conflicts between vehicles, pedestrians and bicyclist. It is recommended that Bicycle Warning signs with In Lane plaques be installed near the intersection of Shermantown Road and





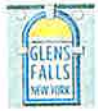
Warren Street for southbound traffic and south of the bridge for northbound traffic to alert drivers of the presence of bicycles in the travel lanes. These signs could be used in addition to sharrows.

2: Construct a designated parking area at the Shermantown Trailhead. Due to the fact that there is no designated parking area, vehicles park wherever room is available. This sometimes causes additional safety concerns. To help safely guide drivers to more appropriate parking locations, a small lot could be constructed. There are two possible locations for the parking areas: on the northern side of the canal and on the southern side. The southern location more be more appropriate since the trailhead is located on south of the canal. This location would provide trail users with direct access without having to cross the bridge which does not safely accommodate pedestrians or bicycles when vehicles pass. It is recommended that the city coordinate with the Feeder Canal Alliance, the Canal Corporation and adjacent landowners regarding the feasibility and need for a designated parking area. If a designated parking area is constructed on the southside of the canal, a highly visible crosswalk should be installed with proper crossing signage as recommended for the Murray Street and Haviland's Cove crossings.

3: Construct a dual use bridge over the canal. As previously indicated, the narrow bridge does not simultaneously accommodate vehicles, pedestrians and bicyclist. In addition, due to the fact that there is an open space area for recreation on the northern sides of the Canal, pedestrians are likely to seek access to both sides. Placing a dual use bridge similar to the one located at the Feeder Canal Park in Queensbury will provide a safe route for trail users to access both sides of the Canal. For trail users who arrive on foot or bike will also be able to directly access the trail without having to navigate the road bridge. Similar to the Murray Street crossing, it is recommended that the city coordinate with the Feeder Canal Alliance and the Canal Corporation to evaluate the need for and feasibility of constructing a pedestrian bridge over the canal.



**Dual use Bridge at Feeder Canal Park,
Queensbury**



Current Conditions and Recommendations

4: Address On-going Trail Erosion at the Lehigh Cement Plan. Similar to the situation at the Haviland's Cove trail crossing, the driveway crossing of the Lehigh Cement Plan east of the Shermantown Trailhead is resulting in erosion to the Feeder Canal Trail. Based upon a site visit on May 29, 2013, the trail is experiencing significant erosion, enough to possibly result in a bicycle accident. This situation should be addressed as soon as it is possible. The city, together with the Feeder Canal Alliance should approach the company and identify a reasonable solution to this issue.



Trail erosion at the Lehigh Cement Plant driveway crossing

2.3.2 Warren County Bikeway

Existing Conditions

The Warren County Bikeway is a 10.5 mile dual use trail that runs from Million Dollar Beach in Lake George to Warren Street in Glens Falls and very close to the Shermantown Trailhead for the Feeder Canal Trail. *Refer to Figure 10 – Warren County Bikeway Proposed Recommendations*, which depicts the route of the Warren County Bikeway within the City of Glens Falls. The vast majority of the bikeway within the City is separated from vehicle traffic with the exception of intersections and on-street sections along Leonard and Pratt Streets.

There are two informal trailheads with one at the end of Mason St. and one at the end of Lawton Avenue just south of Sagamore Street Park. The Adirondack/Glens Falls Transportation Council (A/GFTC) is planning on placing signage at these locations and formalize the areas as trailheads. There is a formal trailhead and designated parking area at Leonard Street.

Within the City, the bikeway is in good condition with most road crossings are well marked with crosswalks and signage alerting drivers to the trail crossing. There are also stop signs to alert trail users of the road crossing. Occasionally, crosswalks need to be



Current Conditions and Recommendations

repainted after road resurfacing and normal wear and tear. There is however, no consistent directional signage for trail users regarding a proper route and distance to the Glens Falls Business District.

With the Bikeway ending on Warren Street near the Feeder Canal Trail at Shermantown Road, trail users have the opportunity to stay primarily on a separated trail network and travel from Fort Edward to Lake George or Queensbury with a stop in Glens Falls. The critical factor is getting trail users to access the Glens Falls business district. An alternate sidewalk route for the Feeder Canal Trail has been proposed above with the objective of bringing trail users into the business district and encouraging them to stop.

Currently there is limited signage and no clearly marked route for bikeway users to safely navigate city streets and reach the business district. A map published by the A/GFTC depicts a possible route into the business district. It recommends heading west on Lawrence Street, then south on Pearl and west on Maple Street before reaching Ridge Street. An alternative route to enter the business district is proposed later in this section.

At the southern terminus of the bikeway in Glens Falls, trail users have a choice of using either McDonald or Pratt Streets to access Warren Street. The A/GFTC Regional Bicycle Map indicates that McDonald Street is for southbound traffic while Pratt Street is for northbound traffic.



**McDonald Street separated bike lane blocked by a car
(Looking south at the intersection of Maple Street)**

The city constructed a separated right-of-way bike lane use along the west side of McDonald Street. Unfortunately, residents and other drivers routinely park on the bike lane. Garbage cans along with brush and other debris are also placed in the lane. There is no signage or markings to indicate the purpose of this paved area. It is suggested that some form of signage or markings be established to inform cyclists and local residents of the purpose of this facility.



Proposed Recommendations

Refer to *Refer to Figure 10 – Warren County Bikeway Proposed Recommendations*, for additional information on the following recommendations.

1: Place directional signage at key road crossings and trailheads. It is recommended that directional signage with distances to significant destinations and attractions be placed at key intersections and trailheads. The WCS&QBO has been working with Glens Falls Hospital (which has provided funding assistance) with technical assistance from A/GFTC to identify locations for the placement of these signs. The city has been asked to identify the preferred destinations to be placed on the signs. Significant destinations could include but not be limited to the business district, the Feeder Canal Trail, the Shirt Factory, the Hyde Collection, the World Awareness Children’s Museum, and the Civic Center. The intent of this recommendation is to provide more predictable and convenient access to the business district and other destinations.

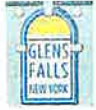


Potential Locations for Trail Signage.
Source: A/GFTC and the WCS&QBO

2: Clearly designate the McDonald Street separated bike trail. The separated bike lane along McDonald Street is routinely blocked by parked cars, garbage cans and other debris. It appears that homeowners do not realize this is a designated bike trail. In addition, trail users may also not realize this is intended for cyclists on the Warren County Bikeway. Therefore, some form of pavement markings and associated signage is recommended to enhance the effectiveness of the



Example pavement markings



Current Conditions and Recommendations

bike trail. Similar to the recommended pavement markings for the sidewalk route of the Feeder Canal Trail, consistent design and color is suggested for the Warren County Bikeway markings.

3: Connection to Sagamore Street Park. The WCB pass directly next to the Sagamore Street Park. Recent improvements have made the park a significant neighborhood asset. A potential opportunity exists to provide a direct connection at the western section of the park where the WCB abuts.



Section 3 Implementation



Section 3 Implementation

3.1 Implementation Schedule

Implementation Key:

- (I) Immediate
- (ST) Short-Term
- (LT) Long-Term

The following is the proposed implementation schedule for the above discussed recommendations.

Walking and Biking

Designation of City Bike Routes

1. The following roads within the City of Glens Falls are proposed to be designated as bike routes under a 12-month pilot program **(I)**.
 - a. Warren St. (Shermantown Rd. to the roundabout)
 - b. Glen St. (Entire length)
 - c. Bay St. (Glen St. to the city line)
 - d. Dix Avenue (City line to Ridge St.)
 - > To signify the designated bike routes, “Bike Route” signs will be placed at the beginning and end of each route. In addition, shared-lane markings (sharrows) will be deployed on each road along with “Bicycle” and “In Lane” signs in accordance with the NYSDOT Shared-Lane Markings (SLMs) Policy (current draft is dated 12/31/12) and the Manual for Uniform Traffic Control Devices.
 - > Sharrows are pavement markings on streets that indicate a bicyclist may use the full lane.
 - > The 12 month pilot program for Warren, Glen, Bay and Dix will be conducted to allow for a public informational campaign to educate drivers and cyclists about the sharrows. The pilot program will also provide an opportunity for the city in partnership with the A/GFTC to evaluate both cyclists and driver behavior before and after route designations and sharrow deployment.
 - > Evaluation of the existing conditions is expected to begin in August 2013. The designation of the four initial bike routes and deployment of sharrows and signs is expected to occur in the spring of 2014.

2. The remaining roads as identified below are proposed to be designated as bike routes upon the completion of the 12 month pilot study **(ST)**.
 - a. Ridge St. (Roundabout to the city line)
 - b. Lawrence St. (Platt St. to Ridge St.)
 - c. Sherman Ave. (Glen St. to Western Ave.)
 - d. Broad St. (South St. to S. Western Ave.)
 - e. South St. (Hudson Ave. to Knight St.)



- f. Bush St. (Knight St. to Haviland's Cove Park)
- g. Western Ave. (Coolidge Ave. to Sherman Ave.)
- h. S. Western Ave. (Sherman Ave. to Broad St.)
- i. Sanford St. (Glen St. to Ridge St.)
- j. Grant St. (Western Ave. to Glen St.)
- k. Hudson Ave. (Glen St. to Broad St.)
- l. Knight St. (South St. to Thomas St.)
- m. Thomas St. (Knight St. to Broad Street)
- n. Murray St. (Broad St. to Murray Street Trailhead)

Fire and Kensington Road/Horicon and Jerome Ave. Study:

- 3. Fire, Kensington, Jerome and Horicon roads all experience high levels of bicycle and pedestrian traffic along with automobile traffic due to the presence of Crandall Park, the YMCA and the Kensington Road School. The city and the A/GFTC are undertaking a study to determine what improvements could be made to benefit cyclists and pedestrians. The Connectivity Plan endorses the completion of such a study

Intersections, Sidewalks and Crosswalks

- 4. All crosswalks within the Downtown Business District have been evaluated to determine if paint resurfacing is required. Approximately 22 intersections (as of the fall of 2012) will require resurfacing **(I)**.
- 5. It is recommended that the city consider a pilot program to evaluate the effectiveness of alternative patterns and materials for crosswalks at intersections experiencing high volumes of vehicle and pedestrian traffic. **(ST)**
- 6. Crosswalks should be placed where Hunter St. intersects with Ridge, Wing and Sagamore Streets to facilitate safer pedestrian connectivity to Sagamore St. Park. **(ST)**
- 7. On-street parking is not only important for area businesses; it also provides a barrier between pedestrians on sidewalks and automobiles in the travel lane. It is recommended that on-street parking remain throughout the downtown business district and not be removed for lane widening or construction of bike lanes.



Separated Shared-Use Paths

Haviland's Cove Park-Feeder Canal Trail:

8. Coordinate with the Feeder Canal Alliance (FCA) and the NYS Canal Corp. to prevent continued erosion and damage of the Feeder Canal Trail at the Bush Street crossing **(I)**.
9. Install "Trail Crossing" signs combined with a new highly visible crosswalk at the Bush Street crossing. "Trail Crossing Ahead" signs would also need to be placed approximately 100 ft. from the trail crossing in both locations **(I)**.
10. Repaint and properly maintain the "Slow" pavement marking at the southbound bridge approach **(I)**.
11. Place a "Watch for Pedestrian" sign prior to the entrance of the park to alert drivers that there may be pedestrians along Bush Street **(I)**.
12. Sufficient buffers between the light industrial uses and the Feeder Canal Trail should be maintained between Haviland's Cover Park and the Murray Street Trailhead (I and ongoing).

Murray Street Crossing-Feeder Canal Trail:

13. Place "Combination Bike and Ped Crossing" signs with "Diagonal Arrow" signs at the crossing of the Feeder Canal Trail for both travel lanes along with additional warning signs approx. 100 ft. from the crossing **(ST)**.
14. Install a highly visible crosswalk at the crossing of Murray Street as an additional indicator for motorists of the crossing and to direct trail users to the correct location for crossing **(I)**.
15. Install signage to alert trail users of the upcoming road crossing approximately 25 ft. from the crossing **(ST)**.

Access to Murray Street Trailhead-Feeder Canal Trail:

16. Narrow the travel lanes and widen the shoulders on and at each approach to the Murray Street Bridge to provide additional room for bicyclists and pedestrians **(I)**.
17. Extend the northern and southern sidewalks along Murray Street to the Murray Street Bridge to provide an alternative for pedestrians walking to the trail. Additional crosswalks will also need to be installed **(LT)**.
18. Ensure debris along the Murray Street Bridge shoulders is routinely cleaned **(I)**.
19. Work with the FCA and the NYS Canal Corporation to evaluate the need for and feasibility of constructing a pedestrian and bicycle bridge over the canal **(LT)**.
20. In addition to addressing connectivity with the Feeder Canal Trail, it is recommended that the city conduct a detailed study regarding Murray Streets current ability to adequately handle all modes of transportation **(ST)**.



Glen Street Trailhead-Feeder Canal Trail: Recommendations 22-24 will involve coordination with the FCA and Finch Paper.

21. Create a direct connection from the trail to the sidewalk allowing trail users to avoid the parking lot **(ST)**.
22. Widen the existing sidewalk to 10 ft consistent with the general width of the Feeder Canal trail to accommodate both pedestrians and bicyclists. Ensure the sidewalk is maintained free of obstructions **(ST)**.
23. Place way finding signage to direct trail users to the Downtown Business District, the Shermantown Road trailhead and other key destinations **(ST)**.
24. Discourage cyclists from riding on any city sidewalk. Specifically, cyclists should be discouraged from riding on the Glen and Warren Street sidewalks between the Glen Street and Shermantown Feeder Canal trailheads **(I)**.

Shermantown Road Trailhead-Feeder Canal Trail:

25. Install “Bicycle Warning” signs with the “In Lane” plaque near the intersection of Shermantown Road and Warren Street for southbound traffic and south of the bridge for northbound traffic to alert drivers of the presence of bicycles in the travel lane. These signs could be used in addition to shared-lane markings (sharrows) **(I)**.
26. Coordinate with adjacent landowners, the FCA and Canal Corporation regarding the need for and feasibility of constructing a designated parking area **(LT)**.
27. Coordinate with the FCA and Canal Corporation to evaluate the need for and feasibility of constructing a pedestrian and bicycle bridge over the canal **(LT)**.
28. Coordinate with the FCA and Lehigh Cement to address the ongoing trail erosion at the Lehigh Cement driveway crossing of the trail **(I)**.

Warren County Bikeway: The following recommendations will involve coordination with the A/GFTC.

29. Consider the placement of way finding/directional signage at key road crossings and trailheads **(I)**.
30. Install pavement markings on the designated bike trail along McDonald Street to minimize ongoing instances where cars park on the bike trail and the placement of debris and garbage cans **(I)**.
31. Consider creating a direct connection from the WCB to Sagamore Street Park **(LT)**.

Downtown Business District:

32. Additional bike racks are recommended for the Downtown Business District including at least one covered back rack in a central location **(I)**.
33. A digital kiosk displaying local information, events, and maps among other important details could be placed in a central location **(ST)**.

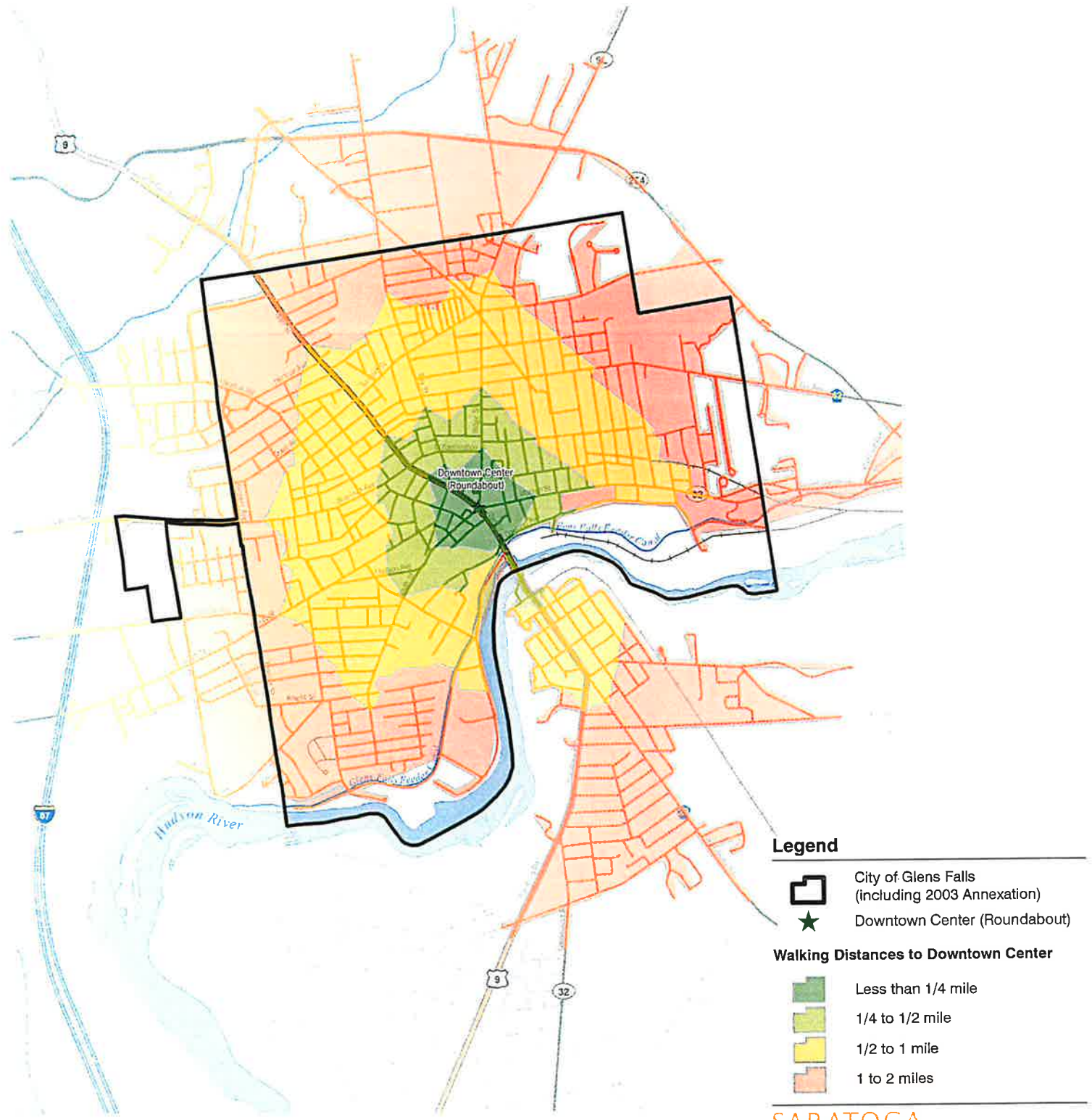


34. Bike share programs can be local assets to not only residents but also visitors. It is recommended that the feasibility of a bike share program be evaluated for Glens Fall **(ST)**.



Walk Bike Glens Falls:

35. To assist in the implementation of the Plan, it is recommended that a Walk Bike Glens Falls Committee be formed. Potential members could include City representatives, bike and pedestrian enthusiast, the Warren County Safe and Quality Bicycling Organization, A/GFTC, and Greater Glens Falls Transit.





36. Walk Bike Glens Falls could also become a City Campaign to educate and inform residents and visitors about the City's walking and biking resources, encourage more walking and biking and assist in implementing the Plan recommendations.



Legend

-  City of Glens Falls (including 2003 Annexation)
-  Downtown Center (Roundabout)

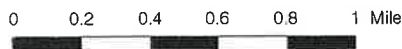
Walking Distances to Downtown Center

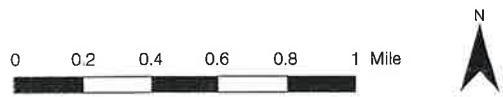
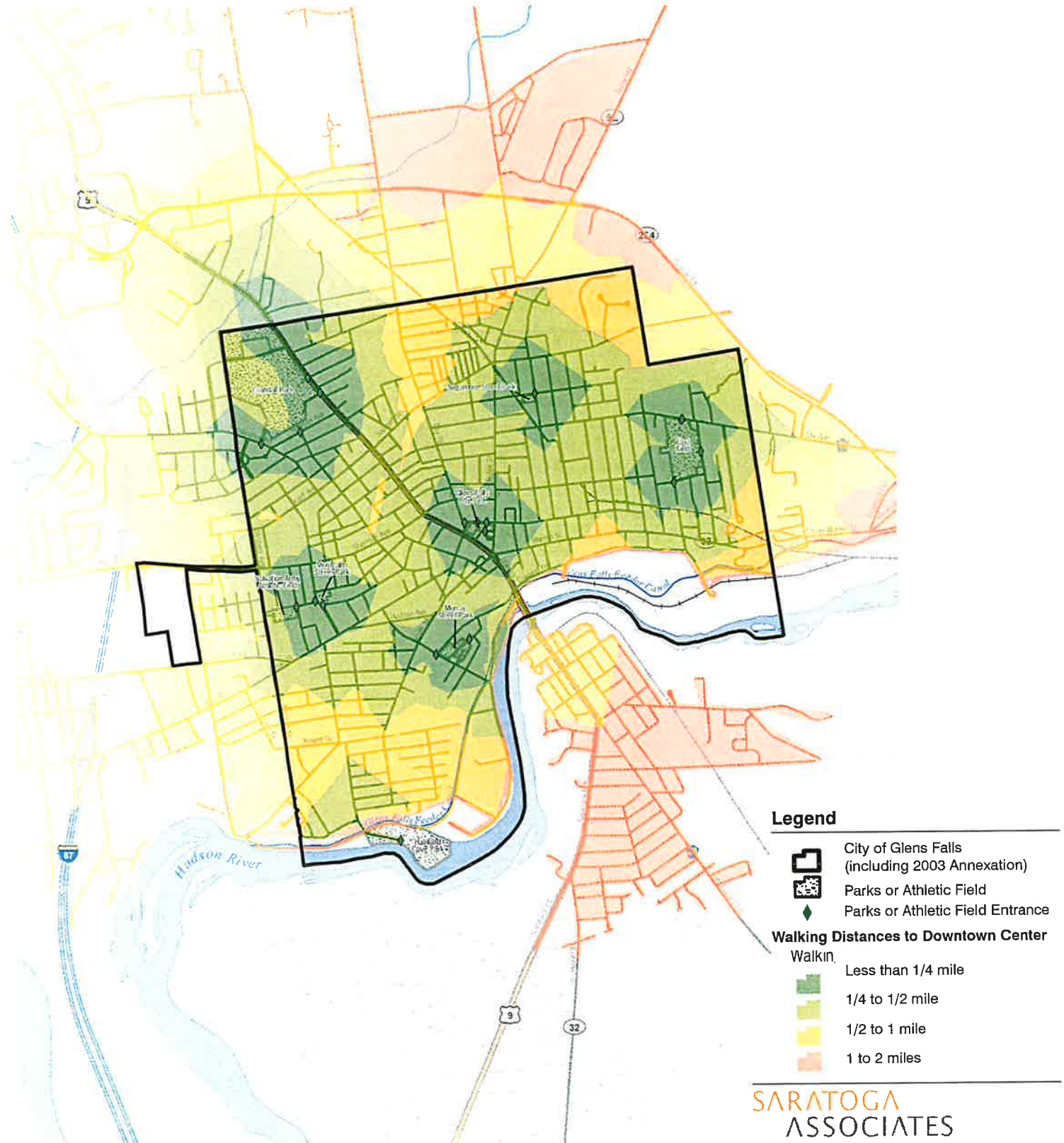
-  Less than 1/4 mile
-  1/4 to 1/2 mile
-  1/2 to 1 mile
-  1 to 2 miles

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Legend

- City of Glens Falls (including 2003 Annexation)
- Parks or Athletic Field
- Parks or Athletic Field Entrance

Walking Distances to Downtown Center

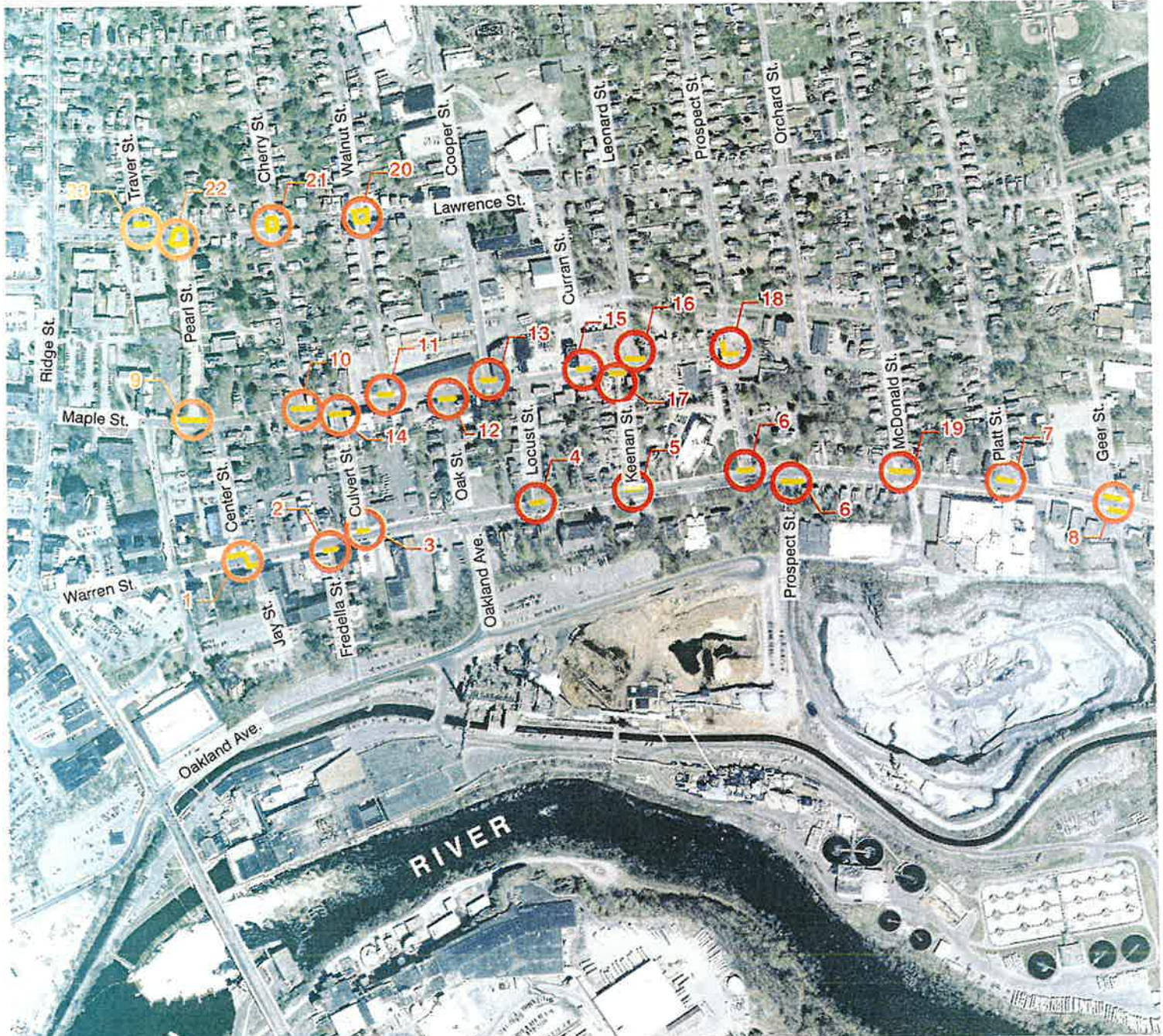
Walking

- Less than 1/4 mile
- 1/4 to 1/2 mile
- 1/2 to 1 mile
- 1 to 2 miles

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- | | |
|---|---------------------------------|
| 1. Jay, Center and Warren Streets | 12. Oak and Maple Streets |
| 2. Fredella Ave. and Warren St. | 13. Cooper and Maple Streets |
| 3. Culvert and Warren Streets | 14. Culvert and Map Streets |
| 4. Locust and Warren Streets | 15. Curran and Maple Streets |
| 5. Keenan and Warren Streets | 16. Leonard and Maple Streets |
| 6. Prospect and Warren Streets | 17. Keenan and Maple Streets |
| 7. Plat and Warren Streets | 18. Prospect and Maple Streets |
| 8. Gear and Shermantown Roads
at Warren Street | 19. McDonald and Maple Streets |
| 9. Pearl and Maple Streets | 20. Lawrence and Walnut Streets |
| 10. Cherry and Maple Streets | 21. Cherry and Lawrence Streets |
| 11. Walnut and Maple Streets | 22. Pearl and Lawrence Streets |
| | 23. Traver and Lawrence Streets |

Legend



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Glens Falls Connectivity Study



Figure 4
Proposed Bike Routes and
Pilot Study



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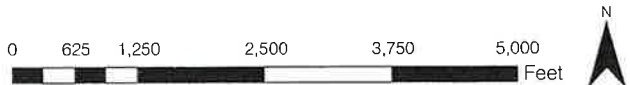
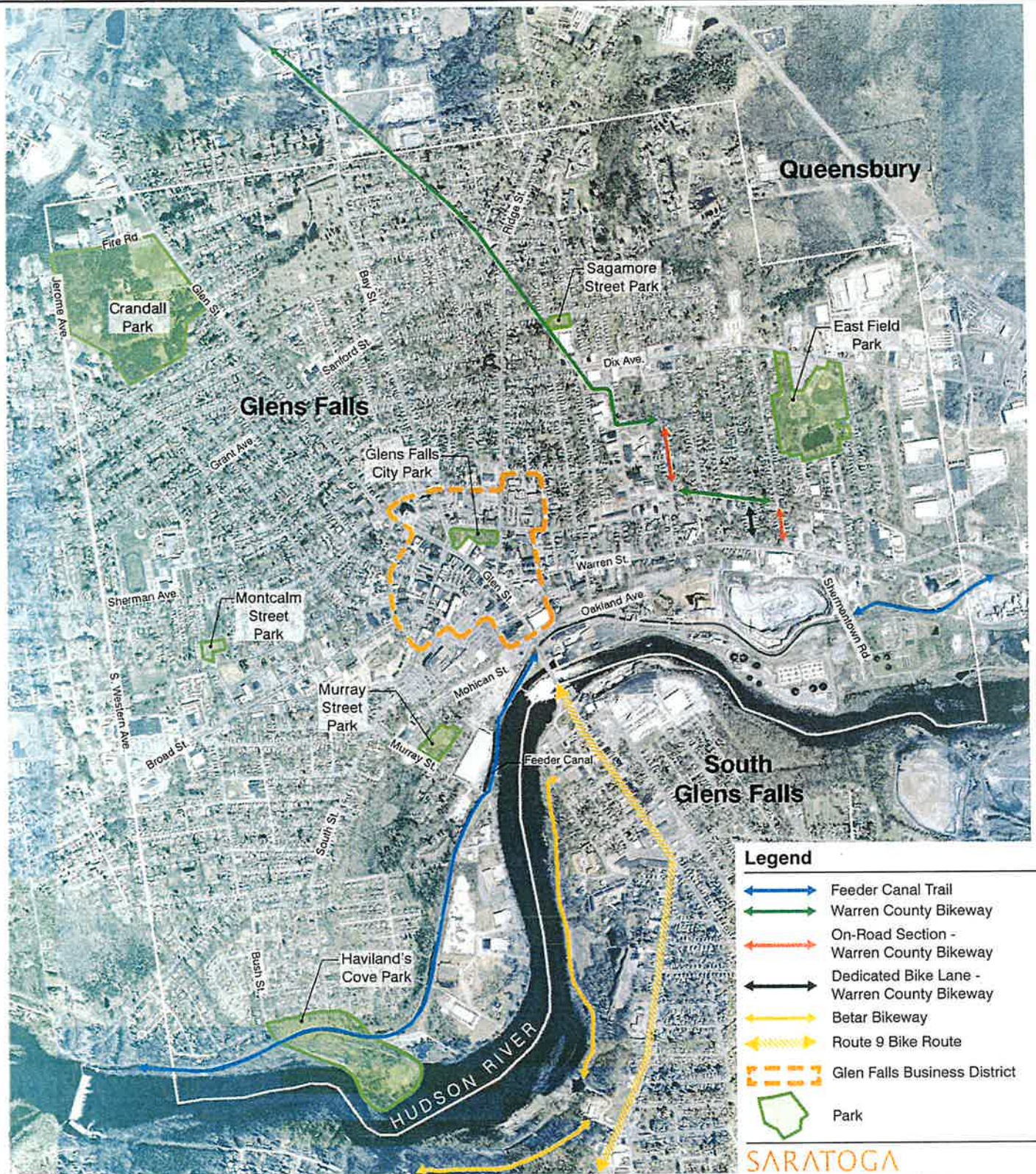




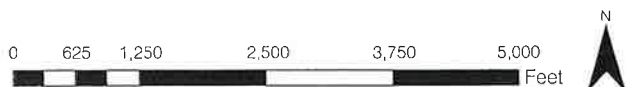
Figure 5 Separated Trail Networks and Bike Facilities

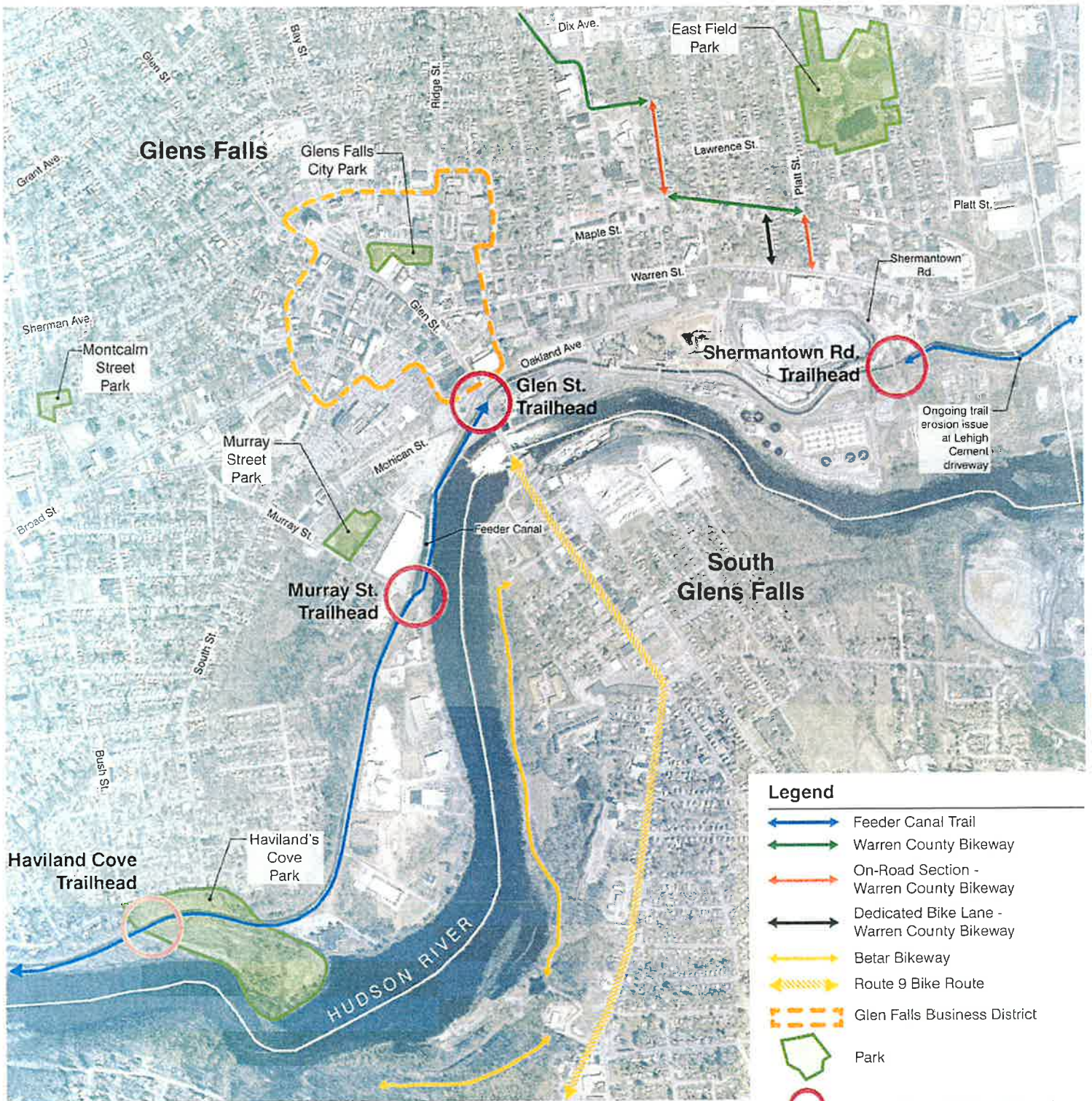


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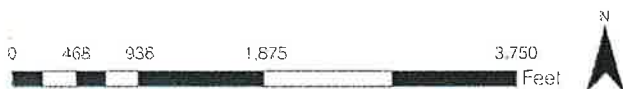
Legend

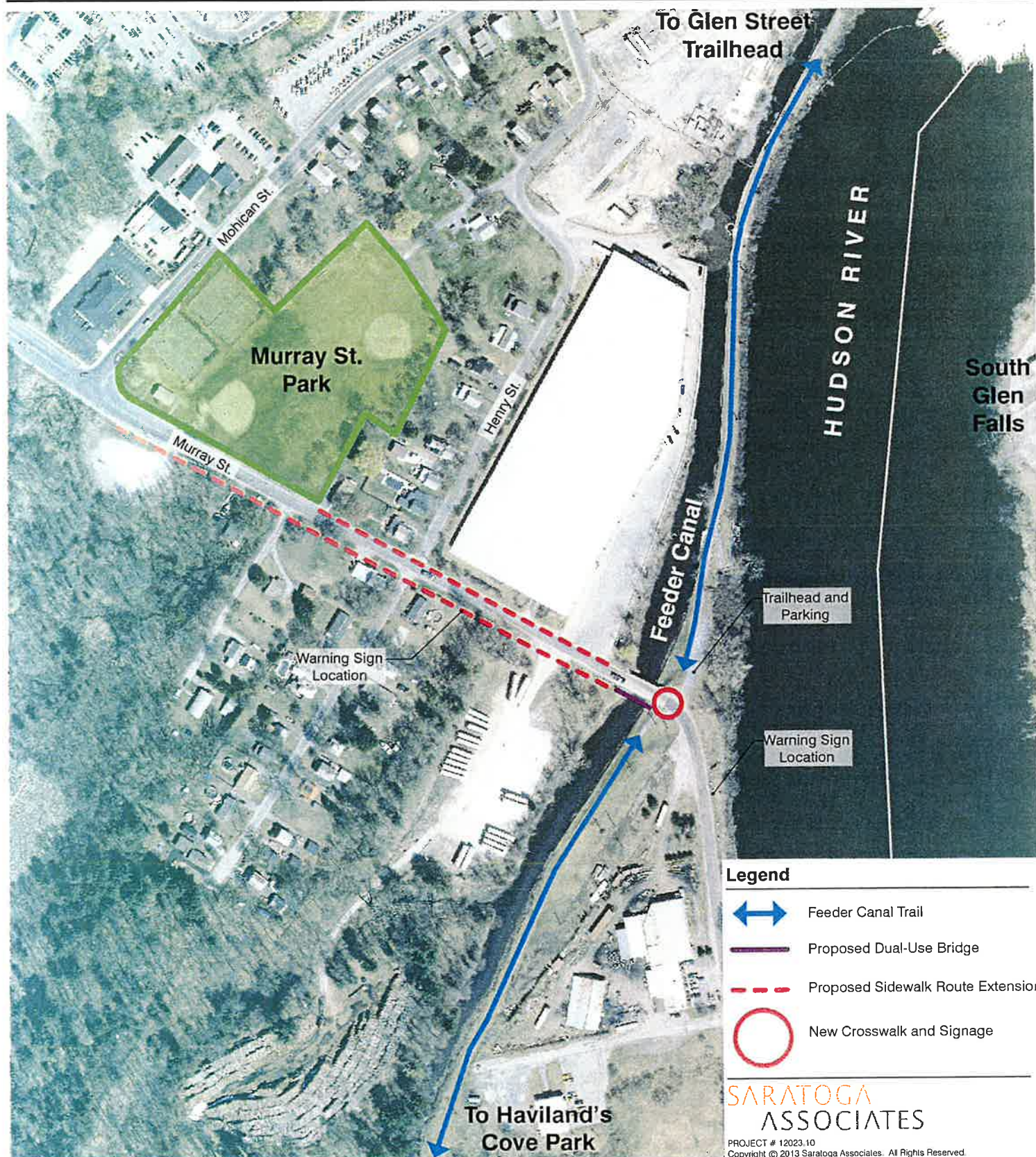
- Feeder Canal Trail
- Warren County Bikeway
- On-Road Section - Warren County Bikeway
- Dedicated Bike Lane - Warren County Bikeway
- Betar Bikeway
- Route 9 Bike Route
- Glen Falls Business District
- Park
- Feeder Canal Trailhead Locations

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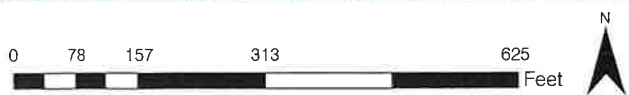
Legend

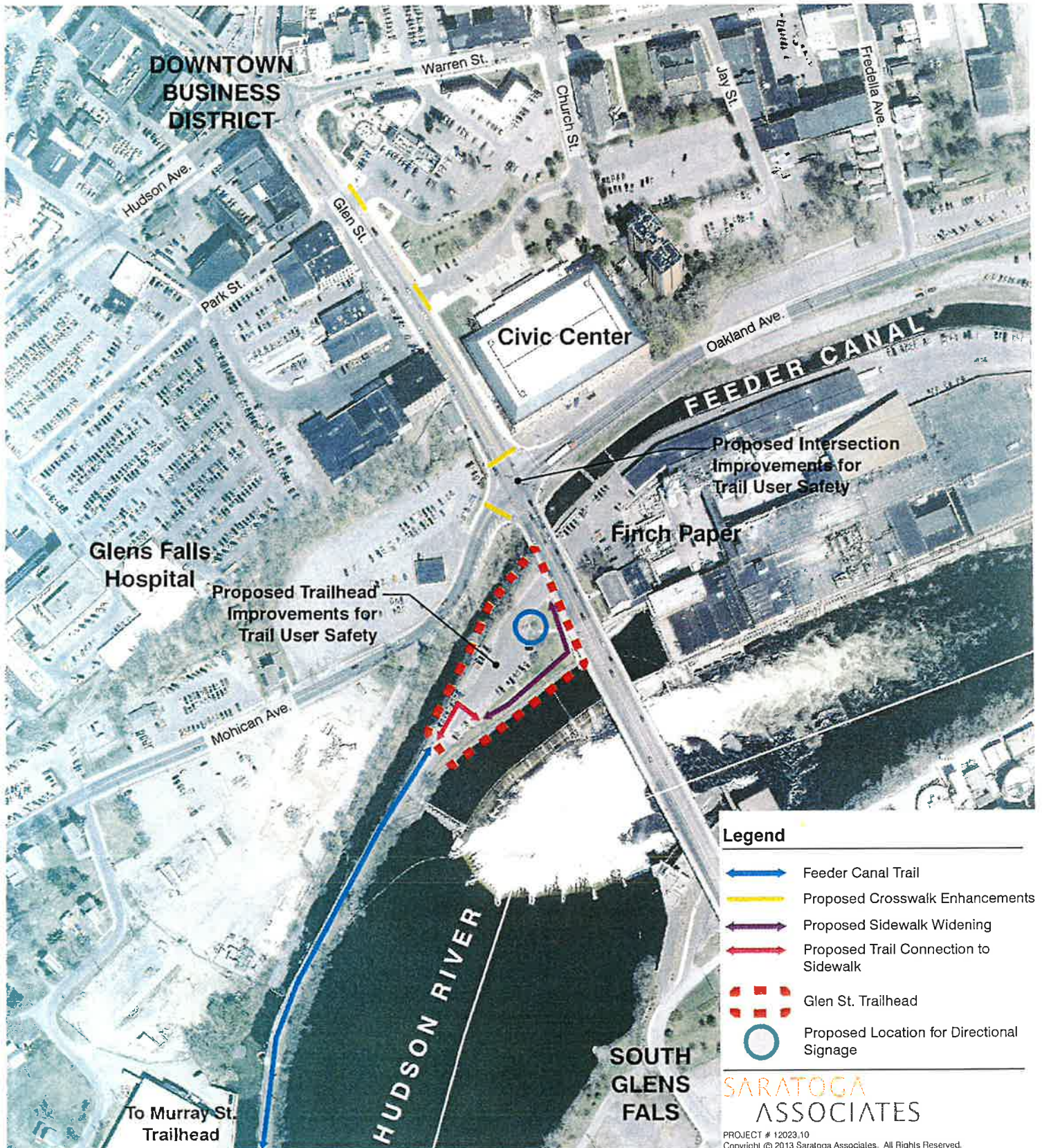
- Feeder Canal Trail
- Proposed Dual-Use Bridge
- Proposed Sidewalk Route Extension
- New Crosswalk and Signage

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- Legend**
- Feeder Canal Trail
 - Proposed Crosswalk Enhancements
 - Proposed Sidewalk Widening
 - Proposed Trail Connection to Sidewalk
 - Glen St. Trailhead
 - Proposed Location for Directional Signage

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City of Glens Falls, NY NY Community Challenge Grant

Glens Falls Bicycle Trail & Recreation
Connectivity Map

Feasibility of Developing a Downtown Multi-Purpose
Facility and Further Improving Connectivity with
Bike/Pedestrian Paths

September 2012

KEY

- City of Glens Falls (including 2003 Annexation)
- Bike Paths**
- Separated right of way (paved, asphalt)
- Designated on-street bike route
- WCS & QBO Priority Route
- Local Priority Route
- A/GFTC Staff Priority Route
- WCS & QBO and A/GFTC Staff Priority Route
- Separated right of way (other surface)
- Feeder Canal Trail Sidewalk Connection
- Proposed designated on-street connector

 Bike/Ped Trail Terminus

Roads

- Primary Highway with Limited Access
- Primary Road without Limited Access
- Secondary and Connecting Road
- Local, Neighborhood and Rural Road
- Bus Depot
- Parking Area

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File Location: \\S001\212023\Map02\GFBicycleTrailRecreationConnectivity.mxd

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Engineers, and Planners, P.C.

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