

Saratoga Greenbelt – Wilton Connector Trail

CDTC / CDRPC TECHNICAL ASSISTANCE PROGRAM



Technical Assistance Memorandum



CAPITAL DISTRICT
Regional
Planning
Commission

May 2022

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Overview

This report presents potential routes for a Saratoga Greenbelt – Wilton Connector Trail. These routes were identified based on information collected and presented in the Existing Conditions Report (Appendix A). For the purposes of this project, “trail” refers to a bicycle- and pedestrian-friendly facility that is off-road, next to the road, or on-road. The Saratoga Greenbelt Trail is a network of planned and existing trails that loop around and through the city and can be used for both transportation and recreation. The proposed connector trail will link this network to the Town of Wilton’s existing and planned nature trails and retail destinations with new trail and sidewalk facilities. The alignment alternatives considered land ownership, available right-of-way, constraints, safety, cost, and feasibility of implementation.

Purpose & Need

The project team collaborated to develop the following project mission statement:

Identify a bicycle- and pedestrian-friendly connection between the northeast corner of Saratoga Springs and the southwest corner of Wilton that will create mobility choices that promote health, sustainability, and accessibility. The study area includes Weibel Avenue from the South side of Lake Avenue to the Saratoga Regional YMCA – Wilton Branch to the north where it becomes Old Gick Road. From the east, the study area begins at the Exit 15 ramp onto NY-50 and follows Louden Road to the County Forest. It also includes the Target, Wilton Mall, and BJs Wholesale Club area to the north side of NY-50 following Lowes Drive.

The trail connection is needed to support development in Saratoga Springs and Wilton. The purpose of this report is to present potential route alternatives for creating a connection with new trail and sidewalk facilities, facility type options, and cost estimates. The objective of the route alternatives is to connect the recently completed Saratoga Greenbelt Trail Downtown Connector to the Bog Meadow Trail to the south, and to existing trails and recreation opportunities in the County Forest on the western edge of the study area. The information in this report is meant to be used by the County, City, and Town to apply for grant funding, procure additional design and engineering services as needed, and guide investments in infrastructure as new development and activity occurs within the study area.

This study was funded through a joint Technical Assistance Program between the Capital District Regional Planning Commission (CDRPC) and the Capital District Transportation Committee (CDTC). A project team consisting of staff from Saratoga County, the Town of Wilton, and the City of Saratoga Springs collaborated with staff from CDRPC and CDTC to collect data, review project materials, and develop the recommendations in this report.



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Key Recommendations

Below is a list of key recommendations included in this study to achieve the goal of developing a seamless connection between the Saratoga Greenbelt Trail and Town of Wilton, or the study area shown in Figure 1:

- There are three major facility types recommended to create a Saratoga Greenbelt-Wilton Connector Trail: (1) sidewalks, (2) sidepaths, and (3) shared-use paths.
- Sidepaths require a greater amount of right-of-way than other facility types.
- Additional site-by-site assessment is needed to determine appropriate pedestrian and trail crossing treatments.
- The New York State Department of Transportation must approve any new facility on State Route 50 or crossing it.
- As new development occurs throughout the study area, there are opportunities to implement the recommendations in this study.
- There is a significant amount of city-owned property and right-of-way in the study area that can be used to construct new sidewalks, sidepaths, and shared-use paths.
- Additional opportunities to create connections to neighborhoods outside the study area should be further evaluated.

Introduction

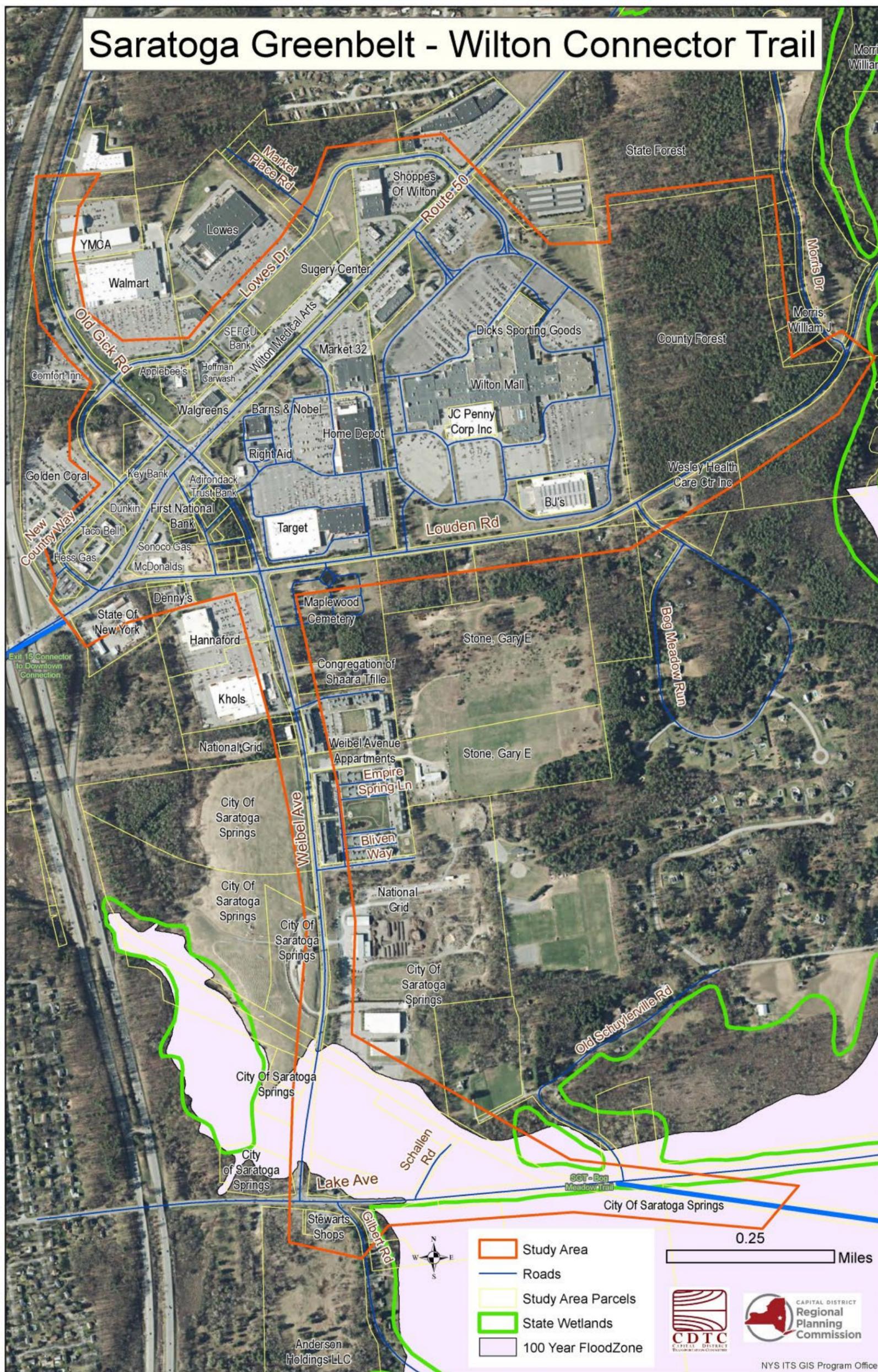
Trails provide people of all ages and abilities with outdoor recreational opportunities and an alternative mode of transportation for people to get from place to place. Part of developing a modern and resilient regional transportation system includes the planning and development of a trail network that complements local roadway infrastructure and public transit systems. New Visions 2050, the Metropolitan Transportation Plan for the Capital Region, sets a goal of constructing 200 miles of new trails by 2050. The New York Statewide Greenway Trails Plan also supports expanding the greenway trails system to reach more New Yorkers in more areas – urban, suburban, and rural. There is strong support for enhancing and expanding trails at the local, regional, and statewide levels.

Supporting this growing trail network are sidewalk and on-road bike facility connections. And as local and state-level Complete Streets legislation and active transportation plans are implemented, new sidewalks and bike facilities are creating safe routes to trail networks and making these networks viable transportation routes and corridors. This report proposes two alternative trail routes for creating a bicycle- and pedestrian-friendly connection between the northeast corner of Saratoga Springs and the southwest corner of Wilton, a complementary network of sidewalks, and potential connections to nearby neighborhoods. Potential funding, design, and other resources are also provided.



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Figure 1. Study Area Map



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Existing Sidewalk, Trail, & Bicycle Facilities

The sidewalk and trail network in the Capital Region grows as new development occurs and demands for safe, active transportation routes increase. Based on data collected by CDTC, there are about 160 miles of paved multi-use trails, 1,230 miles of sidewalks, and 33 miles of designated bicycle facilities in the Capital Region. The number of trail miles increased more than 20% between 2019 and 2020 with the completion of the Empire State Trail.

There are four major types of bike facilities in the Capital Region: buffered bicycle lanes, conventional bicycle lanes, protected bicycle lanes, and bike boxes. Sidewalks mainly refer to concrete paths adjacent to the roadway with and without curbs, as well as concrete paths separated by green, landscaped areas or street plantings. In some areas, sidewalk surfaces include asphalt, but they present like a sidewalk. “Trail” includes paved paths that are at least 10 feet in width, are separated from the roadway network, and meant for walking, bicycling, and other non-motorized mobility. For the purposes of this study, we will consider bike, sidewalks, and trail facilities, to create the bicycle- and pedestrian-friendly connection between the Saratoga Greenbelt Trail, Bog Meadow Trail and commercial area along the NY-50 corridor.

Table 1. Miles of Walking & Bicycling Infrastructure in Each Municipality

Facility Type	Capital Region	Saratoga County	Saratoga Springs	Wilton
Bike	63.07	22.74	2.26	0
Sidewalk	1,230	218.22	97.75	2.74
Trail	162.00	62.85	9.46	0.16

Sidewalks

There are limited segments of disconnected sidewalk in the Study Area. Currently, there are sidewalks on the east side of Weibel Avenue in front of and within the Weibel Avenue Apartment development and another short segment of sidewalks on the west side serving retail and office development. Other pieces of sidewalk are on Loudon Rd, in areas of Wilton Square and Wilton Mall, and connecting separate parking lots to offices and stores on the north side of State Route 50. The sidewalks in the Study Area have concrete surfaces and vary in condition and design.

Trails & Paths

There are three trails in the Study Area – the Saratoga Greenbelt Downtown Connector Trail, Bog Meadow Trail, and Wilton Mall / County Forest Trail. The Saratoga Greenbelt Downtown Connector Trail is part of a larger network of trails that continues south and west into Saratoga Springs. The Greenbelt Trail, when completed, will create a figure-eight loop around and through the city that can be used for both transportation and recreation. The Bow Meadow Trail is a two-mile natural surface trail within a nature preserve that can be access from a small trailhead on Lake Avenue. Lastly, there is a short and narrow, asphalt surface trail between the Wilton Mall and County Forest (see Figure 3).



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Figure 2. Example of sidewalks in Study Area

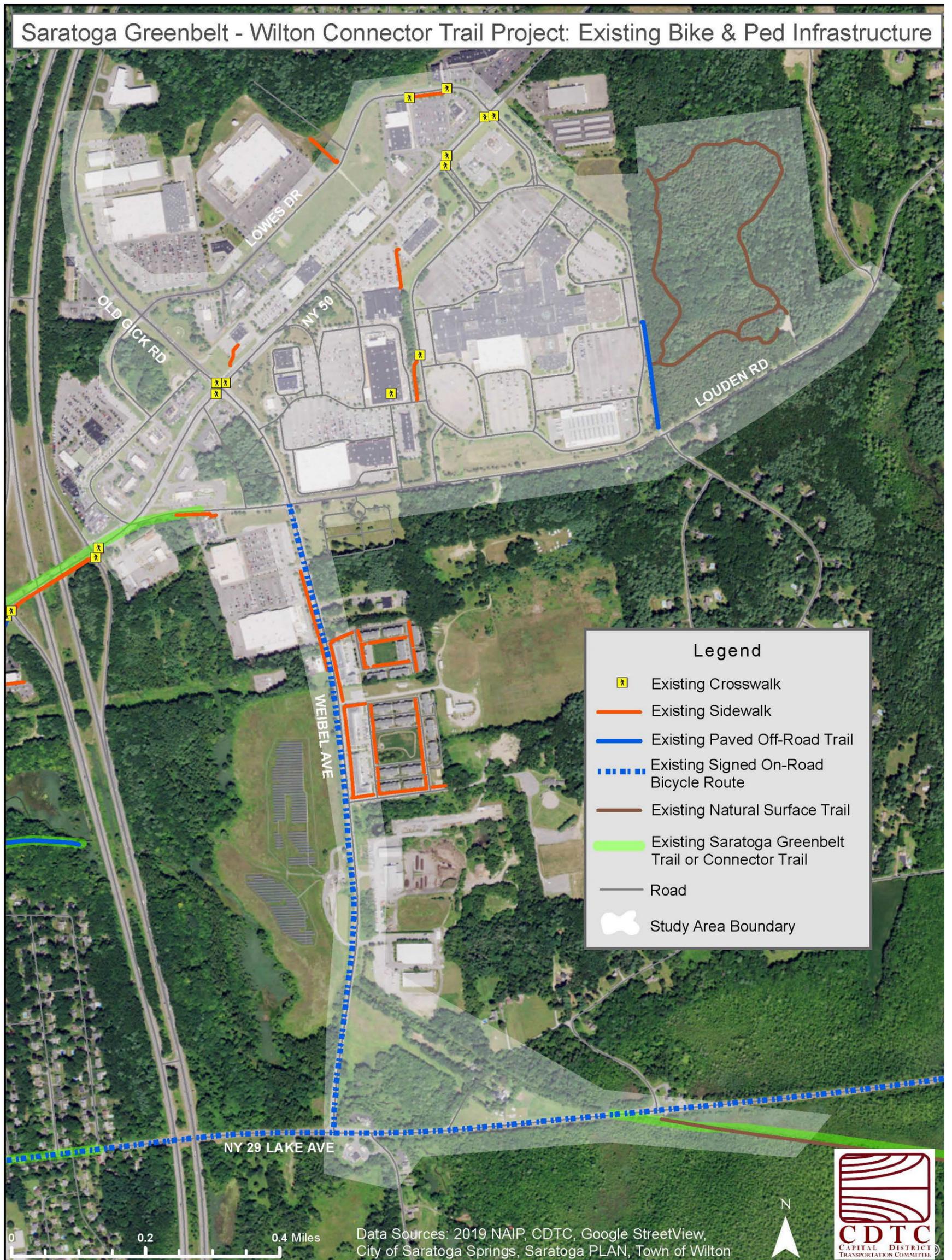


Figure 3. Examples of Trails in the Study Area



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Figure 4. Existing Bicycle & Pedestrian Facilities



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Planned Sidewalks

The Town has worked with developers to coordinate the construction of new sidewalks as the area grows. Planned development along Lowes Drive will include a new sidewalk on north side from about Marketplace Road to the Five Below store (see Figure 1). Continuing to coordinate sidewalk and trail construction with new development is a cost-effective way to create a more connected and walkable area. Stewart’s Shops has proposed redeveloping their property at the corner of State Route 29 and Weibel Avenue which will include a reconfigured intersection, crosswalks, and pedestrian facilities. There may be opportunities to work with the developer to integrate the intersection reconfiguration with the trail connection vision for the Study Area.

Proposed Route Alternatives

Sidewalks

The preferred facility for pedestrian travel along a road is a sidewalk. When a sidewalk is not feasible, other pedestrian facilities, like trails, should be evaluated. Roadway shoulders, regardless of their width, are not substitutes for a well-designed pedestrian facility except where space is constrained and for short segments. When sidewalks are not provided, the New York State Vehicle and Traffic Law states “any pedestrian walking along and upon a highway shall when practicable walk only on the left side of the roadway or its shoulder.” This should be considered when determining the location of sidewalks in relation to development and destinations.

All the existing sidewalks are typically on one side of the street. This can be an adequate solution where there is limited development, but as traffic increases with new development, so does the level of exposure pedestrians have to conflicts with vehicular traffic as they are required to cross the street more frequently to reach their destination. It is recommended that sidewalks or a type of walking path be installed on both sides of streets, where feasible. Additionally, enhanced intersection treatments or midblock crossings should also be considered.

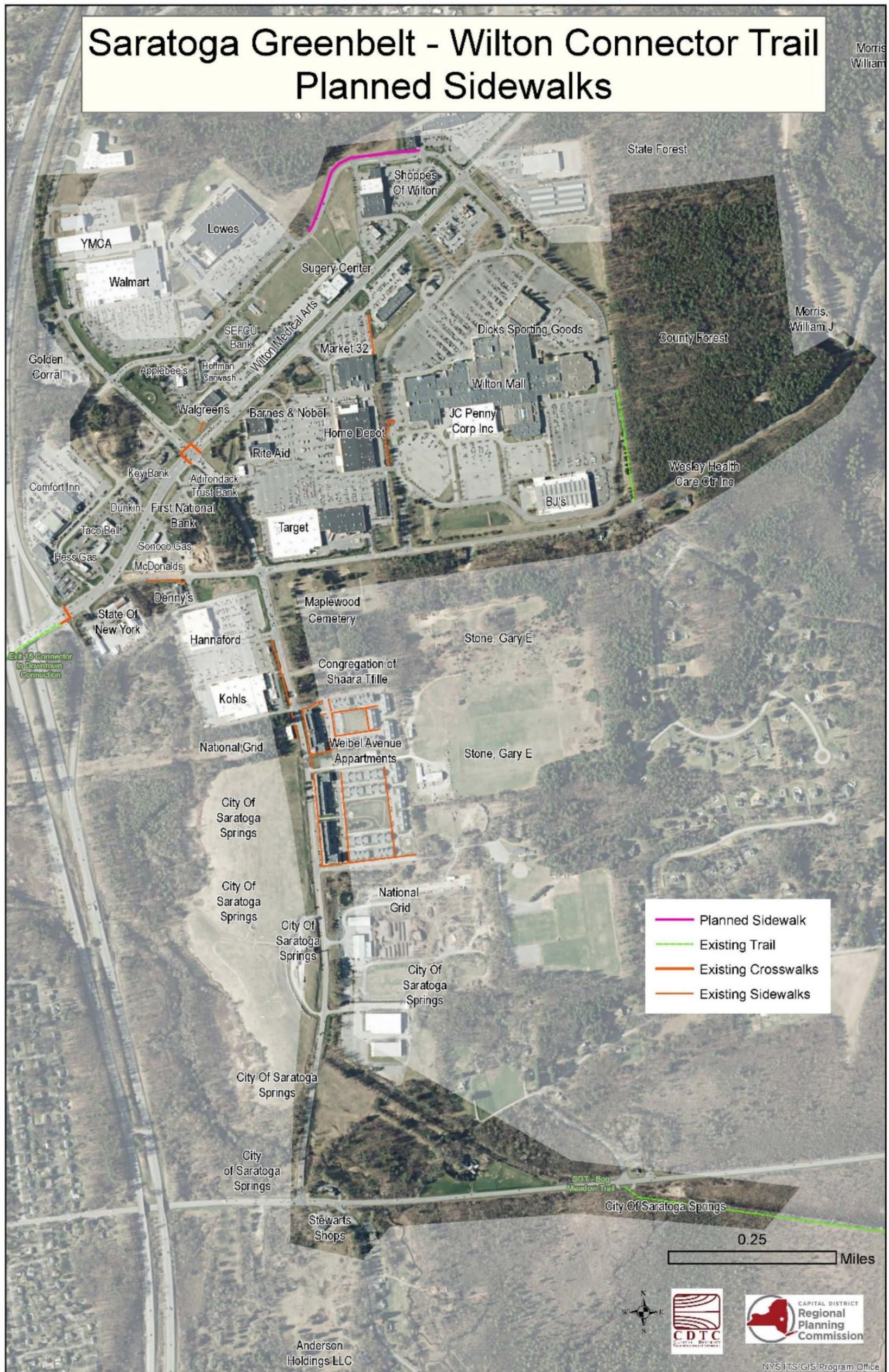
Figure 5 includes the locations of existing and planned sidewalks. The New York State Highway Design Manual requires a minimum of 5 feet (1.525 meters) for pedestrian access, excluding the curb. Additionally, all pedestrian facilities designed, constructed, or altered, must meet or exceed the minimum requirements for design, construction, and alternation established in the ADA Standards for Accessible Design (ADAAG).¹

¹ New York State Department of Transportation (NYSDOT) Highway Design Manual, Chapter 18: Pedestrian Facility Design



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Figure 5. Planned Sidewalks



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Sidewalks may be considered in locations where there is available right-of-way. A map and property owner database were created to assist the Town, City, and County in assembling and identifying parcels that can be used for constructing sidewalks and trails. This can be found in Appendix B. NYSDOT refers to sidewalks separated from the roadway by a ditch, green area, or plantings as “pedestrian paths.” Sidewalks should be located where motor vehicles will not encroach on the path. Generally, as vehicle speeds increase, pedestrians prefer greater separation from traffic.

Figure 6 shows a physically separated sidewalk. It appears to be separated by a planting or landscape strip, but it can also be hardscaped and accompanied by a curb that separates the sidewalk from the roadway. They are appropriate inside built-up areas and may serve short distance travel between built up areas (e.g. along or near highways near pedestrian-generating development, such as neighborhoods, schools, and business).² NY Vehicle and Traffic Law does not expressly regulate sidewalk bicycling. However, NY General Municipal Law (Section 180)6 states that NY municipalities can regulate bike riding on sidewalks. They cannot require that bicyclists use a sidewalk instead of a public roadway, but they can impose limits to sidewalk bicyclists.

Figure 6. Separated Sidewalk



Source: [Small Town & Rural Design Guide](#)

² Alta Planning + Design, Small Urban & Rural Livability Center, et. Al. for the Federal Highway Administration (December 2016). Small Town & Rural Multimodal Networks, Report No.: FHWA-HEP-17-024, <https://ruraldesignguide.com/>.



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Sidewalks are designed and constructed for walking, so bicyclists may create conflicts with pedestrians or make pedestrians feel uncomfortable, depending on the volume of pedestrian use along a corridor. If bicyclists are allowed to use the sidewalks they should be encouraged to ride slow and yield to pedestrians. If they are prohibited from using the sidewalk, bicyclist facilities like bike lanes or trails should be considered. In some locations, the municipality may consider a sidewalk on one side of the road and a sidepath or shared-use path on the other side of the road, and in other locations, a sidepath or shared-use path may be a better alternative to a sidewalk. The Highway Design Manual states “It is inappropriate to sign a sidewalk as a bicycle path, bicycle route or shared-use path in order to discourage bicyclists from using a roadway that may otherwise be legally used by bicyclists.”³ This should be considered when choosing a facility type.

Sidewalks in suburban and rural communities do not typically include frontage or street furniture zones. But if amenities like benches, lighting, or other fixtures are included in the design of sidewalk facilities, a walking width of at least 5 feet must be maintained at all times. Before determining sidewalk widths and design, estimated pedestrian volumes, connectivity and compatibility with existing land uses and transportation systems, and maintenance needs should be considered.

Another consideration for locating and design sidewalks are driveways. The nature of the development in the study area has created a lot of driveways onto State Route 50 and other roadways in the study area. When a car is pulling into or out of traffic across a sidewalk, pedestrians have the right-of-way and drivers must yield. At driveways, there is usually a curb cut and an apron, but the sidewalk materials can be used across the driveway to emphasize pedestrian priority. This is how much of the recently constructed sidewalk on Western Ave. in Guilderland have been constructed.

³ NYSDOT Highway Design Manual, 18-57.



Local Examples of Separated Sidewalks



Western Ave., Guilderland, NY



Wolf Rd., Colonie, NY



Canon St., Cohoes, NY

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Trail Route Alternatives

Where sidewalks may not be feasible or they are cost prohibitive, a shared-use trail or sidepath can connect existing sidewalk segments within the study area to create a network of bicycle- and pedestrian-friendly routes. The project team identified two potential route alternatives to connect the Saratoga Greenbelt Trail with Wilton. These were identified based on land ownership, available right-of-way, constraints, safety, cost, and feasibility of implementation. Both alternatives are feasible and present their own set of obstacles and opportunities. They can be implemented in phases, separately, or together. There may be segments from each alternative that are preferable and the municipality decides to pursue. They will all create the bicycle- and pedestrian-friendly connection that this study aimed to identify.

Route Alternative #1

This route follows the main roadways in the study area, creating a comprehensive and connected bicycle- and pedestrian-friendly network that complements existing sidewalks and infrastructure. The route is illustrated in blue in Figure 7. Part of the proposed route along Lake Avenue and Weibel Avenue is in wetlands and flood zones and may require mitigation efforts or additional design considerations. Green infrastructure can be easily integrated into bicycle and pedestrian facilities. Feasible green infrastructure tools and strategies can be found in the Capital District Regional Planning Commission Green Infrastructure Toolkit.

Route Alternative #1 creates direct connections to popular destinations and activity generators in the study area. There are limited segments where sidewalk currently exists that the Town of City may want to consider replacing with a sidepath. This route would require new midblock and intersection pedestrian crossings. Due to its location, it would be a separated but along the road, asphalt trail like the sidepath illustrated in Figure 8. Sidepaths are bidirectional shared use paths, like trails, that are located immediately adjacent and parallel to a roadway. They are preferred for use on arterial links on regional or local walk and bike networks. The NYS Design Manual and Empire State Trail Design Guide, require that sidepaths be a minimum of 10-feet wide to allow for the potential for mixed pedestrian and bicyclist activity, and be separated from the roadway by a minimum of 5-feet.⁴ NYS Department of Transportation considers a 5-foot wide, concrete path that is separated from the roadway by at least 5 feet to be a “path” rather than a sidewalk.⁵

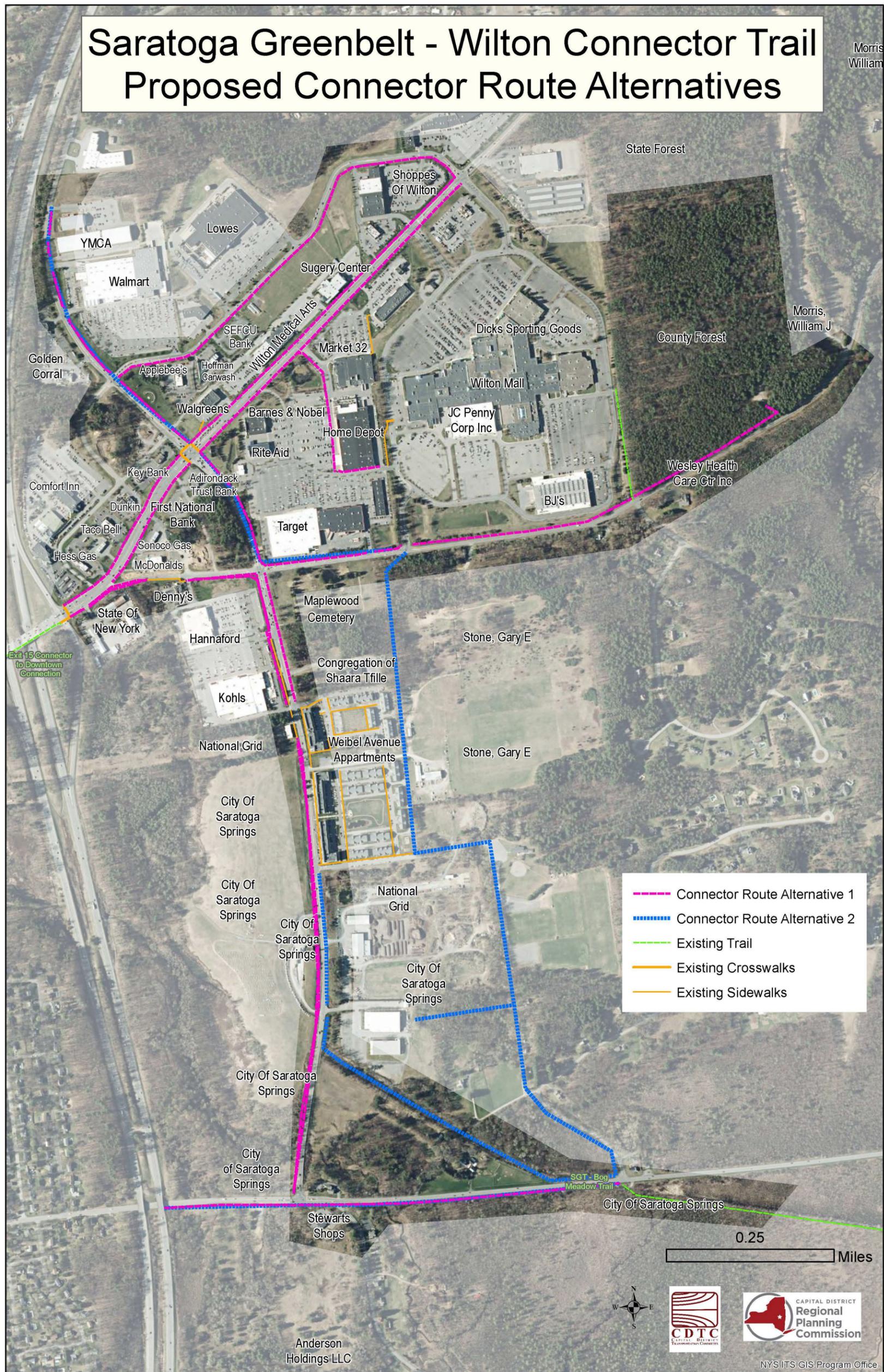
⁴ Alta Planning + Design, C&G Partners, et. al. for the Hudson River Valley Greenway, New York State Canal Corporation, New York State Department of Transportation, & New York State Office of Parks, Recreation, & Historic Preservation (2017). Empire State Trail Design Guide, p. 5-14.

⁵ NYSDOT Highway Design Manual, 18-56.



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Figure 7. Connector Route Alternatives

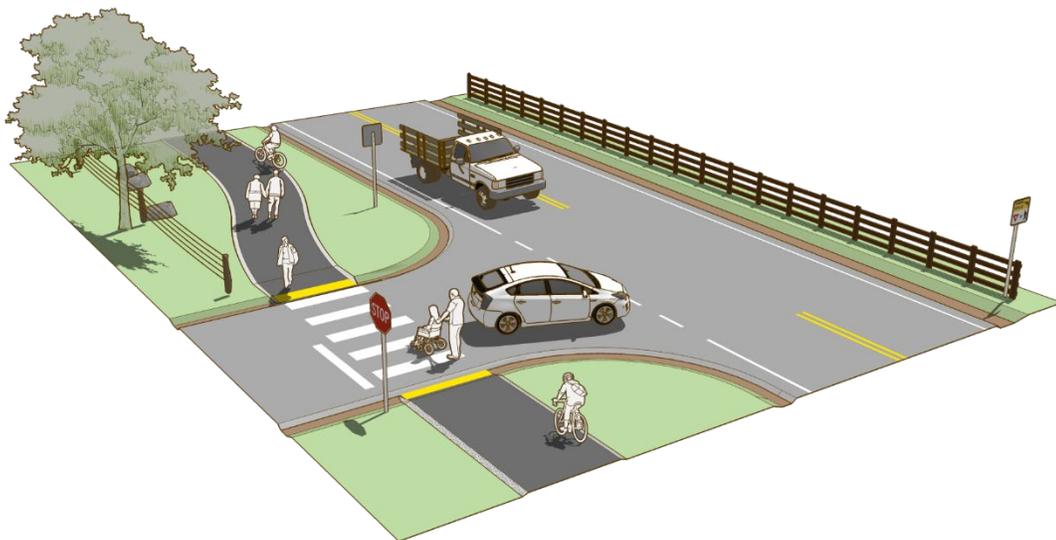


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The wide width and distance from traffic make sidepath use a high-quality experience for most users but may be more difficult to implement because of the significant right-of-way requirements. Sidepaths are ideal in locations with fewer intersections and driveways, which is why it is the preferred facility type for the proposed route. While a narrower sidepath is not recommended, if there are short segments where constrained conditions are present, other types and sizes of barriers and paths, or use of a vehicle travel lane, may be sufficient.

Sidepaths provide dedicated space for pedestrians and can provide separated space for bicyclists in developed areas with heavy traffic. They are more appropriate facilities for users of all ages and abilities than shoulders or mixed traffic facilities on roadways with high traffic stress. And they encourage walking and bicycling in areas, like the study area, where high traffic stress due to volumes and speed, discourage walking and bicycling. They may also be preferred to sidewalks to help maintain a more suburban or rural character. There are more details on sidepaths and shared use paths in the following section.

Figure 8. Separated Sidepath

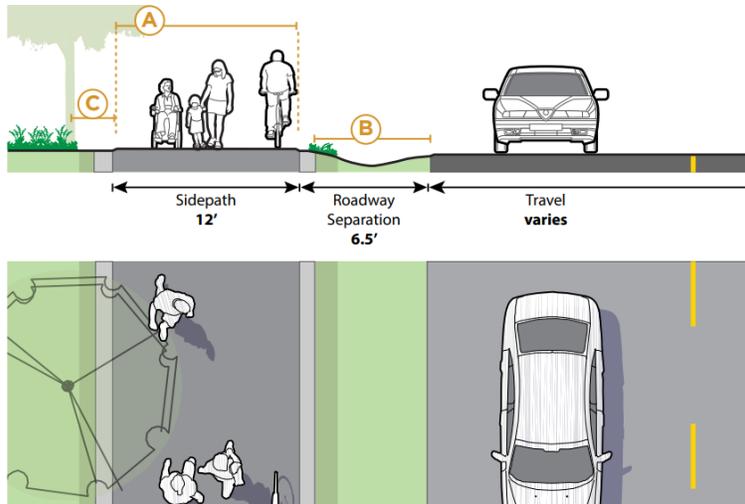


Source: [Small Town & Rural Design Guide](#)

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Sidepath Features

Figure 9. Sidepath Design Features



Source: [Empire State Trail Design Guide](#)

- A. Standard sidepath width at locations with the potential for mixed pedestrian and bicyclist activity is 12 ft (3.6 m). Minimum width of a sidepath is 10 ft (3m).
- B. The preferred minimum roadway separation width is 6.5 ft (2m), with an absolute minimum separation width of 5 ft (1.5m).
- C. A horizontal clearance of 3 ft (1.8m) should be provided on each side of the pathway from signs, poles, trees or other fixed objects.⁶

Local Examples of Sidepaths



State Route 67, Malta, NY



Washington Ave. Ext., Albany, NY



Albany-Shaker Rd., Colonie, NY

⁶ Empire State Trail Design Guide, p. 5-68.



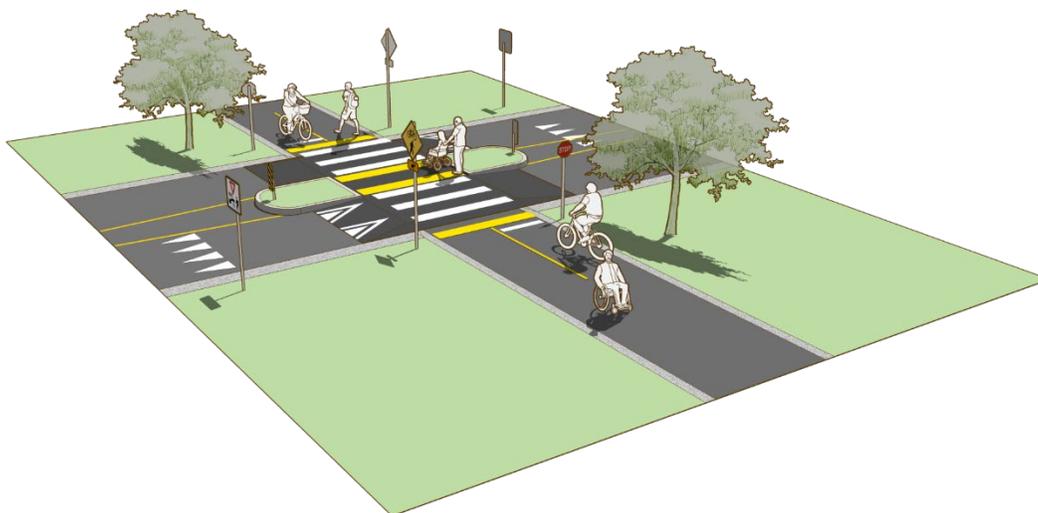
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Route Alternative #2

This route achieves the same goals as Alternative #1 but creates a different experience for users. The proposed route uses vacant city-owned property to connect from the Bow Meadow Trail parking area on Lake Avenue to the Saratoga Springs Ice Rink and continues north on Weibel Avenue to Bliven Way. At the east end of Bliven Way, it would connect with a trail segment that connects the Bog Meadow Trail parking area via Old Schuylerville Road then continues north to Louden Road utilizing city-owned, undeveloped properties behind Ice Rink and between the PBA Baseball Fields and County Transfer Station. The trail would continue north to Louden using undeveloped privately-owned property. This route alternative would require more coordination with private landowners and future development activity but create direct access to popular recreation destinations, separated from traffic.

At Louden Road, the route would head west on the north side before following Weibel Avenue then Old Gick Road along the east side of the road, going north until reaching the Saratoga Regional YMCA – Wilton Branch. As the route follows the roadways, a sidepath is the preferred facility, but for the routes that are independent from the roadway right-of-way, a shared-use path is recommended. Because shared-use paths are separate from motorized traffic, they are desirable for bicyclists and users of all skill levels, ages, and abilities. The preferred surface of a shared use path is asphalt or a porous pavement, but natural surfaces like crushed stone, wood chips, and other low-cost materials can be used. They use less right-of-way as sidepaths because they do not need to be separated from a roadway but are still wide enough (10 ft minimum) to accommodate wo-way travel of multiple user types. An example of a shared-use path is shown in Figure 10 and their design features are explained in the following section.

Figure 10. Shared-Use Path



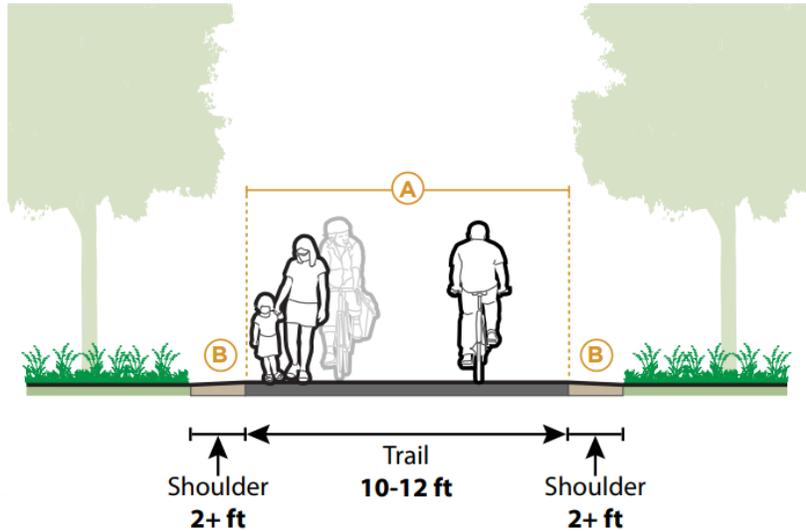
Source: [Small Town & Rural Design Guide](#)



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Shared-Use Path Features

Figure 11. Shared-Use Path Design Features



Source: [Empire State Trail Design Guide](#)

- A. The minimum trail width is 10 ft (3m); in constrained areas, the width may be reduced to 8 ft (2.4m); in high-volume locations the width may increase to 12 ft (3.7m).
- B. Shoulders of 2 ft (.6m) in width should be provided on both edges of the trail. These areas will be graded as an extension of the trail surface, to allow riders to recover should they leave the trail. The shoulder surfaces may be grass or stone dust, depending on local conditions.

Route Alternative #2 (continued)

Short segments of this route use existing roadway right-of-way. This includes Old Schuylerville Road and Bliven Way. Both streets are low speed and low volume residential roadways not for through motor vehicle traffic. A making a mixed traffic roadway can create sufficient bicycle- and pedestrian-friendly spaces. Simple low-cost enhancements, like signage, or optional traffic calming, can make the roadway feel like a cohesive part of the overall trail.

Local Examples of Shared-Use Paths



Albany-Hudson Electric Trail, Chatham, NY



Zim Smith Trail, Halfmoon, NY



Delaware Avenue Trail, Cohoes, NY



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Figure 12. Mixed Traffic Roadway



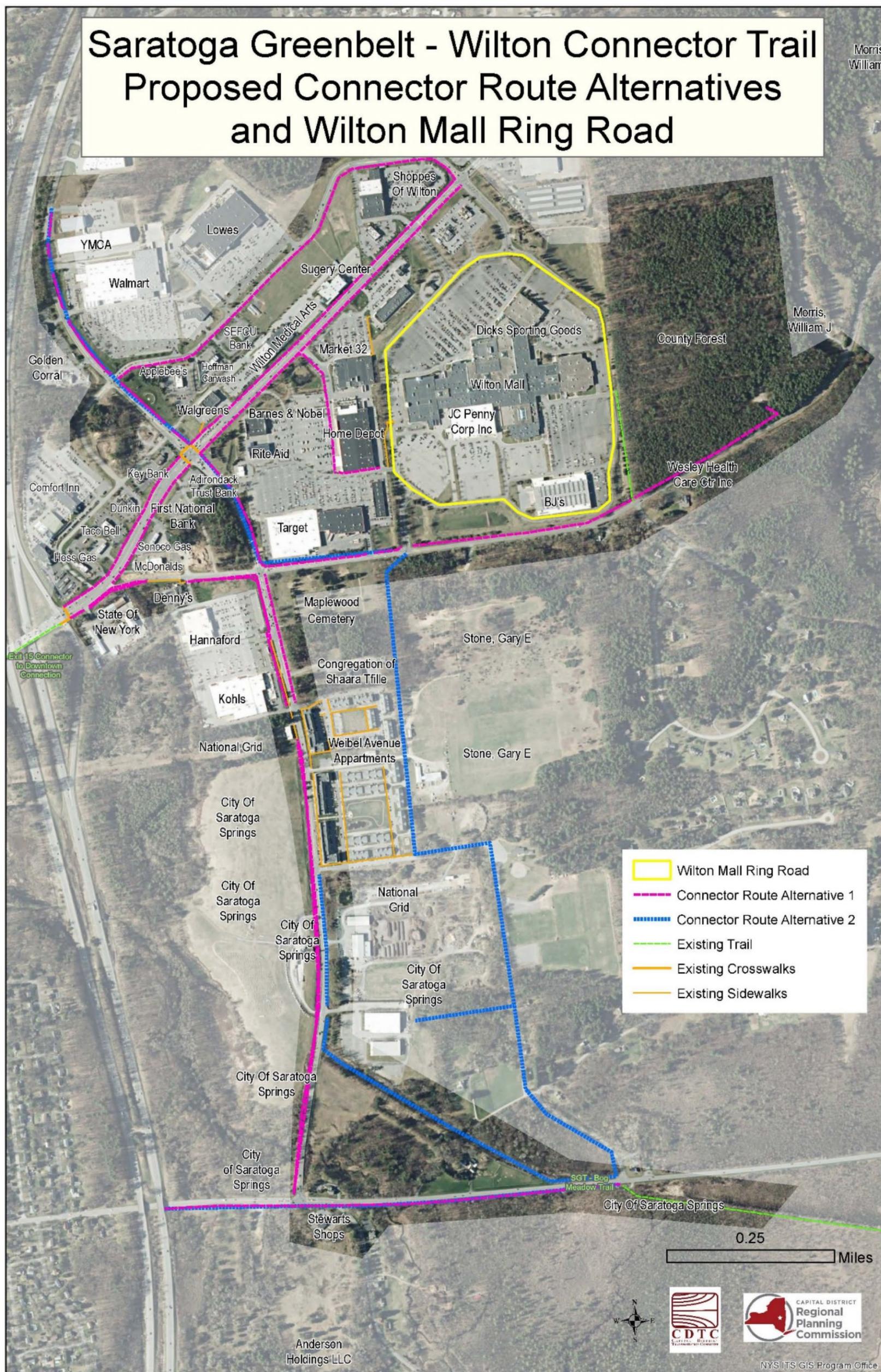
Source: [Small Town & Rural Design Guide](#)

Neighborhood & Mall Connections

As the municipality implements the preferred trail route and development happens within the study area, opportunities to create new bicycle and pedestrian connections to nearby neighborhoods and other destinations will occur. The proposed route alternatives focus on the main corridors and destinations within the study area, CDTC and CDRPC did not evaluate the feasibility of these additional connections but recommend further evaluation as development occurs and opportunities arise. These include a route on the west side of the Wilton Mall Road with connections into the County Forest and to State Route 50. A connection between the Pyramid Pines Mobile Home Park and the YMCA and Lowes Drive would create convenient access to recreation and a grocery store (Aldi) for nearby residents. Lastly, routes along New Country Way and Auto Park Road should also be explored to create more direct access between State Route 50 and the development north of Lowes Drive. If the undeveloped sites north and south of Auto Park Road are developed, there is an opportunity to integrate a bicycle and pedestrian connection to or within the site(s). These potential connections are illustrated in Figure 13 and Figure 14.

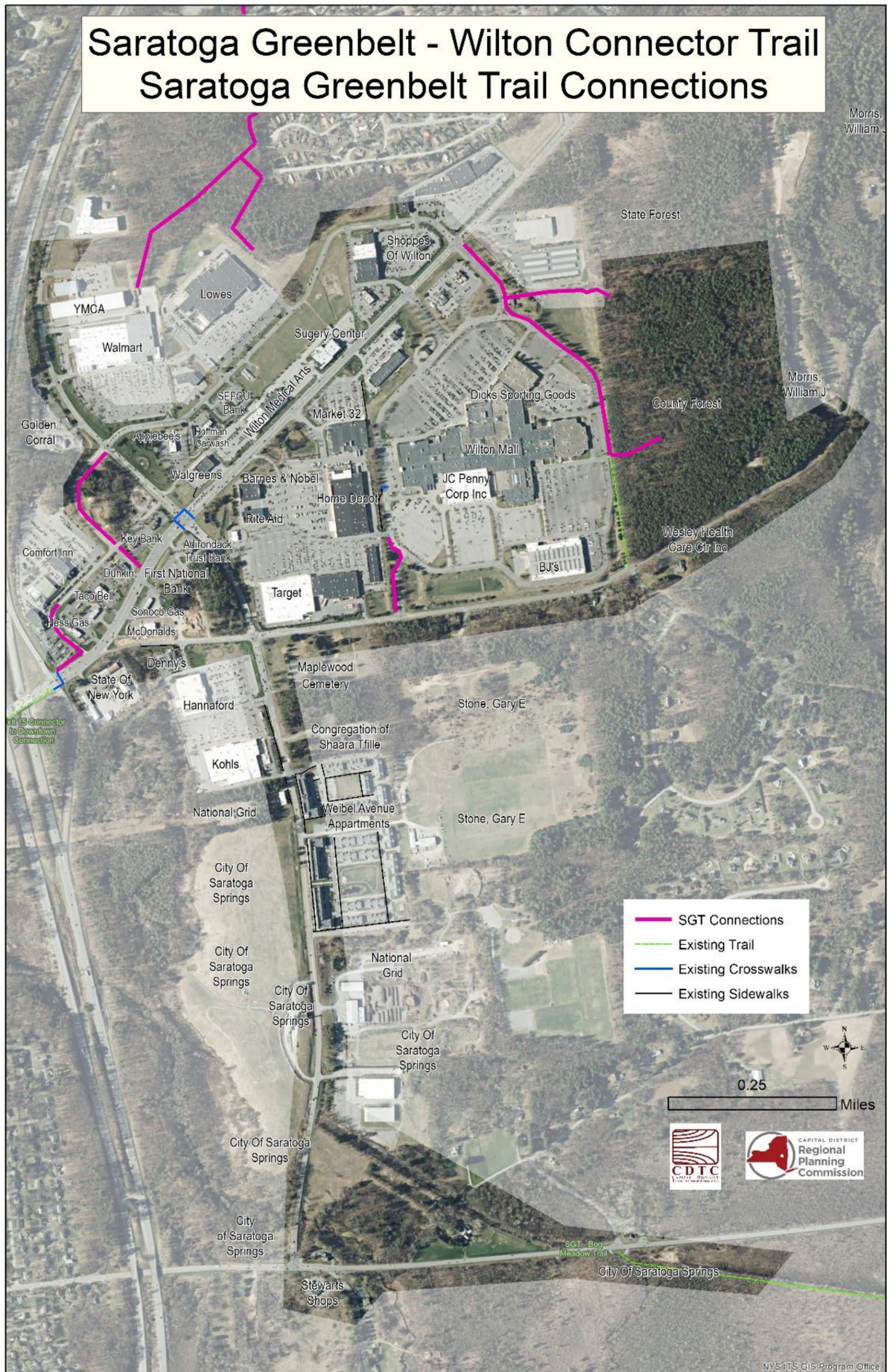
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Figure 13. Mall Connector Trail



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Figure 14. Other Trail Connections



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Intersections

Sidepaths and shared-use paths may be appropriate on streets with few intersections or driveways. Both sidewalk and trail route alternatives require bicyclists and pedestrians to cross roadways, presenting potential conflicts with motorists. New crossing treatments are recommended throughout the study area but enhanced treatments require additional site by site analysis and should be implemented based upon a safety engineering evaluation, identified community need, and NYSDOT or other guidance. Intersections identified for improvement are shown in Figure 15, including Weibel Ave. at Lake Ave., Weibel Ave. at the Ice Rink, Weibel Ave. at Loudon Rd., Weibel Ave. at State Route 50, Lowest Dr. at old Gick Rd., State Route 50 at the I-87 ramps, and Wilton Mall Rd. / Lowes Dr. at State Route 50. The New York State Pedestrian Safety Action Plan offers strategies for systemic improvements that can be applied in the study area, but especially in the State Route 50 and Weibel Avenue corridors.⁷ Based on observations and information collected, the following low-cost intersection improvements are recommended:

- Re-time traffic signals for proper amber and red clearance intervals and proper pedestrian clearance time/intervals.
- Re-time traffic signals in State Route 50 corridor for better coordination.
- Upgrade existing marked crosswalks to high-visibility. Add high-visibility crosswalks at unmarked signalized intersections.
- Evaluate left-turn phasing. Consider protected/permitted left turn phasing and protected only left turn phasing. Consider upgrading permitted phasing from green ball to flashing yellow arrow.
- Upgrade existing pedestrian signals to LPI (Leading Pedestrian Interval) + Overhead blank-out “No turn on Red” + APS (Accessible Pedestrian Signal)
- Add Turning vehicle yield to Pedestrian Sign (Figure 16)
- Evaluate feasibility of pedestrian refuge islands on multi-lane roadways
- At mid-block or uncontrolled pedestrian crossings, consider a HAWK beacon and/or raised crosswalk

The risk of crashes and conflicts between users increases at intersections, especially as the speed and volume of the roadway being crossed increases. Maintaining visibility for all users and providing a clear assignment of right-of-way signs and markings are crucial in designing safe facilities for bicyclists and pedestrians. The Pedestrian Safety Action Plan provides guidance for controlled and uncontrolled pedestrian crossings based on a range of roadway characteristics. The Empire State Trail Design Guide has guidance on shared use path and sidepath crossings at roadways and driveways. Both are recommended as resources to assist in the design of new facilities.

⁷ New York State Department of Transportation, Governor’s Traffic Safety Committee, Department of Health (2016). New York State Pedestrian Safety Action Plan, p.



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Figure 15. Recommended Intersections for Improvement



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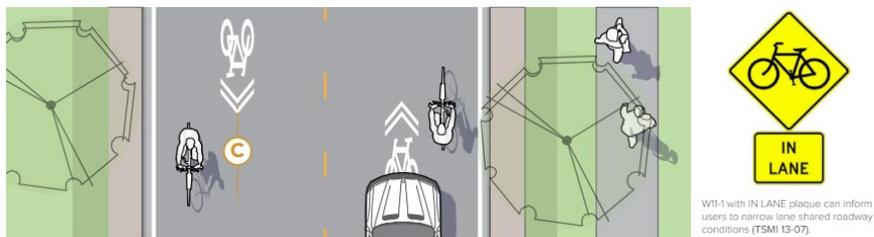
Signage

Traffic control devices in New York on all streets, highways, bikeways, and private roads open to public travel area currently regulated by two documents: the National Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) and 17 NYCRR Chapter V (New York Supplement) as well as the design standards set forth by the Americans with Disabilities Association (ADA). The MUTCD includes sign design specifications related to size, type, and placement. Off-road signs, like shared use path wayfinding and distance markers, are not intended for vehicular visibility, but it is considered best practice to use MUTCD standards for their design and placement. There are no known additional local road signage requirements.

Regulatory Signs

This type of sign is used to inform road users of selected traffic laws or regulations and indicate the applicability of legal requirements. These may include a STOP sign or speed limits. Pedestrian and bicycle signs are recommended throughout the study area to alert drivers where pedestrians and bicyclists may be using or crossing a roadway. Pedestrian warning signs should be installed at all pedestrian crossings like pictured in Figure 14. On roadways shared by bicyclists or other trail users, appropriate signs should be used to identify the route. In some cases, the municipality may also consider shared lane markings, or “sharrows,” which are placed in the center of the travel lane.

Figure 17. Shared Lane Markings & Signage



Source: [Small Town & Rural Design Guide](#) (left) & [NYSDOT Traffic Safety & Mobility Instruction 13-07](#) (right)

Wayfinding & Guidance Signs

The municipality may consider wayfinding and branding signage to create a cohesive look, direct trail users to preferred routes, and provide information about nearby destinations and amenities. Signage can also alert people that they are on a trail that is part of a greater trail network where they can connect to other trails. For the purposes of this study, wayfinding, bicycle route signs, and trail markers are recommended because of the proximity of bike routes, other trails, and regional shopping destinations. These signs are not necessarily intended for motorist or vehicular visibility, allowing for greater flexibility in application and style, but should conform to MUTCD standards.

In addition to the MUTCD, New York State has adopted the New York State Supplement to the MUTCD (NYS Supplement). The NYS Supplement is more restrictive and presents traffic control devices unique to



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New York State. Local bicycle route signs pictures in Figure 16 may be installed on shared roadways, sidepaths, or shared-use paths. Signs should contain designated bicycle route numbers or a unique route logo.⁹

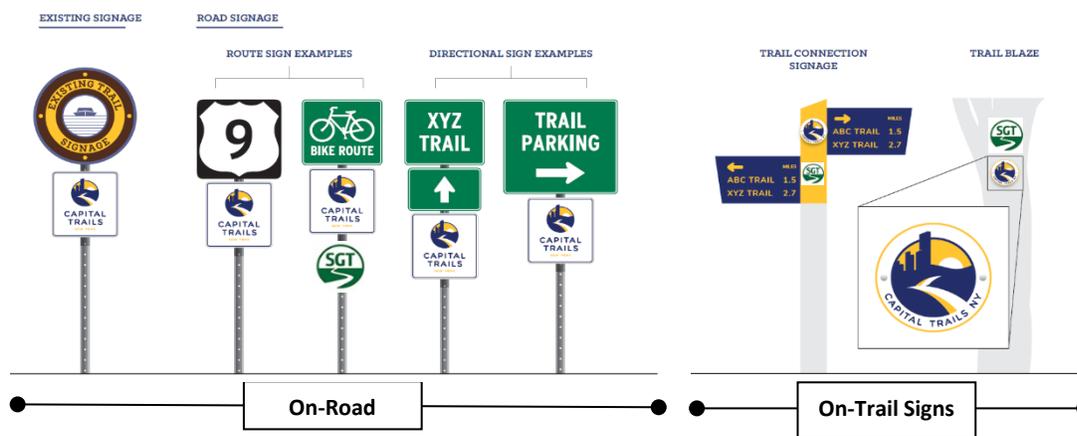
Destination and direction signs are used to lead trail users to nearby attractions and amenities. Signage for trail users in the study area could be used to direct users to Downtown Saratoga Springs, nearby shopping, the Bog Meadow Trail, or County Forest. Direction signs can be branded or co-branded with trail logos or blazes to make users aware they are following a route that is part of and/or connects to a local or regional trail system. There are several examples of direction signs that could be installed along a sidepath or on-road facility, or on a shared-use path, pictured in Figure 17. When identifying locations for direction signs, municipalities should consider proper distance and sequencing, which can be found in the MUTCD and NYS Supplement.

Figure 18. Local Bicycle Route Signs



Source: [NYS Supplement](#)

Figure 19. Direction Signs



Source: [Capital District Trails Plan](#)

⁹ New York State Department of Transportation (2009). New York State Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways (2009 Edition), p. 186-188; 257



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The 2019 Capital Districts Trails Plan introduced a brand and logo for the regional trail system. While there are many individual trails with their own names and identify that make up the system, the overall brand represents the entire trail system and the connections that it creates between communities. The purpose of introducing a brand is to create a cohesive look and make the trail system a destination that people want to experience and support. The Capital District Trails logo can be used by itself or in conjunction with other local trail logos, like the Saratoga Greenbelt Trail, on signage. Logo and branding specifications and other recommendations for incorporating the Capital Districts Trails brand can be found in the Capital District Trails Plan Design Book & Branding Guidelines in Appendix C. Municipalities are not required to use the logo but it was incorporated into the signage examples above.

Implementation

The route alternatives presented in this study are located within the City of Saratoga Springs and the Town of Wilton. The routes are along both local and state-owned roadways. Creating a bicycle- and pedestrian-friendly connection are part of both local and county visions for the area. Implementation of the recommended facilities will be done mostly at the municipal level. This section provides limited information on cost estimates, maintenance recommendations, potential funding opportunities, and design references. Additional, site-by-site assessments must be done to determine final design, engineering, and cost information. This study will assist the city, town, and county to identify the next steps needed to implement the Connector Trail.

Cost

CDTC used the NYSDOT Quick Cost Estimator Reference Tool to estimate the approximate cost for as many of the facilities and infrastructure recommendations included in this study (see Table 2). Cost information for all facility types is not currently available to CDTC. These cost estimates are based on cost information collected by NYSDOT for similar projects across Upstate New York. Local costs may vary and be affected by ongoing economic trends, like inflation, labor shortages, and other uncertainties. The length of the proposed route alternative segments can be found in Figure 20.

Maintenance

Sidewalk and trail maintenance resolutions and agreements are not prerequisites to the construction of necessary bicycle and pedestrian facilities. However, it is recommended that the municipality develop a maintenance plan for planned facilities before maintenance and repair issues arise. Some funding programs, like the Transportation Alternatives Program (TAP) and Congestion Mitigation and Air Quality (CMAQ) Program require bicycle and pedestrian facilities to be maintained, including cleared of snow, all-year found. Surface type, local needs, trail user types, and weather will influence maintenance needs and requirements.

Sidewalk and trail maintenance requirements are codified in local law. In the Town of Wilton, the local law states that, “The owner or owners of all lots, parcels and premises within the Town are required to maintain, repair and keep safe sidewalks adjacent to or upon their property and premises in or along the



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public street in the Town.”¹⁰ In the City of Saratoga Springs, property owners are required to keep all sidewalks, curbs, and gutters adjacent to their properties in good order and reasonable safe condition. This includes keeping sidewalks clear of snow and ice.¹¹

Best practices and recommendations for trail maintenance are included in the Capital District Trails Plan. The Plan outlines various innovative strategies for trail maintenance, especially for municipalities that lack the capacity or resources to do it on their own. Below are some estimated maintenance costs that were taken from the 2019 Capital District Trails Plan.

Table 2. Maintenance Costs (Equipment)

Equipment Cost	Cost/Hour	Hours/Day	Days/Week	Weeks/Year	Total Equipment Cost/Year
Mower	\$20	6	2	32	\$7,680
Weed Wacker	\$1.65	6	3	32	950
Plow Truck	\$40	1	1	20	\$800
Total					\$9,430

Table 3. Maintenance Costs (Labor)

Labor Cost	Cost/Hour	Hours/Day	Days/Week	Weeks/Year	Total Labor Cost/Year
Mowing	3@\$20/hr	6	2	32	\$23,040
Weed Wacking	3@\$20/hr	6	3	32	\$34,560
Inspection	1@\$20/hr	1	5	32	\$3,200
Plowing	1@\$20/hr	1	1	30	\$400
Total					\$61,200

¹⁰ [Town of Wilton General Legislation](#). Chapter 107: Sidewalks, Pathways, and Streetlighting. § 107-4: Construction and maintenance of sidewalks.

¹¹ [City of Saratoga Springs General Legislation](#). Article X Care of Sidewalks



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Table 4. Cost Estimates by Facility Type

Facility Type/ Item	Surface Material(s)	User Groups	Cost (\$)	Note
5 ft sidewalk	Concrete	<ul style="list-style-type: none"> • Pedestrians 	160.00 LF	Includes excavation, disposal, subbase material, compaction, construction of sidewalk and finish work. Does not include, sawcutting driveways, excavation to additional depth for driveways, curbing, grading, or turf establishment.
ADA curb ramp	Concrete & steel	<ul style="list-style-type: none"> • Pedestrians 	3,900.00 EA	Includes site survey, demolition, saw cutting, excavation, disposal, fill, subbase material, compaction, construction of ramp, landings and associated curbing, detectable warning units, repairs to affected asphalt topsoil, establishing turf (to disturbed areas), and finish work.
Curbing	Concrete	<ul style="list-style-type: none"> • Pedestrians • Bicyclists • Vehicles • Other 	80.00 LF	Does not include topsoil, establishing turf, or survey
Asphalt Paved Snow Storage Area	Asphalt	N/A	8.00 SF	
Ladder Crosswalk	Paint	<ul style="list-style-type: none"> • Pedestrians 	800.00 EA	Assume 700 LF of 4-inch striping per crosswalk
Raised Crosswalk	Asphalt	<ul style="list-style-type: none"> • Pedestrians 	15,000.00 EA	
Pedestrian push button on existing signal	N/A	<ul style="list-style-type: none"> • Pedestrians 	250.00 EA	Includes demolition, saw cutting, excavation, disposal, fill, topsoil, establishing turf (to disturbed areas), repairs to affected asphalt and/or concrete as necessary, Pedestrian Signal Systems and components, (removed and or supplied / installed), Pedestrian Signal Systems wiring (removed and or supplied / installed), furnishing electrical service, finish work, and any required adjustments to utilities.
New signal with ped push buttons	N/A	<ul style="list-style-type: none"> • Pedestrians 	7,100.00 EA	Includes demolition, saw cutting, excavation, disposal, fill, topsoil, establishing turf (to disturbed areas), repairs to affected asphalt and/or concrete as necessary, Pedestrian Signal Systems and components, (removed and or supplied / installed), Pedestrian Signal Systems wiring (removed and or supplied / installed), furnishing electrical service, finish work, and any required adjustments to utilities.
10 ft Sidepath or shared-use trail	Asphalt	<ul style="list-style-type: none"> • Pedestrians • Bicyclists • Other 	59.00 LF	Includes all prep of subgrade, sawcutting and tack coat. Doesn't include curbing, grading or turf establishment. NOTE: Prices have been volatile over the past 3 years.
Small single post-mounted sign	N/A	<ul style="list-style-type: none"> • Pedestrians • Bicyclists • Vehicles • Other 	520.00 EA	Includes the cost of excavation and backfill and furnishing all labor, materials, and equipment necessary to complete the work
Wooden Bollard	Timber	<ul style="list-style-type: none"> • Pedestrians • Bicyclists • Vehicles • Other 	250.00 EA	Includes the cost of excavation and backfill and furnishing all labor, materials, and equipment necessary to complete the work
White line to delineate bicycle lane	Paint	<ul style="list-style-type: none"> • Bicyclists • Vehicles 	2,750.00 MI	Price is for one 4 in. wide line to delineate bike lane. Any widening or pavement reconstruction must be estimated separately.
Hatched buffer zone to delineate bicycle lane	Paint	<ul style="list-style-type: none"> • Bicyclists • Vehicles 	14,250.00 MI	2 ft wide hatched buffer with 6 in wide stripe on the bicycle lane side of the buffer and 4 in wide stripe on the opposite side.
Dashed yellow line to delineate bicycle lanes	Paint	<ul style="list-style-type: none"> • Bicyclists • Vehicles 	600.00 MI	Price is for one 4 in. wide dashed line to delineate bike lane. Any widening or pavement reconstruction must be estimated separately.
Bicycle symbol pavement marking	Paint	<ul style="list-style-type: none"> • Bicyclists • Vehicles 	1,575.00 MI	Bicycle symbols (and, if used, associated markings) are placed at intersections and at 250 ft. intervals.
Shared lane pavement marking ("sharrow')	Paint	<ul style="list-style-type: none"> • Bicyclists • Vehicles 	3,675.00 MI	Price includes the bicycle symbol with a double strip "chevron" above. Refer to NYSDOT TSMI 13-07 - Shared Lane Marking Policy for guidance on use and placement of this pavement marking.

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Funding

One of the core functions of the CDTC is the development and maintenance of the Transportation Improvement Program (TIP). The TIP is the 5-year capital plan for the Capital Region that implements the products of the planning process described in New Visions 2050. The TIP is funded by a collection of transportation programs outlined in the 2021 Bipartisan Infrastructure Law (BIL). CDTC must update its TIP every four years as an integral element of a Statewide Transportation Improvement Program (STIP). CDTC is currently updating the 2022-2027 TIP so some of the funding programs outlined below may not be available until the next TIP update. Other programs are administered by New York State agencies.

Table 5 provides information on potential funding sources for some of the facility types recommended in this study. It is not an exhaustive list, and it does not include Federal Discretionary Grant Programs that are being released. The BIL created numerous federal transportation program and grant opportunities, many of which are being announced on an ongoing basis. Information regarding these discretionary funding programs can be found at www.cdtcmpo.org/BIL.

The municipality should further investigate eligibility requirements for each funding program. Local roads, such as Old Gick Road, Lowes Road, and the mall roads are not eligible for Federal Aid. These local roads must seek private or local tax revenues to fund sidewalks and other bicycle- and pedestrian-friendly infrastructure. This may influence the type of facility and timeline for implementation. As development continues within the study area, there may be opportunities to include new bicycle- and pedestrian-friendly infrastructure or other amenities that would enhance this trail connection.



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Table 5. Potential Funding Sources

Facility Type	FUNDING PROGRAM						
	Transportation Alternatives (TAP)	Congestion Mitigation & Air Quality (CMAQ)	Recreational Trail Program (RTP)	Surface Transportation Program (STP)*	National Highway Performance Program (NHPP)**	Consolidated Local Street & Highway Improvement Program (CHIPS)	Empire State Economic Development Fund Program
ADA/504 Self Evaluation / Transition Plan	X			X			X
Bicycles lanes on road	X	X		X	X		X
Crosswalks (new or retrofit)	X	X		X	X		X
Curb cuts & ramps	X	X	X	X	X		X
Landscaping, streetscaping, etc.	X		X	X	X		X
Lighting	X			X	X		X
Recreational trails	X		X	X			X
Separated bicycle lanes	X	X		X	X		X
Shared use paths / transportation trails	X	X	X	X	X		X
Sidewalks (new or retrofit)	X	X	X	X	X	X	X
Signs / signals / signal improvements	X	X		X	X	X	X
Traffic calming	X			X	X		X
Trail construction & maintenance equipment	X			X			X
Trail / highway crossings & intersections	X	X	X	X	X		X
Trailside & trailhead facilities	X		X	X			X

*Only available to roadways on the [Federal Aid System](#) (Lake Ave (SR 29), Weibel Ave, and State Route 50)

**Only routes on the National Highway System are eligible (State Route 50 & 29)



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Design References

There are a range of resources available to municipalities to guide engineering and design of bicycle and pedestrian infrastructure. The Highway Design Manual, MUTCD, and NYS Supplement include guidance on all facility types recommended in this study. However, that does not eliminate the need for other references. Below are additional guides that have been developed with the collective experience of transportation planners, engineers, and bicycle and pedestrian infrastructure users. Many have been recently released and may reflect a more current state of practice for creating safe and invite bicycle and pedestrian facilities. CDTC encourages municipalities to participate in bicycle and pedestrian design training opportunities as they occur.

New York State & Local Guidelines

- [New York State Highway Design Manual](#)
- [Manual on Uniform Traffic Control Devices](#)
- [New York State Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways](#) (2009 Edition)
- [Designing for All Ages & Abilities: Contextual Guidance for High-Comfort Bicycle Facilities](#), National Association of City Transportation Officials
- [Small Town and Rural Multimodal Networks](#), U.S. Department of Transportation Federal Highway Administration
- [Empire State Trail Design Guide](#), Hudson River Valley Greenway, New York State Canal Corporation, New York State Department of Transportation, and NYS Office of Parks, Recreation, and Historic Preservation
- [Green Infrastructure Toolkit](#), Capital District Regional Planning Commission

National Guidelines & Best Practices

- [The United States Access Board’s Proposed Rights-of-Way Accessibility Guidelines \(PROWAG\)](#), Federal Highway Administration, May 2012

Other

- [Quick Cost Estimator Reference](#), NYSDOT
- [NYS Pedestrian Safety Action Plan](#), NYSDOT
- [NYS Pedestrian Safety Corridor Evaluation Guidelines](#), NYSDOT
- [Road and Trail Intersection Safety](#), Parks & Trails New York
- [Capital District Trails Plan](#), CDTC
- [Local Road Safety Action Plan](#)
- [New Visions 2050](#), CDTC
- [City of Saratoga Springs Complete Streets Plan](#) (2016)
- [New York State Complete Streets Act](#)

