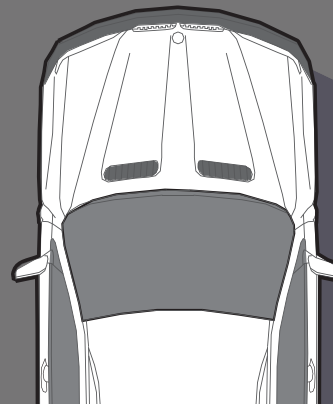
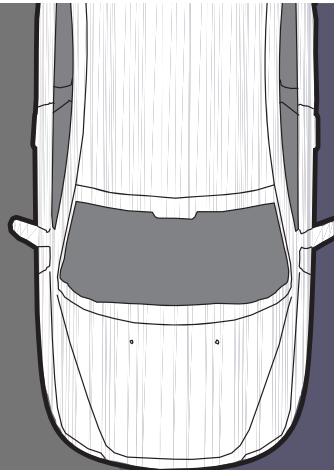
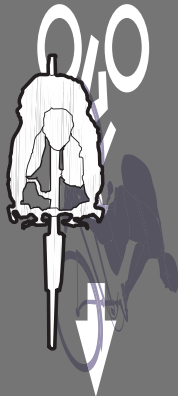


# Lake George - Warrensburg Bikeway Extension Concept Plan

April 2019



# Table of Contents

Introduction	1
Methodology	2
Section 1: Village of Lake George	3
Section 2: Route 9 Connector	7
Section 3: Warrensburg	9
Implementation	13
Appendix 1: Cost Estimates	15

**Disclaimer:**

This report was funded in part through a grant from the Federal Highway Administration, U.S. Department of Transportation. The views and opinions expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation. This study includes preliminary cost estimates prepared by A/GFTC project consultants on behalf of the Town and Village of Lake George and the Town of Warrensburg. These estimates are based on conceptual plans and provide an order-of-magnitude tabulation of costs, such that a project sponsor may seek funding for design and construction. Actual project costs may vary as the project undergoes detailed design. The adoption of this document by the A/GFTC Planning or Policy Committee in no way implies a commitment to include proposed projects in future Transportation Improvement Programs.

## WHAT IS A BIKEWAY?

For the purposes of this report, the term *Bikeway* refers to a variety of different types of infrastructure, which together have been designated as a facility for non-vehicular use with a priority given to cycling. These may include:

- **Shared-use paths can be used by cyclists or pedestrians. These are typically 10-12' wide and paved with asphalt or stone dust. Usually, these are located outside of the road right-of-way; when located beside a road, they are sometimes referred to as sidepaths.**
- **Bike lanes are on-road facilities designated for bicycle use only, located adjacent to vehicle lanes with or without a buffer. If on-street parking is also accommodated on the road, the bike lane is located between the driving lane and the parking lane. Pedestrians are not allowed on bike lanes and would be accommodated via sidewalks. Bike lanes are typically designated with pavement markings.**
- **Wide shoulders, which are often located in more rural settings. Unlike a bike lane, pedestrians may be accommodated on wide shoulders, especially if no sidewalks exist. Wide shoulders along a Bikeway may be delineated with pavement markings.**
- **Cycle tracks are exclusive bike facilities located adjacent to vehicle lanes, but physically separated from vehicular traffic. Two-way cycle tracks allow for bicycle travel in both directions along one side of the street.**
- **Although bicycles are allowed on all public roads, shared-use lanes offer additional accommodation for cyclists via extra lane width and pavement markings.**

The Warren County Bikeway is one of the most important bicycle-pedestrian facilities in the region. As a stand-alone facility, it connects the City of Glens Falls to the Village of Lake George. Regionally, the Bikeway is part of a larger network of off- and on-road trails, connecting to the Feeder Canal Trail, the Betar Byway, and will soon provide access to New York State's Empire Trail. Locally, the Bikeway fulfills crucial transportation and recreation functions and is well-loved by residents and tourists alike.

Currently, the Bikeway terminates in Battlefield Park, near the junction of West Brook Road and Beach Road. The extension of the Bikeway north through the Village and Town of Lake George has long been a priority for both the local municipalities and A/GFTC itself. In addition, the town of Warrensburg has also identified the desire for a bike-ped connection from Route 9 south of the hamlet. However, in both cases a number of challenges exist which complicate the selection of an ideal route.

As such, A/GFTC was asked by the Town of Lake George, in conjunction with the Village of Lake George and the Town of Warrensburg, to prepare a concept plan to evaluate a potential extension from the terminus of the existing Warren County Bikeway through the Village of Lake George and north to Warrensburg. These concepts can then provide the basis for the local municipalities to pursue detailed planning, design and construction.

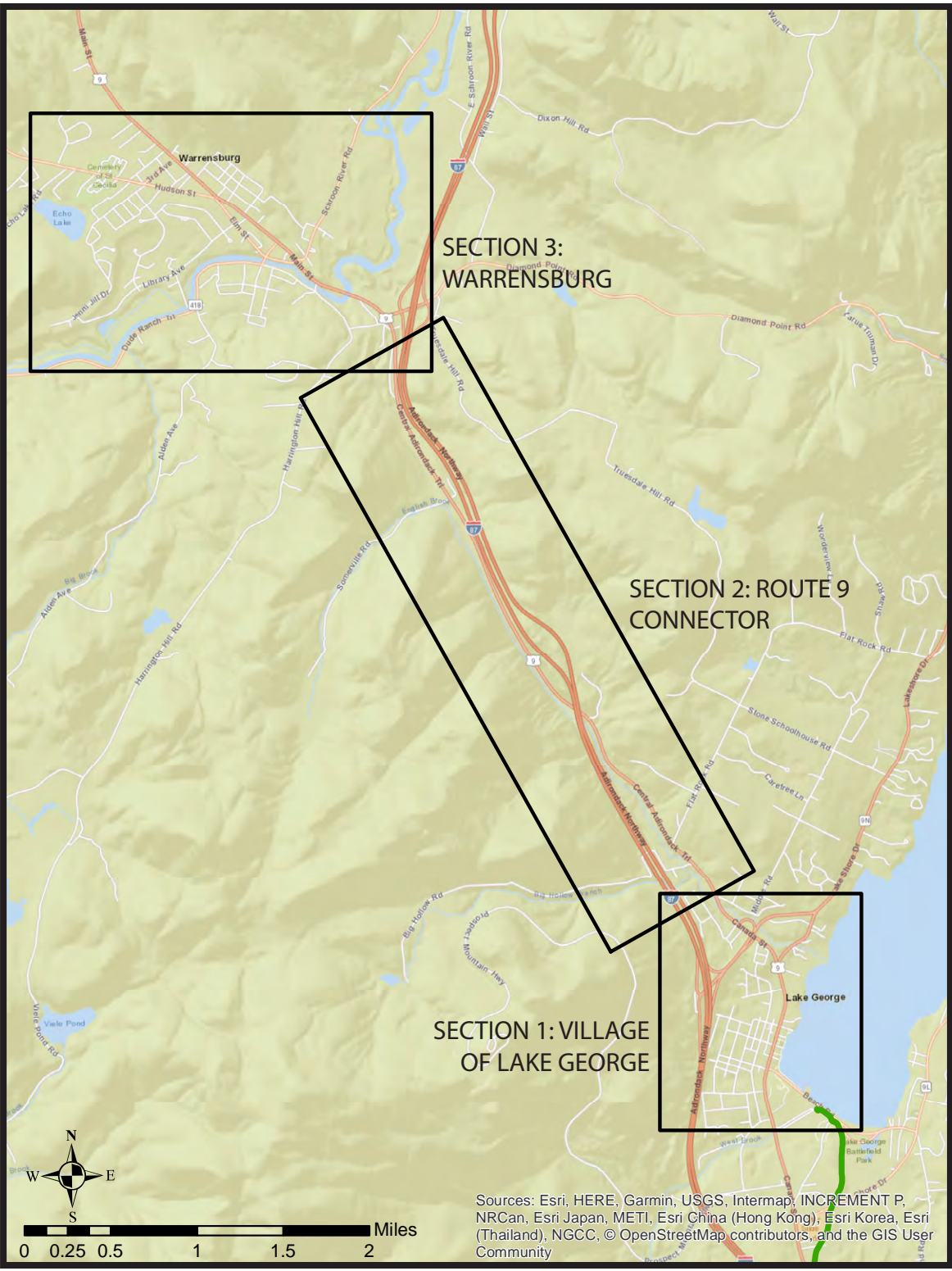




To guide the project, a steering committee was formed, with representatives from the Town and Village of Lake George, Warren County Planning, NYSDOT Region 1 Planning, and A/GFTC staff. The Town of Warrensburg participated as a critical stakeholder, with municipal staff and elected officials providing feedback on the portions of the project located outside of Lake George. In addition, several public meetings were held to gather input.

For this project, the major challenges lay in selecting potential routes through the Village of Lake George and the hamlet area in Warrensburg. As with any developed area, the alignment of a bicycle facility must take into account the constraints of existing infrastructure, buildings and structures, rights-of-way, and natural features. In addition, the safety of future Bikeway users will be affected by the speed, volume, and traffic patterns of vehicles on nearby roadways.

As such, for the purposes of this report, the potential alignment is discussed in terms of three distinct segments: the Village of Lake George, the Route 9 connector, and the hamlet of Warrensburg. For each area, route options were evaluated in terms of feasibility, safety, and user experience, by examining a range of factors specific to the context of the surrounding area.



## Bikeway Evaluation Factors



Safety was evaluated in terms of exposure of cyclists and pedestrians to vehicle traffic, specifically at intersections and road crossings, which have an increased potential for conflict.



Slope was considered as it impacts user experience. Although some cyclists enjoy the challenge of steep slopes, the Bikeway is intended to be desirable to cyclists at every skill level.



Right-of-way was a critical consideration, as alignments which traverse private property will also increase costs and project complexity. In general, the more preferred alternatives avoid private property.



On-street parking was an important factor in both Lake George and Warrensburg. Alternatives which minimize disruption to on-street parking resources were prioritized.



Road and bridge width affect the amount of available space for dedicated bicycle facilities. For the purposes of this plan, most alternatives assumed no significant reconstruction of the road or bridge infrastructure.



Physical barriers, such as embankments or highway ramps, were considered. The steering committee considered non-traditional means, such as tunnels, to overcome barriers when possible.

## SECTION 1: LAKE GEORGE VILLAGE

The Village of Lake George poses a particular set of challenges for the Bikeway extension. For example, the high volume of vehicular and pedestrian traffic on the main thoroughfares and major intersections can make navigation via bicycle difficult, especially on Beach Road and Canada Street. The Village itself is densely developed, which limits available space for additional infrastructure. In addition, maintaining on-street parking is a high priority for the municipality. Topography also comes into play, as many of the local streets are quite steep; combined with the stop-and-go nature of biking through a developed area, these slopes can be a barrier for casual or inexperienced cyclists.

The steering committee discussed many options and potential routes. The various alternatives were evaluated for safety, feasibility, street/bridge width, steepness of the route, potential disruption of on-street parking, private property concerns, connection to the community core, directness, and overall user experience. In almost every case, this involved one or more tradeoffs.

In conducting this analysis within the Village of Lake George, three primary alignments were identified, each having potential optional routing. A summary of the key considerations for these options is included on the following pages.

## Option 1: Beach Road/Canada Street

### Key Considerations:

- Adding bicycle facilities to Beach Road will require major reconstruction of the roadway. Given that the road recently underwent significant improvements involving the use of federal funds, it will be at least several years before additional funds would be available to undertake improvements of this scale. Although Beach Road has wide sidewalks, the presence of obstacles and the high pedestrian volume precludes their use as multi-use paths.
- The Beach Road/Canada Street intersection has multiple turning lanes and cross traffic; this would require pedestrians and bicyclists to check multiple locations for oncoming traffic, increasing exposure to vulnerable road users.
- The traffic volumes and roadway configuration on Canada Street through the heart of the Village are not conducive to cycling and lane widths do not support the introduction of bike lanes. In addition, the peak hourly vehicular volume makes this section of the roadway a poor candidate for a road diet. As such, the steering committee removed this option from further consideration.

## Option 2: Southwest Route

### Key considerations:

- Slopes on southern Dieskau Street, western McGillis Ave, and western Chestnut Street pose major impediments to cycling.
- Routing is circuitous and offers poor connection to the Village core.





## Preferred Option: West Brook & West Neighborhoods

The preferred option is a two-way sidepath, separated from vehicular traffic, along West Brook Road to Route 9. This would be located on the north side of the roadway and the brook itself. Although there are many options for locating the Bikeway alongside the road or within West Brook Park, this option was selected by the steering committee after consultation with the Warren County Department of Public Works as it offers a balance of feasibility and connectivity to Route 9.

The Bikeway then travels alongside Route 9 between West Brook Road and Mohican Street. In this section, there are two options: bike lanes on either side of the roadway, or a separated two-way cycle track on the west side of Route 9. Each option offers pros and cons. Bike lanes would be easier to design and construct, and could be implemented with re-striping the roadway as part of routine maintenance. However, this would require an additional crossing at the north branch of West Brook Road, which is currently configured as a slip lane. This intersection would need to be reconfigured as shown on page 6. In addition, bikes traveling north would then have to cross Route 9 at Mohican Street, which is unsignalized. This could be accomplished by merging into the left lane and turning with traffic, or by dismounting and walking the bike across the road at the existing crosswalk.





West Brook/Route 9 Intersection Alternative 1

If the separated two-way option is chosen, only one crossing of Route 9 would be needed, at the West Brook Road intersection as seen to the top left. This is also an unsignalized intersection, and there is currently no crosswalk at this location. Adequate signage and striping would need to be installed to increase the visibility of the crossing to motorists. No crossing would be needed at Mohican Street, as the Bikeway users would already be on the west side of the road.

At Mohican Street, the preferred alternative traverses the neighborhoods as a shared roadway, following Dieskau, McGillis, Helen, Montcalm, and finally to Cooper St. Though it is indirect, it provides good connection to the village, direct connection to the Prospect Mountain, and a visual connection to the lake. Public bicycle parking can be located on McGillis, just before Helen.

From Cooper Street, the Bikeway would transition to an off-road facility, utilizing the National Grid right-of-way. The preferred but high cost option is to bore a tunnel under the Exit 22 ramps to Cherry Street. Although costly, this route is an optimal opportunity for the trail to avoid the slip ramps and intersections around the Exit 22 and Route 9 convergence. From Cherry St. the trail could continue to the National Grid right of way at the end of Thompson Street before using Big Hollow Road to intersect with Route 9 and continue north.



West Brook/Route 9 Intersection Alternative 2

The more feasible option is for the trail route to continue northeast past the Town/Village office complex, paralleling the Exit 22 ramps. This trail proposal may be encumbered by two private properties near the Route 9 intersection with Exit 22 ramp. However, the steering committee feels that the property owners may be amenable to an agreement. Upon intersecting with Route 9, the proposed route would continue north under the overpass as a two-way separated cycle track on the west side of the road. This would then transition to bike lanes on both sides of the road, requiring a crossing to be located near the Upper Hubbell intersection.



## SECTION 2: TOWN OF LAKE GEORGE ROUTE 9 CONNECTOR

To connect Lake George to Warrensburg, several alignment options were considered. In addition to utilizing the Route 9 corridor (discussed on the following page), the other alternatives included:

### Option 1:

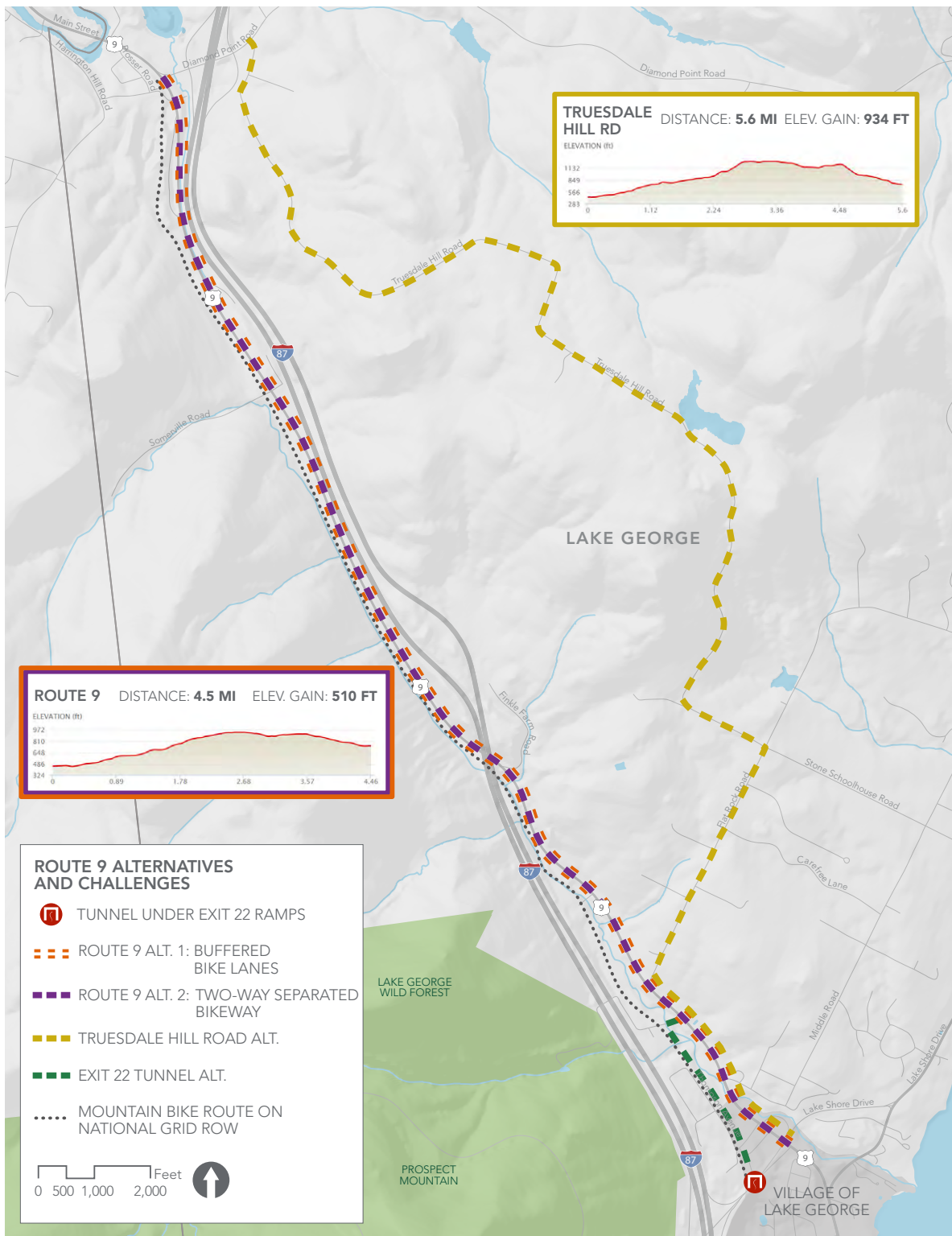
- Utilize the dirt roads/jeep trails and paths north of Prospect Mountain to travel west toward Harrington Hill Road. This option was considered too indirect, substantially hilly and potentially significantly costly to explore further.

### Option 2:

- An eastern route using Flat Rock Road to Truesdale Road was considered too hilly and indirect.

### Option 3:

- The old trolley line corridor, which runs parallel to the west side of Route 9, was also considered as it would provide a direct off-road connection between Lake George and Warrensburg. Due to the cost of improving the power corridor, moving poles and installing drainage, installing a multi-use path on the National Grid right of way, the concept was removed from consideration as a transportation facility. However, this concept would be ideal for future consideration as a recreational mountain bike connection.

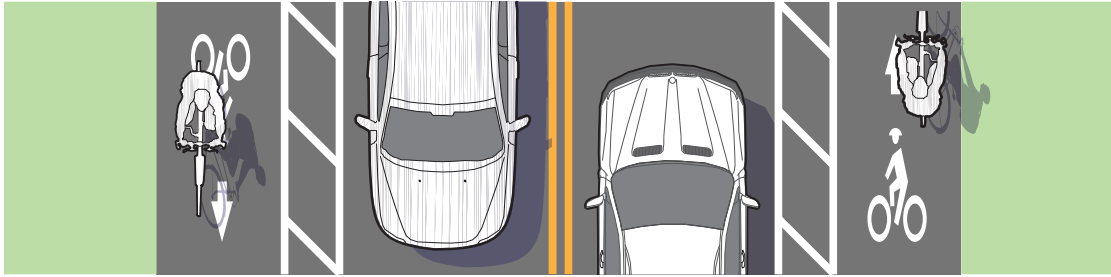
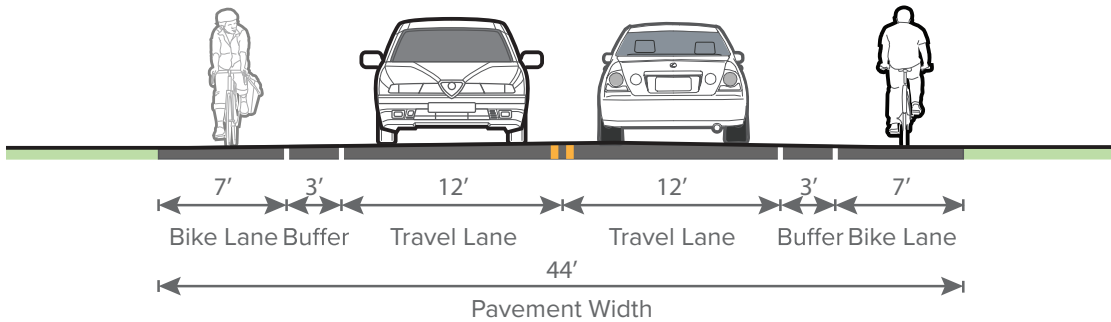


## Preferred Option

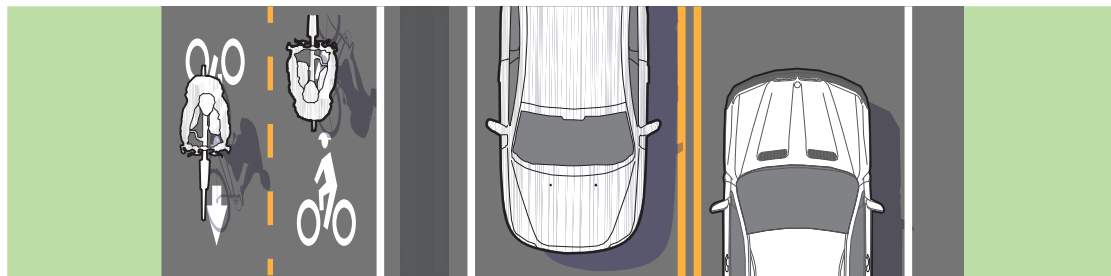
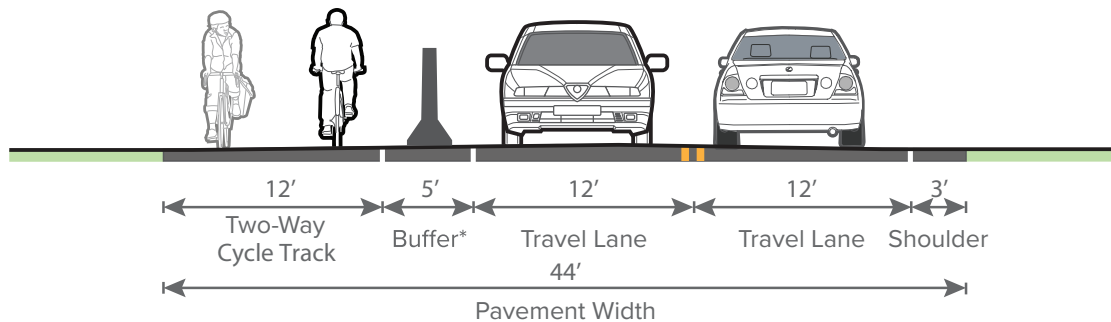
The preferred conceptual alignment utilizes the Route 9 right of way. The existing pavement is approximately 44' wide, providing ample space for either buffered bike lanes on either side or a separated two-way shared use path on one side of the road. Either option can be accommodated within the existing pavement width. However, the buffered bike lane option could be implemented by restriping the pavement, a relatively low-cost option which could be accomplished as a stand-alone project or during the next round of pavement maintenance. The two-way shared use path would require construction of a physical barrier as well as re-grading the crown of the roadway. This would be more costly. Given that much of Route 9 in this section was recently re-surfaced, the likelihood of quick implementation is reduced.

The most significant challenge is how to traverse the north end of this portion of the Bikeway. The intersection of Diamond Point Road and Route 9 presents a challenge for bicycle/pedestrian activity. There are two slip lanes at this signalized intersection, as well as a left-turn lane heading southbound on Route 9 from the hamlet of Warrensburg. Although there are shoulders on both sides of the roadway, the width is constrained on the east side of Route 9 by guiderails.

As such, the preferred alternative is to construct buffered bike lanes for most of the length of Route 9 between Lake George Village and Warrensburg, utilizing the two-way shared use path at the north end of this section of the Bikeway. If located on the west side of Route 9, the Bikeway will thereby avoid the intersection slip lanes at Diamond Point Road. This requires designating a crossing point at a safe location for cyclists traveling northbound (east lane).



### Buffered Bike Lanes



### Two-way Cycle Track

\*Vertical buffer currently shown as jersey barrier. Alternative vertical barriers, such as a rail or flexible delineators, may be used in place of jersey barrier

## SECTION 3: WARRENSBURG

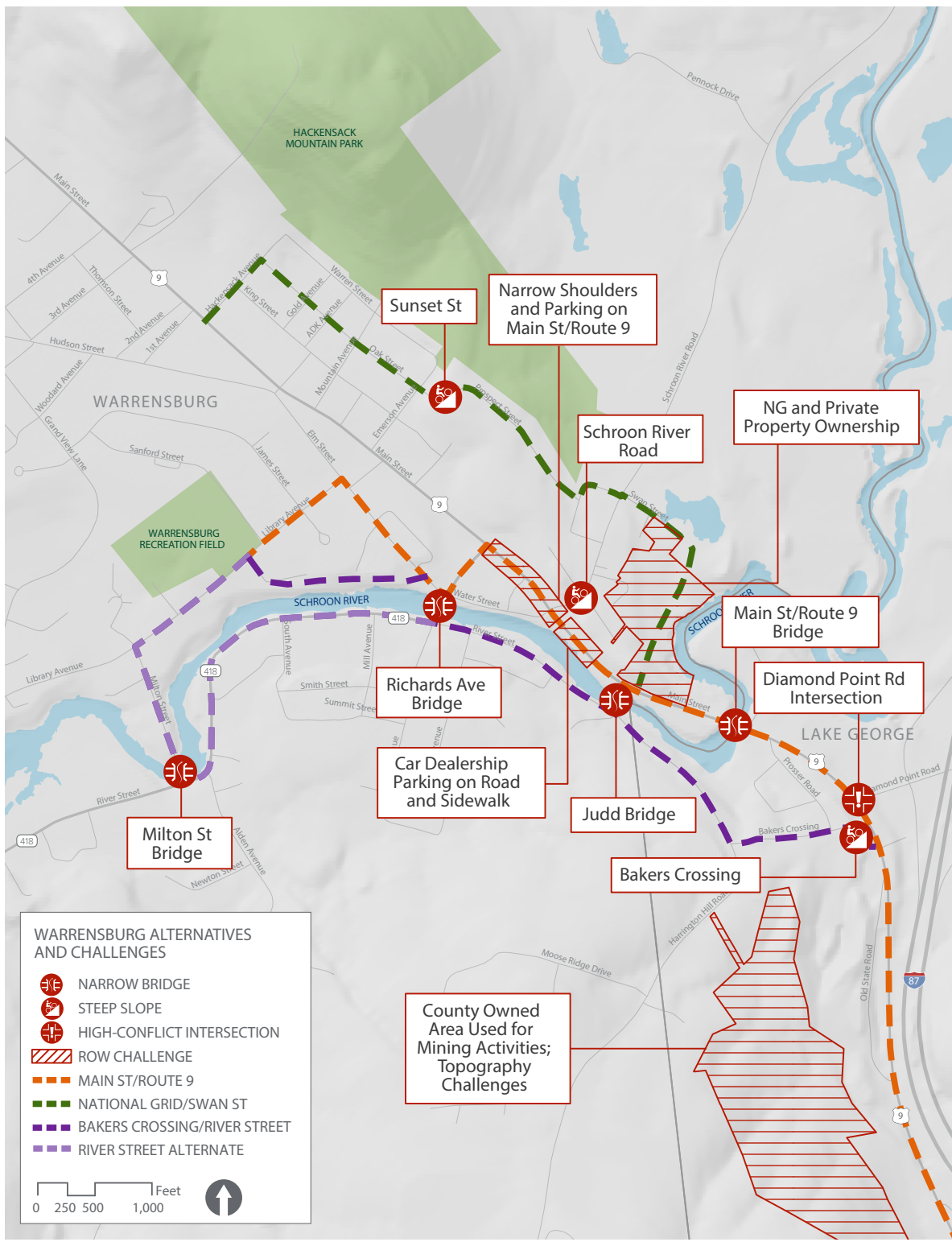
In the Town of Warrensburg, the Bikeway is proposed to terminate at the Warrensburg Recreation Field on Library Avenue. This provides a logical destination from which future Bikeway continuation concepts can extend. There are a number of challenges to creating an inviting and functional Bikeway within Warrensburg. From the south, a 2-way cycle track on the west side of Route 9 is proposed, approaching the Warrensburg town boundary. However, right-of-way and other physical features preclude the continuation north of Prosser Road. North of the Schroon River bridge, Route 9/Main Street has an urbanized cross-section with sidewalks, curbs, and narrow shoulders or on-street parking. This limits the available space for dedicated bicycle facilities. In terms of alternate facilities, River Road is narrow, winding and has a limited shoulder. All of the bridges from River Street to the north side of the Schroon River are narrow, with sidewalks on only one side. Given these constraints, three options were evaluated for this plan.

### Option 1 National Grid/Swan Street:

This option was eliminated from further consideration but is included in the plan for the purposes of discussion.

#### Key Considerations:

- This option would require easements from National Grid and a private property owner to access Swan Street.
- The blind corner and steep grade at Sunset Street are impediments to routing the Bikeway along this alignment.
- This option would require a significant amount of back-tracking to reach the Recreation Field.







Baker's Crossing



River Street



Route 9/Main Street

(above images courtesy of Google Streetview)

## Option 2: Baker's Crossing/River Street

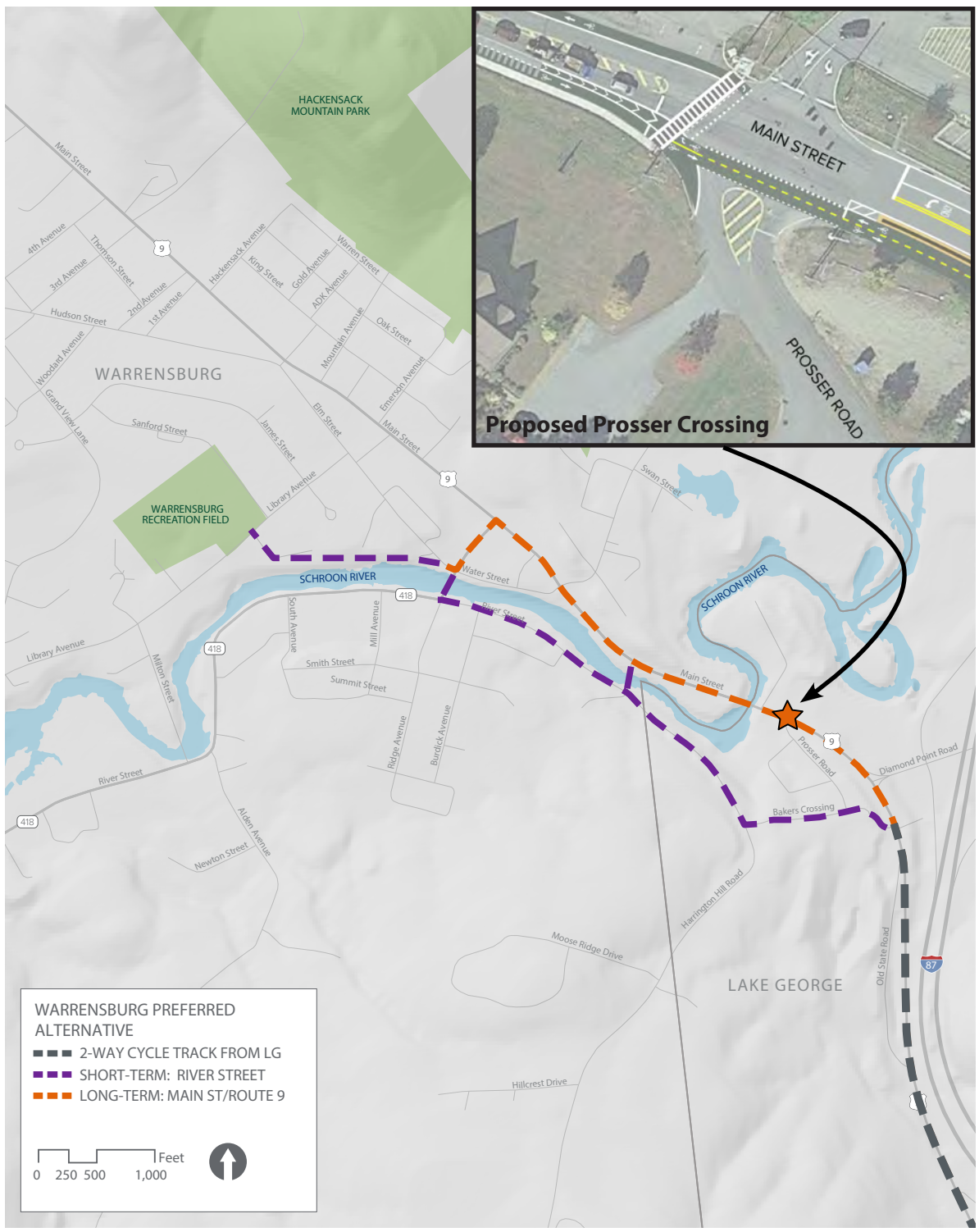
### Key Considerations:

- Baker's Crossing and Harrington Hill are narrow streets with sections of steep grade. Although both facilities have low vehicle traffic, current lane widths are too narrow to support shared lane markings. Baker's Crossing in particular has no pavement markings at all. The lack of pavement markings on a local roadway does not imply that the street is unsuitable for bicycle use; however, it may be undesirable for some cyclists.
- River Street is currently too narrow for dedicated bicycle lanes to be accommodated without extensive reconstruction of the roadway. However, given the slower speeds and volumes of this roadway, shared use lanes would be an acceptable alternative.
- Milton Street and Richards Avenue bridges are narrow, as noted above. The existing travel lane widths are too narrow to support shared lane markings. Cyclists would need to share the lane with traffic or dismount and use the sidewalks. The intersection of Richards Avenue and Water Street also has issues with sight distance and above-average accident rates, which have previously been examined by the town and NYS DOT.

## Option 3: Route 9

### Key Considerations:

- This option continues the 2-way cycle track from Lake George north. At Prosser Road, the 2-way cycle track would end, in favor of bike lanes or shared use lanes. As such, cyclists would use the Route 9 crossing to continue northward. The installation of a crosswalk signal actuation button that can be accessed by bicyclists without needing to dismount is recommended.
- If the existing road width is utilized and the maintenance of parking facilities a priority, space will be limited for dedicated bicycle facilities. With the current curb-to-curb width, a dedicated bike lane is only feasible on the east side for some portions of the roadway, with the Bikeway on the west side being carried in a shared use lane. Although this would increase the amount of dedicated bicycle infrastructure over the current condition, the inconsistency of facility type on either side of the roadway is not a desirable long-term solution.



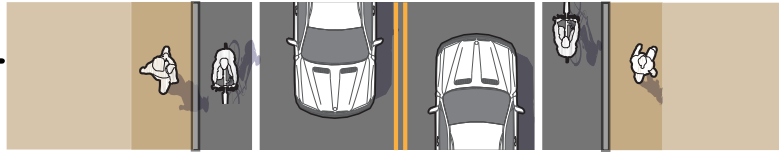
**Preferred option:**

In selecting from among the feasible alternatives in Warrensburg, each option involves considerable trade-offs. Although the River Road option is less direct and does not expose cyclists directly to the core of the hamlet, the roadways carry considerably less traffic and may therefore result in a more desirable cycling experience. The Main St./Route 9 option, conversely, brings the Bikeway into the heart of the community; however, without continuous dedicated bicycle lanes, the higher traffic and on-street parking along Route 9 are considerable disincentives to cycling.

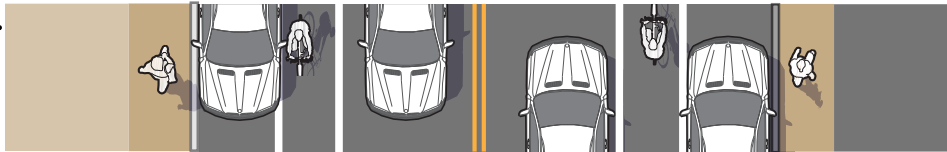
As such, the preferred option in Warrensburg involves a phased approach. In the short-term, Bakers Crossing/River Street could serve as a viable route for the Bikeway. Much of this section was previously studied in the [River Street Streetscape Revitalization Plan](#); the recommendations of that plan are still valid for this project as well. The off-road connector behind the school is also feasible for construction in the short-to medium-term, as it poses no right-of-way challenges and could serve as a stand-alone facility.

In the long term, the 2-way cycle track could be extended to Prosser Road, as shown at left. This would require a crossing (see inset) to separate north and south bound bicycle traffic to the appropriate side of the roadway. Pedestrian push-buttons which could be activated by cyclists without dismounting would provide an ideal crossing opportunity.

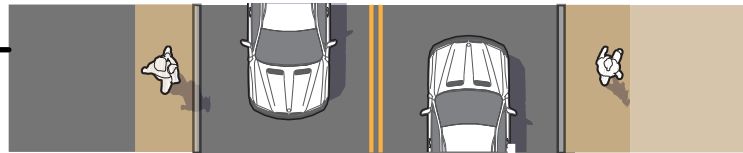




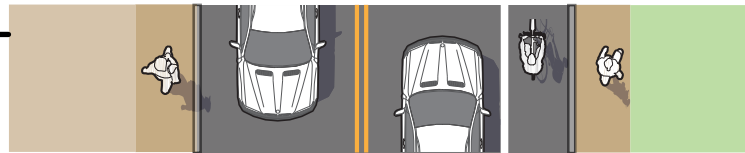
42' road width, 11' travel lanes, 5' bike lane (both directions).



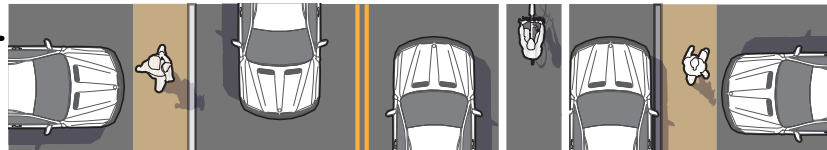
56' road width, 11' travel lanes, 5' bike lane (both directions), 7' parking lane (both directions).



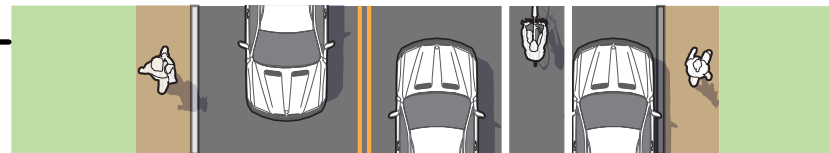
38' road width, 14' travel lanes (north-bound).



39' road width, 11' travel lane (north-bound), 13' travel lane (south-bound), 5' bike lane (north-bound).



46' road width, 11' travel lane (north-bound), 13' travel lane (south-bound), 5' bike lane (north-bound), 7' parking lane (northbound).



46' road width, 11' travel lane (north-bound), 13' travel lane (south-bound), 5' bike lane (north-bound), 7' parking lane (northbound).

Continuing north, every effort should be made to redesign the roadway to include dedicated bicycles facilities when NYSDOT undertakes future large-scale resurfacing or reconstruction projects on Route 9. The Bikeway could then be redesignated to follow Main Street, which would in turn facilitate further extensions to northern Warren County in the future. Illustrated at left are conceptual designs which maximize available curb-to-curb width. As can be seen, given current configuration of sidewalks and on-street parking, there is not sufficient room to include bike lanes for the entire length of Main Street. The future large-scale reconstruction effort for this section of Route 9 would ideally prioritize consistent dedicated bicycle facilities on both sides of the street.



## IMPLEMENTATION CHALLENGE: UTILITY EASEMENTS

Every utility company has a unique policy regarding trail on their property. There are considerations for liability and maintenance, as well as ensuring future access for equipment maintenance. Historically, National Grid has required a full set of design documents as a pre-requisite to granting an easement for trail construction. This approach allows the company to fully vet all aspects of the proposed trail ahead of time. However, since most grant sources require that an applicant demonstrate site control before funding will be given out, this poses a difficulty for local municipalities; transportation funding often bundles design and construction as one package. Given that trail design can cost tens of thousands of dollars, not many local agencies can afford to design a trail without receiving grant funding.

Recently, National Grid has struck an agreement with the Hudson Valley Greenway to provide access for the Empire State Trail. This long-term lease agreement was granted before detailed design was completed. As a condition of the agreement, National Grid will be involved in the design process. The agreement also calls for conditions relating to the trail specifications and other factors.

Bringing a project from concept to construction can be a daunting prospect. This is especially true in cases involving infrastructure owned by another agency, such as NYSDOT. However, a careful approach and long-term planning can spell success. Indeed, one example of successful collaboration between state and local project sponsors can be seen in the recently completed Lake George Gateway project. The lessons learned from that process can be applied to future implementation efforts for the Bikeway extension. Key considerations for implementation include:

### Sponsorship, Ownership, and Maintenance

Deciding which agency will be responsible for ongoing pursuing design and construction, as well as ongoing operations and maintenance, is a critical first step. Although this plan involves extending the Warren County Bikeway, there is no implied burden on the County to implement the recommendations in this document. As this plan was undertaken on behalf of the Town and Village of Lake George, it would be reasonable to identify the municipality as a potential project sponsor. Similarly, the Town of Warrensburg could pursue these recommendations within their jurisdiction. These local municipalities should continue to coordinate all implementation efforts with NYSDOT for the portions of the Bikeway which align with state-owned facilities.

### Right-of-Way Acquisition

Before a trail can be designed and constructed, the project sponsor must secure the rights to access the land. For the sections of trail that are located along a public roadway, this is likely to be straightforward, as access can likely be granted with proper permitting and maintenance agreements. Similarly, the section of off-road connector along the Schroon River in Warrensburg is also located in publicly owned parcels. However, in the Village of Lake George, the preferred alternative includes a section of off-road Bikeway along a National Grid utility corridor. It is therefore recommended that the project sponsor begin the negotiation process as early as possible, preferably by demonstrating that the conditions which are most likely to be requested by the utility company can be met. Even still, there is no guarantee that National Grid will be willing to enter an agreement to grant access.

Village of Lake George	
West Brook Road Subtotal	\$ 535,560
West Brook/Rt. 9 Intersection Subtotal	\$ 750,000
Route 9 Subtotal	\$ 77,251
Neighborhood Roads Subtotal	\$ 37,600
National Grid Subtotal	\$ 353,970
Off-Road Connector Subtotal	\$ 660,000
Lake George Village Subtotal	\$ 2,414,381
Contingency - 20%	\$ 482,876
Legal/Technical allowance - 15%	\$ 362,157
<b>Total</b>	<b>\$ 3,259,414</b>

Town of Lake George Route 9 Connector	
Bike Lane/Cycletrack Subtotal	\$ 684,543
Exit 22 Underpass Subtotal	\$ 664,400
Route 9 Subtotal	\$ 1,348,943
Contingency - 20%	\$ 269,789
Legal/Technical allowance - 15%	\$ 202,341
<b>Total</b>	<b>\$ 1,821,073</b>

Town of Warrensburg	
Main St/Route 9 Subtotal	\$ 1,063,969
Richards Ave. Subtotal	\$ 5,200
Off-Road Connector Subtotal	\$ 282,960
Warrensburg Subtotal	\$ 1,352,129
Contingency - 20%	\$ 270,426
Legal/Technical allowance - 15%	\$ 202,819
<b>Total</b>	<b>\$ 1,825,375</b>

## Cost/Funding

Obtaining funding for design and construction can be a challenge. Concept-level cost estimates have been prepared based on the preferred alternatives listed in this document. (For detailed cost breakdowns, see Appendix 1). These estimates are order-of-magnitude costs, intended to allow project sponsors to gain a rough idea of how much funding might be needed before pursuing design and construction. There are a number of grant programs which provide funding for design, construction, or both. The list below includes several options, however, non-traditional sources of funding, such as public-private partnerships or other groups, may provide additional assistance. The grant programs listed below have historically allowed for trail or trail-related projects; future eligibility is not guaranteed.

- [Recreational Trails Program](#): 80/20 grant, \$25,000/\$200,000 project min./max.
- [Make the Connection Program](#): 80/20 grant, \$75,000 project min.
- [Transportation Alternatives Program](#): 80/20 grant, \$250,000/\$5M project min./max.
- [Waterfront Revitalization Program Implementation](#): 75/25 grant, \$2M project max.
- [Climate Smart Communities \(Mitigation Category\)](#): 50/50 grant, \$10,000/\$2M project min./max.
- [Green Innovation Grant Program \(Permeable Pavement\)](#): match varies, no project min.

## Appendix 1: Cost Estimates



## Village of Lake George

<b>West Brook Road</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
10' Multi Use Path	\$ 850,000	Mile	0.35	\$ 297,500
Creekside Retaining Walls	\$ 200	SF	720.00	\$ 144,000
Blazing and Signage	\$ 400	Ea	12.00	\$ 4,800
Design and Permitting	20%	%	1.00	\$ 89,260
<b>Subtotal</b>				<b>\$ 535,560</b>
<b>West Brook Road/ Rt. 9 Intersection</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
DOT regulated Intersection	\$ 500,000	LS	1.00	\$ 500,000
Signalization	\$ 250,000	LS	1.00	\$ 250,000
<b>Subtotal</b>				<b>\$ 750,000</b>
<b>Route 9 improvements</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Bike Lane Striping	\$ 40,000	Mile	0.24	\$ 19,091
Crosswalks	\$ 12	SF	480.00	\$ 5,760
Signalization (2)	\$ 25,000	Ea	2.00	\$ 50,000
Blazing and signage	\$ 400	Ea	6.00	\$ 2,400
<b>Subtotal</b>				<b>\$ 77,251</b>
<b>Neighborhood Road Improvements</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Blazing and signage	\$ 400	Ea	14.00	\$ 5,600
Road Marking	\$ 20,000	Mile	0.80	\$ 32,000
<b>Subtotal</b>				<b>\$ 37,600</b>
<b>National Grid Corridor Improvements</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Utility adjustments	\$ 20,000	Ea	0.80	\$ 32,000
Per mile cost	\$ 850,000	Mile	0.19	\$ 321,970
<b>Subtotal</b>				<b>\$ 353,970</b>
<b>Off-Road Bike Trail Connection to Route 9</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Property acquisitions	\$ 30,000	LS	2.00	\$ 60,000
Average Per mile cost	\$ 1,000,000	mile	0.30	\$ 600,000
<b>Subtotal</b>				<b>\$ 660,000</b>
<b>Lake George Village Subtotal</b>				<b>\$ 2,414,381</b>
<b>Contingency - 20%</b>				<b>\$ 482,876</b>
<b>Legal/Technical allowance - 15%</b>				<b>\$ 362,157</b>
<b>Total</b>				<b>\$ 3,259,414</b>

Lake George - Warrensburg  
Bikeway Extension Concept Plan  
Cost Estimate - January 2019

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<b>Town of Lake George Route 9 Connector</b>				
<b>Route 9 On-Road Bikeway</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Bike Lane with 3' buffer	\$ 60,000	Mile	8.55	\$ 513,000
Jersey Barrier Separations	\$ 160,000	Mile	0.49	\$ 78,303
Crosswalks (2)	\$ 12	SF	720	\$ 8,640
Blazing and Signage	\$ 400	Ea	24	\$ 9,600
Signalization (2)	\$ 25,000	Ea	3	\$ 75,000
<b>Subtotal</b>				<b>\$ 684,543</b>
<b>Exit 22 underpass</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Two-way Cycletrack	\$ 160	LF	700	\$ 112,000
Property acquisitions	\$ 30,000	LS	4	\$ 120,000
Retaining Wall	\$ 250	SF	240	\$ 60,000
Utility Allowance	\$ 250,000	EA	1	\$ 250,000
Pavement markings	\$ 30,000	LS	2	\$ 120,000
Blazing and signage	\$ 400	Ea	6	\$ 2,400
<b>Subtotal</b>				<b>\$ 664,400</b>
<b>Route 9 Subtotal</b>				<b>\$ 1,348,943</b>
<b>Contingency - 20%</b>				<b>\$ 269,789</b>
<b>Legal/Technical allowance - 15%</b>				<b>\$ 202,341</b>
<b>Total</b>				<b>\$ 1,821,073</b>

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## Warrensburg

<b>Rt 9. - Schroon R. Bridge - North</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Widen Roadway, Asphalt + Subbase	\$ 80	SY	1,627	\$ 130,133
Restripe Ex. Roadway - 5' bikelane	\$ 24	LF	2692.8	\$ 64,627
Curb and Gutter	\$ 52	LF	3,660	\$ 190,320
Demo Allowance	\$ 40	CY	1356	\$ 54,222
Utility Allowance	\$ 250,000	LS	1	\$ 250,000
Property Acquisition Allowance	\$ 250,000	LS	1	\$ 250,000
Lighting Allowance	\$ 250,000	LS	1	\$ 250,000
Blazing and Signage	\$ 400	Ea	12	\$ 4,800
<b>Subtotal</b>				<b>\$ 1,063,969</b>
<b>Richards Ave.</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Roadway marking	\$ 500	EA	4	\$ 2,000
Blazing and Signage	\$ 400	Ea	8	\$ 3,200
<b>Subtotal</b>				<b>\$ 5,200</b>
<b>Off-Road to Recreation Fields</b>	<b>Cost</b>	<b>Unit</b>	<b>Quantity</b>	<b>Subtotal</b>
Land negotiations	\$ 500	EA	4	\$ 2,000
Blazing and Signage	\$ 400	Ea	8	\$ 3,200
10' Multi-use trail	\$ 750,000	Mile	0.36	\$ 270,000
Crosswalk	\$ 12	SF	480	\$ 5,760
<b>On-Road improvements</b>	\$ 2,000	LS	1	\$ 2,000
<b>Subtotal</b>				<b>\$ 282,960</b>
<b>Warrensburg Subtotal</b>				<b>\$ 1,352,129</b>
<b>Contingency - 20%</b>				<b>\$ 270,426</b>
<b>Legal/Technical allowance - 15%</b>				<b>\$ 202,819</b>
<b>Total</b>				<b>\$ 1,825,375</b>

Lake George - Warrensburg  
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