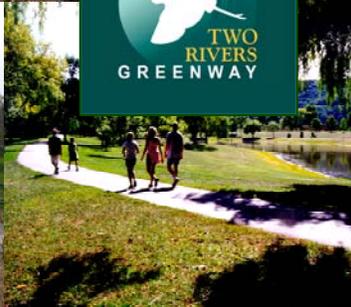
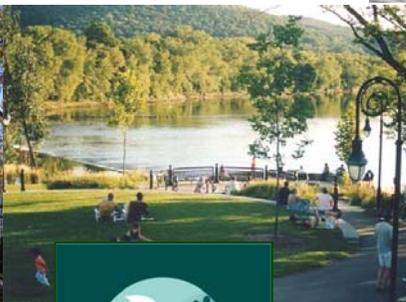




BINGHAMTON
METROPOLITAN
TRANSPORTATION
STUDY

BMTS

PEDESTRIAN PLAN



June 2013

BINGHAMTON METROPOLITAN TRANSPORTATION STUDY POLICY COMMITTEE

RESOLUTION 2013-12 Accepting the BMTS Pedestrian Plan

WHEREAS the Binghamton Metropolitan Transportation Study Policy Committee has been designated by the Governor of the State of New York as the Metropolitan Planning Organization responsible, together with the State, for the comprehensive, continuing, and cooperative transportation planning process for the Binghamton Urban Area, and

WHEREAS Federal regulations (23 CFR Chapter 1, Part 450, Subpart C, and 49 CFR Chapter VI, Part 613, Subpart B) require that the urban transportation planning process shall include development of a Unified Planning Work Program which shall annually describe all urban transportation and transportation related planning activities anticipated within the next one or two year period, and will document the work to be performed with technical assistance provided under the Federal Highway Administration metropolitan planning (PL) program and the Federal Transit Administration Section 5303 program, and

WHEREAS the BMTS Policy Committee has created a Planning Committee of technical representatives to advise it on matters concerning the implementation of the urban transportation planning process, and

WHEREAS the approved 2012-2013 Unified Planning Work Program included an FHWA funded task to perform an update to the 1996 BMTS Pedestrian and Bicycle Plan, and

WHEREAS BMTS staff has conducted the study, met with local municipal representatives, the BMTS Pedestrian and Bicycle Advisory Committee and solicited public input and then prepared a final report describing the findings and including recommendations for the consideration of the municipalities and,

WHEREAS the BMTS Planning Committee on April 11th 2013 unanimously recommended Policy Committee approval,

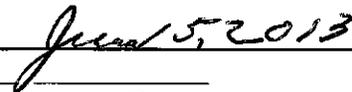
NOW THEREFORE BE IT RESOLVED that the Binghamton Metropolitan Transportation Study Policy Committee accepts the 2013 BMTS Pedestrian Plan.

CERTIFICATION OF RESOLUTION 2013-12

I, the undersigned, duly elected Chair of the Binghamton Metropolitan Transportation Study Policy Committee, do hereby certify that the foregoing is a true and correct copy of BMTS Policy Committee Resolution 2013-12 adopted by consensus this 6th day of June, 2013.



Michael Marinaccio, Chair



Date

**BINGHAMTON METROPOLITAN TRANSPORTATION STUDY
PEDESTRIAN PLAN**

PROJECTED TO BE ADOPTED BY THE BMTS POLICY COMMITTEE
JUNE 2013

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I. INTRODUCTION

Previous Plan for the Binghamton Urban Area

The federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), required that all Metropolitan Planning Organizations (MPOs) include pedestrian and bicycle considerations in their long range plans. In compliance, the Transportation Plan for the Binghamton Urban Area, *TRANSPORTATION TOMORROW: 2020* called for the development of a Pedestrian and Bicycle Plan. The preparation of the BMTS Pedestrian & Bicycle Plan was carried out in partnership with the Broome County Environmental Management Council, and was adopted during June of 1996 by the Policy Committee and appended to *TRANSPORTATION TOMORROW: 2020*.

The Pedestrian & Bicycle Plan was a safety focused plan with the goal of increased safety for those travelling on foot or by bicycle within the Binghamton Urban Area, as measured by reduction in the number of accidents, while increasing the number of trips made by these modes. Action items were recommended and prioritized into high priority/short range, medium priority/mid range, and lower priority/long range actions.

Development of Pedestrian Plan Update

Given the length of time since the adoption of the initial Pedestrian & Bicycle Plan, the need for an update to the plan exists to respond to changes that have taken place including: transportation related legislation and policy at federal, state, and local levels; numerous improvements for pedestrians and cyclists have been made to the urban area's transportation system; and changes in the demand for improved pedestrian and bicycle facilities, as well as the desire for a better quality of life for those in and nearby the Binghamton Urban Area.

Adopted in September 2010, the BMTS Transportation Plan titled, *TRANSPORTATION TOMORROW: 2035 – Creating a Sustainable Future*, called for the BMTS Pedestrian & Bicycle Plan to be updated. It was also recognized that there are unique needs for both these modes of transportation, as well as distinct methods used to address their needs. Therefore, it was determined that the update should be in the form of separate plans for pedestrians and bicyclists, with the pedestrian plan to be completed first.

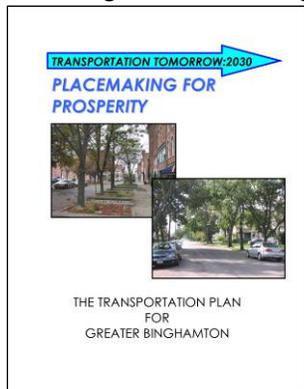
Preparing a new Pedestrian Plan also provides an opportunity to address the interrelations of transportation with multiple disciplines and quality of life issues. Transportation decisions have a significant impact on issues such as improving public health, preserving and improving the environment, making land use decisions, enabling economic development, meeting the needs of the entire population, though recognizing the significant needs of an aging population, and instilling sustainable practices across the population and across multiple disciplines. It is important to understand the need to develop and maintain partnerships, working together with agencies, organizations, and individuals of multiple disciplines to enable the accomplishment of each other's complementary goals & objectives.

Furthermore, there is a need for a **culture change** in which walking is recognized as a viable mode of transportation, the rights and responsibilities of pedestrians are recognized, and where providing pedestrian facilities is seen as equally important to the provisions for automobiles, public transportation, and bicyclists. Engineering improvements to the transportation system to safely accommodate pedestrians by including elements such as sidewalks, high visibility crosswalks, and the latest pedestrian crossing signal technology, must also be combined with education, encouragement, enforcement, and evaluation efforts to accomplish the culture change.

During 2012, BMTS began the Pedestrian Plan update. With assistance from the BMTS Pedestrian & Bicycle Advisory Committee (PBAC), through survey results of the Broome County Community Health Assessment, and through the public outreach efforts of both the 2030 and 2035 Transportation Plans, pedestrian needs and issues were identified. BMTS used this information to develop actions to address those issues. The actions consist of existing and modified ones from the 1996 Pedestrian and Bicycle Plan, as well as the addition of some new actions. The draft Pedestrian Plan was reviewed by the BMTS PBAC and other key stakeholders before completing the final draft.

II. OPPORTUNITY STATEMENT

A decision was made by the BMTS Policy Committee that *TRANSPORTATION TOMORROW: 2035* must address the concept of sustainability, and how transportation can contribute or potentially detract from, achieving a sustainable region. The *2035 Plan* also builds on achieving the scenario determined by extensive



public outreach for *TRANSPORTATION TOMORROW: 2030* – that the BMTS Plan be based on the ‘moving inward’ (i.e. encouraging in-fill redevelopment rather than outward sprawling new development) scenario combined with the modest population growth forecast of 10,000. The scenario also forms the basis for understanding the context in which transportation investment and improvement sits. This is important, since the Plan can define not only projects, but also transportation policies and strategies.

The following is the VISION for *TRANSPORTATION TOMORROW: 2035*

In 2035, Greater Binghamton will be a successful, livable, and vibrant region, and its regional transportation system will have the following characteristics:

- ♦ **Sustainability.** Community sustainability will be supported in terms of reduced energy consumption and greenhouse gas emissions; and improved public health and social equity.
- ♦ **Accessibility:** All users will have convenient, mode-neutral access to employment, education, services, and other destinations.
- ♦ **Mobility.** Personal travel and goods movement will be efficient, with many modes of travel and excellent connections among them.
- ♦ **Safety:** All users will be able to travel safely and with a sense of security, regardless of which mode they choose to use.
- ♦ **System Preservation:** Transportation infrastructure will be maintained in a state of good repair, as the foundation for providing safe, efficient mobility

Incorporating this vision [*identified in italicized brackets below*] along with the following policy statements from the 1996 Pedestrian and Bicycle Plan, form the foundation for this Pedestrian Plan update:

- (1) *Fully accommodate pedestrians in the metropolitan transportation system.*
 [*Accessibility, Mobility, and System Preservation*]

The Binghamton Metropolitan Transportation Study (BMTS) seeks to direct investments in the metropolitan

transportation system to enhance and support all modes of travel in the Binghamton metropolitan area. Encouraging walking is beneficial from a planning, engineering, healthy living, and financial perspective. Further, improvements to the pedestrian infrastructure are a cost effective and equitable way to serve people of all ages, abilities, and incomes. BMTS recognizes that non-motorized modes, walking and bicycling, have been for the most part overlooked in the past. Though more attention has been given to improving the infrastructure for non-motorized modes since the 1996 Pedestrian and Bicycle Plan, elements for those modes are still often among the first targeted for elimination from projects in efforts to reduce costs.

There also is considerable potential demand for pedestrian facilities in the BMTS region, as the 2006-2010 American Community Survey 5-Year Estimates show zero car ownership of the households for the municipalities that comprise the BMTS Planning Area to be 10,487 (10.4%). Residents of these households stand to benefit significantly from improved pedestrian facilities. Also, sizable and increasing student populations at Broome Community College and Binghamton University, and a significant elderly population make walking necessary and a viable transportation mode.

(2) Improve safety for all users of the metropolitan transportation system.

[Safety]

Significant actions and improvements have been made since the 1996 Pedestrian and Bicycle Plan to address the needs of pedestrians, however, there are still locations where the regional transportation infrastructure does not always safely accommodate people who walk. Safety is a critically important consideration in the development and design of the transportation system. Educational, encouragement, and enforcement efforts are also necessary to establish safe behavior and interaction between all users of the transportation system. According to the New York State Accident Location Information System, there were a total of 88 accidents involving pedestrians in 2009, 97 in 2010, and 85 in 2011 for the Binghamton Metropolitan Area. These figures will be used as a benchmark to measure progress in pedestrian safety in future years.

(3) Recognize the importance of the natural and human environments, and minimize negative impacts.

[Sustainability]

While the Binghamton metropolitan area is in attainment of national air quality standards, it is the policy of BMTS that its transportation plans should result in reduced emissions. Encouraging people to shift some of their travel from a single occupant vehicle to a non-motorized mode will have a positive impact on that goal, and help enhance the quality of life in the region.

This policy statement also includes the need to recognize the significant health benefits of walking. Walking to work, school, or running errands, incorporates physical activity into one's daily routine. This helps all to get the physical activity needed for good health for little additional time and very little cost. Since 1996, BMTS is continuing to develop strong multidisciplinary partnerships, particularly with the health sector. Through coordination efforts and with funding from the health sector, improvements to the built environment, as well as pedestrian friendly policies have been made to increase pedestrian safety, thus encouraging more to walk.

Regarding walking and social equity, perhaps the most important factor is choice. When providing pedestrian facilities such as sidewalks and crosswalks, communities allow people to choose how they want to travel. One consequence of not installing these facilities is to force people to travel by personal vehicle or to engage in unsafe walking practices. For those who do not have the option to drive, such as adolescents, those unable to afford a car, and people with certain disabilities, this lack of choice in

transportation creates an inconvenient and socially unjust barrier to mobility.
(Source: www.walkinginfo.org/why/benefits_social-justice.cfm)

The high cost of car ownership means that low-income families will have to spend a greater portion of their income on owning and operating a car or choose not have one. If automobile travel is the only feasible mode of transportation in a community, low-income families are placed at a large disadvantage with very limited mobility. By providing safe and convenient pedestrian facilities, the community can ensure that all citizens have access to a viable mode of transportation.
(Source: www.walkinginfo.org/why/benefits_social-justice.cfm)

Finally, BMTS' policy goals are supported by the federal Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users – 2005 (SAFETEA-LU), as well as the new federal legislation, Moving Ahead for Progress in the 21st Century (MAP-21), which was signed into law on July 6, 2012, and is effective October 1, 2012 through September 30, 2014. They are further supported by federal and state transportation policy which promotes walking as an important and environmentally sound mode of travel.

III. GOALS, OBJECTIVES, AND EVALUATION

This plan update continues to be driven by the following goal of the 1996 plan, adopted from the policy statements of *TRANSPORTATION TOMORROW: 2020* as detailed above, and mirroring the goal of the National Bicycling and Walking Study of the U.S. Department of Transportation.

Goal: To increase the safety of all persons traveling on foot or by bicycle, as measured by reduction in the number of accidents, while increasing the number of trips made by these modes.

Additionally, this plan update incorporates goals derived from the *TRANSPORTATION TOMORROW: 2035* vision statement.

Sustainability Goals:

- (1) To reduce the per capita amount of carbon-based energy consumed and greenhouse gases produced by the transportation sector by 50% by 2035.
[CAVEAT: Climate science generally recognizes that the primary means to accomplish this goal lies in changes in vehicle and fuel technology, which cannot be controlled or influenced by BMTS.]
- (2) To enhance the livability of the Region with appropriate transportation investment.

Accessibility Goal:

To ensure that the regional transportation system provides convenient mode-neutral access to destinations including employment, education, and services.

Mobility Goal:

To create a regional transportation system that provides travel choices so personal travel and goods movement can maximize efficiency.

Safety Goal:

To create a regional transportation system that provides safe and secure travel for all users and all modes.

System Preservation Goal:

To maintain the regional transportation system in a state of good repair.

Objectives: In order to accomplish these goals, a number of objectives have been developed which will guide the recommended action plan. These objectives are divided into the following categories: (1) System Development, (2) System Maintenance, and (3) Education, Encouragement, and Enforcement. Applicable objectives from the *TRANSPORTATION TOMORROW: 2035* (TT: 2035) vision are also incorporated into these categories

1. System Development

Objective #1: To establish an interconnected system of *pedestrian facilities* that offers safety and convenience to the disabled and general population.

Objective #2: To make pedestrian travel part of an intermodal transportation system.

[TT:2035 – Sustainability Objectives 1.2, 1.3; Accessibility Objectives 2.1, 2.2, 2.3; Mobility Objectives 1.4]

Sustainability Objectives:

Invest in strategies to reduce per capita vehicle miles traveled (VMT)

1. Construct sidewalks to ensure connectivity in the urban core communities and contiguous residential areas.
2. Complete the Greater Binghamton Greenway multiuse trail system by year 2020.

Accessibility Objectives:

Improve pedestrian accessibility by

1. Construct sidewalks where gaps are identified in the existing sidewalk network by year 2020 to ensure a continuous network in high priority locations; and over the life of the TT: 2035 Plan to all destinations.
2. Continue to bring existing sidewalks and curb ramps into ADA compliance.
3. Use best available pedestrian signal technology in both new installations and as retrofits

Mobility Objectives:

Invest in strategies to provide travel choices and alternatives to single-occupant vehicle personal travel

1. The same as Sustainability Objectives 1 and 2.

2. System Maintenance

Objective #3: To maintain the existing road infrastructure in addition to unique features of the pedestrian infrastructure to ensure its safety and usefulness, and to protect the community's investment.

[TT: 2035 – Safety Objectives 1.1, 1.2, 2.1, 2.2, 3.1, 3.2; System Preservation Objective 5]

Safety Objectives:

(1) Improve roadway safety by reducing number and severity of crashes

1. Continuously analyze traffic crash data to identify high crash locations
2. Study and propose countermeasures for high crash locations within two years of identification

(2) Improve safety and security for transit users

1. Develop and implement a plan to make bus stops accessible to all users by year 2015
2. Install shelters at key locations

(3) Improve pedestrian safety

1. Complete the construction of sidewalks in identified high priority areas by year 2020
2. Use best available accessible pedestrian signal technology in both new installations and as retrofits.

System Preservation Objective:

Adopt a “Rebuild Smarter” policy for all infrastructure projects that includes:

- ♦ Road Safety Assessment to identify and include necessary safety elements;
- ♦ Complete Streets Assessment to identify and include appropriate complete streets elements;
- ♦ Green Construction Assessment to identify best practices for reducing the environmental impact of construction.

3. Education, Encouragement, and Enforcement

Objective #4: To ensure that pedestrians and motorists understand and abide by the requirements for safe facility-sharing, encouraging a culture change where the rights and responsibilities of pedestrians are recognized.

Objective #5: To foster increased interest in walking in Broome and Tioga Counties. To encourage people to view walking as a viable mode of transportation.

Evaluation: As noted in TT: 2035, measuring the outcome of the transportation investments that will be made to achieve the Plan's objectives is very important. This helps make the Plan meaningful to the public by showing that transportation funds are being used to accomplish objectives, and improve conditions of the transportation system. Below in Table #1 is a list of performance metrics from TT: 2035 that are applicable for pedestrian transportation. Additionally, metrics were added to track progress on education, encouragement, and enforcement objectives. It is acknowledged that collecting and analyzing all of the data to determine the measures is a large task, as not all of the data is now collected by system owners and operators. The metrics need to be evaluated and prioritized by determining which information exists, or can be collected with reasonable effort and benefit. As much as is feasible, it is the intent of BMTS to work with the appropriate agencies over time to make robust performance measurement possible and routine.

TABLE #1 - PERFORMANCE METRICS

PLAN OBJECTIVE	PERFORMANCE MEASURE
1. System Development: Objectives #1 & #2	
Sustainability	
1. Sidewalk connectivity	% streets in urban core and contiguous residential areas with sidewalks
2. Complete Greater Binghamton Greenway Plan	% of total miles in Plan completed
Accessibility	
1. Construct sidewalks to fill gaps; high priority locations 5 years, full system life of Plan	Annual measure of new sidewalk construction, and extent of coverage
2. ADA sidewalk compliance	# of non-compliant locations
3. Improve pedestrian signal technology	# of signal retrofits and new installations that meet this standard
Mobility	
Mobility Objective 1 is the same as Sustainability Objectives 1 & 2.	
2. System Maintenance: Objective #3	
Safety	
1.1 Identify high crash locations	System in place to collect and analyze crash data records
1.2 Study HCLs	# and % of high crash locations studied within 2 years of identification
2.1 Bus stop access and safety	# of bus stops made accessible, # still inaccessible to all users
2.2 Install bus shelters	# of key bus stop locations identified, then % of locations with shelters installed
Safety Objective 3.1 the same as Accessibility Objective 1, thus the same metric.	
Safety Objective 3.2 the same as Accessibility Objective 3, thus the same metric.	
System Preservation	
“Rebuild Smarter” approach to system preservation projects	# and % of pavement and bridge improvement/rehabilitation/ replacement projects that include Road Safety Assessment, Complete Streets Assessment, and Green Construction Assessment (as project applicable)
3. Education, Encouragement, and Enforcement – Objectives #4 & #5	
Objective #4: To ensure that pedestrians and motorists understand and abide by the requirements for safe facility-sharing, encouraging a culture change where the rights and responsibilities of pedestrians are recognized.	# of public outreach opportunities and special events providing instruction and informational materials # of people reached by outreach opportunities and special events
Objective #5: To foster increased interest in walking in Broome and Tioga Counties. To encourage people to view walking as a viable mode of transportation.	# of encouragement related activities and promotions. # of people reached by encouragement related activities and promotions

IV. LOCAL SITUATION

In order to plan for the future development of the pedestrian infrastructure, it is necessary to have a thorough understanding of the current local situation. This section will discuss the following topics:

- A. Policy and Regulatory Environment
- B. Local Participants in Transportation Planning
- C. Description of the BMTS Region
- D. Past Pedestrian Planning Activities
- E. Profile of Walkers
- F. Local Transportation Systems
- G. Safety and Accident Data
- H. Relationship to Public Transit
- I. Relationship to Public Health
- J. Relationship to Economics
- K. Relationship to Multiple Disciplines

A. Policy and Regulatory Environment

New York State Vehicle and Traffic Law

New York State Vehicle and Traffic Law (V&T) assigns various rights and responsibilities to pedestrians and to drivers who encounter them. While it may seem to be common sense, §1146 of the V&T states:

"Drivers to Exercise Due Care. Notwithstanding the provisions of any other law to the contrary, every driver of a vehicle shall exercise due care to avoid colliding with any bicyclist [or] pedestrian upon the roadway and shall give warning by sounding the horn when necessary."

Article 27 of the V&T covers pedestrian's rights and duties. §1150 states:

"Pedestrians subject to traffic regulation. Pedestrians shall be subject to traffic control signals as provided in §1111 of this title, but at all other places pedestrians shall be accorded the privileges and shall be subject to the restrictions stated in this article."

The privileges and restrictions that follow deal with drivers' duty to yield the right-of-way to pedestrians in crosswalks, and on sidewalks when crossing driveways; pedestrians' duty to yield the right-of-way to vehicles when crossing at other than crosswalks; and pedestrians' duty to use sidewalks when provided, and their right to walk along the edge of the roadway when they are not.

Signed into law during July 2002 and taking effect during January 2003, §1151(a) was changed to alleviate confusion about pedestrian right of way within crosswalks at intersections where traffic-control signals are not in place or not in operation. The law was previously worded to require drivers of a vehicle to yield to pedestrians who are within the crosswalk on their half of the roadway. The wording was changed to require drivers of a vehicle to yield to pedestrians who are within the crosswalk on the roadway upon which the vehicle is traveling. The contrast between the text of the former and amended version of the law is shown with highlighted text in the following section.

Section 1151. Pedestrians' right of way in crosswalks.

Former Law

(a) When traffic control signals are not in place or not in operation the driver of a vehicle shall yield the right of way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk **when the pedestrian is upon the half of the roadway upon which the vehicle is traveling or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger**, except that any pedestrian crossing a roadway at a point where a pedestrian tunnel or overpass has been provided shall yield the right of way to all vehicles.

Amended Law

(a) When traffic-control signals are not in place or not in operation the driver of a vehicle shall yield the right of way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk **on the roadway upon which the vehicle is traveling**, except that any pedestrian crossing a roadway at a point where a pedestrian tunnel or overpass has been provided shall yield the right of way to all vehicles.

Finally, there are sections of the law which spell out the rights of governmental entities to prohibit the use of limited access facilities by pedestrians and cyclists; establish bicycle lanes or paths; establish crosswalks; and mark these with signs. See Exhibit 1, Appendix 3 for sections of the New York Vehicle & Traffic Law pertaining to pedestrians.

Federal Law & Policy

Federal transportation law and policy has resulted in continually growing interest in planning for bicycle and pedestrian transportation. The following is a summary of federal legislation and policy composed by the Pedestrian and Bicycle Information Center at <http://www.walkinginfo.org/develop/policies.cfm>, along with some inclusion of local information for the BMTS region.

The United States Department of Transportation (USDOT) is responsible for transportation policies and spending programs at the federal level. Policies and programs of the USDOT and the Federal Highway Administration (FHWA), such as the Interstate Highway System, often have tremendous influence on the national transportation system. FHWA works with Departments of Transportation (DOTs) in each state to implement polices and programs.

For urban areas, federal funds are channeled through the state DOT and then through metropolitan planning organizations (MPOs). MPOs are federally-mandated transportation planning agencies in charge of creating long- and short-range transportation plans for their regions.

It is fair to say that federal transportation funds often are the largest non-local infusion of funding for infrastructure projects. Citizens and advocates interested in policies and projects that support walking should become familiar with their MPO, its functioning, and with elected officials that represent local jurisdiction in MPO activities.

In 1991, Congress passed landmark transportation legislation that set a new direction for transportation policy. The **Intermodal Surface Transportation Efficiency Act (ISTEA)** recognized the importance of bicycling and walking in creating a balanced transportation system. Key provisions in ISTEA regarding bicycling and walking included:

- A ten percent set aside of Surface Transportation Program (STP) funding for transportation enhancements, including facilities for bicycling and walking
- The opening of numerous other funding programs to fund bicycle and pedestrian facilities
- The requirement that all states and MPOs prepare long range transportation plans that include bicycling and walking
- The requirement that each state appoint a bicycle and pedestrian coordinator

Following the adoption of ISTEA, the U.S. Department of Transportation published the National Bicycling and Walking Study (NBWS) in 1994. The NBWS translated the recognition of nonmotorized travel embodied in ISTEA into two specific goals: to double the percentage of trips made by foot and bicycle while simultaneously reducing the number of crashes involving bicyclists and pedestrians by 10 percent.

The **Transportation Equity Act for the 21st Century (TEA-21)**, signed into law on June 9, 1998, carried forward the same programs for bicycling and walking established in ISTEA, and also included several new and stronger directives. Important policies and statements in TEA-21 included:

- State and MPO long range plans are to "provide consideration of strategies that will increase the safety and security of the transportation system for motorized and nonmotorized users."
- Bicyclists and pedestrians shall be given "due consideration" in state and MPO plans.
- Bicycle and pedestrian facilities are to "be considered, where appropriate, with all new construction and reconstruction of transportation facilities."

TEA-21 also required the Secretary of Transportation assure that bicycle and pedestrian linkages are maintained and improved, stating that:

- "The Secretary of Transportation shall not approve any project or take any regulatory action that will result in the severance of an existing major route, or have an adverse impact on the safety of nonmotorized transportation traffic and light motorcycles, unless such project or regulatory action provides for a reasonable alternate route or such a route already exists."
- "In any case where a highway bridge deck being replaced or rehabilitated with federal financial participation is located on a highway on which bicycles are permitted to operate at each end and the Secretary determines that the safe accommodation of bicycles can be achieved at reasonable cost, such bridge shall be so replaced."

In February 1999, FHWA issued a [Guidance Memorandum](#) regarding the **bicycle and pedestrian provisions of TEA-21**. The memorandum is extremely supportive of bicycling and walking and clearly establishes that these modes are an important component of the transportation system, stating that:

- "To varying extent, bicyclists and pedestrians will be present on all highways where they are permitted and it is clearly the intent of TEA-21 that all new and improved transportation facilities be planned, designed, and constructed with this fact in mind."
- "We expect every transportation agency to make accommodation for bicycling and walking a routine part of their planning, design, construction, operations and maintenance activities."

- "Bicycling and walking ought to be accommodated as an element of good planning, design and operation."

The guidance also clarified the meaning of "due consideration" stating that:

- There is a presumption that bicyclists and pedestrians will be accommodated in the design of new and improved transportation facilities.
- The decision NOT to accommodate them should be the exception not the rule.
- There must be exceptional circumstances for denying access through design or prohibition.

The **Safe, Accountable, Flexible, Efficient Transportation Equity Act — A Legacy for Users (SAFETEA-LU)** was passed into law in August 2005. It continued the programs for bicycling and walking established in ISTEA and TEA-21, included several new directives, increased funding for some programs, and gave other programs more flexibility. Key provisions in SAFETEA-LU regarding bicycling and walking include:

- Provision of \$612 million over five years for a new Safe Routes to School (SR2S) program designed to make it safer for children to walk and bicycle to school
- Increased funding for the Recreational Trails Program (RTP), which requires a minimum of 70 percent of the trails be suitable for walking and bicycling
- Nearly 26 percent increase in Congestion Mitigation and Air Quality (CMAQ) program funding to help communities support less polluting non-motorized transportation modes like walking and bicycling. Note, however, since the BMTS area is in compliance with air quality standards, it is not eligible for the CMAQ program.
- Creation of the new Highway Safety Improvement Program (HSIP) to provide more funding for pedestrian and bicycling safety
- Creation of a non-motorized transportation pilot program in four separate cities to fund non-motorized transportation infrastructure projects to study the extent to which walking and bicycling can represent a major portion of the transportation solution in certain communities
- ☆ Requiring that, prior to approval of a TIP, a listing of "investments in pedestrian walkways" and "bicycle transportation facilities" obligated from federal funds during the preceding year need to be made public. This increases accountability of pedestrian-related projects and regional priorities and can be used to inform future TIP decisions.

The United States Department of Transportation issued a [Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations](#), signed on March 11, 2010 and announced March 15, 2010.

Purpose: To reflect the Department's support for the development of fully integrated active transportation networks. The establishment of well-connected walking and bicycling networks is an important component for livable communities, and their design should be a part of Federal-aid project developments. Walking and bicycling foster safer, more livable, family-friendly communities; promote physical activity and health; and reduce vehicle emissions and fuel use. Legislation and regulations exist that require inclusion of bicycle and pedestrian policies and projects into transportation plans and project development. Accordingly, transportation agencies should plan, fund, and implement improvements to their walking and bicycling networks, including linkages to transit. In addition, DOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. Transportation programs and

facilities should accommodate people of all ages and abilities, including people too young to drive, people who cannot drive, and people who choose not to drive.

Policy Statement: The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

Authority: This policy is based on various sections in the United States Code (U.S.C.) and the Code of Federal Regulations (CFR) in Title 23—Highways, Title 49—Transportation, and Title 42—The Public Health and Welfare. These sections, provided in the Appendix, describe how bicyclists and pedestrians of all abilities should be involved throughout the planning process, should not be adversely affected by other transportation projects, and should be able to track annual obligations and expenditures on nonmotorized transportation facilities.

Recommended Actions: The DOT encourages States, local governments, professional associations, community organizations, public transportation agencies, and other government agencies, to adopt similar policy statements on bicycle and pedestrian accommodation as an indication of their commitment to accommodating bicyclists and pedestrians as an integral element of the transportation system. In support of this commitment, transportation agencies and local communities should go beyond minimum design standards and requirements to create safe, attractive, sustainable, accessible, and convenient bicycling and walking networks. Such actions should include:

- Considering walking and bicycling as equals with other transportation modes.
- Ensuring that there are transportation choices for people of all ages and abilities, especially children.
- Going beyond minimum design standards.
- Integrating bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges.
- Collecting data on walking and biking trips.
- Setting mode share targets for walking and bicycling and tracking them over time.
- Removing snow from sidewalks and shared-use paths.
- Improving nonmotorized facilities during maintenance projects.

Conclusion: Increased commitment to and investment in bicycle facilities and walking networks can help meet goals for cleaner, healthier air; less congested roadways; and more livable, safe, cost-efficient communities. Walking and bicycling provide low-cost mobility options that place fewer demands on local roads and highways. Regardless of regional, climate, and population density differences, it is important that pedestrian and bicycle facilities be integrated into transportation systems. While DOT leads the effort to provide safe and convenient accommodations for pedestrians and bicyclists, success will ultimately depend on transportation agencies across the country embracing and implementing this policy.

MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law on July 6, 2012. Funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. This and further information below about MAP-21 is found at <http://www.fhwa.dot.gov/map21/>.

MAP-21 creates a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.

MAP-21 builds on and refines many of the highway, transit, bike, and pedestrian programs and policies established in 1991. The Department will continue to make progress on transportation options, working closely with stakeholders to ensure that local communities are able to build multimodal, sustainable projects ranging from passenger rail and transit to bicycle and pedestrian paths.

MAP-21 restructures core highway formula programs. Activities carried out under some existing formula programs – the National Highway System Program, the Interstate Maintenance Program, the Highway Bridge Program, and the Appalachian Development Highway System Program – are incorporated into the following new core formula program structure:

- National Highway Performance Program (NHPP)
- Surface Transportation Program (STP)
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- Highway Safety Improvement Program (HSIP)
- Railway-Highway Crossings (set-aside from HSIP)
- Metropolitan Planning

It also creates the Transportation Alternatives (TA) formula program with funding derived from the NHPP, STP, HSIP, CMAQ and Metropolitan Planning programs, encompassing most activities funded under the Transportation Enhancements, Recreational Trails, and Safe Routes to School programs under SAFETEA-LU.

Context sensitive solutions is a federal level policy with its objective to improve the environmental quality of transportation decision making by incorporating context sensitive solutions principles in all aspects of planning and the project development process. To learn more about Context Sensitive Solutions, visit the FHWA website on CSS at <http://www.fhwa.dot.gov/context/index.cfm>.

The **National Environmental Policy Act (NEPA)** provides protection for the human environment by requiring federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. To meet NEPA requirements, federal agencies must prepare a detailed statement known as an Environmental Impact Statement (EIS). For more information on NEPA and EIS statements, visit the EPA National Environmental Policy Act web site at <http://www.epa.gov/compliance/nepa/index.html>.

The Clean Air Act Amendments (CAAA) of 1990 is another piece of Federal law that affects non-motorized transportation. Although the Binghamton metropolitan area is in compliance with National Ambient Air Quality Standards (NAAQS), BMTS still strives to minimize the impacts of transportation projects on the environment. Encouraging walking and bicycling to replace some automobile trips clearly has a positive environmental impact. For more information, visit the EPA's Clean Air Act web site at <http://www.epa.gov/air/caa/>.

One other Federal law that has affected pedestrian travel is the **Americans With Disabilities Act (ADA)** of 1990. The ADA has resulted in significant improvements to pedestrian infrastructure. It requires that

a variety of facilities, including sidewalks and public buildings, be fully accessible to individuals with mobility or other impairments. This has resulted in states and municipal governments installing curb ramps at intersections on a regular upgrade program. ADA also requires that public transit buses be accessible to persons with disabilities; along with sidewalk improvements, this will greatly improve the mobility of many people. Although the current ADA Accessibility Guidelines (ADAAG) do not specifically address sidewalk and trail design, the guidelines do contain provisions that are applicable to sidewalks and trails. To best serve people with disabilities and meet the legal obligations of the ADA, designers should follow the applicable guidelines in ADAAG whenever possible. In an effort to determine when ADAAG provisions apply to sidewalks and trails, and to bridge the remaining gaps, the FHWA published "[Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines and Practices](#)" in 1999 and "[Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide](#)" in 2001, and recommends that these documents be used when considering how best to accommodate persons with disabilities in public rights of way. Additionally, the Public Rights-of-Way Access Advisory Committee's [Special Report: Accessible Public Rights-of-Way Planning and Designing for Alterations](#) is a good tool for designing pedestrian facilities where ROW is tight or where other constraints exist. The report provides model sidewalks for areas where there is 4 to 5 feet of ROW from the curb all the way to 15 to 20 feet of ROW from the curb. This report and its recommendations are the work of a subcommittee of the Public Rights-of-Way Access Advisory Committee (PROWAAC) and are intended to provide technical assistance only. The report is not a rule and has no legal effect; it has not been endorsed by the U.S. Access Board, the Department of Justice, or the Federal Highway Administration of the Department of Transportation.

New York State Law and Policy

New York State policy and legislation has in many ways mirrored that of the Federal government. The New York State Department of Transportation has appointed a pedestrian/bicycle coordinator in its main office and each of its regional offices. The main office also created a Pedestrian Specialist position.

NYSDOT produced the [New York State Pedestrian and Bicycle Plan](#) during 1997, as a component of The Next Generation...Transportation Choices for the 21st Century, the 1996 New York State transportation plan. This plan recognizes the importance of bicycle, pedestrian, and intermodal transportation safety and mobility, and the benefits they bring for the State's economy, environment, and quality of life. The **three goals** of the plan are: 1) INCREASE MOBILITY by increasing New York State bike/pedestrian commuter trips by 15% (from 7.2% to 8.5% of all work trips) by the end of year 2015, and by meeting or exceeding the national goal of 16% of all trips being walking or bicycling; 2) IMPROVE SAFETY of bicyclists and pedestrians of all ages and abilities, and meet or exceed the USDOT *National Bicycling and Walking Study* goal of 10% reduction in the rate of bicycle/pedestrian injuries and fatalities; and 3) PROVIDE ACCESSIBILITY of bicycle and pedestrian transportation to all destinations by integrating bicycling and walking into local, regional and statewide transportation infrastructure. Priority actions to accomplish the goals are: share the road campaign, walk and bike to work promotion, statewide 'Bike & Hike' system, urban bicycle and pedestrian plans, high visibility crosswalks, suburban sidewalks, bicycle and pedestrian design guidelines, intermodal connections, greenway and rail trail development, and State Bicycle and Pedestrian Advisory Council.

The latest version of the [NYSDOT Pedestrian and Bicycle Policy](#) was adopted during April 2010, and updates the October 2006 version that was listed in the Appendix of the 1997 NYS Pedestrian and Bicycle Plan. The policy statement reads, "the New York State Department of Transportation will promote pedestrian and bicycle travel for all persons on the state transportation system." This policy will be addressed in all planning, programming, scoping, design, construction, maintenance, operations, permits, and education and outreach programs by incorporating the purpose and intent of this policy into their

operating guidance and procedures. The policy objectives are to: reduce pedestrian and bicycle fatalities and serious injuries, increase the number of pedestrian and bicycle trips, integrate walking and bicycling as viable modes for connectivity, smart growth, and transit oriented development, and promote development of pedestrian and bicycle networks that support sustainable transportation, minimize impacts on natural resources, reduce greenhouse gas emissions, and improve quality of life.

New York State implemented the [Smart Growth Public Infrastructure Policy Act](#) into law in September 2010. The law requires most state agencies and all state authorities, prior to approving or funding any public infrastructure project, to prepare and file a Smart Growth Impact Statement finding that the project is consistent with ten Smart Growth Criteria (see below) or justifying why it is not practicable to do so. The new law also requires each covered state agency and authority to appoint from staff a “Smart Growth Advisory Committee” to investigate and prepare Smart Growth Impact Statements and to advise its agency/authority on how to promote smart growth goals. The Act was intended to minimize the “unnecessary cost of sprawl development” and requires State infrastructure agencies, including NYSDOT, to ensure public infrastructure projects undergo a consistency evaluation and verification using 10 Smart Growth criteria set out in the Act (see below). NYSDOT supported the Smart Growth Public Infrastructure Policy Act Legislation and since the Act became Law in 2010, NYSDOT has undertaken a comprehensive, agency-wide, phased implementation effort to integrate the requirements of Law into the existing, federally-required transportation project development process.

To the extent practicable, projects must align with the following:

- To advance projects for the use, maintenance or improvement of existing infrastructure
- To advance projects located in municipal centers
- To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan
- To protect, preserve and enhance the state’s resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources
- To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, diversity and affordability of housing in proximity to places of employment recreation and commercial development and the integration of all income and age groups
- To provide mobility through transportation choices including improved public transportation and reduced automobile dependency
- To coordinate between state and local government and intermunicipal and regional planning
- To participate in community based planning and collaboration
- To ensure predictability in building and land use codes
- To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation.

On August 15, 2011 New York State Governor Andrew Cuomo signed [Complete Streets Legislation](#) that took effect on February 11, 2012. The purpose of the law is to enable safe access to public roads for all users by utilizing complete street design principles. New York Highway Law-Article 11 was amended with Section 331 titled, Consideration of Complete Street Design.

The following is a summary of the Complete Streets legislation from the Cornell Local Roads Program publication titled, *Complete Streets-Planning Safer Communities for Pedestrians and Bicyclists (Updated February 2012)*:

§ 331, Highway Law states that “Complete Street Designs [must be considered] for all state, county, and local transportation projects that are undertaken by the Department [of Transportation] or receive both federal and state funding and are subject to Department of Transportation oversight...” Most road projects that receive federal funding also receive state funding. The law therefore will not apply to many projects on roads owned by villages, towns and counties. For this reason, local complete streets policies are still necessary because such policies help to knit together a robust network of complete streets. The law does not apply retroactively to previously approved designs for projects that have not yet been constructed.

The law applies to road planning, design, construction, reconstruction and rehabilitation projects, but not resurfacing, maintenance, or pavement recycling projects on otherwise eligible roads.

The law provides for exceptions to its provisions. Specific exemptions are provided to the application of the Complete Streets Law. It does not apply to 1) roads where bicyclists and pedestrians are prohibited (e.g. most interstate highways). 2) When the “cost would be disproportionate to the need or [there is] a demonstrated lack of need” and, 3) where installing complete street design features would create a hazard.

Local Law and Policy

The Town of Union added a pedestrian policy to its general code during September of 2007. The policy defines requirements for construction, design, and maintenance of sidewalks and street pedestrian crossings, plus delineating maintenance responsibilities. To view the entire policy, see Exhibit 2, Appendix 3.

During July of 2011, the City of Binghamton adopted a Complete & Sustainable Streets Policy. The policy states that all projects, including design, planning, reconstruction, rehabilitation, maintenance or operations by the City of Binghamton shall be designed and executed in a balanced, responsible and equitable way to accommodate and encourage travel by public transportation vehicles and their passengers, bicyclists and other wheeled modes of transportation, and pedestrians of all ages and abilities. To view the entire policy, see Exhibit 3, Appendix 3.

Grants through the Broome County Health Department’s STEPS to a Healthier New York program and Strategic Alliance for Health programs respectively, were the impetus for both municipal policies. Both programs were funded by the Centers for Disease Control and Prevention. Each grant required changes to the built environment, such as curb ramps, crosswalks, and bike lanes, to improve pedestrian & bicycle safety and encourage more walking and/or bicycling. The other requirement was to make a policy change to sustain efforts to continue improving the built environment for walking and bicycling.

Several other municipalities in the Binghamton Urban Area have added walkable community elements to Comprehensive Plans and other similar plans. Broome County is currently in the process of creating a new Comprehensive Plan titled, *Building Our Future*. In developing the plan, there are certain self-evident principles that will guide the County’s efforts. One principle is natural and cultural resources should be preserved and enhanced. It is noted that Broome County’s four rivers (Susquehanna, Chenango, Tioughnioga, and Delaware) support **walking trails**, fishing, recreation, and destination tourism, and that these resources can be threatened by poor development, or they can attract investment to the County. Another principle is public health and healthy communities should be promoted through planning tools and strategic public investments. Planners have tools such as land use reviews that can be used to **make**

communities more walkable, and therefore healthier. In addition, public investments made in infrastructure and the proper location of facilities can contribute significantly to community sustainability. To view all the principles of the *Building Our Future Plan*, go to [http://www.gobroomecounty.com/files/planning/_pdf/Comprehensive%20Plan/compplan_principles\(1\).pdf](http://www.gobroomecounty.com/files/planning/_pdf/Comprehensive%20Plan/compplan_principles(1).pdf).

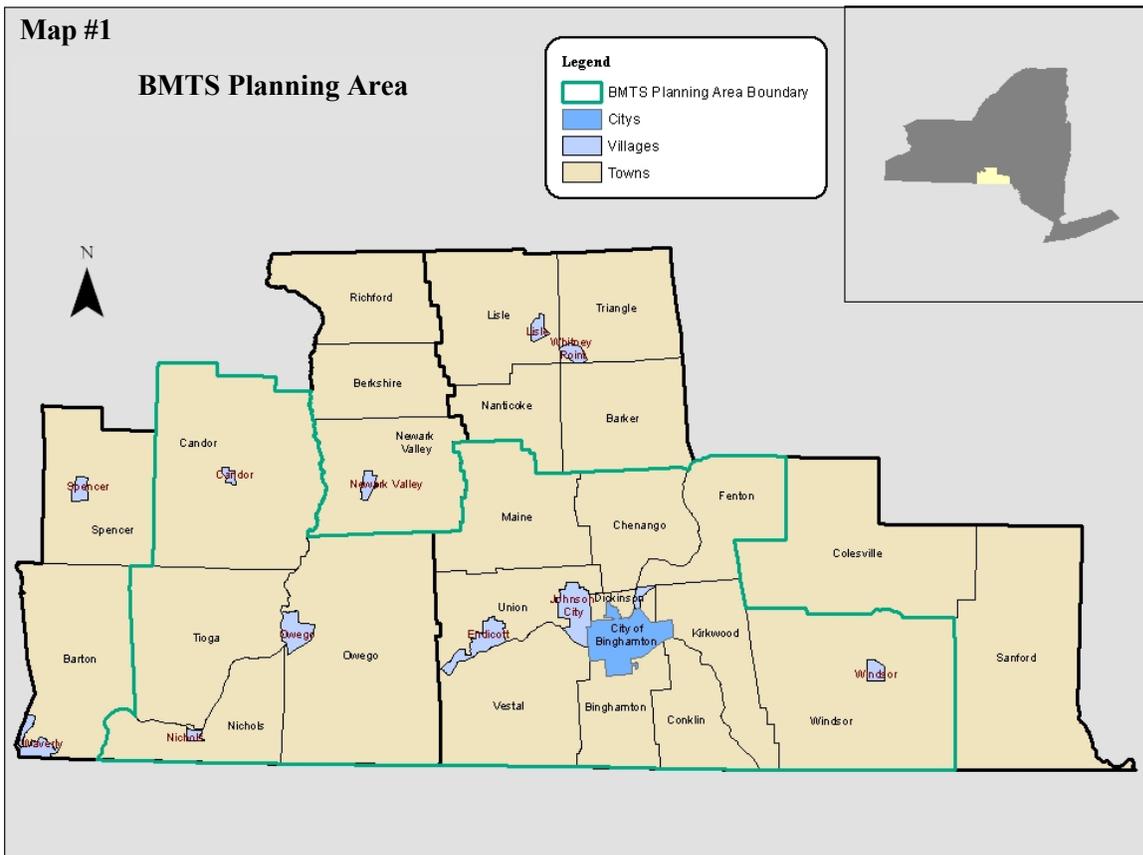
B. Local Participants in Transportation Planning

1. Binghamton Metropolitan Transportation Study

BMTS, also known as a Metropolitan Planning Organization (MPO), is responsible for transportation planning and engineering, as well as programming of federal transportation funds. MPOs are mandated by federal law and designated by the governor of each state in urban areas with at least 50,000 residents. The Binghamton urban area includes portions or the entirety of municipalities within Broome and Tioga Counties. BMTS, like most MPOs, is structured so that decisions are made collectively by all municipalities within the urban area in cooperation with New York State. Composed of state and federal transportation officials, as well as mostly elected municipal officials, and representatives from public transit providers and regional planning boards, the BMTS Policy Committee allocates federal transportation funds within the BMTS region, and adopts transportation plans. To do this, the Committee must reach consensus. A second committee, the Planning Committee, assists the Policy Committee by providing planning and engineering expertise, as well as recommendations for action items. Members of the Planning Committee also represent each of the municipalities in the BMTS region. BMTS Central Staff provides research and administrative support to both committees.

2. Municipalities in BMTS region

BMTS's region includes parts or all of the Towns of Binghamton, Candor, Chenango, Conklin, Dickinson, Fenton, Kirkwood, Maine, Nichols, Owego, Tioga, Union, Vestal, and Windsor; the Villages of Endicott,



Johnson City, Nichols, Owego, and Windsor; and the City of Binghamton (See Map #1). These municipal governments are responsible for constructing, improving, and maintaining local roads within their boundaries. These responsibilities include all pedestrian and bicycle facilities on those roads. Broome and Tioga Counties also have jurisdiction over their respective county highway systems.

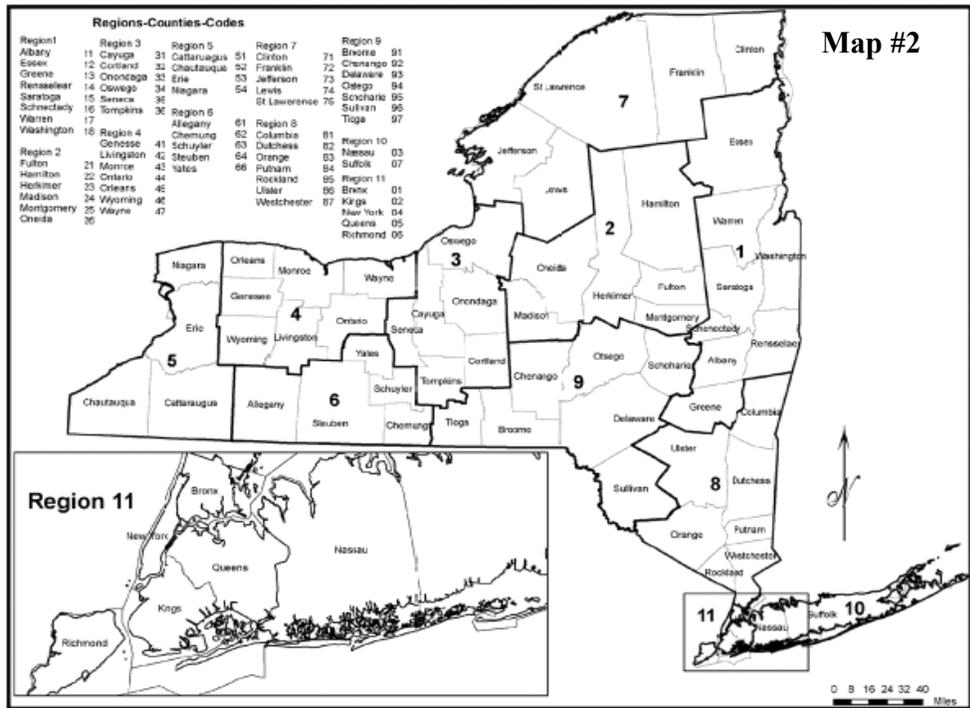
The Binghamton Urbanized Area also extends into Pennsylvania as a result of 2000 US Census. The area includes the Interstate 81 and US 11 corridor through Great Bend, Hallstead, and New Milford. Based upon an agreement reached with the Pennsylvania Department of Transportation and the Northern Tier Regional Planning & Development Commission (designated as a Rural Planning Organization by PennDOT), they will administrate the Federal aid process for projects in the Pennsylvania portion of the BMTS area. Those projects are to be included in the BMTS Transportation Improvement Program for information only; and in the Pennsylvania Statewide TIP (STIP) for programming purposes. Accordingly, this Pedestrian Plan will not include the Pennsylvania portion of the Binghamton Urban Area.

3. BMTS Pedestrian and Bicycle Plan Advisory Committee

The Advisory Committee to the Pedestrian and Bicycle Plan was established by BMTS in 1994 to provide public input on the plan from early scoping stages to the review of final drafts. As noted below, the EMC's Ad Hoc Committee on Alternative Transportation was merged with this Committee. Additionally, toward the end of 1999, the EMC handed over the administration of the Pedestrian and Bicycle Advisory Committee to BMTS. The BMTS Pedestrian & Bicycle Advisory Committee is comprised of officials from NYSDOT Region 9, and the Broome County Health Department, as well as representatives from the Association for Vision Rehabilitation and Employment (AVRE), the Southern Tier Bicycle Club (STBC), and the general public. All with an interest in improving safe walking and bicycling in the Binghamton Urban Area are welcome to be a part of the BMTS Pedestrian & Bicycle Advisory Committee. The Committee reviews and provides input on transportation project designs and transportation plans, addresses safety issues brought to the Committee, and organizes or assists in educational and encouragement outreach activities.

4. Broome County Environmental Management Council (EMC)

The EMC is the citizens advisory board to Broome County government on a broad range of local environmental issues. Its work includes but is not limited to land use and natural resource planning, solid and hazardous waste management, water resource protection, and alternative transportation planning. In April of 1994, the EMC's Executive Committee created the Ad Hoc Committee on Alternative Transportation whose mission statement is, "To plan and promote alternative transportation projects that are environmentally sound and improve the quality of life in Broome County." This committee and BMTS's Pedestrian and Bicycle Advisory Committee merged, and it continues to participate in and advise on the implementation of this plan. Toward the end of 1999, the EMC handed over the administration of the Pedestrian and Bicycle Advisory Committee to BMTS. Loss of a full-time staff person during 2010 further limited the amount of direct participation the EMC could contribute toward implementing the Pedestrian & Bicycle Plan. Despite these two changes, the EMC continues to support BMTS in its efforts to implement the 1996 Pedestrian & Bicycle Plan, as well as the updated Pedestrian Plan and the subsequent Bicycle Plan update.



5. New York State Department of Transportation (NYSDOT) - Region 9

At the time of the 1996 Plan, the BMTS region included parts of both NYSDOT Regions 6 and 9, with Tioga County being in Region 6. During 2006, Tioga County was moved to Region 9. (See Map #2)

Region 9 is responsible for the construction and maintenance of state roads within its jurisdiction as well as management of the Federal-aid transportation program. Region 9, as well as the NYSDOT Main Office, have designated bicycle and pedestrian coordinators. They are responsible for developing regional and statewide bicycle and pedestrian plans, programs, and policies. Region 9 created a Pedestrian and Bicycle Advisory Committee comprised of representatives of each division within NYSDOT Region 9, BMTS, the Association for Vision Rehabilitation and Employment (AVRE), the Southern Tier Bicycle Club, community supporters, and other organizations. NYSDOT projects with pedestrian and/or bicycle issues are reviewed by this committee, and recommendations on actions to take are provided. This Committee also has taken on working with BMTS on facilitating the implementation of the BMTS regional greenway trail system as an ongoing task.

6. Health Sector

BMTS has partnered with the Broome County Health Department even prior to the completion of the 1996 Pedestrian & Bicycle Plan. The primary connection has been with the County's Traffic Safety Program,



Baseball and Education Day at NYSEG Stadium - Binghamton Mets (June 2012)

working together on educational outreach such as bike rodeos (i.e. cycling skills clinics), Walk to School Day, and the pedestrian & bicycle

interactive information display at the B-Mets baseball & education game.

Through the Broome County Health Department, BMTS has been included as a part of several coalitions and consortiums (e.g. Steps to a Healthier NY, Strategic Alliance for Health, and Chronic Disease Leadership Team) that proved to be exceedingly effective in accomplishing the complementary goals of the member organizations, and efficiently having a significant positive impact in Broome County. Regarding pedestrian safety, through networking with key stakeholders, and through provision of funds, several projects were completed that improved the built environment, providing increased safety for pedestrians, and thus encouraging more walking. Policy changes to encourage ongoing built environment improvements were also accomplished. Ultimately, the County's health will improve as we provide the availability for active transportation such as walking.

Notable partnerships have also been established with the Tioga County Health Department, with BMTS currently participating on the Tioga County Health Communities Partnership (TCHCP), and with United Health Services (UHS) with BMTS participating in its Stay Healthy Kids Club Committee. BMTS will continue to develop relationships and partnerships with the many public, private, and non-profit agencies in the health sector.

7. Office for Aging (OFA)

The Broome County Office for Aging is an important source of information regarding the senior population's transportation needs. Annually, OFA produces a *Plan for Services* (<http://www.gobroomecounty.com/senior/publications>), which has a chapter focusing on transportation services and needs for seniors. As the ability to drive a car is commonly reduced as people age, it is important to have other transportation options such as walking or public transit. BMTS has worked often in committees including the Broome County OFA to enable better access to public transit and paratransit services. OFA was also instrumental facilitating a group of local stakeholders to work with the American Association of Retired People (AARP) in its push for New York State to adopt Complete Streets legislation during 2010 – 2011 by conducting walkability audits mainly in the Binghamton Urban Area.

8. Association for Vision Rehabilitation and Employment (AVRE)

AVRE is a key representative and advocate for the sight impaired population (See <http://www.avreus.org/>). An AVRE representative is on the BMTS Pedestrian and Bicycle Advisory Committee, which provides opportunity for commenting on transportation project design, as well as to initiate communications with those who have jurisdiction regarding pedestrian needs on the roadway system. Examples of successful projects resulting from AVRE's participation in transportation planning are:

- During 2006, Broome County constructed a sidewalk segment across the frontage of the Marian Apartment complex on Hooper Road in Endwell. This sidewalk segment provided access to a public transit bus stop, and access to a pedestrian crossing signal and crosswalk. See Exhibit 2, Appendix 4.
- Accessible Pedestrian Signals (APS) with audible cues were installed as a part of the Court St. Bridge replacement project in Binghamton during 2006-2007.



APS installation at Court St. and Water St./Hawley St. intersection.

C. Description of Binghamton Metropolitan Region

The BMTS region encompasses 175.97 square miles that is home to 187,721 people (U.S. Census 2000). It is comprised of both urban and suburban elements. Although the region is centered around the relatively flat Susquehanna and Chenango River Valleys (820 feet above sea level), elevations quickly reach up to 1,600 feet above sea level within a five mile radius of the river valleys. The rolling hills that characterize the area can make for challenging walking and cycling in some areas of the BMTS region.

A more extensive discussion of BMTS's transportation infrastructure can be found in *TRANSPORTATION TOMORROW: 2035* at <http://bmtsonline.com/bmts/long-range-plan-2035>.

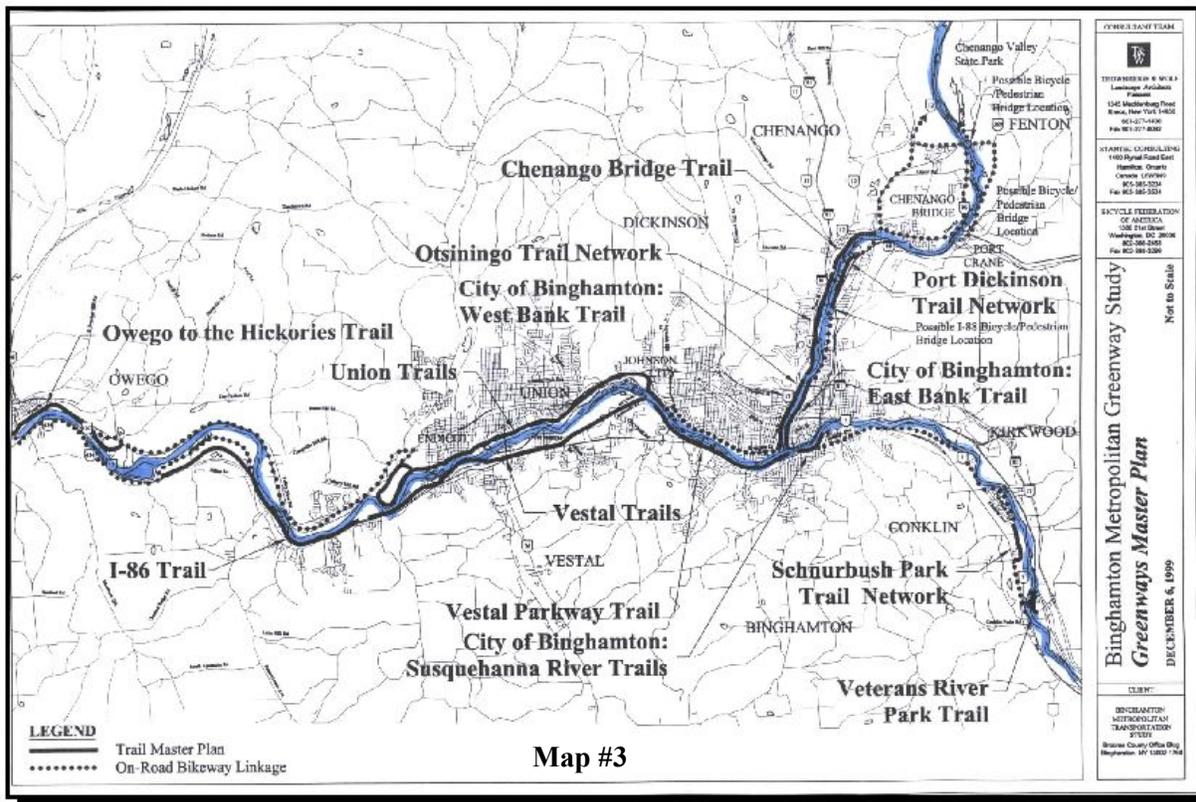
The Binghamton region is in attainment with air quality standards established by the CAAA and the United States Environmental Protection Agency (USEPA). This means that on virtually every day of the year, air quality in Broome and Tioga counties is rated as good. More specifically, it is assumed that levels of sulfur dioxide, carbon monoxide, ground-level ozone, nitrogen dioxide, lead, and inhalable and total suspended particulates fall within acceptable levels.

Currently, however, all of New York State falls within the Northeast Ozone Transport Region, an area created by Congress in the CAAA that includes all east coast states from Maine to Virginia. The USEPA requires that these states enforce more stringent standards for volatile organic compounds (VOCs). Because almost 50% of VOCs emissions come from mobile sources (motor vehicles), it is to the advantage of all communities located in the region to encourage pedestrian travel to the maximum extent practicable. By increasing the number of trips made on foot air quality will be positively impacted.

D. Past Planning Activities

Though planning for cyclists in the Binghamton region is not new, few pedestrian/walking plans were drafted were undertaken prior to the 1996 Pedestrian and Bicycle Plan. In 1976, BMTS contracted with Konski Engineers, P.C. to complete a long-term bicycle plan for the region entitled the *Binghamton Metropolitan Bikeway System: A Plan and Program*. In 1979, BMTS Central Staff revised the study and wrote *Bikeways System Report*. Though pedestrian safety was noted among the objectives of these plans, neither of them explicitly considered the needs of pedestrians.

During December 1999, the *Binghamton Metropolitan Greenway Study* was completed. The Study document is available at <http://www.bmtsonline.com/bmts/bicycle-amp-pedestrian>. This greenway feasibility study was an action item in the 1996 Pedestrian and Bicycle Plan, and was carried out under a consultant contract. The consultant team that performed this study, led by Trowbridge & Wolf Landscape Architects (Ithaca, NY), determined where riverbank trails are feasible throughout the urban area based on access, land use, engineering, and cost criteria. They have also indicated how a continuous system can be developed by using on-road links, and noted the safety improvements that would be required on those links (See Map #3). Finally, they provided recommendations for phased implementation that recognizes how the cost of constructing the system can be spread over a number of years.



During March 2000, the *Binghamton Metropolitan Greenway System Implementation Plan* was completed to facilitate the development of the proposed greenway system. This *Implementation Plan* outlines how BMTS will proceed, based on the consultant's recommendations, public input, and opportunities for trail implementation. As noted above, during 2005 the NYSDOT Region 9 Pedestrian & Bicycle Advisory Committee has taken on working with BMTS on facilitating the implementation of the BMTS regional greenway trail system as an ongoing task. To date, about 38% of the proposed greenway trail system has been either built or funded.

During September 2002, The National Center for Bicycling and Walking chose BMTS as one of eight MPOs nationally to participate in the first round of its *Walkable Community Workshops Project*. This was a shared-cost workshop project, pledging staff and financial resources in exchange for technical assistance and training. The project provided technical assistance to MPOs on how to help communities become more walkable. This assistance included training an MPO staff specialist to serve as the local workshop coordinator and providing instructors to present a series of eight workshops in each region. These workshop sessions were designed for professionals in the fields of planning, engineering, law enforcement, public health, and education, as well as for elected officials and citizens. The workshop program presented information on how to turn communities into pedestrian-friendly places and encourage active living. The series of eight workshops and two community presentations in the BMTS and nearby areas took place from May 12-16, 2003 in the City of Ithaca, the City of Binghamton, Towns of Conklin, Owego, Union, Vestal, and the Villages of Candor and Johnson City. The workshops were extremely successful and were a significant impetus for municipalities to see pedestrian and bicycle modes as an important part of the entire transportation system, and realize the necessity to make changes in policy and the built environment to ensure their safety as well as encourage more to walk & bike. Such changes have been realized in many municipal roadway projects and planning documents.

During 2005, the City of Binghamton completed preparation of a *Local Waterfront Revitalization Program (LWRP)*, which is a locally prepared, comprehensive land and water use plan for its natural, public, and developed waterfront resources. The Binghamton LWRP (<http://www.cityofbinghamton.com/departments.asp?zone=dept-planning&pid=113&pm=page#LWRP>) provides a comprehensive framework within which critical waterfront issues can be addressed and planned waterfront improvement projects can be pursued and implemented. Funding for implementation is also available through LWRP program that is a part of the New York State Department of State.

The City of Binghamton prepared its LWRP with assistance from the New York State Department of State and in accordance with the New York State Waterfront Revitalization of Coastal Areas and Inland Waterways Act and the New York State Coastal Management Program. Trails for walking and bicycling are eligible for this funding.

During 2008 and 2009, BMTS worked with Johnson City and Binghamton officials respectively to perform **Roadway Safety Audits (RSA's)**. The Johnson City audit analyzed transportation performance and safety issues on Floral Ave. from St. Charles St./Ackley Ave. to Baldwin Street. The Binghamton audit analyzed Vestal Ave. from South Washington St. to Pennsylvania Avenue. RSA's are a generally accepted proactive, low cost tool to identify safety issues of transportation facilities. The Federal Highway Administration (FHWA) is encouraging states and local municipalities to use RSA's (See <http://safety.fhwa.dot.gov/rsa/>). A RSA is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. An assessment team considers the safety of all users, qualitatively estimates and reports on safety issues, and suggests opportunities for safety improvements. BMTS continues to allocate time and funds to perform two to three roadway safety audits annually.

The City of Binghamton's Energy and Climate Action Plan was created by City staff and a citizen Climate Action Plan Advisory Committee during 2010 and 2011. On December 7, 2011, City Council adopted a resolution in support of the Energy and Climate Action Plan, which sets a target of reducing greenhouse gas emissions 25% by the year 2025 (accomplishing Milestone 2 & 3). The final steps of the CCP will be to implement the action plan (Milestone 4) and monitor and evaluate the impacts of the action plan (Milestone 5). An Energy and Climate Action Plan plots our course for an important journey into our future. Such a plan is a description of the actions – policies, programs, and projects – a government will take to reduce a community's dependence on fossil fuels and to meet its greenhouse gas (GHG) reduction target. Created by City staff, interns, and a citizen Climate Action Plan Advisory Committee, the City of Binghamton's Energy & Climate Action Plan outlines strategies for cutting energy costs, promoting energy independence and reducing greenhouse gas emissions within Binghamton. The Climate Action Plan calls for promoting and facilitating commuting by walking, biking, carpooling, and public transit instead of private cars in-part by implementing the City's Complete Streets policy, expanding and enhancing bike and pedestrian infrastructure, as well as improving the public transit system. Continuing greenway trail development is also recommended. To view the Energy and Climate Action Plan, go to http://cityofbinghamton.com/departments.asp?zone=dept-planning&pid=147&pm=page#Energy_and_Climate_Action_Plan#Energy_and_Climate_Action_Plan.

Toward the end of 2011, a Broome County-wide effort with Vestal as the lead municipality, produced the LWRP titled, *Four Rivers – An Intermunicipal Waterfront Public Access Plan for Broome County* (http://www.vestalny.com/Resources/Parks/file/BroomeCountyFINAL_web.pdf). This document will serve as a resource to guide future development activity along Broome County's riverfronts: the Susquehanna, Tioughnioga, Chenango, Otselic and Delaware. The Broome County riverfront includes more than 89 miles of waterway that defines the region's diversity. Water traverses the densely populated

areas of Vestal, Johnson City, Endicott and Binghamton, as well as the quiet enclaves of communities like Windsor, Kirkwood and Whitney Point. The riverfronts have historically provided power for industry, transportation, agriculture, fishing and recreation and represent the past and future economic powerhouses for Broome County. Ultimately, the Plan is intended to serve as a tool for each riverfront community in Broome County to create a comprehensive riverfront experience. This experience will attract new visitors to stimulate the local economy and improve existing quality of life for residents by enabling them to interact with their riverfront. As with Binghamton’s LWRP, funding for implementation, such as construction walking and biking trails, is also available through the New York State Department of State’s LWRP program.

Finally, BMTS has been involved continuously in reviewing New York State and municipal transportation project designs to provide recommendations for the accommodation of bicyclists and pedestrians.

E. Profile of Walkers/Pedestrians

1. Walking data

Documentation of pedestrian and cyclist behavior in Broome and Tioga Counties can be found in the Journey-to-Work survey of the 2000 U.S. Census and the 2010 American Community Survey shown in Table #2 below. These numbers do not account for trips made to stores, to school, for personal business or recreational activities.

TABLE #2 U.S. CENSUS – Journey to Work for Broome & Tioga Counties, New York State, and the U.S.

		Car, truck, or van				Walk		Bicycle	
		Drive Alone		Carpool					
Broome County	Census 2000	71,226	79.50%	9,145	10.20%	3,852	4.30%	193	0.20%
	2010 ACS	70,282	79.20%	7,868	8.90%	3,307	3.70%	275	0.30%
Tioga County	Census 2000	19,507	80.20%	3,106	12.80%	546	2.20%	62	0.30%
	2010 ACS	19,620	82.30%	2,319	9.70%	572	2.40%	45	0.20%
New York State	Census 2000	4,620,178	56.30%	756,918	9.20%	511,721	6.20%	25,036	0.30%
	2010 ACS	4,784,387	54.00%	667,841	7.50%	556,692	6.30%	38,253	0.40%
United States	Census 2000	97,102,050	75.70%	15,634,051	12.20%	3,758,982	2.90%	488,497	0.40%
	2010 ACS	105,185,519	75.90%	14,577,524	10.50%	3,964,813	2.90%	687,199	0.50%

(Continued) **TABLE #2 U.S. CENSUS – Journey to Work for Broome & Tioga Counties, New York State, and the U.S.**

		Public Transit (no taxi)		Taxi		Other means		Worked at home	
Broome County	Census 2000	2,345	2.60%	145	0.20%	344	0.40%	2,237	2.50%
	2010 ACS	2,005	2.30%	181	0.20%	764	0.90%	3,894	4.40%
Tioga County	Census 2000	128	0.50%	47	0.20%	130	0.50%	782	3.20%
	2010 ACS	156	0.70%	43	0.20%	98	0.40%	918	3.90%
New York State	Census 2000	1,938,297	23.60%	67,897	0.80%	40,375	0.50%	247,869	3.00%
	2010 ACS	2,350,208	26.50%	60,810	0.70%	53,370	0.60%	335,092	3.80%
United States	Census 2000	5,867,559	4.60%	200,144	0.20%	901,298	0.70%	4,184,223	3.30%
	2010 ACS	6,859,705	5.00%	170,686	0.10%	1,219,225	0.90%	5,575,316	4.00%

Source: Excerpt from a table prepared by the Ithaca-Tompkins County Transportation Council with data from the U.S. Bureau of the Census – December 2010

During 2008-2009, a Regional Household Travel Survey was performed by the ETC Institute for the BMTS area, which provides information on transportation mode use for all trips in the BMTS region. The actual number of completed household travel surveys was 1,034. Findings are shown in the table below.

Bicycle	0.1%	Only 0.1% of all trips generated by household travel survey participants were completed by persons who rode a bicycle to their destination.
Walk	1.8%	Low income residents (earning less than \$20,000) were three times more likely to complete trips by walking than upper income residents (earning \$80,000 or more).
Drive	92%	92% of all trips generated by participants in the household survey were completed by persons who either drove or were passengers in private vehicles, such as cars, SUVs, and pickups. 97% of home-to-work trips completed by household survey participants were completed in private vehicles.
Carpool	→	Over half (58%) of all trips completed by household travel survey participants were completed by persons driving alone. Six percent (6%) of all trips completed by household travel survey participants were completed by persons driving with 3 passengers or more.
Public Transportation	0.8%	Less than one percent (0.8%) of all trips generated by household travel survey participants were completed by persons who used public transit to get to their destination.

For nationwide statistics, the 1996 Pedestrian & Bicycle Plan cites the 1990 Nationwide Personal Transportation Study (NPTS) which interviewed 22,317 households nationwide regarding their travel behavior. As summarized in NCHRP Project 17-18(3) by Zegeer and Strutts - 2004, the NPTS indicates there has been a decrease in the percent of trips made by walking. In 1995, approximately 20 billion trips, or 5.4% of all trips, were made by walking (U.S. Department of Transportation, 1995). These numbers compare to 18 billion walking trips, or 7.2% of all trips, in 1990 (Hu and Young, 1992, 1993). While the absolute number of walking trips increased by about 11% between the 1990 and 1995 NPTS surveys, it was far less than the increase in trips by private auto, creating a reduction in the percentage of total trips by walking.

According to the 2009 National Bicycling and Walking Study: 15 Year Status Report, published in May 2010 by the Federal Highway Administration (FHWA), the National Household Travel Survey (NHTS) shows walking trips accounted for 10.9% of all trips reported.

On the state and local levels, the 1995 NPTS indicated that 15.37% of person-trips were walk/bike trips in New York State, while 5.47% of person-trips were walk/bike trips in Binghamton urban area.

Regarding **car ownership**, the 1990 Census data also reveals that 10,931 households, or 11% of all households in the Binghamton metropolitan area, do not own a car. Similarly, the 2006-2010 American Community Survey 5-Year Estimates show zero car ownership of the households for the municipalities that comprise the BMTS Planning Area to be 10,487 (10.4%). The 2008 – 2009 BMTS Regional Household Travel Survey indicates that 29 (2.8%) of the 1,034 surveyed do not own a car. While residents of these households and those who were surveyed may sometimes have access to a car, they most likely rely extensively on public transit, walking, and bicycling for their travel needs.

2. Public Input from Transportation Tomorrow (TT) 2030 & 2035 Long Range Plans

As noted in the Introduction, this Plan will rely in part on the extensive public outreach that was done for BMTS' TT 2030 and TT 2035 Long Range Plans. In each case, the public clearly supported making investments in the transportation system to better accommodate and improve safety for pedestrians and bicyclists. Refer to the TT 2030 and TT 2035 documents for detailed information and excerpts regarding public outreach. The TT 2030 document is available by request to BMTS, while TT 2035 is available at www.BMTSONline.com.

F. Local Systems

1. Inventory

Sidewalks and Roadway System

The City of Binghamton, villages, and the various central business districts have the highest number of roadways with sidewalks. Gaps in these areas do exist, especially the further away one is from the town/village/city center. Additionally, there are areas of sidewalks in poor condition needing repair, as well as sidewalks and corners needing to be brought into conformance with Americans with Disabilities Act (ADA) guidelines. Most suburban areas in the BMTS region lack sidewalks or do not have a contiguous sidewalk system. Sidewalks can be expensive for municipalities to install, especially as a stand-alone project. Property owners frequently do not want responsibility for maintaining sidewalks, as is required by local law. Maintenance requirements include repair or replacement of sidewalks in poor condition, as well as snow removal. While many subdivision ordinances permit the municipality to request a developer to construct sidewalks, none require it. Such provisions are rarely used.

An overview of the Binghamton Urban Area's sidewalk network is provided in Section VII of this Pedestrian Plan.

Regional Greenway Trail System – Two Rivers Greenway

Multi-use trails are an important resource to supplement roadway pedestrian facilities. They provide additional connections to destinations, and in some cases, provide pedestrian access where roadway facilities, namely sidewalks, are not able to be constructed. Both sidewalks and multi-use trails are

important parts of the transportation system, and the constructing of one should not preclude the constructing of the other.

As noted earlier, the *Binghamton Metropolitan Greenway Study* was completed during December 1999, with a subsequent *Implementation Plan* during March 2000. Implementation efforts for the regional trail system have been ongoing since then. Currently about 38% of the proposed greenway trail system has been either built or funded.



BMTS contracted with a consultant (May through December 2012) to produce a *Sign Plan and Design Guide* for the regional greenway trail system. It was recognized that significant progress had been made in funding and constructing portions of the regional greenway multi-use trail system. As the trail pieces begin to connect, especially across municipal boundaries, there is a need to articulate how the visiting public will be introduced to the regional trail system, and how orientation and direction-giving will be provided. To have this trail system recognized as a regional, contiguous system, as well as facilitate user access to and circulation throughout, it was necessary to create a uniform design & plan for wayfinding, regulatory, warning, and interpretive signing. Additionally, with much stakeholder input, the consultants produced a logo and new name for the regional trail system to help increase public recognition of this trail facility. The new name is, ***Two Rivers Greenway***, and the logo is shown here, to the left. Funding will be pursued for the fabrication and installation of the signs on the *Two Rivers Greenway* existing and funded trails.

Table #4 is a list of trails that are a part of the regional trail system, and Table #5 is a list of trails that are funded and in development.

TABLE #4 - EXISTING TWO RIVERS GREENWAY TRAILS		
TRAIL NAME	JURISDICTION	LENGTH (Miles)
Owego Riverwalk	Village of Owego	0.25
Chugnut Trail – River Terrace to Riverview Dr	Village of Endicott	0.70
Vestal Rail Trail - Main St to African Rd	Town of Vestal	2.09
South Washington Street Pedestrian & Bicycle Bridge	City of Binghamton	0.10
Confluence Park	City of Binghamton	0.10
Chenango Riverwalk - Confluence Park to Court St	City of Binghamton	0.39
Chenango Riverwalk - Court St to East Clinton St	City of Binghamton	0.28
Chenango Riverwalk - Water St to Eldredge St	City of Binghamton	0.40
Chenango Riverwalk - Eldredge St to Cheri Lindsey Park	City of Binghamton	0.50
Otsiningo Park/Otsiningo Park Ext.	Broome County	3.50
Port Dickinson Community Park	Village of Port Dickinson	0.75
	TOTAL MILES:	9.06

TABLE #5 - FUNDED TWO RIVERS GREENWAY TRAILS

TRAIL NAME	JURISDICTION	ESTIMATED SCHEDULE	FUND SOURCE	COST Estimate (millions)	LENGTH (Miles)
Vestal Rail Trail – Phase 2 Castle Gardens to North Main St	Town of Vestal	Construction – 2013	ARRA plus TEP transferred from Phases 3 & 4	\$1.637	1.62
Vestal Rail Trail – Phase 3 Broome Co line to Castle Gardens	Town of Vestal	TBD	TBD – See Phase 2	\$0.660	1.50
Vestal Rail Trail – Phase 4 African Rd to Sycamore Dr.	Town of Vestal	TBD	TBD – See Phase 2	\$0.736	0.46
Rt. 434 Greenway / University Trail - Bing U. East to South Washington St. Bridge	NYSDOT	In Design	NHS (<i>Design only</i>)	\$2.522 (<i>Design only</i>)	1.91
Susquehanna North Trail – Confluence Park to Exchange St.	City of Binghamton	Construction – July 2013	TEP	\$0.668	0.40
Chenango Riverwalk – Cheri Lindsey Park to Bevier St	City of Binghamton	Construction – December 2013	TEP	\$0.971	0.41
Prospect St to Bevier St	NYSDOT	Phase 2 Prospect Mt.	NHS	Unknown	0.68
Conklin Multi-use Trail	Broome County/ Town of Conklin	Construction – August 2013	TEP	\$0.590	1.40

ARRA = American Recovery and Reinvestment Act of 2009 (Federal Funds)

TEP = Transportation Enhancements Program (Federal Funds)

NHS = National Highway System Program (Federal Funds)

TBD = To Be Determined

In addition to the regional signed bike route system, The Greater Binghamton Area Bicycle Route Map shows the existing and funded walking and biking trails that comprise the Two Rivers Greenway. Printed maps are available for free from BMTS, and the map can be downloaded at <http://www.bmtsonline.com/bmts/map>.

The Village of Endicott is using Local Waterfront Revitalization Program (LWRP) funding from the New York State Department of State for a study to plan trails on the north banks of the Susquehanna River, extending the Chugnut Trail westward and providing connections to several parks including Mersereau Park, Roundtop Park, Grippen Park, the Tri-Cities Airport, Route 17C Sports Facility, and Glendale Park. Conceptual locations for trail projects have been made for several locations. This proposed trail is identified as high priority trail in the Four Rivers LWRP for Broome County. A Request for Proposals for the study was issued during November 2012.

Additionally, due to catastrophic flooding events during 2006 and 2011, many property owners in the flood plain are applying to be “bought-out” by the Federal Emergency Management Agency (FEMA). Once bought-out, the property becomes publicly owned, which is potentially an opportunity for further trail development along the corridors of the Susquehanna and Chenango Rivers.

BMTS will continue to promote and seek opportunities for funding trail projects in the effort to complete, as well as expand the Two Rivers Greenway.

Parks or recreational areas are other places where people can walk, for recreation and exercise. In Broome County parks located within the metropolitan area, Otsiningo Park is a popular place to walk. Walking and hiking are available at Finch Hollow Nature Center. In Tioga County a common place for people to walk is

in the Town of Owego's Hickories Park. Chenango Valley State Park, immediately adjacent to the BMTS region, has hiking trails. There are also opportunities to walk in municipal parks. To enable maximum access to park facilities for the all sectors of the population, connections with pedestrian amenities (e.g. sidewalks, trails, and wide shoulders in rural areas) are needed.

2. Maintenance

Sidewalks:

Maintenance of pedestrian facilities and rehabilitating them to comply with design standards is critical for enabling more walking. For instance, most municipalities in the Binghamton Urban Area with sidewalks regularly install ADA compliant curb ramps at noncompliant intersections by request and as funding permits.

Routine sidewalk maintenance is typically the responsibility of the adjacent property owner. Such maintenance responsibilities include repairing or replacing damaged sidewalks, and clearing snow and ice. When NYSDOT constructs sidewalks as a part of a roadway project, after completion the maintenance is given to the municipality the roadway is within. Normally, the municipality then turns the maintenance requirement over to the adjacent property owner. Likewise, municipal built sidewalks are usually maintained by the adjacent property owner. Some municipalities offer cost sharing programs for property owners to aid in repairing or replacing sidewalks. For example, The City of Binghamton has a Curb and Sidewalk Assistance Program where property owners can apply for the City to cover 50% of the cost to construct or reconstruct sidewalks and curbs along their properties.

(See <http://www.cityofbinghamton.com/departments.asp?zone=dept-engineering&pid=152&pm=page>)

Snow and ice removal requirements vary by municipality. However, it is typical for property owners to be responsible for this aspect of sidewalk maintenance. The degree of enforcement for snow/ice removal also varies. The less enforcement there is, the more likely there will be area not complying with snow & ice removal requirements. Thus, even though sidewalks exist, the ability to travel by walking is significantly inhibited when there is not a contiguous clear path. Additionally, when intersection corners are not properly cleared of snow, melting snow banks create deep puddles of water at the curb ramps, inhibiting street crossing.

Other snow removal programs:

- The Town of Chenango updated its Code with a local law that instituted a program to clear snow after sidewalks were installed along Upper Front St. / NYS 11 & 12, and NYS 12A. A Commercial District was created along these roadways. Property owners within the Commercial District are assessed a fee (set by the Town Board: \$0.3548 per lineal foot) for the removal of snow. The plan works very well as the Town pools the property owners' fee to buy equipment and fuel to get a great, consistent and timely service. A lot with a 200lf of frontage pays approximately \$71.00 per winter, no matter how many times it snows. See Exhibit 4, Appendix 3 for a copy of the Town of Chenango Snow and Ice Removal From Sidewalks local law.

- The Broome County Office for Aging provides the following snow removal assistance options on their website (<http://www.gobroomecounty.com/senior/plan-ahead-snow-removal-1>).

If you are unable to remove snow yourself, and you haven't found someone who can do it for you, the Office for Aging offers some ideas on where to get help. In most cases, there will be a fee for this service, but it may be quite affordable.

- Senior Helpers (formerly GROW): 778-6105, 8:30 to 12 noon weekdays. Operated by the Office for Aging, the Senior Helpers program keeps a registry of seniors in the community who, for a fee, perform many kinds of jobs around the home including snow removal.
- The Office for Aging maintains another directory of people who register with our office each winter solely to do snow removal. This group includes seasonal workers from the construction and landscaping trades. To contact these workers, call the Resource Line: 778-2411, 8:30 to 5:00 weekdays. Seniors will be given phone numbers for individuals who have registered with our office and are able to remove snow for a fee.
- Hire-A-Teen Program, Binghamton Boys and Girls Club: Call 723-7404 ext. 308 after 3 pm on school days. Teens are available to do snow removal for a fee.
- Your friends and neighbors may help clean up your snow or your own religious congregation may keep a list of people available to help.

Can you help others? If you are able to do your own snow removal, remember to check on older neighbors who may need your help.

- Neighbors should also help neighbors voluntarily. There are also models of volunteer programs called SNOW ANGELS where people unable to remove snow from their sidewalks are matched with an able volunteer to clear their sidewalks. Volunteers are recognized for their service.
 - Snow Angels – Pittsburgh: <http://www.pittsburghpa.gov/servepgh/snowangels/>
 - Snow Angels – Edmonton: http://edmonton.ca/for_residents/awards_certificates/snow-angels.aspx
 - Snow Angels – Calgary: <http://www.calgary.ca/CSPS/CNS/Pages/Seniors/Snow-Angels/Snow-Angels.aspx>

Mutli-use Trails:

Maintenance of each trail segment of the Two Rivers Greenway is the responsibility of the municipality with respective jurisdiction of the segment(s). Maintenance



includes keeping the trail in good condition, vegetation control, managing safe and proper trail use, signing, snow removal if desired, adding enhancements such as benches, and general

upkeep. Opportunity exists for private sector and community involvement in maintenance and enhancement of the trails. Examples of such involvement are on the Binghamton Chenango River Trail with plantings of trees, flowers and shrubs; the “Tuesday Walkers” group that maintains the plantings; trail cleanup on the Day of Caring; artistic enhancements including murals & mosaics; and organizing activities on the trails.

G. Safety/Accident Data

1. Local data

At the time of the 1996 Plan, there were two data bases of accident reports maintained by the NYS DMV. The State Accident Surveillance System (SASS) and the Consolidated Local Accident Surveillance System (CLASS) summarized accident data for the State highway system and local roads, respectively. Accidents included collisions between motor vehicles and either pedestrians or cyclists. Only reported accidents were included, using standard accident reports filed either by police agencies, or by motorists through their insurance companies.

SASS/CLASS data was extracted for Broome and Tioga Counties from 1990-1993. In all, 207 pedestrians and cyclists were injured in accidents with motor vehicles. Ten people died as a result of their injuries. The average age of Tioga County residents involved in these accidents is 15.5 while the average age for Broome County residents is 20.4. These statistics must be viewed with the understanding that except for those resulting in injury, many bicycle and pedestrian accidents go unreported.

Many of the accidents documented by SASS/CLASS occurred when pedestrians and cyclists shared the road with motorists. Other contributing factors include driver inattention, darting out of a pedestrian or cyclist, absence of adequate crosswalks, crossing against signals, cycling against the flow of traffic, view obstructions, road debris, pedestrian error, glare, or playing in the roadway. This points to a need to stress road sharing in any future safety education program.

The current source for accident information is the New York State Accident Location Information System (ALIS). ALIS is a multi-agency collaboration to develop a GIS-based Accident Location Information System (ALIS), combining several state organizations’ information systems to improve the location accuracy and streamline the processing of traffic accidents. A centralized Accident Location Server automates the location processing of electronically transmitted accidents. If accidents cannot be automatically located they are ‘kicked out’ and put into a queue for processing by Department of Motor Vehicle (DMV) staff via an interactive web-based application. ALIS is based on the ESRI ArcGIS Server platform and supports 14 different location methods to support a variety of input location data. The system leverage a state-wide Geodatabase (New York State Data Product) that was designed to improve location of accidents and at the same time be a comprehensive data set to be used more broadly in the New York State GIS community.

The resulting accident location data is available for highway safety applications in New York State. Traffic Engineers from various local and state agencies leverage the data to conduct detailed studies, and produce reports to identify high accident locations or unusual concentrations of a particular type of accident. Once locations are identified, mitigation action such as roadway improvements (better signage, lighting, or drainage), or behavioral changes (increased law enforcement) may be taken. Moreover, this multi-agency collaboration helps substantiate the vision of enterprise GIS beyond the department level and illustrates the concept of the supra-enterprise where interdependent work groups perform their missions independently, but collaborate to achieve broader goals. (Kevin Hunt, NYSDOT & Jackie Magnant, ESRI)

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Table #6 below shows ALIS data for the Binghamton Metropolitan Area for pedestrian and bicycle accidents from 2009 – 2011. This data will be used as a baseline for performance measurement.

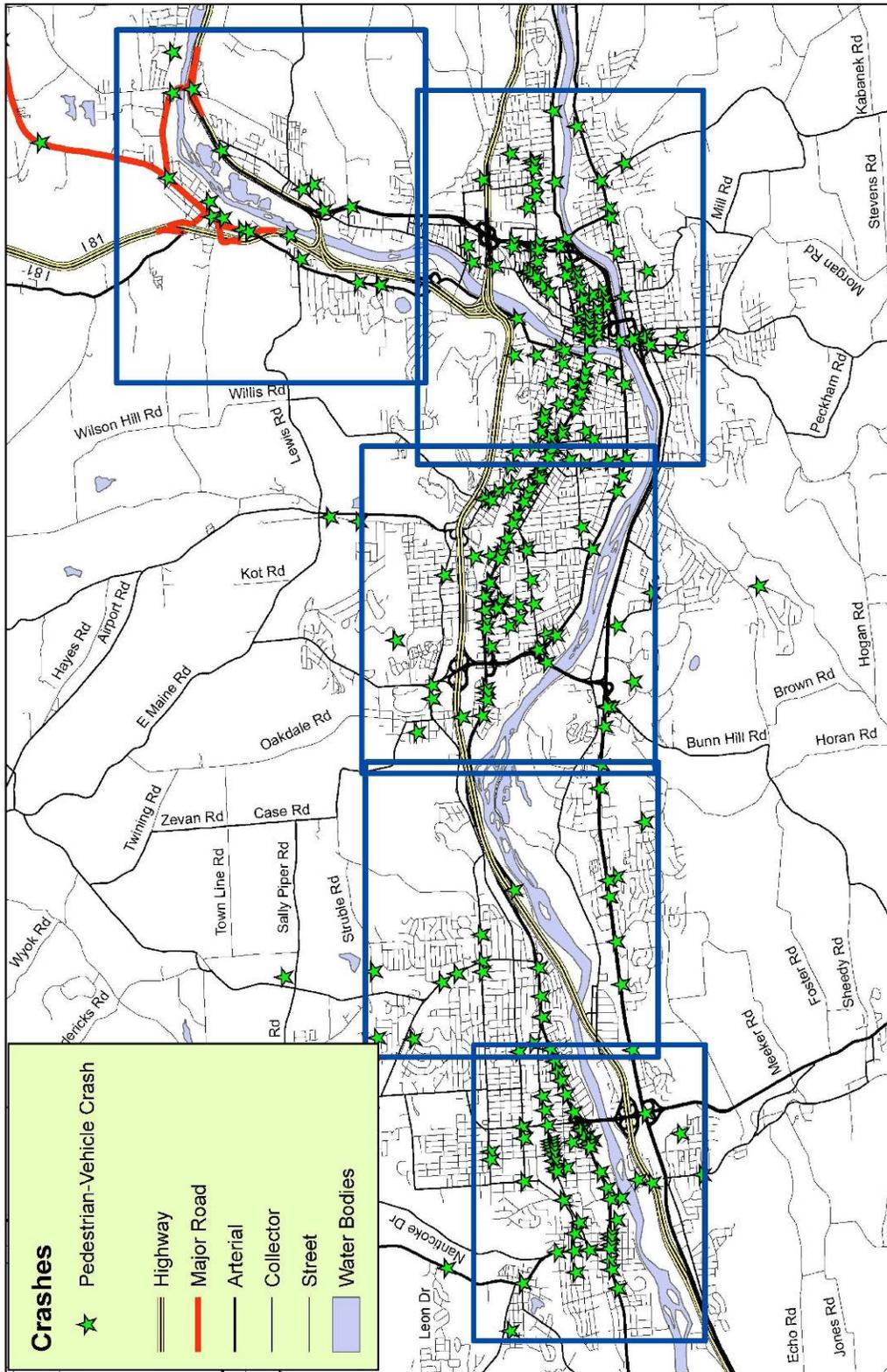
TABLE #6 Pedestrian and Bicycle Accidents				
Binghamton Metropolitan Planning Area (2009 – 2011)				
By Year	2009	2010	2011	Total
Pedestrian Accidents	88	97	85	270
Bicycle Accidents	44	47	37	128
Accident Type	Intersection	Non-intersection		Total
Pedestrian Accidents	164	106		270
Bicycle Accidents	86	42		128
Municipality	Pedestrian	Bicycle		
Binghamton (city)	125	67		
Endicott	40	18		
Johnson City	34	12		
Union (part town)	15	10		
Vestal	17	5		
Chenango	6	6		
Owego (village)	7	0		
All others	26	10		
Total	270	128		
Source: New York State Accident Location Information System				

The following maps (Maps #4 – #10) show the locations of pedestrian-vehicle crashes from 2007-2011.

Vehicle-on-Pedestrian Crashes in Broome County

Map #4

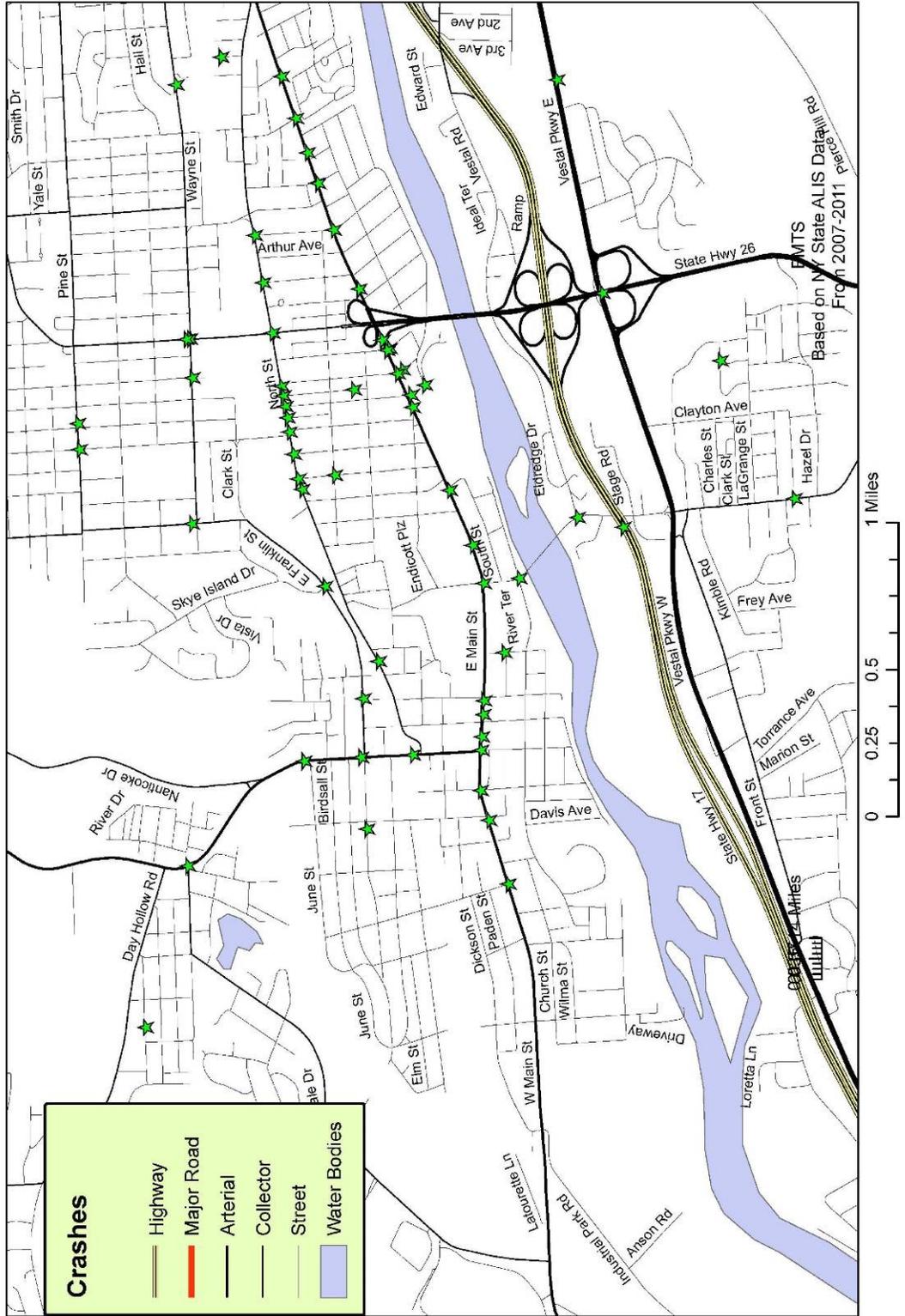
Locations of Pedestrian-Vehicle Crashes In the Tri-Cities Region with Key Areas of Interest



Map #5

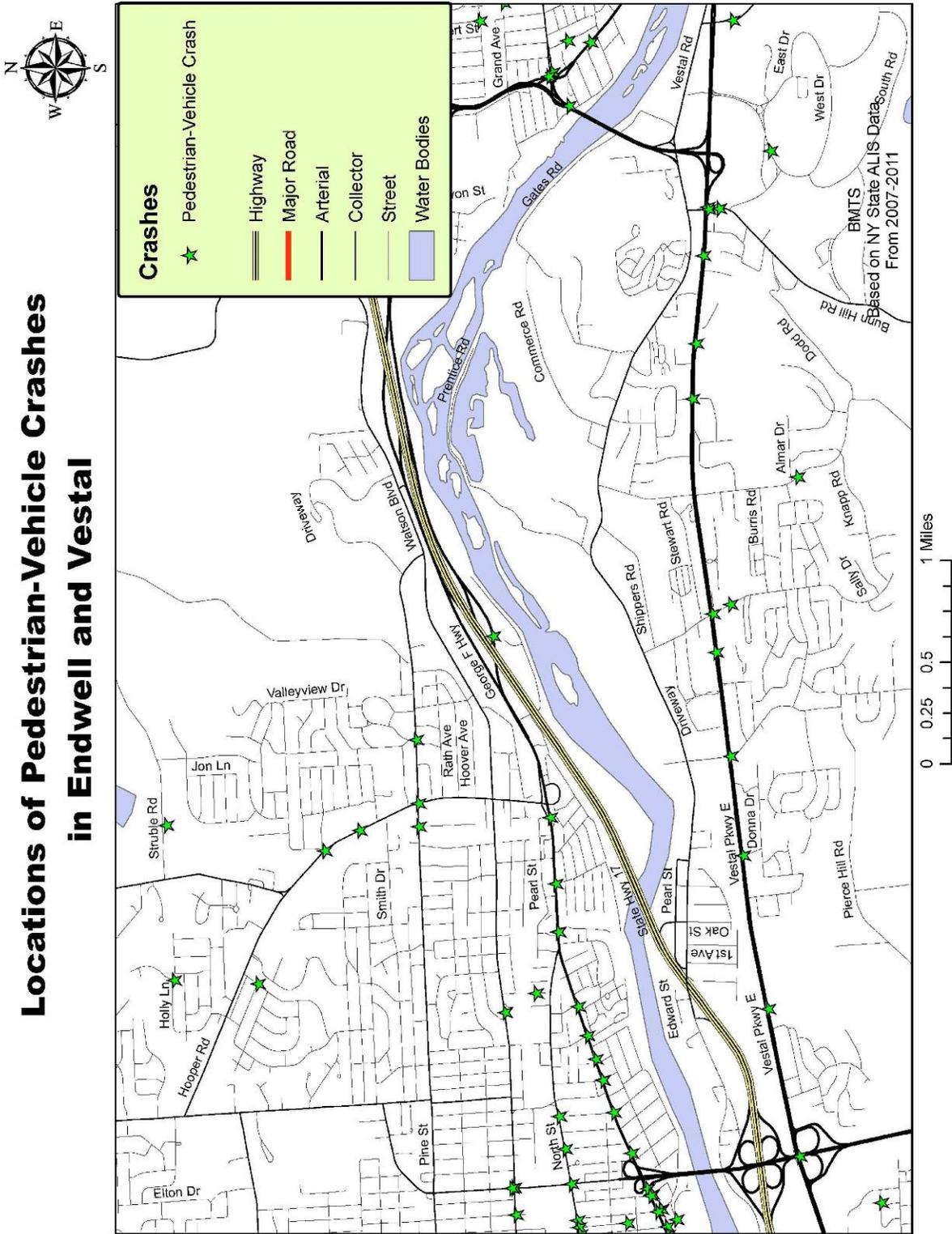


Locations of Pedestrian-Vehicle Crashes in Endicott and Vestal



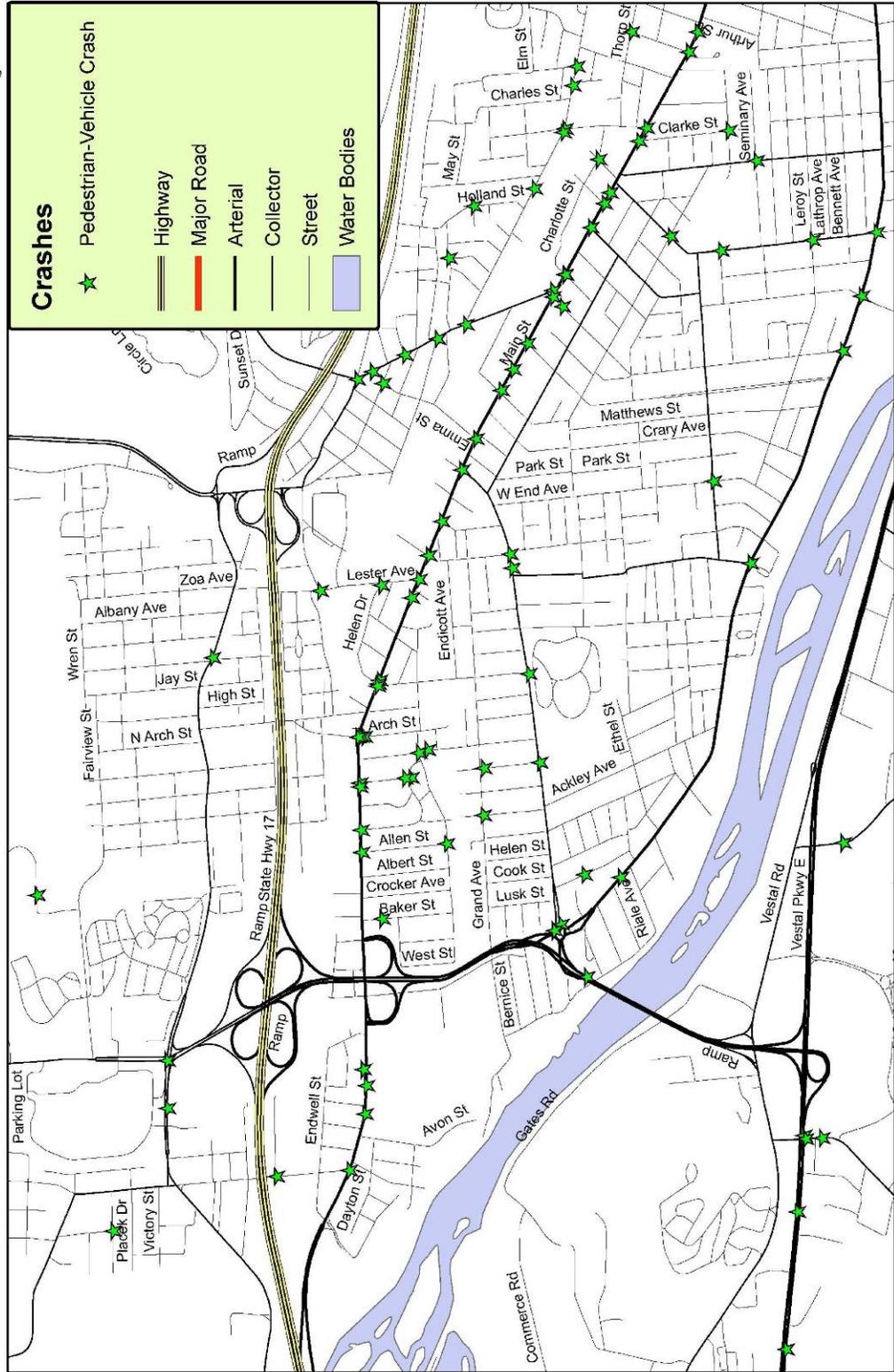
Map #6

Locations of Pedestrian-Vehicle Crashes in Endwell and Vestal



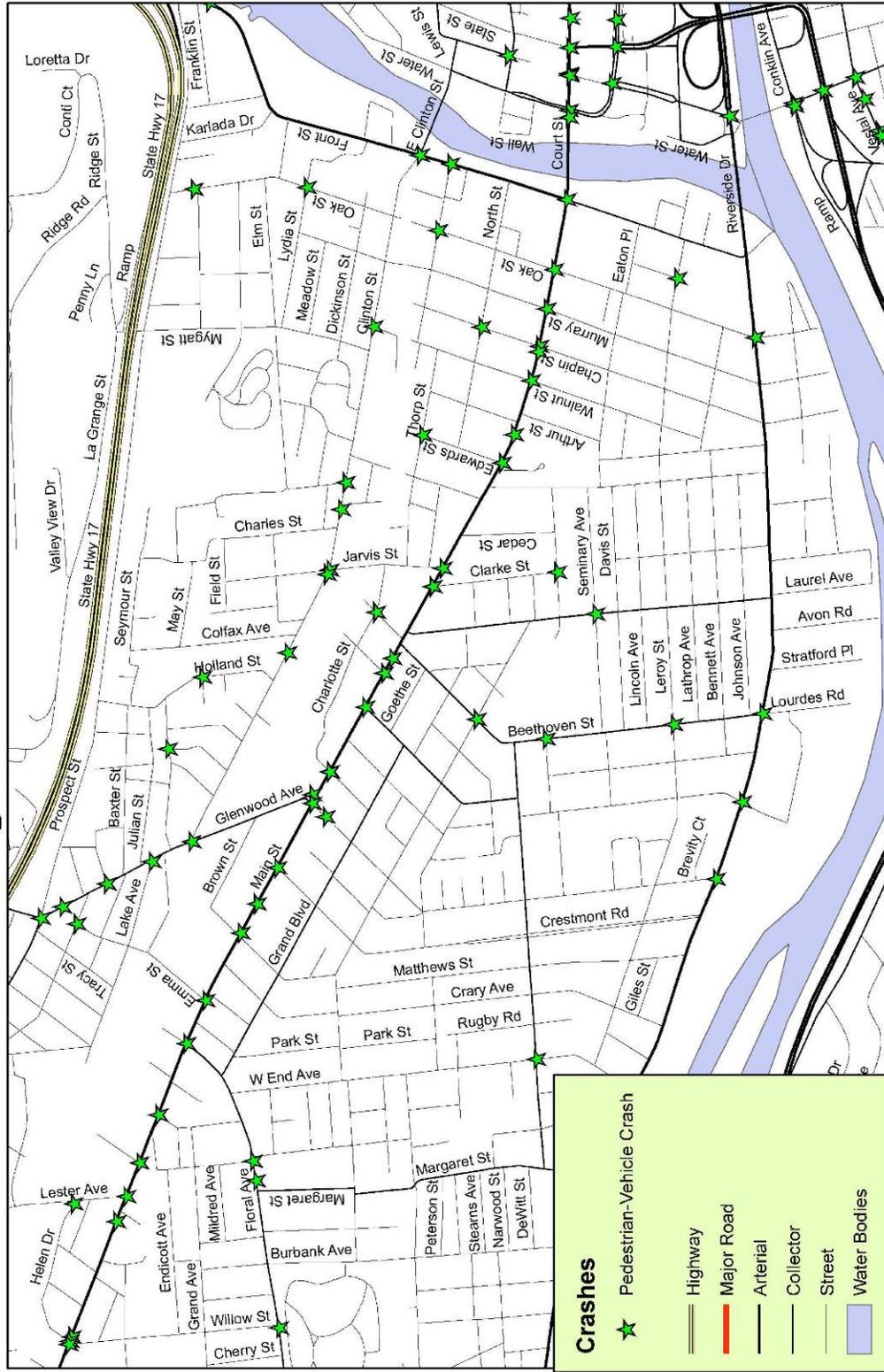
Map #7

Locations of Pedestrian-Vehicle Crashes in Johnson City



Map #8

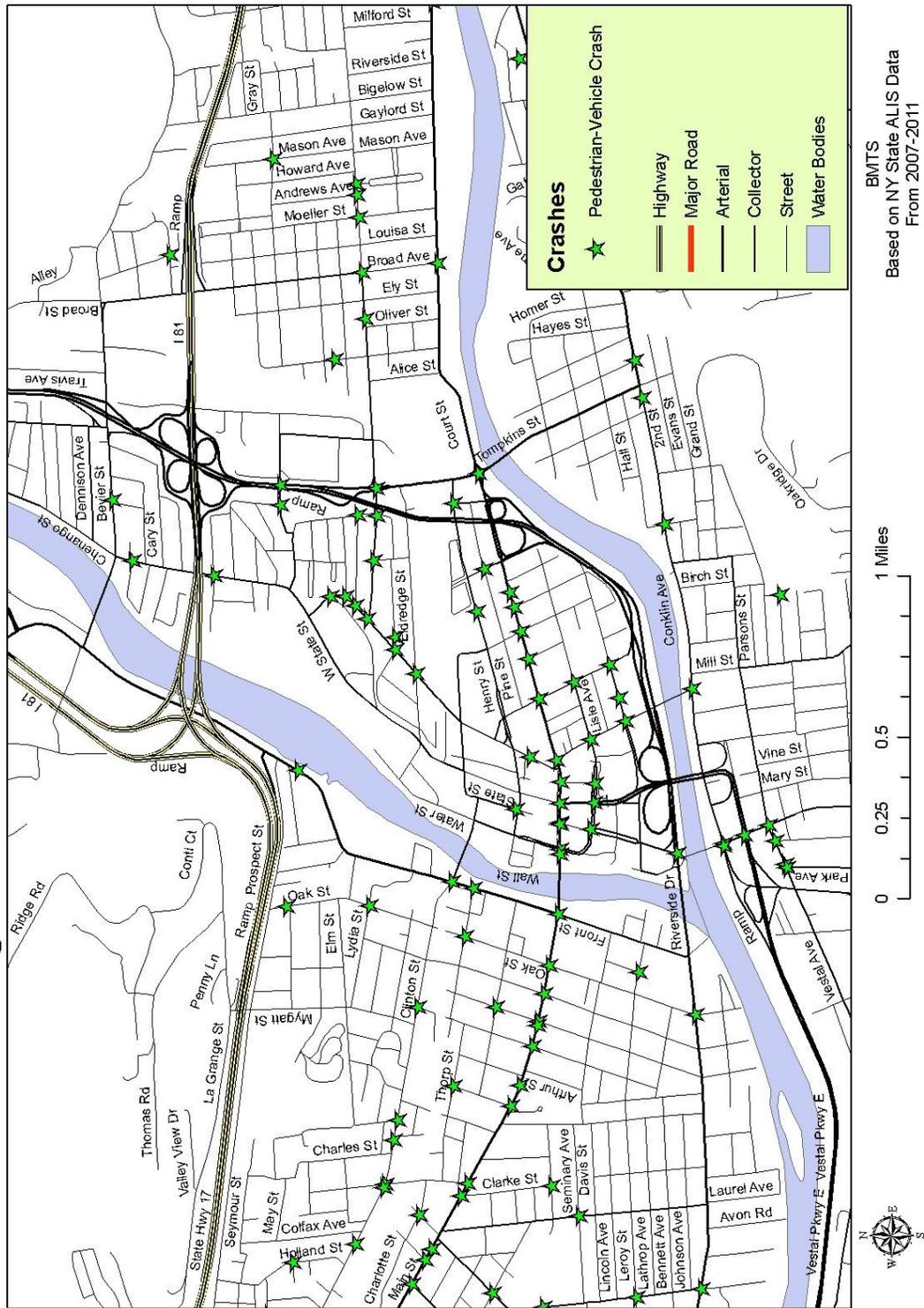
Locations of Pedestrian-Vehicle Crashes In Binghamton Westside



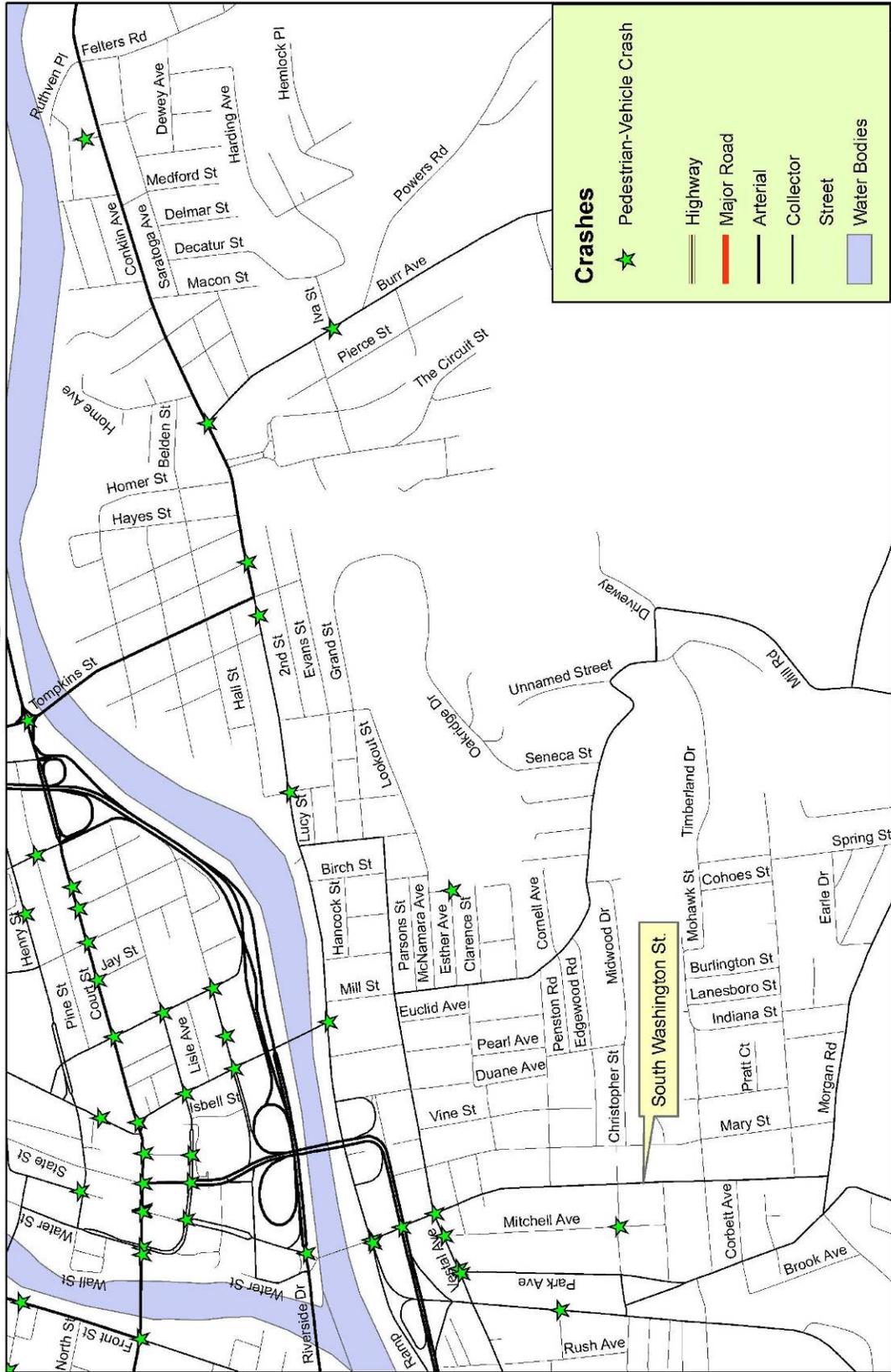
BMTS
Based on NY State ALIS Data
From 2007-2011

Locations of Pedestrian-Vehicle Crashes In Binghamton Central Business District

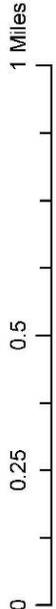
Map #9



Locations of Pedestrian-Vehicle Crashes In Southside Binghamton



BMTS
Based on NY State ALIS Data
From 2007-2011



2. Existing safety programs

Currently, the Broome County Division of Health, as part of its injury prevention mission, houses a Traffic Safety Program which includes safety education programs aimed at bicyclists and pedestrians. The program is funded through an annual grant from the Governor's Traffic Safety Committee.

NYSDOT also addresses bicycle and pedestrian safety in the course of performing safety investigations of high crash locations (HCL), and through scoping and design of its highway and bridge projects.

H. Relationship to Public Transit

Most transit passengers are pedestrians at each end of their trip. Therefore it is important to look at transit facilities as part of the pedestrian planning process. This requires examination of pedestrian access to the transit system, primarily the presence of sidewalks along bus routes, and amenities like benches and shelters.

The Broome County Department of Public Transportation operates three bus services. B.C. Transit is a fixed-route service, operating 15 routes and 2 commuter runs throughout the metropolitan area, providing about 3,000,000 trips annually. Shortly after the completion of the 1996 Pedestrian Plan, half the B.C. Transit fleet was accessible to persons with disabilities by late 1996. Since then, the entire B.C. Transit fleet has become accessible to those with disabilities. B.C. Lift is a paratransit service for persons with disabilities, operating within the metropolitan area. B.C. Country is a paratransit service for rural Broome County residents, providing rural-rural and rural-urban trips. BC Transit also operates a paratransit service in conjunction with the Broome County Office for Aging. This service helps senior citizens travel to medical facilities, residencies, and shopping.

There are several private for-profit providers. These provide ambulette, taxi, and charter bus service. The downtown Binghamton Intermodal Transit Terminal houses the intercity bus services of Coach USA and Greyhound.

One other important component of public transit in the area is the Off Campus College Transport (OCCT) service, a private non-profit transportation provider. OCCT serves Binghamton University students and staff. On average, OCCT serves 500,000 riders each year with fixed route bus service.

Tioga County also has a public transit service called, Ride Tioga. It operates both a fixed route and dial-a-ride service. Ride Tioga travels into Broome and Tompkins County carrying passengers to and from Broome Community College and Cornell University. There is an opportunity on Washington Avenue in Endicott and at the Town Square Mall for riders to connect with B.C. Transit.

I. Relationship to Public Health

Safer and better connected bicycle and pedestrian facilities are important for encouraging citizens of Broome and Tioga Counties to engage in healthy physical activities. Studies show that easily accessible and safer built environments correlate with increases in people walking and cycling, as well as decreases in driving, all of which improve people's health and wellbeing. In addition, if more people used walking or bicycling for utility purpose such as going to the store, to school, or to work, these citizens could easily achieve their daily American College of Sports Medicine (ACSM) recommended physical activity of at least 150 minutes per week of a moderate activity, such as brisk walking (Winters et al. 2010). Construction and improvement of pedestrian and bicycle facilities is all the more important, as increasing

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portions of the population within Broome and Tioga counties are struggling to fight obesity and its associated chronic diseases.

Regular physical activity has been shown to reduce obesity, increase one's lifespan, and lower the risks for heart disease, stroke, type 2 diabetes, depression, and certain cancers (CDC 2012). To further this point, in a study by Frank et al. (2004), for every kilometer (0.62 miles) walked, there was a correlated 4.8% decrease in the likelihood of being obese, while every hour spent in a car was associated with a 6% increase in being obese. Another study showed that people who used public transit had a median daily walking time of 19 minutes, which comes close to the aerobic daily requirements, and that men who commute to work by public transit were 44.6% less likely to be overweight due to the extra walking (Zheng 2008). Thus, being active, whether through walking or bicycling, is correlated with a healthier lifestyle and should be promoted and physically facilitated by transportation planning organizations.

The 2010-2013 Community Health Assessments for Broome and Tioga Counties are both encouraging and disappointing. Physical activity levels for the population are relatively low. The Broome County Community Health Assessment findings show that only 47.7 % of adults in Broome County met either the ACSM recommended moderate guidelines or the ACSM vigorous guidelines for physical activity. In comparison, more than 50% of US adults report meeting the ACSM aerobic guidelines, a figure that is still unsatisfactory. Moreover, 43.7% of Broome County adults work in sedentary jobs and 49.3% watch at least three hours of television per day. For teens, 25% reported watching television for more than three hours, and 23.3% spent at least three hours on the computer or playing videogames. Encouragingly, 62% said they played on sports teams and 27.9% said they walked or biked to school. Therefore, both adults and children are living increasingly sedentary lives, which if not properly balanced with regular physical activity can diminish overall health and wellbeing.

Being overweight, and more specifically, obese, is linked to a 5 year shorter life expectancy, a 25% higher risk of developing diabetes, and medical expenditures that are 3 times higher than those who are not obese. In addition, the CDC reports that childhood obesity is a "national catastrophe," where the present childhood generation will live shorter lives than their parents did. To show how the Broome-Tioga region is fairing, the adult obesity rate for Broome County was approximately 27 percent, and for Tioga County it was 28 percent, both of which were slightly lower than the national rate of 32 percent, and if both obesity and overweight data are accounted for, both counties are respectively between 3 and 5 percentage points shy of the national average of 67 percent. For Broome County's high school students, 10.2 percent are said to be overweight, though, if you add up the adolescents at risk for being overweight, the numbers overcome the national average of 19 percent. All of these numbers were higher than the overall New York State averages, and they are part of the reason why the major causes of death for both counties were heart disease, respiratory problems, and stroke.

Different factors affect how much people will walk or bike, although the main reason is physical barriers imposed upon by the built environment. In the Broome Community Health Assessment from 2010-2013, nearly 70 percent of the sampled citizens voiced a need for more recreational spaces, such as parks and walking trails, as well as more connected and better maintained sidewalks; additionally, more than 50 percent agreed that there should be better traffic control for pedestrian crossings at intersections. These opinions correlate well with a study by Carlson et al. (2011) that showed that 57% of sampled adults rated local street scale urban design, such as ensuring sidewalk continuity and introducing traffic calming devices, as highly important to determining the amount of exercise they obtained. As an aside, both Broome and Tioga counties have sizeable elderly populations. A lack of connected and well-maintained sidewalks and recreational facilities would likely prevent the elderly from frequently walking or biking, especially those who have any mobility impairments. Other factors include a need for more widely distributed promotional maps describing where walking, jogging, and bicycling routes are, as well as

more release time from work to exercise.

Overall, to encourage people to be physically active, the built environment's barriers to bicycling and walking must be addressed. As shown by the community's opinions, if the resources are readily available and made known, they will be used. This is shown through the large increases in bicycle ridership in Portland Oregon and New York City, where safe and easily accessible bicycle facilities have been incorporated throughout the cities. Heath et al. (2006) also showed that mixed use developments, which are designed with the pedestrian in mind, experience increases in residents' physical activity. Many areas of Broome and Tioga Counties are either too stressful or too unsafe for walking or biking. For example, according to the Transportation for America 2008 report, the Binghamton Metropolitan area has the second highest pedestrian danger index in the state of New York, right after Buffalo-Niagara Falls. It is imperative to remedy these cases so that people will exercise more, and eventually even commute via walking or biking. And as shown by the "safety in numbers" idea, the more bicycles and pedestrians on the road, the safer it is for them and for all motorists (NCSL 2012).

For more facts on the health related aspects of walking, go to:
<http://americawalks.org/resources/walking-facts/>

J. Relationship to Economics

Lower healthcare costs are one of the economic benefits of walkable communities. A quarter of all trips in the United States are within a 20 minute walk (Active Transportation for America, 2008). The main population centers in the Broome-Tioga County Region have dense mix of residences, businesses and amenities, which allow for frequent short trips. Thus, a significant portion of the population of the Binghamton Urban Area could use walking not only for exercise, but for utilitarian purposes. Of course, health is a major concern, as Broome and Tioga Counties' obesity rates are nearly 27 and 28 percent respectively, which hovers around the national average of 32 percent. In the Broome Community Health Assessment from 2010-2013, Broome and Tioga County's residents voiced that physical barriers, such as a lack of separated recreational trails or poor traffic control for pedestrian crossings at intersections, were the major cause for not exercising. The annual medical costs for the United States due to physical inactivity have been estimated at 75 billion dollars, or close to 10% of all medical costs (CDC). Thus, the ability to walk in a safe and well connected environment is important to lower health care costs.

Cost of Transportation - Americans living in more compact, mixed-use communities typically drive about 20 to 40 percent less than those in highly car dependent suburbs (Active Transportation for America, 2008). The less one drives, the less money is spent on expensive costs for gas and vehicle maintenance. The American Automobile Association (AAA) calculated that for 2012, the annual cost to own and operate an average sedan was \$8,946. This is compared to walking being essentially free. It is clear that significant cost savings can be realized by replacing automobile trips with walking. Additionally, a great demand for walkable communities has risen as shown by a survey by the National Association of Home Builders which found that 88 percent of millennials, or those born from 1980 to 2000, want to live in an area with smart growth. Smart growth is a term that is defined as a place with a mix of single family homes, apartments, and condominiums, with stores, restaurants, libraries, schools and access to public transportation (Transportation and the New Generation, 2012). Moreover, this group's driving miles decreased by 29% between the years 2001 and 2009. The reasons for this include rising fuel costs, increasing usage of transportation alternatives such as walking, and improvements in technology.

Thirdly, **retail and employment centers** are affected by the quality of their pedestrian environment,

particularly in urban areas and resort communities. The high use of pedestrian malls and pedestrian boulevards, like The Commons in Ithaca (NY), show that consumers place high value on good pedestrian facilities. A shopping center or office complex may become more economically competitive if walking conditions improve, since walkability maximizes transportation alternatives and access for customers and employees. Additionally, Cortright (2009) showed that improved walkability tends to **increase home values**.

For more facts on the economic benefits of walking, go to:
<http://americawalks.org/resources/benefitsofawalkablecommunity/>

K. Relationship to Multidisciplinary Partnerships, Coalitions, and Cooperation

As is evident from the previous sections B, I, and J, transportation decisions directly and indirectly affect various aspects of the population's quality of life, as well as the goals and objectives of agencies from multiple disciplines. In times past, it has been the practice to compartmentalize decision making by a specific discipline or subject area without regard to or at least unaware of the impact those decisions have in other sectors.

Especially with less resources and funding available in general, it is important for agencies and representatives from multiple disciplines to work together to accomplish complementary goals & objectives. This encourages efficient spending that maximizes the return on the investments. As noted earlier, BMTS is participating in several committees and coalitions comprised of representatives from various disciplines. Projects have come to fruition and policies have been adopted that improve the Binghamton Urban Area's walkability as a result of BMTS partnering with agencies of different expertise.

To ensure continued improvement in providing for pedestrians' needs, it is important to maintain, strengthen and expand these collaborative efforts, particularly in the transportation planning process at the federal, state, MPO, and local levels. Ample opportunity needs to be provided for other stakeholders to join in the process when transportation decisions are affecting them, or when their practices impact the transportation system.

V. SYSTEM DESIGN

This section presents recommended design guidelines for pedestrian facilities. These standards may need to be modified to accommodate unique local circumstances. However, using uniform standards improves the public's familiarity with and understanding of pedestrian facilities.

Since the 1996 Pedestrian & Bicycle Plan, numerous guidelines for pedestrian facility design have been and continue to be published. The following website links provide access to an extensive library of design guide publications and research:

- America Walks – <http://americawalks.org/resources/links/>
- Pedestrian & Bicycle Information Center – <http://www.walkinginfo.org/engineering/resources.cfm>
- Federal Highway Administration – http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/

The primary resources highway designers should refer to for pedestrian facility designs are:

- Chapter 18 of the *NYSDOT Highway Design Manual (updated March 2006)*
- *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities (July 2004)*
- *AASHTO's Guide for the Development of Bicycle Facilities (updated 2012)* – for trail design
- The *Manual of Uniform Traffic Control Devices (MUTCD)* establishes warrants for signs, pavement markings, and signals. After the update of the *Federal MUTCD* during 2009, the *New York MUTCD* adopted the *Federal MUTCD* with a few exceptions.

Below are general design guidelines using the primary reference resources listed above, as well as the Institute of Transportation Engineers (ITE) *Design and Safety of Pedestrian Facilities*, the Federal Highway Administration (FHWA) *Designing Sidewalks and Trails for Access*, and Access Board's ADA Accessibility Guidelines (ADAAG). Much more detail for design options are found throughout the entire text of the primary and many other design guide publications (See website links above).

A. Pedestrian Facilities

1. Sidewalks

Sidewalks are the preferred pedestrian facility. Refer to the following general design criteria:

- ◆ Install sidewalks that are a minimum of 5 feet (1.525 meters) wide (NYSDOT's standard minimum accessible width for pedestrian access routes) exclusive of the curb. Where obtaining additional widths is not practicable, short segments of the accessible pedestrian access route as narrow as 4 feet (1.2 m) may be considered. However, ADAAG requires a 1.525 m x 1.525 m minimum passing space every 200 feet (61 m) when walkway widths are less than 1.525 m. In Central Business District (CBD) areas, or other areas with heavy pedestrian traffic, a larger sidewalk width of 10 feet (3.0 m) or wide enough to adequately accommodate pedestrian volumes is desirable.
- ◆ Sidewalks should be located as far as practicable from the travel lanes. The desirable width of the space between the edge of sidewalk and the back of curb or shoulder is 8 feet (2.5 m) or more on all but low-traffic-volume streets and roads. Wider setbacks enhance the real and perceived levels of safety associated with walking close to high-speed, high-volume roadways and improve pedestrian comfort and convenience by moving them away from wind blast, dust, noise, and water splashing. When 2.5 m is not feasible, the desirable minimum setback widths are depicted in Exhibit 1 in Appendix 4. Additional setback may be needed if driveway slopes interfere with sidewalk surfaces.

Setbacks can be accomplished by including a planting strip. Strips provide a space for trees, a buffer for pedestrians against traffic, and a location for snow storage. On-street parking or bike lanes can also act as a sidewalk buffer.

- ◆ As much as possible, install the minimum cross slope of 2% necessary for good drainage. Limit the maximum longitudinal grade to 5%, or 8% with handrails and landings. Where a sidewalk runs along a roadway with a grade that exceeds 5%, the sidewalk grade may exceed 5% but must be less than or equal to the roadway grade.

- ◆ Install sidewalks on both sides of the street when appropriate, based on adjacent land use (refer to Exhibit 2 in Appendix 4).

2. Curb Ramps

The curb ramp is the most common feature used to improve mobility for disabled pedestrians. Use the following criteria in designing them:

- ◆ Curb ramps must be installed at all corners of intersections containing sidewalks.

- ◆ At a minimum, install sidewalk curb ramps to be 5 feet wide (1.525 meters).

- ◆ Do not exceed a 1:12 (8.33%) slope.

- ◆ Detectable truncated dome warning strips are required to mark the street edge. They should be 2 feet (0.6 m) wide and run the full width of the curb ramp. Also see Section 18.7.4 of the *NYSDOT Highway Design Manual*.

- ◆ Blend curb ramps evenly with road surfaces. Wheelchairs can tip over due to a 1/4" drop off to the street.

- ◆ Locate curb ramps on two sides of each corner to serve each crossing direction. Avoid single diagonal or depressed curb ramps placed in the middle of a corner serving two street crossing directions; this results in the channeling of pedestrians into the middle of an intersection.

- ◆ Perpendicular curb ramps (i.e., perpendicular to the flow of pedestrian traffic) must have a level landing at the top.

- ◆ Provide adequate drainage so that ice does not accumulate on curb ramps.

3. Crosswalks

Crosswalks are the portion of roadway designated for pedestrians to use in crossing the street. Crosswalks also serve to inform motorists of the location of a pedestrian crossing so they have time to lawfully yield to a crossing pedestrian. Each proposed crosswalk should be evaluated individually but in general, should be considered:

- (1) for areas with substantial pedestrian traffic;

- (2) in areas of school crossings (with signals or crossing guards) or for crossings on recommended safe school routes;

- (3) at intersections with traffic signals, especially when in central business districts or other areas of high pedestrian traffic;

- (4) at midblock crossings;

- (5) at an unsignalized intersection when there is significant development along both sides of a road but not nearby signalized intersection;

- (6) where it is desirable to indicate to pedestrians where to cross; and,

- (7) in locations of anticipated or known conflicts between pedestrians and motor vehicles (MUTCD 2009; ITE 1998).

Crosswalk design criteria:

- ◆ Remove and relocate storm drains located in the path of crosswalks. Storm drain openings should not exceed 1/2" in any direction. Wider openings catch the tires of wheelchairs and cyclists.
- ◆ Paint crosswalk lines 6" wide (at a minimum).
- ◆ Install signs to warn motorists of mid-block and unsignalized crosswalks. Section 2B.12 of the federal *MUTCD (2009)* states that the In-Street Pedestrian Crossing (R1-6) sign (see Exhibit 3, Appendix 4) may be used to remind road users of laws regarding right-of-way at an unsignalized pedestrian crosswalk. Also see NYSDOT Traffic Engineering Directive OS 05-002 for information on in-street signing.
- ◆ Consider using a higher visibility crosswalk markings for added visibility in locations with high volume or where motorists might not expect pedestrians to cross (Marking "C" shown in Exhibit 4, Appendix 4 is preferred). The *MUTCD* says stripes should be 12-24" wide and should be separated by spaces equal to the width of the lines.
- ◆ Avoid crosswalks where traffic speed limits are greater than 45 mph.
- ◆ Install stop lines 4' in advance of crosswalks to help prevent motorists from encroaching on crosswalks. Lines should be 12-24" wide and parallel to the adjacent crosswalk.
- ◆ Avoid overuse of crosswalks. Refer to Exhibit 5, Appendix 4 to help determine where crosswalks may be needed.

4. Signalization

Traffic signals are intended to assign the right-of-way to vehicular and pedestrian traffic. Signalization options for pedestrians include traffic signals, pedestrian signals (walk/don't walk indications), and push-button actuation of both traffic and pedestrian signals.

The following is taken from the *MUTCD* Section 4E.03, 2009 edition.

- ◆ Pedestrian signals (WALK/DON'T WALK indications) are *required* under the following conditions:

- (1) When traffic signals have been installed to meet pedestrian and/or school crossing warrants;
- (2) When an exclusive phase is provided for pedestrian movements in one or more directions, and all motor vehicle traffic is stopped;
- (3) At an established school crossing at any signalized location; and
- (4) Where engineering judgment determines that multi-phase signal indications would tend to confuse or cause conflicts with pedestrians using a crosswalk guided only by vehicular signal indications.

- ◆ Pedestrian signals (WALK/DON'T WALK indications) are *recommended* under the following conditions:

- (1) If it is necessary to assist pedestrians in deciding when to begin crossing the roadway in the chosen direction or if engineering judgment determines that pedestrian signal heads are justified to minimize vehicle-pedestrian conflicts;
- (2) If pedestrians are permitted to cross a portion of a street, such as to or from a median of sufficient width for pedestrians to wait, during a particular interval but are not permitted to cross the remainder of the street during any part of the same interval; and/or

(3) If no vehicular signal indications are visible to pedestrians, or if the vehicular signal indications that are visible to pedestrians starting a crossing provide insufficient guidance for them to decide when to begin crossing the roadway in the chosen direction, such as on one-way streets, at T-intersections, or at multi-phase signal operations.

Pedestrian signal heads may be used under other conditions based on engineering judgment.

◆ Countdown Pedestrian Signals are *required* under the following condition:

(1) All pedestrian signal heads used at crosswalks where the pedestrian change interval is more than 7 seconds shall include a pedestrian change interval countdown display in order to inform pedestrians of the number of seconds remaining in the pedestrian change interval.

Pedestrian signal heads can also be used at crosswalks where the pedestrian change interval is 7 seconds or less may include a pedestrian change interval countdown display in order to inform pedestrians of the number of seconds remaining in the pedestrian change interval.
(MUTCD Section 4E.07, 2009)

◆ Pedestrian Activated Traffic Signals (Push Buttons) are needed in the following locations:

(1) at semi-actuated intersections, to allow pedestrians to cross the main street without having to rely on a vehicle to trigger the signal;
(2) at intersections having a flashing signal light; and,
(3) at any other signalized intersection where the usual crossing time (green light phase) is not adequate for safe pedestrian crossing.

◆ Pedestrian Crossing Time

The MUTCD specifies use of a walking speed of 3.5 feet/second to calculate pedestrian crossing time. The MUTCD also states that a slower walking speed can be used if people who walk more slowly or use wheelchairs “routinely use the crosswalk”. This involves engineering judgment. Current research suggests that if there are more than 20% elderly people in the pedestrian stream, a slower walking speed of 3.0 feet/second should be used to calculate pedestrian crossing time.

For additional design information, refer to Chapter 5 of the Institute of Transportation Engineers' Design and Safety of Pedestrian Facilities for specific timing and sign conditions.

◆ Accessible Pedestrian Signals (APS)

Accessible pedestrian signals and detectors provide information in non-visual formats (such as audible tones, speech messages, and/or vibrating surfaces). The primary technique that pedestrians who have visual disabilities use to cross streets at signalized locations is to initiate their crossing when they hear the traffic in front of them stop and the traffic alongside them begin to move, which often corresponds to the onset of the green interval. The existing environment is often not sufficient to provide the information that pedestrians, who have visual disabilities, need to cross a roadway at a signalized location.

If a particular signalized location presents difficulties for pedestrians who have visual disabilities to cross the roadway, an engineering study should be conducted that considers the needs of pedestrians

in general, as well as the information needs of pedestrians with visual disabilities. The engineering study should consider the following factors:

- (1) Potential demand for accessible pedestrian signals;
- (2) A request for accessible pedestrian signals;
- (3) Traffic volumes during times when pedestrians might be present, including periods of low traffic volumes or high turn-on-red volumes;
- (4) The complexity of traffic signal phasing (such as split phases, protected turn phases, leading pedestrian intervals, and exclusive pedestrian phases); and
- (5) The complexity of intersection geometry.

The factors that make crossing at a signalized location difficult for pedestrians who have visual disabilities include: increasingly quiet cars, right turn on red (which masks the beginning of the through phase), continuous right-turn movements, complex signal operations, traffic circles, and wide streets. Furthermore, low traffic volumes might make it difficult for pedestrians who have visual disabilities to discern signal phase changes.

Local organizations, such as the Association for Vision Rehabilitation and Employment (AVRE), providing support services to pedestrians who have visual and/or hearing disabilities, can often act as important advisors to the traffic engineer when consideration is being given to the installation of devices to assist such pedestrians. Additionally, orientation and mobility specialists or similar staff also might be able to provide a wide range of advice. The U.S. Access Board (www.access-board.gov) provides technical assistance for making pedestrian signal information available to persons with visual disabilities. (MUTCD 4E.09, 2009)

Push button installations should be installed according to standards for Accessible Pedestrian Signals (APS), even if APS is not immediately installed to allow for future installation.

◆ Pedestrian Hybrid Beacons

A pedestrian hybrid beacon, also known as the High intensity Activated crossWalk (HAWK), is a special type of hybrid beacon used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street or highway at a marked crosswalk.

A pedestrian hybrid beacon *may be considered* for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants, or at a location that meets traffic signal warrants but a decision is made to not install a traffic control signal.



Pedestrian Hybrid Beacon signal assembly

If used, pedestrian hybrid beacons *shall* be used in conjunction with signs and pavement markings to warn and control traffic at locations where pedestrians enter or cross a street or highway. A pedestrian hybrid beacon shall only be installed at a marked crosswalk.

See MUTCD Section 4F.01, 2009 for further detailed guidance on pedestrian hybrid beacons.

5. Roundabouts

Roundabouts are increasingly popular for use in place of signals at relatively busy intersections. The primary purpose of roundabouts is to provide motor vehicles with free-flowing mobility at reduced speeds through an intersection. Roundabouts are also designed to do the following:



Downtown Binghamton Roundabout

- Increase intersection capacity for motor vehicles by maximizing vehicle time/space occupancy.
- Replace traffic signals to lower operating and maintenance costs.
- Reduce delays for motorists.
- Reduce serious collisions.
- Improve streetscapes.
- Improve safety and access by reducing vehicle speeds.

(AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004)

Design and operational characteristics of roundabouts have the following generic characteristics that make them more conducive to pedestrian traffic activity than conventional signalized intersections.

- Splitter islands provide refuge for pedestrians and break up the crossing length into smaller distances.
- Collisions at roundabouts involve low speeds and low angles of impact, and therefore, are less likely to result in serious injury.
- The reduced speed minimizes speed differential and creates a more balanced operating environment for pedestrians. (NYSDOT Highway Design Guide – Ch. 18, 2006)

Research suggests that there may be fewer vehicle-pedestrian conflicts and crashes at properly designed single-lane roundabout intersections versus typical signalized or unsignalized intersections. There is some concern that it is difficult for pedestrians with vision impairments to obtain cues concerning gap availability for crossing near roundabouts. Research completed for the National Cooperative Highway Research Program - [NCHRP Report 572, *Applying Roundabouts in the United States*](#), and [NCHRP Report 674, *Crossing Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities*](#) are good sources of information to determine design and traffic control guidelines to accommodate pedestrians with vision impairments at roundabouts.

More information about roundabouts, as well as detailed design guidelines can also be found on the NYSDOT website at www.dot.ny.gov/main/roundabouts, and in FHWA Publication ([FHWA-RD-00-067](#)) *Roundabouts, An Informational Guide*, 2000.

6. Shared-use Paths

Shared use paths, also referred to as multi-use trails, should be thought of as a complementary system of off-road transportation routes for bicyclists and others that serve as a necessary extension to the roadway

network. Shared use paths should not be used to preclude on-road bicycle facilities, but rather to supplement a system of on-road bike lanes, wide outside lanes, paved shoulders and bike routes. (AASHTO Guide for the Development of Bicycle Facilities, 2012)

Install shared-use paths where there is continuous right-of-way that is generally uninterrupted by intersections. Use the following guidelines when designing bicycle paths:

- ◆ NYSDOT's minimum recommended width for shared-use paths is 13 feet (4 meters). (NYSDOT Highway Design Guide – Ch. 17, 2006)
- ◆ AASHTO guidelines set a minimum paved width of 10ft. for a two-directional shared use path. Typically, widths range from 10 – 14 feet, with the wider values applicable to areas with high use and/or a wider variety of user groups. Wider paths are also advisable in the following conditions:
 - Where there is significant use by inline skaters, adult tricycles, children, or other users that need more operating space;
 - Where the path is used by larger maintenance vehicles;
 - On steep grades to provide additional passing area;
 - Through curves to provide more operating space.
- ◆ Use pavement markings to designate separate bicycle and pedestrian areas.
- ◆ Minimize grade to 5%.
- ◆ Provide a minimum 2' graded area on either side of path.
- ◆ Sign intersections with streets, both on the path and the street.

Pedestrian needs must be identified and addressed as early as possible in the project development process. It is preferable that this occurs at the Initial Project Proposal stage so an accurate cost estimate can be made, which is essential to create a fiscally constrained list of projects for the Transportation Improvement Program. Too often, pedestrian needs are addressed during scoping or even as late as the draft design review for a project. At these later stages of a project, adding pedestrian facilities can significantly increase the project cost, creating a fiscal hardship. Addressing pedestrian needs too late often is labeled as “scope creep”, and not being a part of the original purpose of the project. Thus, addressing pedestrian issues late in the project development process frequently results in compromised pedestrian accommodations or none at all being included in the project, despite the importance and need.

Chapter 18 of the *NYSDOT Highway Design Manual* details its design policy and procedural requirements to account for pedestrian needs in the project development process shown below.

18.3 POLICY

Current Department policy is consistent with federal policy and design guidance and states that: “NYSDOT must make...pedestrians integrated elements of our intermodal transportation system.” It is Department policy to consider the accommodation of pedestrians, including persons with disabilities, during the earliest scoping stage of Department projects. “Considerations” of pedestrian needs should include, at a minimum, a presumption that pedestrians will be accommodated, unless pedestrian access is prohibited by law, deemed unfeasible based on anticipated use, and/or an absence of need is determined. This aligns with FHWA policy (23 CFR 652.5) which requires that the safe accommodation of pedestrians and persons with disabilities should be given full consideration during the planning, design, and construction phases of federal aid highway projects. The Department has determined that this policy also applies to all projects, regardless of the fund source, including 100% state-funded projects.

18.5 PROCEDURAL REQUIREMENTS

FHWA regulations require that whenever a State highway is to be constructed, reconstructed, or rehabilitated or when the Department engages in any other public improvement project, the Project Developer should determine whether the existing pedestrian accommodations:

- Are adequate.
- Are readily accessible to persons with disabilities.
- Require reconstruction.
- Require rehabilitation.
- Warrant the construction of new facilities.

The Americans with Disabilities Act (ADA) requires that new and altered facilities be accessible to and usable by persons with disabilities.

The following procedures for pedestrian accommodation apply to all projects that are classified as new construction, reconstruction, bridge replacement, bridge rehabilitation, signal requirement contracts, safety, 3R, or 2R, as well as locally administered projects and work undertaken by Department Maintenance forces that are similar to the preceding project types.

18.5.1 Pedestrian Generator Checklist

The Pedestrian Generator Checklist (see Exhibit 6, Appendix4) is a tool to be used by the Project Developer in coordination with the Regional Bicycle and Pedestrian Coordinator during project scoping. The checklist highlights the importance of evaluating the potential for pedestrian activity at the project location and observing adjacent land use. The Pedestrian Generator Checklist focuses on the existence of pedestrian generators/destinations rather than on existing pedestrian activity since the lack of facilities may be the root cause of the lack of pedestrian activity. When generators of pedestrian activity are present and there is a probable use, Department policy is to accommodate pedestrians. Probable use has been defined as a mix of pedestrian generators and destinations within 800 meters (2624.67 feet).

A Pedestrian Generator Checklist is required for all projects listed under Section 18.5. A Pedestrian Generator Checklist is also required for Highway Work Permit projects having highway mitigation such as lane widening or intersection improvements. This checklist should be completed during project scoping. All completed Pedestrian Generator Checklists should be submitted to the Regional Bicycle and Pedestrian Coordinator for review. Projects with one or more “Yes” answers on the checklist indicate a potential need for pedestrian accommodation, and the Project Developer should meet with the Regional Bicycle and Pedestrian Coordinator to determine if there is a need to accommodate pedestrians. The completed Pedestrian Generator Checklist should be included as an appendix to the Project Scoping Report and Design Report.

VI. RECOMMENDED ACTIONS

The recommended actions each relate to the previously stated objectives of the plan. Most of the recommended actions from the 1996 Pedestrian & Bicycle Plan remain, some with minor changes. Some of the TT 2035 objectives are more specific and incorporated into the recommended actions as bulleted items. New recommendations are noted by an asterisk (*). Status of their implementation is indicated in *italics*. In the following section, these actions will be assigned a priority for implementation.

1. System Development

Objective #1: To establish an interconnected system of *pedestrian facilities* that offers safety and convenience to the disabled and general population.

Recommended Actions:

1. Collect and compile data necessary to determine the number of trips made by pedestrians. Manual and automated pedestrian counting methods shall be considered. Use the National Bicycle and Pedestrian Documentation Project (www.bikepeddocumentation.org) methodology as a guide for pedestrian counts, which incorporates a survey when manually counting. Pedestrian counts are intended to provide a context of pedestrian presence, and gauge trends of increasing or decreasing numbers over time, especially after improvements to facilities or new facilities are constructed. Pedestrian counts are not meant to be used to establish a threshold that determines when pedestrian improvements may or may not be included in projects. A more thorough evaluation, as is the intent behind the NYSDOT Pedestrian Generator Checklist, is necessary to make such decisions. The U.S. Census American Community Survey data, as well as data from other pedestrian related studies may also provide some useful data for the BMTS area.

Status: Pedestrians and bicyclists are also counted, though not separately, as a part of the turning movement counts that BMTS summer traffic counter employees perform at intersections. The traffic counters took a pedestrian & bicycle count on the South Washington St. Pedestrian & Bicycle Bridge during the summer of 2012. Need to establish a pedestrian counting program.

2. Continue to inventory the network of pedestrian facilities in the urbanized area. Identify and map locations that are a high priority for pedestrian improvements.

Status: See Section IV.G. and VII of this Plan. The data in the aforementioned sections must be updated annually, and analyzed to identify locations that are a high priority for pedestrian improvements.

3. Prioritize and phase in pedestrian system developments and improvements. Follow recommended System Design guidelines for these projects. The development of this system should begin at the earliest possible time.

- Construct sidewalks to ensure connectivity in the urban core communities and contiguous residential areas.
- Construct sidewalks where gaps are identified in the existing sidewalk network by year 2020 to ensure a continuous network in high priority locations.
- Use best available pedestrian signal technology in both new installations and as retrofits.

- Complete the Two Rivers Greenway by the year 2020.

Status: Ongoing and accomplished mainly through the current review process of transportation projects and development site plans, road safety assessments, as well as when pedestrian needs and safety issues are made known to BMTS, NYSDOT, or municipalities.

See Exhibit 1, Appendix 5 for excerpt from Transportation Tomorrow: 2035 (TT 2035) providing status of Transportation Tomorrow long range plans. Pedestrian system development and improvements are highlighted. See Section IV.F. for information on the development of the Two Rivers Greenway.

4. Evaluate and improve intersections where necessary to safely accommodate pedestrians. This includes the current policy of installing curb ramps to accommodate persons with mobility impairments and ensuring the adequacy of pedestrian green time at signalized intersections.
 - Continue to bring existing sidewalks and curb ramps into ADA compliance.

Status: See status for #3. See Exhibit 2, Appendix 5 for before & after photos of projects resulting from requests to make safety improvements.

5. Include pedestrian design features as appropriate on all local road, highway, and bridge construction, reconstruction, and improvement projects on the BMTS Transportation Improvement Program, in accordance with AASHTO standards and this Plan.

Status: Ongoing and accomplished mainly through current review process of transportation projects, including BMTS and its Pedestrian & Bicycle Advisory Committee review of submitted draft design reports, and BMTS' participation in the NYSDOT Region 9 Pedestrian & Bicycle Advisory Committee. See Exhibit 3, Appendix 5 for before & after photos of completed projects.

6. Use traffic-calming techniques (e.g., construction of refuge islands, landscaped medians, sidewalk curb extensions, roundabouts, speed limit reduction) in areas where pedestrian travel is present or is being encouraged and there is evidence of safety hazard and conflict. Municipalities have the authority to designate pedestrian safety zones under the New York State Vehicle and Traffic Law (Section 1640, Part 8).

Status: See status for #3. See Exhibit 4, Appendix 5 for before & after photos of completed projects.

7. NYSDOT Region 9 shall notify BMTS regarding the availability of abandoned railroad properties. Evaluate all such corridors based on their usefulness as pedestrian paths or multi-use trails, and acquire as appropriate and as resources are available.

Status: Though a comprehensive list of abandoned railroad properties has not been initiated, NYSDOT has included BMTS in discussions and investigation of multi-use trail possibilities on the abandoned Vestal Spur (near the National Pipe & Plastic, Vestal plant), and the Ninevah branch of railroad, just outside the Binghamton urban Area.

*8. BMTS shall work with municipalities to evaluate feasibility of developing multi-use trails on land near the river corridors that have become publicly owned due to buyouts resulting from the extensive flooding during 2006 and 2011. Such trails would expand and/or increase the contiguity of the originally proposed Two Rivers Greenway trail system.

Status: Not initiated.

9. Review site development proposals through BMTS participation on the NYSDOT Site Plan Review Committee, and during all review processes related to the State Environmental Quality Review Act (SEQRA) and Section 239(l&m) of NYS Municipal Law. Encourage developers to incorporate pedestrian design elements in construction plans in accordance with this plan.

Status: BMTS is represented on the NYSDOT Site Plan Review Committee, and performs Section 239 reviews for transportation issues and impacts.

*10. BMTS shall work with NYSDOT and municipalities to maintain or create a process for review of all transportation projects to ensure pedestrian accommodations are included.

Status: Review of transportation projects takes place through BMTS participation in the NYSDOT Region 9 Pedestrian & Bicycle Advisory Committee, and BMTS typically receives draft design reports from NYSDOT to review and provide comments for road and bridge projects. Initiated through the Strategic Alliance for Health program, BMTS met with the City of Binghamton to review their list of roadway projects for the year to identify opportunities for low cost pedestrian and bicycle improvements, such as installation of bike lanes, sharrows, or high visibility crosswalks. It is important that these review processes and correspondence opportunities be maintained and expanded to the other municipalities in the Binghamton Urban Area.

Objective #2: To make pedestrian travel part of an intermodal transportation system.

Recommended Actions:

1. Make all bus routes accessible by sidewalks.

- Develop and implement a plan to make all bus stops accessible to all users by year 2015.

Status: An inventory of sidewalks has been made for the bus routes (see Map #18 in Section VI), though some updates are needed as routes have changed slightly. Sidewalk gaps need to be identified and appropriate municipalities notified to enable pursuit of opportunities to install sidewalks.

2. Install shelters and/or benches for pedestrians at major transit stops.

Status: An inventory of transit shelters and bus has been made for the bus routes, though some updates are needed as routes have changed slightly. The inventory needs to be reviewed to identify locations for bus shelter installations. Additionally, BMTS works with the Broome County Department of Public Transportation – BCDOPT (a.k.a. BC Transit) to respond to requests for bus shelter installation. See Exhibit 5 Appendix 5 for before & after photos of completed projects.

2. System Maintenance

Objective #3: To maintain the existing road infrastructure in addition to unique features of the bicycle and pedestrian infrastructure to ensure its safety and usefulness, and to protect the community's investment.

Recommended Actions:

1. All pedestrian facilities must be well maintained in order to ensure their safety and continued use. System maintenance activities include, but are not limited to repairing or replacing broken or uneven sidewalk sections, and repainting pavement markings.

Status: Municipalities address this through local laws that define sidewalk maintenance responsibility, normally given to the adjacent property owner. Sidewalk maintenance is also addressed via information of needs provided through the BMTS Pedestrian & Bicycle Advisory Committee, or from the public.

2. Responsible jurisdictions may not be aware of pedestrian hazards. Because of this, pedestrians should assist municipalities by notifying them, in writing, of hazards whenever possible.

Status: BMTS also aids in notifying jurisdictions of pedestrian hazards when made aware of them through the BMTS Pedestrian & Bicycle Advisory Committee, or from the public.

3. Include snow removal on pedestrian facilities as a regular part of winter maintenance. This is particularly critical in the area of bus stops.

Status: A best practice example is the Town of Chenango's snow removal program noted in Section IV.F.2 and in Exhibit 4, Appendix 3 of this Plan. BMTS and its Pedestrian & Bicycle Advisory Committee address snow removal needs as they are made known.

*4. Actions from TT 2035 objectives:

- Improve roadway safety by reducing the number and severity of crashes
 - Continually analyze traffic crash data to identify high crash locations (HCLs).
 - Study and propose countermeasures for HCLs within two years of identification.

Status: BMTS has crash location information available through the New York State ALIS. Coordination with NYSDOT Region 9 needs to take place to receive lists of HCLs.

- Adopt a “Rebuild Smarter” policy for all infrastructure project including:
 - Road Safety Assessments to identify and include necessary safety elements
 - Complete Streets Assessment to identify and include appropriate complete streets elements
 - Green Construction Assessment to identify best practices for reducing the environmental impact of construction

Status: Road Safety Assessments have been performed for Vestal Ave. (Mary St. – Pennsylvania Ave.) in Binghamton, and Floral Ave. (Ackley Ave. – Baldwin St.) in Johnson City. New York State has passed Complete Streets and Smart Growth Legislation. Additionally, the City of Binghamton adopted a Complete Streets policy. See Section IV.A of this plan for details).

3. Education, Encouragement, and Enforcement

Objective #4: To ensure that pedestrians and motorists understand and abide by the requirements for safe facility-sharing, encouraging a culture change where the rights and responsibilities of pedestrians are recognized.

Recommended Actions:

1. Support the continued development and implementation of safety education programs for pedestrians.

Status: Special events, such as our Pedestrian & Bicycle Safety Display and the Binghamton Mets annual Education and Baseball Day game, and Walk to School Day are being used to provide pedestrian safety education.

2. Develop a public awareness program focusing on pedestrian related safety consciousness, including motorists yielding to pedestrians in the crosswalk at unsignalized crosswalks.

Status: Not initiated.

3. Assess the educational needs of other target groups including motorists, law enforcement officials, and local government officials.

Status: This has been addressed in several manners including: the 2003 series of walkable communities workshops, performing road safety assessments, and involvement with the Broome County Traffic Safety Committee. Continuing education efforts are needed.

4. Encourage local police agencies to enforce traffic violations involving pedestrians.

Status: This has been brought up at the Broome County Traffic Safety Committee, but no organized enforcement efforts have resulted yet.

5. In conjunction with other MPOs, advocate the incorporation of pedestrian safety laws into the NYS drivers' manual and drivers' test.

Status: This is currently a task of the NYSMPO Pedestrian & Bicycle Working Group.

Objective #5: To foster increased interest in walking in Broome and Tioga Counties. To encourage people to view walking as a viable mode of transportation.

Recommended Actions:

1. Increase general public's awareness about health and environmental benefits of cycling and walking.

Status: This has been accomplished through BMTS' participation in multidisciplinary partnerships, particularly with the health sector. See Section IV.B.6 of this plan for more details. An example of a walking encouragement program resulting from such a partnership is BC Walks (see www.bcwalks.com).

2. Make public aware of local opportunities to walk through the distribution of maps.

Status: An initial Bicycle Route Map for the Binghamton Urban Area was printed, with 10,000 copies made available to the public for free at various locations during November 2000. This map displayed the local signed bike routes 1 through 7 as well as NYS Bike Route 17. A second edition of the Bicycle Route Map was completed during May 2005. Added to the map were NYS Bike Route 11, as well as existing and planned Greater Binghamton Greenway and park loop trails that also provide opportunities for walking. In addition to 10,000 printed copies, an online version of the map was put on the BMTS website (www.BMTSONline.com). The current, and third edition of the Bicycle Route Map was completed and printed during May 2011, which displays updated information from the previous map. 10,000 copies were printed, and it is also available on the BMTS website.

3. Merge EMC Ad Hoc Committee on Alternative Transportation with existing BMTS Pedestrian and Bicycle Plan Advisory Committee, and establish it as the ongoing forum for public review of the plan's implementation.

Status: The Committees merged during 1997, and BMTS was given administration of the Committee during 1999. See Section IV.B.4 of this Plan for details.

4. Design and implement a pilot project for state, county, and city government offices in Binghamton Government Plaza to encourage employees to walk to work. Encourage major employers in the metropolitan area to establish walk to work programs.

Status: The BC Walks (www.bcwalks.com) program was used to accomplish this action item.

5. Investigate other sources of funding for plan implementation i.e., special grants, and licensing, etc.

Status: This is an ongoing task that is facilitated through both the BMTS and the NYSDOT Pedestrian and Bicycle Advisory Committees, participation in multidisciplinary partnerships, and pedestrian subject related email listserves.

6. Walkable communities have impacts and benefits in other areas of discipline (i.e. public health, environment/sustainability, economic development, tourism, historic preservation, etc.). Multidisciplinary partnerships must be maintained, strengthened and expanded.

Status: BMTS will continue to actively participate in multidisciplinary partnerships and foster their growth. Projects have resulted including bike parking, sharrow pavement markings, crosswalk improvements, added curb ramp improvements; new pedestrian and complete street policies have been adopted; and educational / encouragement programs (e.g. bike rodeos & BC Walks) have been created with successful results.

4. Evaluation

Recommended Actions:

*1. Evaluate and prioritize metrics in Table #1 to determine which information exists, or what data can be collected with reasonable effort and benefit.

Status: Not initiated.

*2. Establish a data collection process for performance metrics in Table #1. As much as is feasible, BMTS shall work with the appropriate agencies over time to make robust performance measurement possible and routine.

Status: Not initiated.

*3. Perform an annual evaluation by using available data to fill the fields of the Performance Measurements Table

Status: Not initiated.

VII. THE SIDEWALK SYSTEM

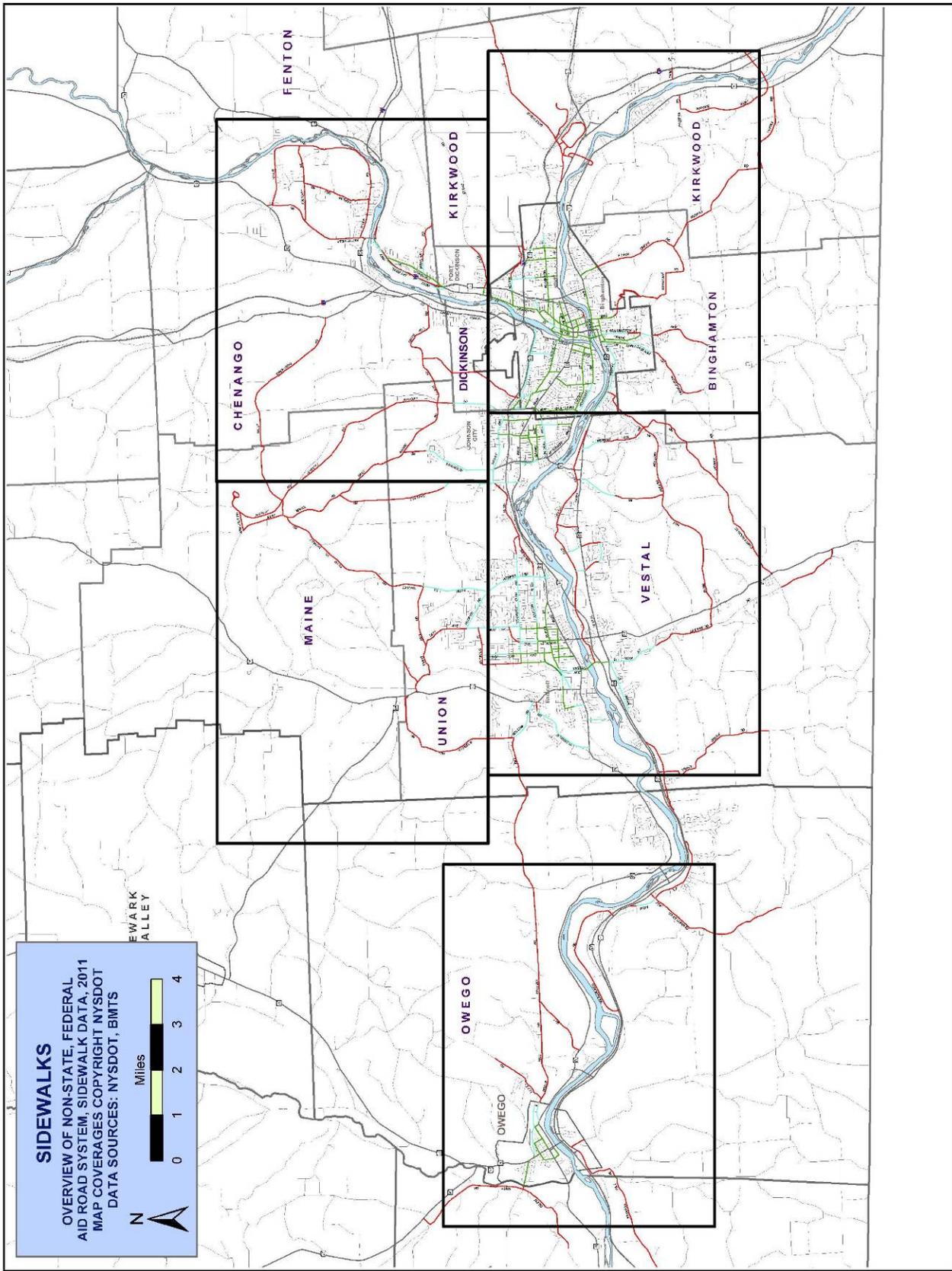
Sidewalk Inventory:

The following maps (Map #11 - #17) display the sidewalk inventory results for the non-state federal aid eligible roadways in the Binghamton Urban Area. The inventory data indicates whether sidewalks are present for each road segment, and if so, whether they are present on one or both sides of the roadway. After the maps, a chart is included that provides details for the road segments that the maps show as “Sidewalk Varies”.

There is no sidewalk condition data collected at this point. It is also desired to work with NYSDOT and the municipalities that are a part of the BMTS planning area to use their existing data or develop a data collection plan to create a comprehensive sidewalk inventory comprised of all the roads in the BMTS planning area.

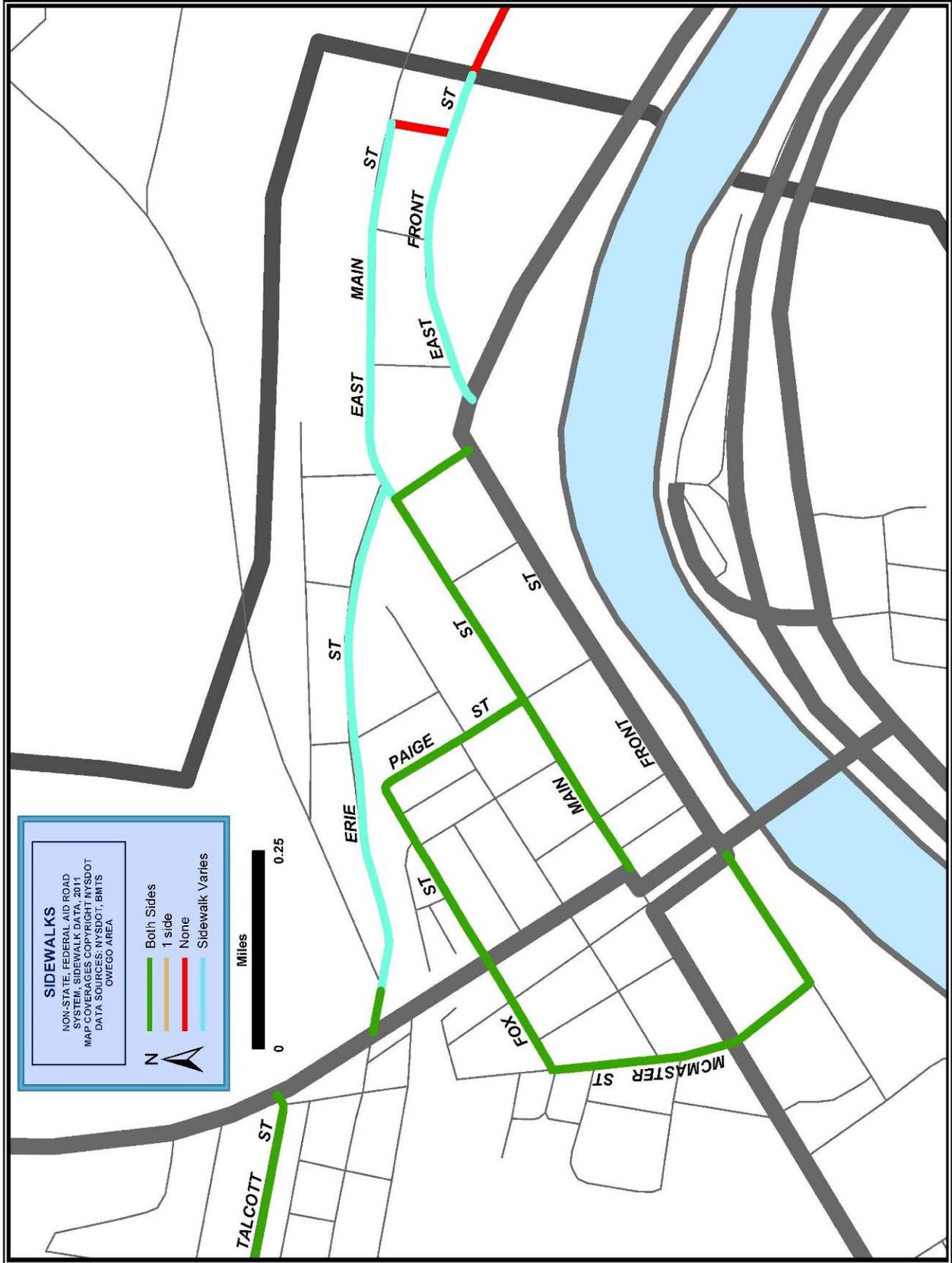
Sidewalk Inventory

Map #11

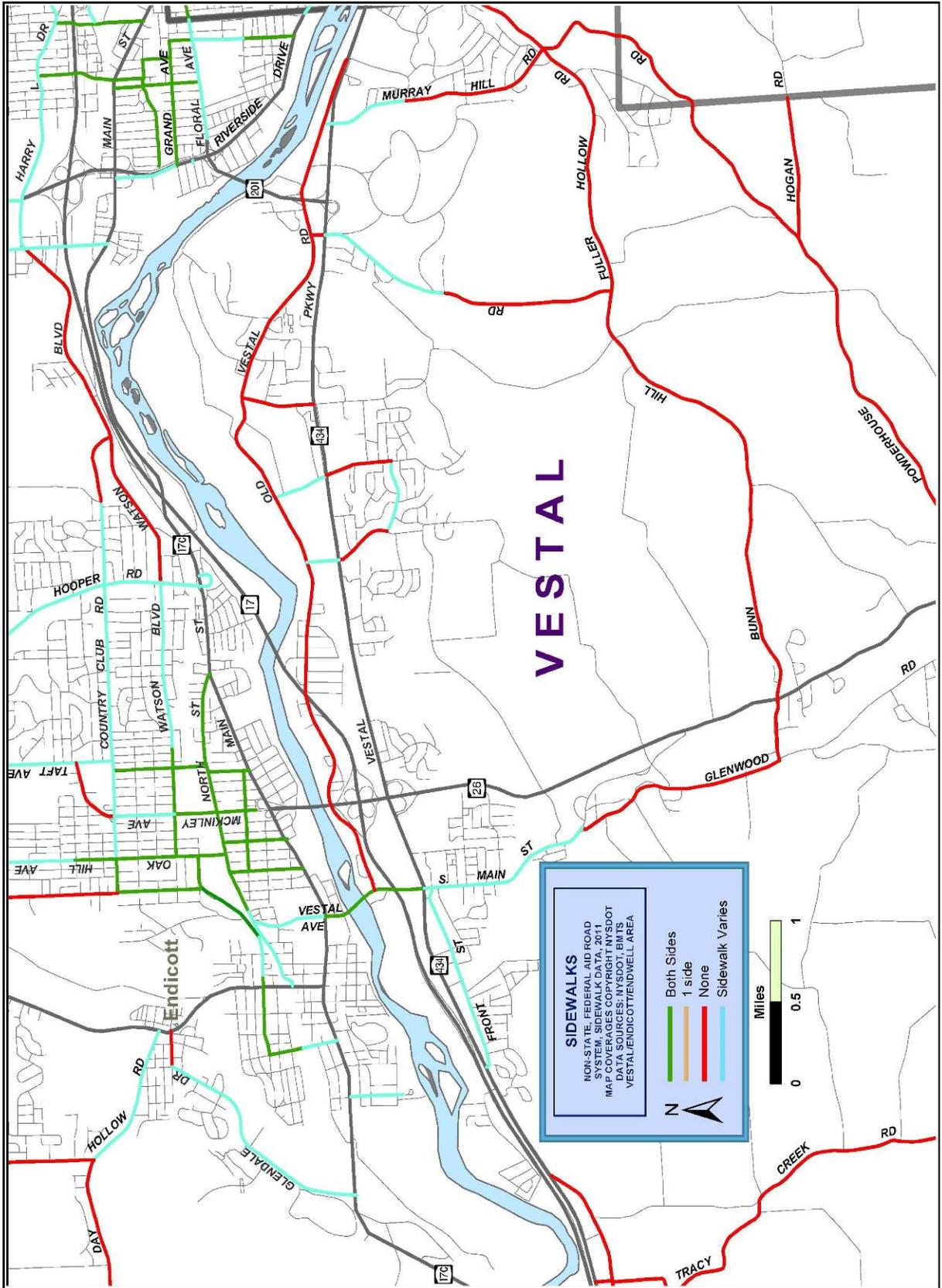


Map #12

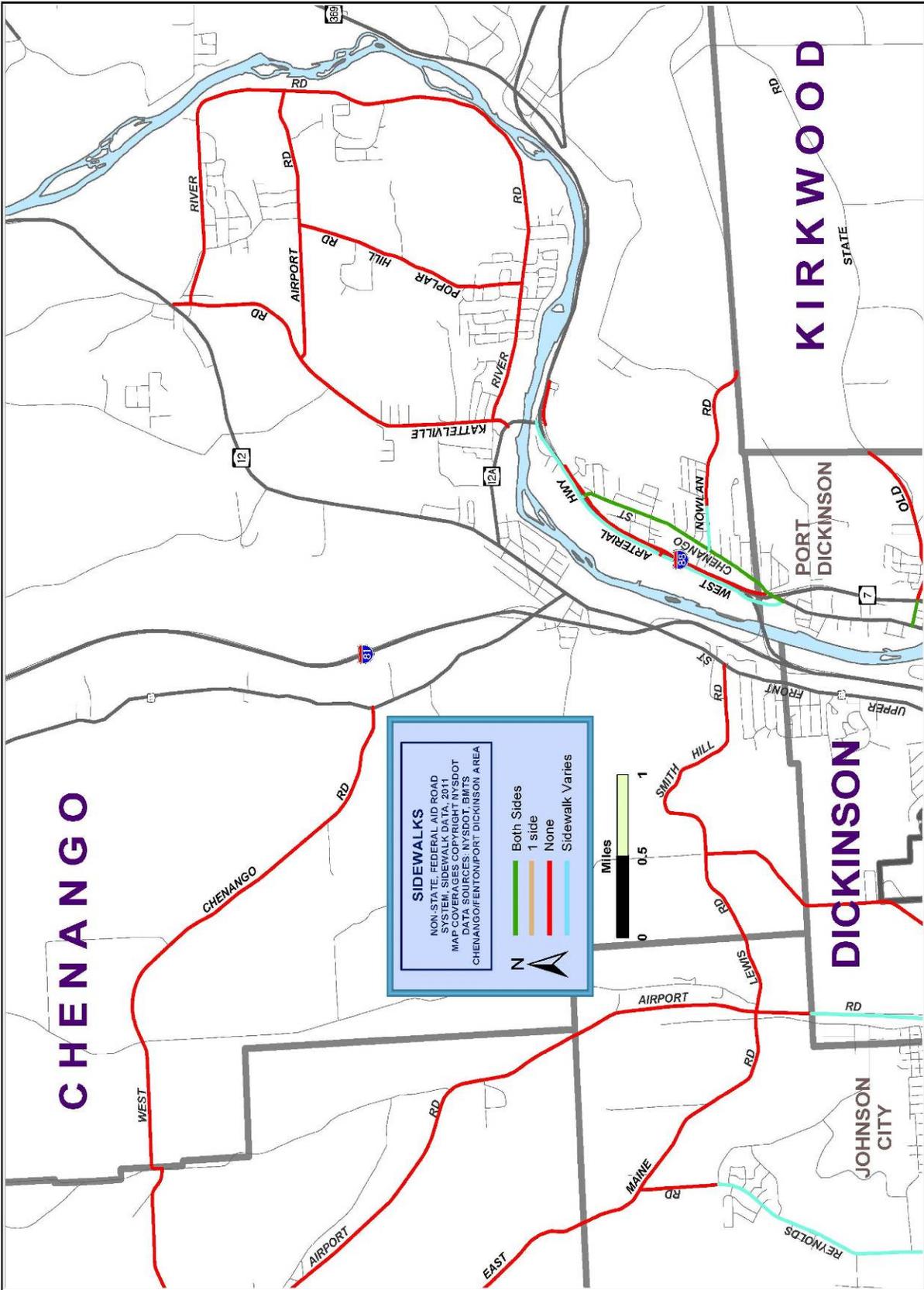
Downtown Owego



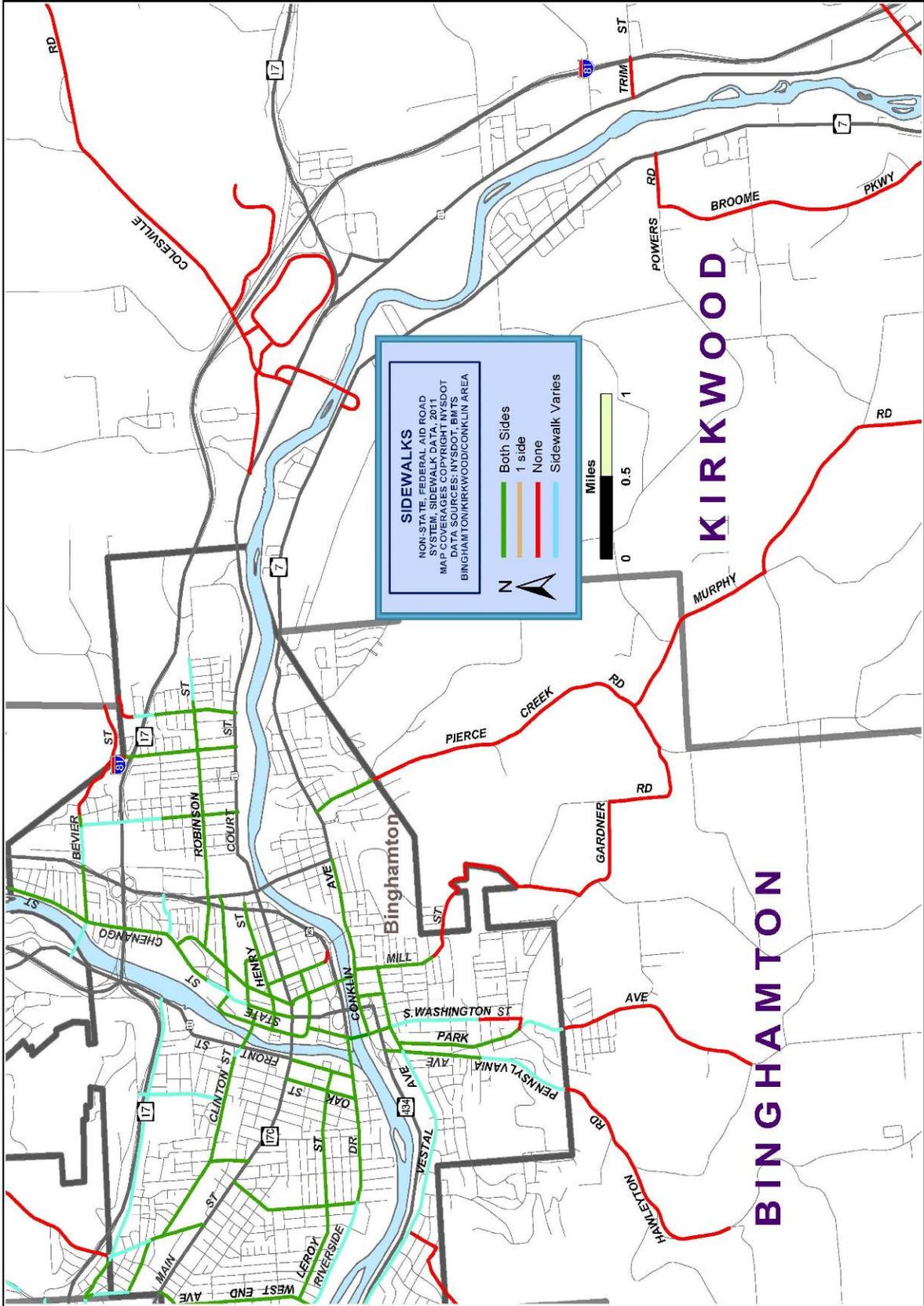
Map #14



Map #15



Map #16



SIDEWALK INVENTORY NOTE SHEET (July/August 2012)

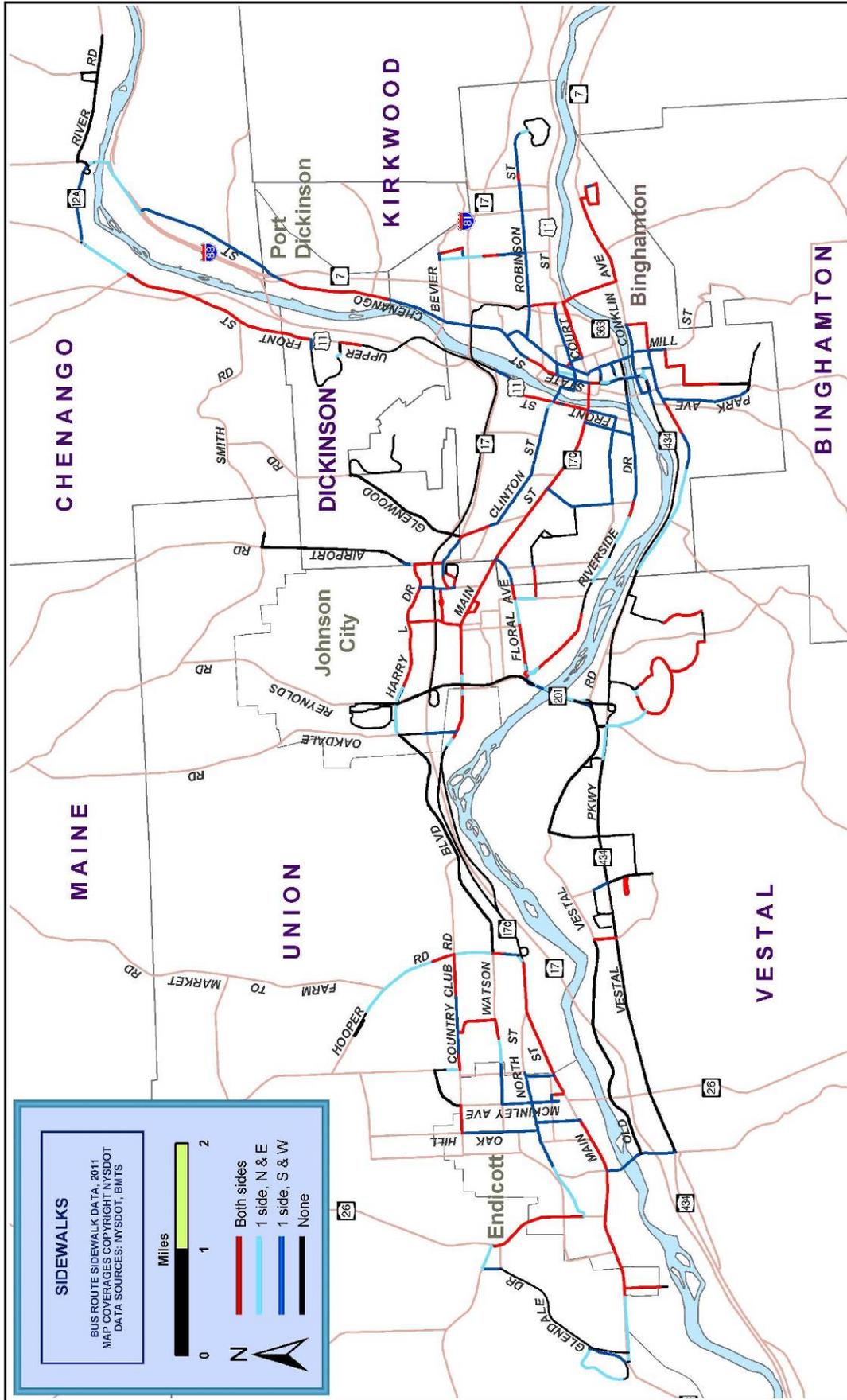
ROAD NAME	SEGMENT	MUNICIPALITY	SIDEWALKS ([N]one, 1, or 2 sides)	COMMENTS
AIRPORT RD.	MARKET ST-VJC ENTRANCE RAMP(HARRY L DR)	BCo	2	
	VJC ENTRANCE RAMP-AIRPORT LOOP	BCo	N	
AFRICAN RD.	OLD VESTAL RD-THE SHOPPES	TV	1	
	THE SHOPPES-NYS 434	TV	2	
BROAD AVE.	E. FREDERICK ST-ABBOTT ST	CB	2	
	ABBOTT ST-BEVIER ST	CB	1	
BUNN HILL RD.	NYS 434-BU WEST ENTRANCE	BCo	1	Asphalt surface.
	BU WEST ENTRANCE-UNIVERSITY CT	BCo	N	
BURBANK AVE.	FLORAL AVE-END OF CEMETARY	VJC	1	
	END OF CEMETARY-GREENRIDGE ST	VJC	2	
CFJ BLVD.	DOWNES AVE-ROGERS ST	VJC	1	
	ROGERS ST-LESTER AVE	VJC	2	
COUNTRY CLUB RD.	ROBINSON HILL RD-HOOVER RD	TU	N	
	HOOVER RD-HOOPER RD	TU	1	
	HOOPER RD-KATHLEEN DR	TU	2	
	KATHLEEN DR-WILSON AVE	TU	1	
	WILSON AVE-TAFT AVE	TU	2	
	TAFT AVE-HAYES AVE	TU	1	
DAY HOLLOW RD.	RT 26-BOSWELL HILL RD	BCo	1	
	BOSWELL HILL RD-BETTY ST	BCo	N	
	BETTY ST-FLORA ST (+ 1/2 BLOCK)	BCo	1	
E. FRANKLIN ST.	LIBERTY AVE-N. OAK AVE	VE	2	
	N. OAK AVE-ROBBLE AVE	VE	1	
EAST FRONT ST.	FRONT ST-DIVISION ST	VO	1	
	DIVISION ST-VO LINE	VO	N	
EAST MAIN ST.	JOHN ST-FARM ST	VO	2	
	FARM ST (for 0.1 miles)	VO	1	
	0.1 miles from FARM ST-DIVISION ST	VO	2	
FAIRVIEW AVE.	MONROE ST-MERRICK ST	CB	2	
	MERRICK ST-CLAPHAM ST	CB	1	
FARM-TO-MARKET RD.	HOOPER RD-CHRYSLER RD	BCo	1	
	CHRYSLER RD-TU LINE	BCo	N	
FLORAL AVE.	CB LINE-BURBANK AVE	VJC	2	
	BURBANK AVE-BALDWIN AVE	VJC	1	Segment runs along cemetery
	BALDWIN AVE-LUSK AVE	VJC	2	
FREDERICK ST.	NYS 7-BRANDYWINE ST	CB	1	
	BRANDYWINE ST-CHENANGO ST	CB	2	
FRONT ST.	MAIN ST-TORRANCE AVE	TV	2	
	TORRANCE AVE-NYS 434	TV	N	
GLENDALE DR.	RT 17C-JEANETTE RD	TU	N	
	JEANETTE RD-MERRITT RD	TU	2	
	MERRITT RD-MITCHELL ST	TU	1	
	MITCHELL ST-CARL ST	TU	N	
GLENWOOD AVE/RD.	LAKE AVE-SOWDEN ST	CB/BCo	2	
	SOWDEN ST-LEWIS RD	BCo	N	1 side at Broome Developmental
GLENWOOD RD.	FORD RD-JONES RD	TV	2	SE corner at Ford Rd and the NW & SW corners at Jones Rd.
	OAKDALE RD-TOYS R US	VJC	1	
HARRY L DR.	TOYS R US-1 HARRY L DR	VJC	2	
	RT 17C-PROSPECT ST	BCo	2	
HOOPER RD.	PROSPECT ST-WATSON BLVD	BCo	1	
	WATSON BLVD-PAYNTER AVE	BCo	2	
	PAYNTER AVE-BEATRICE LN	BCo	1	
	BEATRICE LN-PRUYNE ST	BCo	2	
	PRUYNE ST-FARM-TO-MARKET RD	BCo	1	
	FARM-TO-MARKET RD.-frontage of MARIAN APTS	BCo	2	
	frontage of MARIAN APTS-PARK MANOR PLAZA	BCo	1	
	PARK MANOR PLAZA ENTRANCE-TAFT AVE	BCo	N	
LYNNHURST DR.	CORNER OF AFRICAN RD	TV	1	
	CORNER OF AFRICAN RD-RANO BLVD	TV	N	
MAIN ST.	RT 434-HAZEL DR	TV	2	
	HAZEL DR (FOR 1/2 BLOCK)	TV	1	
	FROM 1/2 BLOCK-GLENWOOD RD	TV	N	
MAIN ST.	WATKINS AVE-PENNSYLVANIA AVE	TO	1 THEN 2 SIDES	
	PENNSYLVANIA AVE-WILLIAMS AVE	TO	2	
	WILLIAMS AVE-DRIVEWAY	TO	1	
MURRAY HILL RD.	OLD VESTAL RD-NYS 434	TV	N	Only pad at NE corner at NYS 434.
	NYS 434-OXFORD DR	TV	N	Only pad at SE corner at NYS 434.
MYGATT ST.	NY 17 EXIT RAMP-BRIDGE	CB	1	
	BRIDGE-PROSPECT AVE	CB	2	
	PROSPECT AVE-SPRING FOREST AVE	CB	1	
	SPRING FOREST AVE-1/2 BLOCK TO ELM ST	CB	2	
	1/2 BLOCK BEFORE ELM ST-ELM ST	CB	1	
	ELM ST-CLINTON ST	CB	2	

ROAD NAME	SEGMENT	MUNICIPALITY	SIDEWALKS (N=None, 1, or 2 sides)	COMMENTS
N. MCKINLEY AVE.	WATSON BLVD-CORNER OF PINE ST	VE	2	
	CORNER OF PINE ST-0.05 MILES SOUTH	VE	N	
NOWLAN RD.	CHENANGO ST-SALUDA ST	BCo	N	
	SALUDA ST-AVE A	BCo	1	
	AVE A-AVE B	BCo	2	
	AVE B-RR KING	BCo	N	
OAKDALE RD.	MAIN ST-ENDWELL ST	VJC	2	
	ENDWELL ST-HARRY L DR	VJC	N	
	HARRY L DR-ROBINSON HILL RD	VJC	2	
	ROBINSON HILL RD-TU LINE	VJC	N	
PAGE AVE.	W MAIN ST-MARION ST	VE	2	
	MARION-RAILROAD	VE	1	
	RAILROAD-"VE LINE"	VE	2	
PENNSYLVANIA AVE.	HOTCHKISS ST-HYDRANT	CB	2	
	HYDRANT-N. CB LINE	CB	N	
PINE ST.	HAYES ST-N. ARTHUR AVE	BCo	N	
	N. ARTHUR AVE-ROGERS AVE	BCo/VE	1	
	ROGERS AVE-OAK HILL AVE	VE	2	
PROSPECT ST.	CB LINE-LORRAINE AVE	CB	2	
	LORRAINE AVE-MYGATT ST	CB	1	
REYNOLDS RD.	HARRY L DR-OAKDALE MALL 1ST ENTRANCE	VJC	N	
	OAKDALE MALL 1ST ENTRANCE-PIZZA HUT	VJC	2	
	PIZZA HUT-LOU RENE CIRCLE	VJC	1	West side of road,
RIVERSIDE DR.	CB LINE-CRARY AVE	CB	1	
	CRARY AVE-MATTHEWS ST	CB	N	
	MATHEWS ST-KNEELAND AVE	CB	1	
	KNEELAND AVE-BEETHOVEN ST	CB	2	
RIVERSIDE DR.	MAIN ST-TAYLOR ST	TU	1	
	TAYLOR ST-FLORIST SHOP	TU	2	
	FLORIST SHOP-GRAND AVE	TU	1	
ROBINSON ST.	GARDEN ST-PARK (NEAR SUNSET AVE)	CB	1	
	PARK (NEAR SUNSET AVE)-SUNSET AVE	CB	2	
S GRIPPEN AVE.	W MAIN ST-CHURCH ST	TU	1	
	CHURCH ST-GRIPPEN PARK ENTRANCE	TU	2	
S. WASHINGTON ST.	SHERWOOD AVE-MORRIS ST	CB	N	
	MORRIS ST-VESTAL AVE	CB	2	
SYCAMORE RD.	NY 434-SAM'S DRIVEWAY	TV	1	
	SAM'S DRIVEWAY-OLD VESTAL RD	TV	N	
STATE ST.	W. STATE ST-HESS GAS STATION	CB	2	
	HESS GAS STATION-LEWIS ST	CB	1	
TAFT AVE.	HOOPER RD-SMITH DR	BCo	N	
	SMITH DR-COUNTRY CLUB RD	BCo	1	
VESTAL AVE.	PENNSYLVANIA AVE-BROOKFIELD RD	CB	2	
	BROOKFIELD RD-EDGEBROOK RD	CB	1	
VESTAL AVE.	NORTH ST-CENTRAL ST	VE	N	
	CENTRAL ST-MAIN ST	VE	1	
WATSON BLVD.	VE LINE-PIERCE AVE	BCo	2	
	PIERCE AVE-HALL ST	BCo	1	
	HALL ST-HOOPER RD	BCo	2	0.1 mile from HOOPER RD is 1 side

Sidewalks on BC Transit Routes:

Map #18 displays the BC Transit bus routes as of 2011, and whether sidewalks are present on both sides, one side (north or east), one side (south or west), or not present. This data, along with the sidewalk inventory data above, will be used to identify gaps in the sidewalk network along bus routes and on roads providing access to the bus routes.

Map #18



VIII. ACTION PLAN AND IMPLEMENTATION ACTIVITIES

A. Guidelines for Phased Implementation

This action plan will guide BMTS and its member municipalities in the implementation of recommended actions. The result will be a phased program for improving pedestrian facilities in the Binghamton metropolitan area. What follows are examples of high, medium, and lower priority projects which will help involved agencies select implementation projects. Section VI contains the entire list of recommended actions. Implementation of projects does not have to follow the order of prioritization, should an opportunity arise to implement a lower priority action.

1. High Priority/Short Range Actions

- ✓ Continue to collect information about the local use of the transportation system by pedestrians.
- ✓ Continue to inventory pedestrian facilities in the Binghamton urbanized area. Identify pedestrian facility/sidewalk gaps.
- ✓ Evaluate all hazardous intersections, based on accident report analysis. Based on accepted traffic engineering principles, develop and implement appropriate countermeasures.
- ✓ Construct sidewalks to provide access to all schools, including institutions of higher education, not currently served.
- ✓ Construct sidewalks along and providing access to all BC Transit bus routes.
- ✓ Complete the Two Rivers Greenway trail system.
- ✓ Develop projects as candidates for Federal Transportation funding.
- ✓ Include appropriate pedestrian design elements in all currently programmed projects to construct, reconstruct, rehabilitate, improve, or preserve State and local highways, streets, and bridges.
- ✓ Coordinate with the New York State Department of Transportation's regional and statewide pedestrian plans.
- ✓ Continue research into best practices which demonstrate enhanced safety for pedestrians.
- ✓ Promote pilot projects and special events to increase interest in walking.
- ✓ Strengthen and expand multidisciplinary partnerships.
- ✓ Develop and implement a public education program emphasizing safe pedestrian and motorist interaction.
- ✓ Evaluate and prioritize metrics in Table #1 to determine which information exists, or what data can be collected with reasonable effort and benefit.
- ✓ Establish a data collection process for performance metrics in Table #1. As much as is feasible, BMTS to work with the appropriate agencies over time to make robust performance measurement possible and routine.
- ✓ Collect information necessary to perform annual Pedestrian Plan evaluation.

2. Medium Priority/Mid Range Actions

- ✓ Evaluate all signalized intersections not addressed as high priority. Modify signal timing as necessary to provide adequate pedestrian green time; install pedestrian signal indications as needed per the Federal MUTCD; install pedestrian actuation and pedestrian phases, as well as Accessible Pedestrian Signals (APS) where needed to accommodate safe pedestrian crossing.
- ✓ Construct sidewalks to provide access to major employment centers, shopping malls and other

- commercial districts, parks and recreational facilities not currently served.
- ✓ Construct/install pedestrian amenities at high passenger volume bus stops.
- ✓ Create a plan for a network of riverbank/greenway paths. - **COMPLETED**

3. Lower Priority/Long Range Actions

- ✓ Construct sidewalks where they do not exist in high to medium density residential areas.
- ✓ Construct/install pedestrian amenities at intervening bus stops.
- ✓ Expand the Two Rivers Greenway trail system beyond the recommended trails.
- ✓ Identify a system of dedicated bicycle/pedestrian paths, including linkage of existing park and river bank facilities and rail-to-trail conversions. – **COMPLETED**

B. Delineation of Responsibilities

A number of agencies and organizations will be involved in plan implementation. The following delineation of responsibilities will assist in the coordination of their efforts.

1. BMTS Central Staff

Designate a current BMTS Central Staff member to coordinate and lead implementation of the Pedestrian Plan. Responsibilities include:

- ◆ Collect and analyze pedestrian trip making data in the metropolitan area.
- ◆ Collect local system inventory data for input into the BMTS Geographic Information System.
- ◆ Create and periodically update a pedestrian and bicycle system map.
- ◆ Monitor system maintenance.
- ◆ Provide technical assistance to municipalities in improving infrastructure.
- ◆ Review scoping and preliminary design documents for all State and local highway, street, and bridge construction, reconstruction, and improvement projects to ensure inclusion of appropriate pedestrian design elements.
- ◆ Review scoping and preliminary design documents for all multi-use trail projects to ensure inclusion of appropriate pedestrian design elements.
- ◆ Review site development documents as provided under SEQRA, Section 239, and participation on the NYSDOT Region 9 Site Plan Committee to ensure inclusion of appropriate-pedestrian design elements.
- ◆ Provide technical assistance to employers regarding walking commute programs.
- ◆ Coordinate periodic bicycle and pedestrian facility workshops for municipal engineers, planners, highway officials, and elected officials to discuss and monitor plan implementation.
- ◆ Coordinate the efforts of the BMTS Pedestrian and Bicycle Advisory Committee.
- ◆ Work with other agencies to develop a public education and marketing plan to promote a safety consciousness for pedestrians and motorists, and encourage walking.

The BMTS traffic engineer and transportation analyst will assist by:

- ◆ Review scoping and preliminary design documents for all State and local highway, street, and bridge construction, reconstruction, and improvement projects to ensure appropriate inclusion of pedestrian design elements.
- ◆ Review site development documents as provided under SEQRA, Section 239, and participation on the NYSDOT Region 9 Site Plan Committee to ensure appropriate inclusion of bicycle and

pedestrian design elements.

- ◆ Review local accident records to identify hazardous locations.
- ◆ Check signal timings for adequate pedestrian green times as part of the BMTS traffic count program.
- ◆ Provide technical assistance to member jurisdictions regarding the redesign of hazardous intersections and traffic calming strategies.
- ◆ Provide GIS and mapping assistance.

2. New York State Department of Transportation

The NYSDOT Main Office and Region 9 have designated Bicycle and Pedestrian Coordinators. Their responsibilities with respect to the BMTS plan include:

- ◆ Coordination with NYSDOT regional and statewide bicycle and pedestrian planning and implementation activities.
- ◆ Provision of technical and mapping assistance to BMTS Central Staff.
- ◆ Attendance at Advisory Committee meetings.
- ◆ Participation in scoping and preliminary design of Federal aid and State funded highway and bridge projects to ensure inclusion of appropriate pedestrian related design elements.
- ◆ Communication regarding availability of abandoned railroad properties and/or DOT right of way for multi-use trail development.
- ◆ Region 9 – Partner with BMTS to promote implementation of the Two Rivers Greenway trail system.

3. BMTS Pedestrian & Bicycle Advisory Committee

Role of the BMTS Pedestrian and Bicycle Advisory Committee:

- ◆ Serve as a focal point for public participation in implementation of the BMTS Pedestrian Plan.
- ◆ Assist BMTS Central Staff in developing a public education and marketing plan to promote a pedestrian and motorist safety consciousness, and encourage more walking.
- ◆ Review, comment on, and assist in implementing pedestrian and bicycle safety education programs.
- ◆ Review and comment on transportation project design plans.
- ◆ Assist BMTS in informing public of new pedestrian and bicycle facilities.
- ◆ Comment on project priorities in conjunction with BMTS staff and committees; recommend system improvements.
- ◆ Provide volunteer staff for promotional events.
- ◆ Assist BMTS Central Staff in developing system maps; assist in distribution.
- ◆ Advocate needs of pedestrians.

4. BMTS Member Municipalities

Because of their jurisdiction over local streets and sidewalks, local municipalities will have primary responsibility for implementation and maintenance of facilities. Responsibilities include:

- ◆ Participate in development of high priority improvement projects in conjunction with BMTS Central Staff.
- ◆ Include appropriate bicycle and pedestrian design elements in road, street, and bridge construction or reconstruction projects in their jurisdiction.

- ◆ Install additional facilities such as bike racks/lockers in areas recommended by this plan.
- ◆ Continue appropriate maintenance of streets, roads, sidewalks, and any other bicycle and pedestrian facilities in their jurisdiction.
- ◆ Respond to recommendation from the BMTS traffic engineer regarding correction of hazardous locations.

5. Broome County Traffic Safety Board Program

This ongoing program, funded by a grant from the Governor's Traffic Safety Committee, and housed by the Broome County Department of Health, has various responsibilities in the areas of traffic safety. The primary emphasis is education, both through broad public awareness campaigns and through focused efforts. Responsibilities of the Traffic Safety Program Coordinator include:

- ◆ Develop and coordinate bicycle and pedestrian safety plans and programs.
- ◆ Provide information to other plan participants of best practices regarding pedestrian and bicycle safety issues.
- ◆ Advise on and participate in the development of the "Share the Road" public awareness safety campaign.

6. The Health Sector

Additional partnerships between the transportation and health sectors, which typically are in the form of coalitions comprised of representation from many other disciplines, have proven valuable in accomplishing members' complementary goals. Health sector agencies primarily serve as the lead agency for the coalitions. Examples of recent and current coalitions include: Broome County Strategic Alliance for Health (Broome County Health Dept.), Tioga County Healthy Communities Partnership (Tioga County Health Dept. & Rural Health Network of South Central NY), and Stay Healthy Kids Committee (United Health Services). Responsibilities of the Health Sector include:

- ◆ Continue to coordinate as well as administrate multidisciplinary coalitions and partnerships.
- ◆ Use coalitions to organize partners to use their strengths and expertise to develop and implement programs and projects to accomplish members' complementary goals resulting in improved public health. Of particular importance to this Pedestrian Plan is promoting improved health through active living, by enabling and encouraging more walking as a transportation option.

C. Summary of Cost Estimates

Costs of items may vary depending on location and suppliers. Use these figures for planning purposes.

<u>Facility</u>	<u>Specifications</u>	<u>Cost per unit</u>
• Signs (installed):	Average Cost	\$130.00 per sign
• Sidewalks:	Average Cost 4' wide	\$33 per linear foot
• Sidewalks:	Average Cost 5' wide	\$39 per linear foot
• Concrete curbing	Average Cost	\$53 per linear foot
• ADA Curb Ramps:	2 ramps per corner	\$1,250 per corner
• LS Type crosswalk	white epoxy	\$770 each
• Striping:	4" wide (epoxy)	\$3.50 per linear foot
• Pavement Letters:	Variable design (epoxy)	\$70 each
• Pavement Letters;	Variable design (preformed)	\$70 each
• Pavement Symbols	Variable design (epoxy)	\$165 each
• Pavement Symbols	Variable design (preformed)	\$198 each
• 10' multi-use asphalt path	Average cost	\$74 per linear foot
• Pedestrian push button	Existing Signal	\$2,005 each
• Pedestrian push button	New Signal	\$6580 each
• Raised Crosswalk	Average Cost	\$15,000 each
• Mini Roundabout	Average Cost	\$175,000 each
• Solar powered radar speed sign	Average Cost	\$7,000 each

Figures taken from “NYSDOT Quick Estimator Reference - Calculations – Upstate”, 2012. Cost estimates for items not listed can be acquired by contacting NYSDOT Region 9 or the Public Works Dept. or Engineering Departments of counties and local municipalities.

D. Funding Sources

This section lists funding sources commonly used to construct pedestrian facilities on the roadway network, construct separated multi-use trails/greenways, and conduct education and enforcement programs. Though the list is extensive, it is not comprehensive.

FEDERAL FUNDING SOURCES

Transportation Enhancements Program (TEP): Under federal transportation legislation prior to MAP-21, this is a 10% set aside of Surface Transportation Program (STP) funds for projects such as multi-use trails, rail-to-trail conversions, historic preservation, and pedestrian and bicycle improvement projects. Applicant projects are selected for funding through a NYSDOT solicitation and competitive process. As of January 2013, some SAFETEA-LU TEP funds remain in New York State that have not been obligated for projects. A solicitation for project applications is planned, which would be an opportunity for funding a local project.

<https://www.dot.ny.gov/programs/tep>

Under MAP-21, federal transportation funding is organized within several core programs, as noted in Section IV.A. of this Pedestrian Plan. Pedestrian walkways and ADA sidewalk modification are eligible activities under the **Surface Transportation Program (STP)**. Selection of these projects is the responsibility of the BMTS Policy Committee. The federal share is 80%, with the State and municipal project sponsor paying the remainder.

<http://www.fhwa.dot.gov/map21/stp.cfm>

STP funds are limited and many projects in the BMTS area compete for funds. Every two years, BMTS updates its Transportation Improvement Program (TIP). This involves selecting and ranking projects, and scheduling ranked projects for design and construction over the next five year period. The TIP is financially constrained and can only program projects within the funding levels that are available. Because MAP-21 expires on September 30, 2014, there is some uncertainty about future funding availability beyond that date.

Even if no solely pedestrian projects can be added to the TIP in the immediate future, it is possible to progress with bicycle and pedestrian improvements. Opportunities to include low-cost pedestrian improvements such as better pavement markings (e.g. high visibility crosswalks), and signing can be incorporated into road and bridge project designs. This should also be pursued in non-federal aid road projects funded by municipalities.

Federal funding sources more directly purposed for pedestrian infrastructure investments has changed under MAP-21. The Transportation Enhancements, Safe Routes to School, and Recreational Trails programs have all been consolidated along with other uses into a new program called Transportation Alternatives.

Transportation Alternatives (TA) -The state DOT distributes 50% of the TA money based on population. Metropolitan Planning Organizations (MPOs) with a population greater than 200,000 have their own competitive grant process. Areas with populations below 200,000, such as the BMTS area, petition the state directly for funds in a competitive grant process.

The other 50% of TA funds may also be available directly from New York State via a competitive grant process. Those that are eligible to apply include:

1. Local governments
2. Regional transportation authorities
3. Transit agencies
4. Natural resource or public land agencies
5. School districts, local education agencies, or schools
6. Tribal governments
7. Any other local or regional governmental entity with responsibility for or oversight of transportation or recreational trails (other than a metropolitan planning organization or a state agency) that the state determines to be eligible, consistent with the goals of this subsection.

To be eligible for TA funding, projects must focus fit into one of these areas:

1. Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized 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.
2. 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.
3. Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other nonmotorized transportation users.
4. Construction of turnouts, overlooks, and viewing areas.
5. Community improvement activities, including-
 - A. inventory, control, or removal of outdoor advertising;
 - B. historic preservation and rehabilitation of historic transportation facilities;
 - C. vegetation management practices in transportation rights-of-way to improve roadway safety, prevent against invasive species, and provide erosion control; and
 - D. archaeological activities relating to impacts from implementation of a transportation project eligible under title 23.
 - E. Any environmental mitigation activity, including pollution prevention and pollution abatement activities and 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 of title 23; or
 - ii. reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats.

The federal share is 80%, with the project sponsor paying the remainder.

<http://www.fhwa.dot.gov/map21/tap.cfm>

Recreational Trails Funds- Under MAP-21, the Recreational Trails Program is no longer guaranteed but rather must be opted-in each year. Thankfully for NYS, Gov. Cuomo has decided to opt-in to the Recreational Trails program for this year. This means that the program will continue to be funded at 2009 levels. The program funds trails for recreational modes such as walking, hiking, bicycling, in-line

skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding and four-wheel driving. The program is administered by New York State's Recreational Trails Program. <http://nysparks.com/grants/recreational-trails/default.aspx>

Congestion Mitigation and Air Quality Improvement Program (CMAQ)- *BMTS is not eligible for CMAQ funding since the Binghamton Urban Area currently meets air quality standards. This funding source is provided for informational purpose, should air quality compliance or CMAQ eligibility criteria change.* Bicycling and walking are cleaner forms of transportation. Because of their positive impact upon air quality improvements, bicycling and walking improvements are eligible for CMAQ funding. <http://www.fhwa.dot.gov/map21/cmaq.cfm>

Funding for pedestrian and bicycle projects can be also provided through the **Highway Safety Improvement Program (HSIP)**, which aims to improve roadway safety for all modes of travel. A highway safety improvement project is any strategy, activity or project on a public road that is consistent with the data-driven State Strategic Highway Safety Plan (SHSP) and corrects or improves a hazardous road location or feature or addresses a highway safety problem. Workforce development, training, and education activities are also an eligible use of HSIP funds. The program is largely underutilized and can provide funds for bicycle improvements in your community. <http://www.fhwa.dot.gov/map21/hsip.cfm>

Section 402- The State and Community Highway Safety Grant Program, commonly referred to as Section 402, was initially authorized by the Highway Safety Act of 1966 and has been reauthorized and amended a number of times since then, most recently under MAP-21, with relatively few changes from SAFETEA-LU. The program is jointly administered by the National Highway Traffic Safety Administration (NHTSA) and the Federal Highway Administration (FHWA) at the federal level and by the New York State Governor's Traffic Safety Committee (GTSC) at the state level. The Section 402 program provides grants to states to improve driver behavior and reduce deaths and injuries from motor vehicle-related crashes. Funds can be spent in accordance with national guidelines for programs to improve pedestrian and bicycle safety through safety and education trainings, as well as traffic law enforcement programs. Broome and Tioga County Health Departments have received Section 402 grants. BMTS has partnered with the Broome County Health Department on several pedestrian and bicycle safety education outreaches including Walk to School Days, and interactive Pedestrian & Bike Safety Displays at Binghamton Mets baseball games.

<http://www.ghsa.org/html/stateinfo/programs/index.html>

<http://www.safeny.ny.gov/overview.htm#grant>

Community Development Block Grant Program (CDBG) provides annual grants on a formula basis to local governments and states for a wide range of community planning initiatives. CDBG funds are intended for activities that benefit low- and moderate-income persons, prevent or eliminate slums or blight, and address urgent community development needs. Examples of the types of pedestrian related projects they fund are: commercial district streetscape improvements, sidewalk improvements, safe routes to school, neighborhood-based bicycling and walking facilities (including trails) that improve local transportation options or help revitalize neighborhoods.

<http://www.hud.gov/cdbg>

NEW YORK STATE FUNDING SOURCES

Consolidated Local Street and Highway Improvement Program (CHIPS): A New York State-funded program administered through the NYSDOT to assist localities in financing the construction, reconstruction or improvement of local highways, bridges, highway-railroad crossings and other local facilities, including provisions for bicycle, pedestrian and traffic calming measures.

<https://www.dot.ny.gov/programs/chips>

Local Waterfront Revitalization Programs (LWRP): This is a locally prepared, comprehensive land and water use program for a community's natural, public, working waterfront, and developed costal area. It provides a comprehensive structure within which critical coastal issues can be addressed. This program is administered by the Department of State and provides 50/50 matching grants to local communities from the New York State Environmental Protection Fund's.

<http://www.dos.ny.gov/communitieswaterfronts/>

The New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) Environmental Protection Fund Programs: Money is available for projects such as municipal parks, historic preservation, and the acquisition and development of parklands.

<http://nysparks.com/grants/>

Architecture, Planning and Design Program: The New York State Council on the Arts makes over 2500 grants each year to arts organizations in every arts discipline throughout the state. These grants are used to bring high quality artistic programs to the citizens of the state through supporting the activities of nonprofit arts and cultural organizations.

<http://www.nysca.org/public/guidelines/architecture/index.htm>

A Grant Program of the Preservation League of New York State and the New York State Council on the Arts: The Preserve New York Grant Program provides support for three types of projects: cultural resource surveys, historic structure reports, and historic landscape reports. An applicant must be a not-for-profit group with tax-exempt status or a unit of local government. State agencies and religious institutions are not eligible to apply. The program generally provides only partial support on a competitive basis. Grants are likely to range between \$3,000 and \$10,000.

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

New York Main Street Program: The Office of Community Renewal administers this program which provides financial resources and technical assistance to communities to strengthen the economic vitality of the state's traditional main streets and neighborhoods. This program provides funds to local governments, business improvement districts and other not-for-profit organizations that are committed to revitalizing historic downtowns, mixed-use neighborhood commercial districts and village centers.

<http://www.nyshcr.org/Programs/NYMainStreet/>

PRIVATE FUNDING SOURCES

Advocacy Advance Rapid Response Grants- Rapid Response Grants help state and local advocacy organizations take advantage of unexpected opportunities to win, increase, or preserve funding for biking and walking. These grants, accepted on a rolling basis, are for short campaigns that will increase or preserve the investment in biking and walking in states, MPOs, and cities where program choices are being made on how to spend safety, air quality, bridge, and local highway funding.
<http://www.advocacyadvance.org/grants>

A wide range of **foundations** have provided funding for bicycling and walking. A few national and large regional foundations have supported the national organizations involved in pedestrian and bicycle policy advocacy. However it is usually regional and local foundations that get involved in funding particular bicycle, pedestrian or trail projects. These same foundations may also fund statewide and local advocacy efforts as well. The best way to find such foundations is through the research and information services provided by the national **Foundation Center** (www.foundationcenter.org). They maintain a huge store of information including the guidelines and application procedures for most foundations, and their past funding records.

Robert Wood Johnson Foundation (RWJF) awards grants for bicycle and pedestrian projects if they can be tied into research or promotion of health and physical activity.
<http://www.rwjf.org/>

OTHER FUNDING SOURCES

AmeriCorps: Offers people power for programs that protect and preserve neighborhood environments.
<http://www.rhnsnyc.org/> or <http://www.americorps.gov>

Supplemental resources may be available from many private and public grant sources, as well as **public/private partnerships**. These partnerships have proven to be successful in funding pedestrian and bicycle improvements, and in increasing the awareness of the value of these travel modes to the private sector. For example, retail and commercial developers can be encouraged to provide appropriate facilities within the context of their development. Advertising space can be rented to pay for bus shelters or benches. Central business district merchants, who understand that increases in human scale traffic are good for business, may be willing to fund projects for sidewalk improvements, bus stop amenities, or bicycle racks. **Service organizations** may wish to participate in an "adopt a bus stop" maintenance program. Finally, in many communities, **citizens groups** have been formed to finance these sorts of improvements.

Many municipalities that have benefitted from the programs listed above have found that matching dollars, which are necessary to receive funding, can be contributed through in-kind services.

Other Sources for Funding and Pedestrian Project Information:

(Most of these websites will have links to additional websites that may be useful.)

American Trails - <http://americantrails.org/resources/funding/index.html>

America Walks - <http://www.americawalks.org/>

Association of Pedestrian & Bicycle Professionals - <http://www.apbp.org/>

National Center for Bicycling and Walking - <http://www.bikewalk.org/>

National Center for Safe Routes to School - <http://www.saferoutesinfo.org/>

National Transportation Enhancements Clearinghouse - <http://www.enhancements.org/>

Parks & Trails New York - <http://www.ptny.org>

Pedestrian and Bicycle Information Center - <http://www.walkinginfo.org>

Rails to Trails Conservancy - <http://www.railstotrails.org>

Safe Routes to School National Partnership - <http://www.saferoutespartnership.org/>

APPENDIX 1
BIBLIOGRAPHY

BIBLIOGRAPHY

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APPENDIX 2

GLOSSARY OF TERMS

GLOSSARY OF TERMS

American Association of State Highway Transportation Officials (AASHTO): An organization of state departments of transportation which promulgates transportation design and operational policies.

Americans with Disabilities Act: 1990 federal legislation that resulted in significant improvements to make infrastructure accessible to all persons regardless of disability.

Barriers: In some areas, there are physical barriers to walking caused by topographical features, such as rivers, railroads, freeways or other impediments. In such cases, providing a facility to overcome a barrier can create new opportunities for walking.

Bicycle: A two or three wheeled vehicle ridden and propelled by a person or persons in combination with belts, chains or gears, and wheels (in tandem or tricycle) except devices intended for sole use on a sidewalk or by pre-teenage children (NYS Vehicle and Traffic Law).

Bicycle and Pedestrian Facilities: Infrastructure designed specifically to accommodate pedestrians and cyclists. Facilities can include sidewalks, parking, mapping, areas set aside specifically for pedestrian or bicycle use, and/or shared roadways not specifically designated for bicycle use.

Binghamton Metropolitan Transportation Study: The MPO for the Binghamton metropolitan region.

Broome County Environmental Management Council (EMC): Broome County citizens' advisory board to Broome County government on local environmental matters.

Class I, II, III Bicycle Facility: The terms sometimes assigned to bicycle paths (Class I), bicycle lanes (Class II), and shared road facilities (Class III).

The Federal Highway Administration (FHWA): provides stewardship over the construction, maintenance and preservation of the Nation's highways, bridges and tunnels. FHWA also conducts research and provides technical assistance to state and local agencies in an effort to improve safety, mobility, and livability, and to encourage innovation.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA): Legislation passed by the US Congress that authorizes all federal surface transportation funding programs for a six year period. Among many other factors, it required the consideration of bicycle and pedestrian needs, environmental concerns such as air quality and energy usage, and public participation in transportation planning.

Multi-use trail: Also known as a "Rail-Trail", it is a facility shared by pedestrians and bicyclists that is separated from motor vehicles and has minimal cross flow by motor vehicles.

Moving Ahead for Progress in the 21st Century Act (MAP-21). Legislation passed by Congress in 2012 that funds surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and

2014. MAP-21 creates a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991.

Metropolitan Planning Organization (MPO): Regional transportation planning organizations established by federal law for urban areas with more than 50,000 people.

Manual on Uniform Traffic Control Devices (MUTCD): defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic

New York State Department of Transportation (NYSDOT): The New York State agency responsible for building and maintaining state roads. BMTS falls into NYSDOT Region 9.

NYSDOT Highway Design Manual: (1) to provide requirements and guidance on highway design methods and policies which are as current as practicable, and (2) to assure uniformity of design practice throughout the New York State Department of Transportation consistent with the collective experience of the Department of Transportation, the American Association of State Highway and Transportation Officials, and the Federal Highway Administration.

Para-transit: Public transportation offered on a demand-responsive rather than fixed route-fixed schedule basis. Para-transit is typically oriented to special populations including elderly persons with disabilities, and rural residents.

Pedestrian: A person on foot or in a wheelchair (NYS Vehicle and Traffic Law).

Pedestrian Facilities: Any features or elements used by disabled or able-bodied pedestrians to move from one point to another including sidewalks, crossings, refuge islands, pedestrian signs and signals, curb ramps, stairs, and general pedestrian areas such as plazas, public transit loading zones, and grade- separation structures. Pedestrian facilities also include call boxes, street furniture, etc.

Roadway Safety Assessment (RSA): A RSA is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. An assessment team considers the safety of all users, qualitatively estimates and reports on safety issues, and suggests opportunities for safety improvements.

Sidewalk: A smooth, paved, stable and slip-resistant, exterior pathway intended for pedestrian use along a vehicular way separated with a curb offset.

State Environmental Quality Review Act (SEQRA): The State Environmental Quality Review Act (6NYCRR Part 617) established a process that considers environmental factors early in the planning stages of actions that are directly undertaken, funded, or approved by local, state, or regional agencies (Jensen et al, 1992).

Traffic Calming: A technique of making streets safer for pedestrians and cyclists by slowing the flow of traffic. Methods to accomplish traffic calming include building pedestrian islands, slowing traffic through speed limits, narrowing and curving streets, installation of stop signs, and the planting

of trees.

Transportation Improvement Plan (TIP): A five year schedule of federally aided highway, bridge, transit, and other improvements developed by MPOs for their regions.

APPENDIX 3
STATE AND LOCAL LAWS

EXHIBIT 1

SECTIONS OF THE NEW YORK STATE VEHICLE AND TRAFFIC LAW PERTAINING TO PEDESTRIANS

ARTICLE 26: RIGHT OF WAY

§1146 **Drivers to Exercise Due Care.** Notwithstanding the provisions of any other law to the contrary, every driver of a vehicle shall exercise due care to avoid colliding with any bicyclist [or] pedestrian...upon the roadway and shall give warning by sounding the horn when necessary.

ARTICLE 27: PEDESTRIANS' RIGHTS AND DUTIES

§1150 **Pedestrians subject to traffic regulation.** Pedestrians shall be subject to traffic control signals as provided in §1111 of this title, but at all, other places pedestrians shall be accorded the privileges and shall be subject to the restrictions stated in this article.

§1151 **Pedestrians' right of way in crosswalks.** (a) When traffic-control signals are not in place or not in operation the driver of a vehicle shall yield the right of way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk on the roadway upon which the vehicle is traveling, except that any pedestrian crossing a roadway at a point where a pedestrian tunnel or overpass has been provided shall yield the right of way to all vehicles.

(b) No pedestrian shall suddenly leave a curb or other place of safety and walk or run into the path of a vehicle which is so close that is impractical for the driver to yield.

(c) Whenever any vehicle is stopped at a marked crosswalk or at any unmarked crosswalk at an intersection to permit a pedestrian to cross the roadway, the driver of any other vehicle approaching from the rear shall not overtake and pass such stopped vehicle.

§1151-a **Pedestrians' right of way on sidewalks.** The driver of a vehicle emerging from or entering an alleyway, building, private road, or driveway shall yield the right of way to any pedestrian approaching on any sidewalk.

§1152 **Crossing at other than crosswalks.** (a) Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right of way to all vehicles upon the roadway.

(c) No pedestrian shall cross a roadway intersection diagonally unless authorized by official traffic control devices; and, when authorized to cross diagonally, pedestrians shall cross only in accordance with the official traffic control devices pertaining to such movements.

§1156 **Pedestrians on roadways.** (a) Where sidewalks are provided and they may be used with safety it shall be unlawful to walk along and upon an adjacent roadway.

(b) Where sidewalks are not provided any pedestrian walking along and upon a highway shall when practicable walk only on the left side of the roadway or its shoulder facing traffic which may approach from the opposite direction. Upon the approach of any vehicle from the opposite direction, such pedestrian shall move as far to the left as is practicable.

ARTICLE 37: REGULATION OF TRAFFIC BY DEPARTMENT OF TRANSPORTATION AND OTHER STATE AUTHORITIES

§1621 Other traffic regulations on state highways and on Indian reservations. (a) The department of transportation with respect to state highways maintained by the state, the intersection of any highway with a state highway maintained by the state, and any highway intersecting or meeting a state highway maintained by the state for a distance not exceeding one hundred feet from such state highway maintained by the state, may by order, rule or regulation:

2. Prohibit, restrict or regulate the operation of vehicles on any controlled-access highway or the use of any controlled-access highway by any limited use vehicle, pedestrian, horseback rider or vehicle or device moved by human or animal power.

16. Designate a portion of a slope as a path for the use of bicycles.

17. Order signs or markings to identify the portion of the highway to be used for bicycle travel.

ARTICLE 39: REGULATION OF TRAFFIC BY CITIES AND VILLAGES

§1641 Additional traffic regulations on all highways except state highways maintained by the state in cities and villages. In addition to the other powers granted by this article, the legislative body of any city or village with respect to highways (which term for the purposes of this section shall include private roads open to public motor vehicle traffic) in such city or village except state highways maintained by the state, may by local law, ordinance, order, rule or regulation:

1. Prohibit, restrict or regulate the operation of vehicles on any controlled-access highway or the use of any controlled-access highway by any vehicle, device moved by human power or pedestrian.

5. Designate a portion of a slope as a path for the use of bicycles.

6. Order signs or markings to identify the portion of the highway to be used for bicycle travel.

ARTICLE 40: REGULATION OF TRAFFIC BY COUNTY SUPERINTENDENT OF HIGHWAYS

§1650 Traffic regulations on county roads. (a) The county superintendent of highways of a county with respect to county roads in such county, may by order, rule or regulation:

6. Order signs or markings to identify the portion of the highway to be used for bicycle travel.

7. Designate preferential use lanes for specified types or classes of vehicles.

ARTICLE 41: REGULATION OF TRAFFIC BY TOWNS

§1660 Traffic regulation in all towns. (a) The town board of any town with respect to highways outside of villages in any such town, but not including state highways maintained by the state except with respect to subdivisions six, eight, nine and ten, subject to the limitations imposed by section sixteen hundred eighty-four may by ordinance, order, rule or regulation:

12. Prohibit, restrict or regulate the operation of vehicles on any controlled-access highway or the use of any controlled-access highway by any vehicle, device moved by human power or pedestrian.

14. Regulate the crossing of any roadway by pedestrians.

21. Designate a portion of a slope as a path for the use of bicycles.

22. Order signs or markings to identify the portion of the highway to be used for bicycle travel.

EXHIBIT 2

TO: Rose Sotak, Chairperson
Louis Caforio
Laws & Legislation/Intergovernmental Committee

FROM: Peter A. Olevano
Comm. of Public Works

DATE: September 24, 2007

SUBJECT: Pedestrian Policy

I hereby request a Public Hearing to consider amending Chapter A208 of the Town of Union Code as follows:

ADD:

ARTICLE V PEDESTRIAN POLICY

A208-20.General

The Town of Union is a pedestrian – friendly community, and will provide and maintain facilities for pedestrians as an integrated part of its new development and redevelopment projects. Property owners and agencies are responsible to construct and maintain facilities in accordance with this policy. Pedestrian facilities include sidewalks, traffic calming features, crossing and accessibility features such as signals, curb ramps and signage.

1. **Sidewalks:** sidewalks will be installed in accordance with the community Pedestrian Plan. Minimum width of all walks shall be five (5') feet with a four and one half (4 ½') foot planting strip (or 9.5' wide sidewalks in Central Business Districts) unless prohibited by documented environmental constraints. Sidewalks must be constructed continuously across all driveways.
2. **Crossings:** safe crossings shall be provided at all locations identified, in accordance with the Pedestrian Policy. All crosswalk, signal and curb ramp features shall comply with the minimum guidelines established in the *NYS DOT Highway Design Manual* and the *Manual of Uniform Traffic Control Devices* (MUTCD). Traffic calming features shall be provided where necessary to balance pedestrian safety with vehicular speeds and volumes.
3. **Accessibility:** all pedestrian facilities will comply with the Americans with Disability Act (ADA) guidelines.
4. **Maintenance:** Each owner or occupant of any house or other building, and any owner or person entitled to possession of any vacant lot, and any person having charge of any facility or public building shall be responsible for maintaining the pedestrian facilities adjacent to their property. During the winter season, this shall include keeping the sidewalk free of snow or ice and at all other times shall keep the sidewalk in good and safe repair in a clean condition, free from obstructions or encumbrances.

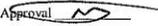
Respectfully submitted,

Peter A. Olevano, Comm. of Public Works

PAO/mb

Cc: Supervisor
Board
Attorney
Clerk
Board Secretary

EXHIBIT 3

Legal Counsel Approval 
RL11-109

Introductory No. R11-69
Permanent No. R11-66



THE COUNCIL OF THE CITY OF BINGHAMTON STATE OF NEW YORK

Date: July 20, 2011

Sponsored by Council Members: Weslar, Webb, Collins, Massey, Rennia, Kramer

Introduced by Committee: Municipal and Public Affairs

RESOLUTION *entitled*

A RESOLUTION ESTABLISHING A SUSTAINABLE COMPLETE STREETS POLICY FOR STREET AND TRANSPORTATION PROJECTS

WHEREAS, "Complete Streets" are defined as roadways that enable safe and convenient access for all users, including bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation and seniors; and

WHEREAS, "Sustainable Complete Streets" are defined as Complete Streets with elements of design, construction and operation that also incorporate environmental sustainability; and

WHEREAS, streets that support and invite multiple uses, including safe, active and ample space for pedestrians, bicycles and public transportation, are more conducive to the public life and efficient movement of people than streets designed primarily to move automobiles and trucks; and

WHEREAS, promoting pedestrian, bicycle and public transportation travel as an alternative to the automobile reduces negative environmental impacts, promotes healthy living, and is less costly to the commuter; and

WHEREAS, the full integration of all modes of travel in the design of streets and highways will increase the capacity and efficiency of the road network, reduce traffic congestion by improving mobility options, limit greenhouse gas emissions and improve the general quality of life; and

WHEREAS, many studies show that when roads are better designed for bicycling, walking and transit use, more people utilize them for alternative modes of transit; and

WHEREAS, the design and construction of new roads and facilities should anticipate and provide for future demand for biking, walking and other alternative transportation facilities and not preclude the provision of future improvements; and

WHEREAS, Complete Streets are supported by the Institute of Traffic Engineers, the American Planning Association and many other transportation, planning and public health professionals.

**THE COUNCIL OF THE CITY OF BINGHAMTON
STATE OF NEW YORK**

Date: July 20, 2011

NOW, THEREFORE, the Council of the City of Binghamton, duly convened in regular session, does hereby:

RESOLVE, that the City hereby establishes and adopts a Sustainable Complete Streets policy whereby all street projects, including design, planning, reconstruction, rehabilitation, maintenance or operations by the City of Binghamton shall be designed and executed in a balanced, responsible and equitable way to accommodate and encourage travel by public transportation vehicles and their passengers, bicyclists and other wheeled modes of transportation, and pedestrians of all ages and abilities, in accordance with established Best Practice Design Guidelines for Complete Streets and Sustainable Complete Streets and in consultation with the AASTHO Guide for Development of Bicycle Facilities and the AASTHO Guide for Pedestrian Facilities; and be it further

RESOLVED, the City of Binghamton shall strongly consider the needs of drivers, public transportation vehicles and patrons, bicyclists, wheelers, and pedestrians of all ages and abilities in all planning, programming, design, construction, reconstruction, retrofit, operations and maintenance activities and products; and be it further

RESOLVED, the City shall view all transportation improvements as opportunities to improve safety, access and mobility for all travelers in the City and shall recognize bicycle, pedestrian and transit modes as integral elements of the transportation system.

I hereby certify the above to be a true copy
of the legislation adopted by the Council
of the City of Binghamton at a meeting
held on 7/20/11. Approved by the
Mayor on 7/24/11.

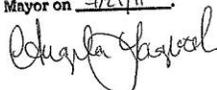


EXHIBIT 4 - TOWN OF CHENANGO – SNOW REMOVAL

From: Thomas Geisenhof [assessor@townofchenango.com]

Sent: Thursday, December 13, 2012 4:04 PM

To: Reigle, Scott E.

Subject: snow removal

Scott,

Below is our Town's "Sidewalk Ordinance". The definition spells out the commercial district. Letter C tells the property owners within that district that they will be assessed a fee (set by the Town Board: \$.3548 per lineal foot) for the removal of snow. The plan works very well as the Town pools the property owners' \$ to buy equipment and fuel to get a great, consistent and timely service... A lot with a 200lf of frontage pays approximately \$71.00 per winter, no matter how many times it snows...

TOWN OF CHENANGO SIDEWALK ORDINANCE

ARTICLE II, Snow and Ice Removal From Sidewalks [Adopted 11-2-1987 by L.L. No. 6-1987; amended in its entirety 8-1-2005 by L.L. No. 2-2005]

§ 60-4. Purpose.

These amendments to the Code of the Town of Chenango are enacted for the purpose of promoting the health, safety and general welfare of the community by imposing a duty on adjoining and abutting landowners to public sidewalks in the Town of Chenango to maintain, repair and keep them clear of snow and ice accumulations and other obstructions, and to provide for the assessment of an annual fee for seasonal snow removal from sidewalks located within a commercial district.

§ 60-5. Definitions.

For purposes of this article, the following words shall have the meanings indicated:

ABUTTING OWNER OR OCCUPANT -- The owner or occupant of any lands immediately adjoining any public sidewalk within the Town of Chenango.

COMMERCIAL DISTRICT -- Any properly constructed sidewalk areas (including driveways as part of the walking lane) abutting Route 11 (Upper Front Street) from the Town of Dickinson line to the intersection of Routes 11 and 12, and any properly constructed sidewalk areas abutting Route 12 continuing north from this intersection to the intersections of Route 12 and Theresa Boulevard, and any properly constructed sidewalk areas abutting Route 12A to the Town of Fenton line, and any properly constructed sidewalk areas abutting Kattleville Road from the intersection of Route 12A and Kattleville Road to the intersection of Kattleville Road and River Road. [Amended 1-4-2012 by L.L. No. 1-2012]

§ 60-6. General maintenance.

- A. The owners or occupants of all lots and premises within the Town of Chenango abutting or adjacent to any public sidewalk shall be required to maintain, repair, replace and keep safe that sidewalk.
- (1) At such time as knowledge of a required maintenance or repair of a defective sidewalk in the street right-of-way is brought to the attention of the Town, a written notice will be sent to the abutting property owner, ordering proper maintenance, repair or replacement of said sidewalks within 30 days from receipt of the notice. If, upon the expiration of 30 days from the receipt of the

notice, required work has not been done or is not in the process of completion, the Town may cause the same to be maintained, required or replaced, and the cost thereof shall be assessed to the property thereon.

(2) For purposes of this article, a "defective sidewalk" means any public sidewalk exhibiting one or more of the following characteristics: vertical separations equal to 3/4 inch or more; horizontal separations equal to 3/4 inch or more; holes or depressions equal to 3/4 inch or more; spalling over 50% of a single square or panel of the sidewalk with one or more depressions equal to 1/2 inch or more; a single square or panel of sidewalk cracked in such a manner that no part thereof has a piece greater than one square foot (without a crack) or is cracked in such a manner that it constitutes a danger or a potential danger to the public; sidewalk with any part thereof missing to full depth; and deviation of the stacked and constructed grade equal to 3/4 inch or more.

B. Snow and ice removal. Between the months of November 1 to April 1 each year hereafter, all snow, ice and other obstruction upon any public sidewalk in the Town shall be removed by the owner or occupant of the adjoining land immediately after such snow, ice, dirt or other obstruction is deposited thereon. Whenever the owner or occupant of the adjoining land fails to remove snow, ice, dirt or other obstruction therein from the sidewalk adjacent to or upon their lots and premises in or along the public street and right-of-way in the Town within 24 hours from the time when such snow, ice, dirt or other obstruction has been deposited thereon, or within 12 hours after notice by the Ordinance Office of the Town to remove the same, the Town Board may remove said snow, ice, dirt or other obstruction from said sidewalk or cause the same to be done by its agents or employees and to clean or cause to be cleaned said sidewalk, and the expense thereof shall constitute and be a lien upon the adjoining premises and charged and assessed against the same.

C. Snow removal charge in Commercial District. Each property owner or occupant abutting public sidewalks with the Commercial District defined by this article shall be assessed an annual fee for seasonal snow removal by the Town Board based upon the number of linear feet of property abutting each sidewalk area (including driveways that are part of the walking lane).

D. Violations:

(1) Redeposits of snow caused by indirect weather-related events, such as by persons or agencies other than the Town of Chenango, either intentionally or unintentionally, will be considered a violation of this article.

(2) It is hereby unlawful for any person, partnership or corporation to park any part of a vehicle, to place, pile or accumulate any goods, wares, merchandise, boxes, containers, stands, commodities or article of any kind or nature on or above any part of public sidewalks within the Town, providing that nothing herein contained shall be construed to prevent any such items from being taken to or from any premises in the ordinary course of delivery or transportation.

APPENDIX 4

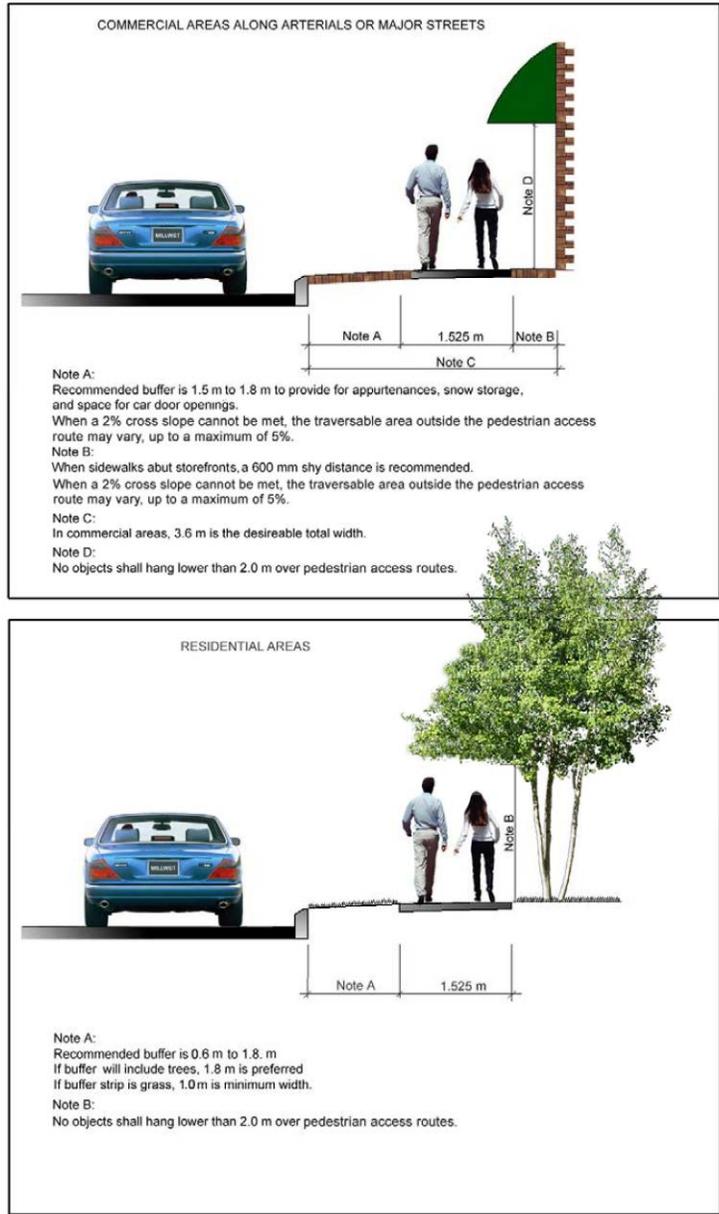
PEDESTRIAN FACILITY DESIGN INFORMATION

EXHIBIT 1

18-30

PEDESTRIAN FACILITY DESIGN

Exhibit 18-9 Sidewalk Placement within the Right of Way



§18.6.6

03/30/06

EXHIBIT 2

Land-Use/Roadway Functional Classification/ and Dwelling Unit	New Urban and Suburban Streets	Existing Urban and Suburban Streets
Commercial and Industrial (All Streets)	Both sides.	Both sides. Every effort should be made to add sidewalks where they do not exist and complete missing links.
Residential (Major Arterials)	Both sides.	Both sides.
Residential (Collectors)	Both sides.	Multifamily—both sides.
		Single family dwellings—prefer both sides; require at least one side.
Residential (Local Streets) More than 4 Units Per Acre	Both sides.	Prefer both sides; require at least one side.
1 to 4 Units per Acre	Prefer both sides; require at least one side.	At least 4-foot shoulder on both sides required.
Less than 1 Unit per Acre	One side preferred; shoulder on both sides required.	One side preferred, at least 4-foot shoulder on both sides required.
NOTES:		
<p>1) Any local street within two blocks of a school site that would be on a walking route to school—sidewalk and curb and gutter required.</p> <p>2) Sidewalks may be omitted on one side of a new street where that side clearly cannot be developed and where there are no existing or anticipated uses that would generate pedestrian trips on that side.</p> <p>3) Where there are service roads, the sidewalk adjacent to the main road may be eliminated and replaced by a sidewalk adjacent to the service road on the side away from the main road.</p> <p>4) For rural roads not likely to serve development, a shoulder at least 4 feet in width, preferably 8 feet on primary highways, should be provided. Surface material should provide a stable, mud-free walking surface.</p>		

Guidelines for Installing Sidewalks

Source: *Design and Safety of Pedestrian Facilities*,
Institute of Transportation Engineers, 1998, p. 31

EXHIBIT 3

Federal Manual on Uniform Traffic Control Devices (MUTCD)

2009 Edition

Page 55

Figure 2B-2. Unsignalized Pedestrian Crosswalk Signs

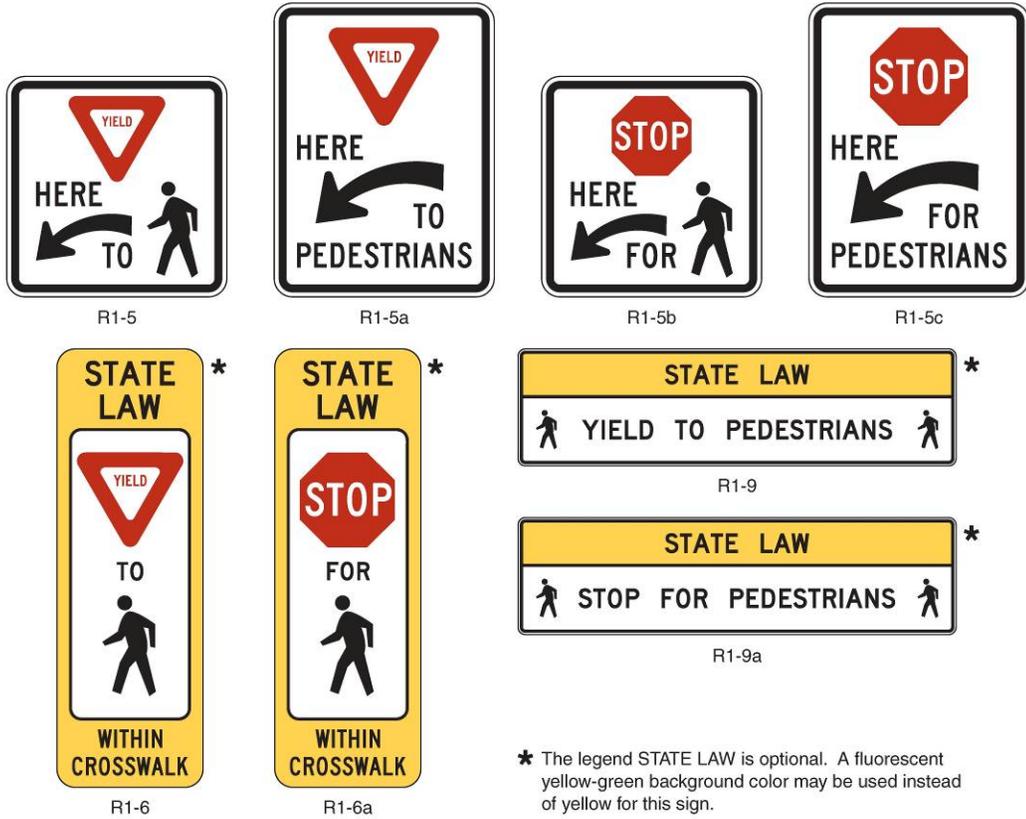
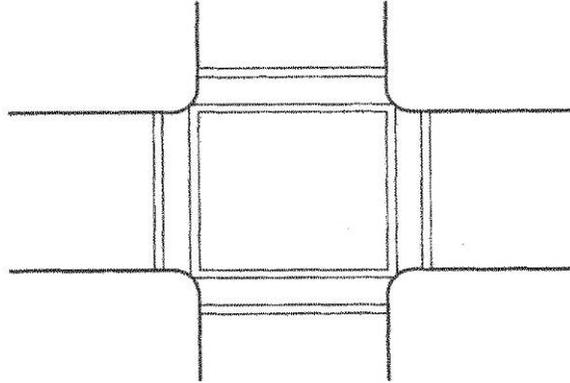
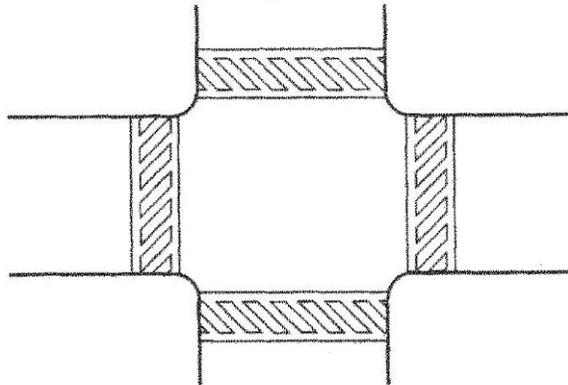


EXHIBIT 4

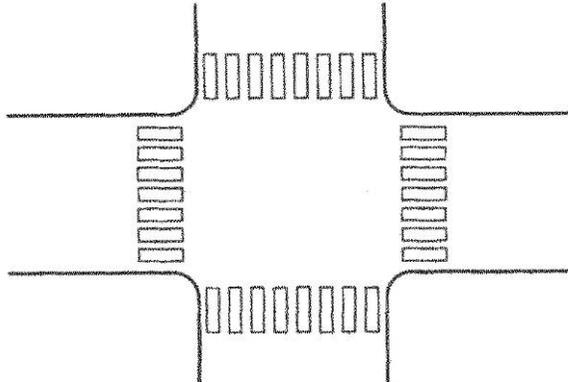
a — Standard crosswalk marking.



b — Crosswalk marking with diagonal lines for added visibility.



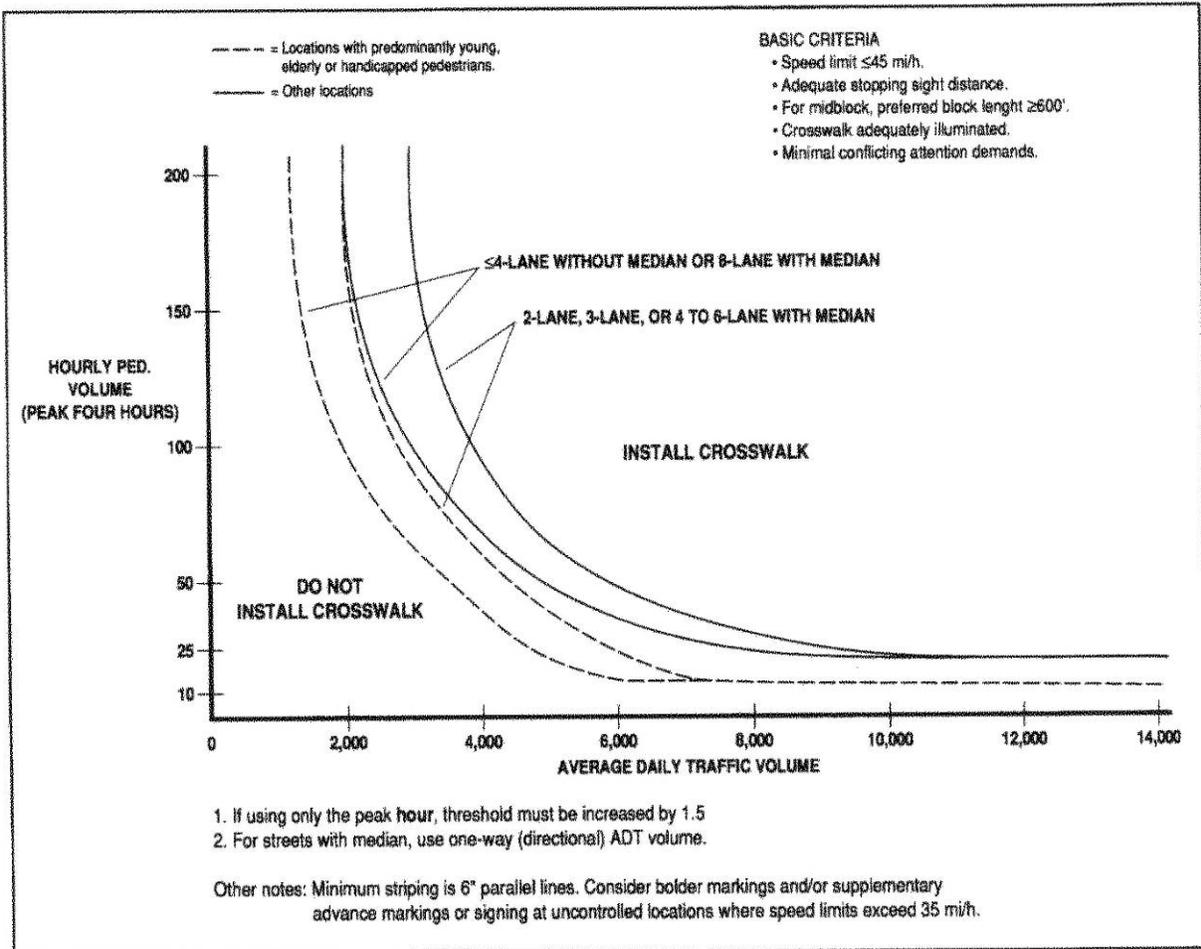
c — Crosswalk marking with longitudinal lines for added visibility.



Typical Crosswalk Markings

Source: *Design and Safety of Pedestrian Facilities*,
Institute of Transportation Engineers, 1998, p. 53

EXHIBIT 5



Guidelines for Crosswalk Installation at Uncontrolled and Mid-block Crossings

*Source: Design and Safety of Pedestrian Facilities,
Institute of Transportation Engineers, 1998, p. 55*

APPENDIX 5

PROJECT STATUS & PHOTOGRAPHS

EXHIBIT 1

EXCERPT FROM *TRANSPORTATION TOMORROW:2035*

Status of *TRANSPORTATION TOMORROW:2025*:

- ♦ Construct northbound flyover, NY 201 and Roundabout, Village of Johnson City
 - ☒ **Completed.**
- ♦ Projects associated with Vestal Corridor Study:
 - ♦ Operational and safety improvements, Murray Hill Rd to Campus Plaza; in conjunction with NY 201 over Vestal Rd and over NY 434 bridge replacement project
 - ☒ **Completed but reduced in scope, limiting project limits along Vestal Road and NY 434 to Glenn Bartle Dr to Bunn Hill Rd**
 - ♦ Operational and safety improvements, NY 434 - Jensen Rd to African Rd including intersection reconstruction, NY 434/Rano Blvd/Sycamore Rd
 - ☒ **Programmed but reduced in scope to minimal intersection improvements and one sidewalk segment**
- ♦ Widen Front Street, I-81 Exit 5 to Broome Community College
 - ☒ **Completed** *Included sidewalks, bike lanes, bus stop benches & bike parking racks.*
- ♦ Construct new Susquehanna River Crossing, Apalachin to Campville, Town of Owego
 - ☒ **Completed.**
- ♦ Support the designation of Route 17 as Interstate 86: reconstruct I-81/NY 17 overlap
 - ☒ **Programmed**
- ♦ Projects associated with City of Binghamton Access Study:
 - ♦ Court Street Gateway
 - ☒ **Completed**
 - ♦ Washington Street Gateway
 - ☒ **Programmed, then deleted from program to consider private development on that street segment**
 - ♦ Front Street Gateway
 - ☒ **Programmed but potentially reduced in scope (currently in design with a reduced cost cap)**
 - ♦ Improved truck access into City of Binghamton First Ward: project to reconstruct intersection of Front St/Clinton Streets
 - ☒ **Programmed, ready for letting, now deferred**
- ♦ Continue multimodal enhancement of Main Street (NY Route 17C):
 - ♦ West Endicott
 - ☒ **Completed**
 - ♦ Hooper Road to Harrison Avenue
 - ☒ **Programmed previously, now deferred**
 - ♦ Arch Street to Lester Avenue, Village of Johnson City
 - ☒ **Programmed previously, now deferred. Project limited in scope to improve signals and street lighting was completed for a portion of this segment.**
- ♦ Improve multimodal mobility on Front Street, BCC to I-81 Exit 6
 - ☒ **Completed.** *Included sidewalks, bike lanes, bus stop benches & bike parking racks.*
- ♦ Provide additional transit service in Binghamton: utilizing FTA Job Access-Reverse Commute funds, expanded fixed route bus service (and complementary ADA paratransit service) on weekday nights and Saturdays, and initiated service on Sundays
 - ☒ **Completed/ongoing.**

- ♦ Construct Intermodal Transit Terminal
 - ☒ **Completed.**
- ♦ Provide additional bicycle and pedestrian infrastructure
 - ☒ **Ongoing, as Transportation Enhancement projects are awarded; additional infrastructure has been constructed with street improvement projects**

Status of *TRANSPORTATION TOMORROW:2030~PLACEMAKING FOR PROSPERITY:*

- High priority actions:
 - Rebuild Main Street using the principles of placemaking and context sensitive solutions
 - ☒ **No projects yet initiated**
 - Rebuild Front Street in the City of Binghamton using the principles of placemaking and context sensitive solutions
 - ☒ **Programmed, in preliminary design; scope to be reduced to meet imposed funding cap**
 - Focus on the rivers and complete the Greenway Plan
 - ☒ **Route 434 Greenway segment programmed, construction deferred; no other new greenway projects programmed.**
 - Support core area economic development strategies with appropriate transportation improvements
 - ☒ **BMTS has participated in Broome County Brownfield Opportunity Area plans for 3 locations in the urban core; no development proposals have yet come forward.**
- System preservation and asset management:
 - Maintain all modal facilities in an acceptable state of good repair and maintenance life cycle
 - ☒ **Little progress made toward this objective because of hyperinflation of construction costs and little growth in revenue over the period. Also true of the Broome Country transit fleet, where a sizable number of buses exceed the federal 12 year standard**
 - Focus pavement investment on urban core area arterial streets.
 - ☒ **Some progress on this objective, primarily as a result of spending ARRA funds on arterial street projects**
 - Expend at least 75% of investments on system preservation over the life of the Plan
 - ☒ **The current TIP shows over 90% of investment directed toward system preservation.**
- Safety:
 - Roadway safety: ensure that high accident locations are addressed, and that safety is accommodated in project design
 - ☒ **High accident locations that are within capital project limits are routinely addressed; stand alone locations as funding becomes available**
 - Pedestrian safety: complete the implementation of the Pedestrian and Bicycle Plan
 - ☒ **Little progress on this objective; 2010-2011 includes development of new Pedestrian Plan, to be followed by new Bicycle Plan**
 - Proactively address the special safety needs of an aging population
 - ☒ **Little progress; staff educational efforts directed at older driver programs and participation in AARP intersection audits.**
- Personal mobility:
 - Transit: enhance service frequency and consolidate into a single transit operation

- ⊗ **Study of consolidation of BC Transit and OCC-Transit completed; no implementation activities to date. No service enhancements to BC Transit; in 2010, service reductions in response to budget cuts**
- Roadway: use transportation system management and operations, and intelligent transportation system technology to improve reliability
 - ⊗ **NYSDOT Region 9 Traffic Operations Center is operational, and continues to add ITS functionality**
- Freight: focus on multimodal trade corridors; specific strategies pending the outcome of the Binghamton Regional Freight Study
 - ⊗ **Binghamton Regional Freight Study completed; no project recommendations were of high priority for the first 5 years of the Plan**
- Environmental protection and quality of life:
 - Enhance the physical and social environment
 - ⊗ **Modest progress in terms of construction of Greater Binghamton Transportation Center, and some greenway/trail projects**
 - Reduce greenhouse gas emissions and energy consumption
 - ⊗ **Implementation of Broome-Tioga Greenride rideshare matching website**

EXHIBIT 2 – Sidewalk in front of Marian Senior Apartments
(Hooper Rd. & Farm to Market Rd – Endwell)

New sidewalk provides access to bus stop and pedestrian traffic signal. The project resulted due to a request to AVRE, and subsequently to the BMTS Pedestrian & Bicycle Advisory Committee, from a resident of Marian Apartments. The Broome County Dept. of Public Works funded and constructed the project.





EXHIBIT 3

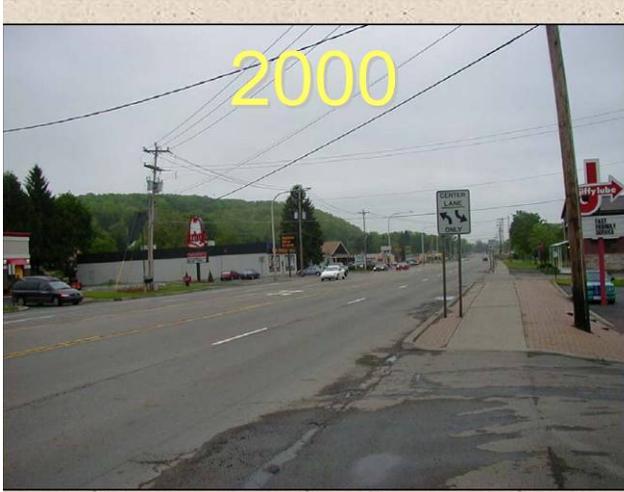
FRONT ST. (BCC to Exit 6) – NYSDOT Project



FRONT ST. (Exit 6 to NYS 12A) – NYSDOT Project







NYS 12A – NYSDOT Project

Before

After



Before

After



River Road – Town of Chenango (Broome County Project)

This project resulted from a request from the Town of Chenango, wanting slower motorist speeds along River Road. This request was precipitated by a crash of a motorist into a house along River Rd., and the desire for increased safety for pedestrians and bicyclists using the roadway to access transit bus stops, an elementary school, a park, and residences, as well as for those using the roadway for recreational biking and walking. By installing an edge line, a space for pedestrians and bicyclists is defined, while the motorist travel lane is narrowed to constrain space, encouraging traffic calming & speed limit compliance. The Broome County Dept. of Public Works funded and constructed the project.



Before

After



Eastbound

Westbound



EXHIBIT 4 – Traffic Calming Treatments

Curb Extension at S. Washington St. and Conklin Ave. (November 2012)

BEFORE



AFTER





Binghamton Roundabout (nearing completion – 11/09/2012)





EXHIBIT 5

Bus shelter and bench installed during 2012 on Vestal Ave., near the Pennsylvania Ave. intersection, in Binghamton. The South Side West Neighborhood Assembly worked with the City and BC Transit to see this project implemented.

