

Ontario County Road 16

West Lake Road Pedestrian & Bicycle Study



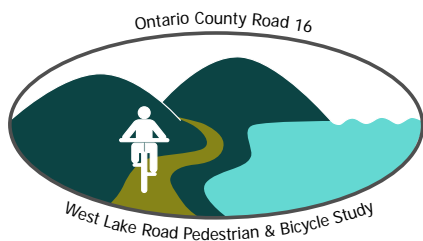
PREPARED FOR:

DEPARTMENT OF PUBLIC WORKS
ONTARIO COUNTY NY

PREPARED BY:

BARTON & LOGUIDICE, DPC

SEPTEMBER 2018



Ontario County Road 16 Pedestrian & Bicycle Study

Department of Public Works - Ontario County, NY

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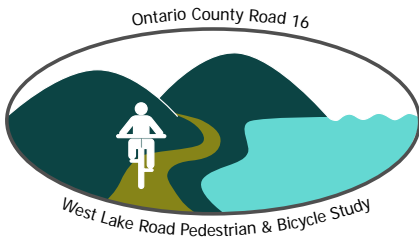
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1.0 EXECUTIVE SUMMARY



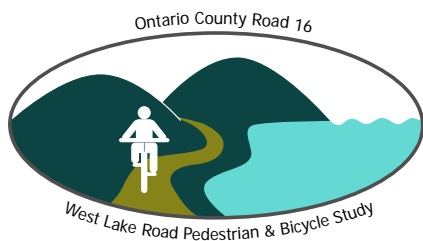
OVERVIEW

Ontario County Road 16-West Lake Road is primarily a north-south route along the west edge of Canandaigua Lake in the Town of Canandaigua, NY. The study area for this project is an 8.2 mile portion of Ontario County Road 16 from the City of Canandaigua boundary extending south to Seneca Point Road in the Town of Canandaigua.

Ontario County Road 16 runs along the western shoreline of Canandaigua Lake, providing stunning views of the lake. This has attracted vigorous residential growth and activity in the past few decades, increasing the number of pedestrians and bicyclists using the road. Two parks on this road, West Lake Schoolhouse Park and Onanda Park, provide public lake access.

Several conditions along Ontario County Road 16 (CR 16) present challenges for pedestrian and bicyclist safety. These include steep topography, narrow shoulders, and lack of sidewalks. Heavy use and constrained space increase the potential for conflicts between travel modes.

The purpose of this study is to analyze existing conditions along CR 16, investigate the feasibility of potential pedestrian and bicycle accommodations, and provide a plan for improving active transportation capabilities of the roadway. Active transportation describes any form of transportation that involves physical activity, including walking and bicycling. This study's recommendations, when implemented, will help achieve public health, environmental, economic, and quality of life benefits in the Town of Canandaigua through these enhanced accommodations.



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ACTIVE TRANSPORTATION BENEFITS

The extensive benefits of active transportation have been documented for this study. These benefits include decreased impact on the environment through reduced motor vehicle usage, health benefits through enhanced physical activity and reduced stress, and economic benefits through expanded tourism and attractiveness for potential home buyers.

INVENTORY & ANALYSIS

This study included an inventory and analysis phase that assessed the existing conditions along Ontario County Road 16. Topography, drainage, wetlands, municipal boundaries, destinations, property ownership, access, circulation, crash history and infrastructure were evaluated. Analysis of existing conditions resulted in a needs assessment based upon the opportunities and constraints of the corridor.

COMMUNITY INPUT

The planning process for this study included outreach to both the general public and to key stakeholders. Representatives from various organizations served on the Project Advisory Committee, providing continuity and oversight. In addition, input from the public was solicited using online surveys and public meetings.

RECOMMENDATIONS

Several roadway improvements were considered. See **Table 1** and **Section 6**. Key recommendations include:

- Frequent maintenance schedule for the roadway
- Additional signing and stop bars at intersections with steep grades
- Shoulder improvements
- Hillcrest warning systems and signing
- West Lake Schoolhouse Park and Beach-Butler Road intersection improvements
- Onanda Park and Canandaigua Yacht Club road crossing improvements
- Education, outreach, and enforcement

IMPLEMENTATION

This section includes information regarding SEQRA documentation, the permitting process, and funding. Appendices are included that provide more detailed information on funding and community input.

1.0 EXECUTIVE SUMMARY

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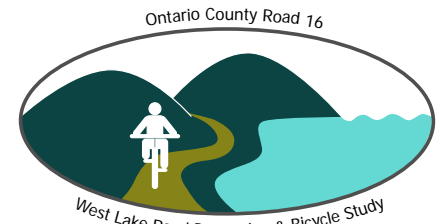
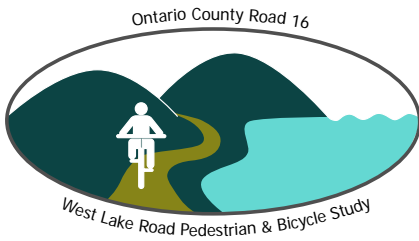


Table 1: Project Prioritization

Project Name	Project Description	Priority Level
Frequent Maintenance Schedule	Increase frequency of scheduled maintenance to address issues of pavement shoulder erosion, uneven paving, low visibility, and traffic line fading by routinely sweeping pavement, patching surfaces, and cutting back vegetation.	Priority
Multi-Use Paved Shoulder Improvements	Standardize shoulder width at a minimum of 5' to allow multiple usage. Selective shoulder widening should be implemented where right-of-way allows.	Priority
Implement Traffic Delineators	Increase use of delineators to separate bicycle and pedestrian facilities in key areas, such as the German Brothers Marina.	Recommended
Asymmetrical Shoulders	Widen shoulders on ascents and decrease shoulders on descents to improve bicyclist experience, safety, and comfort.	Recommended
Additional Signing	Increase Bicycle/Pedestrian signing along Ontario County Road 16. Additional signing and stop bars should be located at intersections with steep grades.	Priority
Hillcrest Warning System & Signing	Implement bicycle detection technology to inform motorists of bicycles at hillcrests where visibility is limited.	Possible
Improved Pedestrian Crossings	Install high visibility crosswalks with pedestrian signage at key locations, including, but not limited to, Canandaigua Yacht Club and Onanda Park. Consider raised crosswalk installation to improve traffic calming.	Priority
Speed Limit Reduction	Undertake speed study to determine feasibility of speed limit reduction to 30 mph in areas to improve multi-use transportation and transitional speed zones. Increase adherence through traffic calming techniques.	Possible
Trails on Private Property	Construct Trail running parallel to Ontario County Road 16 on private property in key areas with property owner consent.	Possible
Stormwater Management	Employ green infrastructure practices to treat water from culverts along Ontario County Road 16. Coordinate with upcoming Ontario County DPW culvert improvements.	Recommended
Education & Outreach	Connect with local organizations to increase bicycle and pedestrian safety education in Ontario County.	Recommended
Zoning & Design Standards Recommendations	Adopt language from Genesee Transportation Council Bicycle and Pedestrian Supportive Code. Update standard details relative to bicycle and pedestrian infrastructure.	Possible
Enforcement	Provide traffic law enforcement to ensure safety for all travel modes. Increase enforcement measures during peak use.	Priority



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2.0 INTRODUCTION



2.1 BACKGROUND AND PURPOSE OF STUDY

Ontario County Road 16 runs predominantly north to south along the western edge of Canandaigua Lake in the Town of Canandaigua, NY. The northern terminus of Ontario County Road 16 (CR 16) is the City of Canandaigua boundary where CR 16 becomes West Lake Drive. The southern terminus is NYS Route 21 South in the Town of Canandaigua. CR 16 is also known as West Lake Road.

The study area for this project is 8.2 miles long, incorporating the roadway from the City of Canandaigua boundary to Seneca Point Road in the Town of Canandaigua.

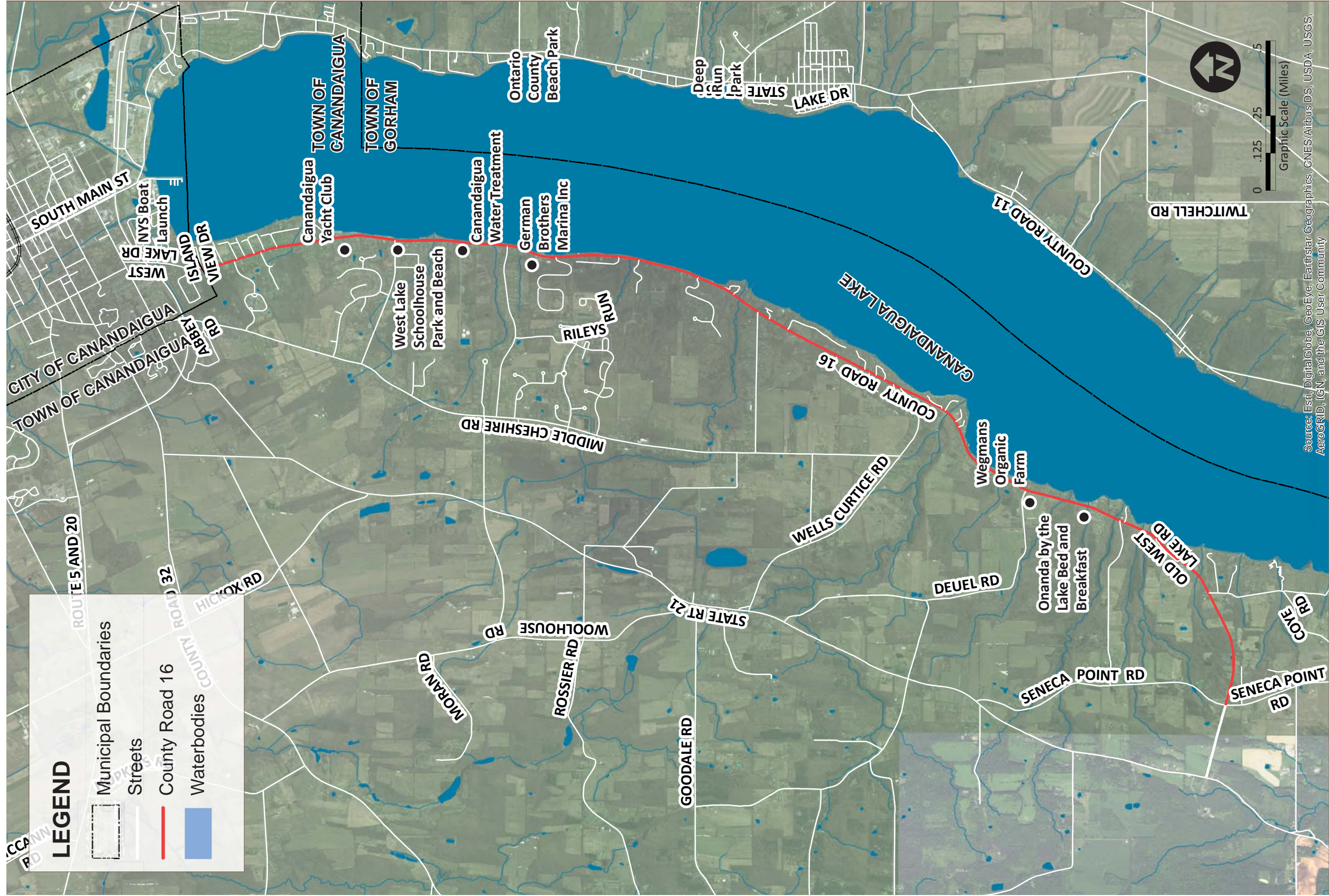
CR 16 runs along the shoreline of Canandaigua Lake, connecting two lakeside parks, West Lake Schoolhouse Park and Onanda Park. Public access to these locations, and the stunning view of the lake along the roadway, attract a significant number of active transportation users.

Five new trails, proposed in the Town of Canandaigua Parks and Recreation Master Plan 2018-2023, would create new active transportation corridors between Canandaigua Lake, existing neighborhoods, and existing parks. These corridors would further increase the number of pedestrians and bicyclists along CR 16.

Despite the road's high recreation potential for bicyclists and pedestrians, there are several barriers to successful roadway coordination between users.

"Unfortunately, County Road 16 is not structured as a multi-use corridor and has relatively narrow shoulders that don't safely accommodate bicyclists, joggers or walkers."

- Town of Canandaigua Comprehensive Plan

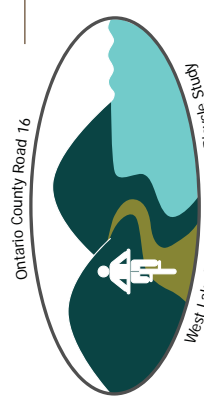


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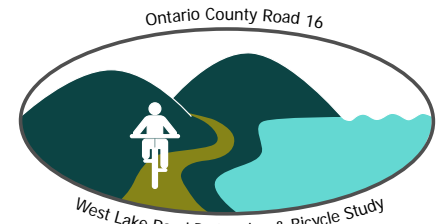
FIGURE 1. LOCATION MAP

August 1, 2018



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The last major roadway improvement occurred in the 1930s to accommodate local daily traffic, and CR 16 has been essentially unaltered since that time. Significant roadway conditions include steep topography, narrow shoulders, and a lack of sidewalks. These conditions present significant safety issues for roadway users.

Refer to **Figure 1** for more information.

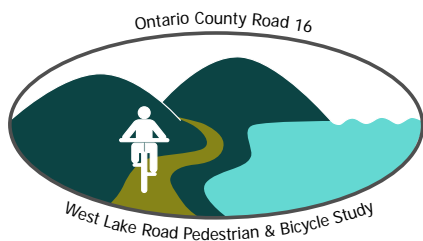
2.2 COMMUNITY INVOLVEMENT

Planning of any kind cannot be done in a vacuum, and must be informed by local residents. New York State has identified principles to guide community planning, which state that planning should be continuous, comprehensive, participatory, and coordinated. Citizen participation is a key component in the process, not just a requirement; it is a critical element of a successful plan. Table 2 chronicles the meetings that were conducted for this project.

Table 2: Chronology of Community Involvement

Date	Meeting Type	Purpose
Sept 20, 2017	Project Kick-Off	Project intentions, goals, and objectives
Oct 12, 2017	Project Advisory Committee Meeting and Walking Tour	Existing conditions and assessment
Jan 13, 2018	Public Meeting #1	Existing conditions review and input
April 16, 2018	Canandaigua Town Board Meeting	Project presentation
May 8, 2018	Project Advisory Committee Meeting	Alternatives and preliminary recommendations
Aug 8, 2018	Public Meeting #2	Draft recommendations
Sept 26, 2018	Project Advisory Committee Meeting	Review of report

The planning process for this study included outreach to both the general public and key stakeholders. A project advisory committee was comprised of representatives from Ontario County, the Town of Canandaigua and local stakeholders. Committee members, as identified in the following pages, provided study oversight.



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PROJECT ADVISORY COMMITTEE

James Fletcher, Town of Canandaigua Highway Supervisor

Saralinda Hooker, Town of Canandaigua Resident

Darin Ramsay, Genesee Transportation Council Program Manager

Gregory Westbrook, Town of Canandaigua Supervisor

William C. Wright, P.E., Ontario County Commissioner of Public Works

Oksana Fuller, Town of Canandaigua Resident

Marion Cassie, Town of Canandaigua Resident

Chris Dombrowski, Town of Canandaigua Resident

ADDITIONAL PROJECT TEAM MEMBERS

Thomas A. Rafferty, P.E., Ontario County Department of Public Works (DPW), Project Manager

Thomas Robinson, RLA, Barton & Loguidice, Consultant

Peyton McLeod, Landis Evans + Partners, Consultant

Theo Petritsch, Landis Evans + Partners, Consultant

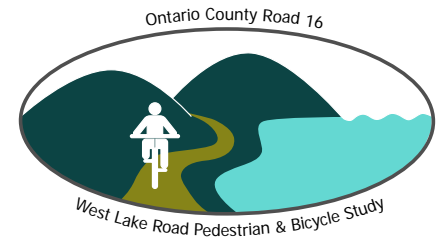
ONLINE SURVEY

An online survey was also used to gather information from community members, including current perceptions of safety along CR 16, pedestrian and bicycling patterns, and stakeholder ideas. These responses significantly influenced the focus and direction of this study.

More information about community involvement is included in **Section 5** of this report, and in **Appendix B**.

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2.3 RELATIONSHIP TO OTHER PLANS AND STUDIES

The goal of planning is to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations (APA, 2011). Planning enables civic leaders, businesses, and citizens to play a meaningful role in creating communities that enrich people's lives. In developing new plans, it is important to refer to plans and studies that have already been completed to evaluate how the new plan relates to existing plans.

The road improvements proposed are compatible with the general principles and specific projects found in the planning documents listed below.

Town of Canandaigua Parks and Recreation Master Plan 2018-2023

Town of Canandaigua Comprehensive Plan Update 2011

Town of Canandaigua Natural Resource Inventory 2011

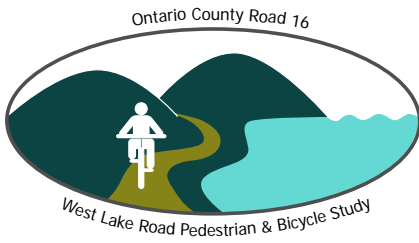
Finger Lakes Regional Sustainability Plan 2013

Long Range Transportation Plan for the Genesee-Finger Lakes Region 2040

Town of Canandaigua Complete Streets Policy Adoption

**Potential Middle Cheshire Road Active Transportation Study*

**As of this writing, the Town of Canandaigua is pursuing funding to conduct an Active Transportation Study of Middle Cheshire Road. That project would support the complete streets policy of the Town, and create synergy with bicycle and pedestrian improvements along CR 16.*



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3.0 ACTIVE TRANSPORTATION BENEFITS



This study is part of a regional active transportation effort that will help Ontario County to harvest the long-term economic, environmental, health and social benefits associated with active transportation.

3.1 HEALTH BENEFITS

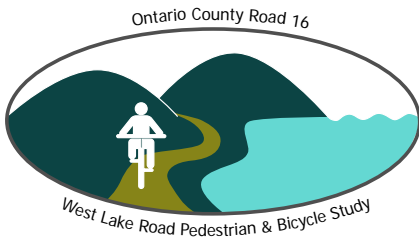
More than 50% of American adults do not get enough physical activity to provide health benefits (CDC, 2012). With this in mind, opportunities for exercise and healthful outdoor activity are more than expendable extras. Trails and improved roadways provide people of all ages with attractive, accessible, safe, and inexpensive opportunities to enjoy physical activity.

Several studies have shown that access to trails and green spaces increase the amount of physical activity of residents, and increase longevity among elderly community members (Rails-to-Trails Conservancy). Other studies have shown that spending more time walking reduces cognitive decline, increases longevity, lowers risk of heart disease, stroke, type 2 diabetes, depression, and some types of cancer (Center for Disease Control and Prevention, Archives of Internal Medicine).

50% of American adults do not get enough physical exercise to provide health benefits

(Centers for Disease Control and Prevention, 2012)

Bicycling and Walking in the United States: 2016 Benchmarking Report, published by the Center for Disease Control and Prevention and the Alliance for Bicycling and Walking, reports that people in areas with a strong culture of cycling and walking are less likely to be obese.



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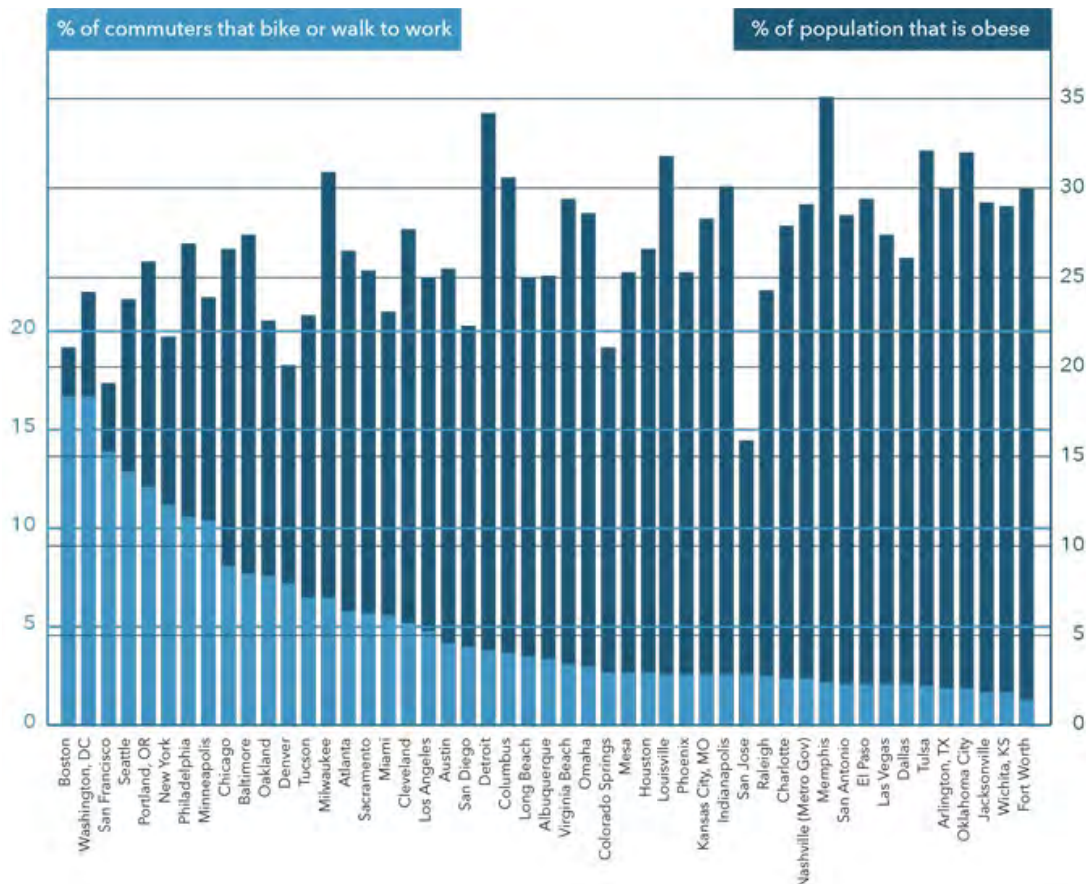
Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities recognizes the importance of physical activity for people of all ages and abilities. It calls on Americans to be more physically active through walking and calls on the nation to better support walking and walkability.
(SurgeonGeneral.Gov)

In recognition of these critical facts, government organizations across the country are responding with new bicycling and walking policies to improve health outcomes across America.

In 2016 the Surgeon General published a call to action to promote walkable communities throughout the United States.

36 states, including New York, have set goals to increase bicycling and walking, and 47 of the 50 most populous cities in the US have published goals to increase cycling.

By creating a more pedestrian and bicycling friendly road network, Ontario County is taking part in this national initiative. The County is creating more opportunities for residents to make healthy and enjoyable choices that will benefit residents for generations to come.



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Ontario County Road 16 is 8.6 miles long.

Walking, jogging or cycling this distance can have considerable health benefits:



956 calories or
4.75 donuts



1,448 calories or
7.25 donuts



349 calories or
1.75 donuts



3.2 ENVIRONMENTAL BENEFITS

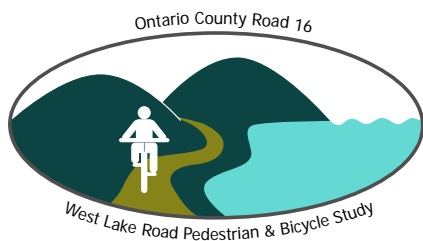
Improved roadways encourage active transportation. This reduces emissions of greenhouse gases and other pollutants that contribute to global warming, smog, and acid rain. Choosing active transportation is an easy way to reduce our environmental impact – bicycling and walking create zero greenhouse gas emissions. Therefore, mode shift will reduce air pollution, minimize traffic congestion, and help to lessen our national dependence on petroleum.

*A four mile
bicycle trip
keeps 15 pounds
of pollutants out
of the air we
breathe*

*(Worldwatch
Institute)*

3.3 COMMUNITY BENEFITS

Cultivating better walking and bicycling conditions provides mobility for the one-third of people in the United States who do not have cars. This improves access to jobs, education, and health care.



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Bicycling and walking can be appealing for families looking to engage in new recreational opportunities while increasing opportunities for social interaction and contributing to a sense of community. Communities across the county have embraced non-motorized transportation as a popular and beneficial option that residents increasingly expect and visitors actively seek when making choices about where to locate their families. Cities that promote bicycling tend to retain youth, attract young families, and increase social capital.

Active transportation can reduce stress and allow for more community interaction. Riding a bicycle allows a commuter to choose a less busy route and by-pass traffic signals. Walkers and bicyclists see more of their community than stoplights, white lines and car bumpers, and benefit from the stress relief that accompanies physical exercise. It is easier to park a bicycle than a car, which further reduces the stress of commuting. In addition, a culture dependent on cars encourages urban sprawl, disintegrated communities and keeps people isolated from one another.

3.4 ECONOMIC BENEFITS

“Economically, a town or city can benefit from having a more walkable environment. The presence of sidewalks and other walking facilities is shown to increase property value and promote tourism. Sidewalks and connected, well-maintained pedestrian networks allow citizens the ability to safely and conveniently patronize local shops, businesses, and restaurants” (University of Delaware Institute for Public Administration).

The number of people walking and bicycling can be a good indicator of a community’s livability- a factor that has a profound impact on attracting new residents, businesses, workers, and tourists, all of which contribute towards stimulating the economy. By encouraging active transportation, local economies keep shoppers centrally located, resulting in increased community reinvestment.



4.0 INVENTORY AND ANALYSIS



4.1 TOWN CHARACTERISTICS

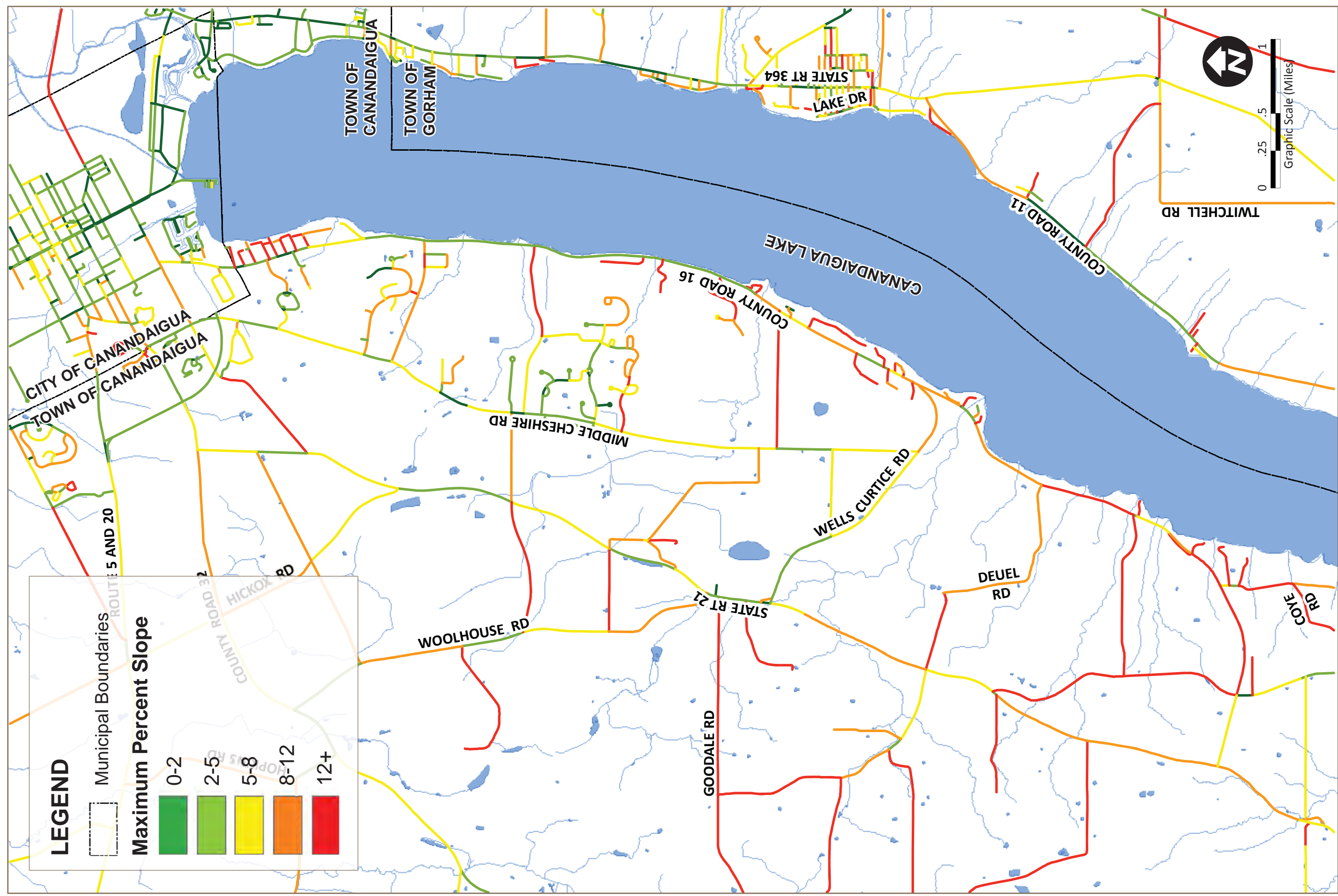
The Town of Canandaigua is in the center of Ontario County, 30 miles southeast of the City of Rochester. The Town is located on the northwestern section of Canandaigua Lake, with a total area of 63 square miles. As of the United States Census of 2010, there were 10,020 residents.

The Town of Canandaigua has many resources that contribute to active transportation including:

- An extensive park network (see Section 4.8 Parks and Trails)
- Scenic views
- Access to Canandaigua Lake
- Proximity to the pedestrian friendly downtown in the City of Canandaigua
- Attractive destinations and businesses

4.2 ROAD CHARACTERISTICS

CR 16 is an 8.6 mile road that runs primarily north and south along the western edge of Canandaigua Lake, connecting West Lake Drive in the City of Canandaigua to NYS Route 21 South in the Town of Canandaigua. It is classified as a rural minor collector, with average daily traffic (ADT) at approximately 3,400 vehicles, and posted speeds of primarily 35 mph.

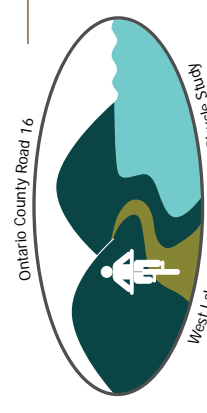


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FIGURE 3. ROAD SLOPE

July 19, 2018



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The study area for this report includes an 8.2 mile stretch along the 8.6 mile roadway, with boundaries from the City of Canandaigua city line to Seneca Point Road in the Town of Canandaigua.

Bicycle and pedestrian travel occur throughout the corridor. In general, the highest density of pedestrian use occurs along the segment where the roadway is closest to the lake shore, roughly between the Canandaigua Yacht Club and Lake Hill Drive.

CR 16 exhibits several non-standard features due to its piecemeal evolution over time. As a result, guiderails, lane widths, shoulder widths and intersection treatments are inconsistent along the corridor.

Land use along the corridor is primarily single family residential. Notable exceptions include Canandaigua Yacht Club, German Brothers Marina, and Wegmans Organic Farm. Over time, some properties have encroached into the right of way. Encroachments may pose issues for roadway and facility improvements.

4.3 SLOPE AND TOPOGRAPHY

CR 16 is significantly impacted by slope and topography, and is characterized by relatively flat areas interspersed with steep hill conditions.

While the average longitudinal slope of CR 16 within the study area is only 3%, one fifth of the road has a slope over 5%. The maximum slope is 19%. The steep segments could be challenging for many pedestrians and bicyclists. To put this in perspective, the maximum continuous slope allowed in an ADA accessible route is 5%, and the maximum slope allowed on an ADA accessible ramp is about 8%.

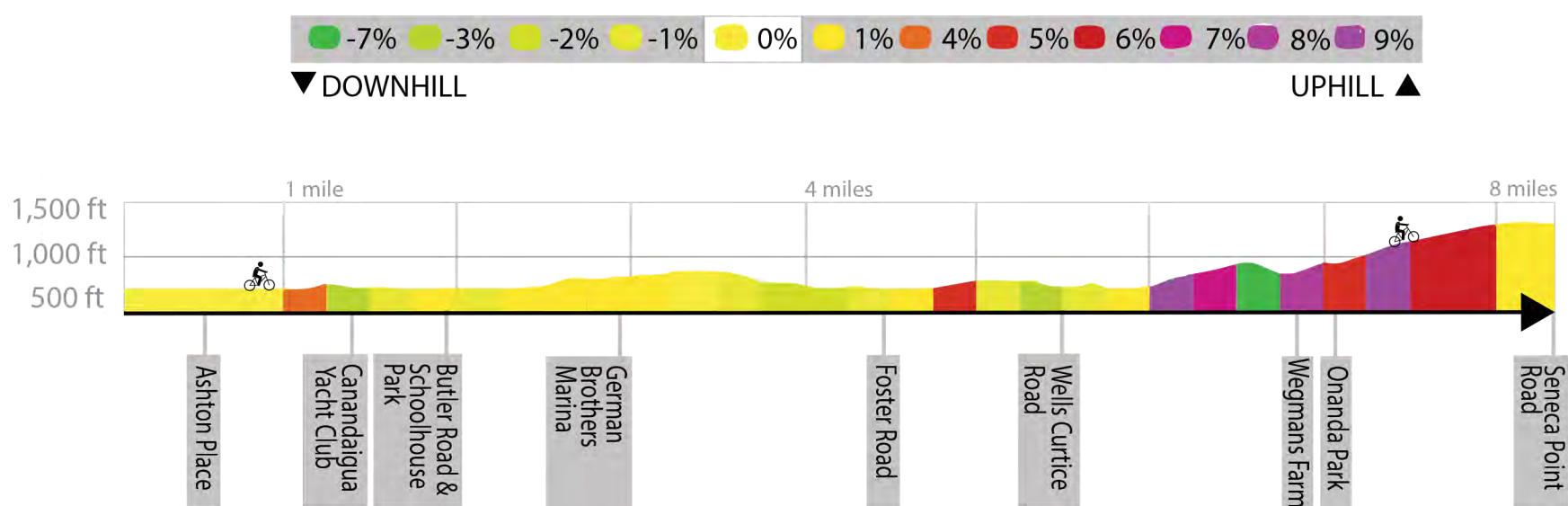
Vertical alignments in steep segments may limit visibility. Many of the roads that intersect with CR 16 have steep slopes as well. This can create a safety hazard for bicyclists who have gained momentum during a steep descent and must come to an abrupt stop at an intersection. It can also pose an issue for vehicles gaining momentum travelling down a hill, causing increased variability in speed control and awareness.

The following list provides a rough guide of the impact of various gradients on bicyclists:

- 0%: Relatively easy riding.
- 1-3%: Slightly uphill but not particularly challenging; rider will feel some resistance.
- 4-6%: Manageable but can cause bicyclists to more easily fatigue over longer distances.
- 7-9%: Becoming uncomfortable for advanced riders; significantly difficult for novice bicyclists.
- 10%+: Difficult for all bicyclists, especially for prolonged distances.

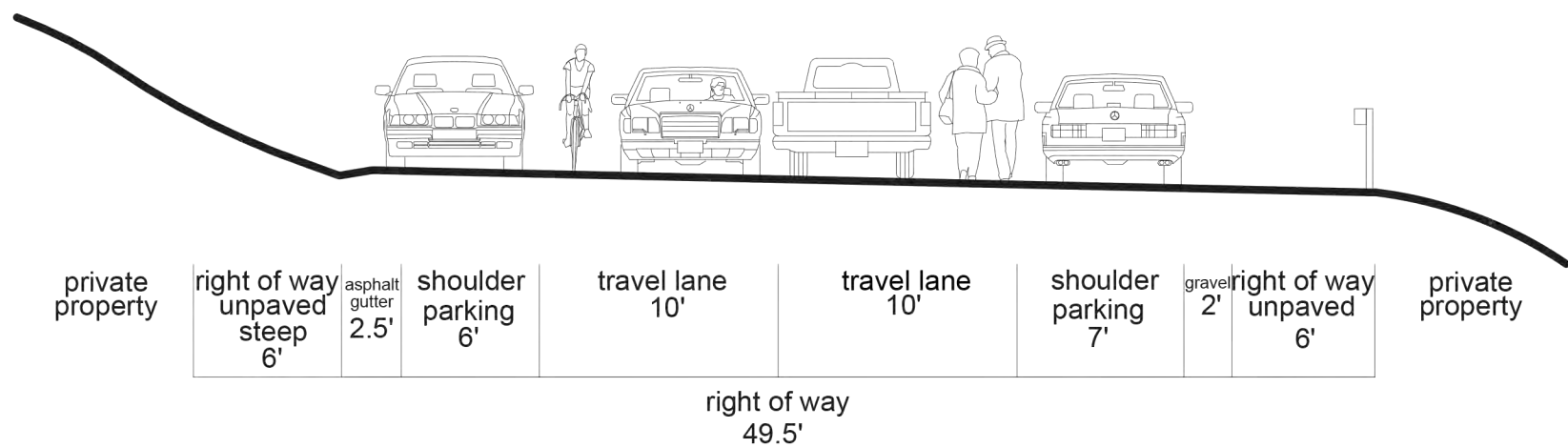
See **Figure 2 and 3** for more information on slope and topography.

ROAD SLOPE SECTIONS

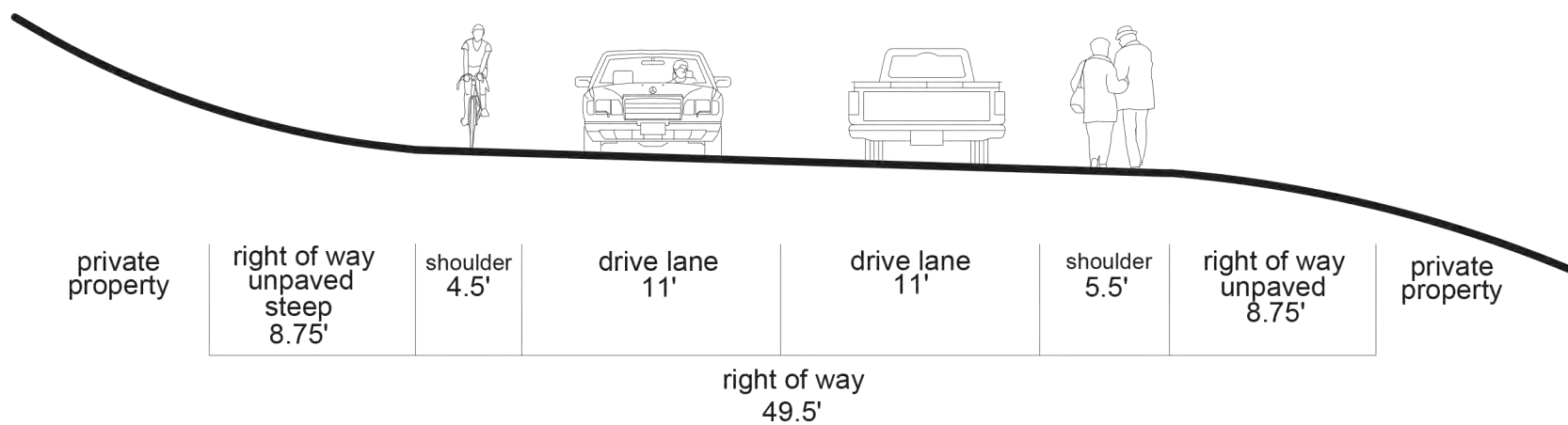


This graph shows average slope for each quarter mile increment heading south from the Canandaigua City Line to Seneca Point Road. Adapted from Map My Ride.

MARINA existing conditions



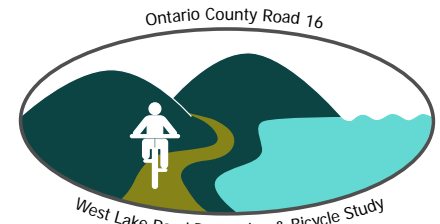
ONANDA PARK existing conditions



These sections display existing roadway conditions along Ontario County Road 16.

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4.4 WETLANDS, STREAMS AND DRAINAGE

A review of United States Fish and Wildlife Service, New York State Department of Environmental Conservation or National Wetland Inventory online map resources show there are several riverine wetlands present within, and adjacent to, the study area.

There are 14 mapped streams and channels that flow across CR 16 into Canandaigua Lake. All of these streams are categorized as 'Class C Streams' and are not protected streams under New York State Environmental Conservation Law.

The steep topography causes water to run quickly downhill, increasing surface runoff and erosion that causes sedimentation.

From Lakeview Lane to Lake Hill Drive, the majority of CR 16 is within a FEMA flood zone.

Following many sections of the roadway is a culvert to capture roadway runoff. This infrastructure should be considered on CR 16 for its significant effects on property connections and slope adjacent to the roadway.



Existing roadside stormwater management.

See **Figure 4** for a map of existing topography, waterbodies, and drainage.

4.5 EXISTING BICYCLE AND PEDESTRIAN CONDITIONS

CR 16 lane widths vary between 10 feet and 11.5 feet. Shoulder widths range from 2.5 feet to 7 feet. The most narrow shoulders occur between Butler Road and the Canandaigua Yacht Club. The most wide shoulders occur in the vicinity of the German Brothers Marina.

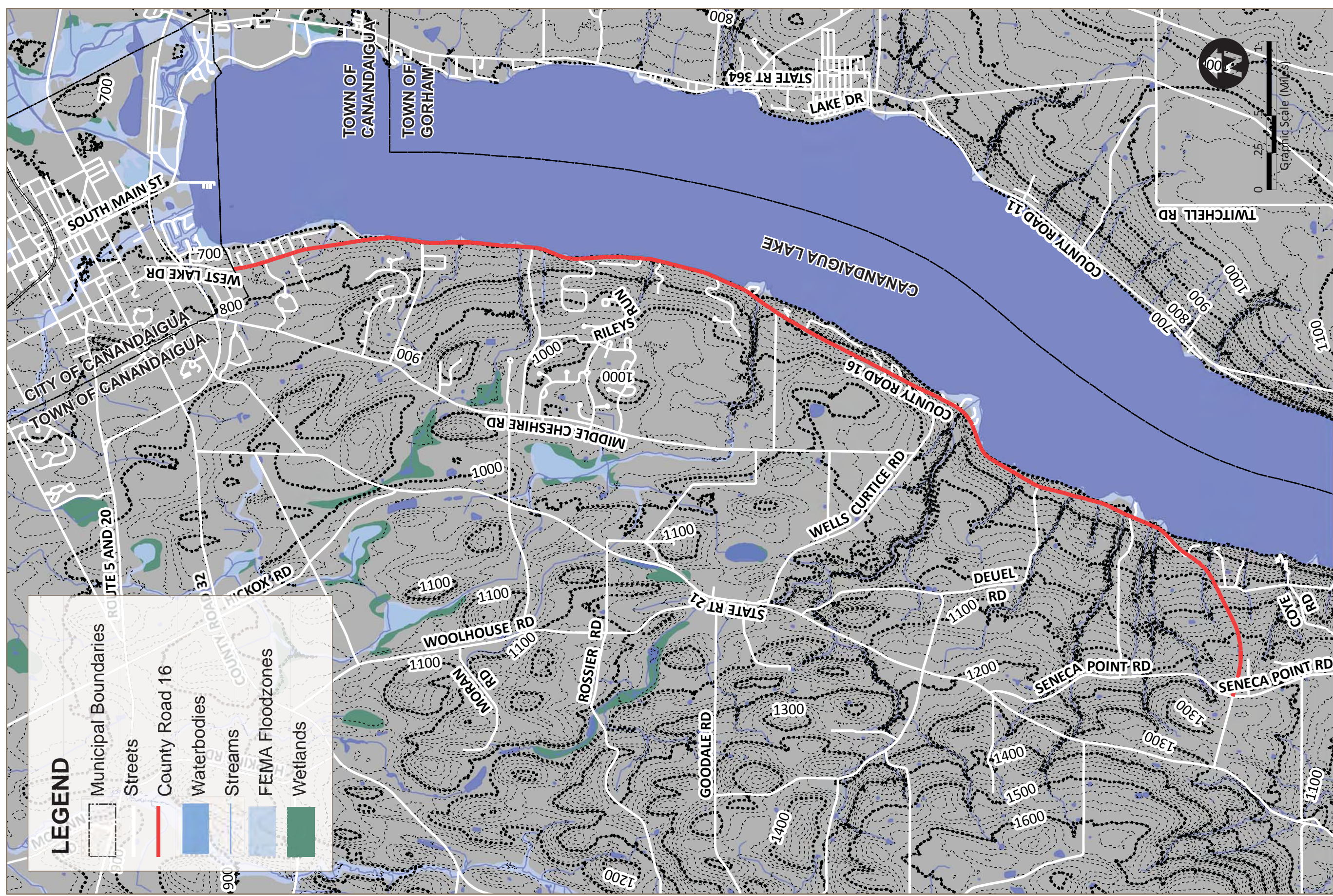
There are no sidewalks or designated bicycle lanes along the study corridor. Temporary parking is common along the shoulders. These conditions present mobility and safety challenges for pedestrians and bicyclists.

Usable space for pedestrians is especially restricted where narrow shoulder widths coincide with guardrail installations. Further, locations where vehicles or trailers may be parked, and guardrails line the roadway, cause a hazardous roadway condition by forcing pedestrians into the roadway in order to pass through.



Existing shoulder conditions.

4.0 INVENTORY AND ANALYSIS

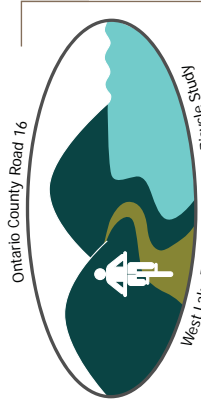


Ontario County Road 16 - West Lake Road Pedestrian & Bicycle Study

Department of Public Works - Ontario County, NY

FIGURE 4. TOPOGRAPHY AND WATERBODIES

July 19, 2018



Ontario County Road 16 Pedestrian & Bicycle Study

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LEVEL OF SERVICE MODELS

The Bicycle Level of Service (BLOS) Model and Pedestrian Level of Service (PLOS) Model, existing conditions performance measure, are a “supply-side” criterion. The models measure bicycling and walking conditions of a roadway, providing an evaluation of the users’ perceived safety and comfort with respect to motor vehicle traffic and roadway conditions.

This nationally adopted and widely used methodology quantifies the quality or level of service (accommodation) for bicyclists and pedestrians that currently exists within the roadway environment.

A major benefit of incorporating the BLOS and PLOS is the indication it provides regarding which network segments have the greatest needs. It uses the same measurable traffic and roadway factors that transportation planners and engineers use for other travel modes. This method is not limited to merely assessing conditions; results can be used to provide a snapshot of existing bicycling and walking conditions to identify roadways that are candidates for reconfiguration of bicycle and pedestrian facility improvements, to conduct a benefits comparison among proposed facilities and roadway cross-sections, and to prioritize and program roadways for such improvements.

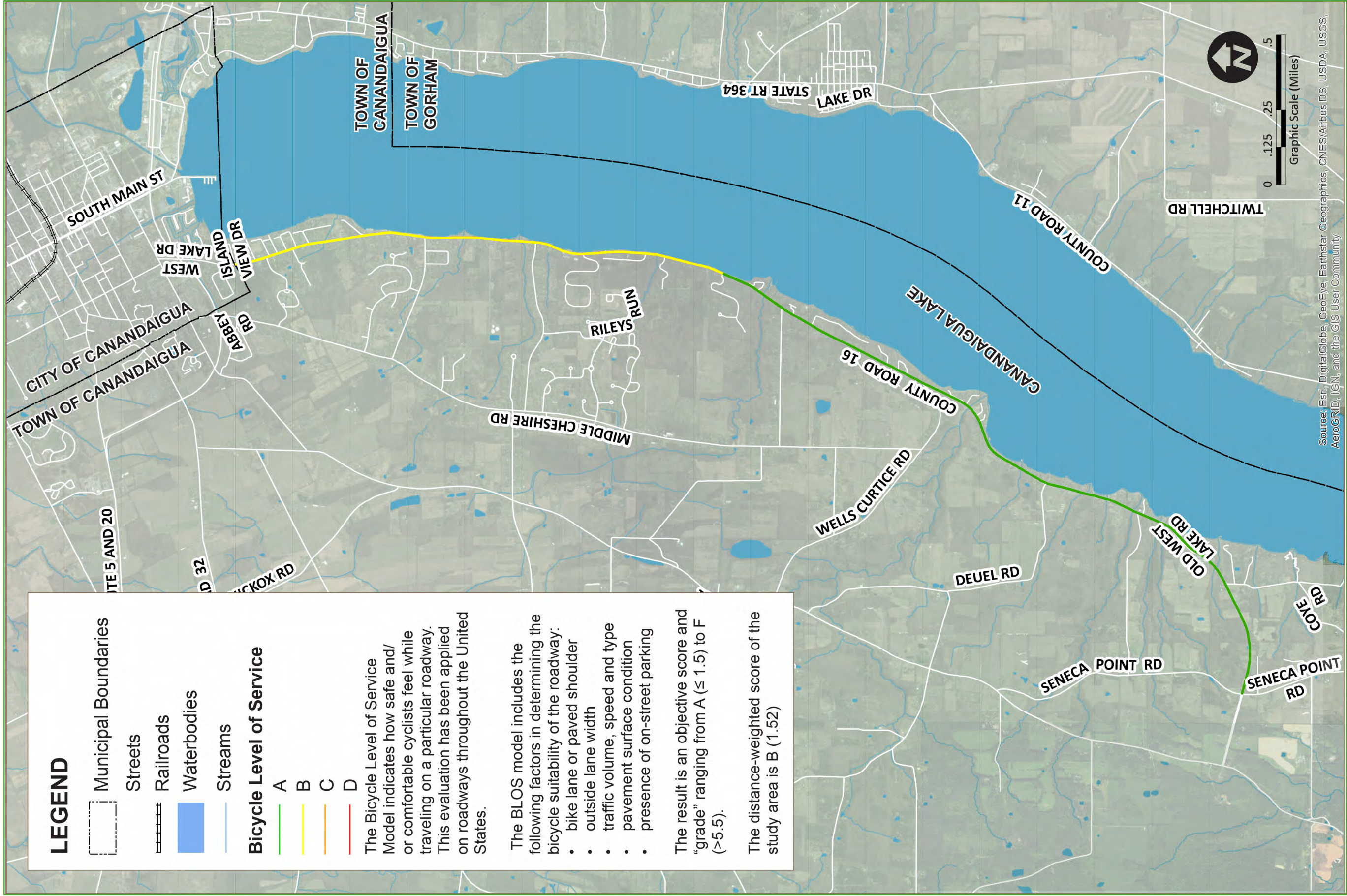
With statistical precision, the BLOS Model clearly reflects the effect on bicycling suitability or “compatibility” due to variations in the following primary factors:

- bike lane or paved shoulder width;
- traffic volume, speed, and type;
- outside lane width;
- presence of on-street parking; and
- pavement surface condition.

The PLOS model reflects the effect on pedestrian suitability or “compatibility” due to variations in the following primary factors:

- sidewalk presence, width;
- roadway width;
- traffic volume, speed, type;
- presence of buffer, width; and
- presence of barriers (on-street parking, street trees).

The level of service analysis produces, for each study network segment, an objective score and “grade” which measures accommodation on that section of roadway. See **Table 3**.

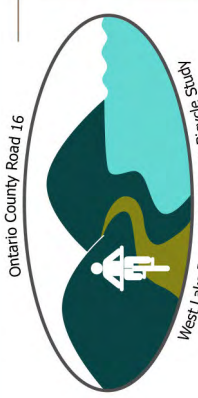


Ontario County Road 16 - West Lake Road Pedestrian & Bicycle Study

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FIGURE 5. BICYCLE LEVEL OF SERVICE

September 6, 2018



Ontario County Road 16 Pedestrian & Bicycle Study

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Table 3: Level of Service

<i>Level of Service</i>	<i>Numerical Range</i>
A	≤ 1.5
B	> 1.5 and $2.5 \leq$
C	> 2.5 and $3.5 \leq$
D	> 3.5 and $4.5 \leq$
E	> 4.5 and $5.5 \leq$
F	> 5.5

EXISTING CONDITIONS ANALYSIS RESULTS

Pedestrian and bicycle levels of service were analyzed at five locations along CR 16. This includes roadway intersections with Ashton Place, German Brothers, Wells Curtice to north of Foster, Onanda Park, and East of Seneca Point.

CR 16 currently provides a range of bicycling conditions from 0.00 to 2.18, which correspond to bicycle levels of service A to B.

CR 16 currently provides a range of pedestrian conditions from 3.32 to 4.00, which correspond to pedestrian levels of service C to D.

Refer to **Figures 5 and 6** for analysis of the levels of service along CR 16. See **Appendix C** for additional information and data related to the PLOS and BLOS models.

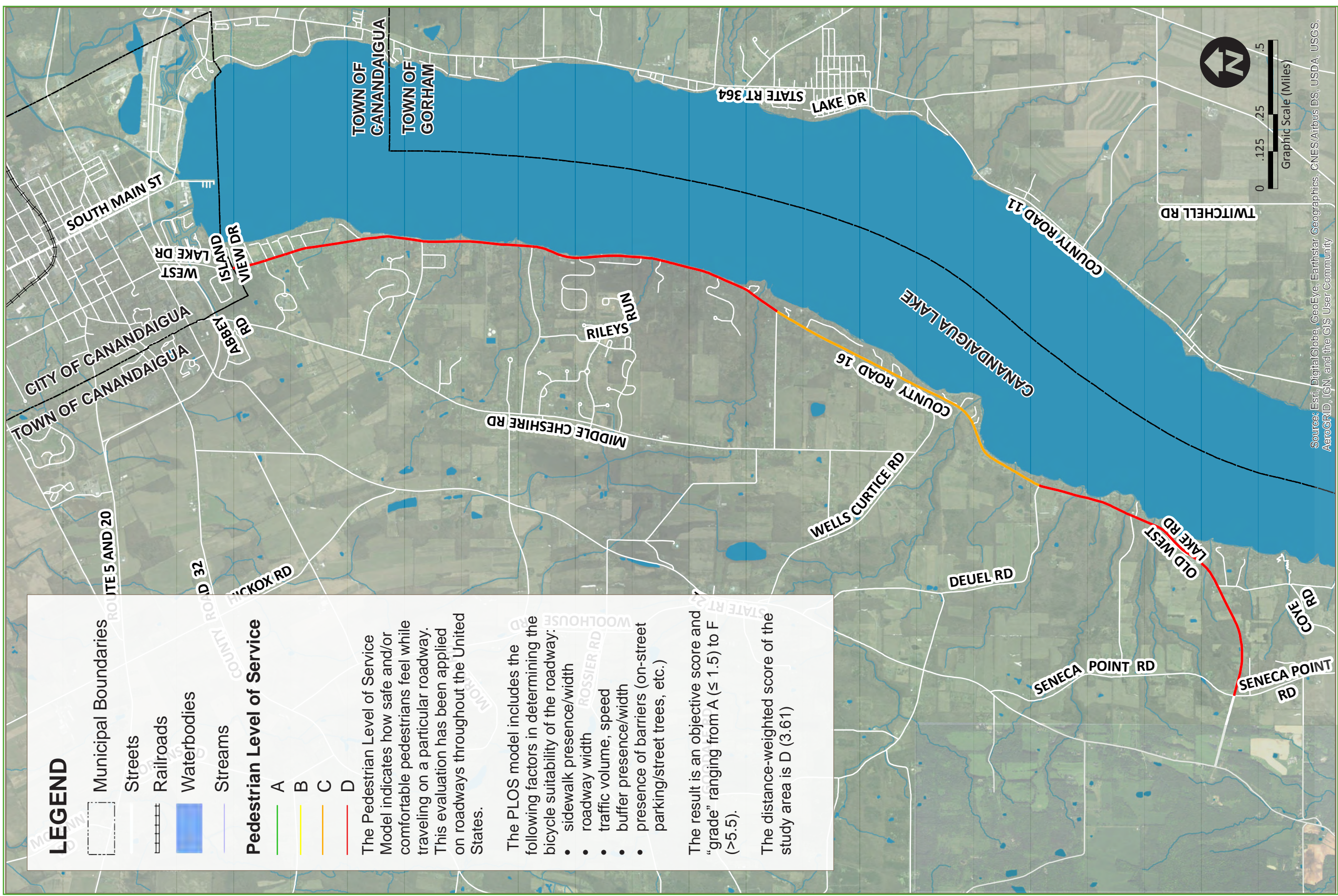
4.6 BICYCLE AND PEDESTRIAN EVENTS

There are several bicycle and pedestrian events along CR 16 that attract local and outside visitors by active transportation. These include:

HIGHLANDER CYCLE TOUR

Highlander Cycle Tour is an annual charity bicycle tour of New York's famous Finger Lakes Wine Country. Courses vary in length, with climbs of up to 10,000 feet of vertical gain on grades up to 23%, within the backdrop of the Finger Lakes wine country. The ride begins and ends at Bristol Mountain Ski Resort, and often travels along the West shore of Canandaigua Lake.

<http://highlandercycletour.com/>

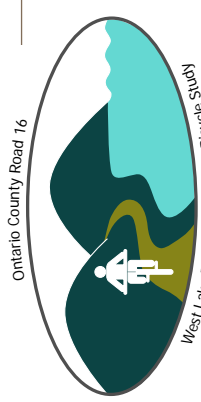


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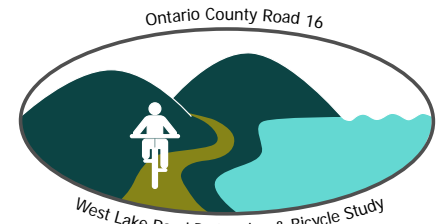
FIGURE 6. PEDESTRIAN LEVEL OF SERVICE

September 6, 2018



Ontario County Road 16 Pedestrian & Bicycle Study

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TOUR DE THOMPSON

Tour de Thompson is an annual scenic bicycle tour through the Bristol Hills. Participation helps benefit the aftercare program at Thompson Health's Rehabilitation Services, helping individuals with chronic disease maintain their level of function and independence in the community. The ride begins at Onanda Park and all routes include extended sections of CR 16.

<https://www.thompsonhealth.com/Foundation/Special-Events/Tour-de-Thompson>

4.7 DESTINATIONS

There are several destination points along CR 16 that attract local residents and visitors both by vehicular transportation and active transportation. These include:



Sail boats on the Lake. Source: Canandaigua Yacht Club.

GERMAN BROTHERS MARINA

Owned and operated since 1977, the German Brothers Marina is an important destination along Canandaigua Lake. The business provides a full service marina, with dockside fuel, a boat launch, repair capabilities, storage, rentals and services.

During the summer months, this location becomes filled with trailers and vehicles, with trailer and boat parking within the shoulder of the road and in designated parking and storage areas above.

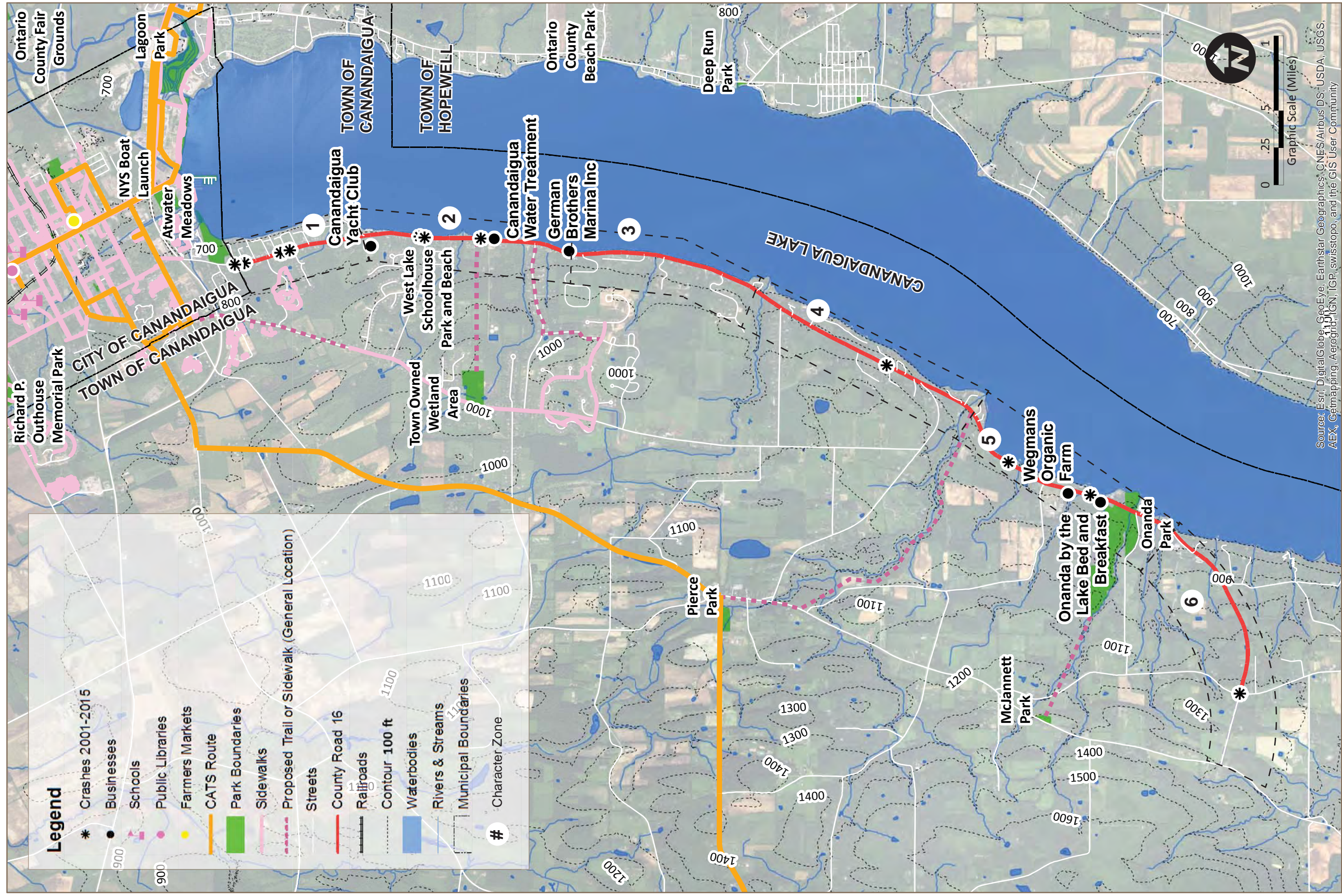
CANANDAIGUA YACHT CLUB

Established in 1891, the Canandaigua Yacht Club is a significant destination along Canandaigua Lake, offering sailing lessons for youth, park facilities and a club house, as well as docks, mooring, and waterfront facilities. It has over 250 members, open from late April until late October.

During the summer months, membership alone generates more than 100 road crossings, with an increase when the Club hosts several race events throughout the summer that are open to the public.

WEGMANS ORGANIC FARM AND ORCHARD

Started in 2007, the Wegmans Organic Farm contributes to the 400 and more local farms that provide organic produce for Wegmans stores throughout New York.

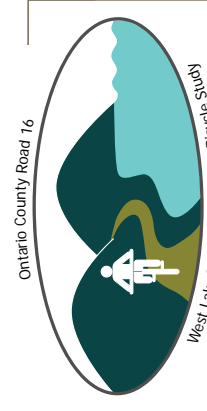


Ontario County Road 16 - West Lake Road Pedestrian & Bicycle Study

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FIGURE 7. TRANSPORTATION NETWORK

August 1, 2018



Ontario County Road 16 Pedestrian & Bicycle Study

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4.8 PARKS AND TRAILS

The Town of Canandaigua holds approximately 183 acres of parkland and 85 acres of open space including:

- Blue Heron Park
- Leonard R. Pierce Memorial Park
- McJannett Park
- Middle Cheshire Road Property Wetlands
- Miller Park
- *Onanda Park (mentioned later in this report in more detail)
- Richard P. Outhouse Memorial Park
- *West Lake Schoolhouse Park and Beach (mentioned later in this report in more detail)

**Located within the study area of CR 16.*

Two trail projects are underway within the Town of Canandaigua. These include the Auburn Trail, which is under active development and included in the 2018-19 budget, as well as the Peanut Line Trail, which is not under active development since one of its trail sections is still in the planning phase.

The Town of Canandaigua Parks and Recreation Master Plan 2018-2023 proposes 16 additional trail and walkability projects, including recommending a County Road 16 Walkability Study.

Five of these proposed trails would provide pedestrian and bicycling linkages to CR 16. Trails, parkland, and overall transportation network are shown in **Figure 7**.

4.9 EXISTING SPEED CONDITIONS

The posted speed limit along CR 16 is 35 mph throughout most of the study area. However, north of the study corridor, the speed limit drops to 30 mph within the City of Canandaigua. To the south of the study corridor, the speed limit increases to 50 mph just before Seneca Point Road.

According to the **New York State Department of Transportation** Speed Count Average Weekday Report, the average travel speed is 38 mph, while the 85th percentile is 44 mph, meaning 85% of motorists are travelling below 44 mph. Not represented by this average value is a significant gap, between slightly above the marked speed, and significantly above the marked speed, up to 55 mph.

Another consideration that should be made is that these counts were taken in 2015, concentrated at the north end of the corridor, near Adams Drive, where speeds are lower than they are further south.

See the end of **Appendix C** for more information on speed data.



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4.10 MIOVISION DATA

The Genesee Transportation Council provided a Miovision Scout camera for video traffic data collection. Miovision is an innovative data collection and analysis system that provides information on all modes of travel, including bicycle and pedestrian movements.

Miovision cameras were placed at four locations (Canandaigua Yacht Club, Butler Road Schoolhouse, German Brothers Marina, and Onanda Park) during two timeframes, Fall 2017 and Summer 2018.



Miovision camera and technology.

Fall 2017 data was collected over a 13-hour period (6:00 a.m. to 7:00 p.m.), while Summer 2018 data was collected over a 10-hour period (6:00 a.m. to 4:00 p.m.).

Time-of-day variation generally follows expected patterns, with lower volumes early in the morning, and peak periods ranging from mid-day to late afternoon. Summer volumes are approximately 40% higher than fall volumes, exhibiting a clear seasonal trend.

The counts were divided into five travel modes: light cars and trucks, heavy vehicles, motorcycles, pedestrians, and bicycles. Across three of the count locations*, the mode split is dominated by light cars and trucks, representing more than 94 percent of overall trips. Non-motorized users account for just over 3 percent of trips along the corridor, with pedestrians outnumbering bicyclists. Across 69 hours of data, 173 pedestrians and 138 bicyclists were observed.

See **Appendix D** for more information.

**Data at the German Brothers Marina site was processed differently than the other three locations (as turning movement counts were included rather than exclusively cutline counts), therefore it was excluded from these summary statistics.*

4.11 SAFETY EVALUATION

With consideration of topographic and roadway conditions, a safety evaluation was conducted in the study area using 15 years of historical data from the Genesee Transportation Council through Accident Location Information System Data (ALIS). This includes crash locations along the corridor, which have been identified in point format on **Figure 7**.

There were 17 total crashes reported during the 15 year period. No pedestrians or bicyclists were involved in these crashes, and there were no fatalities. A few significant takeaways can be seen below.

- Two of the 17 crashes involved motorcycles, with one overtaking a motorist in a no passing zone, and the other colliding with a fixed object;

4.0 INVENTORY AND ANALYSIS

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- 13 total crashes occurred during daylight versus four during the nighttime; and,
- The calculated crash rate is approximately 50 per 100 million vehicle miles traveled. This is below average.

Identifying and analyzing crash patterns and locations helps to identify potential issues that may impact pedestrians and bicyclists in the future. Identifying these areas and patterns helps to identify gaps between roadway users and needs, and how well the street meets these demands.

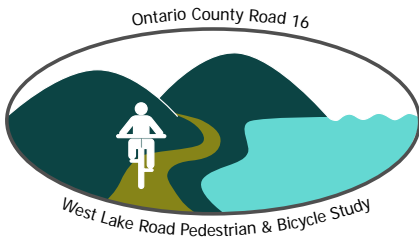
4.12 NEEDS ASSESSMENT

Inventory of existing conditions, input from residents, and discussions with County staff highlighted a number of needs relative to pedestrian and bicycle mobility on CR 16. Many different user groups and travel modes are sharing limited space along a relatively narrow lakeshore corridor.

Local and regional development over recent years has increased the density and diversity of use along the corridor. Proximity to the Canandaigua Lake makes CR 16 especially popular with pedestrians and bicyclists.

Priority pedestrian and bicycle needs identified in this study include:

- Shoulder widths vary considerably along the study corridor, and are less than 5' wide in many locations. 5' is a preferred minimum shoulder width to establish along the corridor.
- Paved shoulder space is heavily used by pedestrians and bicyclists. Standard maintenance practices can be increased to keep shoulder pavement and markings in the best possible condition.
- On-street parking is not regulated along CR 16. Shoulder space is particularly congested in the vicinity of German Brothers Marina.
- Parking in the shoulders reduces sight distances, and forces pedestrians to walk in travel lanes.
- Crosswalks and signing are lacking at some high-demand locations such as Onanda Park and the Canandaigua Yacht Club.
- Vertical alignments of the corridor reduce visibility of bicyclists at hillcrest locations.
- Peak usage of the corridor occurs during summer months, especially on weekends. There is a need for additional traffic law enforcement during peak times.
- Stormwater management along the corridor is problematic during heavy rain events.
- Water quality is a prime concern in the Canandaigua Lake watershed.
- Safety is dependent on cooperation and appropriate behavior of all users groups. There is a need for improved outreach, education, and enforcement related to roadway safety.



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5.0 COMMUNITY INPUT



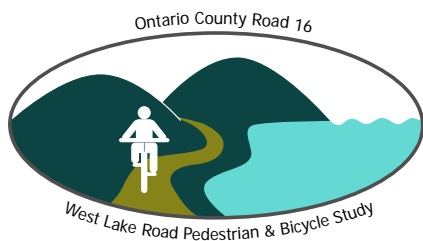
5.1 COMMUNITY INVOLVEMENT

Planning of any kind cannot be done in a vacuum, and must be informed by local residents. New York State has identified principles to guide community planning, which state that planning should be continuous, comprehensive, participatory, and coordinated. Citizen participation is not just a requirement, but a critical element of a successful plan. See **Table 2** for a list of meetings that were a part of this project.

The planning process for this study included outreach to both the general public and key stakeholders. A project advisory committee, comprised of representatives from Ontario County, the Town of Canandaigua and local stakeholders, provided study oversight in addition to public meetings.

Project Advisory Committee Meeting summaries and agendas are provided in **Appendix A**.

Community input meeting materials and information are provided in **Appendix B**.



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5.2 PUBLIC MEETINGS

PROJECT KICK-OFF MEETING

Location - Canandaigua Town Hall

Date - September 20th, 2017

Time - 2:00 PM

COMPILATION OF INPUT

The first Public Input Workshop launched the planning process for the Ontario County Road 16 Pedestrian & Bicycle Study. The team outlined the project scope and schedule, project objectives, and areas of concern. The team also discussed tools for gathering information. Specific study topics suggested include:

- Lower level interventions and pocket improvements
- Upcoming maintenance roadwork
- Potential collaboration with landowners
- Geographic constraints which result in congestion in the right of way, especially in warmer months with excess of parking, significantly near German Brothers Marina, and substandard road conditions
- Popularity of the roadway for pedestrians and bicyclists in Town of Canandaigua
- Flooding and stormwater management
- Issues crossing the street near the Yacht Club
- Topography, which causes safety issues for bicyclists

PROJECT ADVISORY COMMITTEE MEETING #2

Location - Ontario County Road 16

Date - October 12th, 2017

Time - 2:30 PM

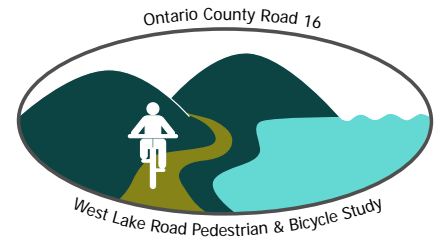
COMPILATION OF COMMITTEE INPUT

The first formal Project Advisory Committee meeting was held to observe existing roadway conditions. Committee members went on a walkabout tour through the project site to gather information for level of service analysis. The team also decided traffic count data was needed to better understand roadway usage.

5.0 COMMUNITY INPUT

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PUBLIC MEETING #1

Location- West Lake School House

Date- January 13th, 2018

Time- 10:00 AM

COMPILATION OF PUBLIC INPUT

The second Public Input Workshop was held to allow the public to review the project area, inventory, analysis of existing conditions.

PROJECT ADVISORY COMMITTEE MEETING #3

Location - Ontario County Department of Public Works Conference Room

Date - May 8th, 2018

Time - 10:00 AM

COMPILATION OF COMMITTEE INPUT

The second formal Project Advisory Committee Meeting was held to assess the study area extents and right of way, discuss increasing public participation through dropbox, advertisement, and survey, and review the existing conditions inventory and needs assessment.

PUBLIC MEETING #2

Location - Onanda Park

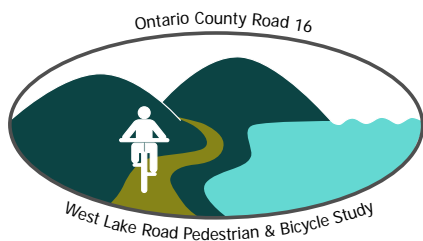
Date - August 8th, 2018

Time - 7:00 PM

COMPILATION OF PUBLIC INPUT

The third Public Input Workshop included a presentation and boards to discuss recommendations in the Ontario County Road 16 Pedestrian & Bicycle Study. General comments included:

- Feasibility of speed limit reduction, or at least Incorporate additional speed recording flashing signs
- Consideration of the size of the roadway for proposed changes



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- Need to discuss crashes in more detail, and look to other sources
- Need to regulate parking in the shoulder
- Request for cost estimates and benefits
- Examination of Ashton Place and northern locations for intersection concerns
- Relation to more projects within the Town of Canandaigua

See **Appendix B** for more information about public meeting input and attendance.

5.3 ONLINE SURVEYS

As part of this study, community members were surveyed to gather information about current pedestrian and cycling patterns along County Road 16, potential road improvements, and current safety issues.

An online survey was active from January 2018 through August 2018. 332 surveys were completed. The survey consisted of 19 questions, completed at an average of 8.5 minutes total, regarding basic demographic information, current bicycle and pedestrian road use, and issues with the existing infrastructure. See **Appendix B** for more information. An independent survey focused on bicycle travelling was also distributed to a local bicycling club.

Survey results show:

81% of the respondents were between 50-79 years old,

81% of respondents reside in the Town of Canandaigua, and

80% of respondents reside within a half mile of Ontario County Road 16.

REPRESENTATIVE SURVEY QUESTIONS:

Q12: DO YOU HAVE PARTICULAR LOCATIONS ALONG ONTARIO COUNTY ROAD 16 THAT YOU LIKE TO BICYCLE OR WALK TO? **ANSWERED: 147**

Responses ranged from:

“Entire length of County Road 16” to “no part of the road is safe”

Most frequently mentioned locations:

Butler Road Park (19)

Canandaigua Yacht Club (18)

Onanda Park (10)

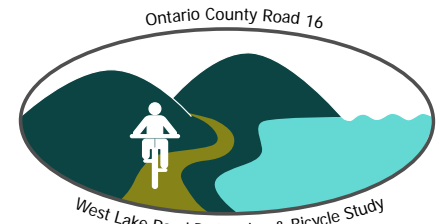
Foster Road (8)

Seneca Point (8)

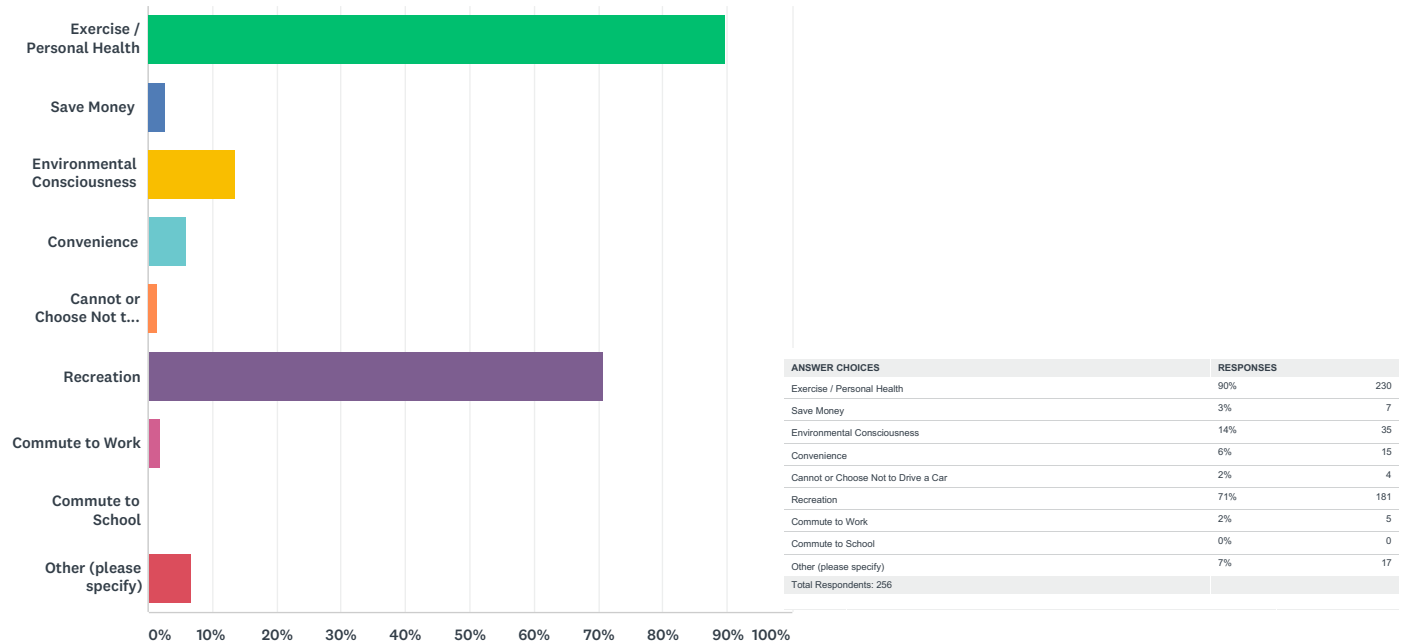
5.0 COMMUNITY INPUT

Ontario County Road 16 Pedestrian & Bicycle Study

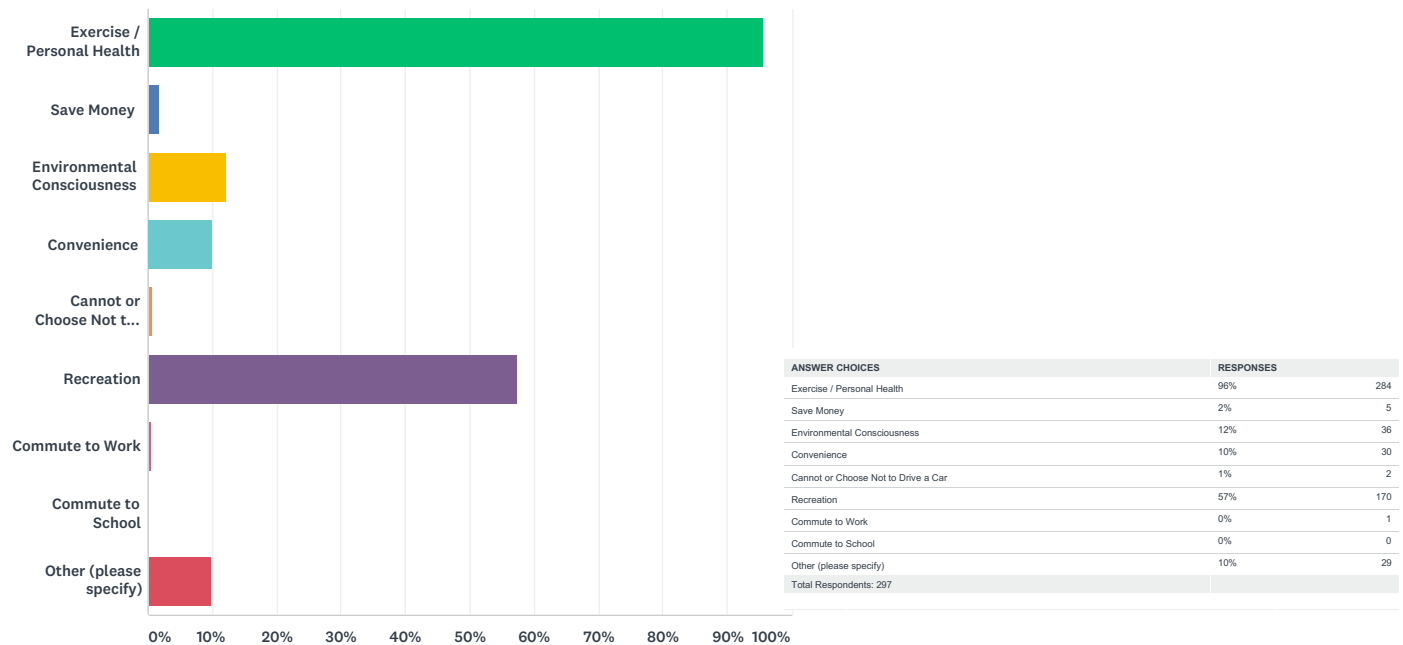
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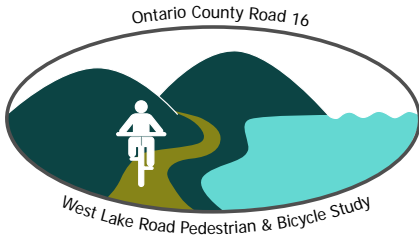


Q13: FOR WHICH OF THE FOLLOWING REASONS DO YOU DECIDE TO RIDE A BICYCLE? (CHOOSE ALL THAT APPLY) **ANSWERED: 256**



Q14: FOR WHICH OF THE FOLLOWING REASONS DO YOU CHOOSE TO WALK (CHOOSE ALL THAT APPLY) **ANSWERED: 297**

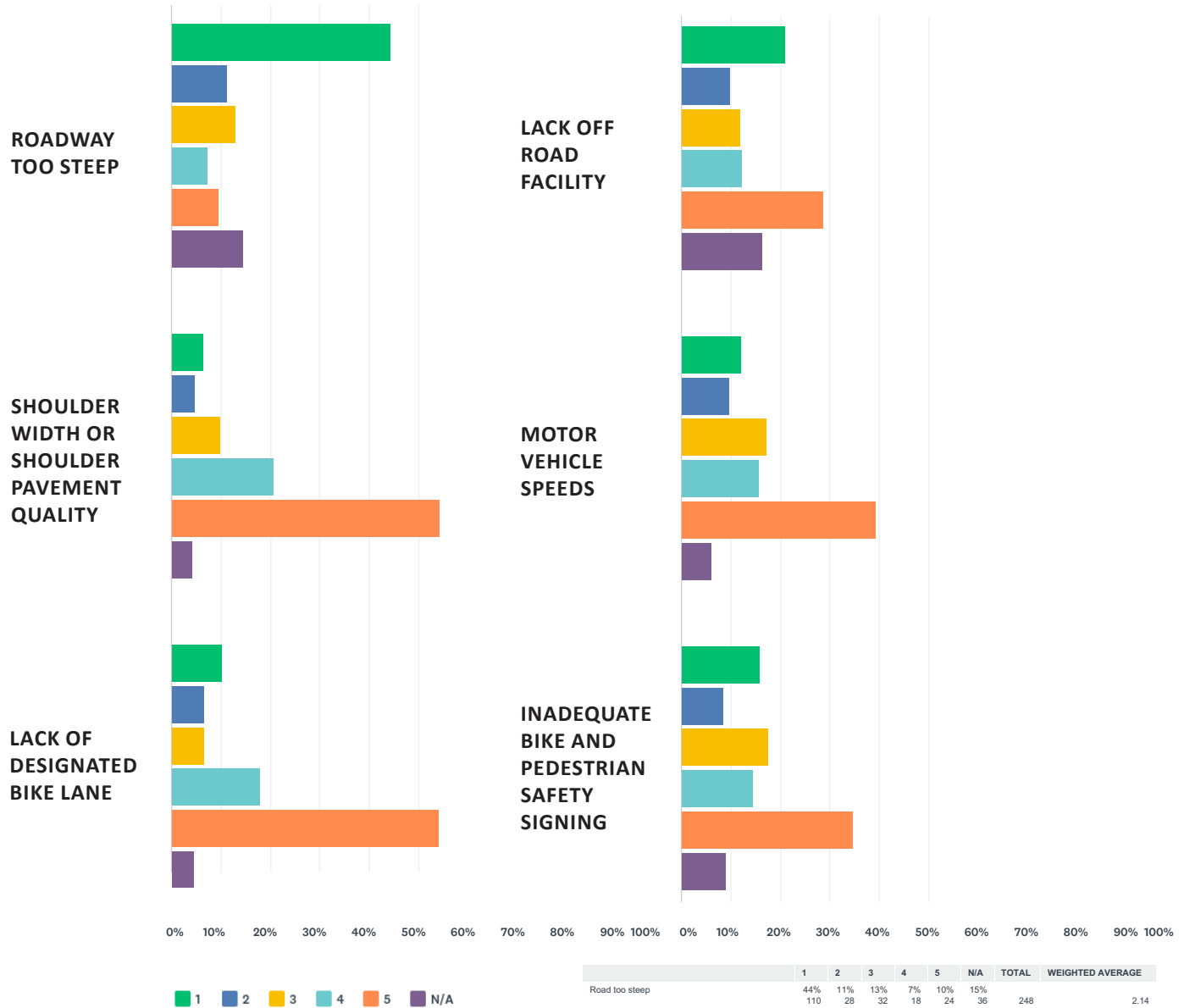




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Q15: WHAT DO YOU CONSIDER TO BE THE PRIMARY BARRIERS TO BICYCLING ON ONTARIO COUNTY ROAD 16? **ANSWERED: 273**



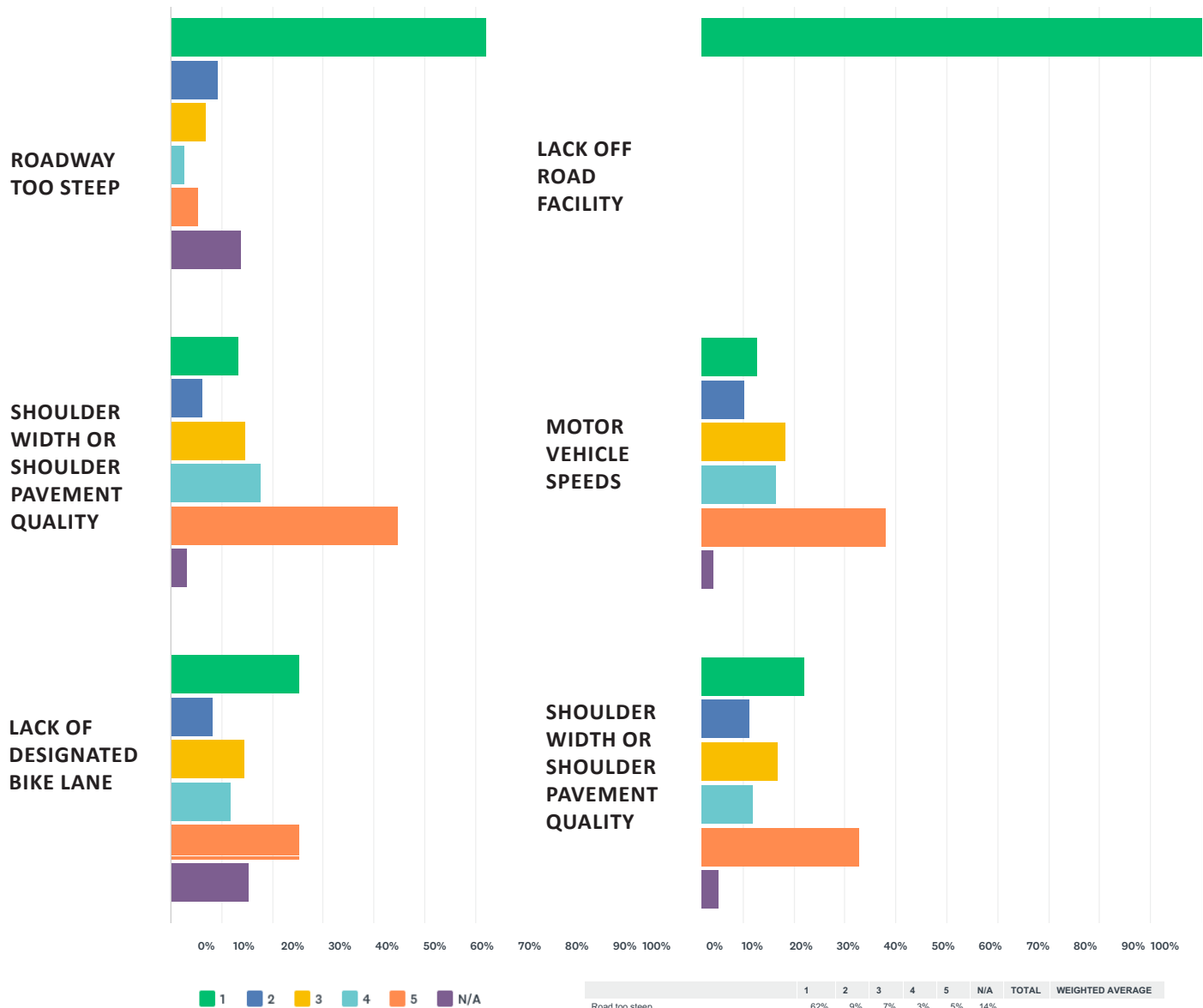
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Road too steep	44% 110	11% 28	13% 32	7% 18	10% 24	15% 36	248	2.14
Shoulder width or shoulder pavement quality	6% 17	5% 13	10% 26	21% 55	54% 144	4% 11	266	4.16
Lack of designated bike lane	10% 28	7% 17	7% 17	18% 46	54% 138	5% 12	256	4.04
Lack of off road facility	21% 51	10% 24	12% 29	12% 30	29% 70	16% 40	244	3.22
Motor vehicle speeds	12% 32	10% 25	17% 45	16% 41	39% 103	6% 16	262	3.64
Inadequate bike and pedestrian / safety signage	16% 41	9% 22	18% 45	14% 37	35% 89	9% 23	257	3.47

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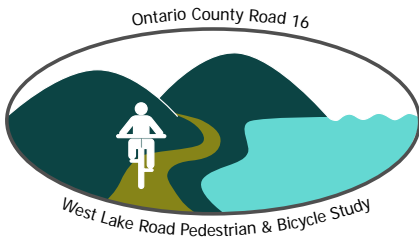
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Q16: WHAT DO YOU CONSIDER TO BE THE PRIMARY BARRIERS TO WALKING ON ONTARIO COUNTY ROAD 16? **ANSWERED: 290**



	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Road too steep	62% 162	9% 24	7% 18	3% 7	5% 14	14% 36	261	1.61
Shoulder width or shoulder pavement quality	13% 38	6% 18	15% 42	18% 51	45% 128	3% 9	286	3.77
Lack of off road facility	25% 65	8% 21	14% 37	12% 30	25% 65	15% 39	257	3.04
Lack of trail	100% 1	0% 0	0% 0	0% 0	0% 0	0% 0	1	1.00
Motor vehicle speeds	13% 36	10% 29	18% 52	17% 47	38% 108	4% 12	284	3.60
Inadequate bike and pedestrian / safety signage	22% 59	11% 30	17% 45	12% 32	33% 88	5% 14	268	3.24



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6.0 RECOMMENDATIONS

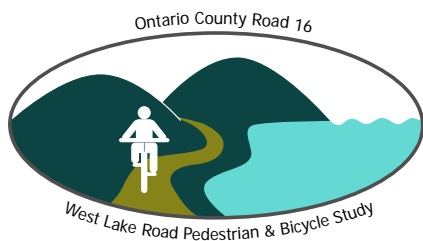


6.1 OVERVIEW

Review and analysis of existing conditions, stakeholder involvement, and extensive public input collectively lead to the development of specific projects that would most improve bicycle and pedestrian accommodations along CR 16 in the Town of Canandaigua.

Project overall recommendations are displayed on the next page. A list of specific recommended improvements and their associated prioritization follows in **Table 4**.

The projects range from those that can be implemented quickly and at very low costs, to those that would be more costly and long-term because of the need for further study prior to design and implementation.



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PRIORITIZATION

Identification of facilities in this Plan increases the likelihood of implementation as opportunities arise. The established prioritization serves as a general guide in phasing implementation, but does not suggest a specific order in which projects will ultimately be constructed. Recommended improvements, regardless of their established priority, may be tied to capital improvement schedules and specific funding opportunities. See **Appendix F** for schematic cost estimates.

Each project varies in priority based on the potential impact of the project and the feasibility of construction and funding. Each project was ranked according to the following prioritization options:



Priority – Highly beneficial projects that are immediately feasible, or will have the most impact and should therefore be addressed first.



Recommended – Beneficial projects that will have a significant impact and should be addressed next.



Possible – Projects that have a less critical time frame, or cannot begin until other projects are completed or issues are addressed.

RECOMMENDATIONS

Numerous alternative improvements were considered. Key recommendations include:

- Frequent maintenance schedule
- Additional signing and stop bars at intersections with steep grades
- Shoulder improvements
- Hillcrest warning systems and additional signing
- West Lake Schoolhouse Park and Beach- Butler Road intersection improvements
- Onanda Park and Canandaigua Yacht Club road crossing improvements

See **Table 4** for recommendations, and **Figure 8** for site improvement locations.

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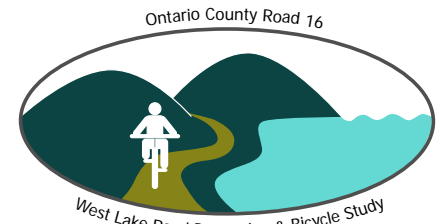


Table 4: Project Prioritization

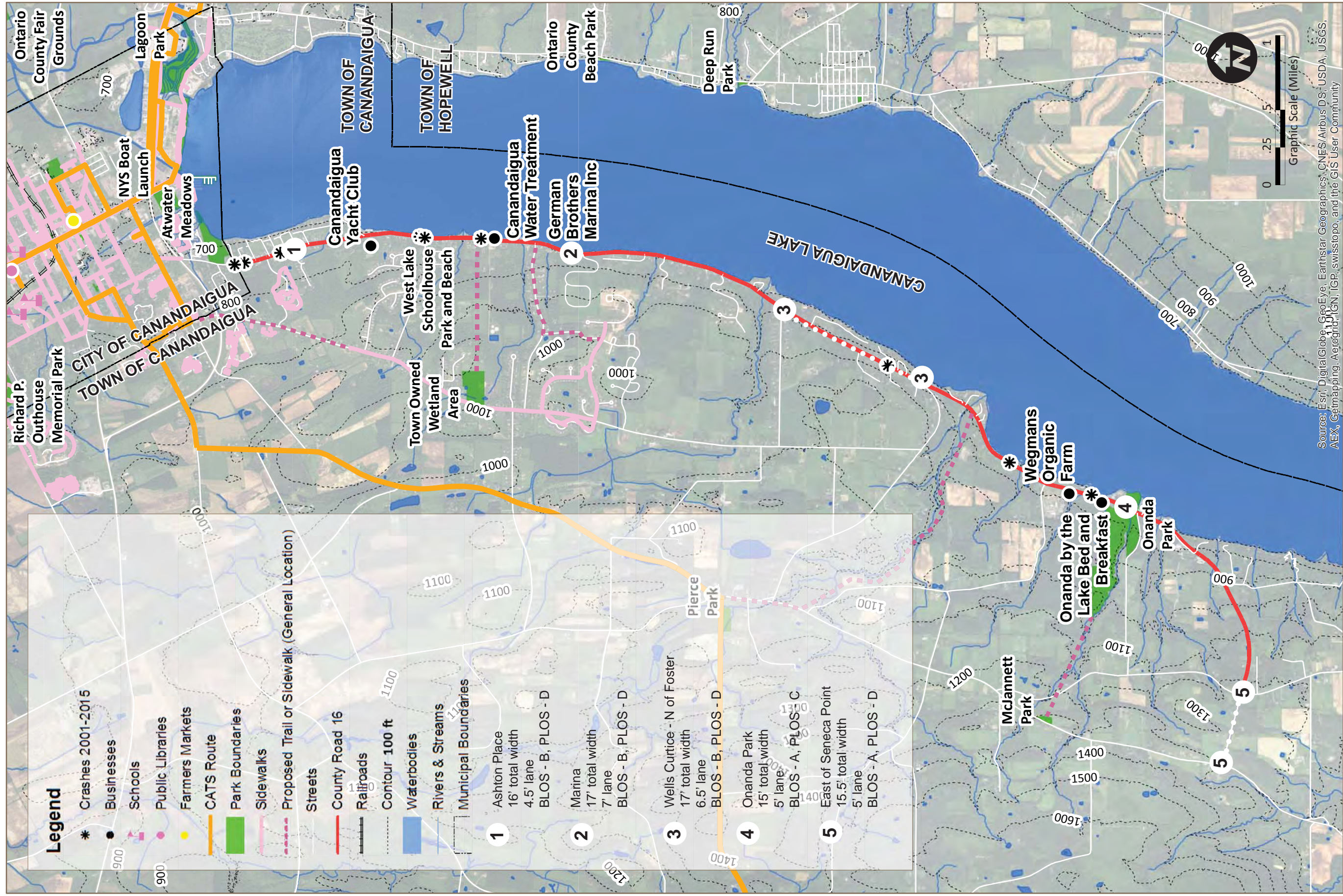
Project Name	Project Description	Priority Level
Increased Maintenance Schedule	Increase frequency of scheduled maintenance to address issues of pavement shoulder erosion, uneven paving, low visibility, and traffic line fading by routinely sweeping pavement, patching surfaces, and cutting back vegetation.	Priority
Multi-Use Paved Shoulder Improvements	Standardize shoulder width at a minimum of 5 feet to allow multi-usage. Selective shoulder widening should be implemented where right-of-way allows.	Priority
Implement Traffic Delineators	Increase use of delineators to separate bicycle and pedestrian facilities in key areas, such as at the German Brothers Marina.	Recommended
Asymmetrical Shoulders	Widen shoulders on ascents and decrease shoulders on descents to improve bicyclist experience, safety, and comfort.	Recommended
Additional Signing	Increase bicycle/pedestrian signing along CR 16. Additional signing and stop bars at intersections with steep grades.	Priority
Hillcrest Warning System & Signing	Implement bicycle detection technology to inform motorists of bicycles at hillcrests where visibility is limited.	Possible
Improve Pedestrian Crossings	Install high visibility crosswalks with pedestrian signing at key locations, including, but not limited to, Canandaigua Yacht Club and Onanda Park. Consider raised crosswalk installation to improve traffic calming.	Priority

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Project Name	Project Description	Priority Level
Speed Reduction	Undertake speed study to determine feasibility of speed limit reduction to 30 mph in areas to improve multi-use transportation and transitional speed zones. Increase adherence through traffic calming techniques.	Possible
Trails on Private Property	Construct trail running parallel to Ontario County Road 16 on private property in key areas with property owner consent.	Possible
Stormwater Management	Employ green infrastructure practices to treat water from culverts along Ontario County Road 16. Coordinate with upcoming Ontario County DPW culvert improvements.	Recommended
Education & Outreach	Connect with local organizations to increase bicycle and pedestrian safety education in Ontario County.	Recommended
Zoning & Design Standards	Adopt language from Genesee Transportation Council Bicycle and Pedestrian Supportive Code. Update standard details relative to bicycle and pedestrian infrastructure.	Possible
Enforcement	Provide traffic law enforcement to ensure safety for all travel modes. Increase enforcement measures during peak use.	Priority

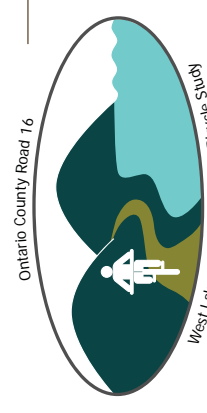


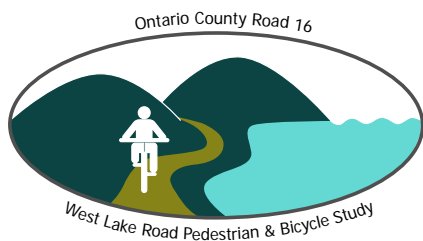
Ontario County Road 16 - West Lake Road Pedestrian & Bicycle Study

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FIGURE 8. PROJECT SITE LOCATIONS

July 19, 2018





Ontario County Road 16 Pedestrian & Bicycle Study

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6.3 FACILITY DESIGN GUIDANCE

The design guidelines contained in this section are intended to support the recommendations presented in this study and to serve as an ongoing reference for CR 16. They reference existing design standards and provide clarification or supplemental information as necessary. They are not intended to be comprehensive design standards. There are six primary sources of bicycle and pedestrian facility design information that were used to develop the guidelines provided in this section.

American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities

— This document presents information on how to accommodate bicycle travel and operations in most riding environments. It is the guidance document upon which most state and local design guidelines are based. In many jurisdictions this document is considered when establishing minimum values for bicycle design.



AASHTO Guide for the Planning, Design, and Operations of Pedestrian Facilities — This document presents information on how to accommodate pedestrian travel and operations in (primarily) roadway environments. It is the design guidance upon which most state and local design guidelines are based. In many jurisdictions this document is considered when establishing minimum values for pedestrian design.

NY Department of Transportation Highway Design Manual Chapter 17 Bicycle Facilities Design — This document provides guidance for bicycle facilities that are included in Department of Transportation designs. Because of the scope of this document, its design criterion, while relevant to local projects, are not required for local projects unless Federal Transportation Funds are involved.

NY Department of Transportation Highway Design Manual Chapter 18 Pedestrian Facilities Design — This document provides guidance for pedestrian facilities that are included in Department of Transportation designs. Because of the scope of this document, its design criterion, while relevant to local projects, are not required for local projects unless Federal Transportation Funds are involved.

Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) — The MUTCD is the national standard for signing, markings, signals, and other traffic control devices. New York State has also adopted a supplement to the MUTCD that provides New York specific standards.

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Federal Highway Administration Separated Bike Lane Planning and Design Guidance - Outlines planning considerations for separated bike lanes (also sometimes called “cycle tracks” or “protected bike lanes”) and provides a menu of design options covering typical one-way and two-way scenarios. To encourage continued development and refinement of techniques, the guide identifies specific data elements to collect before and after implementation to enable future analysis across facilities in different communities. It identifies potential future research, highlights the importance of ongoing peer exchange and capacity building, and emphasizes the need to create holistic ways to evaluate the performance of a separated bike lane.

MULTI-USE PAVED SHOULDERS

In terms of Bicycle Level of Service, designating bike lanes is secondary to simply providing delineated space that can be used by bicyclists. Roads with paved shoulders where no other active transportation facilities exist are shared by more than one type of user (bicyclists, pedestrians, in-line skaters and vehicles for emergency use). Design of new or retrofit of existing paved shoulders should comply with AASHTO standards; “on uncurbed cross sections with no vertical obstructions immediately adjacent to the roadway, paved shoulders be at least 4 feet wide to accommodate bicycle traffic. Shoulder width of 5 feet is recommended from the face of a guardrail, curb, or other roadside barrier to provide additional operating width...” Areas with expected higher bicycle use should have increased shoulder widths as necessary in addition to areas where motor vehicle speeds exceed 50 mph or are used by trucks and buses.

SIGNING ROADWAYS WITH PAVED SHOULDERS

Ontario County may wish to sign CR 16 to either guide bicyclists to a destination or to alert motorists to the presence of bicyclists. The sign would be supplemental to simply providing space for bicyclists within the shoulder. If the subject roadway is along a designated bicycle route, then bike route guidance signs can be used to alert bicyclists to the presence of the interregional or state route.

If the County, or others based on the jurisdiction of the road, determines it is appropriate to warn motorists of the potential presence of bicyclists along a section of roadway with paved shoulders, then special signing, if approved by NYSDOT, would be required. The Bicycle Warning sign (W11-1) alone could be used as its function is to alert road users to locations where unexpected entries into the roadway by bicyclists could be expected.

The NYSDOT MUTCD section 1A.03 Design of Traffic Control Devices states:

Option 03A: Highway agencies may develop word message signs to notify road users of special regulations or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, new word message signs may be used without the need for experimentation.

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Standard 03B: Any change to a word message sign that can be considered more than a minor modification (see next Option) shall be approved by the New York State Department of Transportation before it is implemented.

Option 03C: With the exception of symbols and colors, minor modifications in the specific design elements of a device may be made provided the essential appearance characteristics are preserved. Such minor revisions may include making a word plural or singular; changing the hours listed on a sign; word deviations such as “road” for “street” on a sign; etc. Although the standard design of symbol signs cannot be modified, it may be appropriate to change the orientation of the symbol to better reflect the direction of travel.

SHARED LANE MARKINGS

Traffic lanes are often too narrow to be shared side by side by bicyclists and passing motorists. Where parking is present, bicyclists wishing to stay out of the way of motorists often ride too close to parked cars and risk being struck by a suddenly opened car door (being “doored”). Where no parking is present bicyclists wishing to stay out of the way of motorists often ride too close to the roadway edge, where they run the risks of:

- being run off the road;
- being clipped by motorists who do not see them off to the side or misjudge passing clearance; or
- encountering drainage structures, poor pavement, debris, and other hazards.



Shared lane marking in travel lane.

Riding further to the left avoids these problems, and is legally permitted where needed for safety (Consolidated Laws of New York, Vehicles and Traffic, § 1234 (a)). However, this practice can run counter to motorist expectations. A Shared Lane Marking (SLM) is a pavement symbol that indicates it is legal and appropriate for bicyclists to ride away from the right hand edge of the roadway, and cues motorists to pass with sufficient clearance.

Research suggests that SLMs:

- alert motorists to the lateral location bicyclists are likely to occupy within the traveled way;
- encourage safe passing of bicyclists by motorists;
- assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane;
- reduce the incidence of wrong-way bicycling; and

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- where on-street parking exists, assist bicyclists with lateral positioning in a shared lane with on-street parallel parking to reduce the chances of a bicyclist impacting the open door of a parked vehicle.

SLMs are not to be used on shoulders or in designated bike lanes. MUTCD guidance suggests SLMs not be placed on roadways that have a speed limit above 35 mph. While this does not preclude the use of SLMs on higher speed roadways, no research is available as yet to suggest how effective they may be on such roadways.

SLMs encourage good lane positioning by bicyclists, and discourage them from riding too close to the pavement edge, curb, or parked cars. Riding away from the road edge allows bicyclists to avoid road edge hazards like drainage structures, poor pavement, and debris. It also places the bicyclist more directly in the motorist's field of vision which, along with proper SLM treatments, encourages the safe passing of bicyclists by motorists.

Consequently, on roadways with on-street parking, the MUTCD requires that SLMs be placed with the centers of the markings at least 11 feet from the face of curb. On other roadways, the centers of the markings are required to be placed at least four feet from the edge of pavement. On December 9, 2013, the New York State Department of Transportation's Office of Traffic Safety & Mobility approved a Shared Lane Marking (SLM) Policy (TSMI 13-07) which requires SLMs to be placed in the middle of the travel lane. According to the NYSDOT policy:

- SLMs should only be used to indicate the presence of a narrow lane; a narrow lane is a lane that is less than 14' wide... In a narrow lane, motorists and bicyclists must travel one after the other rather than side by side, and a motorist must leave the lane to safely pass the bicyclist;
- SLMs are sometimes used at the ends of bike lanes or shoulders to inform motorists that bicyclists no longer have a separate space and will be sharing the main travel lane; and
- SLMs should be installed strategically and judiciously to ensure that their value is not reduced by overuse. When used, SLMs should be placed after each intersection and then periodically on spacings not exceeding 250 feet between markings.

The previously referenced NYSDOT Shared Lane Marking (SLM) Policy includes a Narrow Lane sign assembly. It is a Bicycle Warning sign (W11-1) and an "In Lane" plaque (NYW5-32P). When used, the Narrow Lane assembly should be placed with the first SLM, then repeated as deemed appropriate within the section. It is neither necessary nor desirable to supplement every SLM with a sign assembly.



"In Lane" plaque (NYW5-32P).

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SIDEWALKS

For the purposes of design, the term sidewalk means a smooth, paved, stable and slip-resistant exterior pathway intended for pedestrian use along a vehicular way.

All sidewalks constructed within the Town of Canandaigua must be compliant with the Americans with Disabilities Act Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (July 26, 2001) or most recent ADA standards for public rights of way. Sidewalks should be provided on both sides of all public roadways.

SIDEWALK SLOPES

ADA requires a maximum sidewalk cross-slope of 2%. New York State Department of Transportation (NYSDOT) prefers a maximum cross-slope of 1.5% to allow for construction tolerances. This maximum cross slope must be maintained across driveways and crosswalks. Sidewalks may follow the grade of the adjacent roadway. However, on new roadways the grade of the sidewalk cannot exceed 5%. If a grade of more than 5% is required on a new roadway, an ADA compliant ramp must be provided.

CURB RAMPS

A curb ramp is a ramp that cuts through or is built up to the curb. A blended transition is a relatively flat area where a sidewalk meets a roadway. Curb ramps and blended transitions are primarily used where a sidewalk meets a roadway or driveway at a pedestrian crossing location. Blended transitions include raised pedestrian street crossings, depressed corners, or similar connections between pedestrian access routes at the level of the sidewalk and the level of the pedestrian street crossing that have a grade of 5% or less.

Accessibility requirements for blended transitions serve two primary functions. First, they must alert pedestrians that have vision impairments to the fact that they are entering, or exiting, the vehicular area. Second, they must provide an accessible route for those using wheelchairs or other assistive devices. Ideally, a separate ramp should be provided for each crossing of the roadway.

Whichever is chosen, the standard must be applied in its entirety – no mixing and matching of standards is allowed. This is most important in terms of ramps. The 2010 ADA standards do not provide an exception allowing the running slope to follow the grade of an existing roadway.

PEDESTRIAN APPROACH (SIDEWALK/CURB LINE)

The pedestrian approach is the area near the crossing where pedestrians wait on the side of the roadway and away from traffic until they are able to cross.

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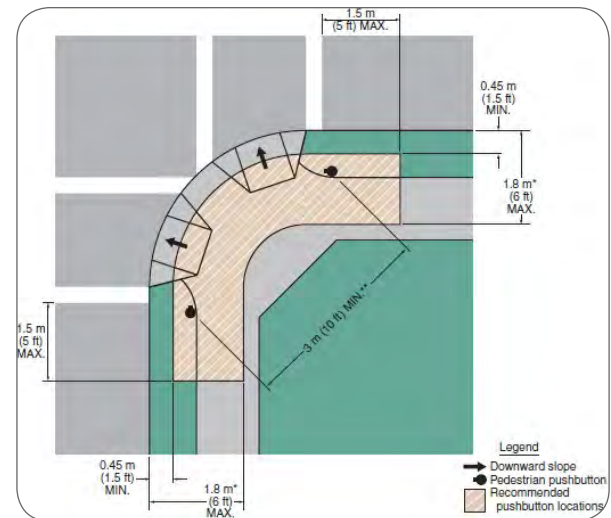
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It is often part of the sidewalk, if the sidewalk is adjacent to the curb line, or an extension or spur of the sidewalk that provides a path from the sidewalk to the crossing, if the sidewalk is not immediately adjacent to the curb. The pedestrian approach design should accomplish the following:

- Encourage pedestrians to cross at the marked crossing. The approach design should discourage pedestrians from crossing away from the marked crossing to the extent possible. The path to the crossing should be as direct and easy to navigate as possible.
- Keep pedestrians visible to approaching drivers and oncoming vehicles visible to pedestrians. On-street parking should be restricted near the crossing so that parked vehicles do not limit sight lines.
- In areas with high volumes of pedestrians, there should be sufficient space for pedestrians to queue as they wait for an appropriate time to cross. Pedestrian storage should be designed to prevent crowds of pedestrians from spilling onto the roadway. Midblock curb extensions are a common and effective treatment at midblock locations and have many benefits.



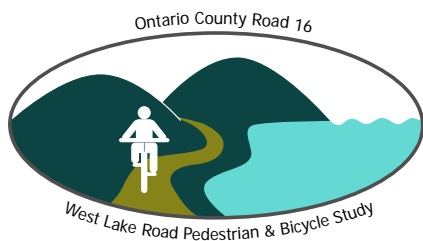
Curb ramp diagram. Source: MUTCD, Figure 4E-2.

MOTORIST APPROACH

Care should be taken to avoid locations where horizontal or vertical alignment of the roadway limit drivers' sight distance, view of the pedestrian approach to the crossing, or view of the crossing itself.

Consideration should be given to how trees, shrubs, poles, signs, and other objects along the roadside might limit a driver's view of the crossing. On-street parking should be prohibited near the crossing using either signs and markings or physical barriers such as a curb extension, since a pedestrian who steps out into the road between parked cars can be blocked from the view of oncoming drivers.

Signing and markings on and along the motor vehicle approach to a midblock crossing should be designed in such a way as to make drivers aware of the crossing in time to notice and react to the presence of a pedestrian, and to enhance the visibility of the crossing. Advanced warning signs should indicate any special traffic control used at the pedestrian crossing. Refer to the **AASHTO Guide for the Development of Bicycle Facilities** for examples of midblock control treatments for shared use paths.



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Traffic calming devices and other measures to prevent high vehicle speeds should be considered along routes with midblock pedestrian crossings. More than 80% of pedestrians die when struck by vehicles traveling at greater than 40 mph versus less than 10% when cars are traveling at 20 mph or slower. In addition, vehicles traveling at lower speeds require less distance to come to a complete stop when braking.

6.4 FREQUENT MAINTENANCE SCHEDULE

Facility improvements do not end at construction. Ongoing maintenance can provide significant benefits for bicyclists and pedestrians at relatively modest additional cost. Identification of maintenance needs and institutionalization of maintenance practices for active transportation facilities are key elements for providing safe bicycle and pedestrian facilities.

Paved shoulders protect the interior roadway, but may degrade more quickly than interior pavement. Bicyclists and pedestrians often use the shoulder to avoid traffic, but this can place them on particularly uneven surfaces. This leads to difficulty in navigation, especially for individuals using wheelchairs or strollers. Roadside debris can exacerbate these issues, forcing bicyclists to ride erratically, moving on and off the shoulder in an unpredictable manner.

In addition to pavement quality, lane markings are key for safe travel along multiple use roadways. West Lake Road experiences heavy summer traffic, and harsh winters that affect the durability of these markings, causing them to fade. This is a safety concern especially along low visibility turns with side parking and multiple users.

Maintaining a road surface for shared use by motorists, bicyclists and pedestrians requires a slightly different approach than maintaining a road surface for motorists alone. Careful planning and budgeting must meet higher demands to ensure signs, pavement markings, and shared-use paths are in good condition, and adequate sight distance is continuously maintained.

To meet these expectations, is important to obtain outside funding for the original facilities construction than for on-going maintenance, and engage residents and businesses to help with clean-up and snow removal. Starting correctly at the outset will reduce the need for future maintenance solutions and expense.

"[Bi]cyclists tend to be particularly sensitive to maintenance problems. Many bicycles lack suspension systems, and as a result, potholes that motorists would hardly notice can cause serious problems for bicyclists."

"Since bicyclists often ride near the right edge of the road... they use areas that are generally less well maintained than the main traffic lanes. On roads with higher vehicle speeds, air from passing vehicle traffic typically sweeps debris to the right where most bicyclists travel."

- Federal Highway Administration

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The following are key maintenance measures for increasing bicycle and pedestrian safety.

- Paying special attention to roadway edges when sweeping pavement, especially presence of debris, and sweeping pavement more regularly.
- Patching surfaces, including shoulders, as smoothly as possible and in an expeditious manner.
- Overseeing pavement overlay projects to ensure they do not result in linear joints.
- Replacing hazards such as dangerous grate or utility covers as the opportunity arises.
- Routinely cutting back encroaching vegetation.
- Re-painting road lane markings regularly to reduce fading.

6.5 MULTI-USE PAVED SHOULDER IMPROVEMENTS

Ontario County Road 16 has existing paved shoulders. These shoulders vary in width from 2.5 to 7 feet, while drive lane widths vary from 10 to 11.5 feet.

According to the ***American Association of State Highway and Transportation Officials (AASHTO)***, “on uncurbed cross sections with no vertical obstructions immediately adjacent to the roadway, paved shoulders should be at least 4 ft wide to accommodate bicycle traffic... Shoulder width of 5 feet is recommended from the face of a guardrail, curb, or other roadside barrier to provide additional operating width.” Shoulder width of 5 ft wide is recommended as a minimum along CR 16 because it is the minimum value for a standard bike lane width.

CR 16 meets these criteria for increasing shoulder widths above 4 feet. Steep topography on both sides of the road presents a roadside barrier that has often been addressed with sections of guiderail, and the road is frequently used by bicycles and trucks.

Restriping to establish consistent 10 foot traffic lanes would result in a standard, expected lane size, and reduction of lane width that would increase shoulder width to 5-7 feet throughout the study area. The reduction in width would also have traffic calming benefits and help control vehicle speeds. See **Section 6.11 Speed Limit Reduction** for additional information.

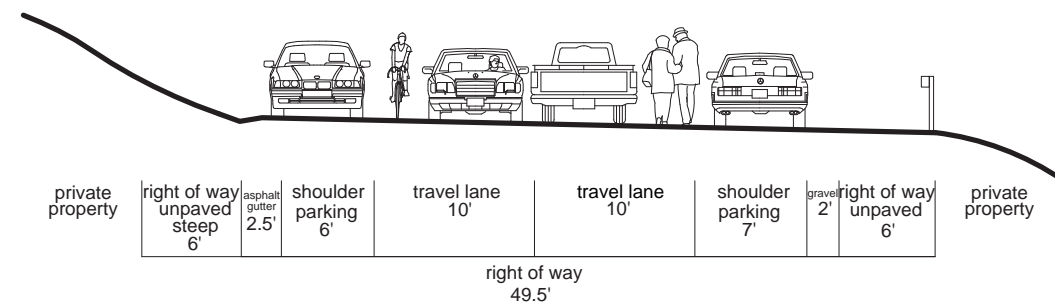
German Brothers Marina, just south of Wyffels Road, is an established local business and important destination along CR 16. Roadside parking is not restricted on CR 16 and cars and boat trailers are frequently parked in both shoulders around the marina. When the shoulder space is occupied, pedestrians and bicyclists are forced into the travel lanes. Sight distances are reduced by parked vehicles. Peak season for the marina coincides with peak season for walking and biking, which increases the potential for conflicts. The shoulder space is limited, and there is high demand by multiple user groups.

Re-allocation of the existing right of way space presents opportunities for shared use of the roadway in the congested segment around the Marina.

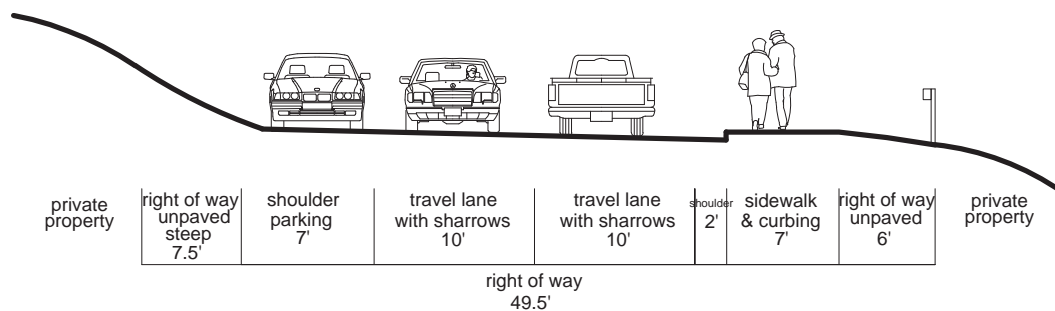
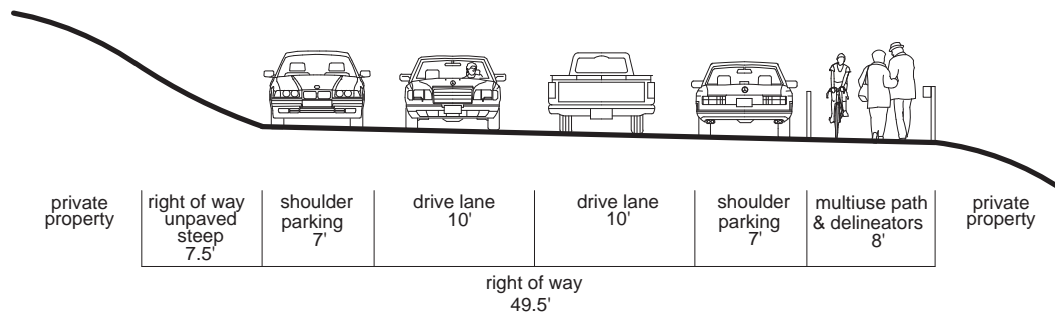
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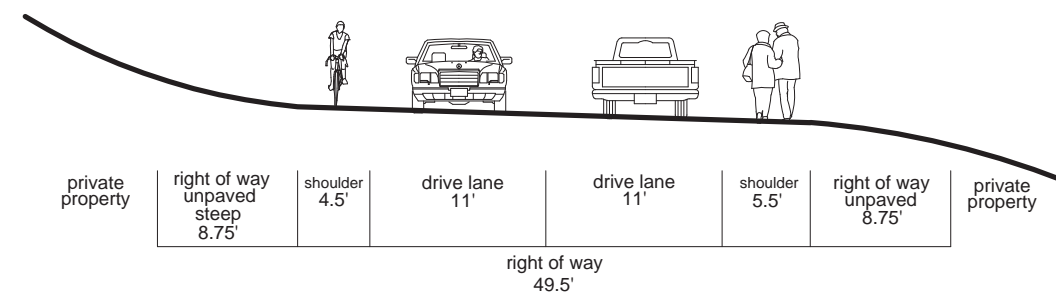
MARINA
existing conditions



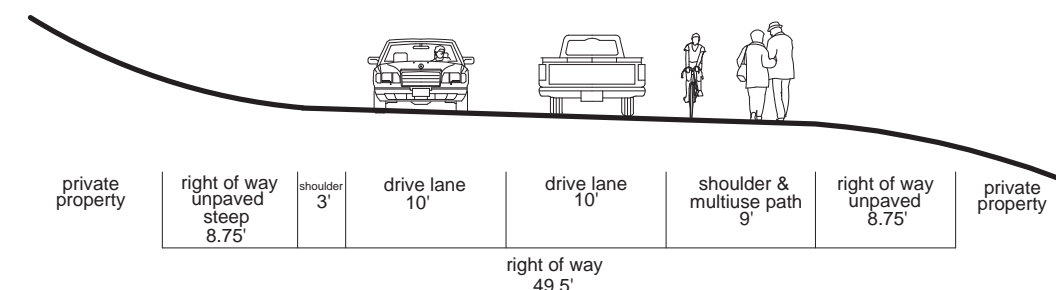
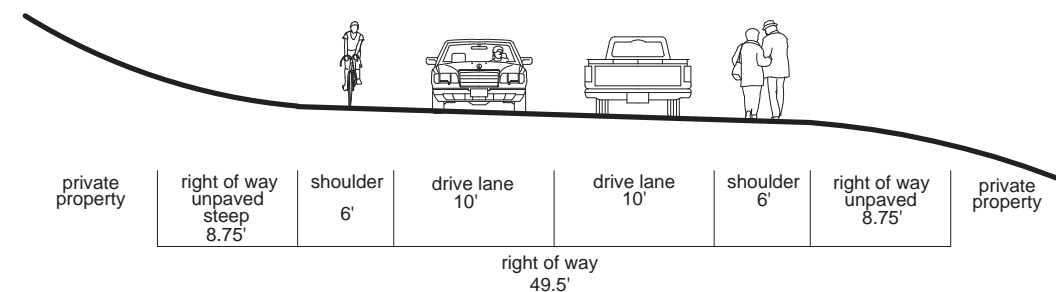
alternatives



ONANDA PARK
existing conditions



alternatives



ONTARIO COUNTY ROAD 16 PEDESTRIAN & BICYCLE ACCOMMODATION FEASIBILITY STUDY

FIGURE 9.
SHOULDER ALTERNATIVES

Existing Road Details

County Road

Posted Speed= 35mph

Average Speed= 38mph

Functional Class: Rural Minor Collector

ADT= 3,400 +/-

Standard Lane Width= 10'

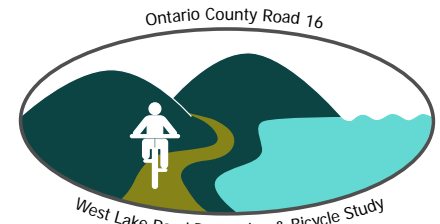
Required Standard Shoulder Width= 2'; 4'
with barrier, 5' if high bike demand

NOT TO SCALE



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The shoulders in this area are relatively wide, approximately 7 feet, with an additional 3 feet of space on the west side of the road between the shoulder and the guardrail. If this 3 foot area were paved it would be possible to create a 5 feet bicycle and pedestrian area along the lake front, while still providing 5 feet for parking on either side of the road for the marina.

While not ideal for bicyclists, this would provide a well defined space for pedestrians. By installing curbing, encroachment into the pedestrian space by parking motorists would be better controlled. Some casual bicyclists may choose to use this sidewalk; while this would not be encouraged, it would allow for that cohort to have a more comfortable space to operate. This space could be separated from the parking area with delineators, a change in pavement type, and curbing of the sidewalk to further assert pedestrian priority.



Seasonal delineators in the City of Rochester.

See **Figure 9** for Multi-use Paved Shoulder Improvements.

6.6 ASYMMETRICAL SHOULDERS

Bicycles tend to meander when traveling up steep slopes and to travel straight while descending.

Because of the additional effort required for cyclists to climb hills, they typically have a greater sweep width (side to side movement) when climbing under stress than when riding casually on a relatively flat roadway. On severe grades some bicyclists may resort to walking their bikes up hill.

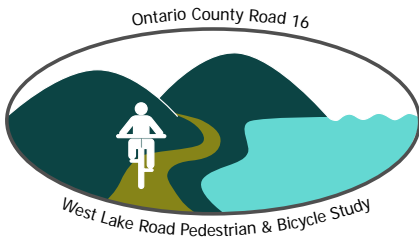
Both of these conditions, in addition to increasing sweep width, also significantly increase the speed differential between the climbing bicyclists and overtaking motorists. Widened bike lanes can significantly improve the safety and comfort of those bicyclists using the shoulder on an uphill grade.

Bicyclists travelling downhill on steep grades also benefit from having more space. However, for downhill cyclists, removal of the bike lane and use of shared lane markings can provide a better facility than marginally widened bike lanes.

As their speed increases, bicyclists benefit from being able to ride further from the edge of the roadway and being able to use the entirety of the travel lane to avoid debris and pavement irregularities. The fact that they gain speed travelling downhill decreases the speed differential between the bicyclists and the overtaking motorists.

For the above reasons, asymmetrical shoulders, narrowing on the downhill side of a roadway and using the gained space to widen the shoulders on the uphill side, can be an effective method for providing improved bicycling conditions in hilly terrain. As a standard, shoulders should be a minimum of 4' wide even on the narrower shoulder to accommodate pedestrians, as well.

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This would be implemented by restriping the pavement to create wider shoulders for ascents and narrower shoulders for descents to encourage bicyclists to remain separate from motorists in the shoulder. Asymmetrical shoulders would also provide some traffic calming by making the route more curvilinear for motorists.

6.7 ADDITIONAL SIGNING

Additional signing along CR 16 could guide bicyclists and pedestrians to destinations and alert motorists to the presence of pedestrians and bicyclists. The signing would be supplemental to simply providing space for pedestrians and bicyclists within the shoulder.

COMBINED BICYCLE/PEDESTRIAN SIGNING

If the County determines it is appropriate to warn motorists of the potential presence of pedestrians and bicyclists along CR 16, then special signing, if approved by NYSDOT, would be required. The Combined Bicycle/Pedestrian sign (W11-15) alone could be used as it is to alert road users to locations where unexpected entries into the roadway by pedestrians and bicyclists could be expected.

ADDITIONAL INTERSECTION SIGNING

Where adjacent roads have steep slopes, additional signing could alert bicyclists of oncoming intersections and alert motorists of bicyclists. This would give both motorists and cyclists a reminder to slow down in time to safely navigate intersections. Stop bars on side streets at intersections with County Road 16 would provide an additional safety cue and increase intersection safety.

REGULATIONS

The **NYSDOT MUTCD section 1A.03 Design of Traffic Control Devices** states:

Option 03A Highway agencies may develop word message signs to notify road users of special regulations or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, new word message signs may be used without the need for experimentation.

Standard 03B Any change to a word message sign that can be considered more than a minor modification (see Option 03C) shall be approved by the New York State Department of Transportation before it is implemented.



Combined Bicycle/
Pedestrian sign (W11-
15).

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Option 03C With the exception of symbols and colors, minor modifications in the specific design elements of a device may be made provided the essential appearance characteristics are preserved. Such minor revisions may include making a word plural or singular; changing the hours listed on a sign; word deviations such as “road” for “street” on a sign; etc.

Although the standard design of symbol signs cannot be modified, it may be appropriate to change the orientation of the symbol to better reflect the direction of travel.

DYNAMIC SPEED DISPLAY SIGNS (DSDS)

Dynamic speed display signs have also been recognized as an effective traffic calming measure, with reductions of up to 9 miles per hour. These devices detect and display a vehicle’s speed back to the driver. Some models of DSDS have the ability to record and store speed data for future analysis. In order to maximize effectiveness, these signs must be temporary, and frequently moved to be as drivers become familiar with their appearance along the roadway. (Evaluation of Dynamic Speed Display Signs (DSDS), 2003).

6.8 HILLCREST WARNING SYSTEMS AND SIGNAGE

Visibility can be limited by topography changes on steep roads. A motorist climbing a hill may be unaware of pedestrians ascending from the other side. Innovative technologies can detect bicycles or pedestrians and warn motorists with a signal. This would increase motorist vigilance and lessen the risk of crashes.

Hillcrest warning systems involve placing a detector prior to the crest of a vertical curve. This detector can be a push button (for pedestrians) or a loop (for bicyclists). When the non-motorized user is detected, a supplemental flasher mounted on a bike or pedestrian warning sign is activated. The duration of the flasher is dependent upon local conditions and is calculated based upon prevailing motorist and unmotorized speeds.

Implementation of these devices will improve coordination between users while approaching crests, and become a traffic calming device to improve safety for all users along the roadway.



Signage and detector.

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6.9 ROAD CROSSING IMPROVEMENTS

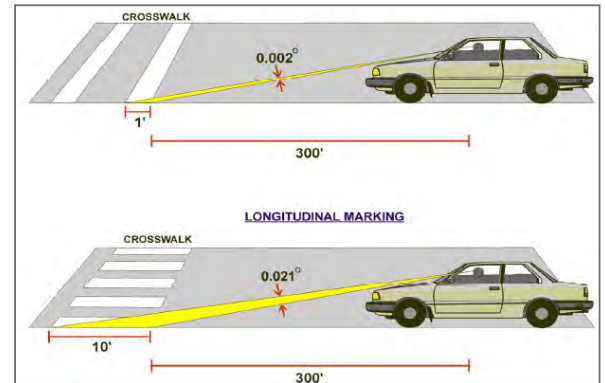
Crosswalks encourage pedestrians to cross the road in a safe and predictable manner, while alerting motorists to possible pedestrians. However, on a roadway with several blind curves, variation in topography, and tendency to speed, high visibility crosswalks are necessary to ensure maximum warning for vehicles and bicyclists that pedestrians are crossing ahead.

High visibility crosswalks should be implemented in areas where pedestrian crossing is likely. These are predominantly areas where related facilities are on both sides of Ontario County Road 16, including businesses and recreational facilities.

Possible sites for additional road crossing improvements include Onanda Park, Canandaigua Yacht Club, and German Brothers Marina. Improvements at these locations could include traffic calming measures, pedestrian crossing warning signage, and high visibility crosswalks.

An even more robust solution would be to create a higher visibility crosswalk roadway system is to implement raised crosswalks at regular intervals. These crosswalks are most effective in a series because drivers will have an expectation of these features on the roadway and become accustomed to how to approach these crossings around the lake. Raised crosswalks also promote traffic calming, as vehicles and bicyclists will slow in approaching and passing over them.

See **Figures 10 and 11** for Canandaigua Yacht Club Crossing and Onanda Park Road Improvements.



Umbs, R. (2010) Enhanced visibility crossings.



Raised intersection at Rochester Institute of Technology.

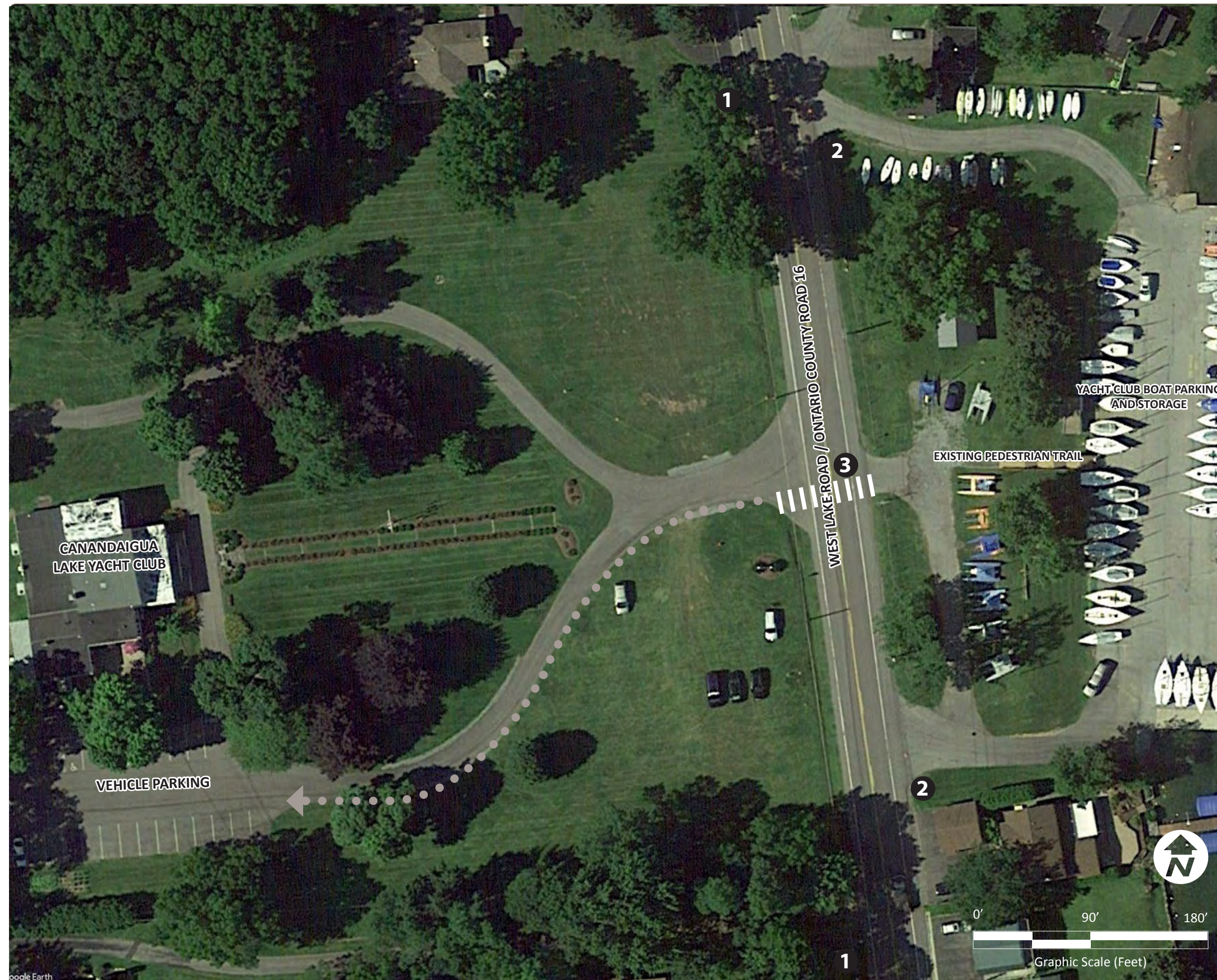
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FIGURE 10.
YACHT CLUB
PEDESTRIAN CROSSING

PEDESTRIAN & BICYCLE IMPROVEMENTS

- 1 TRAFFIC CALMING**
Traffic calming measures to discourage speeding in proximity of the Yacht Club.
- 2 YACHT CLUB AHEAD & PEDESTRIAN CROSSING AHEAD SIGNAGE**
Advance Yacht Club signing provides wayfinding and alerts motorists of oncoming intersection.
Advance notification of pedestrian intersection alerts motorists and increases pedestrian safety.
- 3 PEDESTRIAN CROSSWALK IMPROVEMENTS**
High visibility striping, a raised speed table, or a pavement treatment would increase motorist awareness of the pedestrian intersection.
A pavement treatment would have additional traffic calming benefits.
Landing areas on either side of crosswalk improve crossing safety.

Vertical reflective strips on all signage increase sign visibility.



ONTARIO COUNTY ROAD 16
PEDESTRIAN & BICYCLE ACCOMMODATION
FEASIBILITY STUDY

FIGURE 11.
**ONANDA PARK
PEDESTRIAN CROSSING**

**PEDESTRIAN & BICYCLE
IMPROVEMENTS**

- 1 TRAFFIC CALMING**
Traffic calming measures to discourage speeding in proximity of Onanda Park.
- 2 ONANDA PARK ENTRANCE AHEAD & PEDESTRIAN CROSSING AHEAD SIGNAGE**
Advance park entrance signing provides wayfinding and alerts motorists of oncoming intersection.
Advance notification of pedestrian intersection alerts motorists and increases pedestrian safety.
- 3 PEDESTRIAN CROSSWALK IMPROVEMENTS**
High visibility striping or a pavement treatment would increase motorist awareness of the pedestrian intersection.
A pavement treatment would have additional traffic calming benefits.
Landing areas on either side of crosswalk improve crossing safety.

Vertical reflective strips on all signage increase sign visibility.



Ontario County Road 16 Pedestrian & Bicycle Study

Department of Public Works - Ontario County, NY



6.10 INTERSECTION RECOMMENDATIONS

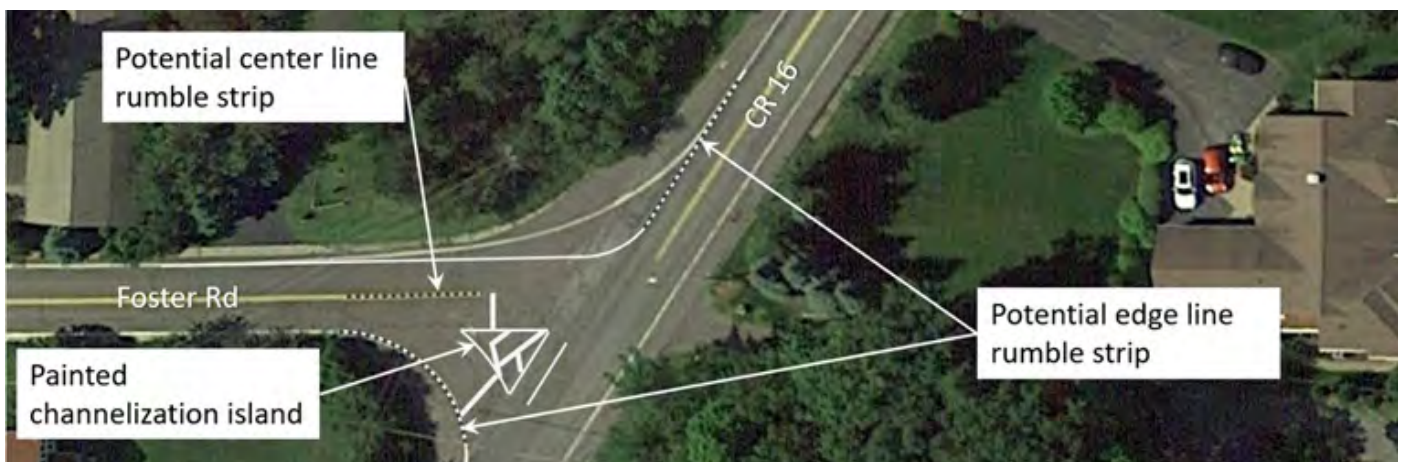
INTRODUCTION

As part of this study, four specific intersections were identified for detailed review:

- CR 16 at Foster Road
- CR 16 at Seneca Point Road
- CR 16 at Wells Curtice Road
- CR 16 and Butler Road

CR 16 AT FOSTER ROAD

- The current southbound to westbound radius is quite large. Consider reducing the radius.
- The eastbound to southbound radius is also large but serves an acute angle and likely provides turning space for motor vehicles with trailers. This radius creates a significant undefined space within the intersection. Consider striping a right turn channelization island at this location.
- To encourage motorists to use their assigned spaces, consider under-stripe rumble strips for the southbound edge line approach, the southwest corner, and the median.
- Add a STOP line for the eastbound approach.
- If bike lanes can be designated along this corridor, consider dashing the bike lanes across this intersection and enhancing with green paint.



6.0 RECOMMENDATIONS

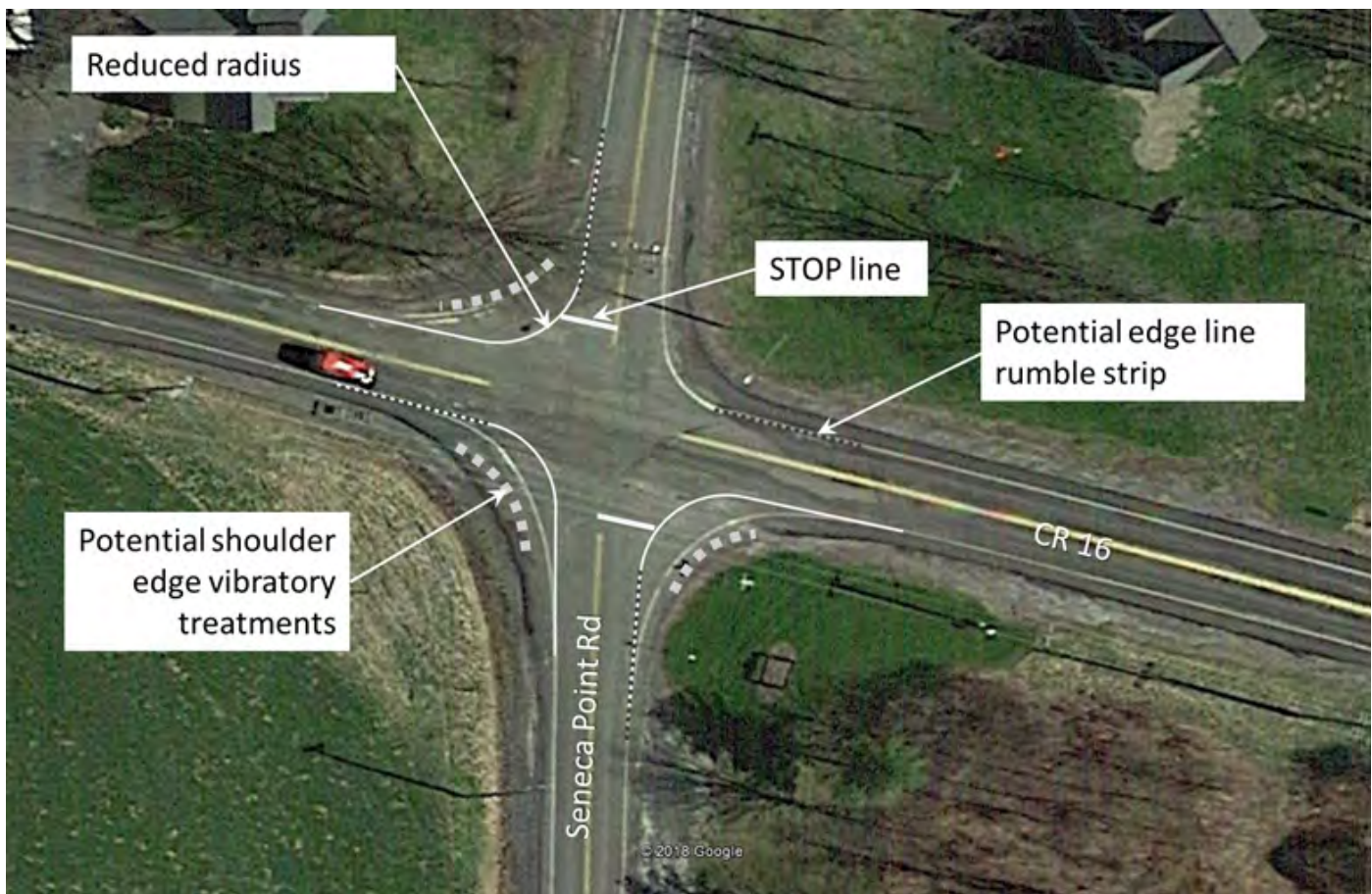


Ontario County Road 16 Pedestrian & Bicycle Study

Department of Public Works - Ontario County, NY

CR 16 AT SENECA POINT ROAD

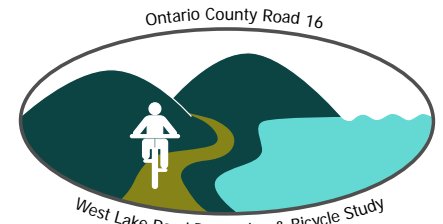
- The northeast corner of this intersection has a striped radius of approximately 30 ft. Consideration should be given to reducing the other three radii to a similar size.
- There appears to be some erosion at the existing pavement radii edges on the larger radii. This suggests attempting to accommodate higher speed turns to prevent shoulder damage is not effective at this location. A vibratory treatment, such as edge line rumble strips, could be used to better channelize motorists. However, a gap in the rumble strips to allow for through cyclists to traverse the intersection without having to negotiate the rumble strips should be provided. This could be accomplished by placing the rumble strips up to the radius point of curvature on each approach. Alternatively, rumble strips near the shoulder edge could be provided to discourage driving too close to the edge of the shoulder. Such a treatment should allow for 5 feet clear of the edge line for bicyclists.
- Add STOP lines to the Seneca Point Road approaches to this intersection.



6.0 RECOMMENDATIONS

Ontario County Road 16 Pedestrian & Bicycle Study

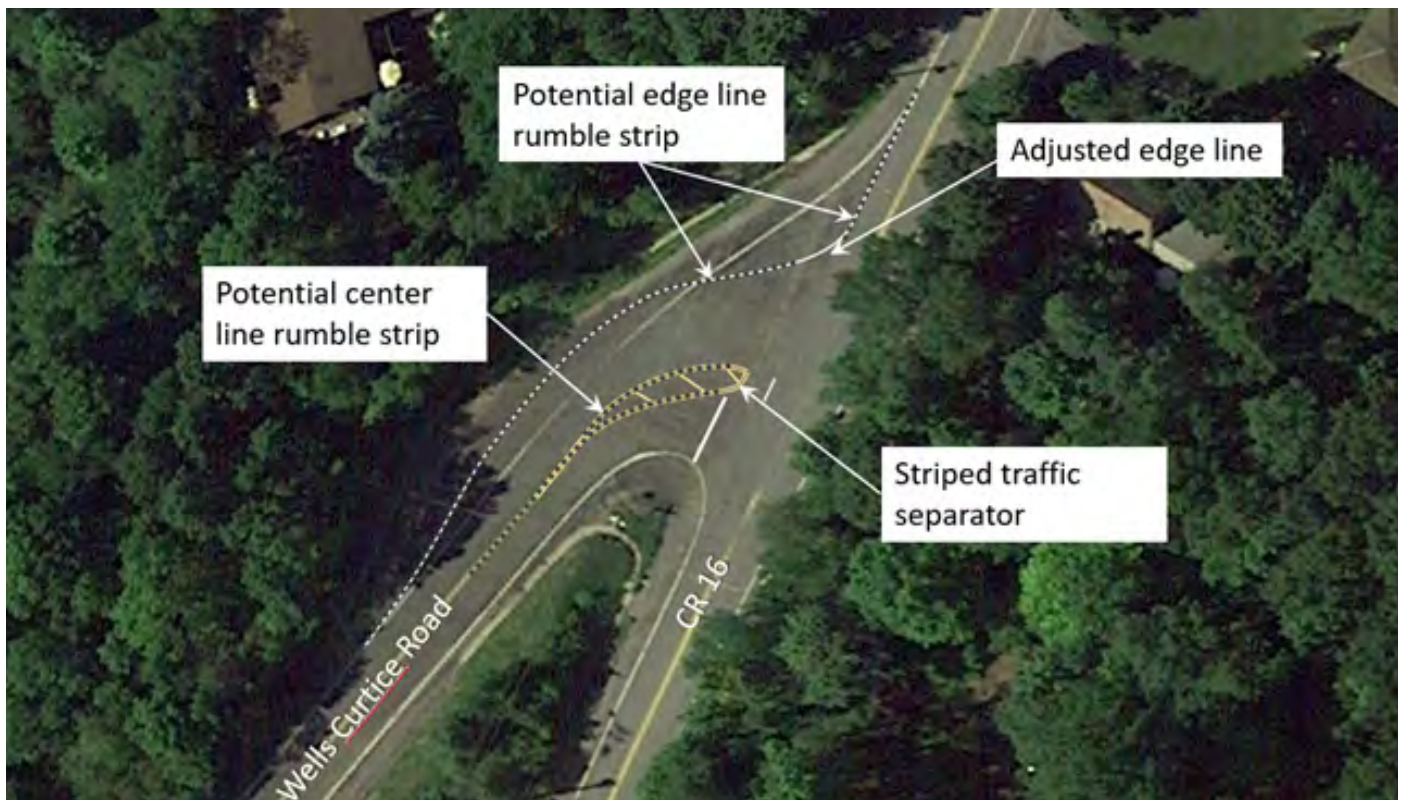
Department of Public Works - Ontario County, NY



CR 16 AT WELLS CURTICE ROAD

This intersection is relatively wide (for this roadway) with much undefined asphalt space. The size of the intersection is likely necessary to accommodate northbound to westbound left turns on an acute angle, particularly left turning vehicles with trailers. However, an effort should be made to provide positive guidance through the intersection and better define vehicular movements. The drawing provided at the bottom of this page is, more than others in this document, a concept. Observations of vehicle types and design using turning templates would be required to precisely set the traffic control devices.

- The current southbound to westbound radius is quite large. Consider reducing the radius.
- There is no defined path of travel for motorists turning from Wells Curtice Road onto CR 16, or for northbound CR 16 motorists turning onto Wells Curtice Road. Consider striping a traffic separator to provide positive guidance at this intersection.
- To encourage motorists to use their assigned spaces, consider under-stripe rumble strips for the northwest corner and the median.
- Add a STOP line for the eastbound approach.
- If bike lanes can be designated along this corridor, consider dashing the bike lanes across this intersection and enhancing with green paint.



6.0 RECOMMENDATIONS

ONTARIO COUNTY ROAD 16 PEDESTRIAN & BICYCLE ACCOMMODATION FEASIBILITY STUDY

FIGURE 12.
WEST LAKE SCHOOL HOUSE
BUTLER ROAD INTERSECTION



- 1 STOP AHEAD SIGNAGE**
Butler Road descends steeply toward the Ontario County Road 16 intersection. This is potentially dangerous for cyclists who increase speed while riding downhill. This signage will increase awareness of the oncoming intersection and encourage lower speeds for cyclists and motorists.
- 2 WIDE STOP BAR & LARGER STOP SIGN**
In a Federal Highway Administration study 12 inch stop bars and 30 inch stop signs decreased the rate of accidents by over 50%.
- 3 PEDESTRIAN CROSSING AHEAD SIGNAGE**
Advance notification of pedestrian intersection alerts motorists and increases pedestrian safety.
- 4 PATH FROM PARKING TO CROSSWALK**
Creating a defined, safe path to the pedestrian crosswalk will increase crosswalk use, and decrease pedestrian crossings at the Butler Road - West Lake Road intersection.
- 5 ADA ACCESSIBLE RAMPS**
Ramps on either side of Ontario County Road 16 for fully inclusive, barrier free design.
- 6 PEDESTRIAN CROSSWALK IMPROVEMENTS**
High visibility striping or a pavement treatment would increase motorist awareness of the pedestrian intersection. A pavement treatment would have additional traffic calming benefits.
- 7 MODIFIED RADIUS**
Reduce radius at intersection.



Ontario County Road 16 Pedestrian & Bicycle Study

Department of Public Works - Ontario County, NY



CR 16 AT BUTLER ROAD

CR 16 approaches to this intersection include (bicycle) rideable shoulders that appear to be in good repair and greater than 4 feet wide. Butler Road is a two-lane road serving numerous homes and serving as a connector to Middle Cheshire Road.

- There are valley gutters along the curb radii at this intersection. On the southbound shoulder, the valley gutter extends into the rideable shoulder area. Placing a white line on the advance of this encroachment to mark the obstruction for approaching bicyclists should be a consideration.
- The northwest radius at this intersection appears to be approximately 60 feet. This is much larger than the southwest corner radius. It also appears to be larger than those radii at intersections to the north. The size of the radius appears larger than should be needed given that this intersection (in that it is skewed at all) is skewed in to an obtuse angle for the southbound approach. Reducing this radius should be a consideration.
- The eastbound approach to the intersection could be better defined by extending the double yellow line and adding a STOP line.
- Add high visibility crosswalks across Ontario County Road 16 at West Lake Schoolhouse Park and Beach intersection, as well as pedestrian crossing ahead signing on both sides of the crosswalk.

See **Figure 12** for more information.

BIKE LANES AT INTERSECTIONS

If (where width allows) the existing paved shoulders were designated as bike lanes, then parking could be restricted from that designated area while still allowing parking on paved areas beyond the bike lane. This would keep the bike lanes clear of parked cars. It would also enable green markings to be placed at these high priority intersections where the bike lanes cross the intersections. Pedestrians, since they are allowed to walk on the roadway in the absence of shoulders, would still be allowed to walk within the bike lanes.

If CR 16 is, or becomes, part of a regional recreational bike route, consideration should be given to providing destination, direction, and distance wayfinding along the route at key intersections.

6.11 SPEED LIMIT REDUCTION

According to the AAA Foundation for Traffic Safety, the likelihood of a pedestrian being killed in a collision with a car going 35 mph is over 30%. The likelihood drops drastically for each 5mph speed reduction. At 30 mph the likelihood is 20% and at 25 mph the chances are only 12%. Reducing car speeds on Ontario County Road by just 5 mph would make a pedestrian 50% more likely to survive a crash.



Ontario County Road 16 Pedestrian & Bicycle Study

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Reducing lane widths to ten feet would make the road feel narrower, encouraging motorists to obey the speed limit. Other potential traffic calming measures could include:

- contrasting color on road shoulders
- contrasting pavement color on crosswalks
- changing road surface texture in key areas such as near crosswalks
- back in diagonal parking at German Brothers Marina; this would need to be paired with a speed limit reduction to 30 mph in this area
- increased police enforcement

While reducing speed along Ontario County Road 16 would provide several benefits, and is a feasible option, a speed study would need to be undertaken to understand traffic patterns and appropriate implementation of speed reductions.

6.12 TRAILS ON PRIVATE PROPERTY

There is significant undeveloped open space to the west of CR 16, most of it privately owned. An off-road, shared use trail on the west side of CR 16 could be an attractive option for some recreational users. Coordination would be required with numerous property owners, but the option should be considered for future study.

6.13 STORMWATER MANAGEMENT

Roadway safety, stormwater management, and environmental sustainability are closely linked. The topography on both sides of CR 16 is relatively steep, draining east into Canandaigua Lake. Stormwater travels downhill and creates flooding on CR 16 and adjacent properties. Many community members have shared concerns about flooding on or around CR 16, with several complaining of property damage. This fast moving stormwater ends up in Canandaigua Lake, where it contributes to sedimentation, nitrification and other types of pollution.

Narrow right of ways and steep topography make stormwater management improvements along side the road challenging.

If it is not actively addressed, this issue is likely to become more severe over time. Further developments in the steep area west of CR 16 could increase stormwater and flooding issues.

Where possible, Ontario County should work with private owners to install bioretention areas and plantings in riparian areas west of CR 16. A shallow, grassy swale within the right-of-way, on the lake side of the roadway, would encourage drainage and decrease sediment travel into Canandaigua Lake. However, sites with enough room for this type of intervention are fairly limited due to topographic constraints.

6.0 RECOMMENDATIONS

Ontario County Road 16 Pedestrian & Bicycle Study

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One possible large scale improvement would be to replace a section of CR 16 with a pervious asphalt surface. This would allow stormwater management to be incorporated directly into the roadway instead of along the edges. This could be implemented for some or all of the area between Lakeview Lane and Tichenor Point (approximately 2.5 miles), where the road slope is relatively level and runs very close to the lake.

See **Case Study** below for more information.



CASE STUDY - BEACH ROAD

Beach Road is a four lane wide, 1 mile long, high-traffic, state owned road along the southern shore of Lake George in Warren County, New York. “The existing roadway originally drained directly into the lake, resulting in the deposition of roadway contaminants such as salt, sediment, and the deleterious particles that are attached to the sediment directly into the lake” (Water Environment and Technology Magazine).

Pervious asphalt was selected for the site because of site constraints such as limited space for stormwater management and proximity to the lake.

As part of the project, new specifications for heavy duty porous asphalt were developed, including improved specifications for the asphalt mix design, foundation and reservoir courses, installation procedures, testing and acceptance criteria. Working with NYSDOT, these specifications have become the NYSDOT standards statewide. The procedures and specifications provide the guidance to construct porous asphalt pavement systems suitable for use on northeastern state and county owned and heavily traveled roadways.

The project eliminates direct stormwater discharge into Lake George for storm events of 5 inches or less in a 24-hour time period, markedly reducing the pollutant loading for all but the most severe events.

Lake George had seen a steady rise in chloride levels over the last 40 years. The use of porous asphalt has shown that salt de-icing applications can be reduced by 40 to 70%. Melting snow passes through the pavement and does not have the chance to re-freeze, thereby, significantly reducing “black ice” formation during winter months. This results in less salt being applied to the roadway (estimated at 11,000 pounds per year, a 50% reduction) and an increase in safety.

6.0 RECOMMENDATIONS



Ontario County Road 16 Pedestrian & Bicycle Study

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Sediment and pollutants attached to sediment are trapped by the voids in the asphalt and are either broken down by aerobic organisms or vacuumed and disposed of in a licensed landfill. Petroleum and other hydrocarbons are consumed biologically within the asphalt layer at an expected rate of more than 90% consumption.

Beach Road is the first roadway in New York State and the largest in the northeastern United States to use a HD porous asphalt system. The project has been described as a model project for innovation and environmental awareness.

The project received funding from the New York State Department of Environmental Conservation and the New York State Green Innovation Grant Program. It also won the 2014 ACEC NY Platinum Award for Transportation and 2014 APWA Capital District Branch and NY State Chapter Environmental Project of the Year Awards.

6.14 EDUCATION & OUTREACH

Education and outreach must be targeted toward increased safety for pedestrians and cyclists in Ontario County and the Town of Canandaigua, at the network level.

A successful bicycle and pedestrian network depends on users being able to safely, appropriately and frequently utilize the network. To assist in creating an effective, safe bicycle and pedestrian network, outreach, education, and zoning enhancements will be necessary. Educating roadway users (bicyclists, pedestrians, and motorists) about the rules of the road and safe bicycling and walking behavior is essential as is encouraging more people to get out and walk and ride their bicycles.

The outreach and education recommendations in this section aim to increase the number of bicyclists and pedestrians while improving safe and appropriate behavior by bicyclists, motorists, and pedestrians. Education and outreach programs must consider all of these different user groups.

The 1999 version of AASHTO's Guide for the Development of Bicycle Facilities recommended that an education plan address the following four groups:

- Young bicyclists;
- Adult bicyclists;
- Parents of young bicyclists; and
- Motorists.

IMPORTANT INFORMATION ELEMENTS

It is important to make sure each group is addressed in multiple and suitable ways. For example, programs for young bicyclists should use age-appropriate curriculum and language to explain concepts and issues.

6.0 RECOMMENDATIONS

Ontario County Road 16 Pedestrian & Bicycle Study

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One of the key things to keep in mind when planning outreach and education efforts is not to “reinvent the wheel.” Many successful programs, campaigns and resources are available. Locally, there are already many efforts underway. Other communities throughout the U.S. and Canada have already developed tools that can be adapted and modified for Ontario County and the Town of Canandaigua.

This adaptation is important in order to effectively localize the educational campaigns. Locally created campaigns that include materials with a local feel have been shown to have a more noticeable influence on motorist and bicyclist behaviors than generic FHWA-produced materials.

Bike and pedestrian education and outreach are vitally important in light of the growing number of distracted pedestrians. Much attention has rightly been focused on distracted drivers. But a recent National Highway Traffic Safety Administration reported that pedestrian fatalities rose by 4.2 percent in 2010 over the previous year, and injuries were up 19 percent, even though overall traffic deaths declined.

As we look around us every day, pedestrians are being distracted by their handheld devices. Researchers believe that the number of injured pedestrians is actually much higher than these results suggest, since police don’t always collect that data. A recent survey by Liberty Mutual suggests 60 percent of 1,000 people surveyed routinely read and send texts and emails, talk on their cell or smartphones, and listen to music while walking. Current trends, such as this, are important factors in designing bicycle/pedestrian safety, education and outreach programs. Several community members expressed concern about this issue in the survey and at public meetings.

PARTNER ORGANIZATIONS

It is important to connect partners to maximize the effectiveness of existing resources, programs, and materials. A list of potential partners has been developed, and their existing programs and partnerships have been inventoried to identify opportunities for new partnerships and enhanced use of resources. Some of these partners are already working together, but there are new partnerships that can be nurtured and developed, and new ways for existing educational materials to be used. Not all of the potential partners are specifically focused on bicycle/pedestrian-related issues, but may still be useful partners because of their ability to communicate with certain parts of the population. Some examples of education and outreach programs are suggested here:

Coordinate safety education with the **Canandaigua City School District** (Canandaigua Academy, Canandaigua Middle School, Canandaigua Primary-Elementary School).

Learn from successful outreach and education examples in other **active transportation-friendly communities**. Many successful programs, campaigns and resources are already available. Other communities throughout the U.S. and Canada have already developed tools that can be adapted and modified for Ontario County.

6.0 RECOMMENDATIONS



Ontario County Road 16 Pedestrian & Bicycle Study

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May is **National Bike Month** - Recognize those who commute by bike and encourage people to become new bicycle commuters or increase their trips by bike during the season when spring has sprung and new beginnings abound. This program features a month long calendar of events that offers organized rides for different ages and abilities, bike handling skills and maintenance workshops, and a Bike to Work Day Commuter Challenge.

The program is most successful when led by a community-based organization with financial support from the Town and the greater business community.

Bicycle Ambassadors - A team of at least two ambassadors encourages an increase in bicycling by engaging the general public to answer questions about bicycling and teach bicycle skills and rules of the road. Ambassadors attend community-based events throughout peak cycling season to offer helmet fits, route planning, bike rodeos and commuting 101 workshops. Community members also may request an appearance by a team of ambassadors at businesses, schools or a conflict zone location along the bikeway system.

Bike Light Campaign - With shorter days, when it gets dark before commuters head home from the office, fall is a good time of year to remind cyclists that proper equipment is required when riding at night. A bike light campaign also offers the opportunity to introduce cyclists to bicycle shops and strengthen partnerships between the City, Town, and retailers. This program could offer discounts on bicycle headlights and rear red reflectors and lights. It is recommended that the campaign be rolled out in September with the return of university as well as K-12 students to school. The campaign should expire before peak holiday season when bike shops are busy and less interested in offering discounts.

League of American Bicyclists: Bicycle Friendly Community status - **The Bicycle Friendly Community (BFC)** program created by the League of American Bicyclists (LAB) offers the opportunity to be recognized for achievements in supporting bicycling for transportation and recreation. It also serves as a benchmark to identify improvements yet to be made.



League Certified Instructor training course scholarships- The League of American Bicyclists offers certification courses to train those interested in teaching others to ride their bike safely and legally as a form of transportation.

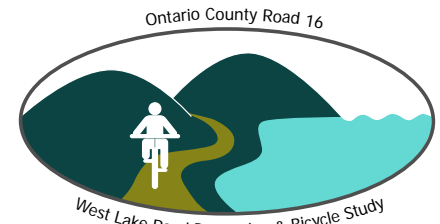
League Certified Instructors (LCIs) are a valuable asset to the community and can offer a variety of workshops for adults lacking confidence to ride in traffic as well as children learning to ride for the first time. LCI training courses require a two and a half day commitment and are offered through the LAB. To facilitate a cadre of cyclists to become LCIs, this program coordinates with the LAB to schedule training course offerings in the community and provide scholarships.

Conduct **public safety announcements** on following the rules of the road. For motorists, this campaign could address the need to look left prior to turning right, and provide clear passing space. For bicyclists, this campaign could address bicycle lights and lack of visibility when not riding in the road, and laws about bicycling including mandatory bicycle bells. For pedestrians, this campaign could address crossing at designated crossing facilities, and walking on the sidewalk in all seasons.

6.0 RECOMMENDATIONS

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Walk Friendly Communities is a national recognition program developed to encourage towns and cities across the U.S. to establish or recommit to a high priority for supporting safer walking environments. The WFC program will recognize communities that are working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort. www.walkfriendly.org/

Distribute a **Bike Map** – The Genesee Transportation Council has created a regional bike map that includes bicycle suitability ratings, extensive safety information for bicyclists, a listing of area bicycle shops and repair services, location of bicycle lockers and how to obtain access to use them, information about how to use the bike racks that are provided on all RTS buses, and a listing of multi-use trails in the region. The map is free and can be provided upon request. This map could be used as a model for an Ontario County bike map. Another excellent example is the map and info guide produced by the City of Vancouver, British Columbia that illustrates bicycle and pedestrian routes in the city, and utilizes a compact, folded-into-wallet-size (Z-card) format.

Create an **active transportation wayfinding** program that includes identification of routes and signing plans (destination, distance, direction) as well as assessments of potential improvements along the proposed routes.

Monroe County Pedestrian Safety videos review the rules of pedestrian safety utilizing age appropriate videos for PreK-1, Grade 2-3, Grade 3-6 and three adult safety review videos. These videos could be incorporated into school district curriculum and shown at City or Town events, or serve as models for Ontario County specific videos. www2.monroecounty.gov/safety-traffic/safety.php.

Adapt Oregon program **“Bike Wheels to Steering Wheels.”** The program helps youth better understand the relationship between bicycle-pedestrian safety and motion, and ultimately gives students a better understanding of safety when traveling by all modes of transportation, in which the laws of physics are applied without exception. The concepts are learned through normal math, science, or physics curriculum in schools.

OTHER POSSIBLE EXAMPLES:

Commuter of the Year Contest - This contest recognizes those who choose to bike, walk, or ride transit. An aim is to encourage others to reduce their drive alone motor vehicle trips. Nominated by their peers, contestants may be employees, residents, or students in the community and could be asked to provide an inspirational story about their transportation choice and habits. Based on nominations, categories could recognize Youth, Student, Senior, and Family Commuters. Winners also should be encouraged to serve as role models and participate in events throughout the year to mentor others and help them set goals to reduce their drive alone trips.

Business Pool Bike Program - Offering employees the opportunity to check out and ride a bike to meetings, lunch or run errands is a great benefit. Pool bikes are a form of bike sharing where an employer manages a fleet of bikes for this purpose. This program offers subsidies for the purchase and on-going maintenance of bikes as part of an agreement to track use and achieve the goal of reducing vehicle miles traveled and greenhouse gases. Employees sign up, make reservations and log their trips using a web-based management tool.

6.0 RECOMMENDATIONS



Ontario County Road 16 Pedestrian & Bicycle Study

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Conduct **pedestrian and bicycle counts** on a seasonal basis to track whether there is an increase in pedestrian and bicycle activity, exploring new methods as suggested by the public, FHWA, and the League of American Bicyclists. Refer to Miovision data in **Figure 6** of this plan as baseline information for Ontario County Road 16.

Bicycle Rodeo Kits- Children learning to ride should be confident with their bike-handling skills before riding in traffic. A Bike Rodeo is an interactive and controlled environment where cyclists practice a new skill at a series of stations. The number and difficulty of skills can be tailored based on attendance and number of instructors available to staff the event. This initiative will create a self-service bicycle rodeo kit that can be reserved by League Cycling Instructors (LCIs), Bike Ambassadors and community members. It contains instructions, diagrams and props necessary to host a bike rodeo. A programmatic collaboration with Ontario County Traffic Safety should be explored.

"Bicyclists and motorists together must better learn to Share the Road, to operate defensively, to understand each other's behaviors, and to be alert to any unanticipated actions or movements. By working together, we can achieve the joint goals to increase bicycle ridership while reducing the number of bicycle crashes, injuries and fatalities."

- New York State Department of Transportation (NYSDOT)

Participate in an **annual meeting of all bicycle/pedestrian planners and engineers in the region**. An annual meeting should be held to allow local communities and organizations to communicate their plans and programs, as well as share best practice information. Note: County officials may not want to facilitate such a meeting, but it would be useful to participate if some other entity were to organize the event.

AARP Network of Age-Friendly Communities Toolkit can be adapted by municipal and local governments, non-profit organizations, community partners and volunteers to guide and support age-friendly initiatives that make 'Livable Communities' great places for all ages. www.aarp.org/livable-communities/network-age-friendly-communities

Identify proper **enhanced visibility clothing** for bicyclists and pedestrians, and advise the local active transportation community of the associated safety benefits. As part of a larger roadway safety campaign, develop an educational campaign to eliminate bicycle and pedestrian fatalities. In Minnesota, **"Toward Zero Deaths"** is a statewide partnership involving federal, state, county and academic partners.

The mission is to create a culture in which traffic fatalities and serious injuries are no longer acceptable through the integrated application of education, engineering, enforcement, and emergency medical and trauma services.

6.0 RECOMMENDATIONS

Ontario County Road 16 Pedestrian & Bicycle Study

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PUBLIC ENGAGEMENT

Appoint a public bicycle/pedestrian committee to promote non-motorized transportation and to actively engage with citizens, planning committees, and boards to expand commuting and recreational paths for walkers and bicyclists. Such a committee could:

- Promote safe routes to school, greenways and connected corridors with adjacent towns,
- Publish and maintain cycling and walking maps,
- Review proposed development for active transportation considerations,
- Recommend amenities to enhance safe walking and cycling.

PROGRAM EFFECTIVENESS MEASURES

Program effectiveness measures can be used to determine if the recommended strategies meet their objectives, discover any areas that need change, justify funding, and provide guidance for similar programs. Baseline data is required prior to implementing recommendations. The County and Town could observe the outcomes or contract with a consultant to measure effectiveness on their behalf.

Observable outcomes include: number of crashes, injuries, and fatalities; behaviors; number of citations issued; number of people walking or bicycling; knowledge, opinions and attitudes; changes in organizational activity; traffic volumes; and traffic speeds. The effort to enforce the traffic laws as they relate to bicycle and pedestrian safety should be addressed in an overall, county wide, coordinated enforcement campaign. Targeted enforcement initiatives result in everyone following the rules of the road.

The 5 E's: Essential elements for communities to become great places for bicycling:

Engineering: Creating safe and convenient places to ride and park

Education: Giving people of all ages and abilities the skills and confidence to ride

Encouragement: Creating a strong bike culture that welcomes and celebrates bicycling

Enforcement: Ensuring safe roads for all users

Evaluation & Planning: Planning for bicycling as a safe and viable transportation option

(The League of American Bicyclists)

6.15 ZONING & DESIGN STANDARDS RECOMMENDATIONS

Ontario County Zoning and Regulations have been inventoried as part of the Ontario County Road 16 Pedestrian & Bicycle Study. Zoning and design standards relevant to bicycle and pedestrian travel are fairly minimal. Relevant sections from zoning code and planning documents included on **Table 5**.



Ontario County Road 16 Pedestrian & Bicycle Study

Department of Public Works - Ontario County, NY

TOWN OF CANANDAIGUA COMPREHENSIVE PLAN 2011 UPDATE

Land Use and Regulations – Scenic, Cultural and Recreational Resources – Transportation – Roadway System:

“The Town has experienced residential growth south of Routes 5 & 20, which has generated vehicular as well as pedestrian traffic on County Road 16.

Unfortunately County Road 16 is not structured as a multi-use corridor and has relatively narrow shoulders that don’t safely accommodate bikers, joggers or walkers. Higher levels of traffic near residential development along Middle Cheshire Road has created pedestrian/vehicle conflicts and raised concerns over safety and levels of service at key intersections. Though the Town has worked to address these issues additional planning may be needed to safely accommodate continued development.”

Goals – Transportation Network and Services:

“Consider the needs of pedestrians and bicyclists during transportation planning.”

COMPREHENSIVE PLAN UPDATE: IMPLEMENTATION PLAN (2017)

- Transportation Network and Services:
- Complete Streets Team created to set goals to create Complete Streets Policy (Feb 2017)
- Town highway department developing restriping schedule to determine time-line for installing bike lanes (Aug 2016)
- Team created to update Design Standards and Criteria (Feb 2017)

SITE DESIGN AND DEVELOPMENT CRITERIA (2012)

- Article II – Design and Construction Standards, Section 2.14, sets sidewalk specifications
- Article IV. – Installation of Improvements, Section 4.10, expands on those specifications
- Appendices E-1 and E-2 provide Typical Road Cross Sections
- Appendix O-1 provides a Sidewalk Detail

The Genesee Transportation Council has prepared recommendations for supporting cyclists and pedestrians through zoning code. Adopting some of these recommendations would increase the safety and comfort of bicyclists and pedestrians in Ontario County. See **Appendix E** for Bicycle and Pedestrian Supportive Code Language.

6.16 ENFORCEMENT

Law enforcement departments can take a leading role in involving public awareness of existing traffic laws and ordinances for motorists, pedestrians and bicyclists.

6.0 RECOMMENDATIONS

Ontario County Road 16 Pedestrian & Bicycle Study

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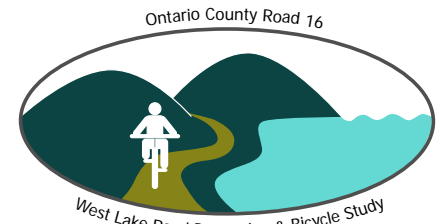
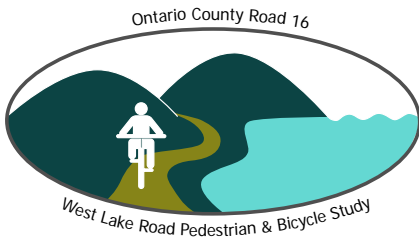


TABLE 5: EXISTING ACTIVE TRANSPORTATION EDUCATION AND OUTREACH PROGRAMS AND PARTNERSHIPS

	Existing Programs					Existing Partnerships					Highlights
Partner Name	Bicycle Safety	Community Health	Environmental Concerns	Transportation Equity	Neighborhood Livability	Bicycle Safety	Community Health	Environmental Concerns	Transportation Equity	Neighborhood Livability	Programs or Partnerships of Note
AARP		+			+						Age Friendly Communities programs.
Common Ground Health		+									Various health and wellness initiatives.
Genesee Land Trust			+		+		+	+		+	
Genesee Regional Off-Road Cyclists (GROC)	+	+				+	+				Singletrack Academy to teach bicycle handling skills.
Southern Tier Bicycle League	+	+				+	+				Dedicated to promoting cycling for health and well being.
Genesee Transportation Council	+	+	+	+	+	+	+	+	+	+	Funds studies addressing key issues. Helmet brochure, bike map.
Injury Free Coalition for Kids	+	+									Kohl's Pedal Patrol provides bike rodeos and helmets.
UR Thompson Hospital		+			+	+	+				
Ontario County Public Health Department		+			+		+				
Ontario County Traffic Safety Board	+					+					
Ontario County Planning Department			+	+	+			+	+	+	
Ontario County/Canandaigua Public Libraries					+						Venue for education/outreach programs and distribution of materials.
Canandaigua YMCA	+	+			+	+	+			+	
Regional Transit Service									+		
Fingerlakes Cycling Club	+			+					+		Dedicated to promoting cycling for health and well being.
Canandaigua City School District		+	+			+	+	+			
Wegmans	+	+	+	+	+	+	+	+	+	+	Passport to Wellness.

6.0 RECOMMENDATIONS



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Information provided for motorists should pertain to obeying speed limits, yielding to pedestrians when turning, traffic signal compliance, and obeying drunk-driving laws. Many local law enforcement agencies have instituted annual pedestrian awareness weeks where they issue tickets to motorists who disregard pedestrian laws and warn pedestrians to follow the law. This includes doubling fines for violations within identified pedestrian zones.



R2-6AP fines doubled mutcd sign.

Information directed to pedestrians should include topics such as crossing the street at legal crossings and obeying signals.

Bicyclists should be made aware of the law in regards to riding at night with lights, obeying traffic signals, avoiding the sidewalk, and riding with the flow of traffic on the roadway. A campaign should be designed keeping in mind the League of American Bicyclists' recommendation that communities make connections between the bicycling community and law enforcement.

Another way to address the need to educate bicyclists, pedestrians, and motorists is to target training of law enforcement, if appropriate.

Some questions that could be covered in this training include:

- When is it acceptable for bicyclists to 'claim the lane?'
- What width constitutes 'traffic lanes too narrow for a bicycle and a vehicle to travel safely side-by-side within the lane?'
- Why is it important for a bicyclist to use headlamps and tail lamps?
- Why is riding against traffic, walking with traffic, or not obeying traffic signals such a problem?

By answering these and other similar questions, and discussing what infractions are most likely to lead to bike crashes, law enforcement can help promote bike, pedestrian, and motorist safety by targeting those behaviors most likely to result in crashes. Some communities educate local law enforcement through the enforcement agency's standing roll-call meetings, while others send officers to traffic skills courses.

Sporadic enforcement will not result in significant improvements to pedestrian, bicyclist, or motorist behavior and will likely result in resentment of law enforcement personnel. To make law enforcement increasingly effective, it is important to coordinate an ongoing public information, education, and enforcement campaign regarding safe sharing of the roadways for all users.



Educational training course.

6.0 RECOMMENDATIONS



7.0 IMPLEMENTATION



7.1 FUNDING

This section identifies and discusses the numerous sources which can be used to provide monetary assistance for bicycle and pedestrian facilities. Some programs are more appropriate than others for funding CR 16 improvements, but this list has not been edited in order to provide a range of funding solutions.

Many of these funding sources are available on the federal level, as dictated in the new transportation legislation, Fixing America's Surface Transportation Act, or the "FAST" Act. Many of these federal programs are administered by the New York State Department of Transportation (NYSDOT). Additionally, there are other state and regional funding sources which can be used to help achieve the goals and objectives of this Plan. Finally, a number of private funding sources exist which can be used by local governments to implement bicycle and pedestrian-related programs.

Table 6 on the following pages includes several options for funding sources.



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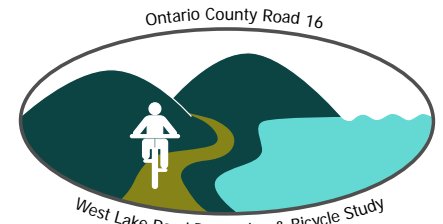
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Table 6: Funding Sources

Funding Source	Category	Relevant Project Types
National Highway Performance Program	Federal	Bicycle transportation facilities and pedestrian walkways adjacent to highways in the National Highway System, including interstates (Section 207)
Highway Safety Improvement Program	Federal	Intersection safety improvement, pavement and shoulder widening; bicycle/pedestrian/disabled person safety improvements; traffic calming; installation of yellow-green signs at pedestrian and bicycle crossings and in school zones; transportation safety planning; road safety audits; improvements consistent with FHWA publication "Highway Design Handbook for Older Drivers and Pedestrians"; safety improvements for publicly owned bicycle and pedestrian pathway or trail
Congestion Mitigation and Air Quality (CMAQ)	Federal	Funding to reduce vehicle emissions and traffic congestion in areas where air quality does not meet National Ambient Air Quality Standards. Eligible projects include bicycle and pedestrian facility improvements; transit improvements; ride-share programs; alternative fueling facilities/clean vehicle deployment
Transportation Alternatives	Federal funding administered by NYS DOT	On and off road bicycle and pedestrian facilities; projects that improve non-driver safety, access to transportation and enhanced mobility; conversion of abandoned railroad corridors into non-motorized trails; projects that enable/encourage children to walk/bike to school (Safe Routes to School); construction of turnouts, overlooks and viewing areas; planning, designing or constructing boulevards in former divided highway right-of-ways

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Funding Source	Category	Relevant Project Types
Recreational Trails Program	Federal funding administered by NYS OPRHP	Develop and maintain trails for both motorized and non-motorized uses, including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or other off-road motorized vehicles; develop trailhead facilities; purchase/lease of maintenance equipment; acquisition of easements/property
Highway Safety Section 402 Grants	Federal	Federal Safety-related programs and projects (Section 402)
Urbanized Area Formula Grants, Capital Investment Grants and Loans, and Formula Program for Other than Urbanized Area	Federal (FTA)	Bicycle access to public transportation facilities, shelters and parking facilities, bus bicycle racks
HUD Community Development Block Grant (CDBG)	Federal Funding Administered by NYS OHCR	Public facilities and improvements, such as streets, sidewalks, sewers, water systems, community and senior citizen centers, recreational facilities, and greenways
CHIPS (Consolidated Local, State, and Highway Improvement Program) www.dot.ny.gov/programs/chips	State	Bike lanes and wide curb lanes; sidewalks
Market NY Empire State Development Grant	State	Marketing, promotion and signage
Local Waterfront Revitalization Program NYSDOS	State	Planning, development, and signage for communities along designated inland waterways
OPRHP-Environmental Protection Fund Grant Program for Parks, Preservation, and Heritage	State	Municipal grant program offers funding for trail planning and development



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Funding Source	Category	Relevant Project Types
The Green Innovation Grant Program GIGP http://www.efc.ny.gov/	State	Projects that improve water quality and demonstrate green stormwater infrastructure in New York State
The Greater Rochester Health Foundation	Regional	Community health and prevention projects and programs
Bikes Belong Coalition www.bikesbelong.org/grants	Private	Bicycle facilities; end-of-trip facilities; trails; advocacy projects such as Ciclovias
National Trails Fund www.americanhiking.org/our-work/national-trails-fund	Private	Hiking trails
Global ReLeaf Program www.americanforests.org/our-programs/global-releaf-projects/global-releaf-grant-application/global-releaf-project-criteria	Private	Tree planting
Robert Wood Johnson Foundation (general) www.rwjf.org/grants	Private	Various
The Conservation Alliance Fund www.conservationalliance.com/grants/grant_criteria	Private	Land Use

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Funding Source	Category	Relevant Project Types
Surdna Environment/ Community Revitalization www.surdna.org/grants/ grants-overview.html	Private	Community revitalization and environment

7.2 SEQRA

Project implementation may involve potentially significant impacts to the environment from construction activities. The following is a framework to comply with applicable State and Federal permitting requirements.

The Ontario County Road 16 Pedestrian and Bicycle Accommodations Feasibility Study is subject to State Environmental Quality Review Act (SEQRA) review because the actions proposed may potentially impact the environment. The Ontario County Road 16 Pedestrian and Bicycle Study is a Type I Action because the construction of the improved roadway and walkway is an action that will involve the physical alteration of 10 acres or more. The SEQRA process for this project will involve a coordinated review as follows:

The Project Sponsor will complete Part I of a Full Environmental Assessment Form (FEAF), identify all other involved agencies and transmit the FEAF to the involved agencies along with a notice that a lead agency must be agreed upon within 30 calendar days of the date the FEAF was transmitted to them.

The lead agency will complete Part 2 and if needed, Part 3 of the FEAF.

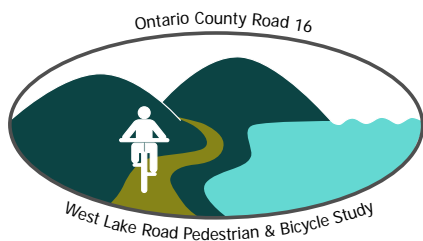
The lead agency will determine the significance of the environmental impact within 20 calendar days of its establishment as lead agency, or within 20 calendar days of its receipt of all information it may reasonably need to make a determination of significance, whichever is later.

The lead agency must immediately prepare, file, publish and distribute the determination of significance in accordance with 6 CRR-NY Part 617.12.

Detailed instructions for each step of the SEQRA review process can be found on the New York State Department of Environmental Conservation website: <http://www.dec.ny.gov/permits/357.html>

7.3 FOLLOW ON ACTIVITIES

Follow-on activities are future endeavors that will help advance the overall objectives of this study. These issues should be considered as the proposed improvements move into the next phase of development. The following issues need to be considered:



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1. Environmental permitting is outlined in this report, and will be a critical undertaking to advance projects recommended in this study. An archaeological investigation may be necessary for some projects, but was not part of this study.

2. To get recommended projects constructed, the following steps will be necessary:

- a. Secure funding for design and construction
- b. SEQRA and permitting
- c. Environmental testing as required
- d. Design development
- e. Construction documents
- f. Bidding
- g. Construction
- h. Acceptance by client
- i. Management and maintenance plan
- j. Programming and community involvement
- k. Identify possible community partners

7.4 CONCLUSION

The key to developing a safe and supportive environment for active transportation lies in the synergy between engineering, education, and enforcement. The improvements recommended for CR 16 include on-road improvements, off-road improvements, programs, and policies. Space limitations in the corridor restrict the range of feasible alternatives, but there are a number of viable improvement options.

The recommendations in this study cover a wide range of project costs, from relatively low cost increases to maintenance budgets, to significant construction projects.

Implementation can be phased in over time, and should be coordinated with long-term planning for roadway and drainage work along CR 16. A combination of modest improvements can meaningfully enhance comfort and safety for all travel modes along the roadway. This study can be reviewed and updated over time as best practices for active transportation continue to evolve.

7.0 IMPLEMENTATION