



VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN



NOVEMBER 2015

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1. EXECUTIVE SUMMARY



INTRODUCTION AND SUMMARY

The Active Transportation Plan puts forth a strategy to improve the physical infrastructure for pedestrian and bicycle travel in the Village of Brockport, including connections to the Towns of Sweden and Clarkson. The Plan examines existing conditions for on-street bicycling and the sidewalk network, identifies a series of specific facility needs, establishes design guidance for new facilities, and recognizes existing and future opportunities for programmatic outreach and education activities that can lead to increased levels of bicycling and walking. Addressing the circulation of pedestrians and bicyclists within the existing auto-centric system and planning the development of a balanced multi-mode system will improve public awareness of active transportation issues, reduce conflicts and create harmony between motorists and non-motorists, and increase safety-conscious travel. This will improve the traveling experience for all users. The Plan will guide the Village in the development and maintenance of active transportation infrastructure, and the incorporation of such into future capital improvement projects such as road and sidewalk development and repair.

The Village and Walk! Bike! Brockport! (WBB) have been successful in advancing active transportation improvements in the most heavily traveled area of the Village, to address obvious problems. The purpose of this study is to look beyond isolated, per-project “spot” improvements to implement improvements as part of a strategically planned, Village-wide network designed for maximum circulation efficiency and safety and that extends as needed into Sweden and Clarkson.

It should be noted, the study area, “Greater Brockport,” includes the urban core encompassed by the Village, the developed areas of Sweden adjacent to the Village, and the connection via Route 19 to the small hamlet of Clarkson at Route 104.

This section provides an outline of the background and setting for the Plan. Summarized within this section are the many natural and planned characteristics that provide an ideal setting for the Plan’s initiatives, as well as the variety of benefits that can be realized as a part of its eventual implementation. The Active Transportation plan is based on stakeholder and public involvement, and is heavily based on input from an active Project Advisory Committee (PAC) and feedback from Brockport’s residents.

EXISTING CONDITIONS EVALUATIONS

An assessment of the conditions that the Village’s roadway network provides for bicyclists, using the nationally implemented Bicycle Level of Service Model as the primary performance measure kicks off the existing conditions evaluation process. The results of this assessment indicate, at a Greater Brockport area level, bicycling conditions are relatively good (average bicycle level of service “B”), although many roads present opportunities for improvement. Regarding pedestrian facilities, although there are already over 32 miles of public sidewalks in Brockport, the pedestrian facilities earned a decent level of service rating (average pedestrian level of service “C”), resulting in the need for improving the walk-ability of Brockport.



FACILITY RECOMMENDATIONS

Based on existing conditions and public/stakeholder input, the Plan identifies numerous strategic, location-specific facility needs that will help complete the Village's bicycle and pedestrian network. The recommendations include new bicycle facilities, important sidewalk connection gaps, and new or improved shared use paths and trails. The recommended facilities have been prioritized to help gain important momentum, while the Village will constantly continue to implement projects in accordance with capital improvement schedules and specific funding opportunities.

FACILITY DESIGN GUIDANCE

This section is a valuable ongoing resource for the Village as new bicycle and pedestrian facilities are constructed, including many of those identified in the Plan. Based on Federal and State of New York sources and standards, the Plan's design guidance covers many established and emerging facility types including bike lanes, Shared Lane Markings, bike routes, bike boulevards, shared use paths, sidewalks, curb ramps, mid-block crossings, and transit stops.

ZONING AND DEVELOPMENT REGULATIONS ASSESSMENT

Outlined in this section is a summary of existing zoning codes that support provisions for bicyclists and pedestrians, identifies their relevance to bicycle and pedestrian issues, and recommends preliminary action strategies to build upon and enhance active transportation in the Brockport community. This Plan section also includes sample bike parking requirements and potential incentives to private developers that can be used to leverage the Village's efforts.

OUTREACH AND EDUCATION RECOMMENDATIONS

Conducting outreach and education programs is another important aspect of the active transportation planning process. The Plan's associated recommendations aim to increase the number of bicyclists and pedestrians while improving safe and appropriate behavior by bicyclists, motorists, and pedestrians. A highlight of this element is a recommended focus on reaching out to and connecting with the numerous local and regional partners who can collectively help maximize the effectiveness of existing resources, programs, and materials. Additionally, Walk!Bike!Brockport! should continue to be engaged with the Village to promote bicycling and walking in the community.

FUNDING AND IMPLEMENTATION STRATEGY

The Plan concludes with recommendations to continue several ongoing strategies to construct new non-motorized facilities and to pursue the plethora of funding sources, both traditional and innovative, that are available to the Village as it seeks to implement this Plan. Each of these sources is described, including the programs contained in the new Federal transportation legislation, MAP-21, as administered through the New York State Department of Transportation (NYSDOT), as well as many state, regional, and private sector sources that provide grants for facilities and programs alike.

FOLLOW ON ACTIVITIES

The final report highlights a wide range of needed improvements that were identified by residents. Follow-on activities are elements that were not able to be examined within the Plan's scope/budget but should be addressed by the Village and/or stakeholders. As a master plan, the Brockport Active Transportation Plan does not identify all of the specifics needed to construct every recommended project. Some work still remains to be done.



2. INTRODUCTION AND SUMMARY



2.1 BACKGROUND AND PURPOSE

This report summarizes the analysis, planning, and design efforts involved in the Village of Brockport's Active Transportation plan, representing the Village's approach to accommodating active transportation by providing a community based, data driven blueprint for guiding future decisions and infrastructure investment. The Plan is intended to guide growth as it relates to pedestrian and bicycle issues through developing a network of sidewalks, on-road bicycle facilities, and off-road trails that make it safer and easier to get around the Village by walking, biking, or transit. In addition to making Brockport a more walkable and bike-friendly community, the Plan will help the Village become a more sustainable community and enhance the perception of Brockport as a great place to live, work, play, and raise families.

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. As such, planning is an orderly, open approach to determining a community's needs and goals, and developing strategies to address those needs and meet those goals. Land use planning enables civic leaders, businesses, and citizens to play a meaningful role in creating communities that enrich people's lives.

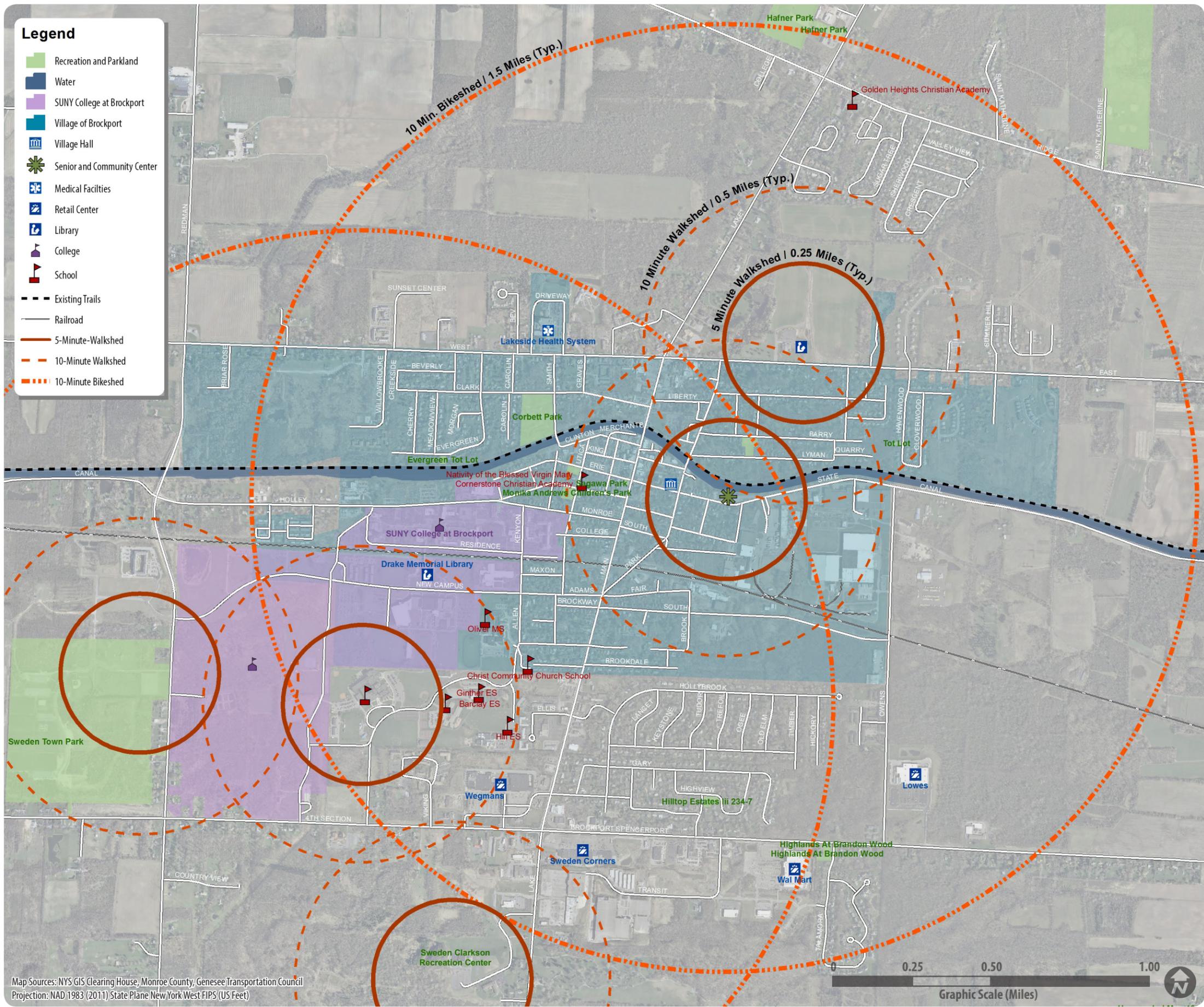
Brockport, the "Victorian Village on the Erie Canal," is located within the Town of Sweden and is gifted with a variety of characteristics, both natural and planned, which collectively make Brockport a great place to live and provide a setting that is ripe for this important planning initiative.

- ◆ Home to 8,369 residents (according to the US Census Bureau 2009-2013 5 Year American Community Survey);
- ◆ An area of 2.2 square miles makes up the Village (according to the United States Census Bureau);
- ◆ A regionally significant university (The College at Brockport);
- ◆ Village industries including frozen food packaging/distribution and electronic recycling;
- ◆ Community diversity in both age and income;
- ◆ The Erie Canal and Erie Canalway Trail runs east/west through the Village; and
- ◆ Pedestrian friendly downtown of small shops and restaurants, listed on the National Register of Historic places.

Refer to **Figure 1** for a graphic map showing local destinations and distances for bicycles and pedestrians.

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE: 1
DESTINATIONS AND DISTANCES



Distance (Miles)	Village Hall	Senior Center	Seymour Public Library	Drake Memorial Library/SUNY Brockport	Wegmans	Brockport High School	Sweden Town Park	Sweden Clarkson Recreation Center
Village Hall	0.0	0.2	0.9	1.6	1.4	0.9	3.4	1.9
Senior Center	0.2	0.0	0.8	1.8	1.6	1.1	3.6	2.0
Seymour Public Library	0.9	0.8	0.0	2.3	2.1	1.6	3.4	2.6
Drake Memorial Library/SUNY Brockport	1.6	1.8	2.3	0.0	1.9	1.1	1.6	2.6
Wegmans	1.4	1.6	2.1	1.9	0.0	1.0	2.2	0.9
Brockport High School	0.9	1.1	1.6	1.1	1.0	0.0	2.0	1.5
Sweden Town Park	3.4	3.6	3.4	1.6	2.2	2.0	0.0	2.9
Sweden Clarkson Recreation Center	1.9	2.0	2.6	2.6	0.9	1.5	2.9	0.0

AVERAGE WALK AND BICYCLE TIMES
Based on Above Destinations and Distances Table Average

1.80 Miles / 36 Minutes
(Based on an average of 20 Minutes per 1 mile)

1.80 Miles / 12 Minutes
(Based on an average of 6.5 Minutes per 1 mile)

Map Sources: NYS GIS (Clearing House, Monroe County, Genesee Transportation Council)
Projection: NAD 1983 (2011) State Plane New York West FIPS (US Feet)



2.2 ACTIVE TRANSPORTATION BENEFITS

The Plan aims to increase the viability of biking and walking as transportation and recreation options for residents of and visitors to the Village of Brockport. Bicycling and walking fulfill important functions in the overall transportation network and in people's everyday lives, in addition to being highly enjoyable activities in and of themselves. While pedestrian and bicycle improvements are important to meet the needs of Brockport today, they are likely to be even more important in meeting the needs of tomorrow. With the development of this plan, the Village of Brockport is taking a progressive stance in addressing important issues, such as rising fuel prices, environmental degradation, and health problems related to inactivity. The Plan will tie into other ongoing Village-wide sustainability efforts, and will help the Village to harvest the long-term economic, environmental, health and social benefits of active transportation.

Transportation accounts for more than 30 percent of the carbon dioxide emissions in the United States (West, 2007). In addition, transportation is a significant household expense for many people. However, there are other transportation options besides using a motorized vehicle, which include active transportation possibilities, such as walking and bicycling. Walking and bicycling as a means of transportation offer environmental, health, economic and social benefits.

Active transportation has benefits in each one of these categories, but the synergy between these varied and dissimilar benefits results in enhanced community sustainability:

- ◆ A local economy that is robust and balanced, with better access to jobs, education and health care.
- ◆ Increased health for persons engaging in active transportation, and increased safety for all.
- ◆ Ecosystems that thrive as a result of reduced air pollution and reduced greenhouse gas emissions.
- ◆ Infrastructure that encourages culturally and socially diverse groups to prosper and connect to the larger community.

ENVIRONMENTAL BENEFITS

Switching to active transportation 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. Active transportation can reduce air pollution, minimize traffic congestion, and help to lessen our national dependence on petroleum. Bicycling and walking can also serve as the final leg of transit trips to and from other parts of the Rochester region, allowing riders to get between home and their boarding stop and between their disembarking stop and their final destination.

HEALTH BENEFITS

Improved bicycling conditions add to the vitality and quality of life of the community and provide access to recreational destinations across the region. Despite the proven benefits, most people – including 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. Parks, trails, and open space resources take on new meaning and value. Active transportation provides an opportunity to incorporate regular physical activity into the daily routine. Opportunities for recreation and active transportation support the health and wellness of local residents, and have significant and quantifiable economic impacts.

*...studies have found that overweight and obese children have lowered academic achievement in standardized test scores...
(California Department of Education, 2005)*

Land use and building patterns exacerbate health problems by providing new, disconnected neighborhoods that have few opportunities for walking or biking. In addition, our lifestyles have become increasingly sedentary in our post-industrial society. Walking and bicycling provide an opportunity to simultaneously obtain the benefits of transportation and physical exercise.



ECONOMIC BENEFITS

Health care costs and insurance rates are escalating, causing serious impacts to the local economy. Lack of physical activity is a contributing factor to a growing number of serious illnesses and health problems among all age groups. In addition to health-related costs, operating a personal automobile is very expensive. With the money saved on a vehicle, or even just the additional parking, fuel and maintenance required to commute in a vehicle, an active commuter can pay for transit expenses, purchase a good quality bicycle, or buy new walking shoes, with money left over.

Better bicycling conditions will provide access to recreational and work destinations, schools, public transit, and local shops. This will, in turn, promote additional economic development in the vicinity of these destinations. The number of people 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 which contribute towards stimulating the economy. By developing transportation programs and encouraging active transportation, Brockport's economy would capture these potential savings and keep shoppers centrally located, resulting in increased community reinvestment.

SOCIAL BENEFITS

Improving transportation equity by 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. Bicycling and walking can serve as appealing for families looking to engage in new recreational opportunities while increasing opportunities for social interaction and contributes to a sense of community. Communities across the country 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 lights. Walkers and cyclists 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 and less expensive to park a bike than a car, which further reduces the stress of commuting. In addition, a culture dependent on cars encourages urban sprawl, which destroys communities and keeps people isolated from one another. With this Plan, the Village of Brockport is taking important steps towards a future in which bicycling and walking are experienced as viable options for trips of all purposes.

2.3 COMMUNITY OUTREACH AND PUBLIC INPUT

Planning of any kind cannot be done in a vacuum, and must be informed by local residents. GTC regularly identifies community participation as an objective in the Long Range Transportation Plan for the Genesee-Finger Lakes Region, which guides their planning efforts. The Plan states, "The transportation planning process should be conducted in as open and visible a manner as possible, encouraging community participation and interaction between and among citizens, professional staff, and elected officials." Public participation is not just a requirement, but a critical element of a successful plan.





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Peter Randazzo	Frank Short	Daniel Varrenti
Milton Way, BCS	Mary Ellen Zuckerman	

TABLE 1: CHRONOLOGY OF COMMUNITY INVOLVEMENT

<i>Date</i>	<i>What</i>	<i>Purpose</i>
September 23, 2014	Project Advisory Committee Meeting	Project Kick-Off
October 25, 2014	Project Advisory Committee Meeting Bicycling Tour	Review Project Progress Site Visit
October 26, 2014	Project Advisory Committee Meeting Walking Tour	Review Project Progress Site Visit
April 9, 2015	Public Information Meeting at the Village Hall	Introduce Project, Present Inventory and Analysis, Solicit Input
June 25, 2015	Project Advisory Committee Meeting	Review Project Progress Prepare for 6/30 PIM #2
June 30, 2015	Public Information Meeting at the Village Hall	Present Draft Recommendations, Solicit Input

2.4 RELATIONSHIPS TO OTHER PLANS AND STUDIES

The Active Transportation Plan builds upon previous research and planning efforts for Brockport. A review of existing bicycle and multi-use trail plans, studies, and proposals, as well as other relevant Village and SUNY Brockport planning documents, provides context for the development of this Active Transportation Plan. In addition, representatives from local schools and universities were consulted. The Plan builds on the following Plans, Studies, and Technical Memorandums:

- ◆ Bicycle and Pedestrian Action Plan for the Rochester Metropolitan Area, 1996
- ◆ Finger Lakes Regional Economic Development Council: Progress Report & Recommended Priority Projects, 2015
- ◆ Genesee-Finger Lakes Historic Transportation Gateway Inventory and Assessment, 2009
- ◆ Genesee-Finger lakes Regional Trails Initiative Update, 2014
- ◆ Long Range Transportation Plan for the Genesee Finger-Lakes Region 2035
- ◆ Regional Trails Initiative Final Report & Action Plan: Phase I - Rochester TMA, 2002
- ◆ Rochester Bike Sharing Program Study, Currently Underway
- ◆ Safe Routes to School Guidebook for the Genesee Finger-Lakes Region, 2009
- ◆ SUNY Brockport Improved Bike Share Program, Currently Underway
- ◆ The College at Brockport, North Campus Utilities, Infrastructure, and Site Enhancements, Holley Street Traffic and Pedestrian Assessment, Existing Conditions Report, 2015

2.5 PLAN SUMMARY



The Village of Brockport's Active Transportation Plan takes a wide-reaching approach to enhancing the Village's current accommodation and promotion of bicycling and walking. A significant number of the Plan's recommendations identify and describe specific infrastructure improvements that will improve pedestrian and bicycle travel in the Village. The Plan recognizes that there are other ways to promote walking and bicycling activity, specifically performing outreach and education initiatives that can make more Village residents aware of the existing and future opportunities available as well as engaging the private sector to increase its role in providing facilities. Following this introduction and summary section, the Plan is divided into seven parts:

- ◆ Existing conditions evaluations
- ◆ Facility recommendations
- ◆ Facility design guidance
- ◆ Zoning and development regulations assessment
- ◆ Outreach and education recommendations
- ◆ Funding and implementation strategy
- ◆ Follow-on activities



3. EXISTING CONDITIONS EVALUATIONS



3.1 COMMUNITY CHARACTERISTICS

The Village of Brockport is in the western part of Monroe County, 20 miles west of the City of Rochester. The Village is located north of the junction of New York State Route 19 (north-south) and New York State Route 31 (east-west) at the northern town line of Sweden. The Village has a total area of 2.2 square miles. As of the US Census Bureau 2009-2013 5 Year American Community Survey, there were 8,369 people, 2,504 households, and 1,346 families residing in the Village. Brockport, known as “The Victorian Village on the Erie Canal,” was incorporated in 1829, 4 years after the completion of the Erie Canal.

Existing transportation networks reflect the Village history. Due to a conflict between two of the founders of Brockport there are no intersections on Main St. that meet up square. Even the intersection of State St. and Main St. along with the intersection of Main St. and Adams St. are between one and two feet off from square. The founders disagreed with each other so much that they refused to line up any streets when each designed each half of the Village

Brockport’s pedestrian friendly downtown of small shops and restaurants is listed on the National Register of Historic places. The Village prides itself on its public art, its canal-front Welcome Center staffed by volunteers who greet boaters and Erie Canal cyclists, and its nine public parks.

The Erie Canal runs through the Village of Brockport, linking it with adjacent nearby canal communities in the region. Topography is generally moderate. Main Street (Route 19) contains many historical buildings, and is a tourist attraction. The Erie Canal Boardwalk that runs from Main Street along the canal is a common spot for locals to enjoy a stroll.

Brockport is home to the College at Brockport, part of the State University of New York system (SUNY).

The Brockport Central School District serves 30,000 residents over 72 square miles. Pre-Kindergarten through grade 12 campus includes five schools (three elementary, one middle and one high school) and is right next door to The College at Brockport.

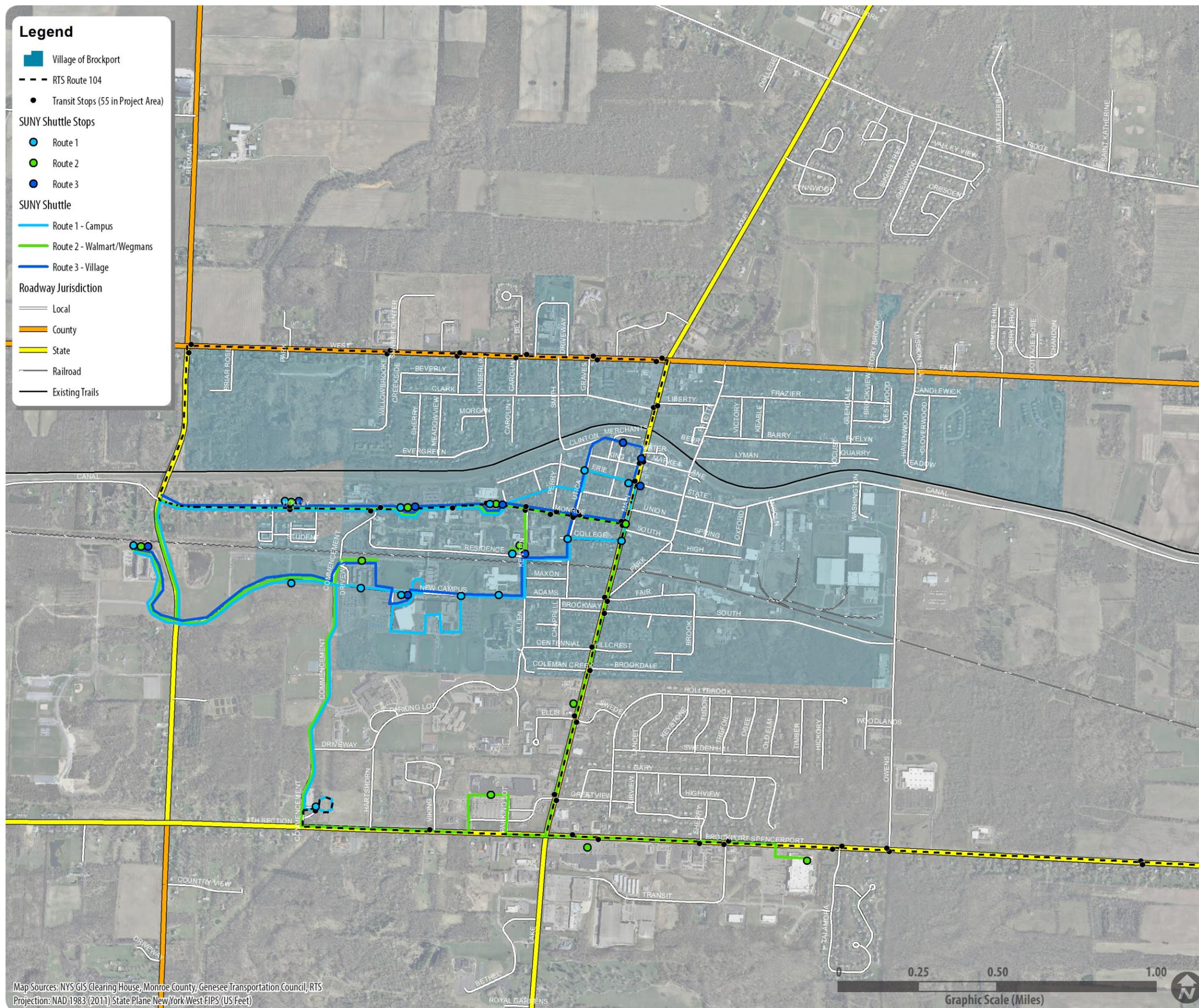
Brockport offers a range of pedestrian options, from an urban experience in the Village core to a more rural and natural experience along the Erie Canal. The pedestrian scale offers a place to emphasize the historic, cultural and natural features of the area.

The close proximity of the Village center, the Canal, the College, and the central school district campus provide extraordinary opportunities for an integrated active transportation network that will provide safety, connectivity, and mobility for all residents.

Refer to [Figure 2](#) for a map of the existing transportation network.

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE 2
TRANSIT & ROADWAY JURISDICTIONS



ROADWAY STUDY NETWORK

Length of Local Roadways: 11.95 Miles
 Length of County Roadways: 2.75 Miles
 Length of State Roadways: 6.30 Miles
 Total Length of Study Network: 21 Miles

Public Transit and Active Transportation are closely related and mutually supportive. Every ride on a bus starts and ends with walking. Nationwide, 29 percent of those who use transit were physically active for 30 minutes or more each day, solely by walking to and from public transit stops. Similarly, transit users took 30 percent more steps per day and spent 8.3 more minutes walking per day than did people who relied on cars.

- Robert Wood Johnson Foundation 2009



An existing CSX bridge over Route 19 provides an excellent opportunity to act as a gateway into the Village. The Village is working with local artists (currently Stacey Kirby) to create a design for the bridge, see photos below. The gateway will “lift spirits of all who pass under it - thus contributing to the health and happiness of many folks who live here in western New York.”

Existing Conditions



Proposed Concept Sketch (Stacey Kirby)



3.2 EXISTING BICYCLING AND PEDESTRIAN CONDITIONS

An important element of any bicycle and pedestrian planning initiative is to gauge how well or how poorly the area’s roadways accommodate users of the transportation system. While much of this information has been gathered from input provided by the public through the processes described in the previous section and Appendix C and D, an objective and defensible system-wide evaluation is also useful in setting the stage for identifying and prioritizing facility improvements.

An evaluation of existing bicycling and pedestrians conditions was conducted for the “Greater Brockport” network of arterial and collector roads (approximately 48 segments totaling about 21 centerline miles) using the Bicycle & Pedestrian Level of Service Models, based on data collected in November 2014. This model, which has been applied on hundreds of thousands of miles of roads throughout the United States, is a fundamental performance measure and design tool in the National *Highway Capacity Manual (HCM 2010)*. The following sections provide background information and data descriptions for this evaluation tool.

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 are an objective measure of bicycling and walking conditions of a roadway which provides 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, identify roadways that are candidates for reconfiguration for bicycle and pedestrian facility improvements, 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.

While the PLOS model, with statistical precision, clearly 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, as shown on the following page.

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

EXISTING CONDITIONS ANALYSIS RESULTS

Pedestrian conditions analysis were performed for more than 48 directional network segments based on the collected network data. The distribution of pedestrian level of service grades is shown in [Figure 3](#). At a distance-weighted network-wide level, the Greater Brockport area was found to currently provide pedestrian conditions that correspond to a pedestrian level of service 2.52 (“C”), which is comparable to many other metropolitan area municipalities. Most of the segments earned A, B, C or D. A few segments earned E and no segments earned F. [Appendix C](#) provides additional information about the PLOS Model, and [Appendix D](#) provides the PLOS data sheets for all roadways that were analyzed in the course of the study.

Bicycling conditions analysis were performed for more than 48 directional network segments based on the collected network data. The distribution of bicycle level of service grades is shown in [Figure 4](#). At a distance-weighted network-wide level, the Greater Brockport area was found to currently provide bicycling conditions that correspond to a bicycle level of service 1.99 (“B”), which is favorable compared with many other metropolitan area municipalities. Most of the segments earned A, B, C or D. No segments earned E or F. [Appendix C](#) provides additional information about the BLOS Model, and [Appendix D](#) provides the BLOS data sheets for all roadways that were analyzed in the course of the study.

SIDEWALK FACILITIES

The presence of sidewalks was assessed along all streets within the Greater Brockport area. Existing sidewalk facility data was created using aerial images and GIS tools. There are over 32 miles of concrete public sidewalk in the study network. Public sidewalks contribute greatly to the residents’ quality of life by providing safe opportunities for healthy activity and opportunities for social interaction. [Figure 5](#) (presented later in the plan in combination with facility recommendations) illustrates existing sidewalk locations and provides an analysis of the presence or absence of sidewalks throughout the system. It is recommended that Brockport use the [Figure 5](#) to identify where new sidewalks are needed during future development projects or public improvement.

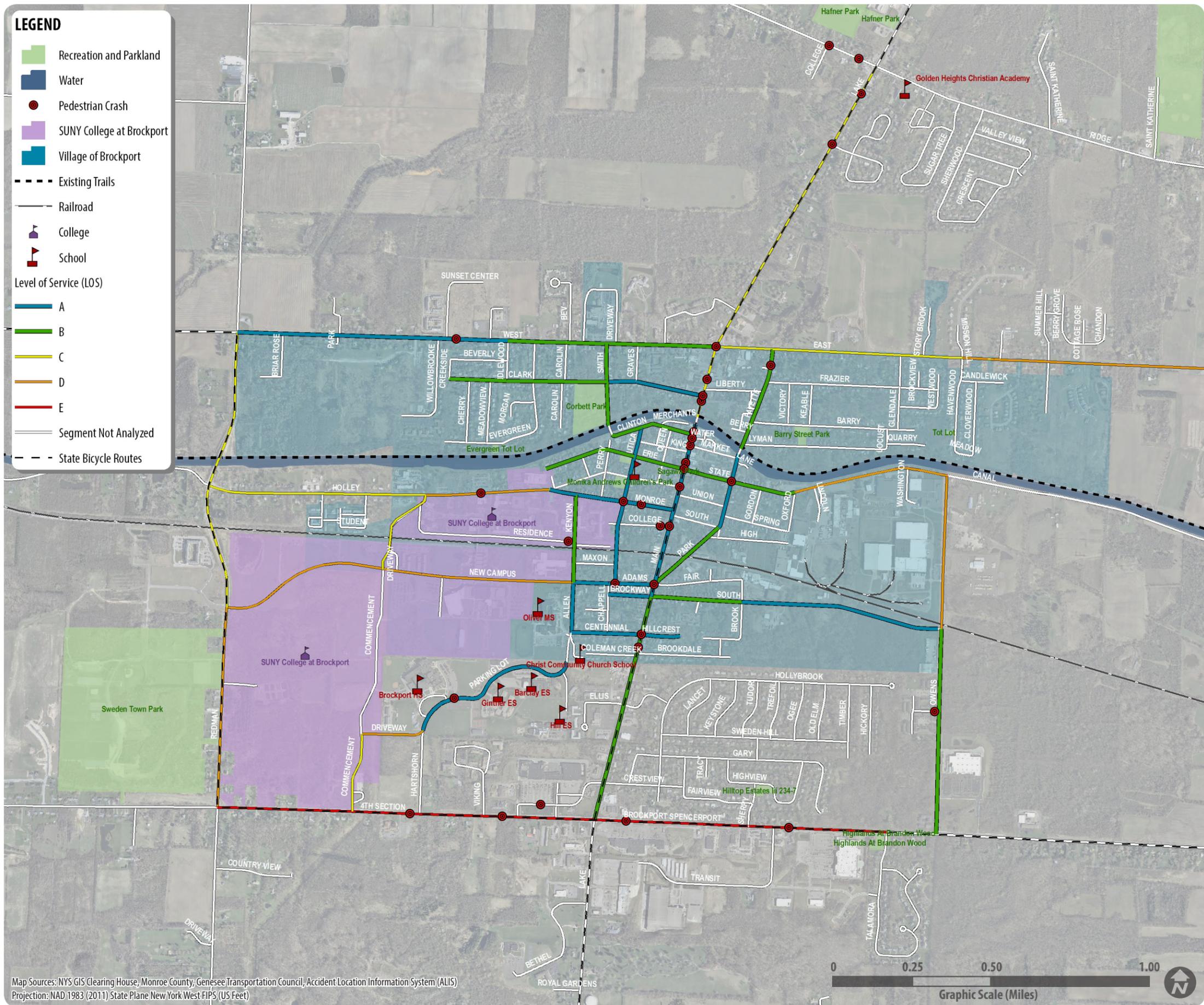
ERIE CANALWAY BRIDGE FACILITIES

Accessibility of the historic Erie Canal bridges was analyzed. A visual assessment coupled with public input provided the basis for existing conditions and concerns regarding the pedestrian and bicycle accessibility. It should be noted as part of this project, the bridges were not observed for structural integrity. Three bridges span the Erie Canal within the Village limits, they are as follows:

1. **Smith Street Bridge:** The western most bridge within the Village, appearing to have been most recently renovated. The bridge deck surface is steel and contains 5 foot wide concrete sidewalks on both sides. The existing guardrail, separating the sidewalks from the vehicular lane, restricts pedestrian and bicycle access from Clinton Street and Smith Street onto the bridge. The existing stairs (located south west area of the bridge) are constructed from concrete and wood and are a critical area for improvement. See [Figure 6](#) (presented later in the Plan in combination with facility recommendations) for photo representations of accessibility restraints.

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE 3
PEDESTRIAN LEVEL OF SERVICE



LEVEL OF SERVICE "A"



LEVEL OF SERVICE "B"



LEVEL OF SERVICE "C"



LEVEL OF SERVICE "D"



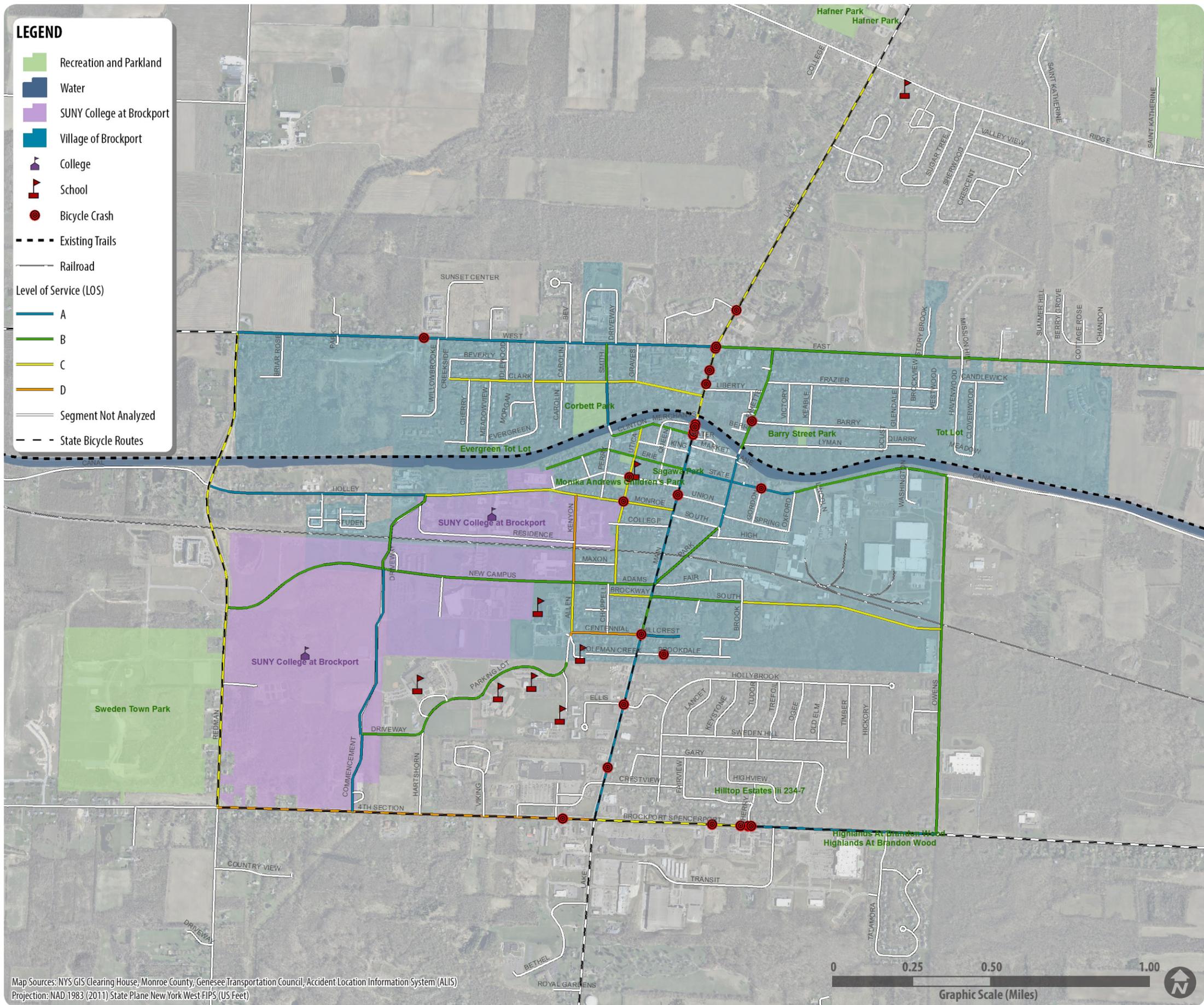
LEVEL OF SERVICE "E"



Note: Crashes as reported from 2004-2013. (GTC, ALIS)

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE: 4
BICYCLE LEVEL OF SERVICE



LEVEL OF SERVICE "A"



LEVEL OF SERVICE "B"



LEVEL OF SERVICE "C"



LEVEL OF SERVICE "D"



Note: Crashes as reported from 2004-2013. (GTC, ALIS)



2. **Main Street Bridge:** The central bridge within the Village providing access to the downtown business district. The bridge deck surface is steel with 5 foot wide steel sidewalks on both sides. Access for bicycles and pedestrians to the sidewalks is open, but the steel deck surface provides low friction, especially when wet or frozen. The Erie Canalway Trail crosses Main Street north of the bridge. The existing crosswalk is not perpendicular to the centerline of Main Street and is not highly visible, causing a perceived unsafe area for pedestrians and bicycles.
3. **Park Avenue Street Bridge:** The eastern most bridge within the Village. The bridge deck surface is steel with 5 foot wide steel sidewalks on both sides. The eastern pedestrian access was closed during the teams fieldwork during June 2015, but usually access for bicycles and pedestrians to the sidewalks is open. The steel deck surface provides low friction, especially when wet or frozen. The Erie Canalway Trail crosses Park Avenue north of the bridge. There is no existing crosswalk pavement markings or signage.

TRANSIT

The existing transit system was analyzed throughout the Village including the SUNY Brockport Shuttle. The Regional Transit Service (RTS) has one route, RTS Route 104 Brockport (former 20), with 55 stops within the Greater Brockport Area providing connections from Downtown Rochester. Currently there is one RTS Park and Ride within the Village south of SUNY Brockport off of Route 31. The SUNY Brockport Shuttle has three routes providing students and faculty access to the Greater Brockport Area; route 1 is the campus route, route 2 is the Walmart/Wegmans route, and route 3 is the Village route. Refer to Figure 4 for a map of transit routes.

Public Transit and Active Transportation are closely related and mutually supportive. Every ride on a bus starts and ends with walking. Nationwide, 29 percent of those who use transit were physically active for 30 minutes or more each day, solely by walking to and from public transit stops. Similarly, transit users took 30 percent more steps per day and spent 8.3 more minutes walking per day than did people who relied on cars.

- Robert Wood Johnson Foundation 2009

3.3 SHARED-USE TRAILS

Multi-use trails in Brockport function as both transportation facilities and destinations for recreation and fitness activities. The status of existing and planned trails in Brockport and overall connectivity of the network was analyzed. Trail assessments were accomplished through desktop analysis of existing data bases and documents, inquiries to local trail managers and operators, input from residents, and field verification. Refer to **Figure 10**, presented later in the Plan in combination with facility recommendations.

The Erie Canalway Trail is part of a developing system of multi-use trails in western New York. Following one of the most famous man made waterways, it spans New York State between Albany and Buffalo. The Trail is an ideal recreational resource for biking, walking, jogging, and other types of seasonal activities. Within the Village of Brockport, the Erie Canalway Trail surface is mainly stone dust with portions of asphalt and stamped colored asphalt. The Trail is a valuable connector for residents to the north of the Canal, as well as a recreational resource.

The Erie Canalway Trail also acts as a tourist element attracting visitors to the Village where Brockport's Welcome Center, part of the Canal-front Hospitality Program, provides water and electric hookups, wifi, showers, and laundry facilities. Connectivity to the Trail and road/driveway crossings are critical areas for improvements. Walk!Bike!Brockport! hosts numerous groups passing through the area. This year alone the group helped the Fireman's Exempt volunteers host 60 riders in July in addition to hosting over 600 riders who were a part of the New York Parks and Trails annual Bike the Erie Canal ride.





A second area was investigated as a possible new trail corridor. A CSX rail line has been abandoned to the east of Owens Road. The corridor is privately owned and coordination between the land owner and the Town of Clarkson would need to take place. The corridor could provide another connection opportunity for residents east of the Village. In addition, existing desire lines ('goat paths') around the Greater Brockport area were identified and mapped as indications of the latest demand for new pathways.

3.4 SCHOOLS AND UNIVERSITIES

Key issues include addressing existing safety concerns, identifying network gaps, and providing guidance for creating a "Complete Streets" environment that will be safe, attractive and supportive for pedestrians and bicyclists.



The Brockport Central School District includes 5 schools and is one of the Village's prime assets. A strong school district supports a strong local economy, and helps create an environment for lifetime residency. Providing safe opportunities for walking and bicycling to the schools can have positive health impacts for school age children, and help reduce short-distance automobile trips. The Brockport School District actively partakes in the National Walk to School Day. 2015 was Brockport's 10th annual Walk to School Day where over 600 students (a record number) participated. The school with the highest percentage of students walking to school wins the coveted Walk!Bike!Brockport Walk to School Day Trophy, claimed this year by Ginther School totaling 37% students walking.

The State University of New York (SUNY) College at Brockport is within the Village limits and acts a valuable asset to the Village. Coordination between the Village and College are crucial in both improving the existing and creating new multi-modal facilities.



3.5 PRIORITY INTERSECTIONS

Five priority intersections in the Village were selected for detailed study. The intersections were selected based on proximity to priority locations, 10 year history of crashes involving pedestrians and bicyclists, and input from the Project Advisory Committee, Village Staff and residents. Intersections were selected that could serve as examples or models for other intersections that were not studied. It is important to note that in selecting intersections, consideration was given to students, who may be walking and bicycling to school facilities, as well as senior citizens, who have active transportation needs to get to community services and health care providers. Bicycle and pedestrian facilities are particularly important to both of these groups.

Intersection safety assessments involved field investigations that considered the physical and operational characteristics of each location, pertinent to pedestrian and bicycle safety. Elements that were investigated include, and are not limited to: sidewalks, crosswalks, crossing widths, intersection geometry and corner radii, traffic controls, lighting, sight lines and other physical conditions; signal operations, phasing and timing related to pedestrian safety, turning volumes, traffic operations, movements and speeds.

The specific details of each intersection assessment can be found on **Sheets 1-5 of Figure 12**, presented later in the plan in combination with facility recommendations.

3.6 SAFETY EVALUATION

A safety evaluation of existing pedestrian and bicycle crash locations using 10-Year accident data information provided by GTC's Accident Location Information System (ALIS) was conducted for the Greater Brockport Area. Pedestrian and bicycle crash locations were each mapped in order to identify areas that may present opportunities to improve bicyclist and pedestrian safety. This safety assessment was a key component in selecting the Priority Intersections, as well as making recommendations for Priority Sidewalk Additions.

High accident crash locations have been identified in point format on the Bicycle and Pedestrian Level of Service Maps (**Figures 3 and 4**). Identifying crash locations help to determine how well streets actually meet the needs of bicyclists and pedestrians and identify where gaps truly exist.



4.0 FACILITY RECOMMENDATIONS



Review and analysis of existing conditions, extensive public input, and stakeholder involvement collectively yield an overview of both general active transportation needs (i.e. facility types) in the Greater Brockport area, as well as specific projects that would most improve bicycle and pedestrian accommodation. General facility types include closure of sidewalk gaps, shared use paths, designated bike lanes, road diet candidates, intersection improvements, and bicycle-specific signage and pavement markings (such as Shared Lane Markings and Bikes in Lane signage). 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.

Recommended improvements should be tied to capital improvement schedules and specific opportunities. Identification of the facilities in this Plan represents a significant enhancement to the likelihood of their implementation as targets of opportunity arise. The prioritization serves as a general guide to the Village of Brockport in phasing implementation, but does not suggest a specific order in which projects will ultimately be constructed.

A list of the Plan's specific recommended facility improvements, many of which were directly derived from community member input, is shown in **Tables 2 through 5**, as separated by facility type. In addition, refer to the associated figures. The Recommendations section proposes significant number of recommended projects. **Tables 2 through 5** summarize all of these proposed projects and their associated phasing. Each project varies in priority based on the number of people served by the project and the feasibility construction and funding. Each project was ranked according to the following sequencing options:

- **Priority** – Highly beneficial projects that are immediately feasible, or will have the most impact and should therefore be addressed first.
- **Recommended** – Very beneficial projects that will have a significant impact and should be addressed next.
- **Possible** – Beneficial projects that have a less critical time frame, or cannot begin until other projects are completed or issues are addressed.

4.1 RECOMMENDED PEDESTRIAN FACILITY IMPROVEMENTS

SIDEWALK NETWORK PRIORITY GAPS

One important task of Brockport's Active Transportation Plan was to identify gaps in the existing sidewalk network, and recommend priority sidewalk additions to help close the gaps. The long-term goal of the Village is to have sidewalks on both sides of all arterial and collector roads. It is recognized that local streets with low traffic volumes can often provide a safe pedestrian environment without a full sidewalk system. In certain locations, new sidewalk construction can also serve as off-street neighborhood connections to enhance walkability.



The inventory of existing conditions mapped the current sidewalk system in Greater Brockport, and identified existing gaps. Priority sidewalk additions address gaps that are in close proximity to community destinations, show a history of pedestrian safety issues, and improve overall connectivity of the pedestrian network. It should be noted for best practices, ADA accessible sidewalks should be provided along all roadways. The Plan specifically recommends approximately 5.20 miles of Priority Sidewalk additions. Refer to [Figure 5](#).

ERIE CANALWAY BRIDGE RECOMMENDATIONS

The Village of Brockport uniquely has three historic steel deck bridges crossing the Erie Canal. The bridges provide valuable linkages from North to South throughout the Village limits. Bridge-specific recommendations related to pedestrian and bicycle accessibility have been provided on [Figure 6](#) and should conform to MUTCD and AASHTO standards.

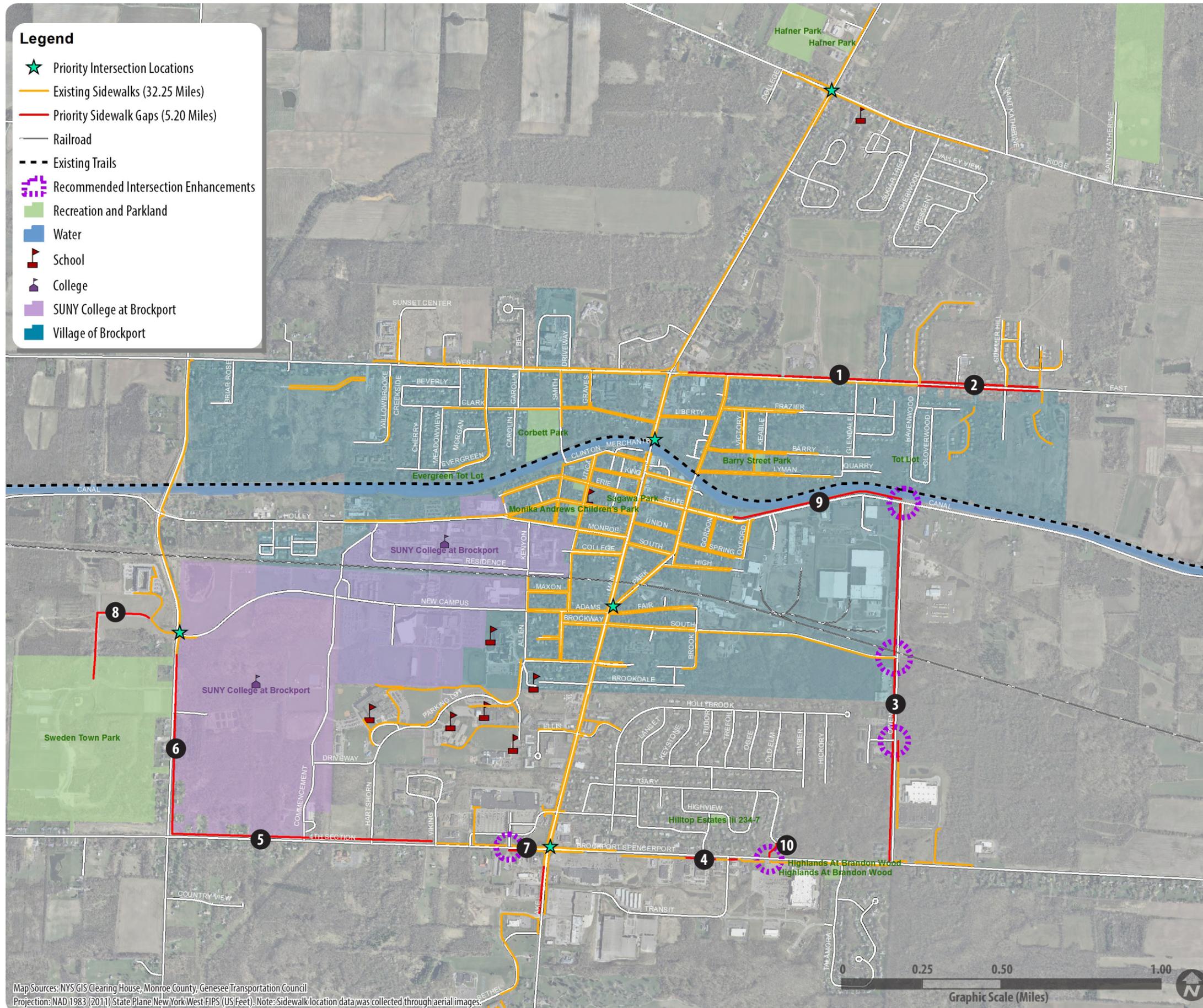
It should be noted that in regards to sidewalks “NYSDOT supports and is agreeable to the installation of sidewalks on State roads including those outlined in this study, on a prioritized basis based on demonstrated need and funding availability.”

TRANSIT STOP IMPROVEMENTS

Every trip on public transportation begins and ends with a walk or bicycle ride. It is recommended that existing and newly constructed transit stops shall be ADA accessible, encourage the use of public transportation and act as a key element in enhancing Active Transportation through the Village and Greater Brockport area. Refer to the [Facility Design Guidelines](#) section for the minimum design standards.

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

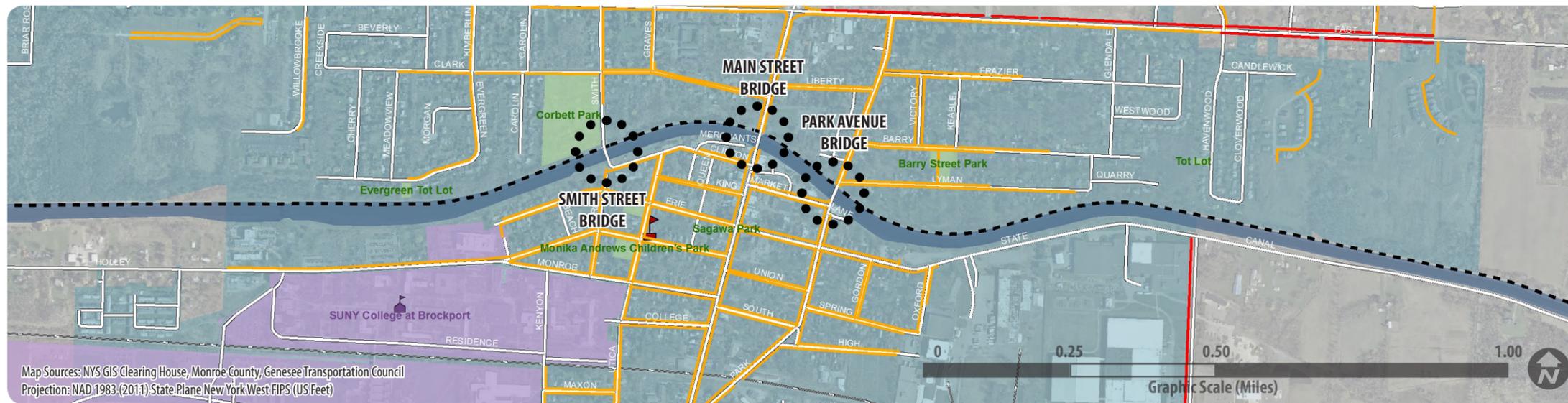
FIGURE 5
SIDEWALK NETWORK
PRIORITY GAPS



SIDEWALK NETWORK PRIORITY GAPS		Proximity to Schools / Universities	Proximity to Neighborhoods / Housing Communities	Connectivity to Mass Transit System	Proximity Commercial / Retail Facilities	Proximity to Parks / Opens Space / Trails	Pedestrian Crash (Location nearby)	Pedestrian Level of Service (PLOS) Rating
1	EAST AVENUE (North side from Route 19 to Wedgewood Ct.)	●	●			●		●
2	EAST AVENUE (South side from Havenwood Dr. to Anita's La.)	●	●			●		●
3	OWENS ROAD (West side from Route 31 to State St.)	●	●		●	●	●	●
4	ROUTE 31 (South side, gaps from Spurr Chevrolet to Walmart)	●	●	●	●	●	●	●
5	ROUTE 31 (North side, from Viking Way to Redman Rd.)	●	●	●	●	●	●	●
6	REDMAN ROAD (East side, from Route 31 to New Campus Dr.)	●	●			●		●
7	ROUTE 31 (Southside, from ex. sidewalk west of Rt 19 to Tim Hortons entrance)		●	●	●			●
8	PERSISTENCE PATH (North side from Redman Rd. to Park Entrance Dr.)	●	●			●		●
9	STATE STREET (North side from Owens Rd. to Ex. sidewalk at Sweden Senior Center)	●	●		●			●
10	* SWEDEN VILLAGE (Gary Drive to traffic light at Walmart, include crosswalk safety enhancements to intersection)	●	●		●			●

* Note: Sweden Village is not a sidewalk gap, but a recommended new sidewalk ultimately to connect the neighborhood to Walmart.

FIGURE 6
ERIE CANALWAY
BRIDGE RECOMMENDATIONS



SMITH STREET BRIDGE



EXISTING CONDITIONS / ISSUES

- Walkways on both sides of bridge but guiderail prevents bicycle access.



RECOMMENDATIONS

- Potential micro-brewery development and redevelopment of an existing historic structure could revitalize neighborhood (refer to Clinton Street Master Plan).
- Plan for a full inclusive active transportation system.
- Provide proper signage in fully visible locations (in reference to the presence of pedestrians and bicyclists on the bridge). Shall conform with AASHTO and MUTCD standards.
- Adjust guiderail to allow bicycle access.
- Existing steps are not ADA compliant and are in poor condition. Improve steps.
- Extend existing sidewalk on east side of bridge, south of the canal along the north side of Clinton St. Install pedestrian crosswalk (conforming to AASHTO and MUTCD standards) at base of the bridge ramp to connect to the existing sidewalk on the south side of Clinton St.

MAIN STREET BRIDGE



EXISTING CONDITIONS / ISSUES

- Steel deck is a low friction surface for cyclists - slippery when wet or frozen.
- Erie Canal Trail crosswalk on north side is not perpendicular to the centerline of Main Street
- Low visibility of crosswalk for vehicles due to current location
- Crosswalk placement, on downhill, causes vehicles to pick up speed on approach



RECOMMENDATIONS

- Re-stripe crosswalk for high-visibility.
- Move crossing to the north, providing improved sight distances.
- Install W11-15 and W11-15P signs.
- Provide proper signage in fully visible locations (in reference to the presence of pedestrians and bicyclists on the bridge). Shall conform with AASHTO and MUTCD standards.
- Identify trail alignment through parking area with pavement markings and/or physical separation.
- Refer to **Priority Intersections** Figure.
- Possible retrofits to steel deck surface to improve traction could be a spray on surface, such as Rhino Linings, Linex, or approved equal.



PARK AVENUE STREET BRIDGE



EXISTING CONDITIONS / ISSUES

- Steel deck is a low friction surface for cyclists - slippery when wet or frozen.
- No existing crosswalk pavement markings or signage for Erie Canalway Trail.
- Low visibility of crossing location for vehicles due to current location
- Future crosswalk placement, on downhill, would cause vehicles to pick up speed on approach



RECOMMENDATIONS

- Re-stripe crosswalk for high-visibility.
- Install W11-15 and W11-15P signs.
- Provide proper signage in fully visible locations (in reference to the presence of pedestrians and bicyclists on the bridge). Shall conform with AASHTO and MUTCD standards.
- Possible retrofits to steel deck surface to improve traction are being investigated.
- Possible retrofits to steel deck surface to improve traction could be a spray on surface, such as Rhino Linings, Linex, or approved equal.



TABLE 2: PEDESTRIAN FACILITY IMPROVEMENTS

<i>Roadway/Location</i>	<i>Recommended Facility Improvement</i>	<i>Coordinating Jurisdiction</i>	<i>Phasing</i>
East Avenue (Route 19 to Wedgewood Ct)	Complete sidewalk north side	Town of Sweden, Village of Brockport, Monroe County	Recommended
East Avenue (Havenwood Dr to Anita's Ln)	Complete sidewalk south side	Town of Sweden, Village of Brockport, Monroe County	Recommended
Owens Road (Route 31 to State St)	Complete sidewalk west side	Town of Sweden	Priority
Route 31 (Viking Way to Redman Rd)	Complete sidewalk north side	NYS DOT	Recommended
Route 31 (existing sidewalk west of Rt 19 to Tim Hortons entrance)	Complete sidewalk south side	NYS DOT	Priority
Redman Road (Route 31 to New Campus Dr)	Complete sidewalk east side	NYS DOT	Priority
Persistence Path (Redman Rd to Park Entrance Dr)	Complete sidewalk north side	Town of Sweden	Recommended
State Street (Owens Rd to Ex. sidewalks at Sweden Senior Center)	Complete sidewalk north side	Village of Brockport	Priority
Smith Street Bridge	Plan for a full inclusive active transportation system, provide proper signage in fully visible locations (in reference to the presence of pedestrians and bicyclists on the bridge). Shall conform with AASHTO and MUTCD standards. Adjust guiderail to allow bicycle and pedestrian access. Existing steps are not ADA compliant and are in poor condition. Improve steps. Extend existing sidewalk on the South side of the Canal along the North side of Smith Street/ Clinton Street. Install pedestrian crosswalk to conform to AASHTO and MUTCD standards.	Village of Brockport	Priority
Main Street Bridge	Re-stripe crosswalk for high-visibility, move crossing to the north providing improved sight distances, install W11-15 and W11-15P signs, provide proper signage in fully visible locations (in reference to the presence of pedestrians and bicyclists on the bridge), identify trail alignment through parking area with pavement markings and/or physical separation, refer to Priority Intersections Figure. Retrofits to steel deck surface to improve traction.	NYS DOT	Priority
Park Avenue Bridge	Re-stripe crosswalk for high-visibility, install W11-15 and W11-15P signs, provide proper signage in fully visible locations (in reference to the presence of pedestrians and bicyclists on the bridge), refer to Priority Intersections Figure. Retrofits to steel deck surface to improve traction.	Village of Brockport	Priority



4.2 RECOMMENDED BICYCLE FACILITY IMPROVEMENTS

It should be noted that as part of this Plan, approximately 28% of recommendations include the need for detailed corridor study (shared lane markings candidates), 20% include creation of space for paved shoulders or bike lanes, 10% include roadway re-stripe candidates, 1% include road diet candidate and the remaining 41% include segments with no recommended improvements. In terms of Bicycle Level of Service, designating bike lanes is secondary to simply providing delineated space that can be used by bicyclists. There are, however, many operational benefits to designating bike lanes including, but not limited to, their striping through most intersections (particularly those with exclusive right turn lanes) and their impact in reducing the incidence of wrong way riding. Decisions to designate paved shoulders as bike lanes will be at the discretion of the controlling jurisdictions of roads within Brockport. It should be noted that Monroe County DOT prefers not to designate shoulders as bike lanes since this “prohibits all other uses of the space.”

Based on existing conditions and roadway geometries, each study network segment is classified into one of several recommended bicycle facility improvement categories. One of five potential outcomes has been identified for each of the analyzed roadway segments. These outcomes include the following:

1. No Recommended Improvement (existing bicycle facility);
2. Roadway Re-stripe Candidate (reduction of existing lane widths to create bike space);
3. Road Diet Candidate (reduction of the number of lanes to create bike space);
4. Add or Widen Paved Shoulders; and
5. Detailed Corridor Study Needed/Shared Lane Markings Candidate.

Each recommendation type is discussed in more detail within this section. Please see **Figure 7** for an illustration of the recommended improvements, and **Table 3** for more detail. Refer to **Appendix G** for a memorandum from FHWA expressing their support for taking a flexible approach to bicycle and pedestrian facility design and *“encouraging transportation agencies to go beyond the minimum requirements, and pro actively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all abilities, and utilize universal design characteristics where appropriate.”*

EXISTING BICYCLE FACILITIES

One of the primary purposes of this plan is to identify locations for new on-road bicycle facilities. Accordingly, the first step in the facility recommendation process is to identify and filter out those study network segments where a bicycle facility already exists. For the purposes of this analysis, an existing bicycle facility is constituted by any designated bike lane or paved shoulder at least four feet wide (with a striped edge line) that is not clearly intended for on-street parking. Segments meeting these criteria have been identified as having an existing bicycle facility for this plan’s purposes; the analysis of all other segments continued into the next step. Approximately 41% of the network’s total mileage, currently have existing on-road bicycle facilities. In addition, most of Brockport’s local streets are likely to provide acceptable bicycling conditions as shared lanes due to low volumes and speeds.

ROADWAY RE-STRIPE CANDIDATES

Among strategies commonly used to improve bicycling conditions, roadway re-striping is frequently considered the most desirable solution. This is because of the very low (or effectively non-existent, if performed in concert with scheduled resurfacing) associated cost and the existence of excess lane width on many streets. For this reason, roadway re-striping was the first option analyzed for the study network after those segments with existing bicycle facilities were filtered out of the process.

The analysis spreadsheet was programmed to reflect Brockport’s standards to determine whether the total pavement width (TPW) of each roadway segment is sufficient to leave space for four feet of bicycle facility in each direction of travel while preserving the minimum lane width for all other travel lanes, turn lanes, and on-street parking. Based on these criteria, approximately 10% of the study network are roadway re-striping candidates. Many of these segments already include a narrow paved shoulder on one or both sides of the road, such that the re-striping would widen those shoulders to an appropriate width for bicycle travel. Refer to **Figure 8** for a visual rendering of Owen’s Road re-stripe recommendation. Improvements on Owens Road will provide a



north/south active transportation corridor between Route 31 and the Canal. Proposed new sidewalks along the south side of the Canal will connect Owens Rd to the Village core. An asphalt rumble strip is shown as a buffering option in Alternative 2. This practice is not technically sanctioned by FHWA, AASHTO, or MUTCD as a Buffered Bike Lane practice. It is recommended as possible a safety measure to provide a visual and audible buffer for vehicles and bicycles. More information regarding Rumble Strips can be found on the FHWA website (http://safety.fhwa.dot.gov/roadway_dept/pavement/rumble_strips/). Owens Road may also be a corridor where the Village **Signs the Roadways with Paved Shoulders** (refer to Section 5: Facility Design Guidance).

ROAD DIET CANDIDATES

While the removal of travel lanes to create bicycle facilities (i.e., a road diet) is also relatively inexpensive to implement, re-striping (to reduce travel lane widths but not reduce the amount of travel lanes) is typically a less noticeable change to a roadway and should generally be considered first. Road diets are frequently considered when a preliminary analysis indicates that sufficient capacity exists to effectively accommodate motor vehicle traffic for the foreseeable future with a reduced number of lanes. Such preliminary planning-level analyses have been performed for this project to identify road diet candidates. Significantly more detailed operational analyses should be carried out for individual sections before moving forward with any of the identified projects.

To identify road diet candidates, the number of lanes was hypothetically reduced (e.g., 4-lane to 2-lane) to determine the resulting motor vehicle level of service. The results were compared against the identified motor vehicle level of service standard of “D” to see where excess capacity exists. Collectively, the re-stripe candidates and road diet candidate show a significant potential for making Brockport much more accommodating for bicyclists inexpensively (and potentially quickly depending on established roadway resurfacing cycles). Redman Road was identified as a road diet candidate, only representing 1% of the study network. Refer to **Figure 9** (2 pages) for a visual rendering of the Redman Road Road Diet candidate. The section of Redman Road, from Route 31 to West Avenue, falls under the jurisdiction of New York State Department of Transportation (NYSDOT). A representative from the agency was included on the project advisory committee and there was productive dialogue regarding this roadway throughout the course of the study. The road diet recommendation is conceptual in nature and would be subject to further study and review before advancing to design development and implementation. It should be noted that “NYSDOT supports a road diet of Redman Road facilitating a bicycle space.” Traffic calming effects from the proposed Redman Road Road Diet could enhance the safety of the Redman Road/New Campus Drive intersection.

ADD PAVED SHOULDERS CANDIDATES

At this point in the process, remaining roadway segments were examined to determine the feasibility of adding or widening paved shoulders, which could be designated as bike lanes or bike space, at the edge of the existing pavement. While more expensive than roadway re-striping and road diet projects, constructing paved shoulders on the outside of the existing edge of pavement is still much less expensive than projects that involve reconstruction of the roadway. However, paved shoulders can add impacts to adjacent properties. For a network segment to be considered a candidate for adding paved shoulders, it must have an open shoulder (i.e., not curb-and-gutter) cross-section. Another 20% of the study network mileage), some of which already have narrow paved shoulders, meet this criterion. It should be noted that some of these paved shoulder candidate segments have flat roadside profiles, while others have swales that would require more expensive re-grading and possibly piping of ditches.

DETAILED CORRIDOR STUDY NEEDED/SHARED LANE MARKINGS CANDIDATE

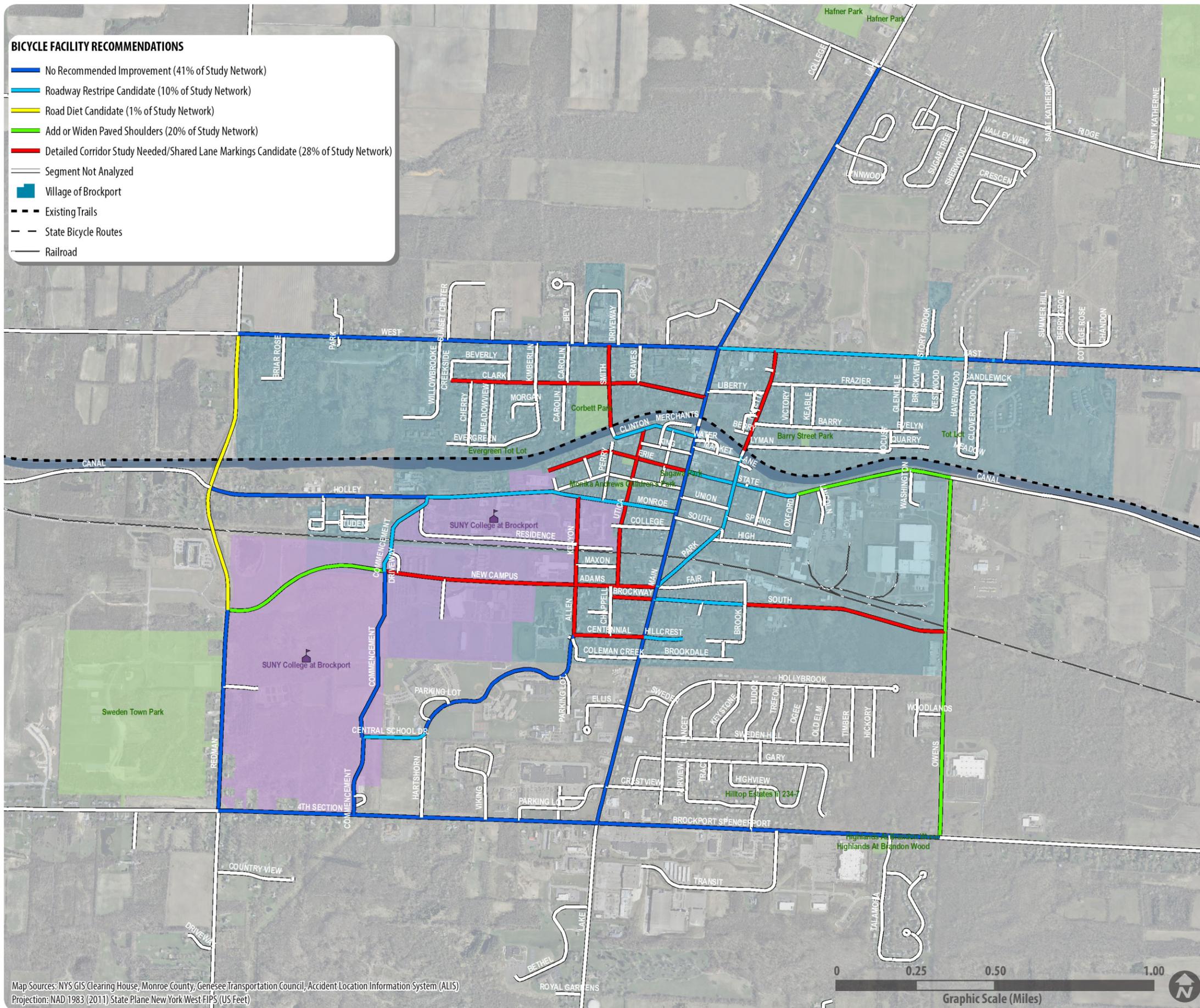
Many study segments present minimal opportunity for improving bicycling conditions through the identified roadway retrofit strategies discussed above. Specific bicycling-related improvements to these segments (representing the remaining 28% of the study network) will require extensive and detailed operational-level investigations of the constraints and opportunities along these corridors. Options for these roads include sidepaths (shared use paths adjacent to the road), bike boulevards, and Shared Lane Markings, or “sharrows.” Shared lane markings are intended to assist bicyclists with lateral positioning in the lanes, outside the door zone on streets with on-street parallel parking and away from the curb in lanes too narrow to share with a motor vehicle.

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE 7
**ON-STREET BICYCLE
FACILITY RECOMMENDATIONS**

BICYCLE FACILITY RECOMMENDATIONS

- No Recommended Improvement (41% of Study Network)
- Roadway Restripe Candidate (10% of Study Network)
- Road Diet Candidate (1% of Study Network)
- Add or Widen Paved Shoulders (20% of Study Network)
- Detailed Corridor Study Needed/Shared Lane Markings Candidate (28% of Study Network)
- Segment Not Analyzed
- Village of Brockport
- Existing Trails
- State Bicycle Routes
- Railroad



Based on existing conditions and roadway geometries, each study network segment is classified into one of several recommended bicycle facility improvement categories. One of five potential outcomes has been identified for each of the analyzed roadway segments.

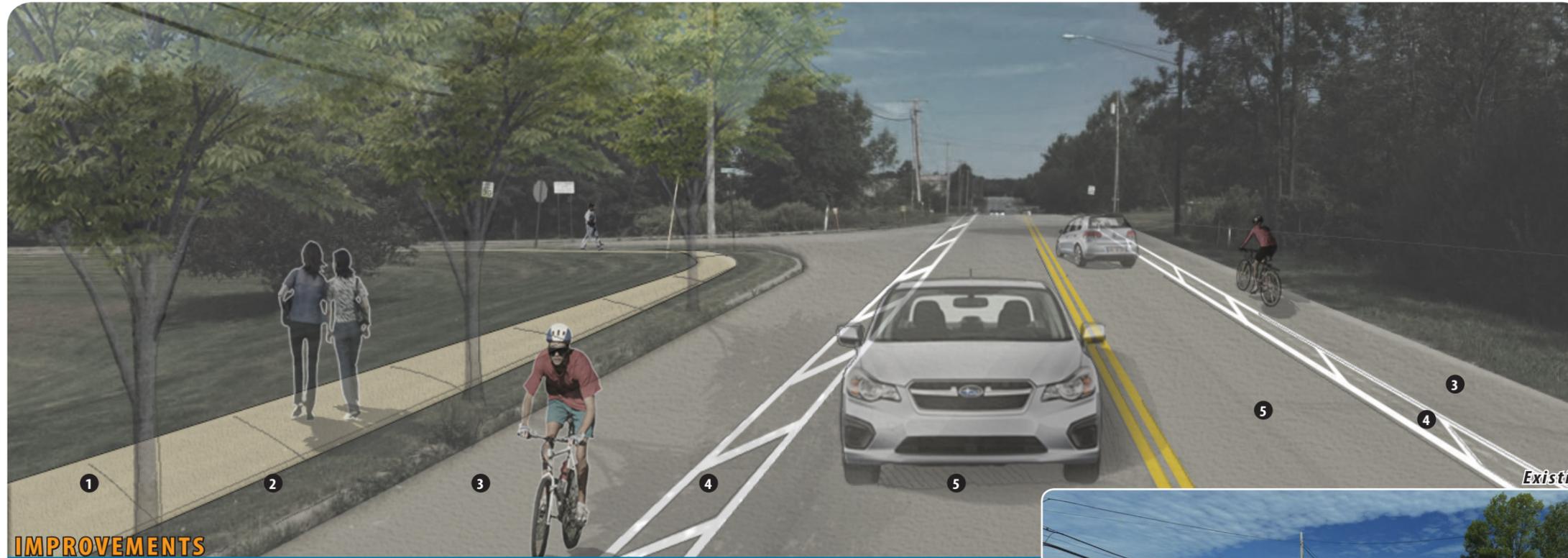
These outcomes include the following:

1. No Recommended Improvement (existing bicycle facility);
2. Roadway Re-stripe Candidate (reduction of existing lane widths to create space for bike lanes);
3. Road Diet Candidate (reduction of the number of lanes to create space for bike lanes);
4. Add or Widen Paved Shoulders; and
5. Detailed Corridor Study Needed/Shared Lane Markings Candidate.

Map Sources: NYS GIS (Clearing House), Monroe County, Genesee Transportation Council, Accident Location Information System (ALIS)
Projection: NAD 1983 (2011) State Plane New York West FIPS (US Feet)

CONCEPTUAL IMPROVEMENTS ALTERNATIVE 1

Concept rendering, not to scale, not for construction



IMPROVEMENTS

- 1 New Concrete Sidewalk
- 2 Tree Lawn
- 3 Bike Lane
- 4 Striped Buffer
- 5 Travel Lane

Existing Conditions



CONCEPTUAL IMPROVEMENTS ALTERNATIVE 2

Concept rendering, not to scale, not for construction

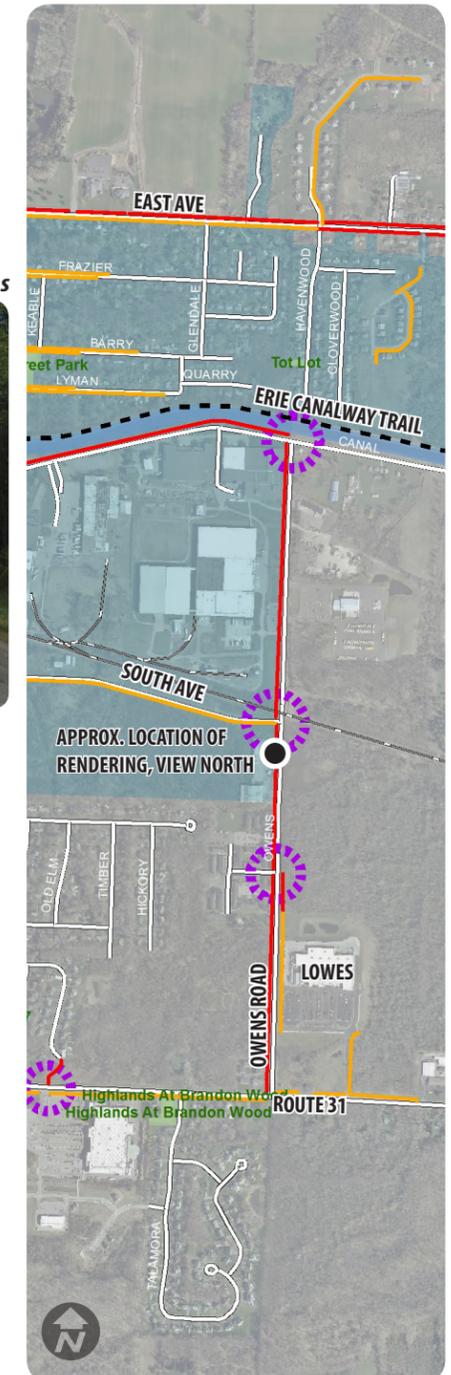


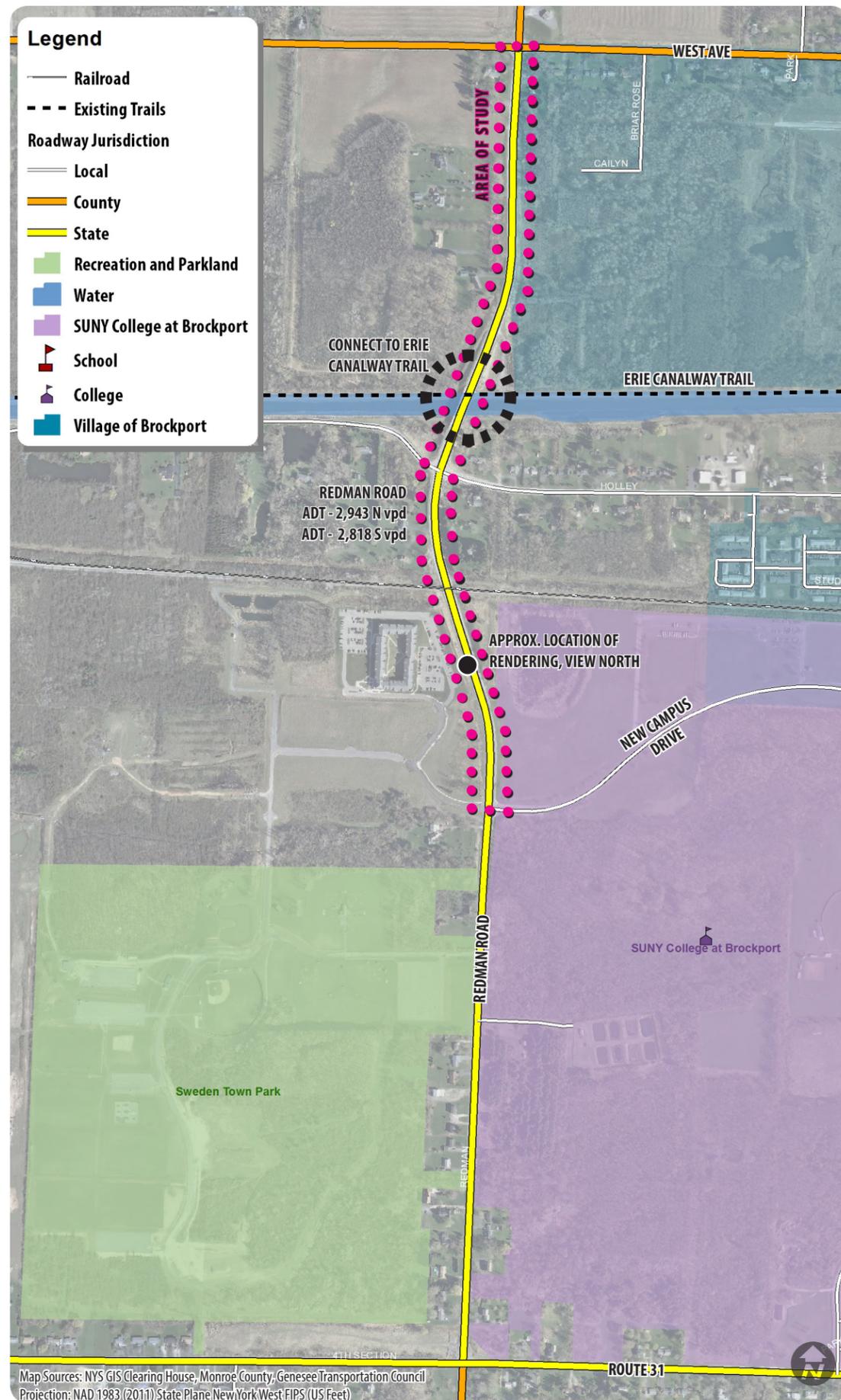
IMPROVEMENTS

- 1 New Concrete Sidewalk
- 2 Tree Lawn
- 3 Bike Lane
- 4 Striped Buffer with Rumble Strip
- 5 Travel Lane

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE 8
OWENS ROAD
CONCEPTUAL IMPROVEMENTS





REDMAN ROAD

EXISTING CONDITIONS / ISSUES

- West Avenue to New Campus Drive
 - ◆ North/south 4 Lane highway. Two lanes per direction of travel.
 - ◆ 40 mph.
- New Campus Drive to Route 31/4TH Section Road
 - ◆ North/south 2 Lane highway. One lane per direction of travel.
 - ◆ 40 mph.

WHAT IS A ROAD DIET?

- A road diet can be described as “removing travel lanes from a roadway and utilizing the space for other uses and travel modes. (FHWA, 2014)”
- **Operational Factors: What is considered when determining feasibility of a site for a Road Diet?**
 - ◆ De Facto Three-Lane Roadway Operation
 - ◆ Speed
 - ◆ Level of Service
 - ◆ Quality of Service
 - ◆ Average Daily Traffic
 - ◆ Peak Hour and Peak Direction
 - ◆ Turning Volumes and Patterns
 - ◆ Frequently Stopping and Slow-Moving Vehicles
- **Benefits Include:**
 - ◆ Allows for new or wider shoulder space for cyclists and/or wider pedestrian area;
 - ◆ Reduces vehicular speeds and provides room for exclusive left-turn lanes;
 - ◆ Reduces frequency and severity of collisions, and may reduce traffic volumes;
 - ◆ Reduces crossing width and exposure for pedestrians; and
 - ◆ Can lead to a higher quality of life through pedestrian and bicycle improvements.
 - ◆ Provides traffic calming to enhance the intersection of New Campus Drive and Redman Road.

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE 9 REDMAN ROAD CONCEPTUAL ROAD DIET CANDIDATE SHEET 1 OF 2

Table 2. Practitioner Interview Results Summary Road Diet Installation Observations

Road Diet Feature	Primary/Intended Impacts	Secondary/Unintended Impacts	
		Positive	Negative
Bike lanes	<ul style="list-style-type: none"> • Increased mobility and safety for bicyclists, and higher bicycle volumes • Increased comfort level for bicyclists due to separation from vehicles 	<ul style="list-style-type: none"> • Increased property values 	<ul style="list-style-type: none"> • Could reduce parking, depending on design
Fewer travel lanes	<ul style="list-style-type: none"> • Reallocate space for other uses 	<ul style="list-style-type: none"> • Pedestrian crossings are easier, less complex • Can make finding a gap easier for cross-traffic • Allows for wider travel lanes 	<ul style="list-style-type: none"> • Mail trucks and transit vehicles can block traffic when stopped • May reduce capacity • In some jurisdiction, maintenance funding is tied to the number of lane-miles, so reducing the number of lanes can have a negative impact on maintenance budgets • Similarly, some Federal funds may be reduced • If travel lanes are widened, can encourage increased speeds
Two-Way Left Turn Lane	<ul style="list-style-type: none"> • Provide dedicated left turn lane 	<ul style="list-style-type: none"> • Makes efficient use of limited roadway area 	<ul style="list-style-type: none"> • Could be difficult for drivers to access left turn lane if demand for left turns is too high
Pedestrian refuge island	<ul style="list-style-type: none"> • Increased mobility and safety for pedestrians 	<ul style="list-style-type: none"> • Makes pedestrian crossings safer and easier • Prevents illegal use of the TWLTL to pass slower traffic or access an upstream turn lane 	<ul style="list-style-type: none"> • May create issues with snow removal • Can effectively increase congestion by preventing illegal maneuvers
Buffers (grass, concrete medians, plastic delineators)	<ul style="list-style-type: none"> • Provide barriers and space between travel modes 	<ul style="list-style-type: none"> • Increases comfort level for bicyclists by increasing separation from vehicles • Barrier can prevent users entering a lane reserved for another mode 	<ul style="list-style-type: none"> • Grass and delineator buffers will necessitate ongoing maintenance

- Reduced right-angle crashes as side street motorists must cross only three lanes of traffic instead of four.
- Traffic calming and reduced speed differential, which can decrease the number of crashes and reduce the severity of crashes if they occur.
- The opportunity to allocate the “leftover” roadway width for other purposes, such as on-street parking or transit stops.
- Encouraging a more community-focused, “Complete Streets” environment.
- Simplifying road scanning and gap selection for motorists (especially older and younger drivers) making left turns from or onto the mainline.

A Road Diet can be a low-cost safety solution, particularly in cases where only pavement marking modifications are required to make the traffic control change. In other cases, the Road Diet may be planned in conjunction with reconstruction or simple overlay projects, and the change in cross section allocation can be incorporated at no additional cost.

Geometric and operational design features should be considered during the design of a Road Diet. Intersection turn lanes, traffic volume, signing, pavement markings, driveway density, transit routes and stops, and pedestrian and bicyclist facilities should be carefully considered and appropriately applied during the reconfiguration for appropriate Road Diet implementation.⁷ As with any roadway treatment, determining whether a Road Diet is the most appropriate alternative in a given situation requires data analysis and engineering judgment.

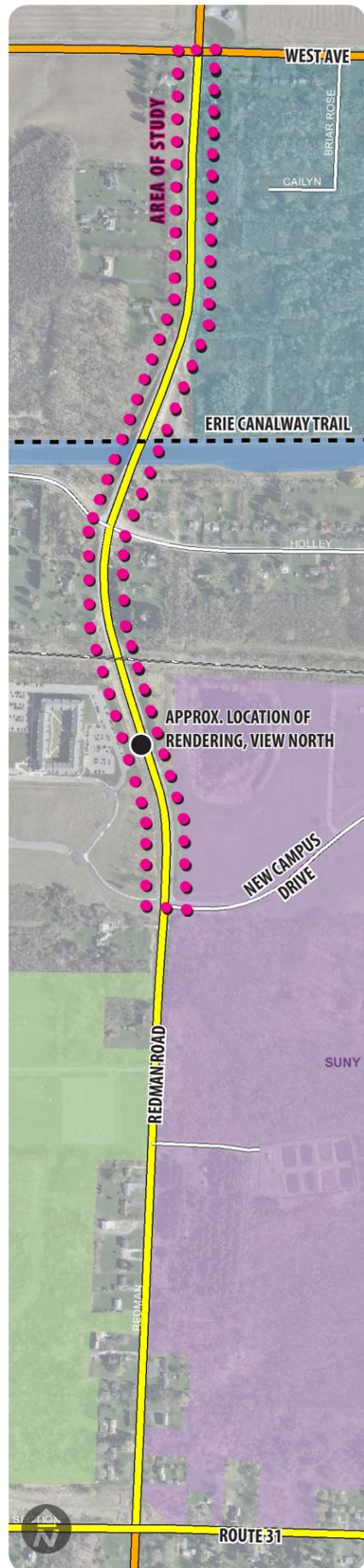
Once installed, it is important to monitor the safety and operational effects of the roadway, and to make changes as necessary to maintain acceptable traffic flow and safety performance for all road users. Evaluation of Road Diets will provide practitioners the information needed to continue implementing reconfiguration projects in their jurisdictions.

Table 1. Problems Potentially Correctable by Road Diet Implementation

Category	Problem	Rationale
Safety	Rear-end crashes with left-turning traffic due to speed discrepancies	Removing stopped vehicles attempting to turn left from the through lane could reduce rear-end crashes
	Sideswipe crashes due to lane changes	Eliminating the need to change lanes reduces sideswipe crashes
	Left-turn crashes due to negative offset left turns from the inside lanes	Eliminating the negative offset between opposing left-turn vehicles and increasing available sight distance can reduce left-turn crashes
Operational	Bicycle and pedestrian crashes	Bicycle lanes separate bicycles from traffic; pedestrians have fewer lanes to cross and can use a refuge area, if provided
	Delays associated with left-turning traffic	Separating left-turning traffic has been shown to reduce delays at signalized intersections
	Side street delays at unsignalized intersections	Side-street traffic requires shorter gaps to complete movements due to the consolidation of left turns into one lane
Other	Bicycle operational delay due to shared lane with vehicles or sidewalk use	Potential for including a bike lane eliminates such delays
	Bicycle and pedestrian accommodation due to lack of facilities	Opportunity to provide appropriate or required facilities, increasing accessibility to non-motorized users
	Unattractive aesthetic	Provisions can be made for traversable medians and other treatments

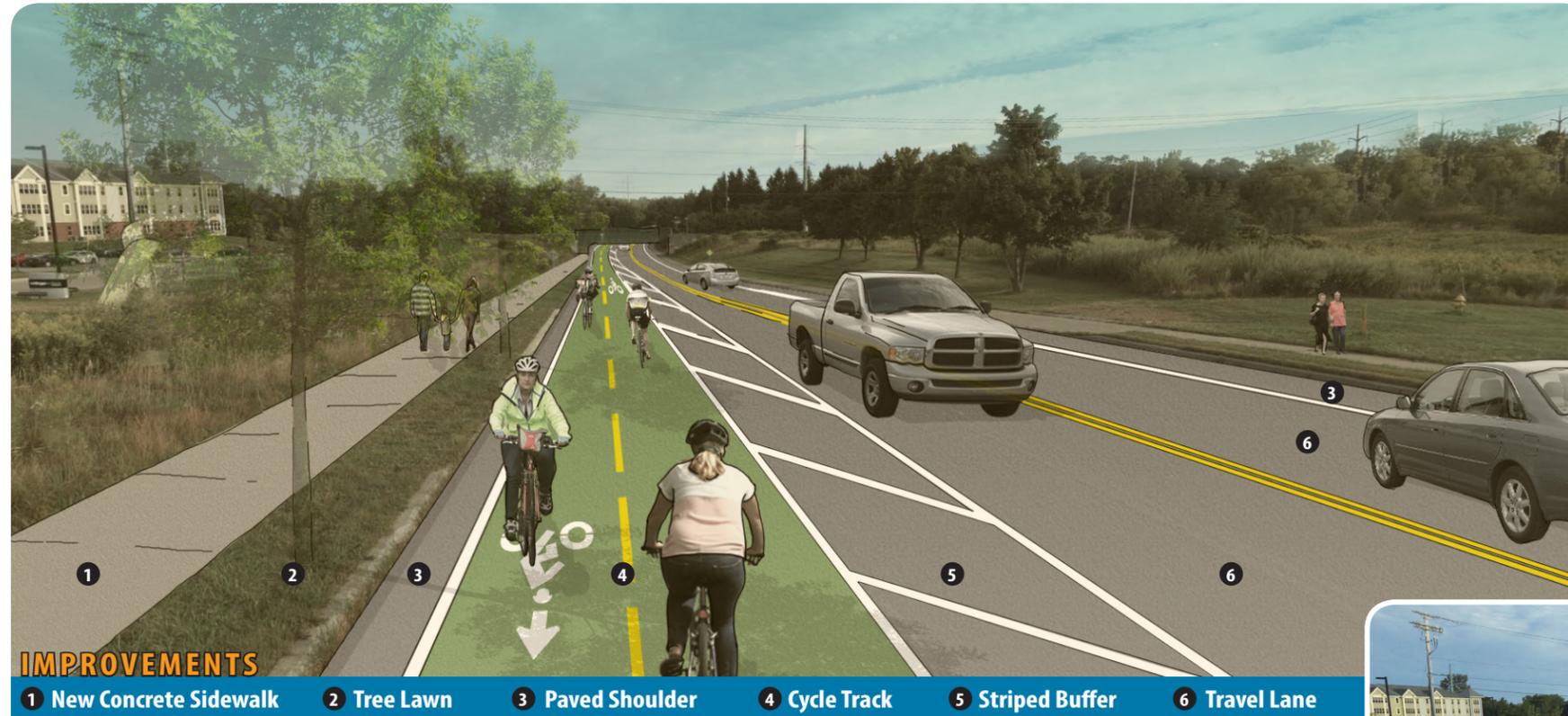
Adapted from Kentucky Transportation Center's Guidelines for Road Diet Conversions⁷

FIGURE 9
REDMAN ROAD
CONCEPTUAL ROAD DIET CANDIDATE
SHEET 2 OF 2



CONCEPTUAL ROAD DIET: ALTERNATIVE 1

Concept rendering, not to scale, not for construction



IMPROVEMENTS

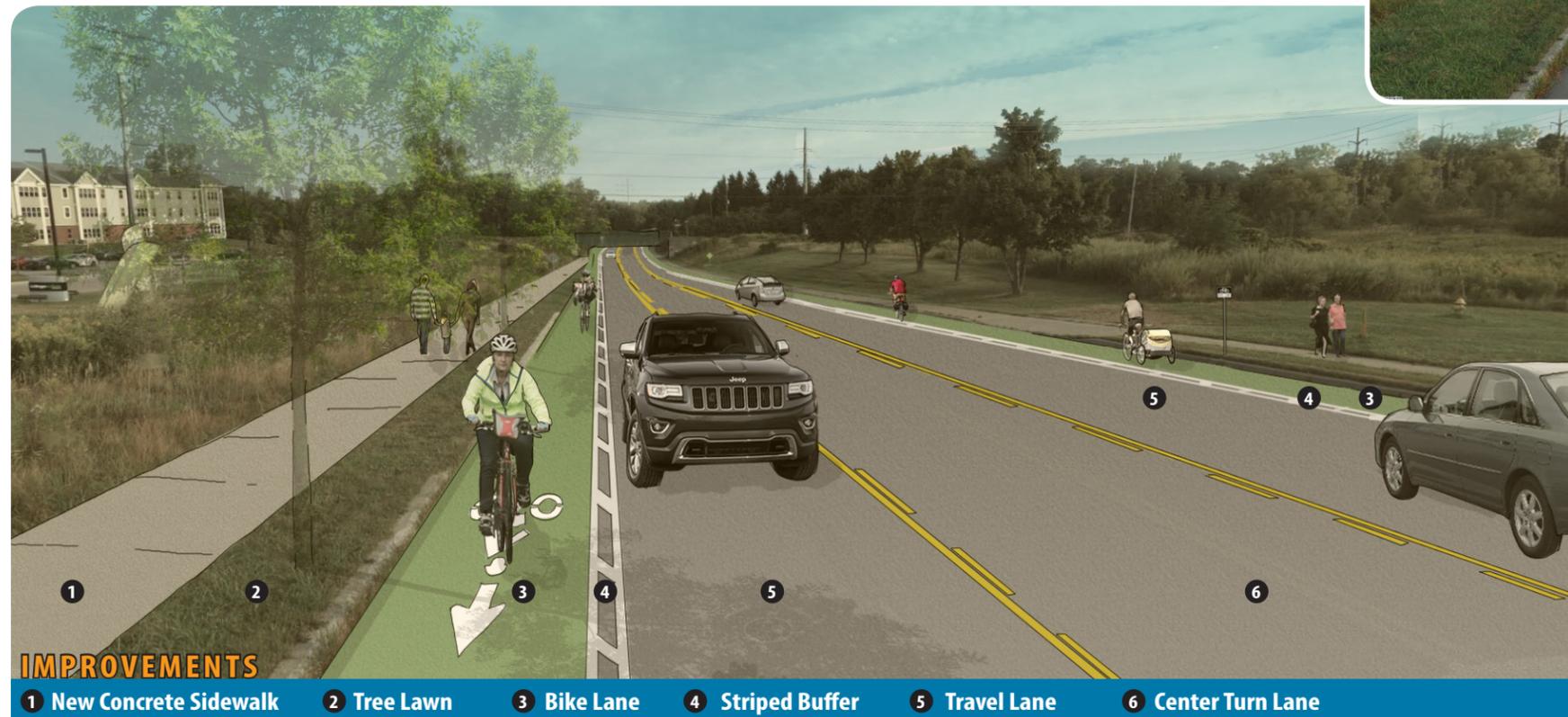
- 1 New Concrete Sidewalk
- 2 Tree Lawn
- 3 Paved Shoulder
- 4 Cycle Track
- 5 Striped Buffer
- 6 Travel Lane



Existing Conditions

CONCEPTUAL ROAD DIET: ALTERNATIVE 2

Concept rendering, not to scale, not for construction



IMPROVEMENTS

- 1 New Concrete Sidewalk
- 2 Tree Lawn
- 3 Bike Lane
- 4 Striped Buffer
- 5 Travel Lane
- 6 Center Turn Lane

NOTE:
After review of the two alternatives during the second Public Informational Meeting, **Alternative 2** was chosen as the preferred option.



TABLE 3: BICYCLE FACILITY IMPROVEMENTS

<i>Roadway/Location</i>	<i>Recommended Facility Improvement</i>	<i>Coordinating Jurisdiction</i>	<i>Phase</i>
Adams Street (Rt 19 to New Campus Dr)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Allen Street (Centennial Ave to Adams St)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Brockway Place (Rt 19 to Chappell St)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Centennial Avenue (Rt 19 to Allen St)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Central School Drive (Commencement Dr to Hartshorn Dr)	Roadway re-stripe to create paved shoulders	Village of Brockport	Priority
Clark Street (Rt 19 to Creekside Dr)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Clinton Street (Rt 19 to Erie Canal)	Roadway re-stripe to create paved shoulders	Village of Brockport	Recommended
Commencement Drive (New Campus Dr to Holley St)	Roadway re-stripe to create paved shoulders	SUNY Brockport	Recommended
East Avenue (Rt 19 to Havenwood)	Roadway re-stripe to widen paved shoulders	Monroe County	Priority
Erie Street (Rt 19 to end)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Fayette Street (Erie Canal to East Ave)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Hillcrest Parkway (Rt 19 to end)	Roadway re-stripe to create paved shoulders	Village of Brockport	Recommended
Holley Street (Commencement Dr to Monroe Ave)	Roadway re-stripe to create paved shoulders	SUNY Brockport	Priority
Kenyon Street (Adams St to end)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
Monroe Avenue (Holley St to Rt 19)	Roadway re-stripe to create paved shoulders	Village of Brockport	Priority
New Campus Drive (Adams St to Commencement Dr)	Detailed corridor study to create bike facilities	SUNY Brockport	Priority
New Campus Drive (Commencement Dr to Redman Rd)	Add or widen paved shoulders	SUNY Brockport	Priority
Owens Road (Canal Rd to Rt 31)	Add or widen paved shoulders	Village of Brockport	Priority
Park Avenue (Erie Canal to Rt 19)	Roadway re-stripe to create paved shoulders	Village of Brockport	Recommended
Redman Road (New Campus Dr to West Ave)	Road diet candidate	NYSDOT	Priority
Smith Street (Erie Canal to West Ave)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
South Avenue (Brook Terrace to Owens Rd)	Detailed corridor study to create bike facilities	Village of Brockport	Possible
South Avenue (Rt 19 to Brook Terrace)	Roadway re-stripe to create paved shoulders	Village of Brockport	Recommended
State Street (Oxford to Owens Rd)	Add or widen paved shoulders	Village of Brockport	Priority
State Street (Rt 19 to Oxford)	Roadway re-stripe to create paved shoulders	Village of Brockport	Priority
Utica Street (Adams St to Clinton St)	Detailed corridor study to create bike facilities	Village of Brockport	Possible



BICYCLE PARKING FACILITIES

It is recommended that bicycle parking is provided at major destinations throughout the Greater Brockport Area. Bicycle parking, at its most basic level, encourages people to ride. Bicycle parking should be provided on a firm stable surface with convenient connections that are ADA accessible. Parking should be available throughout the campus and Village in centralized parking clusters. Parking requirements should follow LEED design standards for Sustainable Sites.

Well designed and properly executed bicycle parking can provide the benefits below.

- Bicycle parking not only invites cyclists in, but shows the business values sustainability, which is an increasingly important factor in the decisions of consumers.
- Good bike parking benefits the disabled. By providing adequate, well-planned bike parking, business owners or property managers can ensure that hand rails and ramps intended for accessibility purposes are not clogged with bicycles looking for a bike parking spot.
- Pedestrians also benefit when orderly and aesthetic bike parking is provided. Not only does it improve the appearance of the area, it ensures that sidewalks and benches intended for pedestrians are not cluttered by bikes that do not have a designated parking space.
- In this way, bike parking can also prevent damage to other street furniture like garbage cans, posts, benches and trees.
- Covered shelters: provide protection from weather, promoting year round use.



Covered Bike Parking Shelter, RIT

There are opportunities to work with members of the community and local schools to create unique bicycle racks and other site furnishings or architectural elements around the Greater Brockport area. Successful project examples in the City of Rochester include Benches on Parade, Horses on Parade, and ARTwalk in the Neighborhood of the Arts (NOTA).



Artistic Bike Parking Opportunity

4.3 SHARED USE PATH FACILITY IMPROVEMENTS

Formalizing existing connections and providing new shared use paths would provide access from surrounding neighborhoods, improve connectivity to major destinations, and enhance the already impressive walking and biking network offering healthy and recreational fitness opportunities. All trails shall conform to current best design and construction practices and should be fully ADA compliant. Trail alignments shall minimize environmental impacts and be respectful of adjacent properties. Resting points should also be included as well as bike parking shelters. The trails improvements shown on **Figure 10** could be constructed cost-effectively, easily maintained, and implemented in phases over time. The priority intersection recommendations, specifically the Erie Canalway Trail and Main Street Bridge, should act as a prototype for all trail/road crossings.

The Village, as a **Follow-on Activity**, is urged to investigate a Rails-to-Trails opportunity (“Trolley Trail”) along the abandoned CSX rail line, providing a connection from Owens Road to the east at Sweden Walker Road. A Rails-To-Trails corridor is the conversion of an abandoned railway into a shared use path. The characteristics of former trails - flat, long, frequently running through historical areas - are appealing for various developments. The Village could also investigate a Rails-With-Trails where the shared-use path would continue alongside the still active CSX rail line to the west of Owens Road. This trail system could provide a valuable corridor south of the Canal through the Village with connections to the west and east communities. The trail system also provides opportunity for a loop system using the existing Erie Canalway Trail, Redman Road, and Owens Road. Coordination between the Village, the Town of Sweden, CSX, private owners and other necessary stakeholders will be required. More information on these two rail trail concepts can be gathered from the Rails-To-Trails Conservancy.

<http://www.railstotrails.org/>

ERIE CANALWAY TRAIL

EXISTING CONDITIONS / ISSUES

- Stone dust surface provides pros and cons for trail users
 - Pro: Fully accessible.
 - Pro: Installation cost is lower up front.
 - Pro: Acts as a speed reducer for bicyclists, creating a safer environment for all trail users.
 - Con: Not as durable as asphalt.
 - Con: May require more maintenance than asphalt.
- Issues at Canalway vehicular bridge crossings, refer to *Erie Canalway Bridge Recommendations Figure*

RECOMMENDATIONS

- Improve connectivity to neighborhoods, parks, Village, SUNY Brockport. Modify Land Use Policy or Zoning language to require ADA compliant trail connections to Erie Canalway Trail for future developments.
- Trail should act as "Active Transportation Spine" for the Village.
- Possible loop trail system with abandoned CSX rail line.

LOCAL EXAMPLES OF POSSIBLE ENHANCEMENTS



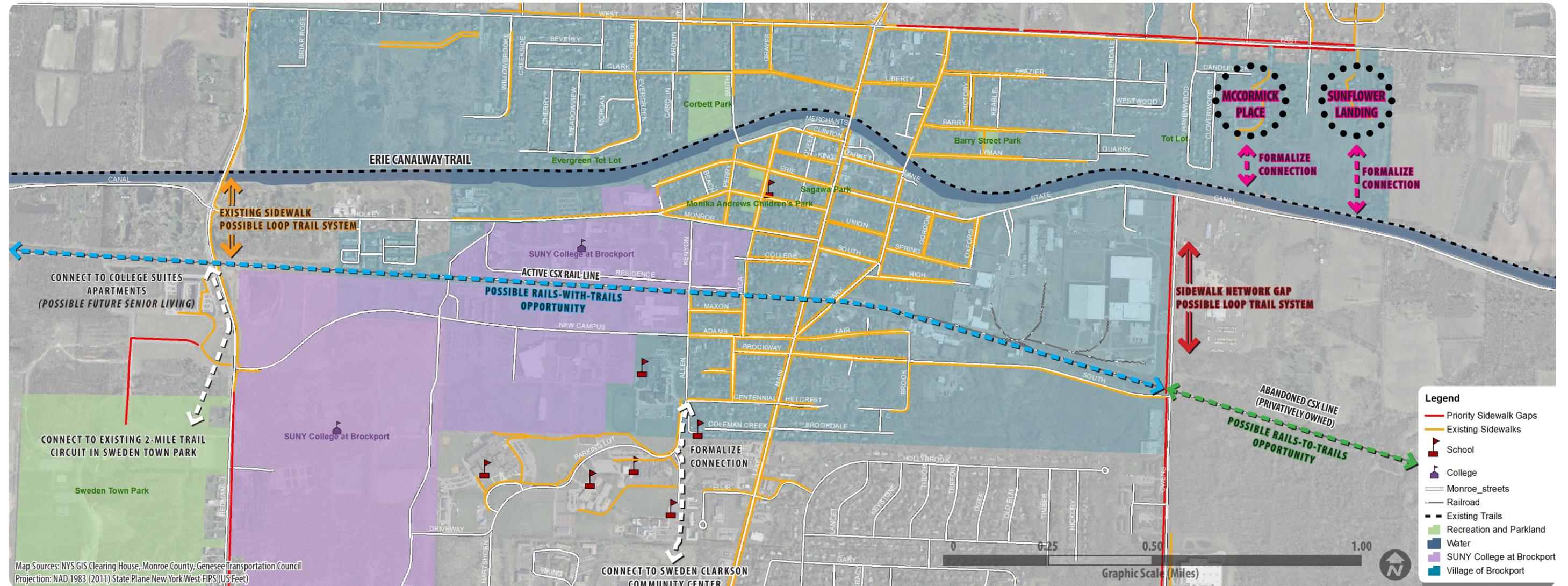
Asphalt surface, allows for multi-use, Brighton, NY



Asphalt surface, allows for winter maintainability, Fairport, NY

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE: 10
TRAIL RECOMMENDATIONS

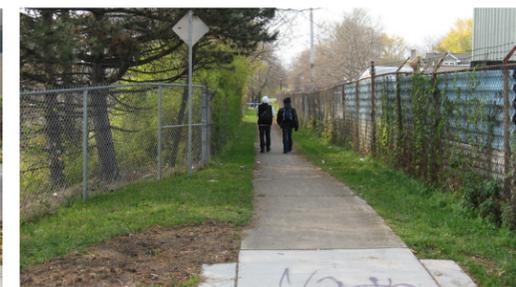


POSSIBLE RAILS-TO/WITH-TRAILS OPPORTUNITIES

BENEFITS

- Would improve connectivity to neighborhoods, parks, Village, SUNY Brockport.
- Would create a loop trail system with the existing Erie Canalway Trail.
- Would conform to AASHTO and Rails-To-Trails Conservancy standards.

EXAMPLE:
EL CAMINO TRAIL
ROCHESTER, NY



EXAMPLE:
MARY CARTER GREENWAY
NORTH CAROLINA



- Dual surface trail
- 5' wide stone dust walking/jogging path
- 10' wide shared-use path



TABLE 4: SHARED USE PATH FACILITY IMPROVEMENTS

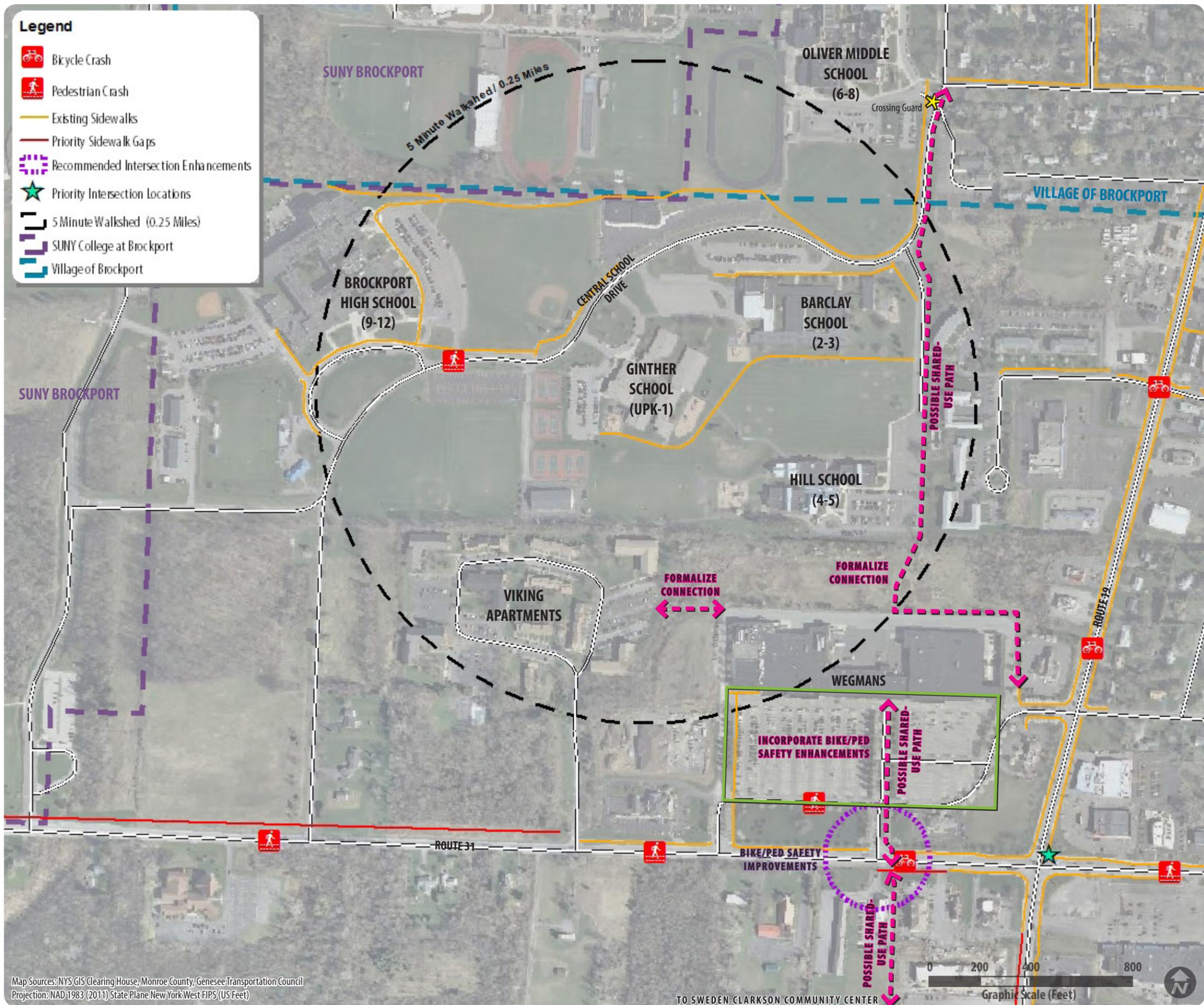
<i>Roadway/Location</i>	<i>Recommended Facility Improvement</i>	<i>Coordinating Jurisdiction</i>	<i>Phase</i>
Existing “Goat Path” from Wegmans to Brockport Schools	Formalize trail as a 10 foot wide ADA accessible shared use facility. Provide seating and signage as necessary. Comply with AASHTO and MUTCD design standards.	Village of Brockport, Brockport Central Schools, Wegmans	Priority
Brockport Schools to Centennial Ave (east of Central School Dr)	Connect trail mentioned above to Centennial Ave. Providing a 10 foot wide, ADA accessible shared use facility. Provide seating and signage as necessary. Comply with AASHTO and MUTCD design standards.	Village of Brockport, Brockport Central Schools, Wegmans	Priority
Wegmans to Sweden Clarkson Community Center	Create trail as a 10 foot wide ADA accessible shared use facility. Provide seating and signage as necessary. Improve pedestrian crossing facilities at Route 31/Wegmans traffic light. Comply with AASHTO and MUTCD design standards.	Town of Sweden, Wegmans, and other Private Developers	Possible
College Suite Apartments to Sweden Town Park	Create trail as a 10 foot wide ADA accessible shared use facility. Provide seating and signage as necessary. Comply with AASHTO and MUTCD design standards.	Town of Sweden, Private Developers	Recommended
Neighborhood Connections to Erie Canalway Trail (McCormick Place and Sunflower Landing)	Create trail connection as a 10 foot wide ADA accessible shared use facility. Provide seating and signage as necessary. Comply with AASHTO and MUTCD design standards.	Village of Brockport, Private Developers	Recommended
Rails-To-Trails (East of Owens Road along abandoned CSX rail line - connecting Owens Road and Sweden Walker Road)	Create trail as a 10 foot wide ADA accessible shared use facility. Provide seating and signage as necessary. Comply with AASHTO, MUTCD, and Rails-To-Trails Conservancy design standards. Possible follow-on activity.	Private Ownership	Possible
Rails-With-Trails (Existing CSX rail line from Owens Road to Redman Road)	Create trail as a 10 foot wide ADA accessible shared use facility. Provide seating and signage as necessary. Comply with AASHTO, MUTCD, and Rails-To-Trails Conservancy design standards. Possible follow-on activity.	Private Ownership	Possible

4.4 SCHOOL AND UNIVERSITY IMPROVEMENTS

Specific site improvements have been provided for the Brockport Central School District. In addition to these recommendations, as a follow-on activity the Village of Brockport could investigate the use of Bike Boulevards on contiguous neighborhood streets to provide enhanced accommodation as a through street for bicyclists while discouraging through automobile travel. Refer to **Figure 11** for recommended improvements.

VILLAGE OF BROCKPORT ACTIVE TRANSPORTATION PLAN

FIGURE 11
SCHOOL CONNECTIVITY



EXISTING BICYCLE INFRASTRUCTURE



SCHOOL RECOMMENDATIONS

- Bike Racks (examples below)
 - ♦ Located near main entrance to school.
 - ♦ Locate on concrete pad to provide easier accessibility.
 - ♦ Provide overhead shelter to promote year round use.



Examples of bike parking shelters at RIT's Gleason Circle

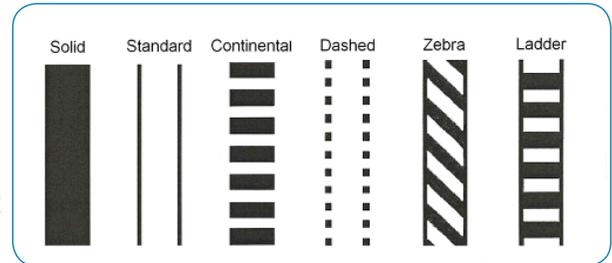
Map Sources: NYS GIS (Clearing House), Monroe County, Genesee Transportation Council
Projection: NAD 1983 (2011) State Plane New York West FIPS (US Feet)



4.5 PRIORITY INTERSECTION IMPROVEMENTS

The Priority Intersections serve as prototypes, or case studies, which highlight improvement strategies that can be applied over time to other intersections in the Greater Brockport Area. Public input was received on other intersections as well but were not studied in detail, such as Route 19 and Centennial Avenue which would benefit from similar improvements as the five priority intersections. Please see **Figure 12**, for illustrations of the priority intersection improvements.

Please note that currently, NYSDOT does not support use of high visibility crosswalks (typically ladder, continental or zebra style) at signalized intersections. NYSDOT's present standard for high visibility crosswalks is for uncontrolled crossings or mid block crossings, for signalized intersections and stop controlled crossings a standard crossing is used. However, Monroe County DOT utilizes high visibility crosswalks at signalized intersections. A consistent and uniform approach to crosswalks in Brockport is recommended.



Crosswalk Types, www.fhwa.dot.gov

A combination of statistical data, field observation, and input from residents was used to evaluate existing conditions at the intersections. The overall goal of the recommended improvements is simply to make the intersections function better for pedestrians and bicyclists while not adversely impacting other users. The objectives of investigation and recommendations include the following:

- minimize conflicts between different modes of transportation;
- separate conflicts;
- improve visibility between modes; and
- elevate motorist awareness of pedestrian and bicycle activity.

The priority intersection recommendations identified below and shown on **Figure 12** are conceptual in nature and would be subject to further study and review before advancing to design development and implementation. Three possible roundabouts were studied as a part of the priority intersections, more information can be found below. The recommendations are conceptual in nature and would be subject to further study and review before advancing to design development and implementation. Refer to section 2.1.1.2 of the **FHWA's Roundabouts: An informational guide**. <https://www.dot.ny.gov/main/roundabouts/files/00-067.pdf>

It should be noted, the safety at the intersection of Redman Road and New Campus Drive was a primary concern from project stakeholders and residents. Redman Road, from Route 31 to West Avenue, falls under the jurisdiction of New York State Department of Transportation (NYSDOT). A representative from the agency was included on the project advisory committee and there was productive dialogue regarding this roadway throughout the course of the study. As described by NYSDOT "A traffic study was conducted about 10 years ago due to the expansion of residential development on the west leg of the intersection." The expansion never took place, therefore a signal was never installed. "A signalized intersection is unlikely to be warranted under existing conditions. A roundabout would be a good solution if there was an accident problem at the intersection and a signal was unwarranted. An accident analysis would be the first step to answer that question. Roundabouts typically cost about \$1.2 to \$1.5 million. Therefore, it is unlikely to happen unless it is merited as a safety project. Another option for this intersection might be a road diet. Redman Road was identified as being a good candidate for a road diet. A road diet would make crossing Redman Road a lot easier, which would help address pedestrian and bike safety concerns."

An investigation into a possible round-about at the intersection of Route 19 and Route 31 was performed. This intersection sees approximately 28,000 vehicles per day and would most likely require a double-lane roundabout. The safety benefits of a double lane roundabout are significantly less than their single-lane counterparts.

An investigation into a possible round-about at the intersection of Main Street, Park Avenue, Fair Street and Adams Street was performed. A single lane roundabout would be expected here and would likely require significant right-of-way acquisition at the corner of Park Avenue and Fair Street, the northwest corner of Adams Street and Main Street, and the southwest corner of Fair Street and Main Street. The location of the houses at the northwest corner and the corner of Park and Fair would also play a significant role in design. It is possible that removal of one or both of these houses may be required to fit a roundabout.



LOCATION MAP

- 1. ROUTE 19 AND ROUTE 104
- 2. ERIE CANALWAY TRAIL AND MAIN STREET BRIDGE
- 3. MAIN ST., ADAMS ST., FAIR ST. AND PARK AVE.
- 4. REDMAN ROAD AND NEW CAMPUS DRIVE
- 5. ROUTE 19 AND ROUTE 31

PRIORITY INTERSECTION 1 ROUTE 19 AND ROUTE 104

Context

- Near Hafner Park
- Posted speed limit, Route 104: 40mph
- Posted speed limit, Route 19: 40mph
- Walk Score: 0 - Car dependent

Crossing Distances

- SB approach: 77'
- WB approach: 68'
- NB approach: 64'
- EB approach: 77'

Issues & Concerns

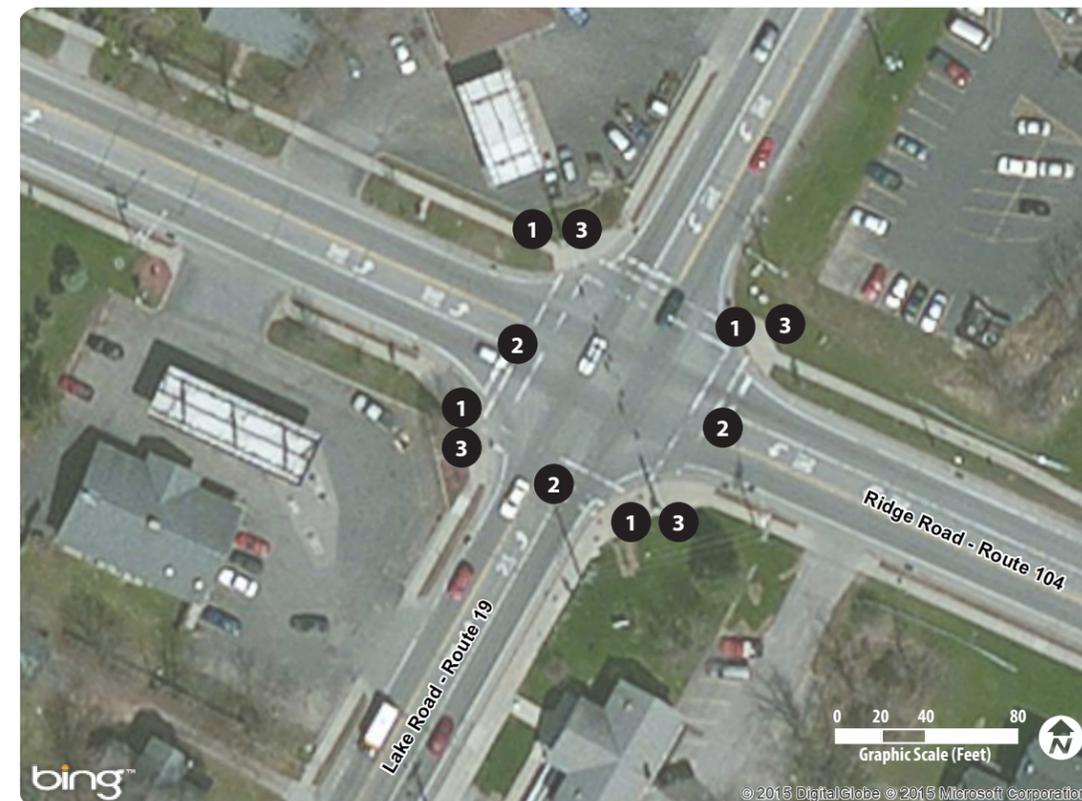
- Not ADA compliant: Lacking detectable warning fields at crosswalk ramps
- No pedestrian signals (posts for signal are present)

RECOMMENDATIONS

- 1 Install detectable warning fields, all ramp locations.
- 2 Re-stripe crosswalks for high-visibility.
- 3 Install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals.

**VILLAGE OF BROCKPORT
ACTIVE TRANSPORTATION PLAN**

FIGURE: 12
PRIORITY INTERSECTIONS
SHEET 1 OF 5



PRIORITY INTERSECTION 2 ERIE CANALWAY TRAIL AND MAIN STREET BRIDGE

Context

- Central village
- Pedestrian generators (i.e. retail, food)
- Employment centers
- Posted speed limit: 30mph
- Walk Score: 74 - Very walkable

Crossing Distances

- SB approach: 25'
- NB approach: 36'

Issues & Concerns

- Erie Canalway Trail, west of Route 19, travels through trailhead parking area and drive lanes
- Crossing at trailhead parking entrance/exit drive
- Skewed crossing
- Wide curb drops don't provide enough direction for vehicles: crosswalk and detectable warning field is located in trail head driveway apron
- Detectable warning fields do not extend the full width of curb drops
- Sight distance is limited at the crossing due to bridge trusses

RECOMMENDATIONS

- Re-stripe crosswalks for high-visibility.
- Install W11-15 and W11-15P (trail crossing) signs.
- Move the crossing to the north, providing improved sight distances.
- Identify trail alignment through parking area with pavement markings and/or physical separation.



LOCATION MAP

- ROUTE 19 AND ROUTE 104
- ERIE CANALWAY TRAIL AND MAIN STREET BRIDGE
- MAIN ST., ADAMS ST., FAIR ST. AND PARK AVE.
- REDMAN ROAD AND NEW CAMPUS DRIVE
- ROUTE 19 AND ROUTE 31



RECOMMENDATIONS

- 1 Move crosswalk across Route 19 (from Adams St to Fair St/ Park Ave) to the North (from Adams St to Park Ave)
- 2 * Consider an urban compact bike/pedestrian safe roundabout.
- 3 Modify curb ramps to direct pedestrians to desired crosswalk and help deter vehicle tracking on to sidewalks. Install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals.
- 4 Remove or modify landscaping to improve sight distances.
- 5 Re-stripe crosswalks for high-visibility.

PRIORITY INTERSECTION 3 MAIN ST., ADAMS ST., FAIR ST. AND PARK AVE.

Context

- Transit stops
- Pedestrian generators to the north and south (i.e. retail, food)
- Employment centers to the north and south
- Residential neighborhoods
- Posted speed limit, Park Avenue: 30mph
- Posted speed limit, Fair Street: 30mph
- Posted speed limit, Adams Street: 30mph
- Posted speed limit, Route 19: 30mph
- Walk Score: 63 - Somewhat walkable

Crossing Distance

- SB approach: 37'
- SEB approach: 53'
- WB approach: 42'
- NB approach: 59'
- EB approach: 51'

Issues & Concerns

- 5 leg intersection
- Skewed alignment of Park Ave
- Vehicle tracking was evident on wide curb ramps at south east and north east corners of Main St and Fair St
- Access for bicyclists from Park Ave onto Route 19/Main St is a tough turn angle
- Intersection sight distance is limited at Park Ave and Fair St "wedge" due to landscaping



LOCATION MAP

1. ROUTE 19 AND ROUTE 104
2. ERIE CANALWAY TRAIL AND MAIN STREET BRIDGE
3. MAIN ST., ADAMS ST., FAIR ST. AND PARK AVE.
4. REDMAN ROAD AND NEW CAMPUS DRIVE
5. ROUTE 19 AND ROUTE 31

*Note: An investigation into a possible round-about at the intersection of Main Street, Park Avenue, Fair Street and Adams Street was performed. A single lane roundabout would be expected here and would likely require significant right-of-way acquisition at the corner of Park Avenue and Fair Street, the northwest corner of Adams Street and Main Street, and the southwest corner of Fair Street and Main Street. The location of the houses at the northwest corner and the corner of Park and Fair would also play a significant role in design. It is possible that removal of one or both of these houses may be required to fit a roundabout.

Refer to section 2.1.1.2 of the **FHWA's Roundabouts: An informational guide.**

<https://www.dot.ny.gov/main/roundabouts/files/00-067.pdf>



RECOMMENDATIONS

- 1 Install advance warning signs on Redman Road for pedestrian and bicycle crossings.
- 2 Install/improve overhead lighting.
- 3 Install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals.
- 4 Consider road diet. Redman Road is a road diet candidate, refer to Conceptual Road Diet Figure. Coordination with NYS DOT required.
- 5 Stripe crosswalks for high visibility.

PRIORITY INTERSECTION 4 REDMAN ROAD AND NEW CAMPUS DRIVE

Context

- SUNY Brockport campus access
- Student housing (possible future conversion of student housing to senior living)
- Posted speed limit, Redman Road: 40mph
- Posted speed limit, New Campus Drive: 30mph
- Walk Score: 1 - Car dependent

Crossing Distance

- SB approach: 96'
- WB approach: 51'
- NB approach: 71'
- EB approach: 46'

Issues & Concerns

- Limited stopping sight distance on Redman Rd due to crest vertical curve
- No crosswalk striping
- No tactile warning areas on existing curb ramps
- Limited curb ramps currently installed
- Minimal overhead lighting



LOCATION MAP

1. ROUTE 19 AND ROUTE 104
2. ERIE CANALWAY TRAIL AND MAIN STREET BRIDGE
3. MAIN ST., ADAMS ST., FAIR ST. AND PARK AVE.
4. REDMAN ROAD AND NEW CAMPUS DRIVE
5. ROUTE 19 AND ROUTE 31

*Note: The safety at the intersection of Redman Road and New Campus Drive was a primary concern from project stakeholders and residents. Redman Road, from Route 31 to West Avenue, falls under the jurisdiction of New York State Department of Transportation (NYS DOT). A representative from the agency was included on the project advisory committee and there was productive dialogue regarding this roadway throughout the course of the study. As described by NYS DOT "A traffic study was conducted about 10 years ago due to the expansion of residential development on the west leg of the intersection." The expansion never took place, therefore a signal was never installed. "A signalized intersection is unlikely to be warranted under existing conditions. A roundabout would be a good solution if there was an accident problem at the intersection and a signal was unwarranted. An accident analysis would be the first step to answer that question. Roundabouts typically cost about \$1.2 to \$1.5 million. Therefore, it is unlikely to happen unless it is merited as a safety project. Another option for this intersection might be a road diet. Redman Road was identified as being a good candidate for a road diet. A road diet would make crossing Redman Road a lot easier, which would help address pedestrian and bike safety concerns."

Refer to section 2.1.1.2 of the **FHWA's Roundabouts: An informational guide.**

<https://www.dot.ny.gov/main/roundabouts/files/00-067.pdf>





LOCATION MAP

- 1. ROUTE 19 AND ROUTE 104
- 2. ERIE CANALWAY TRAIL AND MAIN STREET BRIDGE
- 3. MAIN ST., ADAMS ST., FAIR ST. AND PARK AVE.
- 4. REDMAN ROAD AND NEW CAMPUS DRIVE
- 5. ROUTE 19 AND ROUTE 31

*Note: An investigation into a possible round-about at the intersection of Route 19 and Route 31 was performed. This intersection sees approximately 28,000 vehicles per day and would most likely require a double-lane roundabout. The safety benefits of a double lane roundabout are significantly less than their single-lane counterparts.

Refer to section 2.1.1.2 of the **FHWA's Roundabouts: An informational guide.**

<https://www.dot.ny.gov/main/roundabouts/files/00-067.pdf>

PRIORITY INTERSECTION 5 ROUTE 19 AND ROUTE 31

Context

- Pedestrian generators (i.e. shopping plazas, food)
- Employment centers
- Posted speed limit, Route 31: 40mph
- Posted speed limit, Route 19: 35mph
- Walk Score: 10 - Car dependent

Crossing distances

- SB approach: 84'
- WB approach: 84'
- NB approach: 97'
- EB approach: 78'

Issues & Concerns

- Curb ramps are not ADA compliant, lacking detectable warning fields
- Slightly skewed intersection, Route 19
- Limited curb ramps currently installed

**VILLAGE OF BROCKPORT
ACTIVE TRANSPORTATION PLAN**

FIGURE: 12
PRIORITY INTERSECTIONS
SHEET 5 OF 5

RECOMMENDATIONS

- 1 Install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals.
- 2 Re-stripe crosswalks for high-visibility.
- 3 Possible bike lane along 31 east bound, west of Route 19.

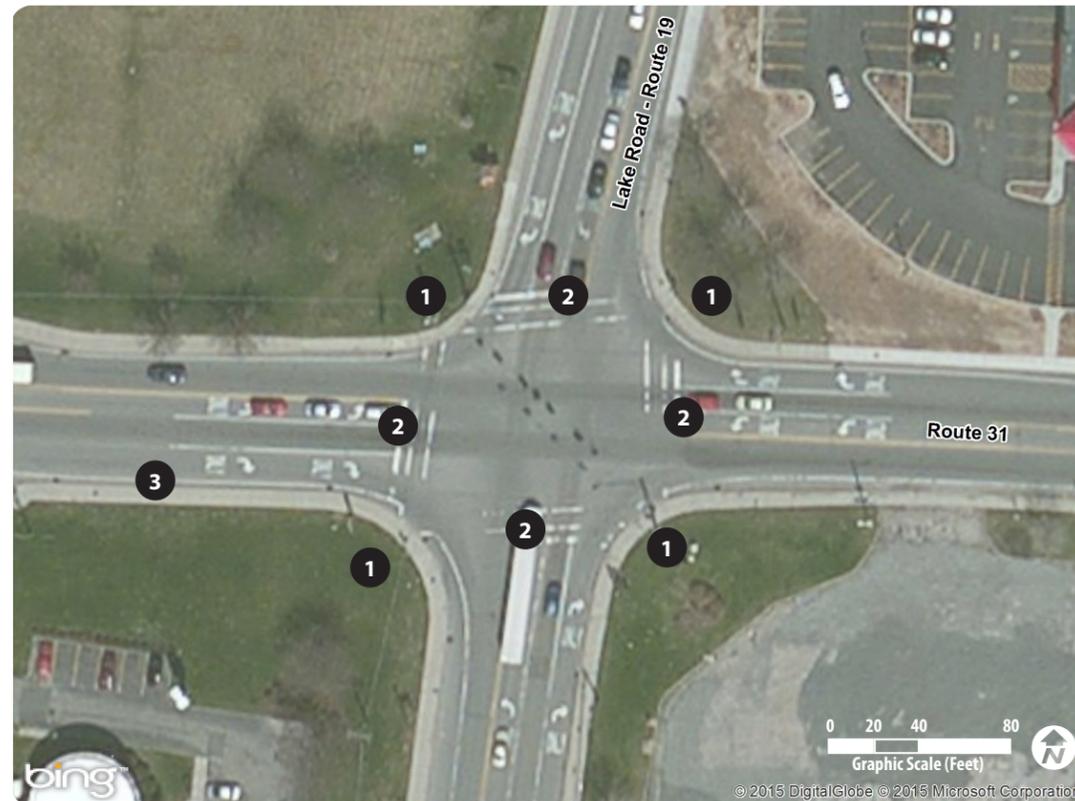




TABLE 5: PRIORITY INTERSECTION IMPROVEMENTS

Roadway/Location	Recommended Facility Improvement	Coordinating Jurisdiction	Phase
Route 19 and Route 104	Install detectable warning fields at all ramps, re-stripe crosswalks for high visibility, install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals. <i>"NYSDOT agrees that the installation of audible tactile pedestrian signals with countdown timer and leading pedestrian intervals should be considered in the future if an opportunity is present at this intersection. Generally however, NYSDOT does this type of work as an addition to a larger project being completed in the area. Therefore, this type of recommendation may take more time to accomplish depending on upcoming projects."</i>	NYSDOT	Priority
Erie Canalway Trail and Main Street Bridge	Re-stripe crosswalks for high visibility, install W11-15 and W11-15P signs, move crossing to north, identify trail alignment through existing parking area with pavement markings and/or physical separation. Signage and railings or median could be used to safely direct pedestrians to crossing location. <i>"NYSDOT agrees with the signing of the trail way."</i>	NYSDOT, Village of Brockport	Priority
Main Street, Adams Street, Fair Street, and Park Avenue	Move crosswalk across Route 19 (from Adams St to Fair St/Park Ave) to the North (from Adams St to Park Ave), investigate urban compact bike/pedestrian safe roundabout, modify curb ramps to direct pedestrians to desired crosswalk and help deter vehicle tracking on to sidewalks, install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals, remove or modify landscaping to improve sight distances and re-stripe crosswalks for high-visibility. <i>"NYSDOT agrees that a roundabout at this intersection should be considered. NYSDOT also agrees that there are benefits with relocating the Adams Street to Fair Street crosswalk, to Adams Street to Park Avenue."</i>	NYSDOT, Village of Brockport	Priority
Redman Road and New Campus Drive	Install advance warning signs on Redman Road for pedestrian and bicycle crossings, install/improve overhead lighting, install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals, consider merging southbound travel lanes prior to intersection, Redman Road is a road diet candidate, refer to Conceptual Road Diet Figure. Coordination with NYSDOT has been performed, install roundabout if warranted by a safety analysis, and stripe crosswalks for high visibility. <i>"NYSDOT agrees and supports a future roundabout at this intersection."</i>	NYSDOT, Village of Brockport, SUNY Brockport	Priority
Route 19 and Route 31	Install audible tactile pedestrian signals with countdown timer and leading pedestrian intervals, re-stripe crosswalks for high-visibility, possible bike lane along 31 east bound, west of Route 19, analyze intersection capacity and identify turn lane modifications based on current traffic forecasts, modifications would enhance safety of crossings, and investigate possible right-turn channelized islands/slip lanes. <i>"NYSDOT comments: At this intersection, right turn channelized islands/slip ramps are proposed. For this proposal to work, a large intersection radii and island is necessary to accommodate pedestrian facilities (ramps and pedestrian indications within island). Secondly, a free flow right turn movement may not be the better alternative for crossing pedestrians in regards to safety."</i>	NYSDOT	Priority



5.0 FACILITY DESIGN GUIDANCE



The previous section identifies numerous recommended infrastructure improvements that are comprised of a variety of facility types. The design guidelines contained in this section are intended to support the recommendations presented in this Plan, and to serve as an ongoing reference for the Village of Brockport. They are not intended as comprehensive design standards. Rather, they reference existing design standards and provide clarification or supplemental information as necessary. There are eight primary sources of bicycle and pedestrian facility design information that were used to develop the guidelines provided in this section:

1. ***American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities*** – This document is intended to present information on how to accommodate bicycle travel and operations in most riding environments. It is the design guidance upon which most state and local design guidelines are based. In many jurisdictions this document is considered to set the minimum values for bicycle design.
2. ***AASHTO Guide for the Planning, Design, and Operations of Pedestrian Facilities*** – This document is intended to present 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 to set the minimum values for pedestrian design.
3. ***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 criteria, while they are relevant to local projects, are not required to be met for local projects unless Federal transportation funds are used.
4. ***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 criteria, while they are relevant to local projects, are not required to be met for local projects unless Federal transportation funds are used.
5. ***Institute of Transportation Engineers Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*** – This document's development was supported by FHWA. Designing Walkable Thoroughfares helps designers understand the flexibility for roadway design that is inherent in the AASHTO guide A Policy on the Geometric Design of Highways and Streets with a focus on balancing the needs of all users.
6. ***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.



7. **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 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.
8. **National Association of City Transportation Officials (NACTO) Urban Bike way Design Guide** – FHWA has issued a memo supporting the use of this document to further develop non-motorized transportation networks, particularly in urban areas. Many of the designs in this document have been used successfully in urban areas. However, care should be exercised when applying the treatments described in this document to suburban or rural areas.

In this guidance section of the Village of Brockport Active Transportation Plan the following facility types are discussed:

- bike lanes;
- shared lane markings;
- bike routes;
- bike boulevards;
- shared use paths;
- sidewalks;
- curb ramps; and
- mid-block crossings.

5.1 BIKE LANES

A bike lane is a portion of the roadway that has been designated for preferential or exclusive use by bicyclists by striping, signing and pavement markings (the MUTCD does not require signs, but in New York the legal definition of a bike lane requires signs). No other uses are allowed within bike lanes which are intended for one-way travel by bicyclists, usually in the same direction as the adjacent travel lane. Bike lanes should be designed for the operation of bicycles as vehicles, encouraging bicyclists and motorists to interact in a safe, legal manner. Bike lanes should be designated with bike lane markings, arrows, and bike lane signs.

WIDTH

Wider pavement cross sections to allow for 4-foot bike lanes where gutter is provided (RD-02) and 5-foot bike lanes for the vertical curb without gutter (RD-02a) would be acceptable. Motor vehicle travel lanes could possibly be reduced to 11 feet on these cross sections.



City of Rochester, New York

In commercial or industrial areas (RD-03 and RD-04), buffered bike lanes should be considered. An 11'-2'-5' (lane-buffer-bike lane) section would be desirable, but at minimum a 5-foot bike lane should be provided.

The AASHTO Guide for the Development of Bicycle Facilities provides guidance on the width of bike lanes. The following points summarize this guidance:

- under most circumstances the recommended width for bike lanes is 5 feet;
- for roadways with no curb and gutter and no on-street parking, the minimum width of a bike lane is 4 feet;
- along sections of roadway with curb and gutter, a usable width of 4 feet measured from the longitudinal joint to the center of the bike lane line is recommended (this means that 4 feet of pavement is sufficient when coupled with the gutter pan; it is also conceivable to interpret the guidance as meaning that even narrower pavement can be used as long as a total of 5 feet of ride-able surface is maintained);
- additional width may be desirable on higher speed roadways.



INTERSECTIONS

At intersections, bike lanes must be designed to encourage legal movements at the intersection; this includes proper positioning of bicyclists and motorists. Bike lane stripes should be dashed on the approaches to intersections without right turn lanes. Where there are right-turn lanes, through bike lanes must be placed to the left of the right turn lane. Section 4.8 of the AASHTO Guide for the Development of Bicycle Facilities (2012) provides numerous graphics illustrating bike lane markings at intersections.

Bike lanes should be continuous through intersections. For example, if a bike lane is provided to the intersection, a receiving bike lane should be provided on departure side of the intersection.

BUFFERED BIKE LANES

A buffered bike lane is a bike lane that is separated from adjacent through lanes by a striped out buffer area. In some locations it may be desirable to use less than the full space available for a bike lane. Such locations include sections of roadway where a wide bike lane might be perceived as on-street parking or another travel lane. In these locations a buffered bike lane may be considered. A buffered bike lane may also be considered where a bike lane of six or more feet is being provided to meet a minimum level of accommodation.

At mid-block locations the buffered bike lane is separated from the travel lanes by a chevroned buffer. The width of the buffer will vary depending upon such conditions as motor vehicle speed, percent heavy vehicles, roadway cross slopes, and desired level of accommodation of bicycles. At intersections, buffered bike lanes must be striped to allow for right turning motorists. Typically this is done by eliminating the buffer on the approach to intersections and striping the area as one would a regular bike lane.

5.2 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.

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

1. alert motorists to the lateral location bicyclists are likely to occupy within the traveled way,
2. encourage safe passing of bicyclists by motorists,
3. 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,
4. reduce the incidence of wrong-way bicycling, and
5. where on-street parking exists, to 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 discourage bicyclists 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.
- 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.

5.3 BIKE ROUTES

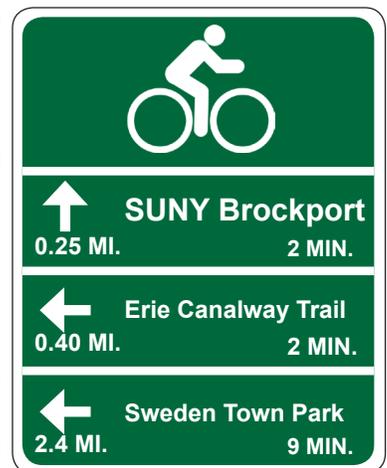
Within the Greater Brockport Area, there are currently three designated New York State Bicycle Routes; Route 31, Route 19, and West Avenue (west of the Village limits). Bike routes are not an actual facility type. A bike route is a designation of a facility, or collection of facilities, that links origins and destinations that have been improved for, or are considered preferable for, bicycle travel. Bike routes include a system of route signs that provide at least the following basic information:

- Destination of the route
- Distance to the route’s destination, and
- Direction of the route.

Bike routes can be designated in two ways: General Routes and Number Routes. General Routes are links tying specific origins to specific destinations. Number Routes form a network of bike routes that do not necessarily connect specific destinations, but serve as general travel routes through an area.

General Routes connect users to destinations within a community. Typical destinations include the following:

- Attraction Areas (i.e. libraries, parks, etc.)
- Neighborhood Areas (i.e. RIT housing, historic neighborhoods, etc.)
- Trail Networks or trailheads (i.e. Lehigh Valley Trail)



Bicycle Guide (the D11 series in the MUTCD) signs may be provided along designated bicycle routes to inform bicyclists of bicycle route direction changes and to confirm route direction, distance, and destination. Typical signs that convey the basic way-finding information for general routes are shown on the previous page. The MUTCD provides a number of different types of signs that can

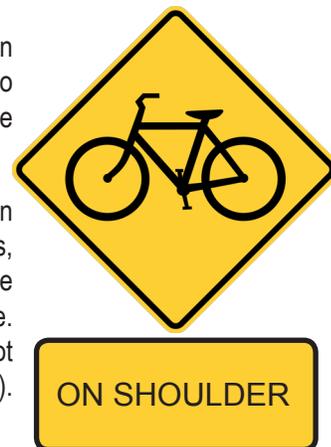


be used to provide guidance along bike routes. Some communities implement bike routes with unique designations (numbers or names). These routes should be designated using Bike Route signs.

SIGNING ROADWAYS WITH PAVED SHOULDERS

The Village of Brockport, or other municipalities within the Greater Brockport Area, may want to sign some roadways with paved shoulders to either guide bicyclists to destination or to alert motorists to the presence of bicyclists. 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 Village, 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 would be required. The Bicycle Warning sign (W11-1) and an “In Lane” plaque (NYW5-32P) shown would not be appropriate because bicyclists would not actually be in the lane. Similarly, the “Share the Road” (W16-1P) plaque is not appropriate as bikes on the shoulder are not on the road (which is defined the same way as roadway in the MUTCD and excludes the shoulder). Thus a special supplemental plaque such as “On Shoulder” might be appropriate.



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 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.

5.4 BIKE BOULEVARDS



A bike boulevard is a local street or series of contiguous street segments that have been modified to provide enhanced accommodation as a through street for bicyclists while discouraging through automobile travel.

Bike boulevards usually make use of low volume, very low speed local streets. Often, streets are made more accommodating for bicyclists by significantly keeping motorists’ speeds and volumes low. Often bike boulevards include bicycle friendly traffic calming treatments (speed pillows, mini traffic circles, chicanes with bike bypass lanes, etc.) to reduce speeds of motor vehicles along the roadway. While local motor vehicle traffic is maintained along the bike boulevard, motor vehicle traffic diverters may be installed at intersections to prevent through motor vehicle travel while having bypasses for bicyclists to continue on along the bike boulevard. Bike boulevards can be facilitated by connecting the ends of cul-de-sac roadways with shared use paths. At intersections the bicycle boulevard should be given priority over side streets.

Because of low motor vehicle speeds and volumes, bike lane markings are often not necessary along bike boulevards. SLMs may be used along bike boulevards. Alternatively, larger than normal bike symbols supplemented with the text **BIKE BLVD** have been used to designate bike boulevards.

In some communities, bike boulevard networks begin as a “one-off” system of bike ways. When a primary arterial roadway cannot



be improved to a point where most cyclists feels safe and comfortable using the facility, a parallel roadway - often one street off the main road (or “one-off”) - may be improved with bicycle facilities and traffic calming features to provide an enhanced cycling street. By paralleling the main road, the “one-off” network provides access to the businesses along the arterial using a pleasant cycling roadway. A “one-off” roadway can be improved in stages: initially with signage and shared lane markings and then into a bike boulevard by instituting more substantial features such as traffic calming and diverters.

Since bike boulevards typically serve as bike routes, wayfinding signage should be provided. This signage should include destination, direction, and distance (or travel time) information to attractors throughout Brockport. Wayfinding adds to the utility of bike boulevards because it educates cyclists that there are safe, comfortable ways of accessing Brockport by bike.

5.5 SHARED USE PATHS

Shared use paths are facilities separated from motor vehicle traffic by an open space or barrier and either within the highway right-of-way or an independent right-of-way. They are open to many different user types and are often used by bicyclists, pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Motor vehicles are not allowed on shared use paths except for maintenance and emergency vehicles in specific circumstances. Most shared use paths are two-way facilities.



Erie Canalway Trail

Shared use paths have design criteria for many of the same parameters as roadways. These include widths, horizontal clearances, design speed, horizontal alignment, stopping sight distance, cross slopes, grades, vertical clearance, drainage, and lighting. The AASHTO Guide for the Development of Bicycle Facilities should be consulted for design values.

The MUTCD provides the standards for signing, striping, and markings shared use paths. In most cases, the signs and markings use on shared use paths are smaller versions of those used on roadways. Many shared use paths are separated from the roadway network. Consequently, street name signs should be provided at intersecting roadways to help users orient themselves to the roadway network. Wayfinding signs should be used on paths and to potential destinations along the path such as locations where users can access water fountains and restrooms. At trailheads and rest areas, the distance and direction to the next trail head should be posted.

Most shared use path projects will be paved. Asphalt and Portland cement concrete are the two most common surfaces for shared use paths. In areas where path use is expected to be primarily recreational, unpaved surfaces may be acceptable for shared use paths. Materials should be chosen to ensure the ADA requirements for a firm, stable, slip resistant surface are met. Even when meeting ADA criteria, some users such as in-line skaters, kick scooters, and skateboarders may be unable to use unpaved shared use paths.

The geometric and operational design of shared use paths is quite similar to that of roadways. However, additional considerations such as aesthetics, rest areas, amenities, and personal security are also important ensure the maximum number of potential users are encouraged to use the path for both utilitarian and recreational purposes. Sometimes local resistance to implementing shared use paths and other trail facilities exists because of perceived potential negative impacts to neighboring communities, usually in terms of property values and crime/vandalism. A valuable resource in discussions of these matters is a summary of national research conducted for a state department of transportation. The studies cited collectively suggest that negative impacts are not an issue in either regard, and in fact suggests that property values frequently increase following the construction of shared use paths while crime rates are sometimes found to decrease.

5.6 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 Greater Brockport Area 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. AASHTO's

A Policy on the Geometric Design of Highways and Streets and the AASHTO Guide for the Planning, Design, and Operations of Pedestrian Facilities recommends sidewalks at the back of curb be at least 6 feet wide.

LOCATION OF SIDEWALKS



City of Rochester, New York

On roadways with curb and gutter, sidewalks should be located six feet from the back of curb. This minimizes the encroachment of curb ramps and driveway cuts into the sidewalk width. On roadways without curb and gutter sidewalks should be separated from the roadway as shown by the following criteria, which are given in a sequence of desirability:

- at or near the right of way line (ideally, 3 feet of width should be provided behind the sidewalk for access, construction, and maintenance),
- outside of the minimum required roadway clear zone, or
- as far from the edge of the driving lane as practical.

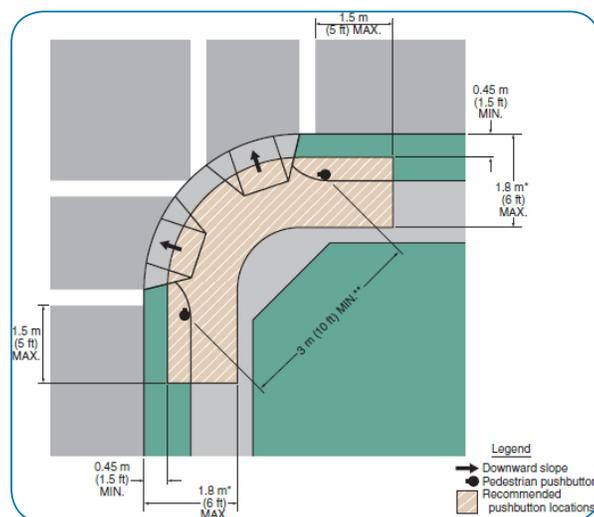
Sidewalk alignments, which are set back from the roadway, should taper for alignment closer to the roadway at intersections. This will allow for coordinated placement of crosswalks and stop bars.

SIDEWALK SLOPES

The maximum cross slope on a sidewalk is 2%. This maximum cross slope must be maintained across driveways and crosswalks. Sidewalks may follow the grade of the adjacent roadway. However, on new structures the grade of the sidewalk cannot exceed 5%. If a grade of more than 5% is required on a new structure, an ADA compliant ramp must be provided.

5.7 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. FHWA has suggested that either the 2010 ADA Standards for Accessible Design or the 2011 Notice of Proposed rule-making can be used by agencies. Whichever is chosen, the chosen standards must be applied in its entirety – no mixing and matching of standards. This is most important in terms of ramps.



MUTCD, Figure 4E-2



The 2010 ADA standards do not provide an exception allowing the running slope to follow the grade of an existing roadway. The following modifications should be considered for the Parallel Sidewalk Ramp Type 2B drawing (RD-13a).

- Clarify where the 18-in flare can be used. Where pedestrians might walk across the flare a 1:10 maximum slope should be used on the flare
- The 6-ft max length of the ramp is not appropriate. The slope of the ramp may not exceed 1:12 on new construction; 1:10 on alterations. This means that along non-flat section of roadway, the run would exceed 6-inches in the uphill direction, and a hand rail may be required.

5.8 MIDBLOCK CROSSINGS

Intersections are often the best and most direct place for pedestrians to cross a roadway and are the most common pedestrian crossing locations. Still, more than 70 percent of pedestrian fatalities occur away from intersections, so it is critical to design midblock crossings that both increase drivers' awareness of the crossing and expectation of encountering pedestrians and encourage pedestrians to cross in the designated location. While drivers may not expect to encounter pedestrians at midblock locations as much as they do at intersections, midblock crossings have fewer conflict points between vehicles and pedestrians which is an important safety advantage over crossings at intersections.

Midblock crossings are different from intersection crossings in three important ways: there are many more potential crossing locations at midblock than at intersections, motorists are less likely to expect pedestrians crossing at midblock, and pedestrians with visual impairments have fewer audible clues for determining the best time to cross.



National Association of City Transportation Officials (NACTO)

Each of these differences leads to important design considerations for midblock crossings:

- Make the crossing location convenient for pedestrians - Midblock crossings are provided in locations where crossings at intersections are not available or are inconvenient for pedestrians to use. Midblock crossings must be placed in convenient locations to encourage pedestrians to use them rather than other, more convenient, unmarked midblock locations.
- Make pedestrians aware of the opportunity to cross - Provide aids for pedestrians with visual impairments to recognize the presence of a midblock crossing and the best opportunities for crossing. Auditory and tactile information should be provided for pedestrians with visual impairments since clues present at an intersection crossing are not always available at a midblock crossing (such as the sound of traffic stopping and starting).
- Make drivers and pedestrians aware of their responsibilities and obligations at the crossing and provide opportunities to meet these responsibilities/obligations - Use MUTCD guidance to establish a legal crossing. Vehicle approach, pedestrian approach, and traffic control design should provide pedestrians with clear messages about when to cross and drivers about where to yield. Where necessary, a refuge area should be provided for pedestrians to complete the crossing in stages. Traffic control devices can be used to create gaps in traffic for pedestrians to cross.
- Make drivers aware of the crossing as they approach it - Drivers should be warned of the pedestrian crossing in advance of the crossing location, and the midblock crossing should be highly visible to approaching drivers. Drivers should have clear lines of sight to the crossing so that pedestrians at the crossing are visible. The approach to the crossing should encourage drivers to reduce their speeds prior to the crossing. Drivers should be given plenty of time to recognize the presence of a pedestrian and stop in advance of the crossing.



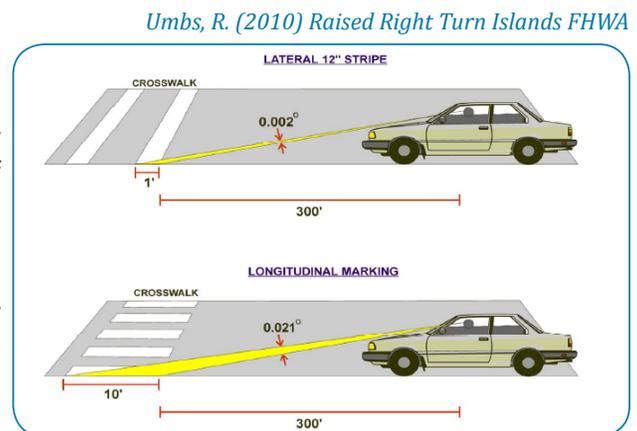
PEDESTRIAN APPROACH (SIDEWALK/CURB LINE)

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. 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. Pedestrian furniture, traffic control devices, planters, and other objects should be located so they do not block pedestrians from the site of approaching drivers. Also, 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. Pedestrian storage area design can be especially important at bus stops, and care should be taken so that children can wait a safe distance from the roadway while waiting for a school bus. Midblock curb extensions are a common and effective treatment at midblock locations and have many benefits.
- Make pedestrians, especially those with visual impairments, aware of the crossing location. In complex pedestrian environments, wayfinding signs may be appropriate to guide people to their desired destination. Auditory and tactile cues can be provided with traffic control devices adjacent to and in the sidewalk to direct pedestrians toward the crossing.
- Direct pedestrians to the proper location to activate a pedestrian signal (if present) and wait for an appropriate time to cross. Pedestrian-activated traffic control devices should be accessible to pedestrians with visual impairments and those using wheelchairs, scooters, and walkers. The approach design should make clear where pedestrians should stand while waiting to cross.

MOTORIST APPROACH

As noted in the discussion about locating a midblock crossing, 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.



Signage 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.

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.



5.9 TRANSIT STOPS

Improving transit stops can increase convenience, comfort, and attractiveness, thus potentially increasing ridership and supporting transit oriented development. Transit stops provide opportunities to utilize sustainable design and construction strategies, improve storm water quality with green infrastructure, and improve the streetscape aesthetics by incorporating Complete Streets policies. Both new and existing bus stops need to be ADA accessible. To be accessible, the following details need to be considered during design and construction:

- A firm, stable surface when new bus stop pads are constructed at bus stops where a lift or ramp is to be deployed
- A minimum clear length of 96" (measured from the curb or vehicle roadway edge) and a minimum clear width of 60" (measured parallel to the vehicle roadway) to the maximum extent allowed by legal or site constraints
- Connections to streets, sidewalks or pedestrian paths by an accessible route
- The slope of the pad parallel to the roadway should be the same as the roadway, and for water drainage, a maximum slope of 1:50 (2%) perpendicular to the roadway
- New or replaced bus shelters should be installed or positioned so as to permit a wheelchair or mobility aid user to enter from the public way and to reach a location, having a minimum clear floor area of 30" x 48", entirely within the perimeter of the shelter
- Shelters should be connected by an accessible route to the boarding area
- All new bus route identification signs should be appropriate in finish and contrast, character height and proportion

Sources: http://wwwadata.org/adaportal/Facility_Access/ADAAG/Special_Occupancies/ADAAG_10.html



6.0 ZONING AND DEVELOPMENT REGULATIONS ASSESSMENT



EXISTING PROGRAMS AND POLICIES

The positive impact of zoning and subdivision regulations in a municipality's codebook can be a critical tool in making policy recommendations and planning for bicycle and pedestrian infrastructure projects. Strategic implementation of certain policies can make it easier and more feasible for the Village of Brockport to become a more accommodating place to walk and ride. A thorough review of existing Village of Brockport zoning and subdivision laws provides important context in the preparation of this Active Transportation Plan.

In addition to identifying specific code updates and strategic infrastructure projects, it is important for the Village to also consider the educational benefits, outreach, and maintenance programs that can be implemented Village-wide to increase the user base, maximize efficiency, and provide optimum safety of the active transportation network.

As it stands today, the Village of Brockport has a significant bicycle and pedestrian network in place. The majority of its facilities are within the public right-of-way and in the form of sidewalks and road shoulders. However, as effective as these facilities typically are, they alone are not enough to increase the user base from occasional recreation to an alternative means of commuting and travel for those that live and work in the community. In order to truly capitalize on the goals of the Village of Brockport Active Transportation Plan, this effort must consider strategic zoning and subdivision regulatory updates to its code, identify ways to incentivize not only the implementation and construction of bicycle and pedestrian facilities, but also its use, and to encourage private sector cooperation and educational opportunities.

Outlined in this section is a summary of existing zoning codes that support provisions for bicyclists and pedestrians, identifies their relevance to bicycle and pedestrian issues, and recommends preliminary action strategies to build upon and enhance active transportation in the Brockport community.

REVIEW OF LOCAL CODES AND STANDARDS

When considering development applications, the Village Planning Board must consider the safety and mobility of the pedestrian in its review for adequacy and completeness. How a person gets from their vehicle in the parking lot to their destination's front door, or travels to a site on foot or bike from their home should be a priority review criteria. The construction of sidewalk facilities and other provisions for bicycles and pedestrians are typically included as detailed design standards and review criteria during a municipality's subdivision and site plan approval process.



The Village of Brockport is comprised of five (5) zoning districts and a Historic Overlay District. They include:

- Residential Use District (O)
- Business Use District (B)
- Limited Industrial Use District (LI)
- Industrial Use District (I)
- Planned Development District (Q)
- Historic Overlay District (HO)

While bicycle and pedestrian use is not specifically discussed in any of these districts, the construction of sidewalks within the public right-of-way, as well as sidewalk connections from parking areas to building entryways are specified design considerations and conditions of the Village's zoning and site plan review process by the Planning Board. However, these considerations alone will not sufficiently promote active transportation systems through the typical development process.

The policies and sections of the Village Zoning (Code Chapter 58), Subdivision (Chapter 26) and Streets and Sidewalks (Chapter 45) have been reviewed. In very few instances, Village regulations require or encourage bicycle and pedestrian accommodations. Specifically, the Residential (O) district does include "public parks, playgrounds and similar recreational areas" as permitted uses. However, whether bicycle and pedestrian facilities such as trails, boardwalks and bike lanes would be considered permissible under this designation could be subject to interpretation. Further, the planning board's ability to define and hold authority over where, how and when active transportation facilities are included in a development plan can be compromised due to potential misinterpretation. Or, construction of new roadway could be hindered due to the lack of clarity and definition in this type of instance.

Similarly, the Village's subdivision regulations contain only one clear condition for pedestrian activity within §26-14(D) of the zoning code, whereby "the Planning Board, where it deems necessary, may require, in order to facilitate pedestrian access from streets to schools, parks, playgrounds or other nearby streets, perpetual unobstructed easements at least 20 feet in width." Aside from this requirement, there are no clear specific bicycle and pedestrian considerations within the subdivision regulations outside of the typical sidewalk and street design criteria. Even within those regulatory sections, bicycle and pedestrian use is not being encouraged through the subdivision and site plan review approval process.

Therefore, the following associated recommendations incorporate or add components that will strengthen and encourage bicycle and pedestrian access and safety throughout the Village of Brockport.

VILLAGE ZONING: §58-9 RESIDENTIAL USE DISTRICT (O)

1. As is the case with all of the district regulations in the Village's zoning code, there is no stated intended purpose for the Residential District. It is recommended the Village amend the zoning code to include an introductory "District Purpose" to, in clear but general terms, convey the intent of the district. This district intent should identify general provisions for the harmonious interface between residential land uses and the local transportation network, including bicycle and pedestrian facilities.
2. While several residential streets in the Village include sidewalks, many do not. The zoning code should be updated to include specific criteria which mandate, barring particular hardships; that all newly constructed local residential streets include sidewalks on at least one side of the street. Performance standards and construction details should be included in the Village Code as a supplemental design standard to ensure uniformity and the public health, safety and welfare.
3. It is recommended that the trails, multi-use paths and other bicycle and pedestrian facilities be a permitted use within the Residential District.

VILLAGE ZONING: §58-11 BUSINESS USE DISTRICT (B)

1. Again there is no clearly stated intended purpose for the Business Use District. Being that the area within this district's boundaries includes the downtown business district of the Village, there should be a clear intent to design and develop with the bicyclist and pedestrian in mind. This district's intent should include provisions that design for the pedestrian, encourages a mixed-use



and compact urban development pattern, and identifies the importance of public spaces, people and activity within its central business district.

2. It is recommended the Business Use District include a section on bicycle and pedestrian facilities which could include specific design criteria for sidewalks and bike lanes within Main Street and Clinton Street corridors.

VILLAGE ZONING: §58-13.1 PLANNED DEVELOPMENT DISTRICTS (Q)

1. Similarly, there should be a clear intended purpose drafted for the Planned Development District in the Village. Typically, these types of zoning designations are established to encourage a more flexible development plan than would otherwise be allowed in a conventional “Euclidean” zoning district such as the Residential or Business Use Districts.
2. Integral to Planned Development Districts are their ability to incorporate a mix of uses, development densities, and standalone set of design standards, which typically include specific considerations and criteria for bicycle and pedestrian facilities. The idea being that various uses could be linked through an off-road system of trails, greenways and sidewalks to encourage a more sustainable and community-driven experience. It is recommended the Planned Unit District regulations be amended to include a subset of its own regulatory requirements that are not necessarily driven by the existing Residential and Business Use District regulations, as they are in their current form.

VILLAGE SUBDIVISION REGULATIONS: §26-11 STREETS

1. It is recommended the Village amend this section of its Subdivision law to include a street cross-section that accommodates active transportation modes such as walking and biking.
2. The “Standards for Street Design” section should be reviewed to include bicyclist and pedestrian accommodations where practicable, and ensure specific design criteria and right-of-way widths are built into the cross-section for each type of street, i.e. “local”, “collector”, or “business” street.
3. There is no mention of pedestrian accommodations in the Intersection regulations. It is recommended specific criteria and performance standards are included to provide for the safe and accessible route for bicyclists and pedestrians, i.e. crosswalks, bike lanes, surface materials, signage, and lighting.

VILLAGE SUBDIVISION REGULATIONS: §26-14 RESERVATIONS AND EASEMENTS

1. It is recommended that this section be amended to clearly state that each new residential subdivision and/or commercial development that abuts the Old Erie Canal be provided an access easement for bicycle and pedestrian connectivity to the Erie Canalway Trail.
2. There should be language included in this section that encourages the connection from existing pedestrian facilities/easements to new segments that must be built into new residential developments. For example, if an applicant is seeking to construct a new residential subdivision adjacent to an existing neighborhood that has existing pedestrian accommodations such as sidewalks or an easement dedicated to a trail, the developer of the new subdivision should be required to link up to that active transportation system either through sidewalk extensions or through the procurement of an easement dedicated to pedestrian access.

GENERAL GUIDING POLICY ACTION RECOMMENDATIONS

Brockport’s active transportation system should meet the basic needs of a variety of users. For bicyclists and pedestrians, this means providing continuous sidewalks, trails, multi-use paths or bike lanes that are safe, comfortable, and easily used by people with disabilities. Ensuring that Brockport’s active transportation system effectively meets the needs of different user groups requires the adoption of a comprehensive set of policies that addresses each aspect of biking and walking. This includes new policies specific to the Village of Brockport as well as the adherence to and/or adoption of state and federal policies. Rather than merely focusing on routes and infrastructure upgrades, this Active Transportation Plan sets a well-rounded foundation for a complete bicycle and pedestrian plan and program that seeks to sustain and enhance walking and biking conditions for all users, whether they walk or



bike for transportation or recreational purposes. This section summarizes additional general policy recommendations that may not particularly be governed by the Village's zoning or subdivision regulations, and that also take into consideration state and federal guidelines and regulations.

1. Follow the Complete Streets process to accommodate biking and walking in Brockport. One of the primary goals of this Active Transportation Plan is to encourage if not mandate that bicycle and pedestrian facilities be included with all street projects when they are initially constructed, or when streets are reconstructed. Obviously, including bicycle and pedestrian facilities at this time is less costly than trying to retrofit a roadway to include them. Following a Complete Streets process for street project will help further the implementation of this Plan. In doing so, this process will ensure that all transportation network users in Brockport are considered during the design stage of a project.
2. Refer to nationally recognized guidelines such as the American Association of State Highway and Transportation Officials (AASHTO) and the Americans with Disabilities Act, when planning and designing for bicyclist and pedestrians. The Highway Design Manual (HDM) is the New York State-wide guiding document used by the NYSDOT and local jurisdictions during the design and development of transportation projects. Such projects could include trails, bike lanes, multi-use paths, and cycle tracks. However, it does not contain the specific design guidance necessary to design on-street bicycle facilities. In this case, refer to the AASHTO Guide for the Development of Bicycle Facilities (The Green Book). This guide establishes minimum criteria for bicycle facilities and is used in many communities around New York State and the Country.
3. Design highly visible crosswalks that are free of obstructions. Street crossings are typically high conflict areas. Therefore, crosswalks must be clear of obstructions and visible to bicyclist and pedestrians. Considering this, for every marked crosswalk in the Village, Brockport should, at minimum, paint two solid white lines in keeping with national Manual Uniform Traffic Control Devices (MUTCD) standards. This should be the case regardless of whether the crosswalk is in a residential area or in the downtown business district.
4. Enhance bicycle and pedestrian accessibility and circulation through connectivity between neighborhoods. This may perhaps be the most difficult challenge facing Brockport's active transportation needs. In many cases, there is simply no connectivity between residential neighborhoods and/or commercial developments. In order to increase biking and walking mobility and access in the Village, neighborhoods, destination and public gathering spaces, commercial centers, parks and playgrounds must be physically linked via a sophisticated system of sidewalks, trails, greenways, and bike paths. Making this even more difficult is the fact that several neighborhoods do not have sidewalk connections to the nearest arterial or collector road. As such, the Village must look at ways to provide an easement or construct a network of sidewalks that connects to the nearby sidewalk or trail system that ultimately links up to the street grid where access to shops, parks, and businesses can be obtained.

WHAT IS A COMPLETE STREET?

A Complete Street is a roadway planned and designed to consider the safe, convenient access and mobility of all roadway users of all ages and abilities. This includes pedestrians, bicyclists, public transportation riders, and motorists; it includes children, the elderly, and persons with disabilities.

Complete Street roadway design features include sidewalks, lane striping, bicycle lanes, paved shoulders suitable for use by bicyclists, signage, crosswalks, pedestrian control signals, bus pull-outs, curb cuts, raised crosswalks, ramps and traffic calming measures.

www.dot.ny.gov/programs/completestreets



7.0 OUTREACH AND EDUCATION RECOMMENDATIONS



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 (both bicyclists and motorists) about the rules of the road and safe bicycling behavior is essential, while at the same time, encouraging more people to get out and ride their bikes.

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. The network will attract users of different skill levels and ages, as well as provide opportunities for interaction with 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.

This Plan recommends that the following groups be addressed as well:

- Senior pedestrians and bicyclists;
- Low income pedestrians and bicyclists;
- Visiting pedestrians and bicyclists; and
- School-age pedestrians and bicyclists.

IMPORTANT INFORMATIONAL 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. In addition, most communities are home to people of many different ethnic backgrounds. Language barriers should be considered as educational materials are developed. The Village of Brockport should seek partnerships that bridge cultural boundaries. Such partnerships would provide a valuable channel for distribution of educational materials and for general promotion of bicycling in under-served communities. The Village should ensure that all parts of the Brockport, not only geographically, but also demographically, have equal access to active



transportation information and facilities. **Table 6** at the end of this Plan section provides a thorough summary of existing active transportation-related education and outreach programs and partnerships.

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 the Town of Henrietta. 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.

“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)

“1,152 pedestrians were treated in emergency rooms after being injured while using a cellphone or some other electronic device in 2010 — and the number had doubled since the year before.”

- US Consumer Product Safety Commission

As we look around us every day, pedestrians are being distracted by their hand held 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 smart phones, and listen to music while walking. Current trends, such as this, are important factors in designing bicycle/pedestrian safety, education and outreach programs. The framework for these recommendations was crafted with all this in mind.

7.1 RECOMMENDATION 1

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 a useful partner for their ability to communicate with a certain part of the Rochester population. Some examples of education and outreach programs are suggested here:

1. Coordinate different organizations that offer **bicycle rodeos** for young bicyclists to see ways they can support each other and maximize existing resources. Organizations include Sweden/Clarkson Community Center, Injury Free Coalition for Kids, and Monroe County Office of Traffic Safety.
2. Utilize the **RocCity Coalition** to locate volunteers for bicycle rodeos and bicycle repair programs, and to distribute information about bicycling to young adults in Rochester.
3. Coordinate safety education with the **Brockport Central School District** (Ginther Elementary, Barclay Elementary, Hill Elementary, Oliver Middle School, and Brockport High School).
4. 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 the Greater Brockport Area.



5. 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 Village and greater business community.
6. **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.
7. **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 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.
8. 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. Refer to **Follow On Activities** presented later in this plan for more information. 
9. 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.
10. Expand the **Safe Routes to School (SRTS)** program – SRTS is a national program that addresses barriers that inhibit students from walking and biking to school. The Genesee Transportation Council recently administered a regional study of the Safe Routes to School program. The Village should work with the different schools operating in Brockport to consider how the program could be used to assess barriers at all local schools. Increasing the number of children that can safely walk and bicycle to school as well as protecting the safety of those that already do so requires a holistic approach. SRTS programs need to be cooperative efforts involving both the Village and the various schools or districts.
11. 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. For pedestrians, this campaign could address crossing at designated crossing facilities, and walking on the sidewalk in all seasons.
12. **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. Refer to **Follow On Activities** presented later in this plan for more information. www.walkfriendly.org/ 



13. 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. If the Village published a map including only its corporate boundary, it could probably be produced in a smaller format than the GTC map, which covers a much larger area. An excellent example is the map and info guide produced by the City of Vancouver, British Columbia that illustrates bicycle/ pedestrian routes in the city, and utilizes a compact, folded-into-wallet-size (Z-card) format. Additionally, the Greater Rochester Area Bicycling Map was recently updated in 2014 and can be found here:

http://www.gtcmpo.org/bike_map/bikemapinfo.htm

14. Institute a **“Sunday Parkways”** ride once per month - In Madison, WI, Sunday Parkways are times set aside on weekends and holidays for traffic-free biking and walking on a network of selected streets.

15. 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.

16. **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. www2.monroecounty.gov/safety-traffic/safety.php. These videos could be incorporated into school district curriculum and shown at Village events.

17. 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.

18. Consider **Colorful Sidewalks and Crosswalks** at unsignalized intersections around the Brockport Central School District campus per HealthiKids Coalition, an initiative of the Finger Lakes Health Systems Agency. <http://www.healthikids.org/>



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.

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 and the League of American Bicyclists. Refer to **Follow On Activities** presented later in this plan for more information.



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 Monroe County Office of Traffic Safety should be explored.



Participate in an **annual meeting of all bicycle/pedestrian planners and engineers in Monroe County**. 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: Village 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.

7.2 RECOMMENDATION 2

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

- 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.

SafeRoutes
National Center for Safe Routes to School



7.3 RECOMMENDATION 3

Coordinate an ongoing **public information and enforcement campaign** regarding safe sharing of the roadways for pedestrians, bicyclists and motorists.

Pedestrians - Law enforcement departments can take a leading role in improving public awareness of existing traffic laws and ordinances for motorists (e.g. obeying speed limits, yielding to pedestrians when turning, traffic signal compliance, and obeying drunk-driving laws) and pedestrians (e.g. crossing the street at legal crossings and obeying pedestrian signals). Many local law enforcement agencies have instituted annual pedestrian awareness weeks when they issue tickets to motorists who disregard pedestrian laws and warn pedestrians to follow the laws as well.



Bicyclists - 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. Sporadic enforcement will not result in significant improvements to bicyclist behavior and will likely result in resentment of law enforcement personnel. Those behaviors to be targeted should be determined at the outset of the law enforcement campaign. The following behaviors should be targeted consistently:

- Riding at night without lights;
- Violating traffic signals;
- Riding on sidewalks; and
- Riding against traffic on the roadway.

These four behaviors were chosen for two reasons. First, they represent particularly hazardous behaviors which result in many crashes. Secondly, and very importantly, the enforcement of these behaviors is easy to justify to the public. When coupled with (and in fact preceded by) a large-scale education campaign, the public will understand the importance of the campaign and consequently will accept the enforcement activity.

In addition to the need to educate bicyclists, pedestrians, and motorists, some targeted training of law enforcement may also be appropriate. Some questions that could be covered in this training include:

- When is it okay 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 such a problem?

By answering these and other similar questions, and discussing what infractions are most likely to lead to bike crashes, cities can encourage law enforcement to help promote bike 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 the League of American Bicyclists' Traffic Skills 101 courses.

7.4 RECOMMENDATION 4

Schedule regular maintenance and facility improvements to keep bike lanes and walkways well-marked and free of snow and debris. The availability of bicycle and pedestrian facilities is one of the components that can lead to increased riding and walking in a community. However, facility improvements do not end at construction; facilities also need to be maintained to be useful. Maintenance needs require planning and budgeting. Sample maintenance activities include keeping roadways and bike lanes clean and free of debris, identifying and correcting roadway surface hazards, keeping signs and pavement markings in good condition, maintaining adequate sight distance, and keeping shared-use trails in good condition. Maintenance is an area where planning and attention can provide significant benefits for bicyclists and pedestrians at relatively modest additional cost.

It should be noted that the Brockport Department of Public Works efficiently maintains snow removal, leaf and brush collection, pothole repairs and road resurfacing to a high level, scheduling an active multi-year calendar of road and sewer projects for planning and public informational purposes. Identification of maintenance needs for active transportation facilities, and institutionalization of good maintenance practices are key elements in providing safe facilities for bicyclists and pedestrians. Winter snow removal and year-round debris removal will be key maintenance concerns in the Village of Brockport. The importance of good planning and initial design cannot be overstated with respect to long-term maintenance needs. It is easier to obtain outside funding for facilities construction than for on-going maintenance, so planning and building correctly at the outset will reduce future maintenance problems and expense. Residents and businesses can be engaged in clean-up days, or help with snow removal.



7.5 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 Village 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.



TABLE 6: EXISTING ACTIVE TRANSPORTATION EDUCATION AND OUTREACH PROGRAMS AND PARTNERSHIPS

Partner Name	Existing Programs					Existing Partnerships					Highlights
	Bicycle Safety	Community Health	Environmental Concerns	Transportation Equity	Neighborhood Livability	Bicycle Safety	Community Health	Environmental Concerns	Transportation Equity	Neighborhood Livability	
AARP		+			+						Age Friendly Communities programs.
Boys & Girls Clubs of Rochester, NY	+	+		+		+	+				Cyclopedia - connects bicycling to online documentation.
Finger Lakes Health Systems Agency		+									Various health and wellness initiatives.
Genesee Land Trust			+		+		+	+		+	
Genesee Regional Off-Road Cyclists (GROC)	+	+				+	+				Singletrack Academy to teach bicycle handling skills.
Genesee Transportation Council	+	+	+	+	+	+	+	+	+	+	Funds studies addressing key issues. Helmet brochure, bike map.
Greater Rochester Health Foundation											
Injury Free Coalition for Kids	+	+									Kohl's Pedal Patrol provides bike rodeos and helmets.
Monroe County Health Department		+			+		+				Partnered with University of Rochester Center for Community Health.
Monroe County Office of Traffic Safety	+					+					Programs are free and available to any school in Monroe County.
Monroe County Planning Department			+	+	+			+	+	+	
Monroe County/Rochester Public Libraries					+						Venue for education/outreach programs and distribution of materials.
Monroe YMCA	+	+			+	+	+			+	
NYSDOT											
RGRTA									+		
R Community Bikes, Inc.	+			+					+		Bike helmet giveaways, bike repairs for under-served.
RocCity Coalition					+					+	Many partnerships, not specifically related to active transportation.
Rochester Area Community Foundation		+	+		+		+	+		+	Support community efforts through grants.
Rochester Bicycling Club (RBC)	+					+					Dedicated to promoting cycling for health and well being.
Rochester Cycling Alliance	+	+				+	+				
Rochester General Hospital		+			+	+	+				
SUNY Brockport	+	+	+	+		+	+	+	+		
Brockport Central School District		+	+			+	+	+			
Unity Health Services		+			+	+	+				
Walk!Bike!Brockport	+	+	+	+	+	+	+	+	+	+	Dedicated to promoting cycling for health and well being.
Wegmans	+	+	+	+	+	+	+	+	+	+	Passport to Wellness.

8.0 FUNDING AND IMPLEMENTATION STRATEGY



Those responsible for implementing this Plan’s recommendations should monitor capital improvement plans to identify specific opportunities, coordinate the available outreach and education programs identified in the previous section, coordinate improvements with adjoining municipalities, and identify and follow through on relevant grant opportunities. In addition to these strategies, the Village of Brockport has historically funded, and will continue to fund, sidewalks and other active transportation projects using the following techniques:

- New development projects requesting incentive zoning may be required to install and/or fund sidewalks as an amenity.
- New developments or redevelopments may be required to provide sidewalk easements and/or construct sidewalks as a condition of Planning Board approval.
- In addition, the Village has established a sidewalk maintenance fund that annually funds sidewalk maintenance projects.

In general, however, most large sidewalk construction projects are funded by state and federal grants. In addition, the costs associated with constructing the bicycle and pedestrian facilities recommended in this Plan exceed available Village resources.

To help alleviate this deficiency, this section identifies and discusses the numerous sources which can be used to provide monetary assistance for bicycle and pedestrian facilities and programs. Many of these funding sources are available on the federal level, as dictated in the new transportation legislation, Moving Ahead for Progress for the 21st Century (MAP-21). 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. The following quick-reference table ([Table 7](#)) includes all of the funding sources that are described subsequently in greater detail.



TABLE 7: FUNDING SOURCES

Funding Source	Category	Relevant Project Types
National Highway Performance Program	Federal	Bicycle transportation and pedestrian walkways (Section 207)
Surface Transportation Program	Federal	Bicycle transportation and pedestrian walkways; modification of sidewalks to comply with ADA; recreational trail projects; Scenic Byway projects; SRTS projects (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 Management and Air Quality (CMAQ)	Federal	Bicycle and pedestrian facilities (TA projects)
Transportation Alternatives (replaced TE, SRTS, Recreational Trails	Federal	Bicycle and pedestrian facilities; Safe routes for non-drivers projects and systems; preservation of abandoned railway corridors including for pedestrian and bicycle trails; Safe Routes to School infrastructure and non-infrastructure projects: school-based facility, education, and enforcement projects/campaigns
State and Community Highway Safety Grants	Federal	Safety-related programs and projects (Section 402)
HUD Community Development Block Grants	Federal	Public facilities and improvements, such as streets, sidewalks, sewers, water systems, community and senior citizen centers, recreational facilities, and greenways
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
CHIPS (Consolidated Local, State, and Highway Improvement Program) (www.dot.ny.gov/programs/chips)	State	Bike lanes and wide curb lanes
The Community Development Block Grant (CDBG)	Regional	Sidewalks
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	Trail tree plantings
Robert Wood Johnson Foundation (general) (www.rwjf.org/grants)	Private	Various
The Conservation Alliance Fund (www.conservationalliance.com/grants/grant_criteria)	Private	Land Use
Surdna Environment/Community Revitalization (www.surdna.org/grants/grants-overview.html)	Private	Community revitalization and environment, including greenway trail design

8.1 FEDERAL FUNDING SOURCES: MAP-21 FUNDED PROGRAMS

With the adoption of Moving Ahead for Progress for the 21 st Century (MAP-21), the funding landscape for bicycle and pedestrian projects changed radically. Whereas under SAFTEA-LU (MAP-21’s legislative predecessor), non-motorized transportation facility projects had been eligible under dedicated funding categories that included the Transportation Enhancements Program (TEP), Safe Routes to School (SRTS) and recreational trails. These dedicated programs have been folded into is a new category, Transportation Alternatives which recasts, at reduced funding levels, the former TE program. ³Transportation Alternatives includes TA projects (see list below), previously eligible Safe Routes to School Projects, 4 Recreational Trails projects, and boulevard projects in former Interstate Highway rights of way. Eliminated programs include Safe Routes to School, National Scenic Byways, and the Paul S. Sarbanes Transit in Parks program. The Land and Water Conservation Fund has been funded at a reduced amount through 2013. As before, non-motorized projects must be “principally for transportation, rather than recreation, purposes” and must be designed and located pursuant to the transportation plans required of States and Metropolitan Planning Organizations. The exception to this rule is the Recreational Trails Program (RTP), under which projects may be used for recreational purposes.

Whereas before there were different funding methods for each program, new MAP-21 TA funds will be distributed through grant programs. Fifty percent of the funding will be distributed according to population share. For areas over 200,000, the MPOs will manage the distribution of funds by grant competition. For areas under 200,000, the state will manage the distribution through a competitive grant program. These funds are limited to this use and are not transferable. The remaining fifty percent will be distributed by DOTs, and is transferable to other highway uses. The combination of reduced available funding and increased competition for funds due to the combining of programs may lead to a reduction in bicycle and pedestrian projects being funded.

³Section 101 (29) Transportation Alternatives.--The term ‘transportation alternatives’ means any of the following activities when carried out as part of any program or project authorized or funded under this title, or as an independent program or project related to surface transportation: (A) Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety- related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.)(B) Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs. (C) Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other non-motorized transportation users. (D) Construction of turnouts, overlooks, and viewing areas. (E) Community improvement activities, including--(i) inventory, control, or removal of outdoor advertising; (ii) historic preservation and rehabilitation of historic transportation facilities; (iii) vegetation management practices in transportation rights-of-way to improve roadway safety, prevent against invasive species, and provide erosion control; and (iv) archaeological activities relating to impacts from implementation of a transportation project eligible under this title. (F) Any environmental mitigation activity, including pollution prevention and pollution abatement activities an mitigation to-- (i) address stormwater management, control, and water pollution prevention or abatement related to highway construction or due to highway runoff, including activities described in sections 133(b)(11), 328(a), and 329; or (ii) reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats.

⁴Authorized in the 2005 SAFETEA-LU bill, Safe Routes to School projects include: (f) Eligible Projects and Activities.-- (1) Infrastructure-related projects.-- (A) In general.--Amounts apportioned to a State under this section may be used for the planning, design, and construction of infrastructure-related projects that will substantially improve the ability of students to walk and bicycle to school, including sidewalk improvements, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, secure bicycle parking facilities, and traffic diversion improvements in the vicinity of schools. (B) Location of projects.--Infrastructure-related projects under subparagraph (A) may be carried out on any public road or any bicycle or pedestrian pathway or trail in the vicinity of schools. (2) Non-infrastructure-related activities.--(A) In general.--In addition to projects described in paragraph (1), amounts apportioned to a State under this section may be used for non-infrastructure-related activities to encourage walking and bicycling to school, including public awareness campaigns and outreach to press and community leaders, traffic education and enforcement in the vicinity of schools, student sessions on bicycle and pedestrian safety, health, and environment, and funding for training, volunteers, and managers of safe routes to school programs.



National Highway Performance Program. Funds may be used to construct bicycle transportation facilities and pedestrian walkways on land adjacent to any highway in the National Highway System, including Interstate highways.

Surface Transportation Program (STP). Funds may be used for the construction of bicycle transportation facilities and pedestrian walkways, as well as many other related facilities (bicycle parking, bike-transit interface, etc.). Transportation Alternative projects are eligible for STP funds. Modifications of public sidewalks to comply with the Americans with Disabilities Act (ADA) are also covered.

Highway Safety Improvement Program. Funds may be used for bicycle- and pedestrian-related highway safety improvement projects, strategies and activities on a public road that are consistent with a State strategic highway safety plan.

Congestion Mitigation and Air Quality (CMAQ) Improvement Program. Established in 1991 and continued in MAP-21, CMAQ will continue to provide funding for projects that help State and local governments meet the requirements of the Clean Air Act. Whether they include attainment or non-attainment areas, States may use CMAQ funds for CMAQ- or STP-eligible projects. Projects must be included in the MPO's current transportation plan and transportation improvement program (TIP) or state transportation program (STIP) in areas without an MPO.

It is important to note that future additional funding from this program is unlikely to be available in the Genesee-Finger Lakes region and there is a backlog of eligible projects in the region that makes funding for new bicycle and pedestrian projects unlikely within the MAP-21 time frame (through 2014).

Transportation Alternatives. As mentioned earlier, this new program now provides funding for what used to be funded by three separate programs (Transportation Enhancements, Safe Routes to School, Recreational Trails). In addition to projects in these categories, TA money can be used to fund some road projects. Fifty percent of each state's funds will be distributed by the DOT, the remainder by the MPOs. There is an opt-out clause that allows up to fifty percent of the funds to be transferred to use in any program without restriction. NYSDOT's TAP Guidebook lists six eligible project categories and two sub-categories:

CATEGORIES

1. Construction, Planning and Design of On-road and Off-road Facilities for Pedestrians, Bicyclists and Other Non-motorized Forms of Transportation;
2. Construction, Planning and Design of Infrastructure-Related Projects to Provide Safe Routes for Non-drivers to Access Daily Needs;
3. Conversion and Use of Abandoned Railroad Corridors for Trails for Pedestrians, Bicyclists and Other Non-motorized Transportation Users;
4. Construction of Turnouts, Overlooks and Viewing Areas;
5. Safe Routes to School;
6. Construction, Planning and Design of Boulevards; and

SUB-CATEGORIES

- A. Community Improvement Activities (including Landscaping and Streetscape Improvements), when integrated with work in another category;
- B. Environmental Storm Water Management Activities, when integrated with work in another category

The Recreational Trails Program is now funded under the TA umbrella. Funds may be used for all kinds of trail projects. Of the funds apportioned to a state, 30 percent must be used for motorized trail uses, 30 percent for non-motorized trail uses, and 40 percent for diverse trail uses (any combination). Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles. The funding amount will remain the same as in 2009 (\$2,204,556). An important provision of the new bill allows the Governor of a state to opt out the recreational trails program if the Governor notifies the U.S. Secretary of Transportation no later than 30 days prior to apportionments being made for any fiscal year.



Highway Safety Section 402 Grants. Generally unchanged from SAFETEA-LU. A State is eligible for these Section 402 grants by submitting a Performance Plan (establishing goals and performance measures for improving highway safety) and a Highway Safety Plan (describing activities to achieve those goals). Research, development, demonstrations, and training to improve highway safety (including bicycle and pedestrian safety) are carried out under the Highway Safety Research and Development (Section 403) Program.

Title 49 USC allows the **Urbanized Area Formula Grants (Section 5307), Capital Investment Grants and Loans (Section 5309), and Formula Program for Other than Urbanized Area (Section 5311)** transit funds to be used for improving bicycle and pedestrian access to transit facilities and vehicles. Eligible activities include investments in “pedestrian and bicycle access to a mass transportation facility” that establishes or enhances coordination between mass transportation and other transportation.

8.2 OTHER FEDERALLY FUNDED PROGRAMS

National Park Service Land and Water Conservation Fund (LWCF) Grants. This federal funding source was established in 1965 to provide “close-to-home” parks and recreation opportunities to residents throughout the United States. Money for the fund comes from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases, and surplus federal land sales. LWCF grants can be used by communities to build a variety of parks and recreation facilities, including trails and greenways. LWCF funds are distributed by the National Park Service to the states annually. Communities must match LWCF grants with 50 percent of the local project costs through in-kind services or cash. All projects funded by LWCF grants must be used exclusively for recreation purposes, in perpetuity. Projects must be in accordance with each State’s Comprehensive Outdoor Recreation Plan.

8.3 STATE AND REGIONAL FUNDING SOURCES

CHIPS (Consolidated Local, State, and Highway Improvement Program). Funds are administered by NYSDOT for local infrastructure projects. Eligible project activities include bike lanes and wide curb lanes (highway resurfacing category); sidewalks, shared use paths, and bike paths within highway right-of-way (highway reconstruction category), and traffic calming installations (traffic control devices category).

Community Development Block Grants (CDBG). Through the U.S. Department of Housing and Urban Development (HUD), the CDBG program provides eligible metropolitan cities and urban counties (called “entitlement communities”) with annual direct grants that they can use to revitalize neighborhoods, expand affordable housing and economic opportunities, and/or improve community facilities and services, principally to benefit low- and moderate-income persons. Eligible activities include building public facilities and improvements, such as streets, sidewalks, sewers, water systems, community and senior citizen centers, and recreational facilities. Several communities have used HUD funds to develop greenways.

<http://www.hud.gov/offices/cpd/communitydevelopment/programs/>

The Green Innovation Grant Program The Green Innovation Grant Program (GIGP) provides grants on a competitive basis to projects that improve water quality and demonstrate green stormwater infrastructure in New York State. Eligible projects include: permeable pavement, such as porous asphalt, concrete, or pavers; bioretention / bioinfiltration and rain gardens; green roofs or green walls; street trees or urban forestry programs designed to manage stormwater; construction or restoration of wetlands, floodplains, or riparian buffers; stream daylighting, which includes removing streams from pipes and restoring the natural morphology; Downspout disconnection which redirects stormwater from sewers to vegetated areas; and stormwater harvesting and reuse, for example rain barrel and cistern projects. <http://www.efc.ny.gov/>

The Greater Rochester Health Foundation administers a competitive grant program to implement community health and prevention projects. While grant focus topics and cycles may vary from year to year (the letter of intent deadline for 2013 grants was August 6, 2012), bicycle- and pedestrian-related projects and programs may frequently be well suited for these opportunity grants. <http://www.thegrhf.org/>



8.4 PRIVATE FUNDING SOURCES

There are a number of for and non-profit businesses that offer programs that can be used to fund bicycle and pedestrian related programs and projects. Nationally, groups like Bikes Belong fund projects ranging from facilities to safety programs. Locally, Wegmans and Excellus have a strong track record of supporting health-based initiatives and may be resources for partnership or sponsorship.

Bikes Belong Coalition. The Bikes Belong Grants Program strives to put more people on bicycles more often by funding important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S.” Most of the Bikes Belong grants awarded to government agencies are for trail projects. The program encourages government agencies to team with a local bicycle advocacy group for the application. Bikes Belong Coalition seeks to assist local organizations, agencies, and citizens in developing bicycle facilities projects that will be funded by MAP-21. Bikes Belong Coalition will accept applications for grants of up to \$10,000 each (with potential local matches), and will consider successor grants for continuing projects. Grant applications are accepted quarterly. <http://www.bikesbelong.org/grants>

American Hiking Society National Trails Fund. The American Hiking Society’s National Trails Fund is the only privately funded national grants program dedicated solely to hiking trails. National Trails Fund grants have been used for land acquisition, constituency building campaigns, and traditional trail work projects. Since the late 1990s, the American Hiking Society has granted nearly \$200,000 to 42 different organizations across the US. Applications are accepted annually with a summer deadline.

<http://www.americanhiking.org/NTF.aspx>

The Global ReLeaf Program. The Global ReLeaf Forest Program is American Forests’ education and action program that helps individuals, organizations, agencies, and corporations improve the local and global environment by planting and caring for trees. The program provides funding for planting tree seedlings on public lands, including trail sides. Emphasis is placed on diversifying species, regenerating the optimal ecosystem for the site and implementing the best forest management practices. This grant is for planting tree seedlings on public lands, including along trail rights-of-way.

http://www.americanforests.org/global_releaf/grants/

The Robert Wood Johnson Foundation. The Robert Wood Johnson Foundation seeks to improve the health and health care of all Americans. One of the primary goals of the Foundation is to “promote healthy communities and lifestyles.” Specifically, the Foundation has an ongoing “Active Living by Design” grant program that promotes the principles of active living, including non-motorized transportation. Other related calls for grant proposals are issued as developed, and multiple communities nationwide have received grants related to promotion of trails and other non-motorized facilities. <http://www.rwjf.org/grants/>

Conservation Alliance. The Conservation Alliance is a group of outdoor businesses that supports efforts to protect specific wild places for their habitat and recreation values. Before applying for funding, an organization must first be nominated by a member company. Members nominate organizations by completing and submitting a nomination form. Each nominated organization is then sent a request for proposal (RFP) instructing them how to submit a full request. Proposals from organizations that are not first nominated will not be accepted. The Conservation Alliance conducts two funding cycles annually. Grant requests should not exceed \$35,000 annually. <http://www.conservationalliance.com/>

Surdna Foundation. The Surdna Foundation seeks to foster just and sustainable communities in the United States, communities guided by principles of social justice and distinguished by healthy environments, strong local economies and thriving cultures.

<http://www.surdna.org/>

8.5 EXISTING RECONSTRUCTION PROJECTS

There are possible opportunities to collaborate with existing highway/street reconstruction projects to include upgrades to bicycle and pedestrian infrastructure. Coordination at the beginning of the reconstruction project will help to ensure bicycle and pedestrian facilities are studied as part of the inventory phase and carried through construction. Maintain regular communication with NYSDOT and MCDOT regarding implementation of plan recommendations. Examples of these types of projects include the Monroe County Highway Preventive Maintenance projects in addition to those projects identified through NYSDOT’s Statewide Transportation Improvement Program (STIP) which lists all projects in NY state for which Federal funding is proposed to be used that are scheduled to begin within a designated time frame of four federal fiscal years. The most recent STIP is for October 1, 2013 to September 30, 2017 and can be found here: <https://www.dot.ny.gov/programs/stip/stip-project-rpt>



9.0 FOLLOW ON ACTIVITIES



The Brockport Active Transportation Plan helps chart a course toward a fully inclusive and accessible Active Transportation System for the community. The project was driven by a consistent and comprehensive flow of input from residents and stakeholders.

The final report highlights a wide range of needed improvements that were identified by residents. Follow-on activities are future endeavors that will help advance the overall objectives of the Brockport Active Transportation Plan.

Follow-on activities can be placed into 3 general categories

- Next steps to advance improvements recommended in the Plan
- On-going coordination and communication to support Active Transportation
- Additional plans and studies to advance community objectives.

As a master plan, the Brockport Active Transportation Plan does not identify all of the specifics needed to construct every recommended project. Some work still remains to be done. This includes, but is not limited to:

- Additional study and operational analysis is required for each recommended project prior to implementation.
- Consultation with - and agreement from - facility owners is required prior to implementation.
- Access agreements from landowners and/or property acquisition are necessary prior to implementation. (Please see Appendix G, Economic Impact of Trails for useful information in talking with landowners.)
- Detailed corridor studies are needed in order to provide on-street bicycle facilities in select corridors. Please see [Table 3](#) and [Figures 7-9](#) for more details.
- Design development and construction documentation will be necessary for any construction-related projects, such as trails, side paths, and other infrastructure improvements.
- Regulatory approvals and permitting will be necessary for many of the recommended projects.
- Environmental permits will be required for trail projects. Some of the program and policy recommendations do not require regulatory approvals. However, changes to Village code will need review and approval by the appropriate municipal boards and would be subject to the SEQR process.



During the planning process, several possible projects emerged that would be beneficial follow-on activities:

1. **TROLLEY TRAIL**

The Village is urged to investigate a Rails-to-Trails opportunity along the abandoned CSX rail line, providing a connection from Owens Road to the east at Sweden Walker Road. A Rails-To-Trails corridor is the conversion of an abandoned railway into a shared use path. The characteristics of former trails - flat, long, frequently running through historical areas - are appealing for various developments. The Village could also investigate a Rails-With-Trails where the shared-use path would continue alongside the still active CSX rail line to the west of Owens Road. This trail system could provide a valuable corridor south of the Canal through the Village with connections to the west and east communities. The trail system also provides opportunity for a loop system using the existing Erie Canalway Trail, Redman Road, and Owens Road. Coordination between the Village, the Town of Sweden, CSX, private owners and other necessary stakeholders will be required. More information on these two rail trail concepts can be gathered from the Rails-To-Trails Conservancy.

<http://www.railstotrails.org/>

2. **BROCKPORT CROSSROADS MASTER PLAN**

Route 31 and Route 19 Intersection Area

Long-term community planning could address a comprehensive approach to transforming the Route 19 and Route 31 intersection area into a vibrant and sustainable mixed-use district. A vision plan for this “Crossroads District” could identify desired character, transportation networks, preferred land use and development patterns. Multi-modal transportation should be prioritized as a framework for active living and sustainable redevelopment. Form-based code would support building placement, architectural character and densities supportive of walking, cycling and transit use. Design standards would require safe connectivity between the public and private realms. The overall goal would be to establish a forward-thinking vision for this critical area that builds upon the recommendation of the Brockport Active Transportation Plan.

3. **SHARED USE PATH THROUGH WEGMANS PARKING AREA**

Creating a shared use path through the Wegmans parking area would provide a valuable link connecting the proposed shared use path from Sweden Clarkson Recreation Center to the Village. Coordination with Wegmans, the Village of Brockport and the Town of Sweden would be required.

4. **SUNY BROCKPORT: BICYCLE FRIENDLY UNIVERSITY APPLICATION**

With the goal to build healthy, sustainable and livable institutions of higher education, The League of American Bicyclists created the Bicycle Friendly University program (BFU).

<http://www.bikeleague.org/university>

The program recognizes institutions of higher education for promoting and providing a more bike-able campus for students, staff and visitors. Members of the Brockport Active Transportation task force are currently collaborating with SUNY Brockport students and staff to submit a first application for BFU status in spring 2016. Follow-on activities should include future campus upgrades and re-applications to eventually achieve the Platinum level of BFU award.

5. **PEDESTRIAN AND BICYCLE COUNTS**

Collecting reliable data on pedestrian and bicycle usage and travel patterns will provide an important tool for advancing Active Transportation in Brockport. Without accurate and consistent demand and usage figures, it is difficult to measure the positive benefits of investments in these modes, especially when compared to the other transportation modes such as the private automobile. SUNY Brockport would be a logical partner for the project, and students could potentially be volunteers to collect and manage the data.

A good follow-on project would be to implement bike and pedestrian counts in selected locations, based on protocols provided by the National Bicycle and Pedestrian Documentation Project (NBPD).

<http://bikepeddocumentation.org/>



6. BICYCLE FRIENDLY COMMUNITY APPLICATION

The Bicycle Friendly Community (BFCSM) program provides a roadmap to improve conditions for bicycling and the guidance to make your distinct vision for a better, bike-able community a reality. Applying to be a BFC would support Brockport's principles of welcoming bicyclists by providing safe accommodations for bicycling and encouraging people to bike for transportation and recreation. Making bicycling safe and convenient are keys to improving public health, reducing traffic congestion, improving air quality and improving quality of life. Additional follow-on activities should include future infrastructure upgrades and re-applications to eventually achieve the Platinum level of BFC award.

<http://www.bikeleague.org/community>

7. WALK FRIENDLY COMMUNITY APPLICATION

Walk Friendly Communities (WFC) 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 recognizes communities that are working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort. Applying for and receiving the "Walk Friendly" title would mean the Village is being recognized for its success in working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort.

www.walkfriendly.org/

8. REDMAN ROAD: ROAD DIET

NYS DOT identified Redman Road as a good candidate for a road diet, which could help control vehicular speeds as well as improving pedestrian and bicycle facilities. The recommendation is conceptual in nature and would be subject to further study and review before advancing to design development and implementation. The FHWA's Road Diet Informational Guide provides a general outline of necessary steps for identifying road diet candidates, determining feasibility, and design.

http://safety.fhwa.dot.gov/road_diets/info_guide/

9. RE-EVALUATE PEDESTRIAN SIGNAL CROSSING TIMES AT INTERSECTIONS

Check the signal timing to ensure that the maximum walk time is allowed for the crossings. Pedestrian signals are designed to direct and protect the pedestrian at street crossings. The MUTCD provides both mandatory and permissive warrants. When applying the warrants, consideration should be given to any significant concentrations of young, elderly, or persons with disabilities using the project site. Pedestrian-activated signals should be considered when vehicular signal timing is not sufficient to properly accommodate pedestrians. Refer to *NYS DOT Highway Design Manual, sections 18.7.9 and 18.7.10*.

<https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm>

10. ON-GOING COORDINATION WITH NYS DOT AND MCDOT

There are possible opportunities to collaborate with existing highway/street reconstruction projects to include upgrades to bicycle and pedestrian infrastructure. Coordination at the beginning of the reconstruction project will help to ensure bicycle and pedestrian facilities are studied as part of the inventory phase and carried through construction. Maintain regular communication with NYS DOT and MCDOT regarding implementation of plan recommendations.