

# SUSTAINABLE STREETS

## SIDEWALK REFERENCE MANUAL



May 20, 2014

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# 1. INTRODUCTION

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Sidewalks improve pedestrian safety, encourage otherwise sedentary people to walk and are not extremely expensive to construct. In areas developed after the 1940s, however, sidewalks are not the norm, even in neighborhoods that are otherwise “walkable,” in the sense of having clusters of homes, businesses and other destinations within walking distance of one another. Retrofitting these areas with sidewalks presents funding, planning and maintenance issues. New development, site redevelopment or roadway reconstruction can provide more opportunities for adding sidewalks and pedestrian amenities, but these amenities add to the overall cost of the project, and may mean that the scope of the project is decreased, or that the final cost of a new home or commercial space is higher.

This guide is intended to make the process of adapting infrastructure to pedestrian needs easier by identifying the areas where pedestrian demand is likely to be highest and where the long-term benefits of adding sidewalks are most likely to outweigh the costs. It is also intended to provide a source of information and a catalog of references for anyone confronting the complexities of sidewalk planning, funding, construction or maintenance. There are thousands of pieces of research, plans, studies, guidebooks, ordinances and other documents related to sidewalks available online; the hyperlinks in this document will reduce the time it takes for users to do their own research.

## 1.1. Scope

The subject of this research is the individual traveling by foot, stroller, walker or wheelchair along a street or on a walkway within a community, rather than a hiker in the woods. On a per capita basis, Americans walked about a third of a mile every day in 2009. About three-fourths of walking trips are “for utilitarian purposes such as getting to work, school, shopping, visiting friends, and accessing public transport.” (Pucher, 2011) This guidance is oriented around these trips, rather than on developing recreational trails or intercommunity pedestrian connections.

This is also not a guidebook on intersection design: intersection facilities *are* critical to pedestrian movement, but intersections are planned, designed, financed, constructed and maintained by highway departments. As a result, there is plentiful guidance available on how

### Walking Speeds

Federal standards require that traffic signals be timed for a walking speed of **3.5 feet per second** (f/s). This translates to a walking speed of 2.4 miles per hour (about 25 minutes per mile).

### Walking speed by age

Average “comfortable” walking speed

40-year-old: **4.8 f/s**  
(3.3 mph or 18.3 minutes/mile)

70-year-old: **4.2 f/s**  
(2.9 mph or 21 minutes/mile)

Source: “Comfortable and maximum walking speeds of adults aged 20 – 79 years;” Richard Bohannon, *Age and Ageing*, 1997.

# 1. INTRODUCTION

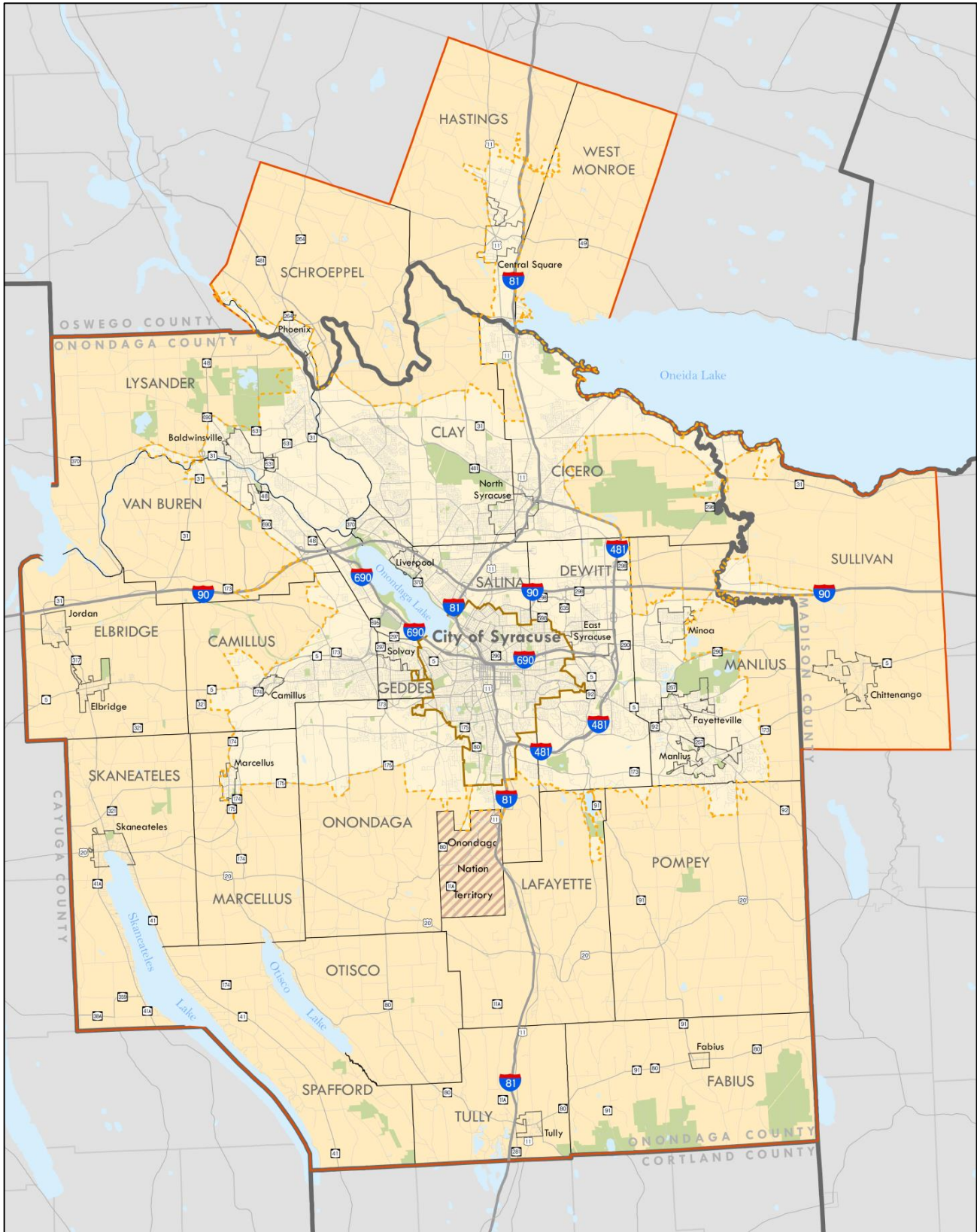


Figure 1-1 - SMTC Planning Area

best to design, build and maintain these facilities for pedestrian safety (see the Design Standards section, below).

Sidewalks, on the other hand, are built by many different entities, both public and private, and are typically maintained by individual property owners. There are several permutations on how a given sidewalk slab got to be, or failed to be, constructed and/or maintained.

Geographically, this research is focused on Onondaga County and Central New York. Examples and data are drawn from cities and counties in other states and in other countries, but the frame of reference is the SMTC's Metropolitan Planning Area. This includes 43 individual governments, primarily in Onondaga County but also including the Villages of Phoenix and Central Square in Oswego County and the Village of Chittenango in Madison County. (See Figure 1-1 – SMTC Planning Area)

## 1.2. Purpose

The purpose of this document is to collect information on a wide variety of subjects related to sidewalks, from the legal framework in which decisions are made, to suggestions for how to plan for and prioritize sidewalks, to financing and maintenance options. It is generally geared toward decision-makers and residents at the municipal or neighborhood level considering pedestrian accessibility, as opposed to technical guidance for designers or engineers.

The existing literature on sidewalk planning, financing, design and construction is extensive. This document is not intended to reiterate data that is readily available in numerous sources. Rather, it attempts to identify best resources and best practices. Additionally, this document provides data that is unique to the study area, including existing sidewalk ordinances and mapping showing Priority Zones for sidewalk infrastructure. This study is intended to serve three purposes:

- 1.) To point the user toward the best sources for information on subjects that are already well documented and summarized, such as facility design,
- 2.) Provide a summary and list of best practices and references for subject areas in which there is less readily available guidance, such as legal issues, planning and the use of porous pavements,
- 3.) Provide a summary of existing conditions and a set of Priority Zones for pedestrian infrastructure in the study area.



Figure 1-2 - Sidewalks on Falls Boulevard in the Village of Chittenango



## 1.3. Planning Context

### *New York State's Complete Streets Law*

New York State's Complete Streets Law (S5411A-2011), enacted in 2011, is a milestone in terms of the inclusion of sidewalks and pedestrian facilities in highway projects in New York. Roadway rehabilitation or reconstruction may be the single best opportunity to add a substantial amount of sidewalk mileage to an existing corridor, and this law ensures that pedestrians' needs, as well as those of bicyclists and transit users, are considered when these projects are being planned.

For example, several of the Priority Zones identified in this document include suburban areas that are accessed by major roadways. The mix of land uses that have developed along some of these corridors are highly walkable, in terms of distance, but the lack of sidewalks and crosswalks makes them uninviting to pedestrians. Under the Complete Streets Law, sidewalks will likely be included as part of the eventual reconstruction of these corridors.

The law states:

(a) For all state, county and local transportation projects that are undertaken by the Department or receive both federal and state funding and are subject to Department of transportation oversight, the department or agency with jurisdiction over such projects shall consider the convenient access and mobility on the road network by all users of all ages, including motorists, pedestrians, bicyclists, and public-transportation-users through the use of complete street design features in the planning, design, construction, reconstruction and rehabilitation, but not including resurfacing, maintenance, or pavement recycling of such projects.

(B) Complete street design features are roadway design features that accommodate and facilitate convenient access and mobility by all users, including current and projected users, particularly pedestrians, bicyclists and individuals of all ages and abilities.

The law includes an exception for situations where the "cost would be disproportionate to the need," based on factors such as "land use context; current and projected traffic volumes; and population density"; or where there is a demonstrated lack of need or community support. This underscores the importance of undertaking a

*New York State law identifies the following as elements of a "complete street":*

- Sidewalks
- Paved shoulders suitable for use by bicyclists
- Lane striping
- Bicycle lanes
- "Share the road" signs
- Crosswalks
- Traffic signals for pedestrians
- Bus pull outs
- Curb cuts
- Raised crosswalks
- Traffic calming measures

community-wide evaluation of the type discussed in [Chapter 4](#) in the “Pedestrian Demand Model” section. The Priority Zones identified in this document are areas in which the benefits of building a complete street are most likely to outweigh the costs.

## *Bicycle and Pedestrian Plan, SMTC*

The SMTC’s 2005 *Bicycle and Pedestrian Plan* sets forth the SMTC’s policy on bicycle and pedestrian facilities, including:

- 1.) Bicycle and pedestrian ways should be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:
  - Bicyclists and pedestrians are prohibited by law from using the roadway.
  - The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use.
  - Sparsity of population or other factors indicate an absence of need.
- 2.) In rural and suburban areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day.
- 3.) Highway and transit facilities should be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, and bicyclists can travel safely and independently.

Find the SMTC’s Bicycle and Pedestrian Plan in the Final Reports section of SMTC’s web site:  
[www.smtcmpo.org](http://www.smtcmpo.org)

Goals for the MPA identified in this plan include:

- 1.) To encourage the use of bicycling and walking as legitimate modes of transportation.
- 2.) To improve the safety of bicyclists and pedestrians.
- 3.) To educate bicyclists, pedestrians, motorists, law enforcement officers, and others regarding traffic laws and safety measures.
- 4.) To promote the improvement of travel and tourism and business opportunities along bicycle and pedestrian infrastructure.
- 5.) To encourage planners and municipalities to develop bicycle and pedestrian resources.
- 6.) To develop a methodology for tracking bicycle and pedestrian improvements.



## *Long Range Transportation Plan, SMTC*

The SMTC's Long Range Transportation Plan (LRTP) provides a review of existing conditions in the MPA and a set of goals and objectives for improving the region's transportation system. According to the 2011 LRTP Update, four percent of workers over age 16 in the MPA walked or biked to work in the year 2000. The LRTP states that: "The region lags behind the rest of the state, where 6.2% of workers walked to work and 0.8% used other means in 2000. Of those who walked or bicycled to work in the MPA, 70.8% lived within the City of Syracuse. The next highest percentage, 4.2%, lived in Salina." (Syracuse Metropolitan Transportation Council, 2011)

One of the LRTP's Mobility Objectives is:

To reverse the decline in the share of trips made by modes other than the single occupant vehicle by 2000 and to increase the share of trips made by high occupancy vehicles (including fixed and demand-responsive transit), bicycle, and walking by 25% collectively, by the year 2020.

The LRTP also includes the following Land Use Objective: "To support development patterns, densities and design options that are conducive to transit service, pedestrian and bicycle travel." This is in contrast to recent development seen in the rural areas of the MPA that frequently has the characteristics of suburban sprawl: "unmanaged, low density development patterns that lack a sustainable environmental, economic, and social balance".

## *Sustainable Development Plan, Onondaga County ([future.ongov.net](http://future.ongov.net))*

Onondaga County's *Sustainable Development Plan* (available online at [future.ongov.net](http://future.ongov.net)) also discusses sidewalks and pedestrian infrastructure. As the plan points out, "Generally, the more densely developed the area, the more likely it is to be walkable and have sidewalk infrastructure." (Syracuse-Onondaga County Planning Agency, 2012)

This plan also states that "Complete Streets policy and practice, which rethinks the design and function of roadways to incorporate a more multi-modal approach for all segments of the population, has been noted as having numerous social, fiscal and environmental community benefits."

## *Local Plans and Ordinances*

In general, it is the local (city, town or village) ordinance that determines sidewalk location, maintenance responsibility, material, and width. Local ordinances are summarized in this document for reference (see [Chapter 3](#)).

## 1.4. Design Standards

Discussions with highway engineers and local departments of public works have indicated that design guidance is readily available and that presenting it in this document would be duplicative. One exception is the use of permeable pavements in the construction of pedestrian facilities, which has only come into widespread use within the past 10 years or so. For information on pedestrian facilities and porous materials, see Appendix D. For a brief selection of key design parameters gleaned from these resources, see Appendix F. The following annotated list identifies some of the essential resources on designing pedestrian facilities.

[\*Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities\*](#), Institute of Transportation Engineers (ITE)

The ITE's approach is based on four context zones: Suburban, General Urban, Urban Center and Urban Core. It cross-references these context zones with several street types, such as boulevard, avenue and street, and provides specific recommendations for numbers of lanes and pedestrian facilities for each street type in each context zone.

[\*Design and Safety of Pedestrian Facilities\*](#), Institute of Transportation Engineers (ITE)

This 1998 guidance provides details on the technical aspects of designing pedestrian facilities and makes a good complement to the ITE's guidance on context sensitivity.

[\*Chapter 18 – Pedestrian Facility Design\*](#), *Highway Design Manual*, New York State Department of Transportation

This guidance from NYSDOT provides the state's standards for a variety of features, including:

- Americans with Disabilities compliance
- Guidelines for locating sidewalks in developed areas
- Minimum sidewalk widths (five feet is standard, but four-foot sidewalks are allowable if conditions require it)
- Crosswalk striping patterns
- When to install crosswalks
- Sidewalk width needed for various levels of pedestrian activity

[\*PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System\*](#), FHWA

This online reference includes an interactive countermeasure selection system, designed to assist users in picking out a design solution for an existing issue. This site also provides information on how to plan for pedestrian infrastructure.

[\*Highway Design Handbook for Older Drivers and Pedestrians\*](#), FHWA

Detailed design guidelines for roads and pedestrian facilities, based on the increased likelihood of various physical limitations (such as slower reaction time and reduced visual acuity) that can accompany aging. This document includes references to standard design guidelines throughout.

# 1. INTRODUCTION

[Guide for the Planning, Design, and Operation of Pedestrian Facilities](#), American Association of State Highway and Transportation Officials (AASHTO)  
An overview of accepted practices in the planning and design of pedestrian facilities.

[Stormwater Management Handbook](#), US Environmental Protection Agency  
Chapter 5 of this handbook presents examples of streetscape improvements that minimize stormwater runoff, including porous pavement sidewalks and street trees.

[Urban Street Design Guide](#), National Association of City Transportation Officials (NACTO)  
The *Urban Street Design Guide* provides brief summaries of design elements like chicanes, along with helpful visuals. This guide also tackles knotty issues such as balancing the need for clear recovery zones along the sides of roads with the desire to foster pedestrian scale and a sense of enclosure.

Examples of guidance from other states and cities:

- [Pedestrian Facilities Guidebook](#), Washington State Department of Transportation  
This source includes a chapter on designing sites for pedestrian access, including walkways in parking lots.
- [Pedestrian and Streetscape Guide](#), Georgia Department of Transportation  
A comprehensive handbook for pedestrian facility design.
- [Urban Street Design Guidelines](#), City of Charlotte, North Carolina  
Charlotte's *Urban Street Design Guidelines*, like ITE's *Context Sensitive Solutions* guidance, focuses on making sure that complete streets solutions "fit" adjacent land uses. The guidelines are based around a set of street classifications, with associated

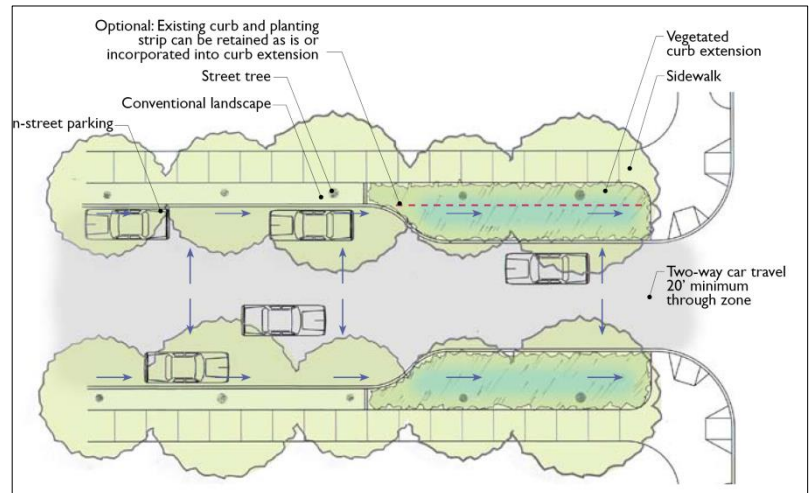
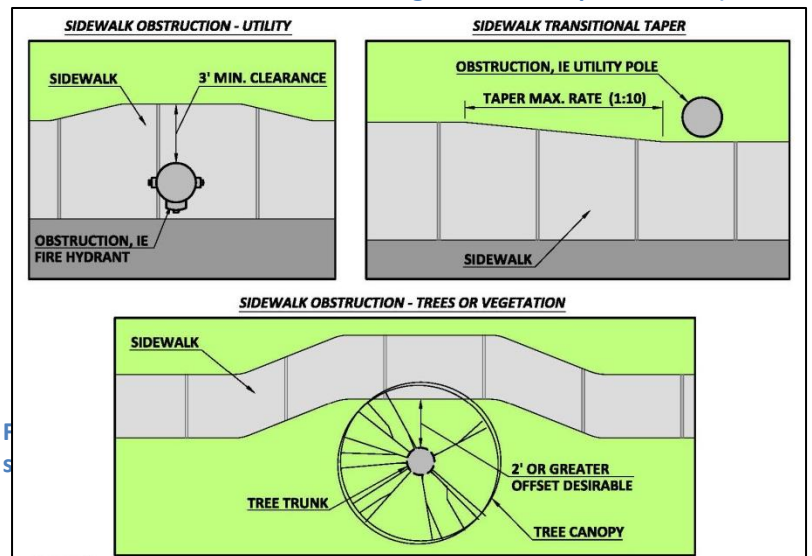


Figure 1-3: A vegetated curb extension captures stormwater, calms traffic and means a shorter crossing distance for pedestrians (Source:



speed limits and cross-sections, and a six-step process to match land use and transportation facility recommendations.

- [Comprehensive Pedestrian Plan](#), City of Raleigh, North Carolina  
Raleigh's pedestrian plan uses a geographic model to prioritize sidewalk investments, similar the SMTC's Priority Zone modelling (see Chapter 4). This plan also includes design specifications for pedestrian facilities.

## 1.4.1 Additional Information and References

- New York State Complete Streets Law  
<http://open.nysenate.gov/legislation/bill/s5411a-2011>
- SMTC Bicycle and Pedestrian Plan  
[www.smtcmpo.org/docs/bike-ped/Final\\_Report/FINAL\\_REPORT.pdf](http://www.smtcmpo.org/docs/bike-ped/Final_Report/FINAL_REPORT.pdf)
- SMTC Long Range Transportation Plan  
<http://www.smtcmpo.org/lrtp.asp>
- Onondaga County Sustainable Development Plan  
<http://future.ongov.net/>
- City of Syracuse Sustainability Plan  
[http://www.syr.gov.net/Sustainability\\_Plan.aspx](http://www.syr.gov.net/Sustainability_Plan.aspx)
- Statewide Bicycle and Pedestrian Plan, New York State Department of Transportation  
[https://www.dot.ny.gov/display/programs/bicycle/maps/app\\_repository/bike\\_and\\_ped\\_plan.pdf](https://www.dot.ny.gov/display/programs/bicycle/maps/app_repository/bike_and_ped_plan.pdf)
- John Pucher, *Walking and Cycling in the United States, 2001 - 2009: Evidence from the National Household Travel Surveys*, American Journal of Public Health, 2011  
[http://policy.rutgers.edu/faculty/pucher/NHTS\\_TRB\\_25Jan2011.pdf](http://policy.rutgers.edu/faculty/pucher/NHTS_TRB_25Jan2011.pdf)

## 2. LEGAL ASPECTS

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### 2.1. Overview

The four major sources of legal guidance for pedestrian infrastructure are:

- New York State law
- Tort law
- Americans with Disabilities Act (ADA)
- Municipal ordinances

This chapter is primarily concerned with the first two sources; municipal ordinances are addressed in [Chapter 3](#), and the ADA has been extensively addressed in other readily available resources. New York State law touches on several aspects of pedestrian mobility, including which levels of government construct sidewalks and who is responsible for maintaining sidewalks. State law also relates to the question of whether or not children walk to school, since State law establishes the distance that students must be bused to school.

Tort law related to the accidental injury of pedestrians is a large and ever-shifting body of law, based primarily on rulings in specific cases. Generalizing policy or design standards on the basis of case law can be complicated and should not be done without guidance from a legal professional. However, basic concepts are presented in order to provide an orientation to this type of law.

### 2.2. Disclaimer

The portions of this document relating to liability and legal issues are intended to provide a brief and simple overview of some points of intersection between federal, state and local law and transportation planning. It is not intended to be legal advice, does not constitute legal advice and should not be used as a substitute for qualified legal advice from a competent, experienced attorney licensed to practice law. Any person or entity reading this document should retain a lawyer to seek his or her advice with respect to any information or legal issues discussed in this document.

While every effort is made to ensure accuracy and to keep this information current, agency details, law and procedure outlined herein can change constantly. No responsibility is accepted for any loss, damage or injury, financial or otherwise, suffered by any person or organization acting or relying on this information or anything omitted from it.

### 2.3. New York State Law

#### 2.3.1 Highway Law

##### *Sidewalk definition*

New York State law defines a sidewalk as “that portion of a street between the curb lines, or the lateral lines of a roadway, and the adjacent property lines, intended for the use of pedestrians.” *New York State Vehicle and Traffic Law, Title 1, Article 1, Section 144*

State law addresses some, but by no means all, aspects of sidewalk construction and maintenance. Compiling state law for reference can become convoluted, since a given section of the law may be addressing a specific level of government (state, county, city, town or village), a specific type of highway (for example, a state highway outside a city or village), and a specific function (construction or maintenance). No single compilation of state laws related to sidewalks was found as part of the development of this document, but this would be a welcome reference. State laws applicable to sidewalk construction are found primarily in State Highway Law, in a variety of sections.

##### *Sidewalks on State Highways*

#### CONSTRUCTION

The New York State Department of Transportation can build sidewalks adjacent to state highways in towns (outside city and village boundaries) where necessary, as described in [State Highway Law, Article 2 \(State Commissioner\), Section 10.22](#):

The commissioner of transportation shall:

22. Provide for the construction of sidewalks adjacent to state highways outside of cities and incorporated villages, when he is of the opinion the same are necessary. He shall have full authority to determine the type, width, location with respect to the highway, and the general construction details of such sidewalks. The expense of such construction shall be a proper charge against funds available for the construction, reconstruction or maintenance of state highways. *State Highway Law, Article 2 (State Commissioner), Section 10.22*

##### *County Government*

Counties can build “walks or paths” for pedestrians along state highways. [State Highway Law, Article 3, Section 54](#) provides a process whereby a town’s board can request that the county build a sidewalk or path along a state highway. If the county’s board of supervisors agrees to this request, the county then works with the state to develop a plan for the construction of these improvements. Upon state and



## 2. LEGAL ASPECTS

county approval of the project, the county constructs the project on the state's highway. Under this section of state law, the county funds construction and right-of-way acquisition and the requesting town is responsible for reimbursing 35 percent of these costs to the county.

### *Town Government*

Town governments can construct sidewalks along state and county roads, with the permission of the State Commissioner of Transportation or the County Superintendent of Highways, as appropriate. Towns must pay for these sidewalks themselves. [State Highway Law, Article 7, Town Superintendents, Section 151](#)

### MAINTENANCE

As the following examples show, state law places the burden for maintenance on municipal entities. However, these municipalities (towns, villages and cities) are not restricted from then placing the burden for sidewalk maintenance on individual property owners; frequently, this is done through local ordinances. [Chapter 3](#) provides an inventory of local ordinances and discusses their requirements.

### *City Government*

Under State law, cities are charged with the maintenance of sidewalks constructed by the state along state arterial highways. Following construction by the state: "Such sidewalks, facilities and appurtenances shall be maintained or shall be continued to be maintained, as the case may be, by the city in which they are located, or by the agency or unit owning or having control and jurisdiction thereof." [New York State Highway Law, Article 12-B, Section 349-C](#)

### *Town Government*

Under New York State Highway Law, it is the town superintendent's responsibility to ensure maintenance of all sidewalks along state and county roads. The town superintendent shall: "Maintain all sidewalks in the town constructed by the state adjacent to state highways and all sidewalks in the town constructed by the county adjacent to county roads and, when authorized by the town board, cause the removal of snow therefrom, and the cost thereof shall be paid from the miscellaneous or other town funds." [New York State Highway Law, Article 7, Section 140](#)

Read the full text of NYS's Complete Streets Law on the NY Senate Open Legislation web site: <http://open.nysenate.gov/legislation/bills/5411a-2011>

### *Village Government*

For a state highway in a village, the maintenance of everything along a state highway other than the pavement and drainage facilities falls to the village. Specifically: “Any sidewalks, sewers, water mains, curbs, paved gutters, conduits, facilities and appurtenances ... shall be maintained ... by the village in which they are located, or by the agency or other unit owning or having control and jurisdiction thereof except the state shall maintain any drainage ditches and storm sewer facilities which are constructed primarily to service the state highway facility.” [State Highway Law, Article 3, Section 46](#)

### **Sidewalks on County Highways**

#### COORDINATION REQUIREMENT

County highway superintendents are responsible for determining the type and location of sidewalks along county roads, but they need the consent of the municipality (town, village or city) in which the sidewalk would be constructed. [State Highway Law, Article 5, County Superintendents, Section 102.15](#) states: “No such sidewalk shall be constructed in that portion of a town outside a village unless the town board consents thereto. No such sidewalk shall be constructed within any city or village unless the governing body of such city or village consents thereto.”

### **Town-Village Sidewalk Maintenance**

[State Highway Law Article 7, Section 142-c](#) allows towns to do sidewalk maintenance, including snow removal, in villages, based on terms agreed to by the town board and the village’s board of trustees. This section of the Highway Law also specifies that towns can share tools and equipment with villages located wholly or partly within their boundaries. Villages are not required to pay for these services, nor does state law identify a formula for determining their value: towns and villages must come to an agreement.

### **2.3.2 Property Maintenance Code**

New York State’s *Property Maintenance Code* states that “The owner of the premises shall maintain the structures and exterior property in compliance with these requirements...” The Code goes on to identify sidewalks (and driveways) as exterior property areas that “shall be kept in a proper state of repair, and maintained free from hazardous conditions.” [New York State Property Maintenance Code, Sections 301 and 302.3](#)

In many cases, local ordinances expand upon this requirement, making individual property owners responsible for maintaining sidewalks (including ice and snow removal) adjacent to their property. See [Chapter 3](#) for more information on local ordinances.

### 2.3.3 Sidewalk Planning and Construction

New York State's Complete Streets Law (S5411A-2011) states that "it shall be the policy of the state to consider people all ages and abilities and all appropriate forms of transportation when planning roadway projects." This policy applies both to New York State Department of Transportation (NYSDOT) projects, and to county and other local projects that receive state and federal funding. [S5411A-2011, Section 1](#)

New York State's Smart Growth Public Infrastructure Policy Act codifies the state's interest in "minimizing unnecessary costs of sprawl development including environmental degradation, disinvestment in urban and suburban communities and loss of open space." The law identifies publicly supported infrastructure, like roads, sewers, water lines, wastewater treatment facilities and schools, as facilitating sprawling development patterns. To the extent that this law encourages more compact and infill development, it may result in greater demand for and use of pedestrian facilities, since it would promote development at a walkable scale. [Smart Growth Public Infrastructure Policy Act](#)

## 2.4. Town Law

[New York State Town Law, Article 12, Section 198](#) provides for the creation of sidewalk snow removal districts and sidewalk districts for sidewalk construction and maintenance:

7. Snow removal districts. After a snow removal district shall have been established, the town board may contract for a term not exceeding ten years for the removal of snow from all the sidewalks in said district or such portion thereof as the board may determine. Whenever the town board shall have awarded a contract for the removal of snow from a portion of the sidewalks in any such district, the town board may contract for the removal of snow from additional sidewalks in said district from time to time as the said town board in its discretion may determine advisable. Whenever the town board may determine it advantageous so to do, it may employ a sufficient number of persons and provide the necessary equipment to remove snow from sidewalks within the district, at the expense of said snow removal district. NYS Town Law, Section 198, 7

10-b. Sidewalk districts. After a sidewalk district shall have been established, the town board may construct or contract for the construction of sidewalks within the district as it may determine to be necessary or desirable. The board shall also have authority to provide for the maintenance thereof. NYS Town Law, Section 198, 10-b

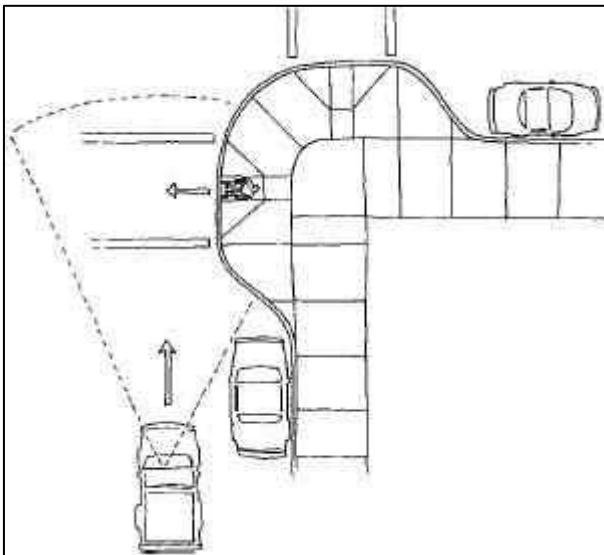
While some villages in the Study Area will perform sidewalk snow clearance, no instances of a town establishing a sidewalk snow removal district were identified during the preparation of this guidance.

## 2.5. Americans with Disabilities Act (ADA)

Title II of the Americans with Disabilities Act (ADA), together with the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG), sets minimum standards for accessibility to buildings, facilities, rail passenger cars, and vehicles for individuals with disabilities.

The ADA requires that all new and altered public sidewalks and street crossings be accessible so that people with disabilities can use the pedestrian routes that connect buildings, facilities and transportation modes. Title II of the ADA specifically requires that curb ramps be provided when sidewalks or streets are newly constructed or altered. Curb ramps should be designed to minimize the grade, cross-slope and changes in level experienced by users. The transition between the ramp and the street surface should be flush, since any height transition can create difficulties for individuals with disabilities.

For more information about ADA standards as they relate to sidewalks, visit FHWA's online guide [Designing Sidewalks and Trails for Access](#)



**Figure 2-1: Full curb extensions improve visibility between pedestrians and motorists** (from "Designing Sidewalks and Trails for Access")

ADAAG requires that sidewalks be designed with a minimum width at any given point of 32 inches, but with a continuous width of 36 inches, in order to accommodate wheelchairs.

The ADA does not require that sidewalks be constructed where none exist. However, it does require that existing sidewalks be retrofitted to include curb ramps. The ADA allows facility owners (including state departments of transportation and municipalities) to phase-in these improvements over time. As the SMTC's *Bicycle and Pedestrian Plan* states: "Each Town and Village within the MPO should have its own schedule or implementation plan for replacing non-ADA compliant sidewalks and curb ramps."

## 2.6. Tort Law and Municipal Liability

Sidewalk and other walkway projects are sometimes opposed by local decision-making bodies because of the fear of municipal liability for accidents that may occur on these facilities. A relatively minor mishap, for example someone slipping in an icy parking lot or tripping on a sidewalk, can lead to expensive medical bills and the possibility of a lawsuit.

Legally speaking, when an individual suffers harm as a result of someone else’s “wrong,” that individual has recourse to a lawsuit to attempt to recover damages from the wrongdoer. The “wrong” is known legally as a tort. A lawsuit that results from a tort is a civil lawsuit, as opposed to a criminal action. The goal is to determine the degree of “fault” to assign to the individual or entity who is being accused of causing the tort.

In the case of a publicly owned and maintained sidewalk, where the municipality has not shifted the burden of sidewalk liability to adjacent property owners, the municipality would likely be the subject of tort lawsuits for accidents occurring on those sidewalks, such as tripping or slipping on ice.

There is often an assumption that exposure to a lawsuit would be reduced if there were no sidewalk on which to trip. In general, however, a municipality has greater legal protection when it addresses an accessibility issue than when it does not.

As previously stated, this document is not intended as a substitute for guidance from a qualified attorney. However, the following concepts can be useful in understanding the guidance provided by a qualified attorney and can be helpful to citizens or municipal officials who are interested in learning more on this subject:

- **Qualified immunity:** a highway official’s design decisions or highway improvements plan *can* be insulated from tort liability under the “qualified immunity” principle. (Gelormini, 2011)
- **Inaction does not equate to immunity:** municipalities and agencies can be liable for what they do *not* do to accommodate all potential roadway users.
- **Written notice laws limit maintenance liability:** Determining legal liability for problems arising from facility maintenance (as opposed to design or planning) can be extremely complicated and will vary from case to case. Laws requiring written notice of a maintenance issue can limit municipal liability for roadway and sidewalk maintenance.

### 2.6.1 Qualified Immunity

Qualified immunity is a legal concept that assumes that an expert’s analysis should not be reversed by a judge or a jury, because these people lack the expert’s technical knowledge and experience.

A recent US Supreme Court case described qualified immunity in the following terms: “Qualified immunity balances two important interests—the need to hold public officials accountable when they exercise power irresponsibly and the need to shield officials from harassment, distraction, and liability when they perform their duties reasonably.” (Pearson v. Callahan, 2009)

## 2. LEGAL ASPECTS

In the context of designing roadway facilities, such as bicycle and pedestrian facilities, the legal theory of qualified immunity in New York State essentially ensures that the court system will not attempt to second-guess design decisions made by engineers. The courts have taken up the question of whether or not adequate study went into a given decision, but if it can be demonstrated that a design solution was properly studied and developed, the design itself will not (generally) be scrutinized by the court.

The following text is from the report *A Highway Department's Legal Liabilities*, prepared by the Cornell Local Roads Program (*A Highway Department's Legal Liabilities*):

“A highway official’s decisions about designing or planning highway improvements or implementing operational practices may be insulated from tort liability under the so-called ‘qualified immunity’ principle first enunciated in *Weiss v. Fote*, 7 NY2d 579, 586-588 (1960).

A municipality may be entitled to this ‘qualified immunity’ where its highway official has reasonably and properly studied a certain highway safety issue and decided on how to respond to it. *Id.*

The Court of Appeals reasoning was: “that the traditional reliance on a jury verdict to assess fault and general tort liability is misplaced where a duly authorized [public official] has entertained and passed on the very same question of risk as would ordinarily go to the jury.” *Weiss, supra*, 7 NY2d at 579.

Therefore, “when [a municipality] studies a dangerous condition and determines as part of a reasonable plan of governmental services that certain steps need not be taken, that decision may not form the basis of liability.” *Freidman v. State of New York*, 67 NY2d 271, 286 (1986).

The New York State Court of Appeals case in which this idea was originally developed is the 1960 case of *Weiss v. Fote*. The case involved a collision at a signalized intersection. The plaintiff attributed the accident to a traffic signal’s clearance interval being too short and sued the municipality that had set the signal’s timing. The Court of Appeals ruled in favor of the municipality out of “a

For a thorough discussion of qualified immunity as it relates to highway departments, see:

- [A Highway Department's Legal Liabilities](#)
- [New York State Qualified Immunity - Complete Streets Primer](#)

“Highway and recreational facilities that fail to fully incorporate the needs of all users increase the likelihood of potential court settlements in favor of those who are excluded.”

*FHWA University Course on Bicycle and Pedestrian Transportation*



## 2. LEGAL ASPECTS

regard for sound principles of government administration and a respect for the expert judgment of agencies authorized by law to exercise such judgment.” (Weiss v. Fote, 1960) (Tri-State Transportation Campaign, 2012) The ruling in this case specifies that qualified immunity does not protect a municipality when it can be proven that a plan was developed without adequate study or did not have a reasonable basis.

According to the *New York State Qualified Immunity - Complete Streets Primer*, prepared by the Tri-State Transportation Campaign in October 2012, “A governmental entity implementing Complete Streets designs in traffic planning should be entitled to qualified immunity unless its study and determination is plainly inadequate or there is no reasonable basis for its traffic plan.” (Tri-State Transportation Campaign, 2012)

Challenges to qualified immunity can arise when a municipality has not adequately considered, planned or designed facilities for pedestrians or cyclists. New York State courts have said that “immunity can be overcome by showing that a particular design, signage or signal configuration was built or installed without adequate study or a reasonable basis.” (Kane v. State of New York, 2005) For example, if a municipality claims qualified immunity for the design of an intersection where a pedestrian has been injured, the success of the claim may depend on whether or not the municipality can demonstrate that pedestrians were considered in the intersection’s design.

Often, scarcity of funding will mean a substantial lag time between the identification of a problem and the implementation of a solution. The Court of Appeals has granted qualified immunity when a solution, such as a signal, was identified as necessary but was not implemented at the time of an accident. In this case, immunity was granted because a process and schedule were in place for implementing improvements based on specific criteria for prioritization and funding availability. (Kane v. State of New York, 2005)

In 1982, trial lawyers in New York City started the Big Apple Pothole and Sidewalk Protection Committee to map sidewalk and street defects. These maps put the City on notice of thousands of sidewalk defects, thus circumventing an existing prior written notice law, and attempting to make the City liable for slip and fall accidents.

As many as 5,000 maps per year were created until a 2003 ordinance shifted liability for sidewalk maintenance to adjacent property owners. New York City paid out \$600 million in sidewalk injury cases from 1997 to 2006.

*“Ruling deals a setback to sidewalk injury lawsuits in New York”, New York Times, January 3, 2009*

### 2.6.2 Inaction

As the Federal Highway Administration has put it, “Doing nothing is not an option.... More and more governments are being sued for failing to recognize public needs and taking actions to meet them.” (Federal Highway Administration, 2006) Ignoring maintenance or design issues has not provided municipalities with the same degree of legal protection as studying existing problems and developing a reasonable plan for correcting them.

### 2.6.3 Prior Written Notice

In New York State, qualified immunity applies to the design and planning of facilities, but it typically does not provide protection from liability for accidents caused by improper maintenance. Given that a city, or even a small village, may not be able to maintain all of its street and sidewalk mileage in perfect condition on an annual basis, the exposure to liability seems massive. Municipalities can give themselves some protection by putting laws in place that require prior written notice of a maintenance problem in order to be held liable for it.

As the Cornell Local Roads Program’s *A Highway Department’s Legal Liabilities* states:

A written notice law ‘represents the Legislature’s solution to the vexing problem of municipal street and sidewalk liability’ concerning maintenance of municipal highways and sidewalks. *Barry v. Niagara Frontier Transit System Inc.*, 35 NY2d 629, 633 (1974).

Therefore, in cases based on improper highway maintenance (as opposed to highway design or signage), a written notice law establishes the rule that no liability against a municipality can arise unless a written notice was received by the designated municipal officer and it failed to remedy the condition within a reasonable time after receipt of notice. *Barry v. Niagara Frontier Transit System Inc.*, 35 NY2d 629, 633-634 (1974). (Gelormini, 2011)

The nuances of written notice law are extremely complicated. For example, if a municipality has “actual notice” of a defect, it is probably liable for that defect. Actual notice “means that a responsible municipal employee had actual knowledge of the defective or dangerous condition in that specific information concerning the defect was brought to the attention of the municipality or its agents or employees prior to the occurrence.” (Gelormini, 2011) Similarly, municipalities can be held liable for defects when they have “constructive notice” of the defect. Constructive notice essentially means that a problem was so clearly visible that the municipality *should* have known about it.

### 2.7. Tort Law & Private Liability

Many of the municipalities in the Study Area have language in their local ordinances stating that proper sidewalk maintenance is the responsibility of the owner of the property adjacent to the sidewalk and that the property owner is liable for injuries sustained to users of the sidewalk. (See [Chapter 3](#) for more details on local ordinances.) In a residential setting, this means that a homeowner is responsible for the sidewalk in front of his house – including removal of snow and ice. Failure to keep up with this maintenance can mean that the property owner is held responsible in the event that someone using the sidewalk is injured. Often, this becomes a negotiation between the holder of the homeowner’s property insurance and the injured party.

### 2.8. More Information

#### 2.8.1 Law and Liability

*A Highway Department’s Legal Liabilities*, Cornell Local Roads Program, September 2011,  
[http://www.clrp.cornell.edu/workshops/manuals/hwy\\_depts\\_legal\\_liability.pdf](http://www.clrp.cornell.edu/workshops/manuals/hwy_depts_legal_liability.pdf).

*Federal Highway Administration University Course on Bicycle and Pedestrian Transportation*, July 2006.  
Available at: <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/>

*New York State Qualified Immunity Complete Streets Primer*, Tri-State Transportation Campaign,  
October 2012, page 1. <http://tstc.org/reports/licsbx/liability-memo.pdf>

*Hausser v. Giunta*, 88 N.Y.2d 449, 669 N.E.2d 470, 646 N.Y.S.2d 490 (1996)  
New York State case law that discusses homeowner’s liability for sidewalk maintenance when local ordinance explicitly places onus of responsibility on property owner  
[http://www.law.cornell.edu/nyctap/I96\\_0103.htm](http://www.law.cornell.edu/nyctap/I96_0103.htm)

*Assessing the Fiscal Impact of Lawsuits on New York State Municipalities*, Rockefeller College of Public Affairs and Policy, University at Albany  
<http://www.albany.edu/polis/pdf/Municipal%20Lawsuit%20Report%20One.pdf>

Laws of the State of New York

Highway Law: <http://codes.lp.findlaw.com/nycode/HAY>

Town Law: <http://codes.lp.findlaw.com/nycode/TWN>

Village Law: <http://codes.lp.findlaw.com/nycode/VIL>

#### 2.8.2 Prior Written Notice

“Ruling deals a setback to sidewalk injury lawsuits in New York”, *New York Times*, January 3, 2009  
<http://www.nytimes.com/2009/01/04/nyregion/04pothole.html?pagewanted=all>

## 2. LEGAL ASPECTS

### 2.8.3 ADA and Accessibility

*Designing Sidewalks and Trails for Access*, Federal Highway Administration. Available at:  
[http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/sidewalks/](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalks/)

2010 ADA Standards for Accessible Design, US Department of Justice  
<http://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf>

Guidance on the 2010 ADA Standards for Accessible Design  
[http://www.ada.gov/regs2010/2010ADAStandards/Guidance\\_2010ADAStandards.pdf](http://www.ada.gov/regs2010/2010ADAStandards/Guidance_2010ADAStandards.pdf)

Department of Justice/Department of Transportation Joint Technical Assistance on Title II of the Americans with Disabilities Act Requirements to Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing  
<http://www.ada.gov/doj-fhwa-ta.htm>

## 3. MUNICIPAL CODES

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### 3.1. Issue Area

As publicly owned thoroughfares that traverse what many property owners think of as their front yards, sidewalks can be legally complicated. Sidewalks are often publicly constructed and are frequently located in the public right-of-way, but in many cases they are maintained by a private property owner.<sup>1</sup> Questions of liability, construction or replacement costs, and responsibility for snow clearance can all be answered (or left unclear) through the wording of the city, town or village’s ordinances.

### 3.2. Local Ordinance Inventory

#### 3.2.1 Introduction

Of the 42 individual governments in the Study Area, 36 have some form of ordinance pertaining to sidewalks. Regulations of this kind generally serve two purposes: to define the duties of the individual property owner (particularly as compared to and contrasted with those of the municipality), and to define how and where sidewalks should be constructed. Appendix B is a compilation of excerpts from local ordinances pertaining to sidewalks.

Eighty-five percent of the local governments in the Study Area have ordinances pertaining to sidewalks.

Many of the municipalities in the Study Area have regulations that describe the property owner’s obligations, versus those of the municipality, when it comes to sidewalk maintenance. These regulations sometimes specify that the municipality is not liable for sidewalk conditions or for any accidents that occur as a result of sidewalk conditions. Additionally, sidewalk ordinances often include specifications on where and how new sidewalks should be built.

#### 3.2.2 Inventory Methodology

The municipal ordinance review for this project involved a combination of reviewing online resources, such as “e-codes” accessed through municipal web sites, and contacting individual towns and villages, as well as the Onondaga Nation, to determine what their offices had on file under the category of

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<sup>1</sup> <sup>1</sup> Terms like “often,” “generally” and “usually” are used throughout this guide as reminder that the facts surrounding the construction and maintenance of any given block of sidewalk can vary. Some are constructed by a private entity like a developer, others are built by a municipality, such as a village, and still others are built during roadway construction or reconstruction by a department of transportation. In New York, maintenance practices and responsibilities vary by community, as defined by local ordinance.

**Table 3.1(a) – Summary of municipal ordinances related to sidewalks or pedestrian facilities**

	City of Syracuse	Town of Camillus	Town of Cicero	Town of Clay	Town of DeWitt	Town of Geddes	Town of Hastings	Town of LaFayette	Town of Lysander	Town of Manlius	Town of Marcellus	Town of Onondaga	Town of Pompey	Town of Salina	Town of Skaneateles	Town of Spafford	Town of Tully	Town of Van Buren	Town of West Monroe
<b>Liability:</b> Prior Written Notice		Y	Y	Y	Y	Y			Y	Y		Y		Y	Y		Y	Y	
<b>Liability:</b> Explicit to owner				Y								Y		Y					
<b>Maintenance:</b> Required Upkeep	Y	Y	Y	Y		Y						Y		Y	Y		Y	Y	Y
<b>Maintenance:</b> Clear snow & ice	Y			Y		Y						Y		Y	Y			Y	
<b>Maintenance:</b> Penalty	Y	Y	Y	Y		Y						Y							
<b>Planning:</b> Arterial/Subdivision		Y	Y	Y	Y			Y	Y	Y	Y		Y	Y			Y		Y
<b>Planning:</b> Mobile Home Parks/Courts			Y	Y			Y		Y						Y				Y
<b>Planning:</b> Long block considerations		Y							Y										
<b>Planning:</b> Specific Zone(s)	Y				Y		Y					Y				Y			
<b>Planning:</b> Local authority reserved	Y			Y	Y			Y	Y	Y	Y		Y	Y	Y	Y			Y
<b>Design:</b> Width			Y	Y	Y		Y	Y	Y			Y	Y		Y				Y
<b>Design:</b> Material	Y		Y		Y		Y	Y	Y			Y			Y				Y
<b>Design:</b> ADA/Accessibility	Y				Y						Y								

*Note: no code specific to sidewalks could be found for the Onondaga Nation Territory or for the Towns of Elbridge, Fabius, Otisco, Schroepfel, or Sullivan.*



**Table 3.1(b) – Summary of municipal ordinances related to sidewalks or pedestrian facilities**

	Village of Baldwinsville	Village of Camillus	Village of C. Square	Village of Chittenango	Village of E. Syracuse	Village of Elbridge	Village of Fabius	Village of Fayetteville	Village of Jordan	Village of Liverpool	Village of Manlius	Village of Marcellus	Village of Minoa	Village of N. Syracuse	Village of Phoenix	Village of Skaneateles	Village of Solway	Village of Tully
<b>Liability:</b> Prior Written Notice		Y						Y		Y		Y	Y	Y	Y	Y	Y	
<b>Liability:</b> Explicit to owner	Y														Y			Y
<b>Maintenance:</b> Required Upkeep	Y	Y			Y			Y		Y	Y	Y	Y		Y	Y	Y	Y
<b>Maintenance:</b> Clear snow & ice	Y	Y		Y	Y			Y		Y	Y	Y	Y		Y	Y		Y
<b>Maintenance:</b> Penalty	Y	Y		Y	Y			Y		Y	Y	Y			Y	Y	Y	Y
<b>Planning:</b> Arterial/Subdivision			Y	Y		Y	Y	Y		Y			Y	Y				
<b>Planning:</b> Mobile Home Parks/Courts																		
<b>Planning:</b> Long block considerations						Y												
<b>Planning:</b> Specific Zone(s)				Y		Y	Y	Y		Y				Y				
<b>Planning:</b> Local authority reserved			Y	Y		Y	Y	Y	Y	Y		Y		Y				
<b>Design:</b> Width			Y		Y	Y	Y	Y	Y	Y								
<b>Design:</b> Material	Y	Y			Y	Y	Y		Y	Y					Y			
<b>Design:</b> ADA/Accessibility																		

*Note: no code specific to sidewalks could be found for the Onondaga Nation Territory or for the Towns of Elbridge, Fabius, Otisco, Schroepfel, or Sullivan.*

sidewalks or sidewalk ordinances. In two cases, this involved SMTC staff visiting municipal offices to obtain the appropriate code section.

Five towns and the Onondaga Nation reported not having any codes or ordinances relevant to sidewalks. One town, Otisco, reported having no zoning code.

No municipal legal officials were contacted during the collection of these ordinances: this inventory relies on online resources and the input of clerks' offices and code enforcement officers. As such, it reflects the local ordinances with which local officials are most likely to be familiar. It is possible that additional regulations exist elsewhere.

### 3.2.3 Local Ordinances - Major Elements

Local sidewalk ordinances can be broken into four major subject areas: liability, maintenance, sidewalk planning and facility design. Every ordinance in the Study Area does not address all four of these subject areas. Refer to Table 3.1 to identify the municipalities being enumerated in the text below.

#### *Liability*

##### PRIOR WRITTEN NOTICE

Sixty percent of the municipalities in the Study Area that have a sidewalk ordinance have adopted some form of prior written notice ordinance. See [Chapter 2](#) for more information on [Prior Written Notice](#) ordinances.

##### LIABILITY – EXPLICIT TO OWNER

Five municipalities in the Study Area have specific language in their sidewalk ordinances stating that it is the owner of the property adjacent to a sidewalk who is responsible for sidewalk maintenance and who will be held liable for injuries sustained to sidewalk users, not the municipality. For example, the Village of Tully's Code, Section 94-11, states:

Notwithstanding any other provision of law, the owner of real property adjoining any sidewalk, or the agent or occupant to whom the owner has delegated responsibility, shall be liable for any injury to property or personal injury, including death, proximately caused by the failure of such owner, agent, or occupant to maintain such sidewalk in a reasonably safe condition.

This code section goes on to say that the Village itself "shall not be liable" for injuries that result from improper maintenance of sidewalks.

Local ordinances cover four main subjects related to sidewalks:

- Liability
- Maintenance
- Planning
- Facility design

## Maintenance

### REQUIRED UPKEEP

New York State’s Property Maintenance Code, Section 302, specifies that property owners have an obligation to maintain the exterior of their property. *Section 302.3, Sidewalks and Driveways*, states: “All sidewalks, walkways, stairs, driveways, parking spaces and similar areas shall be kept in a proper state of repair, and maintained free from hazardous conditions.”

Over half of the sidewalk ordinances in the Study Area either reiterate this obligation or enlarge upon it, placing the responsibility for sidewalk upkeep on property owners. The Village of Minoa, for example, requires property owners to repair or otherwise eliminate “ground surface hazards or unsanitary conditions such as holes, excavations, breaks, projections, objections and excretion of pets and other animals on paths, walks, driveways, parking lots and parking areas.”

Twenty-three municipalities in the Study Area place the responsibility for sidewalk maintenance on property owners; 18 specify that the owner is responsible for snow and ice clearance.

### CLEAR SNOW & ICE

Half of the municipalities in the Study Area that have sidewalk ordinances, including the City of Syracuse, have ordinances specifying that it is the property owner’s responsibility to clear ice and snow from sidewalks on their property. These ordinances vary widely in detail. Some, like the Town of Clay’s, simply specify that the property owner is responsible for snow removal and would be liable if someone were to be injured on a snowy sidewalk:

The owner or occupant of lands fronting or abutting on any street in the Town of Clay shall maintain and repair the sidewalks adjoining said lands and keep the sidewalk free from obstruction, including snow and ice. Such owner or occupant shall be liable for any injury or damage by reason of omission, failure or negligence to maintain or repair such sidewalks or to keep them free of obstructions, including snow and ice. *Chapter 197, Article II, Number 197-5*

Others, like ordinances in the City of Syracuse and the Town of Onondaga, specify a timeframe for snow removal. In the City, it is 6 p.m. of the day following accumulation of snow. In the Town of Onondaga, it is 12 hours following the “cessation of snowfall”.

### PENALTY

Just under half of the municipalities that have sidewalk ordinances institute some form of penalty for non-compliance with the ordinance. In most cases, this penalty can be construed as a fee for services: if the municipality fixes or cleans the sidewalk after the property owner fails to respond to written

requests to take action, then the property owner pays the municipality its repair or cleaning costs. In the Village of East Syracuse, the payment can include an additional 25 percent fee. In most cases, these fees can be rolled onto the property's tax assessment and are paid over time. Some municipalities, such as the City of Syracuse, specify a rate of interest (seven percent in the city) that is applied to any costs rolled onto the property's assessment.

Many municipalities retain the right to levy a fine, without spelling out the particulars in their ordinance. The Village of East Syracuse's ordinance, for example, states that "Any one violating this Part shall be subject to a fine set by resolution of the Village Board." (*Village of East Syracuse Municipal Code, Section 341.42*)

Table 3.2 summarizes penalties as described in local ordinances.

## Planning

### ARTERIAL/SUBDIVISION

In many cases, local municipalities' subdivision regulations specify that sidewalks are either necessary or can be required by local authorities in new subdivisions.

Frequently, the trigger for considering sidewalks is the presence of an adjacent arterial street. The Town of Camillus' Subdivision Regulations, for example, state that: "Where the subdivision abuts or fronts on arterial streets, sidewalks may be required and shall be of size and type as approved by the Planning Board." (*Town of Camillus Subdivision Regulations, Section 39.31*) This ordinance is typical, in that it leaves the ultimate decision with the municipality.

### MOBILE HOME PARKS/COURTS

Characterized by high population densities (relative to their rural or suburban surroundings) and relatively low automobile traffic, mobile home parks represent an opportunity for a pedestrian-friendly environment. Amenities within or adjacent to the mobile home park, such as a community center, laundry room, bus stop or mailboxes, are likely to be within a short walk from most homes in the park.

Recognizing this, six of the towns in the Study Area have ordinances that require or encourage the use of paved walkways within mobile home parks. The Town of Lysander's code devotes a chapter to Mobile Home Parks, including the following:

All mobile home parks shall provide safe, convenient, pedestrian access of adequate width for intended use, durable and convenient to maintain, between individual mobile homes, the park streets and all community facilities provided for park residents.  
*Chapter 91, Section 16, Part A*

**Table 3.2 – Penalties for failure to comply with municipal ordinances**

<b><i>Municipality</i></b>	<b><i>Condition</i></b>	<b><i>Penalty</i></b>
<b>City of Syracuse</b>	Obstructions or defects in sidewalks, as reported to the Public Works Commissioner by the Police Department	Costs + 7% interest
<b>Town of Camillus</b>	Failure to remedy Uniform Code violation	Max. \$250 fine and/or 15 days in jail for each violation
<b>Town of Cicero</b>	Failure to comply with Zoning Officer’s order	Max. \$250 fine or 30 days in jail for each week of violation
<b>Town of Clay</b>	Violation of any chapter, rule or regulation in the Code	Max. \$250 fine or 15 days in jail or both
<b>Town of Geddes</b>	Any violation of an ordinance in Chapter 185, Streets and Sidewalks	Max. \$250 fine or 15 days in jail or both
<b>Town of Onondaga</b>	Any violation of snow & ice removal article (e.g., failure to remove snow and ice)	Reimbursement of Town’s snow/ice removal costs; max. \$250 fine and/or 15 days in jail
<b>Village of Baldwinsville</b>	Any violation of specific sections of Streets and Sidewalks code, including snow and ice removal	Reimbursement of Village’s snow removal costs; max. \$50 fine for each day a violation exists
<b>Village of Camillus</b>	Failure to remove snow and ice within a reasonable time following written notice by the Village	Reimbursement of Village’s snow removal costs; max. fine of \$250 and/or 15 days in jail
<b>Village of Chittenango</b>	Any violation of sections of Streets and Sidewalks code, including snow and ice removal	Max. \$250 fine or 15 days in jail or both
<b>Village of East Syracuse</b>	Any violation of the Public Pedestrian Thoroughfare ordinances	Fine set by resolution of Village Board; reimbursement of Village’s costs to do work plus 25%
<b>Village of Fayetteville</b>	Failure to keep sidewalks clear of grass, weeds, snow and ice	Reimbursement of Village’s weed, grass, snow or ice removal costs
<b>Village of Liverpool</b>	Damage to sidewalk resulting from neglect or carelessness of adjacent property owner	Reimbursement of Village’s repair costs
<b>Village of Manlius</b>	Any code violation	Max. \$250 fine and/or 15 days in jail
<b>Village of Marcellus</b>	Failure to keep sidewalks clean and free from rubbish, obstructions, snow & ice	Reimbursement of Village’s sidewalk clearing expenses
<b>Village of Phoenix</b>	Failure to remove snow and ice within 24 hours after snowfall / within 24 hours of being notified in writing to remove snow/ice	Reimbursement of Village’s sidewalk clearing expenses; general violations of Sidewalk ordinance are punishable by a fine of \$50 for each day a violation exists
<b>Village of Skaneateles</b>	Failure to maintain sidewalk	Reimbursement of Village’s costs
<b>Village of Solway</b>	Any violation of Streets and Sidewalks ordinance	Max. \$250 fine and/or 15 days in jail
<b>Village of Tully</b>	Failure to remove snow within 24 hours after snowfall /or within 4 hours of notice to remove snow	Cost of Village’s labor, equipment and material costs; violations of ordinance are punishable by a \$500 fine for each day of continued violation; Village reserves right to “institute any action ... to compel compliance”

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## LONG BLOCK CONSIDERATIONS

The Towns of Camillus and Lysander provide specifications for mid-block crossings of long blocks (Camillus defines this as a block over 800 feet long; the Town of Lysander refers to “exceptionally long blocks”) to provide pedestrian access to schools, parks and shopping centers.

The Village of Elbridge includes in its Subdivision Ordinance a provision to allow walkways that connect through blocks that are more than 600 feet long, particularly in order to provide access to schools, playgrounds or shopping centers.

## SPECIFIC ZONES

Local ordinances vary in their approaches to matching up sidewalks and/or walkways to specific land uses.

The Town of Spafford’s Site Plan Review code, for example, states that sidewalks should be included in site plans for development on lots within 1,000 feet of a school, park or residential concentration. (This code section notwithstanding, the sidewalk inventory carried out for this project did not identify any sidewalks in the Town of Spafford.)

Similarly, the Village of Elbridge’s Subdivision Code states that sidewalks may be required if a sidewalk segment would link “pedestrian generators,” would continue a walk on an existing street, or would link areas of probable future development, as outlined in the Village’s Master Plan.

In the Town of Hastings, sidewalks (and street trees) are required adjacent to multi-family homes and nonresidential uses in specific zoning districts.

The Village of Liverpool’s Zoning Code is explicit in associating sidewalks to community character. It states that single-family, two-family and multiple-family residential districts “should exemplify the peace and quiet of our traditional, walkable, friendly neighborhoods and be interconnected by a well-maintained system of sidewalks that enhance the traditional Village character of this area.”

## LOCAL AUTHORITY RESERVED

More than half of the municipalities in the Study Area that have sidewalk ordinances include language similar to the following (from the Village of Jordan’s code): “Sidewalks shall be installed on one or both sides of a street or road **as the Board may require**, depending on local conditions or public safety.” (*Subdivision Regulations, Section C, Part 1*)[*Emphasis added*]

Local ordinances typically delegate the final decision about sidewalk placement and design to a local board or municipal official (such as a Planning Board or Town Engineer).

These local ordinances leave the final decisions on sidewalk placement and design up to a decision-making body, such as a Planning Board, or up to an engineer, such as Public Works Director, or both. These clauses provide flexibility in dealing with unusual site conditions and other unforeseeable situations.

## Design

### WIDTH AND MATERIALS

Not all sidewalk ordinances include specifications describing what a sidewalk should look like or how wide it should be. In many cases, the ordinance refers the reader to the Town Engineer, Public Works Director or Planning Board for these details. Typically, when width and material requirements are specified, sidewalks are to be four feet wide and made of concrete. Width can vary depending on context: wider (five feet) in industrial or commercial areas or, as in the case of the Village of Elbridge, near pedestrian generators like schools. Alternate materials such as brick or crushed stone are identified as options in the Village of Elbridge's code. In no cases do local sidewalk ordinances mention the use of porous pavement.

In many cases, sidewalk specifications are provided in the subdivision regulations, rather than the general ordinances on streets and sidewalks (where, for example, maintenance requirements are spelled out). This may suggest that the existing sidewalk network is perceived as needing maintenance rather than completion, while new development presents an opportunity for creating a new pedestrian network.

No local ordinances currently address the use of porous pavement in sidewalks.

## Unique Elements

While local ordinances share a common set of core characteristics, they have evolved over time to suit the needs and preferences of individual communities. The following is by no means a comprehensive accounting of local ordinances' unique elements, but may be helpful in understanding the level of variability available to towns and villages interested in modifying their ordinances.

### CITY OF SYRACUSE

The City's code includes the details of how individual property owners are assessed for sidewalk construction costs. The City's code also includes a section on Special Assessment improvements that can be made upon petition from abutting property owners. Under this regulation, if the owners of at least a third of the property fronting on a street petition for new or reconstructed sidewalks, the City will construct it and assess property owners for the costs.



**Table 3.3 – Sidewalk Material and Width Specifications from Municipal Ordinances**

<i>Municipality</i>	<i>Width</i>	<i>Material</i>	<i>Specifications apply to...</i>	<i>Notes/other details</i>
City of Syracuse	n/a	Concrete	Residential areas	Required as of 9/1/03
Town of Cicero	4'	Concrete	Along arterial Streets (Subdivision Ordinance)	Brewerton Rd. Corridor Regulating Plan also requires sidewalks in Brewerton's Downtown Core District
Town of Clay	2'	n/a	Walkways - Mobile home parks	
Town of DeWitt	5'	Concrete, modular unit pavers	Parking lot walkway - Off-Street Parking	Applies within Hamlet Districts
Town of Hastings	4' / 5'	Hard surfaced	Within / external to mobile home parks	
Town of LaFayette	4' / 5'	Concrete or other approved material	Residential / Commercial areas	
Town of Lysander	4' / 2'	Concrete: 3,000 pound min. strength	Common walks / private walks – Mobile home parks	Source: Subdivision Ordinance
Town of Onondaga	5'	Various materials, colors and textures	Walkways - West Seneca Turnpike corridor	
Town of Pompey	4'	n/a	Along arterial Streets	Source: Subdivision Ordinance
Town of Skaneateles	3' / 2'	Smooth, hard, paved surface	Common walks / private walks – Mobile home parks	
Town of West Monroe	4' / 5'	Concrete or other approved material	Residential / Commercial Areas	Source: Subdivision Ordinance
Village of Baldwinsville	n/a	Concrete		Superintendent of Public Works establishes specifications
Village of Camillus	n/a	Concrete		
Village of Central Square	4'	n/a	Subdivision Ordinance	
Village of East Syracuse	n/a	Concrete		
Village of Elbridge	4' / 5'	Class C Concrete	Wider near "pedestrian generators" and employment centers; 5' when sidewalk is adjacent to curb (Subdivision Ordinance)	4,500 pounds min. strength ; Gravel, crushed stone, brick, etc., may be permitted
Village of Fabius	4' / 5'	Concrete	Residential / Commercial Areas	Other materials, as approved (Source: Subdivision Ordinance)
Village of Fayetteville	4'	n/a	Along arterial Streets	Source: Subdivision Ordinance
Village of Jordan	4'	Concrete		3,000 pounds min. strength, 1-2-4 mix (Source: Subdivision Ordinance)
Village of Liverpool	4'	Portland Cement Concrete		Detailed specs in sidewalk ordinance
Village of Phoenix	n/a	Concrete	n/a	

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## TOWN OF CICERO

Like several other municipalities, the Town of Cicero specifies that in new subdivisions, sidewalks will be provided along arterial streets. The size and type of sidewalk is left up to the Town's discretion.

It should also be noted that the summary provided in Table 3.2 does not include the language from the Town of Cicero's Zoning Code (Article XIII) that provides streetscape specifications and lot standards for Route 11 in Brewerton. This code section applies to the portion of Route 11 (Brewerton Road) from Bennett Street, adjacent to Oneida Lake, to Orangeport Road to the south. One of the objectives of the development of regulations for this corridor is to "create a public realm conducive to pedestrian activity." This includes the following characteristics in the Downtown Core District (Brewerton Road between Bennett and Jerome Streets):

- 1.) Two- to four-story buildings;
- 2.) Small-scale retail, office, service and restaurant use with upper floor residential use;
- 3.) A shallow Build-To-Line and frontage build-out requirement that supports a pedestrian-friendly street;
- 4.) On-street parking, tree lawn with street trees, sidewalks and streetlights;
- 5.) Flat roofs with cornices or pitched roofs.

## TOWN OF DEWITT

DeWitt's Zoning Ordinance requires concrete sidewalks within "Hamlet Districts," both along street frontages and connecting buildings' entrances to the street. The only hamlet district identified in the zoning code is the Jamesville Hamlet District, in and around the East Seneca Turnpike crossing of Butternut Creek.

## TOWN OF HASTINGS

While there are no sidewalks within the portion of Hastings that is in the Study Area, this is one of the few towns to specify that sidewalks (and street trees) are required adjacent to multi-family homes and nonresidential uses in specific zoning districts.

## TOWNS OF LAFAYETTE

The Town of LaFayette's code states that "in heavy traffic areas" sidewalks may be required in addition to pedestrian easements for access to schools, parks, play areas or nearby roads. (*Town of LaFayette Subdivision Regulations, Article 5, Section 535, Pedestrian Easements*)

## TOWN OF ONONDAGA

The Town of Onondaga's sidewalk ordinance includes provisions to ensure that property owners keep sidewalks cleared of ice and snow whether or not the sidewalk is in the public right-of-way. This extends

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to sidewalks on private roads in areas of new development. Additionally, Section 285-32 of Onondaga’s Zoning Code describes desired pedestrian amenities that should be included in site designs for the West Seneca Turnpike Corridor overlay zone. This includes sidewalks, as well as pedestrian walkways in parking areas.

## TOWN OF SPAFFORD

Spafford’s Site Plan Review code states that sidewalks should be included in site plans for development on lots within 1,000 feet of a school, park or residential concentration.

## VILLAGE OF BALDWINSVILLE

The Village of Baldwinsville’s code provides details on what constitutes a “defective sidewalk” (including differences in elevation between sidewalk blocks of more than ½ an inch). The Village also assumes responsibility for clearing snow and ice on sidewalks in the downtown area, near the intersection of Routes 370/31 and Route 48.

## VILLAGE OF CAMILLUS

The Village of Camillus is unusual in that the Village bears the costs of sidewalk repairs, unless the need for repairs is the result of damage done by an adjacent property owner, in which case the village will repair the damage and bill that property owner.

## VILLAGE OF ELBRIDGE

The Village of Elbridge’s subdivision code provides for the possibility that sidewalks may be required if a sidewalk segment would link “pedestrian generators,” would continue a walk on an existing street, or would link areas of probable future development, as outlined in the Village’s Master Plan.

### **Cost Sharing for Sidewalk Repairs**

A shared cost program for sidewalk repair can be an effective way for municipalities to both take the sting out of sidewalk maintenance costs and ensure that repairs are being made.

The Village of Phoenix’s code (Article I, Section 165-13.1) spells out a shared cost strategy in which the property owner pays (at least) 50 percent of repair costs and the Village provides sufficient materials and/or Public Works man-hours to make up the remainder. This code section also allows the Village to prioritize sidewalk repairs based on the sidewalk’s location and its degree of disrepair.

## Green Infrastructure

Green infrastructure refers to the use of natural systems, and engineering solutions designed to mimic and/or enhance natural systems, to manage stormwater and wastewater. Green infrastructure is frequently contrasted with so-called “grey” infrastructure, which relies on storm drains, sewer pipes and centralized water treatment plants. Collecting the stormwater that runs off a road through a drain and into a pipe and then transporting it to a wastewater treatment plant is an example of a grey infrastructure solution. Green infrastructure might use a bioswale (essentially a vegetated ditch) to capture this stormwater, allowing it to filter into the groundwater through engineered layers of rock.

In the context of sidewalks, porous pavements are increasingly being investigated as a means of capturing stormwater on-site. Appendix D includes a description of porous pavements and how they apply to sidewalk planning and construction.

As [Table 3.3](#) shows, no local ordinances identify porous pavements as a recommended sidewalk material and, in a few cases, the specifications for sidewalk materials would preclude the use of porous pavement.

### 3.3. Model Ordinances

Appendix C provides two variations on model sidewalk ordinance language, as well as a copy of the Town of Penfield’s ordinance. During this research, the SMTC was not able to identify any single source of model ordinance language that both addresses all of the major elements identified in local ordinances (liability, planning, design and maintenance) and also included key elements of green infrastructure, such as encouraging the use of porous pavements in sidewalks and identifying suitable locations for their use.

The Environmental Protection Agency’s Water Quality Scorecard recommends that municipalities enact regulations to encourage green infrastructure elements in roadway design. This could include:

- Adopting green infrastructure retrofit standards for major street projects.
- Adopting technical specifications and design templates for green infrastructure in private and public rights-of-way.
- Requiring all local road projects to allocate a minimum amount of the total project cost to green infrastructure elements.
- Adopting requirements that some percentage of parking lots, alleys, or roads in a development utilize pervious materials.
- Ensuring that development approvals that allow/require the use of pervious materials include requirements for continuing maintenance/cleaning of porous surfaces.

## 3.3.1 Guidelines for New York State Communities

[http://www.albany.edu/ihi/files/NY\\_Planning\\_And\\_Policy\\_Models\\_iHi.pdf](http://www.albany.edu/ihi/files/NY_Planning_And_Policy_Models_iHi.pdf)

The Institute for Healthy Infrastructure at the University at Albany offers a number of resources designed to make it easier for New York State's municipalities to improve conditions for walking and bicycling. The 2007 document *Planning and Policy Models for Pedestrian and Bicycle Friendly Communities in New York State* provides guidelines for language to include in comprehensive plans and local codes.

## 3.3.2 Sidewalk Policy, Town of Penfield, Monroe County

<http://www.penfield.org/index.php?pr=dpt-engineer-sidewalks>

The purpose of the Town of Penfield's Sidewalk Policy is to "install sidewalks along all Minor Arterial, Major Collector and Minor Collector roads." The Policy identifies two sidewalk systems within the town: a "Primary" and a "Secondary" system.

The Primary System is made up of the Minor Arterial, Major Collector and Minor Collector roads, but it includes local roads that serve as connectors within the community as well. The Town takes responsibility for "the maintenance, replacement, and snowplowing of all sidewalks constructed along publicly dedicated roads classified as Minor Arterial, Major Collector, and Minor Collector." (Town of Penfield, 2000) The Policy identifies the roads that comprise the Primary System.

The Secondary Sidewalk System is made up of roadways within residential subdivisions and other short, low-volume roadways. According to the Town's Policy, "All new development within the Town of Penfield is required to install sidewalks along both sides of all local roads." (Town of Penfield, 2000) Developers of new subdivisions can waive this requirement but are required to both grant the Town a seven-foot-wide easement along all roads in the subdivision for future sidewalks and to pay a fee of \$500 per dwelling unit, in the case of residential properties, and \$4,000 per lot in the case of commercial properties. The money paid in waivers is then used to fund sidewalk projects through a Sidewalk Capital Account.

Additionally, the Sidewalk Policy provides for the formation of Intensified Sidewalk Districts in all new residential subdivisions that include sidewalks, in order to fund the sidewalks' long-term maintenance. Each home in an Intensified Sidewalk District pays \$25 per year into this fund, which is then dedicated to sidewalk maintenance and/or replacement in that subdivision. These sidewalks are considered part of the Town's "Secondary Sidewalk System," however, which means that the Town does not clear the snow from these sidewalks.

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## 3.3.3 Site Design and Pedestrian Circulation, Holly Springs, NC

<http://www.hollyspringsnc.us/DocumentView.aspx?DID=952>

As part of its Unified Development Ordinance, which regulates all aspects of new development, the Town of Holly Springs, North Carolina includes a substantial set of regulations on pedestrian-friendly site design. This ordinance provides an example of code language on elements such as:

- Walkways within subdivisions to connect houses to open space.
- Pedestrian links from residential areas to public open space.
- Ensuring connections between commercial/industrial areas and planned or existing public greenways.
- Maximizing the connectivity of parking areas and internal driveways to surrounding uses.

This code section also includes language on what a developer would need to do in order to be granted a waiver of these requirements.



## 3.3.4 Model Ordinance for Pedestrian- and Bicycle-Friendly Site Design

<http://www.public.applications.co.brown.wi.us/Plan/Planningfolder/Transpotation/Model%20STP%20Ordinance%20FINAL%20071712.pdf>

The Department of Planning and Land Services in Brown County, Wisconsin, prepared a set of guidelines in order to foster pedestrian access during the design review process. While not written as an



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ordinance, per se, the *Model Ordinance for Pedestrian- and Bicycle-Friendly Site Design in the Green Bay Metropolitan Area* provides a wealth of guidance for municipalities interested in improving their review process as it relates to pedestrian access. This document includes an appendix with numerous examples of how to retrofit existing developments, including schools, retail and multifamily developments, with improved pedestrian access. Figure 3.2 provides an examples of this plan’s assessment of a retail development’s pedestrian accessibility.



**Figure 3-2: Large retail site designed with high pedestrian accessibility**  
*(Source: A Model Ordinance for Pedestrian- and Bicycle-Friendly Site Design in the Green Bay Metropolitan Area)*



## 4. PLANNING

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### 4.1. Issue Area

As stated in the SMTC's *Bicycle and Pedestrian Plan*, roads in urbanized areas should generally include some form of pedestrian accommodation. In the city of Syracuse, in villages, and frequently in hamlets, major streets typically have sidewalks.

Residential and commercial areas developed since the 1950s sometimes include sidewalks but frequently do not. Without facilities with which to connect, it may seem nonsensical for an individual project to include sidewalks. However, the Federal Highway Administration advises that "Lack of a seamless system is no excuse not to provide parts of the system." (Federal Highway Administration, 2004)

Retrofitting roads with sidewalks can be challenging, particularly when property owners have made improvements to the public right of way that would be used for pedestrians. Prioritizing sidewalk projects and making them part of a larger, planned system can help stakeholders understand the need for new facilities.

A critical first step in assessing the need for new sidewalks is to ensure that there is an up-to-date inventory of existing sidewalks. The amount of detail in the inventory can vary. Many municipalities are wary of inventories that could expose them to liability under prior written notice statutes (see the [Prior Written Notice](#) section in [Chapter 2](#)). In the case of the Sustainable Streets Project, a block-level rating was utilized for the inventory of sidewalks within the City of Syracuse in order to provide an overall assessment of the degree to which a block's sidewalks complied with the City's sidewalk ordinance.

Sidewalks are not equally important on every street. A side street in a residential subdivision may see more use from kids on skateboards and parents pushing strollers than from cars and trucks, whether or not there are sidewalks. Most rural roads see so little pedestrian activity in a year that sidewalks would be underutilized. At the other end of the spectrum, a road that connects an apartment complex to a nearby school or grocery store is a relatively high priority for pedestrian facilities. Planning processes and tools are available to help communities with the many different cases in between these extremes, where it can be difficult to prioritize among needed improvements.

#### 4.1.1 Sidewalk Inventory

The SMTC's 2005 *Bicycle and Pedestrian Plan* included an inventory of sidewalks for towns and villages in the Metropolitan Planning Area. The Sustainable Streets Project updated this inventory and also

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added an inventory for the City of Syracuse. The inventory was based on aerial photos, supplemented by site visits and online mapping resources such as Google’s Street View tool ([www.google.com](http://www.google.com) ) and Bing map’s Bird’s Eye view (<http://www.bing.com/maps/>).

The inventory of city sidewalks included a block-level rating, based primarily on two factors: continuity and material. Rating criteria were assigned on a scale of 0 to 100 and were based on the degree to which the sidewalk segment complied with the City’s regulations, which state that sidewalks should be made of concrete, not asphalt, and should be continuous along the length of a block. Based on these requirements, the rating criteria were as shown in Table 4.1.

**Table 4.1 – Sidewalk Rating Criteria for City of Syracuse Sidewalks**

Rating	Criteria
0	NO SIDEWALK. No signs of sidewalk being present or having been present.
25	POOR COMPLIANCE. Large segments of the block are missing sidewalks, but not the entire block.
50	MODERATE COMPLIANCE. Mix of concrete and asphalt or completely paved with asphalt; small sections of block missing; sidewalk broken up by most driveways.
75	VERY GOOD COMPLIANCE. No gaps in paved surface and majority of block is paved with concrete; sidewalk broken up by some driveways.
100	PERFECT COMPLIANCE. No gaps visible in concrete surface, including driveways.

## 4.1.2 Sidewalk Inventory Results

### City of Syracuse

As noted in the SMTC’s *Bicycle and Pedestrian Plan*, most of the City’s streets have sidewalks. Nearly 600 miles of sidewalk were evaluated, and an additional 204 miles of street were identified as not having sidewalks (including nearly nine miles of roads in parks that do not have, but probably do not need, sidewalks).

As shown in Table 3.1, the majority of sidewalks in the city are being maintained more or less according to City ordinances. Fifty-seven percent of blocks in the city have scores of 75 or 100, indicating that they are continuous the length of the block. Nearly 300 miles of roadway in the city lacks continuous, maintained sidewalks.

**Table 3.1 – Sidewalk Inventory – City of Syracuse**

Sidewalk Inventory - City of Syracuse			
Block-level Rating		Sidewalk Mileage	Percent
0	No sidewalk present	204 <sup>2</sup>	26%
25	Partial sidewalk present	78	13%
50	Minor sidewalk gaps, mix of materials	174	30%
75	No gaps, mix of materials	206	35%
100	Continuous concrete sidewalk	128	22%
<b>TOTAL:</b>		<b>586</b>	<b>100%</b>

### Towns and Villages

As shown in Table 3.2, there are 245 miles of sidewalk in the towns and villages in the Study Area. These sidewalks are primarily concentrated in villages (164 miles). Villages have historically had a combination of both dense housing and multiple destinations in a relatively small area, making them highly walkable. As seen in [Chapter 3](#), most of the villages in the Study Area have a sidewalk ordinance of some kind.

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<sup>2</sup> “No sidewalk present” mileage not included in total sidewalk mileage.

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**Table 3.2 – Sidewalk Inventory – Towns and Villages**

*In order by total mileage in inventory*

Municipality/Government	Sidewalk Mileage	Percent	Municipality/Government	Sidewalk Mileage	Percent
Village of Solvay	26	11%	Village of Elbridge	3	1%
Town of DeWitt	21	9%	Town of Camillus	3	1%
Town of Salina	19	8%	Village of Camillus	3	1%
Village of Baldwinsville	18	7%	Village of Tully	3	1%
Town of Lysander (Radisson)	17	7%	Town of Geddes	3	1%
Village of Liverpool	16	7%	Town of Cicero	3	1%
Village of East Syracuse	15	6%	Village of Fabius	3	1%
Village of Fayetteville	14	6%	Town of Van Buren	2	1%
Village of Skaneateles	13	5%	Town of Clay	1	1%
Village of Phoenix	10	4%	Town of Manlius	1	1%
Village of Manlius	9	4%	Town of Lafayette	<1	0%
Village of North Syracuse	9	3%	Town of Lysander	<1	0%
Town of Onondaga	8	3%	Town of Marcellus	<1	0%
Village of Marcellus	7	3%	Onondaga Nation	<1	0%
Village of Jordan	5	2%	Town of Fabius	<1	0%
Village of Minoa	5	2%	Town of Skaneateles	<1	0%
Village of Central Square	5	2%	Town of Elbridge	<1	0%
			<b>TOTAL:</b>	<b>245</b>	<b>100%</b>

Source: SMTC Sidewalk Inventory. Towns with zero sidewalk mileage in the Study Area are not included: Towns of Hastings, Otisco, Pompey, Schroepfel, Spafford, Sullivan, Tully and West Monroe.

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Sidewalks in towns are frequently, but not exclusively, found either in hamlets or in areas adjacent to villages or the City of Syracuse. In the Town of DeWitt, for example, ten of its 21 miles of sidewalk are located either in the Dewittshire neighborhood, the hamlet of Jamesville, or in a neighborhood adjacent to the Village of East Syracuse. There are also six miles of sidewalk along major corridors: West Genesee Street, Jamesville Road, Erie Boulevard and Thompson Road. The other five miles are scattered throughout the town, in school campuses or in residential areas.

The 17 miles of sidewalk identified in the Town of Lysander are primarily comprised of walkways within the Radisson community. These walkways provide connections within a largely residential area, but also between homes, businesses, parks and playgrounds. Radisson’s walkways are unusual in that they are maintained by a single private entity (the Radisson Community Association) rather than private homeowners, and they primarily serve a recreational purpose.

### 4.1.3 SMTC’s Pedestrian Demand Model

In 2013, the SMTC developed a Pedestrian Demand Model for its Metropolitan Planning Area (MPA). This model uses a combination of factors, such as proximity to schools, parks and grocery stores, as well as population density, employment density and demographic characteristics, to identify places that are “walkable” and, therefore, would be considered Priority Zones. Walkable, in this context, means that homes, businesses and public areas (such as schools, parks and libraries) are situated near one another, within a relatively short walk – generally considered to be less than a half-mile.

The model does not take into consideration whether or not there are existing pedestrian facilities, such as cross-walks, sidewalks and pedestrian signals. The Pedestrian Demand Model measures the degree to which land uses are clustered in such a way as to make them attractive to potential users. If a school, a park and a large apartment complex are all located within a half-mile of one another, this model will likely identify this area as a Priority Zone. This Priority Zone’s geography can then be compared to the sidewalk inventory undertaken for this project, particularly along the roads with the highest speed limits and the most number of vehicles.

A detailed description of the Pedestrian Demand Model is provided in Appendix A. The model is based in geographic information systems (GIS) and uses a weighted overlay approach. The model was developed using GIS data layers, with each layer – such as a 1/4-mile buffer around all grocery stores – receiving a specific value. The entire study area was then split into “cells” (10 meter by 10 meter squares). When the values for all 18 of the layers in the model are added up for a specific cell, the total represents that cell’s score on a scale of 0 to 100. See Table 4.3 for a list of the layers used in this analysis.

<b>Destinations</b>	<b>Neighborhood Characteristics</b>
Schools	Population Density
Grocery Stores	Employee Density
Pharmacies	HHs w/o vehicles
Libraries/Community Centers	Percent Walking to Work
Post Offices	Percent Over Age 65
Town/Village/City Hall	Percent Under Age 18
Parks	Refugee Resettlement Areas
Convenience Stores	
Transit Stops	<b>Pedestrian Detractors</b>
Community Core	Pedestrian/Vehicle Collision Density

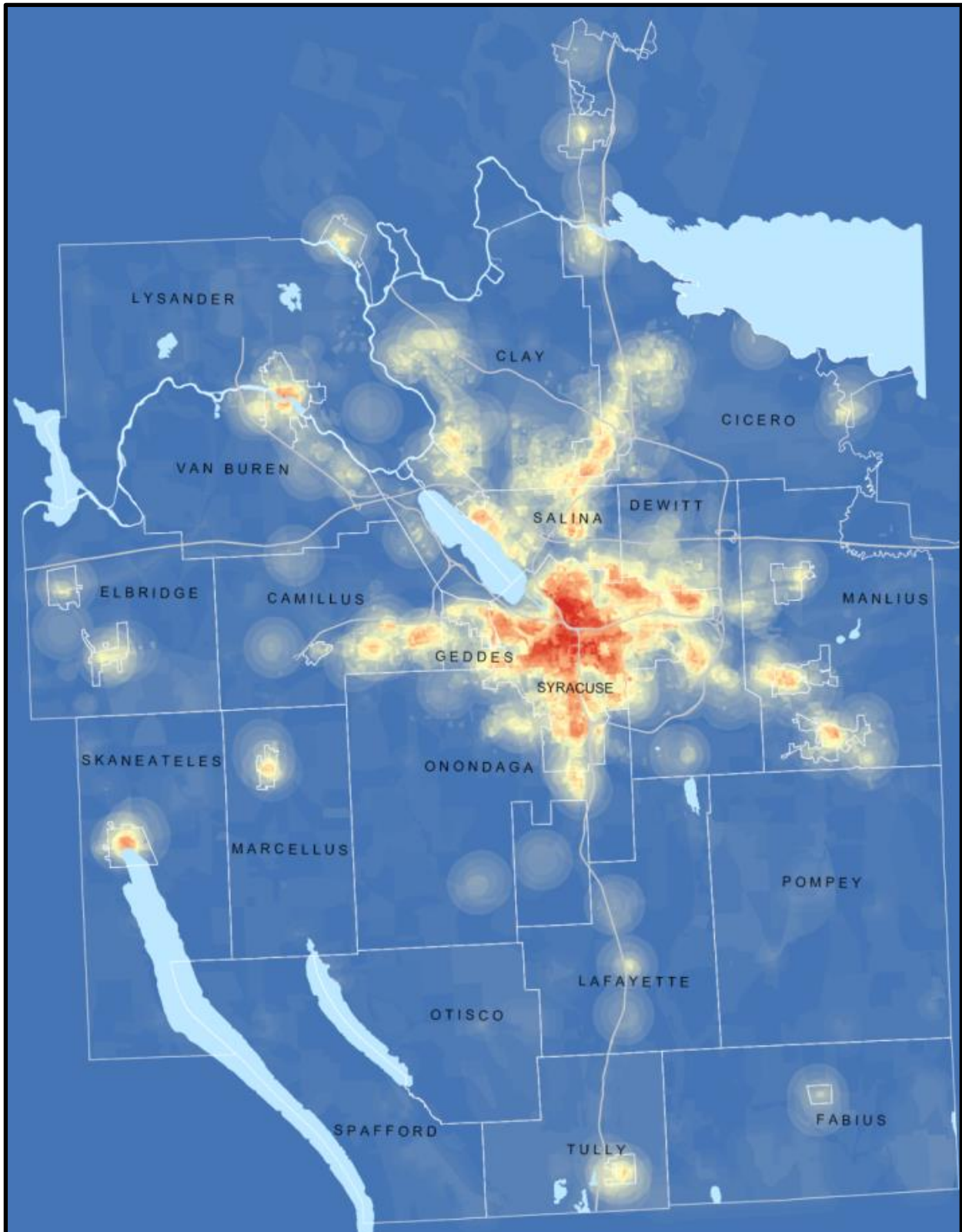
Based on the model’s structure, farmland generally would receive a low score. A specific farm might get some points if it happened to be near a cluster of homes, but without other nearby destinations, such as schools or community centers, it would receive a score under 10 points, suggesting no significant demand for pedestrian facilities.

On the other hand, a cell in the middle of a village would likely receive a high score, because of proximity to destinations, housing and public spaces. With the exception of the Village of Jordan, every village in the study area has a Priority Zone associated with it.

The model’s results can be displayed as a “heat map” (see Figure 4.1) that graphically represents the relative walkability of different places within the Study Area. The rural parts of the Study Area, such as the Towns of Otisco, Pompey and Spafford, have low scores and show as “cold” areas on the heat map: homes, businesses and other destinations are spread out. The City of Syracuse, particularly downtown Syracuse and the city’s north side, are “hot”. Scores are highest in these areas, in the high 80s and low 90s, indicating dense housing and destinations, such as schools and convenience stores, are clustered together.

Based on these outputs, the SMTC has identified Priority Zones, defined by the highest scores in the Study Area. The threshold for evaluating an area as a possible Priority Zone was a score of 40 points. To reach a score of 40, a cell had to have a combination of the items listed in Table 4.3, such as being near several destinations (a school, a pharmacy, a grocery store, etc.) and having certain demographic characteristics, such as a high population density and a higher than average proportion of households without vehicles.

The model identified most of the City of Syracuse as a single, large Priority Zone. In order to identify the areas in the City with the greatest potential for pedestrian activity, a secondary analysis was conducted using a threshold of 66 points. This threshold defines a core area within the city. This area is likely to already have sidewalks, and should be considered a focus area for maintenance activities.



**Figure 4.1 – Pedestrian Demand Model Results**

*Areas shown in dark red have the highest pedestrian demand scores, indicating the greatest potential for people to use sidewalks. Light yellow and blue areas have low pedestrian demand scores.*



## EVALUATION OF NEEDS

The Priority Zones identify road segments that are likely to see a substantial pedestrian demand and, therefore, warrant some type of accommodation for pedestrians. This does not necessarily mean that every segment in a Priority Zone requires sidewalks. The most appropriate pedestrian treatment for individual road segments within a Priority Zone may vary depending on the characteristics of the road.

Roads that carry more cars and that have higher speed limits often need additional design elements to secure a sense of safety for pedestrians. On local roads with lower traffic volumes and lower speeds, it is easier for pedestrians and drivers to avoid conflicts with one another, even if the only facility available for pedestrians is the roadway's shoulder.

The following evaluation is recommended for streets in Priority Zones:

- 1.) Is it currently safe and comfortable for pedestrians?

Major roads that lack sidewalks and have speed limits at or over 45 mph, and/or where there is no buffer between the curb and the sidewalk should be the top priority for a review.

- 2.) Are there sidewalks to schools, community centers, senior centers, medical facilities and libraries?

The pedestrian demand model takes numerous destinations into consideration, but the destinations that attract children, the disabled, and the elderly should receive special attention.

- 3.) Would a sidewalk and/or off-road path provide useful connections within or between zones?

The Priority Zone boundaries can be helpful in providing a geographic focus for analyzing possible connections on local roads, along abandoned rights of way, or through parks. Safe and attractive pedestrian connections within these Zones can link multiple origins and destinations. The roads that connect adjacent Zones should be evaluated to determine the probable level of pedestrian demand on critical connections.

Transportation planners classify roads into three broad categories: arterials, collectors and local roads. Local roads are spread throughout a community and frequently form a redundant network: several local roads may all lead to the same collector road. Collector roads, as the name suggests, collect local traffic and connect local roads to arterials. Arterials are the major thoroughfares in a community, providing connections from one side of a community to another, as well as between communities. Both arterials and collectors qualify as "major" roads in most cases and should be the first routes to be analyzed for gaps in the sidewalk network.

The Federal Highway Administration's online PEDSAFE Pedestrian Safety Guide and Countermeasure Selection System provides an excellent summary of pedestrian planning and sidewalk prioritization: [http://www.pedbikesafe.org/PEDSAFE/guide\\_implementation.cfm](http://www.pedbikesafe.org/PEDSAFE/guide_implementation.cfm).

## MUNICIPAL SIDEWALK PLANNING

The Priority Zones should be considered a starting point for discussions related to sidewalk and pedestrian infrastructure planning. Municipal leaders, community groups, and transportation agencies should evaluate these Zones based on their own knowledge of the routes that residents use to access key destinations. Such scrutiny can serve as the basis for a long-term pedestrian plan at the town or village level that identifies gaps in the existing network and outlines a plan for improving both sidewalks and street crossings.

A pedestrian plan should address:

- The responsibility of new development or redevelopment to include pedestrian connections.
- The municipality's role in maintaining pedestrian facilities and in enforcing property owners' responsibility to maintain these facilities.
- Short-term improvements needed to close gaps.
- Long-term improvements needed to ensure safe pedestrian routes throughout the municipality.

Additional information will be needed to develop a thorough pedestrian plan for a community. Specifically, three important categories of information could not be included in the model and should be considered by any municipality interested in using the Priority Zones as the basis for planning:

- 1.) Detailed facility information: The SMTC's model uses functional class as a proxy for elements such as roadway width and vehicle speed, recommending that municipalities look first at making improvements to pedestrian facilities along arterials and collectors. Additional existing conditions information will help communities identify the locations where the greatest potential for pedestrian demand overlaps with the most critical gaps in the sidewalk network. Useful information might include: the presence, absence, and quality of amenities (such as street lights, curb ramps, and crosswalks), traffic volumes and traffic speeds.
- 2.) Local Plans and Proposed Development: Municipalities may have their own plans that identify locations for sidewalks or other pedestrian accommodations based on specific community goals, such as revitalization of a waterfront district or hamlet area. These existing plans should be incorporated into an overall pedestrian plan along with the Priority Zones. The pedestrian demand model identifies the locations likely to have the greatest pedestrian demand, but does not preclude the installation of pedestrian accommodations outside of the Priority Zones.

Also, the model does not capture proposed future development. The addition of a high-density residential subdivision or apartment complex can dramatically increase the number of people walking or interested in walking in a given area. Future projects should be considered in sidewalk planning decisions.

- 3.) Pedestrian habits or destinations that are unique to a community or a destination. Sites that regularly draw large crowds, like Paper Mill Island in Baldwinsville or the Regional Market in Syracuse, may have a greater need for well-developed pedestrian facilities than the model is capable of predicting. Municipalities should identify special use sites such as these and develop appropriate pedestrian circulation plans for them.

## SIDEWALKS IN STATE OR COUNTY PROJECTS

The New York State Department of Transportation and county highway departments can use this set of Priority Zones to evaluate the need for pedestrian facilities in given projects. Under New York State's Complete Streets law, pedestrian access and mobility must be considered in the planning and design of highway projects that reconstruct or rehabilitate a roadway, unless one of four criteria are met:

- 1.) Pedestrians are not allowed on the roadway.
- 2.) The cost would be disproportionate to the need.
- 3.) There is a "demonstrated lack of need" based on land use, current and projected traffic volumes, population density, or a lack of community support.
- 4.) Use of the design features would adversely impact public safety.

The set of Priority Zones can be used to identify places in which the second and third of these criteria will not be true. However, as with municipal sidewalk planning, the Priority Zones are an evaluation done at the macro level; projects located outside of Priority Zones should be evaluated for specific pedestrian needs, such as access to a school or other destination.

## 4.2. Resources & Best Practices

### 4.2.1 Pedestrian Demand Models

The SMTC's model was based on similar models from around the country. Information on these plans and models can be found below.

***Pedestrian Master Plan, City of Sacramento***

[http://www.cityofsacramento.org/transportation/dot\\_media/street\\_media/sac-ped-plan\\_9-06.pdf](http://www.cityofsacramento.org/transportation/dot_media/street_media/sac-ped-plan_9-06.pdf)

***Pedestrian Mobility Planning, City of San Diego***

<http://www.sandiego.gov/planning/programs/transportation/mobility/pedestrian.shtml>

***Pedestrian Planning, Duluth-Superior Metropolitan Interstate Council***

<http://www.dsmic.org/default.asp?PageID=334>

## ***Pedestrian Master Plan, City of Seattle***

[http://www.seattle.gov/transportation/pedestrian\\_masterplan/](http://www.seattle.gov/transportation/pedestrian_masterplan/)

### **4.2.2 Planning**

## ***Bicycle and Pedestrian Plan, Syracuse Metropolitan Transportation Council***

See the [Section 1.3](#) for a description of the SMTC's 2005 *Bicycle and Pedestrian Plan*.

## ***PEDSAFE Pedestrian Safety Guide and Countermeasure Selection System, FHWA***

The FHWA's PEDSAFE resource available online provides a wealth of information on both solving specific technical problems related to pedestrian safety and getting a pedestrian plan started.

- PEDSAFE  
<http://www.pedbikesafe.org/PEDSAFE/>

## ***Complete Streets Planning Checklist, NYSDOT***

New York State's Complete Streets Law (S5411A-2011) requires that appropriate pedestrian accommodation be included in the design of all roadway projects that receive state and federal funding. In order to determine the need for pedestrian facilities in projects, NYSDOT has developed the "Complete Streets Planning Checklist".

- Complete Streets Planning Checklist (Draft)  
[https://www.dot.ny.gov/programs/completestreets/repository/DRAFT\\_Complete Streets Checklist\\_9-20-13.pdf](https://www.dot.ny.gov/programs/completestreets/repository/DRAFT_Complete_Streets_Checklist_9-20-13.pdf)

## ***Creating Walkable + Bikeable Communities, Initiative for Bicycle and Pedestrian Innovation, Portland State University***

A comprehensive guide to developing neighborhood-level pedestrian and bicycle facility plans. This guidance provides an overview of the steps to be taken, including data collection, inventorying opportunities and constraints, developing goals and a vision, and coming up with recommendations and an implementation plan.

- Creating Walkable + Bikeable Communities  
[http://www.pdx.edu/ibpi/sites/www.pdx.edu/ibpi/files/IBPI%20Master%20Plan%20Handbook%20FINAL%20\(7.27.12\).pdf](http://www.pdx.edu/ibpi/sites/www.pdx.edu/ibpi/files/IBPI%20Master%20Plan%20Handbook%20FINAL%20(7.27.12).pdf)

## *Urban Street Design Guidelines, City of Charlotte*

Like New York State’s Complete Streets policy, the policy of the City of Charlotte, North Carolina is to apply its Urban Street Design Guidelines to new and modified streets in the city. The City’s Urban Street Design Guidelines provide criteria for assigning a given street segment to a specific category: Main Street, Avenue, Boulevard, Parkway, or one of several categories of Local Street. The Guidelines provide a cross-section for each type of roadway, as well as a six-step decision-making process to be followed.

- Urban Street Design Guidelines  
<http://charmeck.org/city/charlotte/transportation/plansprojects/pages/urban%20street%20design%20guidelines.aspx>
- Policy Document  
<http://charmeck.org/city/charlotte/Transportation/PlansProjects/Documents/USDGPolicyRecommendationsOctober2607.pdf>

## *Evaluation Process for New Pathway Investment, Town of Bethlehem*

The Town of Bethlehem has developed an “Evaluation Process for New Pathway Investment” to rate possible sidewalk investments. This tool compares the anticipated benefit of the sidewalk to its anticipated costs and gives each proposed investment a letter grade (A through F) depending on the cost-benefit ratio. A relatively expensive project (over \$1 million) has to provide a substantial benefit (grade C or better) in order to “pass” this evaluation.

Elements used to rate a project’s benefits include:

- Inclusion in a previously prepared plan or study
- Roadway functional class and average annual daily traffic volume
- Existing roadway speed
- Number of intersections and roadway crossings included
- Number of driveways crossed
- Presence or absence of existing bicycle and pedestrian accommodation
- Nearby destinations (within ½ mile)
- Residential population density
- Potential users nearby (schools, parks, etc.)
- Record of investment in bike and pedestrian facilities in an area

The documentation for this approach provides a detailed explanation of how the Town came up with its scoring system for each criteria.

- Evaluation Process for New Pathway Investment  
<http://www.townofbethlehem.org/DocumentCenter/Home/View/3728>

## *Worth Walking, Village of Rhinebeck Pedestrian Task Force*

The Village of Rhinebeck’s Pedestrian Task Force prepared a comprehensive report on the state of its sidewalks and steps that could be taken to improve them. In addition to providing an excellent look at sidewalk maintenance funding issues at the village level, this study is valuable for its treatment of a frequently vexing issue: conflicts between tree roots and sidewalk slabs. The Task Force conducted an inventory of existing tree-sidewalk conflict points, including an evaluation of both the tree (its health and attractiveness) and the adjacent sidewalk. This helped clarify the set of alternatives being considered in each case to resolve the conflict.

- Worth Walking  
<http://www.rhinebecknyvillage.org/PDF/Documents/2011/02-28-11SidewalkWorthWalkingReport.pdf>

## *A Citizen’s Guide to Better Streets, Project for Public Spaces*

This guide developed by the Project for Public Spaces is subtitled “How to engage your transportation agency.” Its purpose is to act as a guide “to help citizens interact collaboratively and productively with their DOT.” It serves primarily to provide the layman with the vocabulary and knowledge of planning and engineering processes needed to get involved with the transportation planning process. It also includes information on the role of MPOs in the planning process.

- A Citizen’s Guide to Better Streets, Project for Public Spaces  
[http://www.pps.org/pdf/bookstore/How\\_to\\_Engage\\_Your\\_Transportation\\_Agency\\_AA\\_RP.pdf](http://www.pps.org/pdf/bookstore/How_to_Engage_Your_Transportation_Agency_AA_RP.pdf)

## *Case Study Compendium, Pedestrian and Bicycling Information Center*

Brief summaries of 100 different case studies are included in this resource. Case studies are split up according to major issue addressed: education, engineering, planning, or encouragement of non-motorized transportation. Each case study provides an overview of a problem, relevant background information, the solutions the community implemented and the results.

- Case Study Compendium  
[http://www.walkinginfo.org/case\\_studies/](http://www.walkinginfo.org/case_studies/)

# 5. BENEFITS

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## 5.1. Overview

This chapter focuses on the health, safety and economic benefits of pedestrian accessibility, and provides information on the cost-benefit analyses reported in other studies. Background data on walking to school is provided primarily to inform discussions of this topic; the benefits of improving kids' journey to school are addressed under the topics of health and safety.

The 2011 report *Making the Case for Investment in the Walking Environment: A review of the evidence* is a compilation of some of the best academic research and real-world case studies on the many and far-reaching benefits of improving conditions for pedestrians. (Sinnott, 2011) It summarizes cost-benefit findings from several reports, examining a range of possible benefits, including:

- Reduced road collisions
- Reduced congestion, fuel and other costs
- Reduced noise and air pollution
- Reduced carbon dioxide emissions
- Health benefits from a more physically active population
- Greater accessibility to facilities and services
- Increased social capital
- Increased economic activity
- Reduced public costs of providing transport infrastructure and services

This report draws several important conclusions, including:

- Investments in the walking environment are **good value for money** – even accounting for the fact that most **evaluations only consider a small number of potential benefits**. Cost-benefit analyses are underestimating the value of the walking environment, because very few studies have accounted for the impacts of increased walking on road casualties, congestion, fuel costs and other motorized travel costs, noise and air pollution, carbon dioxide and reduced public costs of providing for motorized transport. There are likely to be substantial benefits arising in these areas where investment in walking leads to modal shift.
- The most **significant measured benefit of investments in the walking environment is better health from increased physical activity**, and again, this is despite the fact that the only part of the total health benefit has been assessed.



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- **User experience (often referred to as journey ambience) is the second largest benefit.** This represents the improved travel experience of users of a walking environment
- **All the evidence reviewed of evaluations of walking environments showed positive cost-benefit ratios, of up to 37.6 (Sinnott, 2011)[emphasis in original]**

### 5.1.1 Health Benefits

Walking is good exercise. The US Centers for Disease Control and Prevention (CDC) recommends that adults engage in 150 minutes a week of moderate-intensity aerobic activity, such as brisk walking. (Centers for Disease Control)

Numerous studies have assessed the health benefits of walking. As reported in *The New York Times Magazine*:

A recent meta-analysis of studies about exercise and mortality showed that, in general, a sedentary person's risk of dying prematurely from any cause plummeted by nearly 20 percent if he or she began brisk walking (or the equivalent) for 30 minutes five times a week. (Reynolds, 2011)

In recent years, researchers have focused on the links between land use patterns that rely on automobile transportation, decreased rates of physical activity and increased rates of obesity and heart disease. For example, a 2002 article in the *American Journal of Preventive Medicine* found that "Residents of homes built before 1974 in urban or suburban areas were more likely than residents of newer homes to walk  $\geq 20$  times per month." (Berrigan & Troiano, 2002). This research used the construction year of 1974 as a proxy for neighborhood design. The paper states: "Neighborhoods containing older homes in urban areas are more likely to have sidewalks, have denser interconnected networks of streets, and often display a mix of business and residential uses."

A 2004 article in the *Journal of Planning Literature* makes the case, based on a review of 20 public health studies, that there is a link between the way neighborhoods and streets are built and health outcomes. This article concludes:

During the past several decades, the lack of sufficient coordination between land use and transportation planning and the limited public expenditures in nonmotorized facilities - less than 2 percent of total federal transportation budgets are allocated for pedestrian and bicycle facilities and programs (FHWA 2002) - have contributed to creating urban environments where walking and biking are marginalized or disregarded as transportation modes. The studies' findings imply that, to enhance the health and well-being of the population, infrastructure for walking and biking needs to become an integral part of public transportation systems and services. (Lee & Moudon, 2004)

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A good deal of recent research has focused specifically on the health benefits for children who walk to school. Encouraging kids to walk to school has become an increasingly high priority for public health officials who are concerned about an increase in childhood obesity. In 2009, the National Centers for Disease Control reported that:

Walking to and from school has been demonstrated to increase physical activity among children during the commute, leading to increased energy expenditure and potentially to reduced obesity. However, the percentage of students walking to school has dropped dramatically over the past 40 years, partially due to the increased distance between children's homes and schools. (Centers for Disease Control, 2009)

The CDC's top recommendation, as presented in this report, is to site schools in neighborhoods rather than on the community's edge, in order to eliminate a key deterrent to walking: distance. In most places in the Study Area, reconsidering school siting would provide a very long-term solution, since new communities and new schools are not being built. Locally, the emphasis is on improving routes to school. (See "Journey to School", below, for more information on walking to school.)

## 5.1.2 Safety Benefits

There were 960 vehicle collisions with pedestrians in the Study Area in the four-year period from January 2008 to December 2011. A pedestrian was killed in 20 of these collisions. As seen in Table 4.1, nearly 70 percent of these collisions were in the City of Syracuse. The Towns of Clay, Cicero, Salina and DeWitt each had at least 30 pedestrian-vehicle collisions in this period.

According to the FHWA's "Toolbox of Countermeasures and their Potential Effectiveness for Pedestrian Crashes," building sidewalks in order to get pedestrians out of the roadway can reduce the incidence of car-pedestrian collisions by 88 percent (Federal Highway Administration, 2008). Based on this rating system, the only type of project that is more effective in making a facility safe for pedestrians is the construction of a pedestrian overcrossing or underpass.

Pedestrian safety is important for all roadway users, but particularly so for populations that have limitations in their ability to use motorized vehicles, such as children, disabled populations and the elderly. According to the report *Aging Americans: Stranded without Options*, older pedestrians are more vulnerable to injury than younger people: "Older people are among the first to suffer increased injuries and fatalities when streets and highways are not safe." (Bailey, 2004)



Source: [www.pedbikeimages.org/](http://www.pedbikeimages.org/)  
Photo by Dan Burden

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**Table 5.1 –Vehicle-Pedestrian Collisions in the Study Area, January 1, 2008 to December 31, 2011**

Municipality	Total Number	Percent
City of Syracuse	655	68%
Town of Cicero	42	4%
Town of Clay	37	4%
Town of Salina	34	4%
Town of DeWitt	30	3%
Town of Manlius	23	2%
Town of Camillus	17	2%
Town of Geddes	15	2%
Town of Onondaga	13	1%
Village of Baldwinsville	12	1%
Village of North Syracuse	12	1%
Village of Solvay	11	1%
Town of Skaneateles	8	1%
Town of Lysander	6	1%
Village of East Syracuse	6	1%
Village of Liverpool	5	1%
Village of Minoa	5	1%
Onondaga Indian Reservation	4	0.4%
Village of Central Square	4	0.4%
Town of LaFayette	3	0.3%
Town of Pompey	3	0.3%
Village of Fayetteville	3	0.3%
Town of Elbridge	2	0.2%
Town of Hastings	2	0.2%
Town of Tully	2	0.2%
Town of Van Buren	2	0.2%
Village of Phoenix	2	0.2%
Town of Marcellus	1	0.1%
Town of West Monroe	1	0.1%
<b>TOTAL</b>	<b>960</b>	<b>100%</b>

*Source: Accident Location Information System data*

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There are many resources available on the safety benefits of sidewalks and designing roadways and pedestrian facilities to improve pedestrian safety. See the links provided in the “More Information” section below for more information on how to assess roads for pedestrian safety and how to plan and design roadways for greater safety.

### 5.1.3 Journey to School

When the route that children would use to walk or bike to school is perceived as too dangerous, the most immediate solution is to use school buses and family vehicles to get students between home and school. But the health benefits of walking and biking, and the safety benefits associated with improved facilities, argue for investments in improved facilities.

A recent analysis of the benefits of walking to school states: “Studies show that children who walk and bicycle to school are more physically active, have lower body mass index scores, lower obesity levels and are more likely to meet physical activity guidelines than students who are driven or bused to school.” (Safe Routes to School National Partnership, 2012)

This source also states that the direct costs of treating childhood obesity nationally are as high as \$14 billion annually.



Source: [www.pedbikeimages.org/](http://www.pedbikeimages.org/)  
Photo by Dan Burden

More research is needed locally to determine the possible cost savings and safety benefits that could be realized through improvements to pedestrian access to school.

#### Background Information

According to a survey conducted by the National Center for Safe Routes to School, more than three-quarters of elementary and middle-school children in the United States take either a family car (45 percent) or a bus (37 percent) to get to school. Eleven percent walk to school (the survey did not specify whether or not children were walking alone, with an adult or in a group). The trip home from school has slightly different percentages: 35 percent of students take a family car, 42 percent ride a bus and 15 percent walk. (National Center for Safe Routes to School, 2010) This survey also asked parents why they do or do not allow their children to walk or bike to school. The six issues most frequently cited by parents were:

- Distance, 62%
- Traffic speed, 55%
- Traffic volume along the route, 55%
- Intersection and crossing safety, 48%

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- Weather, 44%
- Crime and violence, 38%

According to this survey's results, 41 percent of students who live within a quarter-mile of their school walk to school. This proportion drops to 18 percent for students who live between a quarter-mile and a half-mile from their school, and to 9 percent for students who live between a half-mile and a mile from school. Two percent of students who live more than a mile from school walk. (National Center for Safe Routes to School, 2010)

While sidewalks cannot alter the weather or make a two-mile walk to school substantially shorter, good planning and design can reduce the risks that parents perceive in letting their children walk next to and across high-speed, high-traffic roadways.

### *Busing Costs*

Beyond health implications, adding sidewalks to make routes to school safer can save school districts (and taxpayers) money by reducing transportation costs. According to a report from the Citizens Budget Commission, "School districts in New York spent \$1,100 per pupil on average on transportation in 2010, more than any other state and 140 percent above the U.S. average of \$459." (Citizens Budget Commission, 2012)

New York State Education Law Section 3635 provides the framework for how school districts provide transportation to and from school. The law requires Boards of Education of non-city school districts to provide transportation for all eligible resident pupils in grades K-8 who live more than two miles from school, and for pupils in grades 9-12 who live more than three miles from school, up to a distance of 15 miles. (New York State Department of Education, 2009) School districts are then reimbursed for up to 90 percent of the cost of busing students who live within the mandated busing radii.

### *Child Safety Zones*

Section 3635-b of the Education Law allows Boards of Education to identify "Child Safety Zones" within the radii specified above. These safety zones are based on whether or not students must traverse a known hazardous area in order to reach their school.

The guidelines for establishing these zones provide a scoring system for the hazards that students must traverse while walking to school (New York State Department of Education, 2009). Three types of hazard are identified: highways without sidewalks or with inadequate shoulders, highway intersections and highway-railroad grade crossings. Points are assigned depending on several variables; for a roadway with narrow shoulders, factors include the length of the roadway, the speed limit and traffic volume. Depending on the score and the type of school, specific routes or areas can be classified as Child Safety Zones. The school district then becomes eligible for state funding for busing the student or students who would otherwise be forced to walk or bike through these zones, even if these students are

within the radii specified under State law. There is not a single, comprehensive data source on which school districts use this mechanism to fund supplemental bus services, so it is not known how extensively Child Safety Zones are utilized locally.

One of the elements considered in this evaluation is the presence or absence of sidewalks and adequate (five-foot-wide) shoulders. For example, a half-mile long stretch of road with a 45 MPH speed limit, without sidewalks or adequate shoulders and with moderate traffic volumes (50 vehicles in a 15-minute period) would likely be eligible to be a Child Safety Zone, if used by students getting to a K-8 school.

Adding sidewalks to this portion of the road during a road reconstruction project could have the effect of dramatically improving safety and reducing a hazard, making it possible for more students to walk to school.

## *Safe Routes to School*

Between 2005 and 2012, the US Department of Transportation provided over a billion dollars to state departments of transportation through the National Safe Routes to School program to improve safety on walking and bicycling routes to schools. With the approval of a new transportation bill, Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) in July 2012, Safe Routes to School ceased to have a dedicated share of the national transportation budget and has become one of the types of project funded by a new category, known as Transportation Alternatives Programs (TAP) (see [Chapter 6, Sidewalk Finances](#)).

## *Cost-Benefit Analyses*

Improved air quality, better health and safer streets are goals in and of themselves, but each of these has a quantifiable financial aspect as well. For example, health benefits may be seen in fewer sick days, number of hospitalizations and lower medical bills. Recent research has quantified the costs and benefits of improving bicycle and pedestrian facilities and finds that benefits far outweigh costs.

A 2010 study that focused on one Wisconsin county estimated that the cost of making sidewalks available to everyone in the county (ensuring sidewalks on at least one side of all streets) would cost \$450 million, but would yield benefits to residents in terms of health and improved air quality over a ten-year period on the order of \$800 million, for a cost-benefit ratio of 1.7. (Guo & Gandavarapu, 2010)

A 2008 study that compiled the results of 16 research projects found that, while the cost-benefit ratios identified in these papers vary widely, the average cost-benefit ratio for bike and pedestrian improvements was 1:5. In the studies reviewed, benefits were primarily health related (quantified in terms of hospitalization, absenteeism, etc.), but also included reduced risk of accidents, reduced congestion and improved air quality. (Cavill, Kahlmeier, & Rutter, 2008)

## 5.2. More Information

### Health & Social Benefits

*Recommended Community Strategies and Measurements to Prevent Obesity in the United States*, Centers for Disease Control

[http://www.cdc.gov/obesity/downloads/community\\_strategies\\_guide.pdf](http://www.cdc.gov/obesity/downloads/community_strategies_guide.pdf)

“How much physical activity do adults need?”, Centers for Disease Control and Prevention webpage

<http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>

The Association between Urban Form and Physical Activity in US Adults

[http://www.ajpmonline.org/article/S0749-3797\(02\)00476-2/fulltext](http://www.ajpmonline.org/article/S0749-3797(02)00476-2/fulltext)

Correlates of Walking for Transportation or Recreation Purposes

[http://www.activelivingresearch.org/files/JPAH\\_6\\_Lee\\_0.pdf](http://www.activelivingresearch.org/files/JPAH_6_Lee_0.pdf)

Destinations that matter: associations with walking for transport

[http://www.ipenproject.org/documents/publications\\_docs/CERIN%20destinations\\_H&P.pdf](http://www.ipenproject.org/documents/publications_docs/CERIN%20destinations_H&P.pdf)

Linking Objectively Measured Physical Activity with Objectively Measured Urban Form: Findings from SMARTRAQ

<http://www.ncbi.nlm.nih.gov/pubmed/15694519>

Operational Definitions of Walkable Neighborhood: Theoretical and Empirical Insights

[http://activelivingresearch.com/files/JPAH\\_7\\_Moudon.pdf](http://activelivingresearch.com/files/JPAH_7_Moudon.pdf)

Social Capital and the Built Environment: The Importance of Walkable Neighborhoods, *American Journal of Public Health*

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448008/pdf/0931546.pdf>

“What's the single best exercise?”, *New York Times Magazine*

[http://www.nytimes.com/2011/04/17/magazine/mag-17exercise-t.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2011/04/17/magazine/mag-17exercise-t.html?pagewanted=all&_r=0)

### Safety Benefits

Aging Americans: Stranded without Options, Surface Transportation Policy Project

<http://www.transact.org/report.asp?id=232>

PEDSAFE, Pedestrian Safety Guide and Countermeasure Selection System, FHWA

*Comprehensive online source for pedestrian safety planning and design*

<http://www.pedbikesafe.org/PEDSAFE/>

A Guide for Reducing Collisions Involving Pedestrians, National Cooperative Highway Research Program Report 500

*Data and analysis on accidents, as well as a catalog of safety improvements and steps to*



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*implementation.*

<http://safety.transportation.org/guides.aspx?cid=29>

Dangerous by Design, Transportation for America

*This resource focuses primarily on data that indicate dangerous roadways in America.*

<http://www.transact.org/PDFs/2009-11-09-Dangerous%20by%20Design.pdf>

How to Develop a Pedestrian Safety Action Plan, FHWA, NHTSA, Pedestrian and Bicycle Information Center

*Summary of steps to take in coming up with a pedestrian plan focused on safety. Appendix B is an excellent resource on conducting pedestrian counts. Appendix D lists funding sources.*

[http://safety.fhwa.dot.gov/ped\\_bike/ped\\_focus/docs/fhwasa0512.pdf](http://safety.fhwa.dot.gov/ped_bike/ped_focus/docs/fhwasa0512.pdf)

A Review of Pedestrian Safety Research in the United States and Abroad, FHWA

*Review of research and analysis of how, where and why vehicle-pedestrian collisions occur and which measures are most effective at eliminating or reducing collisions.*

<http://www.fhwa.dot.gov/publications/research/safety/pedbike/03042/>

Pedestrian and Bicycle Collisions in Onondaga County, Tri-State Transportation Campaign

*This is not the source of the collision data in this report, but this is a good source for information on collisions between vehicles and non-vehicles in New York State.*

[http://org2.salsalabs.com/dia/track.jsp?key=-](http://org2.salsalabs.com/dia/track.jsp?key=-1&url_num=1&url=http%3A%2F%2Ftstc.org%2Freports%2Ffactsheets%2FOnondaga_2013.pdf)

[1&url\\_num=1&url=http%3A%2F%2Ftstc.org%2Freports%2Ffactsheets%2FOnondaga\\_2013.pdf](http://org2.salsalabs.com/dia/track.jsp?key=-1&url_num=1&url=http%3A%2F%2Ftstc.org%2Freports%2Ffactsheets%2FOnondaga_2013.pdf)

## ***Journey to School***

*Safe Routes to School: Helping Communities Save Lives and Dollars*, Safe Routes to School National Partnership 2011 Policy Report

<http://www.saferoutespartnership.org/sites/default/files/pdf/SRTSNP-2011-Policy-Report.pdf>

Developing a Walking School Bus

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

*Better Targeting New York's Pupil Transportation Aid*, Citizens Budget Commission

Provides background information on the costs of busing students to and from school in New York State.

[http://www.cbcny.org/sites/default/files/REPORT\\_SchoolTransport\\_12122012.pdf](http://www.cbcny.org/sites/default/files/REPORT_SchoolTransport_12122012.pdf)

*Safe Routes to School Travel Data*, National Center for Safe Routes to School

[http://www.sacog.org/complete-streets/toolkit/files/docs/NCSRTS\\_SRTS%20Travel%20Data.pdf](http://www.sacog.org/complete-streets/toolkit/files/docs/NCSRTS_SRTS%20Travel%20Data.pdf)

Pupil Transportation Policy, New York State Department of Education

[http://www.p12.nysed.gov/schoolbus/Parents/htm/general\\_info\\_intro.htm](http://www.p12.nysed.gov/schoolbus/Parents/htm/general_info_intro.htm)

Calculating School Transportation Reimbursement

<https://stateaid.nysed.gov/trans/calculated.htm>

# 5. BENEFITS

Child Safety Zone Regulations, New York State Department of Education

[http://www.p12.nysed.gov/schoolbus/BusinessOfficial/htm/Part\\_191.html#p191.8](http://www.p12.nysed.gov/schoolbus/BusinessOfficial/htm/Part_191.html#p191.8)

## **Economic Benefits**

*Making the Case for Investment in the Walking Environment*, Living Streets

<http://www.livingstreets.org.uk/professionals/making-the-case-for-investment-in-the-walking-environment>

“Economic analyses of transport infrastructure and policies including health effects related to cycling and walking: a systematic review”, *Transport Policy*

[http://www.euro.who.int/\\_data/assets/pdf\\_file/0010/53857/E92660.pdf](http://www.euro.who.int/_data/assets/pdf_file/0010/53857/E92660.pdf)

*Walking the Walk: How Walkability Raises Housing Values in US Cities*, Joe Cortright and CEOs for Cities

[http://www.ceosforcities.org/pagefiles/WalkingTheWalk\\_CEOsforCities.pdf](http://www.ceosforcities.org/pagefiles/WalkingTheWalk_CEOsforCities.pdf)

“An economic evaluation of health-promotive built environment changes” (the Wisconsin sidewalk study), *Preventive Medicine*

<http://www.ncbi.nlm.nih.gov/pubmed/19840817>

“The Walkability Premium in Commercial Real Estate Investments”, *Real Estate Economics*

[http://cala.arizona.edu/sites/default/files/faculty\\_papers/The%20Walkability%20Premium%20in%20Commercial%20Real%20Estate%20Investments,%202011.pdf](http://cala.arizona.edu/sites/default/files/faculty_papers/The%20Walkability%20Premium%20in%20Commercial%20Real%20Estate%20Investments,%202011.pdf)

# 6. SIDEWALK FINANCES

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## 6.1. Issue Area

Any effort to plan for new sidewalks should include a consideration of anticipated costs and possible sources of revenue for both construction and long-term maintenance. Accurate cost estimates are difficult to make until the specifics of a given design are known. However, for planning purposes, an average sidewalk construction of \$92 per linear foot (five-foot width), or \$485,760 per mile, can be assumed.

This chapter also includes references to possible funding sources, including information based on the changes to federal highway funding made under the most recent round of federal transportation funding legislation, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21).

## 6.2. Average Costs

Sources vary on the average costs for sidewalk construction. The following provides information from the FHWA, NYSDOT and the Vermont Agency of Transportation<sup>3</sup> to serve as references. The per-unit estimate for sidewalk construction of \$92 per linear foot is based on NYSDOT estimates.

### 6.2.1 Construction

#### *FHWA*

The Federal Highway Administration's (FHWA) report "PEDSAFE: Pedestrian Countermeasure Selection Guide" provides the following estimate and discussion:

The cost of constructing sidewalks alone is relatively low; typical bids run between \$24 and \$36 per meters squared (\$20 to \$30 a square yard), which roughly translates to \$43 to \$64 per lineal meter (\$12 to \$20 per lineal foot) for 1.8-m- (6-ft-) wide sidewalks. Therefore, sidewalks on both sides of the roadway can run roughly between \$93,000 and \$155,000 per kilometer (\$150,000 and \$250,000 per mile) (costs from Oregon DOT, 1999).

Factors to consider when calculating the cost of sidewalks:

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<sup>3</sup> The Vermont Agency of Transportation was selected for comparison purposes because it is a cold-weather state and because it provides a "fully loaded" cost estimate for sidewalk construction.

## 6. SIDEWALK FINANCES

1. Presence of curb and gutter: The costs of providing curb and gutter, which presumes the need to also provide a street drainage system, run much higher than the cost of sidewalk alone. ... Yet, on many urban streets, this work must be performed prior to installing sidewalks. If this is the case, only the cost of sidewalks and curb ramps should be attributed to expenditures for pedestrians – catch basins are provided to drain the roadway surface used by motor vehicle traffic.
2. Number of driveways: To comply with ADA, many existing driveways must be replaced with ones that provide a level passage at least 0.9 (3 ft) wide. It can also be advantageous to inventory all existing driveways to see if any can be closed, resulting in a cost savings.
3. Number of intersections: While intersections represent a reduction in the sidewalk, curb ramps are required where sidewalks cross intersections and the cost of providing additional traffic control at each intersection should be considered.
4. Obstacles to be removed: The cost for moving or removing obstacles such as utility poles, signposts, and fire hydrants vary too much to be itemized here; however, they are required to be moved if they obstruct access. These costs must be calculated individually for each project.
5. Structures: While minor sidewalk projects rarely involve new structures such as a bridge, many projects with significant cuts and fills may require retaining walls and/or culvert extensions. The costs of retaining walls must be calculated individually for each project.
6. Right-of-way: While most sidewalk projects can be built within existing rights-of-way (especially infill projects), some may require some right-of-way easement. An alternative to acquiring right-of-way is to narrow the roadway, which should consider the needs of bicyclists (e.g., through bike lanes or shoulders, at a minimum of 1.5 m (5 ft).
7. Miscellaneous factors: Planters, irrigation, benches, decorative lampposts, and other aesthetic improvements cost money, but they are usually well worth it if the impetus for the project is to create a more pleasant and inviting walking environment.

When project costs appear to be escalating due to one or more of the above-listed items, especially retaining walls or acquiring right-of-way, consideration may be given to narrowing the sidewalk in constrained areas as a last resort. The full sidewalk width should be resumed in non-constrained areas—this is preferable to providing a narrow sidewalk throughout, or dropping the project because of one difficult section.

### Tips to Reduce Total Costs:

1. Stand-alone vs. integrated within another project: Sidewalks should always be included in road construction projects. Stand-alone sidewalk projects cost more than the same work performed as part of a larger project. Sidewalks can be piggybacked to projects such as surface preservation, water or sewer lines, or placing utilities underground. Besides the monetary savings, the political fallout is reduced, since the public doesn't perceive an agency as being inefficient. (It is very

Sidewalk construction costs fall when sidewalks are included in other projects, such as road construction projects, and when several small sidewalk projects are bundled into one large project

## 6. SIDEWALK FINANCES

noticeable if an agency works on a road, then comes back to do more work later.) The reduced impacts on traffic are a bonus to integration.

2. Combining Projects: A cost-savings can be achieved by combining several small sidewalk projects into one big one. This can occur even if the sidewalks are under different jurisdictions, or even in different localities, if they are close to each other. The basic principle is that bid prices drop as quantities increase.

### *New York State Department of Transportation*

To assist applicants with their Safe Routes to School grant applications, NYSDOT has developed the Safe Routes to School Quick Estimate tool (<https://www.dot.ny.gov/divisions/operating/opdm/local-programs-bureau/srts/repository/SRTS%20Quick%20Estimate.xls>). This listing provides per unit costs for a variety of pedestrian amenities, as shown in Table 6.1.

Note that, according to this estimate, the cost of a cast-in-place concrete curb is more per linear foot than the cost of a concrete sidewalk.

Using this estimating tool, the cost to add pedestrian signals, curb ramps and crosswalks to a signalized intersection (without adding sidewalks) is on the order of \$30,000.<sup>4</sup>

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<sup>4</sup> This assumes the addition of: eight pedestrian push buttons and curb ramp (two per corner) and four crosswalks.

# 6. SIDEWALK FINANCES

**Table 6.1 – Selected Cost Estimates from NYSDOT Safe Routes to School Quick Estimates**

Item	Unit Price	Cost Breakdown
4-foot-wide sidewalk	\$33/LF	Sidewalk: \$23/LF
		Excavation & disposal: \$5/linear foot
		Subbase Course Type II: \$5/linear foot
5-foot-wide sidewalk	\$39/LF	Sidewalk: \$27/LF
		Excavation & disposal: \$6/linear foot
		Subbase Course Type II: \$6/linear foot
10-foot-wide multiuse asphalt path	\$74/LF	Includes subgrade preparation, saw cutting and tack coat; doesn't include curbing, grading or turf establishment
ADA Curb Ramp	\$1,250/each	Includes site survey, demolition, saw cutting, excavation, etc.
Crosswalk (ladder bar w/standard striping)	\$770/each	White epoxy reflectorized pavement symbols: \$.42/LF
		Pavement cleaning and preparation: \$.68/LF
		Assumes 700 LF of striping per crosswalk
Concrete Curbing	\$53/LF	Cast in place concrete curb: \$32/LF
		Cost estimate includes saw cutting, excavation & disposal, embankment in place, subbase, top course and foundation concrete
Raised Crosswalk	\$15,000/EA	
Pedestrian Push Button – Existing Signal	\$2,005/EA	Includes audible signal, conduit, LED signal, demolition, excavation, repairs to asphalt, signal system components, adjustments to utilities and finish work
Pedestrian Push Button – New Signal	\$6,580/EA	Includes items from Existing Signal, as well as signal pole, pullbox and conduit excavation

*Estimates do not include: moving utilities/mailboxes, incidental alteration of drainage structures, driveway aprons, pruning, clearing and grubbing, maintenance and protection of traffic (M&PT) or planting.*

**Abbreviations:** LF = Linear Foot; EA = Each

Source: New York State Safe Routes to School Quick Estimates

## Vermont Agency of Transportation

The Vermont Agency of Transportation produced a report in 2010 that provides cost estimates for a variety of pedestrian path options, based on recent bids and cost estimating software. This report is particularly useful since it gives both “basic” costs and “total” costs in another cold-weather state. The report describes these as follows:

‘Basic’ costs of sidewalk construction are only the items that are required to build the sidewalk itself, such as gravel sub-base, concrete, and granite curbing, as well as the excavation of the area in which the sidewalk is built. The ‘total’ cost reflects the

# 6. SIDEWALK FINANCES

combined cost of sidewalk construction with other costs that are incidental to the construction. For example, pavement markings, new signs, traffic control, drainage, and landscaping are included in the non-basic costs.

Table 6.2 provides relevant information from this report.

**Table 6.2 – Per-Foot Costs of Sidewalk Construction Items, 2010**

Sidewalk/curb configurations (5-foot wide)	BASIC cost per foot	TOTAL cost per foot
Concrete walk with granite curb	\$ 79	\$ 218
Concrete walk with concrete curb	\$ 65	\$ 180
Concrete walk with no curb	\$ 47	\$ 131
Bituminous walk with granite curb	\$ 67	\$ 185
*Bituminous walk with concrete curb	\$ 53	\$ 148
*Bituminous walk with no curb	\$ 36	\$ 99
*Aggregate walk with granite curb	\$ 58	\$ 160
*Aggregate walk with concrete curb	\$ 44	\$ 123
*Aggregate walk with no curb	\$ 27	\$ 74
<i>*No projects of this kind completed in study period</i>		
Source: VTrans Bicycle and Pedestrian Program Unit Cost Database		

These estimates underscore how variable cost estimates can be for pedestrian facilities: the Vermont Agency of Transportation’s “Total” per foot estimate works out to \$950,400 for a mile of sidewalk with concrete curbs, while NYSDOT’s estimates put the cost of a mile of sidewalk and curb, with eight curb ramps, eight push button signals and four crosswalks, at \$514,880. FHWA’s estimate of \$250,000 per mile (actually two miles of sidewalk, because it assumes sidewalks on both sides of the street) is substantially lower than either of these estimates, but does not include curbs, curb ramps or any additional elements, such as crosswalks or pedestrian signals. This is useful as a “minimum” estimate of sidewalk costs.

For planning purposes, this report assumes that the best available estimate for the cost of a mile of five-foot-wide sidewalk will also include the costs of adding a curb and should be based on the NYSDOT estimate of \$92 per linear foot, or \$485,760 per mile.

## 6.2.2 Maintenance Costs – Sidewalk Snow Removal

### SIDEWALK SNOW REMOVAL



## 6. SIDEWALK FINANCES

The cost of clearing snow from sidewalks depends on several factors, including the magnitude and type of snow event, the type and age of the equipment being used, and whether the workers doing the snow clearing are public or private-sector employees. Locally, several villages clear snow from their sidewalks periodically. Determining the cost of this service is difficult, because it is typically combined with other snow and ice removal activities undertaken by public works departments, such as plowing roads and clearing snow at parks and in municipal parking lots. An estimate from the Village of Skaneateles put the cost of clearing the village's 20 miles of sidewalks at \$85 per snowfall, with an average rate of nearly seven miles of sidewalk cleared per hour. (Jacobs, 2000) The City of Rochester's sidewalk snow removal program splits the city into plowable routes of roughly 15 miles, with each route taking about five hours to plow, for an overall rate of approximately three miles per hour. The total cost to plow the City's 880 miles of sidewalks each year is on the order of \$1.2 million, for an average annual cost per mile of \$1,365. (City of Rochester, 2012)

Seasonal, per-mile sidewalk snow clearing costs vary widely, from a low of around \$50 in the Village of Skaneateles, using Public Works personnel and equipment, to a high of \$2,100 for a private contract at the neighborhood level.



Figure 6-1: A Bobcat clears snow from a sidewalk in Syracuse

In the winter of 2009/2010, the University Neighborhood Partnership Committee in the City of Syracuse hired a private contractor to clear snow from 4.75 miles of sidewalk in the Syracuse University neighborhood. For the winter of 2009/2010, the cost of this contract was \$10,000 and included up to 26 plow runs. This works out to an average cost of approximately \$2,100 per mile per season.

### *Number of Plowable Events*

Several sources consulted used a standard average of 12 major snowfall events per season. While Syracuse receives more snow than the average community in the northeast, data from the National Oceanic and Atmospheric Administration (NOAA) indicate that the long-term average for the area is to have around six days a year with snowfall over five inches and 13 or 14 days a year with snowfall of three inches or more. (National Oceanic and Atmospheric Administration, 2011) To be on the safe side,

this guidance recommends planning for 15 “plowable” events per year, bearing in mind that this is not intended to produce bare pavement all winter, but to make the sidewalks passable.

## OTHER MAINTENANCE ACTIVITIES

FHWA’s document *A Guide for Maintaining Pedestrian Facilities for Enhanced Safety* provides detailed information on the following maintenance techniques, including an estimate of costs:

- Patching
- Repairs to cracks
- Wedging
- Grinding and horizontal cutting
- Mud-jacking

With the exception of mud-jacking, which can be comparable to slab replacement in cost, these are relatively inexpensive repairs. The best long-term solution for a damaged sidewalk is slab replacement. Generally, this is comparable in cost to sidewalk construction but, as with sidewalk construction, costs per foot typically decrease with the number of feet being replaced.

## 6.3. Funding Sources

### 6.3.1 Private Funding

#### *Sidewalk Construction*

The private sector’s role in sidewalk construction is frequently overlooked, since many sidewalk projects are planned and constructed either by municipalities or transportation agencies. But large institutions, like college campuses, business parks and retail centers, frequently include sidewalks. Residential developments also may include sidewalks.

Regulations that require sidewalks help ensure continuity between new and existing developments. A set of sidewalk ordinances that require sidewalks can be a cost-effective way to create a sidewalk system, particularly within a residential subdivision or adjacent to a large commercial development. Additionally, design regulations and site review can improve pedestrian circulation within a development, such as a large commercial or multi-family residential development. For more information on sidewalk ordinances, see [Chapter 3](#).

#### *Maintenance*

With rare exceptions, the owner of property adjacent to a sidewalk is the source of some or all of the funds to repair that sidewalk. As stated in the article *Fixing Broken Sidewalks*: “A survey of 82 cities in 45 states found that 40 percent of the cities require property owners to pay the full cost of repairing

sidewalks, 46 percent share the cost with property owners, and only 13 percent pay the full cost of repairing sidewalks.” (Shoup, 2010)

In many cases, then, 100-percent of the cost of a sidewalk repair or replacement project would fall on the owner of the adjacent property, as spelled out in local ordinances. New York State law allows municipalities to create programs to share the costs of sidewalk repairs with property owners; locally, the Village of Baldwinsville has such a program (see [Chapter 7, Maintenance](#)).

Homeowners frequently contract through their local department of public works to have sidewalk repairs done and, in some cases, can finance these repairs through an additional assessment to their property, repaying over several years. This varies by local ordinance.

## POINT-OF-SALE/CERTIFICATE OF OCCUPANCY REQUIREMENT

In New Jersey, many municipalities include the condition of sidewalks in the property inspection conducted prior to issuing a Certificate of Occupancy. The result is that: “If a sidewalk is found to be damaged, the current property owner will be required to make necessary repairs before the property can be sold.”

In a 2010 article in the *Journal of Urban Planning and Development*, author Donald Shoup argues for what he refers to as “point-of-sale” programs similar to a Certificate of Occupancy program. A property inspection conducted by the municipal government as a condition of the sale of the property would include the sidewalks fronting the property. Sidewalk repairs would be required prior to the sale. This allows the property’s owner to use funds from the sale of property to pay for these improvements. Shoup states that “If Los Angeles has adopted a point-of-sale program in 1995, about half of the city’s 4,600 miles of broken sidewalks would have been repaired by 2007.” (Shoup D. , 2010)

### 6.3.2 Public Funding

#### *Routine Accommodation*

The vast majority of federal transportation funding allocated in the Study Area is spent on roadway maintenance activities. Under New York State’s [Complete Streets Law](#), roadway projects that involve reconstruction and rehabilitation are required to consider the needs of bicyclists and pedestrians. This means that *major* rehabilitation projects (resurfacing and regular maintenance projects are exempt from this requirement) can be an excellent way to get pedestrian improvements constructed.

FHWA’s [PEDSAFE](#) guidance suggests the following:

Contact all state and regional agencies, and local public and private utilities that do work in public rights-of-way. Secure their 5-year project plans as well as their long-range plans. Then, work with them to make sure that the streets are restored in the way that works for your city.

# 6. SIDEWALK FINANCES

Look internally at all capital projects. Make sure that every opportunity to make improvements is taken advantage of at the time of construction.

Consider combining small projects with larger capital projects as a way of saving money. Generally, bid prices drop as quantities increase.

## *Federal Funding Sources*

### TRANSPORTATION FUNDING

As the state designated Metropolitan Planning Organization for the Study Area, one of the SMTC's key activities is the development and maintenance of the area's Transportation Improvement Program (TIP). The TIP is a listing of all capital projects that are programmed to utilize federal transportation funding over a four-to-five-year period in the Study Area. Required by federal law, the TIP represents the transportation improvement priorities of the Syracuse Metropolitan Area. The list of projects is multi-modal and includes highway and public transit projects, as well as bicycle and pedestrian projects. The SMTC created the "Transportation Improvement Program Guidebook" to assist prospective applicants in the TIP development and application process ([TIP Guidebook](#)).

#### *Transportation Alternatives Program*

Federal transportation funding is periodically reshaped and restructured by the federal legislation that allows money to be spent. In 1991, Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA), which created a category of transportation projects called Transportation Enhancements. As described in the National Transportation Alternatives Clearinghouse's *Transportation Enhancements and Alternatives Primer*:

Under ISTEA, Congress ensured that funding would be available for bicycle and pedestrian transportation, for the preservation and enhancement of many of the nation's scenic and historic assets, and to address and protect environmental systems that form the context for much of America's transportation infrastructure. (National Transportation Alternatives Clearinghouse, 2013)

Seven years later, Congress passed the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21), which increased funding for Transportation Enhancements and expanded the number of enhancements programs from 10 to 12. The most recent round of federal transportation funding legislation, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) has made some significant changes to this category of transportation project. As the National Transportation Alternatives Clearinghouse's primer states:

MAP-21 made drastic changes to many of the multimodal programs of the Federal-aid Highway program. Several Transportation Enhancements activities were eliminated or revised and recast as Transportation Alternatives. The Transportation Alternatives were combined with the Recreational Trails Program, Safe Routes to School Program, and the creation of boulevards from former divided highways to create the Transportation Alternatives Program. The consolidation of

## 6. SIDEWALK FINANCES

these programs is associated with a 26.37% reduction in total funding for all three programs from FY 2009 funding levels. Additional funding from the Surface Transportation Program can also be used to fund TAP projects.

Prior to MAP-21, the Safe Routes to School and Recreational Trails programs had their own funding allocations, in addition to a larger funding allocation for Transportation Enhancements. Under MAP-21, the Recreational Trails program continues to be funded at 2009 levels (using Transportation Alternatives allocations), but Safe Routes to Schools funding is no longer a separate source of funds: it is part of the Transportation Alternatives Program (TAP).

The FHWA's guide to the Transportation Alternatives Program lists the following activities as eligible for TAP funding:

Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation.

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.

Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other nonmotorized-transportation—users.

Construction of turnouts, overlooks, and viewing areas.

Community improvement activities, including—

- inventory, control, or removal of outdoor advertising;
- historic preservation and rehabilitation of historic transportation facilities;
- vegetation management practices in transportation rights-of-way to improve roadway safety, prevent against invasive species, and provide erosion control; and
- archaeological activities relating to impacts from implementation of a transportation project eligible under 23 USC.

Any environmental mitigation activity, including pollution prevention and pollution abatement activities and mitigation to:

- address stormwater management, control, and water pollution prevention or abatement related to highway construction or due to highway runoff; or
- reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats.

## 6. SIDEWALK FINANCES

Additionally, Safe Routes to School and Recreational Trails projects are eligible for TAP funding, as are projects to plan, design and construct boulevards in or largely within the right-of-way for former interstate routes or other divided highways. (Federal Highway Administration, 2012)

*National Highway Performance Program (NHPP), Surface Transportation Program (STP)*

The National Highway Performance Program (NHPP) is the source of many of the major improvement projects on the network of interstates and major roads known as the National Highway System. The Surface Transportation Program (STP) is also a major source of resources, used by states to fund projects on the federal-aid highway system.

The NHPP and STP together account for more than \$30 billion of total MAP-21 funding available in 2014. Typically, these resources are targeted at major roadway improvement projects. These projects may include the addition of sidewalks and other improvements in pedestrian mobility, but in most cases would not be used for pedestrian mobility upgrades alone, without mainline roadway improvements.

*Hazard Elimination Program/Highway Safety Improvement Program*

Section 152 of United States Code 23, governing Federal Aid Highways, states that:

Each State shall conduct and systematically maintain an engineering survey of all public roads to identify hazardous locations, sections, and elements, including roadside obstacles and unmarked or poorly marked roads, which may constitute a danger to motorists, bicyclists, and pedestrians, assign priorities for the correction of such locations, sections, and elements, and establish and implement a schedule of projects for their improvement.

In New York State, NYSDOT's Highway Safety Improvement Program (HSIP) fulfills this requirement. The HSIP program provides annual reports on capital projects that include safety elements. In the 2013/2014 federal fiscal year, approximately 19 percent of the state's HSIP funds went to pedestrian related projects, such as pedestrian countdown timers, pedestrian safety islands and medians and sidewalks.

Additional facets of this safety program include the High Risk Rural Roads Program and funds to assist older drivers. A High Risk Rural Road is any rural major or minor collector or rural local road identified by a state in its Strategic Highway Safety Plan (SHSP) as having significant safety risks. If fatalities increase on these roads, states must increase spending on safety projects on them. Regarding older drivers, FHWA's *Highway Safety Improvement Fact Sheet* states: "If fatalities and serious injuries per capita for drivers and pedestrians over age 65 increase during the most recent 2-year period for which data are available, a State is required to incorporate strategies focused on older drivers and pedestrians in the next SHSP update." (FHWA, 2012)

# 6. SIDEWALK FINANCES

## *Tribal Transportation Program (TTP)*

Prior to MAP-21, the Tribal Transportation Program (TTP) was known as the Indian Reservation Roads program. The goal of this program is “to provide access to basic community services to enhance the quality of life in Indian country.” (FHWA, 2012) Bicycle and pedestrian facility improvement projects can be funded through this program, but only on tribal lands.

## OTHER FEDERAL FUNDING SOURCES

### *Community Development Block Grant (CDBG)*

Community Development Block Grant (CDBG) funds originate with the US Department of Housing and Urban Development and can be used for a variety of purposes, including construction of infrastructure like sidewalks. It should be noted that sidewalk maintenance, such as filling cracks or making minor repairs, cannot be funded through CDBG money. (US Department of Housing & Urban Development, 2012)

### *New York State Funding Sources*

#### [CONSOLIDATED LOCAL STREET AND HIGHWAY IMPROVEMENT PROGRAM \(CHIPS\)](#)

The Consolidated Local Street and Highway Improvement Program (CHIPS) supports local roadway maintenance and reconstruction in New York State. It is allocated annually to every city, county, town and village in the state, based on a formula that factors in the number of miles of roadway in the Local Highway Inventory (LHI) in the municipality, as well as the number of motor vehicle registrations. CHIPS funds can be used to reimburse municipalities for eligible expenditures on roadway projects.

CHIPS funds can be used for a wide variety of purposes, including pedestrian facilities. State Highway Law, Section 10 describes these funds as being for the purpose of “making payments toward the construction, operation and/or maintenance of highways, bridges and highway-railroad crossings that are not on the state highway system.” Sidewalks, shared-use paths and bike paths within the highway right of way are eligible for funding as part of a highway reconstruction. (New York State Department of Transportation, 2013)

#### [NEW YORK MAIN STREET PROGRAM](#)

The New York Main Street Program, administered by the State’s Office of Homes and Community Renewal, is primarily a source of funding for renovating buildings along main streets. However, these building renovation funds can come with a modest (\$15,000) streetscape enhancement grant that can be used to install amenities that enhance the pedestrian environment, such as street furniture and trees (note that these funds cannot be used for sidewalk installation). This program is only available for use in areas in which more than 50 percent of residents are of low income.



## CONSOLIDATED FUNDING APPLICATION

New York State’s Consolidated Funding Application (CFA) process is the means by which municipalities and non-profits access funds available through a wide range of state-level programs. The following provides information on programs that have been known to fund sidewalks and other pedestrian zone improvements in the past. Municipalities are encouraged to review the annual “Available Resources Guide” published by New York State in order to identify possible future additions to the following list.

- **Cleaner, Greener Communities Program**, New York State Energy Research and Development Authority  
*The Cleaner, Greener Communities Program was in its second phase of funding as of this writing. The purpose of this program is to fund sustainability initiatives across the state, including reducing carbon emissions. This includes improvements to pedestrian and cyclist infrastructure (e.g., sidewalks and crosswalks) to improve safety.*
- **Green Innovation Grant Program**, Environmental Facilities Corporation  
*This program can be used to fund green infrastructure, such as porous pavement sidewalks, bioswales, rain gardens and street tree planting.*
- **Local Waterfront Revitalization Program**, Department of State  
*The Local Waterfront Revitalization Program (LWRP) provides funds for both planning and construction of facilities adjacent to rivers and lakes. LWRP funds are frequently used to enhance access to waterfront areas through the construction of sidewalks and trails.*
- **Canalway Grants Program**, Department of State  
*Communities along the New York State Canal System are eligible to apply for this program, which provides funds to rehabilitate and enhance the canal system, including pedestrian access to and along canal facilities.*
- **New York Main Street Program**, Homes and Community Renewal  
*The New York Main Street Program is primarily a source of funding for renovating buildings along main streets. However, these building renovation funds can come with a modest (\$15,000) streetscape enhancement grant. While streetscape funding cannot be used for sidewalks, it can be used for amenities such as street furniture and trees.*

## **Municipal Budgets**

### GENERAL FUND

A review of the budgets of selected villages in the Study Area indicated that few provide a line item specifically devoted to either sidewalk construction or maintenance. Several villages (including Camillus, Elbridge, Minoa and Tully) have an annual budget item for sidewalks, ranging from \$3,000 to \$5,000. These villages have relatively small sidewalk networks (five or fewer miles) and use their sidewalk budgets for spot repairs to sidewalks as needed.

# 6. SIDEWALK FINANCES

## MUNICIPAL BONDS

Like any other public infrastructure, sidewalk projects can be funded by municipal bonds. The limitations on this funding source are likely to be based on the municipality's financial condition (e.g., its bond rating) and the politics associated with creating new debt.

## TAXES AND FEES

### *Annual Maintenance Fee*

In 2013, the City of Ithaca changed its policy on sidewalk maintenance. Its previous policy had made sidewalk repair and replacement the responsibility of the adjacent property owner. As the Mayor's Sidewalk Task Force reported, this policy led to "the construction of very little sidewalk in the last twenty years (and owner resistance to sidewalk construction projects)." (Mayor's Sidewalk Task Force, 2013)

Under the new policy, the City has taken over responsibility for the long-term maintenance of sidewalks (with the exception of the Cornell University campus). The City has been divided into five Sidewalk Improvement Districts (SIDs), similar to the [Town of Penfield's Intensified Sidewalk Districts](#). Revenues collected within each SID are spent on the sidewalks in that SID. The City is not taking over sidewalk snow removal responsibilities.

To fund public sidewalk maintenance, the City has levied an additional tax on all properties in the City, including vacant parcels. The fee for one- and two-family homes is \$70 per year. Non-residential properties pay an annual fee of \$140, plus an additional fee based on their square footage. The City estimates that this will raise approximately \$846,000 annually. (Hill, 2013)

One of the reasons for the development of this policy was the recognition that well-maintained sidewalks provide a benefit to the entire community, not just the adjacent property.

### *Intensified Sidewalk District*

Towns have the ability under State law to form sidewalk districts (see [Chapter 2, Town Law](#)). As seen in [Chapter 3](#), the Town of Penfield in Monroe County requires developers to include sidewalks in new developments or to pay a fee. In cases where the developer opts to build sidewalks, the Town then creates an Intensified Sidewalk Districts for the development (for example, a residential subdivision). Revenues collected from the homeowners in that district (approximately \$25 annually) give the Town a revenue source that is used to maintain and replace sidewalks in that district, as needed (not including snow removal).

# 6. SIDEWALK FINANCES

## *Utility Tax*

The City of Corvallis, Oregon, charges a Sidewalk Maintenance Fee to all City of Corvallis utility customers. The fee is currently \$.80 per month, which is based on the \$150,000 spent in the City's Annual Sidewalk Safety Program, divided by the number of utility customers (14,951), divided by 12. Like a shared cost program, it creates a common source of funds to rectify problems identified in an annual inventory of sidewalk defects. (City of Corvallis, 2011)

Unlike the City of Ithaca's approach, this utility fee is not a property tax – it is not paid by property owners (including landlords and property owners not living in the city). It is paid by the same person or entity that is paying the utility bill, which may be the landlord or property owner, but is more likely to be the tenant, in the case of rented or leased space. As a result, this fee would not be paid by owners of vacant or abandoned properties.

## *Speed Cameras*

The City of Takoma Park, Maryland, has been using funds brought in by speed camera citations to fund the construction of new sidewalks and to bring existing sidewalks up to ADA standards. Takoma Park is a relatively small suburban community, with a population of 17,000. Four speed cameras were projected to bring in approximately \$1.6 million in revenue annually. (Arias, 2011) Approximately 2/5 of this revenue goes toward administrative costs related to the cameras, but it nevertheless represents a substantial source of revenue for sidewalk improvements.

## **6.4. More Information**

### **6.4.1 Construction Costs**

PEDSAFE: Pedestrian Countermeasure Selection Guide, Federal Highway Administration  
<http://www.pedbikesafe.org/PEDSAFE/>

Safe Routes to School Quick Estimates, New York State Department of Transportation  
<https://www.dot.ny.gov/divisions/operating/opdm/local-programs-bureau/srts/applications>

VTrans Bicycle and Pedestrian Program Unit Cost Database, Vermont Agency of Transportation  
[http://vtransengineering.vermont.gov/sites/aot\\_program\\_development/files/documents/ltf/Report%20on%20Share%20use%20and%20sidewalk%20costs.pdf](http://vtransengineering.vermont.gov/sites/aot_program_development/files/documents/ltf/Report%20on%20Share%20use%20and%20sidewalk%20costs.pdf)

### **Maintenance Costs**

*A Guide for Maintaining Pedestrian Facilities for Enhanced Safety*, Federal Highway Administration  
[http://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/fhwasa13037/](http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa13037/)

# 6. SIDEWALK FINANCES

*Constructing, Maintaining and Financing Sidewalks in New Jersey*, Rutgers University  
[http://bprc.rutgers.edu/wordpress/wp-content/uploads/2012/08/Sidewalks\\_in\\_New\\_Jersey\\_Final\\_Report.pdf](http://bprc.rutgers.edu/wordpress/wp-content/uploads/2012/08/Sidewalks_in_New_Jersey_Final_Report.pdf)

## **Snow Removal**

Sidewalk Snow Removal, City of Rochester  
<http://www.cityofrochester.gov/article.aspx?id=8589936460>

Sidewalk Snow Removal, City of Waterville, Maine  
<http://www.waterville-me.gov/departments/pw/content/1052/snow-removal---sidewalks.php>

*1981 - 2010 Climate Normals*, National Oceanic and Atmospheric Administration  
*Includes 20-year average precipitation rates, with snowfall levels by month.*  
<http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html>

Public Safety Subcommittee Minutes, Brookline, Massachusetts  
[http://www.brooklinema.gov/index.php?option=com\\_docman&task=doc\\_download&gid=4698&Itemid=626](http://www.brooklinema.gov/index.php?option=com_docman&task=doc_download&gid=4698&Itemid=626)

## **6.4.2 Funding Sources**

### **Federal**

Transportation Improvement Program (TIP) Guidebook, SMTTC  
<http://www.smtcempo.org/TIP/2012/Guidebook2012.singleside.pdf>

MAP-21 Fact Sheets, Federal Highway Administration  
<http://www.fhwa.dot.gov/MAP21/factsheets.cfm>

*Transportation Enhancements and Alternatives Primer*, National Transportation Alternatives Clearinghouse  
*Note: the NTAC was funded through a cooperative agreement between the FHWA and the Rails-to-Trails Conservancy. This cooperative agreement expired in 2013, but the web site continues to function as an archive of information, particularly on the differences between pre-MAP21 and post-MAP21 federal funding for pedestrian improvement projects.*  
<http://www.ta-clearinghouse.info/publications>

*Basically CDBG*, US Department of Housing & Urban Development  
[http://portal.hud.gov/hudportal/HUD/program\\_offices/comm\\_planning/communitydevelopment/training/basicallycdbg](http://portal.hud.gov/hudportal/HUD/program_offices/comm_planning/communitydevelopment/training/basicallycdbg)

### **State**

*Consolidated Local Street and Highway Improvement Program (CHIPS)*, New York State Department of Transportation  
<https://www.dot.ny.gov/programs/chips>

# 6. SIDEWALK FINANCES

Transportation Enhancement Activities, New York State Department of Transportation  
[http://www.fhwa.dot.gov/environment/transportation\\_enhancements/](http://www.fhwa.dot.gov/environment/transportation_enhancements/)

Local Waterfront Revitalization Program, New York State Department of State  
<http://www.dos.ny.gov/communitieswaterfronts/WFRevitalization/LWRP.html>

Brownfield Opportunity Areas Program, New York State Department of Environmental Conservation  
<http://www.dec.ny.gov/chemical/8447.html>

Bicycling in New York, New York State Department of Transportation  
*Includes links to funding sources for pedestrian facility projects*  
<https://www.dot.ny.gov/display/programs/bicycle/funding-sources/federal-funding>

## Local

*Frequently Asked Questions on the Sidewalk Maintenance Fee*, Corvallis, OR  
<https://www.corvallisoregon.gov/modules/showdocument.aspx?documentid=4126>

Mayor's Sidewalk Task Force Fact Sheet, City of Ithaca  
[http://www.egovlink.com/public\\_documents300/ithaca/published\\_documents/Clerks\\_Office/In%20the%20news/Sidewalk%20Task%20Force%20Fact%20Sheet.pdf](http://www.egovlink.com/public_documents300/ithaca/published_documents/Clerks_Office/In%20the%20news/Sidewalk%20Task%20Force%20Fact%20Sheet.pdf)

## Private

- “Putting Cities Back on Their Feet”, *Journal of Planning and Urban Development*, Donald Shoup  
<http://shoup.bol.ucla.edu/PuttingCitiesBackOnTheirFeet.pdf>
- *Walking the Walk*, CEOs for Cities.  
[http://www.ceosforcities.org/pagefiles/WalkingTheWalk\\_CEOsforCities.pdf](http://www.ceosforcities.org/pagefiles/WalkingTheWalk_CEOsforCities.pdf)

# 7. MAINTENANCE ISSUES

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## 7.1. Background

Like any other form of public infrastructure, a sidewalk must be maintained in order to remain useful. Unlike a city street or a park, sidewalks require little in the way of annual maintenance in order to remain structurally sound. Over a period of several years, weeds, poor drainage and tree roots can erode the value of a stretch of sidewalk, but the costs of maintaining a small portion of sidewalk are low relative to the benefits that a sidewalk provides. Full sidewalk replacement is not likely to be needed more than once every 20 years and will mean a one-time cost to the average homeowner of approximately \$1,560.<sup>5</sup> Considered in aggregate, however, at the level of a town, village or city, sidewalk maintenance costs can become quite substantial.

In Central New York, the issue of snow clearance is especially problematic. Not only can clearance of a typical snowfall of one or two feet be physically difficult for senior citizens and disabled residents, but snowfall is frequently combined with snow plowed from roads onto adjacent sidewalks, creating barriers that are difficult to eliminate without a snow blower. Other difficulties include locations where the adjacent property owner is the State or County, such as bridges on county highways or at freeway interchange ramps.

## 7.2. Responsibility

While there are many different ways to find funding for sidewalk construction (see [Chapter 5](#)), the problems of maintenance (snow clearance and sidewalk repair) become the responsibility of some combination of the adjacent property owner and the city, town or village in which the sidewalk is located. State law specifies that neither NYSDOT nor county departments of transportation are responsible for sidewalk maintenance (see [Section 1, Legal Issues](#)). Most of the municipalities in the MPA have ordinances that spell out that the adjacent property owner is responsible for sidewalk maintenance (see [Chapter 3, Municipal Ordinances](#)). In some villages, the Department of Public Works assists property owners with maintenance by, for example,

Most municipalities in the MPA assign responsibility for sidewalk maintenance to the adjacent property owner.

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<sup>5</sup> Based on a 40-foot property frontage, five-foot-wide sidewalks and a sidewalk replacement cost of \$39 per linear foot. See [Chapter 5](#) for average costs. Homeowners are typically not responsible for elements such as curbing.

providing snow removal and subsidized sidewalk repairs.

### 7.3. Lifespan

As the report *Constructing, Maintaining and Financing Sidewalks in New Jersey* says: “The preference for concrete is based on its long service life – many sidewalk slabs in older cities remain in good condition even after 75 years of service.” (Alan M. Voorhees Transportation Center, 2006)

According to a 2007 survey of 35 state, local and provincial departments of transportation and public works departments, the minimum reported lifespan for a concrete sidewalk is 20 years. The average reported lifespan is 34.3 years (Markow, 2007) (see Table 7.1). Another source puts the average lifespan of a sidewalk at 30 years, but cautions that “the amount of rain or snow and fluctuations in temperature affect the life of sidewalks”. (Gruenwald, 2002) Based on weather patterns in Central New York, which tend toward extreme levels of snow and rain, as well as temperatures that can fluctuate rapidly, this report assumes an average lifespan of 20 years for sidewalks.

**Table 7.1 – Estimated Service Lives of Sidewalks by Material**

Sidewalk Material	No. of Responses	Survey Responses (Years)				
		Minimum	Maximum	Mean	Median	Mode
Concrete	7	20	60	34.3	25	20
Asphalt	5	5	20	11.4	10	10
Brick or block	2	20	20	20	20	20
Gravel / crushed rock	1	n/a	n/a	10	n/a	n/a

Source: (Markow, 2007)

Over time, vegetation and precipitation wear away at a concrete sidewalk. When moisture from rain or melted snow infiltrates a crack in the concrete (without draining through the material, as in the case of porous pavements), the expansion and contraction caused by freezing and thawing can turn a small opening into a large fissure. Additionally, tree roots (see Tree Roots, below), grass and other vegetation can grow between or next to sidewalk blocks. Inadequately compacted subgrade can also cause sidewalk failure over time.

The result is frequently cracking of sidewalks and the lifting (vertical displacement) of one block above another. According to the FHWA, when the vertical displacement between sidewalk blocks reaches ½ an inch, this change in elevation should be beveled in order to be passable by people in wheelchairs:

The Federal accessibility standards permit changes in level less than 6 mm (0.25 in) high to be vertical but require changes in level between 6 mm and 13 mm (0.25 in and 0.50 in) to have a maximum bevel of 50 percent, as shown in Figure 4-11. A ramp is required for changes in level that exceed 13 mm (0.50 in) (US DOJ, 1991; UFAS,U.S. DoD et al., 1984). ([Designing Sidewalks and Trails for Access](#))



## 7.4. Maintenance Planning

### 7.4.1 Evaluation

The City of Ventura, California, has responsibility for maintaining approximately 420 linear miles of sidewalk. Faced with a dramatic decline in public funding for sidewalk maintenance, the City has developed a system for prioritizing repairs, based on the severity of the sidewalk's problem and the location's importance in the sidewalk network. For example, a sidewalk slab lifted two inches above the adjacent slab by tree roots would be a higher priority if it were near a hospital and on an arterial route than if it were in a residential neighborhood on a local street. (City of San Buenaventura Public Works, 2013)

### 7.4.2 Funding

For information on funding sidewalk maintenance, see [Chapter 5](#).

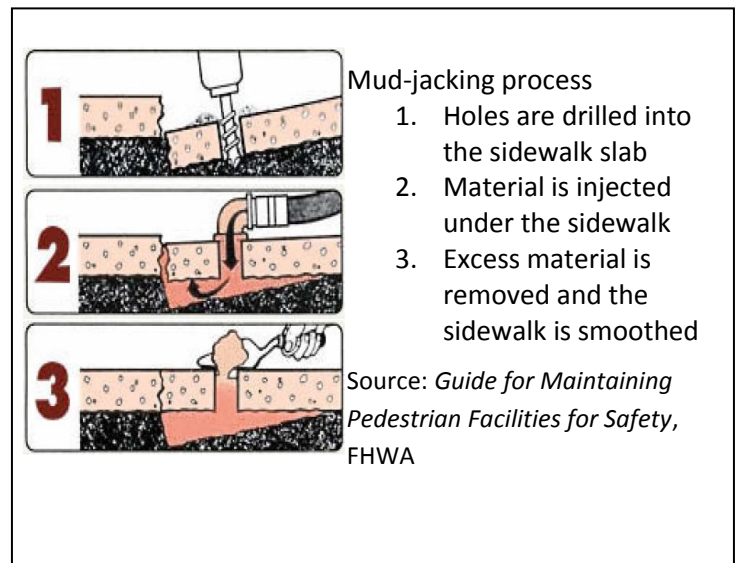
## 7.5. Maintenance Issues

### 7.5.1 Sidewalk Grinding

Relatively minor sidewalk disruptions (one inch or less) can usually be addressed through sidewalk grinding. This is done with machinery such as a rotary scarifier, followed by use of a grinder to smooth out the surface. (Concrete Network, 2013) This is not work that the typical homeowner is either trained or equipped to handle, and requires either bringing in an outside contractor or, depending on the municipality, requesting public works department's assistance.

### 7.5.2 Mud-jacking

Mud-jacking is used to elevate sidewalk slabs that have sunken by a half-inch or more, relative to the adjacent sidewalk. The process involves drilling holes in the sidewalk and pressure injecting cement (or other material) under the sidewalk slab until it is lifted into place (see Figure 7.1). Mud-jacking must be performed cautiously, since the cause of sidewalk subsidence may be related to problems with underground utilities, such as leaking pipes, and the process of injecting a slurry under the sidewalk could exacerbate these problems.



## 7.5.3 Tree Roots

In some ways, trees are as much a part of a complete and sustainable street as are facilities for cyclists, pedestrians, transit and motor vehicles. Dan Burden's *Urban Street Trees* lists 22 of the benefits of street trees, including the following cost-benefit statistic: "For a planting cost of \$250-600 (includes first 3 years of maintenance) a single street tree returns over \$90,000 of direct benefits (not including aesthetic, social and natural) in the lifetime of the tree." (Burden, 2006) Benefits reported include improvements in business activity, reductions in drainage infrastructure costs, improved cooling efficiency for adjacent buildings and added property value.

When tree plantings are designed properly, conflicts between tree roots and sidewalks can be minimized. When trees are planted too close to sidewalks, conflicts are common and both the sidewalk and the tree are frequently damaged.

Tree roots spread out in search of soil oxygen, water and minerals. Depending on the site, this can mean that they are quite close to the surface; several studies have indicated "that most roots grow in the upper 30 cm of soil, and that they spread well beyond the crown." (Morgenroth, 2011). Roots expand radially, meaning that buffer space is needed between trees and sidewalks in order to ensure the tree's well-being and the sidewalk's structural integrity. In many cases, the cause of conflicts between sidewalks and tree roots is a lack of adequate space between the two. Other causes are the use of fast-growing tree species and trees that are too large for the area in which they are meant to grow. (Randrup, McPherson, & Costello, 2001)

In some municipalities, damage done to a sidewalk by a tree located in the public right of way is the responsibility of the municipality, not the property owner. In these cases, it is because the tree itself is public property and cannot be pruned or removed by the property owner without a permit. Local public works staff should be consulted in order to make this determination. The City of Syracuse's stated policy is that the homeowner is responsible for sidewalk repairs even if a city-owned tree has damaged the sidewalk. (City of Syracuse, 2008)

Additionally, the Village of Rhinebeck's [Worth Walking](#) plan is an excellent resource for how to evaluate both sidewalks and adjacent trees and to develop a plan of action (e.g., grinding the sidewalk, re-designing the sidewalk around the tree, or pruning the tree's roots) based on the quality of the tree and the damage to the sidewalk.

Additional resources on minimizing conflicts between sidewalks & tree roots include:

[Village of Rhinebeck,](#)

[Worth Walking;](#)

[University of Florida Dept.](#)

[of Environmental](#)

[Horticulture presentations](#)

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The University of Florida's Department of Environmental Horticulture provides PowerPoint presentations online summarizing best practices in managing conflicts between sidewalks and tree trees. While much of this guidance is rooted in design practices, it recommends re-routing sidewalks around trunks without cutting large (greater than one-inch diameter) roots. Pruning or shaving tree roots is a less expensive approach, but if done improperly it can damage or kill the tree. Root pruning should be done under the supervision of an arborist. Generally, a rule of thumb is to preserve all roots within an area about five times the trunk's diameter. (University of Florida, 2007)

Horticulture provides PowerPoint



Figure 7-1 - Route sidewalk around tree

Other solutions include:

- Removing concrete sidewalks and replacing them with different surface materials, such as crushed rock, stone dust or porous pavers
- Using metal decking or other material to create a bridge over exposed roots

## 7.5.4 Do it Yourself Maintenance

Generally speaking, repairing a cracked or heaved sidewalk block is not the type of project that a homeowner is encouraged to undertake without professional assistance.

In New York City, however, the New York City Department of Transportation's web site includes a page on "Do it Yourself Repairs" and provides property owners with the specifications that must be met in order to comply with the City's regulations. (New York City Department of Transportation, 2013)

Similarly, the City of Portland provides a user-friendly [Sidewalk Repair Manual](#) that includes estimated number of hours that a specific project could take. It also provides a list of equipment needed, an overview of the process for installing a sidewalk and the specifications that a City inspector will review prior to project approval. (City of Portland, 2013)

## 7.5.5 Snow Removal

### Individual Property Owner

Where they are the party responsible for clearing sidewalk snow, property owners frequently discharge this responsibility themselves, using shovels, snow blowers and rock salt. They may also contract out for this service. Typical seasonal fees for this service are on the order of \$200 (UNP 2009). Given a block of property owners who are either doing their own snow removal or hiring someone else to remove snow from their property, sidewalks on any given block should be completely clear within two days of a snowfall. Unfortunately, individual property owners have varying responses to this responsibility. The

# 7. MAINTENANCE ISSUES

owner of a vacant structure who is not paying the taxes owed on that structure is extremely unlikely to be paying someone to maintain the adjacent sidewalk.

Several local municipal codes make the penalty for failing to clear ice and snow from sidewalks equal to the cost of having the municipality do the ice and snow clearance. In some cases, this requires the municipality to provide property owners with written notice of noncompliance and allow the property owner time to respond to the notice before clearing the snow and ice.

## Groups of Property Owners

### UNIVERSITY NEIGHBORHOOD PARTNERSHIP COMMITTEE:

During the winter of 2009/2010, the Syracuse University Neighborhood Partnership Committee (UNP), a non-profit organization made up of representatives of the University and the surrounding neighborhood, developed a plan for snow removal on a 4.75 mile stretch of sidewalks. This organization considered developing a Business Improvement District (BID), but ultimately determined that it would be less expensive and less complicated to hire a contractor, to be paid by property owners.

The program charged \$70 per 40 feet of sidewalk for the season, anticipating that approximately half of the property owners along the 4.75 mile plowing route would actually pay this money. Not all property owners paid the fee, but all property owners along the route had their sidewalk plowed. The total cost of the plowing program was \$10,000 for up to 26 plow runs over the winter months.

Program charges were projected to cover all the costs of the contractor's operations, including:

Plowing of sidewalks on the entire route once per 24-hour period when accumulation reached 3" or more between the hours of 2 a.m. and 8 a.m.

Moving snow banks back with snow blower twice per season if large amounts of snow accumulate without a thaw. (University Neighborhood Partnership, 2010)

Salting of sidewalks was not included because of concerns over damage to sidewalks and the lack of equipment. The contractor also indicated that additional insurance would be needed if salt were applied to the sidewalks.

Sidewalk snow clearance may be accomplished by:

### **Individual property owners** **Groups of property owners**

- University Neighborhood Partnership

### **Volunteers**

- Westside Residents Coalition, Syracuse
- Snow Corps, Chicago

### **Municipalities**

- City of Rochester
- Town of Penfield

## *Volunteers*

### WESTSIDE RESIDENTS COALITION

During the winter of 2012/2013, the Westside Residents Coalition, based in Syracuse's Near Westside Neighborhood, began a volunteer-based sidewalk snow removal program. The program was funded in part by a \$3,900 grant from a local foundation; the funds were used to buy snow shovels, hats and gloves. The community group met in December 2012 to discuss the routes most in need of shoveling and to encourage volunteers to participate. The organization is continuing this effort in the 2013/2014 winter season.

### SNOW CORPS, CHICAGO

The City of Chicago began a program called Snow Corps in January 2012, to match snow shoveling volunteers to places in the city in which elderly and disabled citizens requested help clearing snow from sidewalks. City residents age 60 and over and/or residents with disabilities can request assistance by dialing "311." Volunteers sign up online and receive e-mails and assignments from the City, instructing them as to where help is needed. Volunteers commit to removing snow from these sidewalks within 24 hours following a snowstorm.

## *Municipal Sidewalk Snow Clearing*

### CITY OF ROCHESTER

The City of Rochester provides municipal sidewalk snow clearing to supplement property owners' snow clearance. This service is paid for through an "embellishment fee" added to property taxes, which also includes street cleaning, roadway snow plowing and sidewalk repair. Costs are based on street frontage. A home with the standard 40-foot frontage on a city street pays approximately \$32 a year for sidewalk snow plowing; total embellishment fees for such a property are approximately \$210.

The City of Rochester's [website](#) provides the following summary of its sidewalk snow plowing program:

The City begins plowing sidewalks once new snowfall exceeds 3 inches.

The City plows all sidewalks that are at least five feet in width.

The City plows 880.5 miles of sidewalks. These miles are divided into distinct sidewalk plow runs of approximately 15 miles. Each sidewalk plow run takes about five hours to complete.

Depending on the severity of a storm, sidewalk snow plowing policies must sometimes be altered to meet the needs of the situation.

The City uses private contractors to plow sidewalks.

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Sidewalk plowing usually happens in the evening and early morning when pedestrian traffic is lowest, but this schedule is modified to respond to actual storm conditions.

Additional information from the City of Rochester indicated that the annual operating cost of the sidewalk snow clearing program is on the order of \$1.2 million. The average seasonal cost per mile of snow clearing is \$1,365. (Gillis, 2014)

The City has averaged 10 snow plow runs a year over the last 24 years, but the City's budget allows for up to 13 runs. Most years (19 out of the past 24 years), there are fewer than 13 snowplow runs, meaning that on average, this program uses less than the amount for which it has been budgeted.

The City utilizes contractors for sidewalk snow plowing. In 2013/2014, there were eight separate contractors involved. Contractors are paid per snowplow run, but are also guaranteed a minimum dollar amount in the event of a winter with less than normal snowfall amounts. This minimum compensates contractors for holding on to personnel and equipment.

Equipment used includes large farming tractors with V-plows, as well as bombardiers (see Figure 7-2). Any damage done to property as a result of plowing is the responsibility of the individual contractor and the City can withhold payment to contractors until appropriate repairs have been made.



**Figure 7-2: A bombardier with snowplow in Chicago (left) and a tractor with a V-plow clearing sidewalks in the Rochester suburb of Chili (right)**

## TOWN OF PENFIELD

The Town of Penfield in Monroe County has an extensive sidewalk network along major roads, and it is responsible for keeping these sidewalks free of snow (see [Section 3.3.2](#) for information on the town's ordinance structure, which makes this possible). The Town divides its Primary Sidewalk Network into three snow clearing routes, with each route taking approximately 4 to 5 hours to complete, typically starting at or near schools and working outward.



## INFORMAL PROGRAMS

Several villages in the Study Area provide what might be termed “informal” assistance with sidewalk snow clearance efforts by using small bulldozers (Bobcats) to clear all or some village sidewalks after a heavy snowfall. In the Villages of Liverpool and North Syracuse, for example, it is not officially the Department of Public Works’ responsibility to clear sidewalks on residential streets, but these villages will periodically clear them.

### Road Plowing and Sidewalks

ITE’s *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities* includes a brief summary of the problem that many municipalities in the Study Area face after a heavy snowfall:

During and after a snowstorm, most snow plows operate in emergency or “hurry-up” mode, focusing on opening up lanes for vehicles. Often, when snow is scraped from the vehicular lanes, it is piled up in the bicycle lane, parking lane, or along the sidewalk, thus making it difficult for bicyclists and pedestrians to use the facilities that have been provided for them.

This guidance includes the following recommendations:

Streetsides should be designed to accommodate a normal level of plowed snow behind the curb without blocking the pedestrian throughway. A wide planting strip or furnishings zone can accommodate plowed snow.

Avoid designing objects in the furnishings zone that interfere with the ability to plow snow onto the streetside, such as large raised planters, continuous hedges and large utility and traffic control cabinets. Objects that snow can wrap around include trees, signs and light poles.

## 7.6. More Information

### Snow Removal

City of Rochester Sidewalk Snow Removal  
<http://www.cityofrochester.gov/article.aspx?id=8589936460>

Constructing, Maintaining and Financing Sidewalks in New Jersey, Alan M. Voorhees Transportation Center  
[http://www.sacog.org/complete-streets/toolkit/files/docs/NJDOT\\_Constructing,%20Maintain,%20and%20Financing%20Sidewalks%20in%20New%20Jersey.pdf](http://www.sacog.org/complete-streets/toolkit/files/docs/NJDOT_Constructing,%20Maintain,%20and%20Financing%20Sidewalks%20in%20New%20Jersey.pdf)

Think about snow storage when designing new roads or streetscaping projects. Wide planting strips and furnishing zones can accommodate plowed snow. Large objects in the furnishings zone can impede snow storage.



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Snow Corps, City of Chicago

[http://www.cityofchicago.org/city/en/depts/mayor/snowportal/snow\\_corps.html](http://www.cityofchicago.org/city/en/depts/mayor/snowportal/snow_corps.html)

Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities, Institute of Transportation Engineers

<http://www.ite.org/bookstore/RP036.pdf>

## **Sidewalk Maintenance**

A Guide for Maintaining Pedestrian Facilities for Enhanced Safety, FHWA (2013)

[http://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/fhwasa13037/research\\_report/](http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa13037/research_report/)

*Sidewalk Maintenance and Repair Plan*, City of Buenaventura Public Works

<http://www.cityofventura.net/files/file/SidewalkMaintenanceandRepairPlan.pdf>

*Sidewalk Repair Manual*, City of Portland, Bureau of Transportation

<http://www.portlandoregon.gov/transportation/article/443054>

*Do It Yourself Repairs: New York City Specifications for Residents Installing their Own Sidewalk*, New York City Department of Transportation

<http://www.nyc.gov/html/dot/html/infrastructure/sidewalkspecs.shtml>

## **Street Trees**

Urban Design to Accommodate Street Trees - Solutions (PowerPoint presentation), University of Florida

<http://hort.ufl.edu/woody/powerpoints/urbandesigntoaccommodatetreessidewalksolutions.ppt>

*Urban design for a wind resistant urban forest*, University of Florida.

<http://hort.ufl.edu/woody/documents/EP309.pdf>

*Urban Street Trees - 22 Benefits, Specific Applications*, Dan Burden - Walkable Communities, Inc.

[http://www.michigan.gov/documents/dnr/22\\_benefits\\_208084\\_7.pdf](http://www.michigan.gov/documents/dnr/22_benefits_208084_7.pdf)

Randrup, T., McPherson, E., & Costello, L. (2001). A review of tree root conflicts with sidewalks, curbs, and roads. *Urban Ecosystems*, 209 - 225.

<http://goo.gl/mj52Bx>

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# APPENDIX A – PEDESTRIAN DEMAND MODEL

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## Overview

The SMTC Pedestrian Demand Model was developed in ArcGIS version 10.1 using various Spatial Analyst tools and ModelBuilder. This type of analysis can be done using a basic layer overlay mapping technique, but due to the number of data layers and the level of detail required for the analysis it was determined that using Spatial Analyst and ArcGIS ModelBuilder would be the most effective and efficient approach.

SMTC's pedestrian demand model is based on similar models developed by counties and metropolitan planning organizations across the country. SMTC's model divides the planning area into a 10 meter grid (10m x 10m cells) and assigns a value to each cell based on the sum of the values of all layers present in that cell. The values assigned to each layer were determined by research on other similar models, professional judgment of SMTC staff and input from a Study Advisory Committee.

A total of 18 data layers were used for this analysis, which were grouped into three main categories: destinations, neighborhood characteristics and pedestrian detractors. The maximum score for any cell was 100. Higher scores represent areas that have a higher pedestrian demand. The model results showed the highest scores in the City of Syracuse. The next highest score were located in village centers and in larger multi-use corridors. Sidewalk priority zones were created based on high score areas, road functional classifications and adjacent land uses. The purpose of these priority zones is to identify places where it makes the most sense to focus resources to improve pedestrian access.

The sections below describe additional details of the SMTC Pedestrian Demand Model.

## Process

The first step of the modeling process was to gather and verify data that would be useful for the analysis. SMTC staff worked with local agencies to develop a comprehensive set of data: specifically, the locations of destinations such as schools, grocery stores, parks, post offices, convenience stores and pharmacies. Destinations were represented in the model by points, based on an extensive file of addresses maintained by Onondaga County's 911 program. This file includes the approximate location and use of individual buildings. Destinations outside of Onondaga County were identified by parcel data, using property class code. All data gathered for this analysis was reviewed for accuracy and completeness. The review process consisted of comparing similar datasets, internet research and field verification.



<b>TABLE A1 – Model Structure</b>	<i>Data Layer Scoring</i>	<i>Total Possible Points</i>		<i>Data Layer Scoring</i>	<i>Total Possible Points</i>
<b>Destinations</b>		<b>55</b>	<b>Neighborhood Characteristics</b>		<b>40</b>
<b>Critical Destinations</b>	<b>22</b>		<b>Population Density</b>		
Schools			>25	<b>14</b>	
0.125 mile	<b>10</b>		10 to 25	<b>10</b>	
0.25 mile	<b>10</b>		5 to 10	<b>6</b>	
0.5 mile	<b>10</b>		0 to 5	<b>0</b>	
0.75 mile	<b>8</b>		<b>Employee Density**</b>		
1 mile	<b>5</b>		High	<b>8</b>	
Grocery Stores*			Medium	<b>6</b>	
Pharmacies*			Low	<b>4</b>	
0.125 mile	<b>6</b>		<b>HHs w/o vehicles</b>		
0.25 mile	<b>6</b>		>36%	<b>6</b>	
0.5 mile	<b>6</b>		24 to 36%	<b>4</b>	
0.75 mile	<b>5</b>		12 to 24%	<b>2</b>	
1 mile	<b>3</b>		<12%	<b>0</b>	
<b>Neighborhood Destinations</b>	<b>18</b>		<b>Pct Walking to Work</b>		
Libraries/Community Centers*			90th Percentile and Above	<b>6</b>	
Post Offices*			80th to 90th Percentile	<b>4</b>	
Town/Village/City Hall*			70th to 80th Percentile	<b>2</b>	
Parks*			<b>Pct &gt;65 years</b>		
Convenience Stores*			<b>Pct &lt;18 years</b>		
Transit Stops*			90th Percentile and Above	<b>2</b>	
0.125 mile	<b>3</b>		80th to 90th Percentile	<b>2</b>	
0.25 mile	<b>2</b>		70th to 80th Percentile	<b>1</b>	
0.5 mile	<b>1</b>		<b>Refugee Resettlement (Households)***</b>		
0.75 mile	<b>0</b>		>50	<b>2</b>	
1 mile	<b>0</b>		20 to 50	<b>1</b>	
<b>Community Core**</b>	<b>15</b>		<20	<b>0</b>	
High	<b>15</b>				
Medium	<b>10</b>		<b>Pedestrian Detractors</b>		<b>5</b>
Low	<b>5</b>		<b>Pedestrian/Vehicle Collision Density**</b>		
			High	<b>5</b>	
			Medium	<b>3</b>	
			Low	<b>2</b>	

\*Each of these is a separate layer in the model.

\*\*High / Medium / Low scores are based on evaluations of the outputs of the ArcGIS kernel density tool.

\*\*\*Based on approximate number of refugee households resettled within Census Tracts in the Study Area.

A major component of building the model was determining how each data layer would be scored or weighted (the proportion of the total score allotted for each layer). The SMTC developed its scoring system through a combination of internal discussions and research on similar models from across the country. Table A1 displays the final scores for each data layer. Scores for destinations are based on a sliding scale. For example, the score for proximity to schools decreases as distance from schools increases. The score for population density decreases as population become less dense.

A suitability analysis using ArcGIS Spatial Analyst requires that all input files be in raster format (a raster consists of a matrix of cells/pixels organized into a grid). Vector files (points, lines and polygons) were converted to a grid-based raster format so that each 100 square meter cell within the SMTC planning area can be assigned a value for each input as well as a final value once the model is run.

The model for this project was set up as six individual models using ArcGIS ModelBuilder, based on the model structure seen in Table A1. These models included: Critical Destinations, Neighborhood Destinations, Community Core, Neighborhood Characteristics and Pedestrian Detractors, as well as a final model that combined the results of the other five and calculates a final score for each grid cell. Having smaller individual model components allowed the analyst to make a change without having to re-run the entire model.

## Data Layers

The data layers used, data ranges and scores are shown in Table A1. A total of 18 different data layers were used for this analysis.

### *Critical Destinations*

- Schools
- Grocery Stores
- Pharmacies

The pedestrian demand model was not designed primarily to make it easier for pedestrians to get from home to nearby destinations that they may need to reach on a daily or weekly basis. A review of available research indicated that schools and grocery stores are frequently identified as key destinations for pedestrians. Additionally, conversations with stakeholders indicated that pharmacies are often critical destinations. Because of the importance of these destinations, the walkable radius was set at a mile from the destination. Schools are given the highest scores of any single destination, because students are obliged to reach their school daily. In the City of Syracuse, students must find their own transportation (either on foot, bike or riding with an adult) if they live within 1.5 miles of their school. A radius of one mile was used because, given the proximity of schools within the city to one another, a radius of 1.5 miles would have meant that virtually the entire city was covered in school proximity scores, effectively neutralizing this as a variable.

## *Neighborhood Destinations*

- Libraries/Community Centers
- Post Offices
- Town/Village/City Hall
- Parks
- Convenience Stores
- Transit Stops

The set of Neighborhood Destinations was originally conceptualized as being places within a neighborhood that are “unique.” Most neighborhoods have a single post office, library or community center. In a village, there will typically be one key government center, such as a village hall. As the model was refined, it was recommended that parks, convenience stores and transit stops be added, because of their importance as pedestrian destinations. The relative importance of these destinations to pedestrians is debatable; values were discussed and agreed upon after extensive discussion. It is a recognized limitation of the model that unique circumstances, such as a convenience store being the only place in a neighborhood that sells groceries, cannot be reflected in the model.

## *Community Core*

While the Critical and Neighborhood Destinations take many key, individual destinations into consideration, they may not always capture the sense of a community or neighborhood’s central business district. Community Core scores are based on the clustering of non-residential land uses, including restaurants, shopping, cafes, religious facilities and recreational uses. See the Model Structure Overview for information on how this score was generated.

## *Neighborhood Characteristics*

The inputs used in the Neighborhood Characteristics element of the model are listed in Table A2. A review of research literature indicated that population density was a factor frequently correlated to pedestrian activity levels. While a lot of research identifies 10 people per acre as the level of density at which an urban land use pattern starts to emerge, making it easier for people to get from home to their desired destination, a review of actual densities in villages and city neighborhoods indicated that densities between 5 and 10 people per acre should be given a value in the model.

Other demographic characteristics were chosen based on their correlation with the need to walk for transportation.

**Table A2 – Neighborhood Characteristics Model Inputs**

Data Layer	Units	Data Source
Population Density	People per acre, Census Blocks	US Census
Employee Density	Employees per business (kernel density)	New York State
Households without Vehicles	Percent of households without vehicles by Census Tract	US Census
Percent Walking to Work	Percent of workers walking to work by Census Tract	US Census
Percent Over 65 Years	Proportion of population over age 65, with scores based on Census Tracts’ percentile ranking within the study area	US Census
Percent Under 18	Proportion of population under age 18, with scores based on Census Tracts’ percentile ranking within the study area	US Census
Refugee Resettlement Households	Number of households resettled within a given Census Tract, based on historic data from resettlement agencies	Syracuse Community Geographer

### *Pedestrian Detractors*

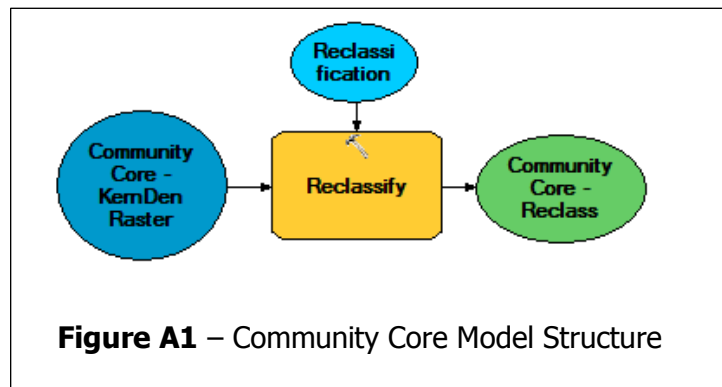
The SMTC reviewed several models that included inputs under the category of “pedestrian detractors.” These included roadway characteristics, such as speed limit and traffic volume – both of which typically have an inverse relationship with pedestrian comfort (as speed and volume go up, the feeling of safety that a pedestrian has goes down). Unlike the other inputs to the model, which identify where there are concentrations both of people and places for them to go on foot, the pedestrian detractor data helps identify locations that are in greatest need of improvements to make them attractive to pedestrians.

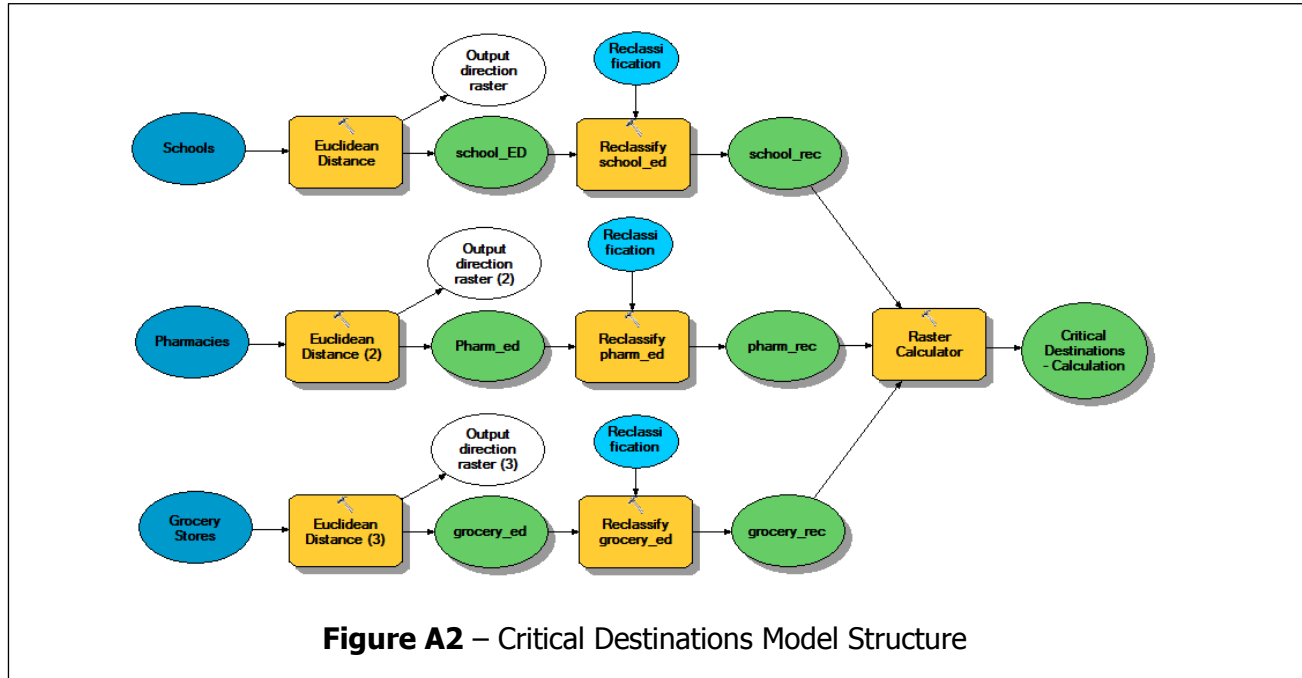
Due to data limitations (a lack of data on local roadways and inconsistent data on major roadways), the SMTC used the concentration of pedestrian/vehicle collisions, as provided by the New York State Department of Motor Vehicles as the sole Pedestrian Detractor in the model. Scores for this input were based on kernel density outputs.

## Model Structure Overview

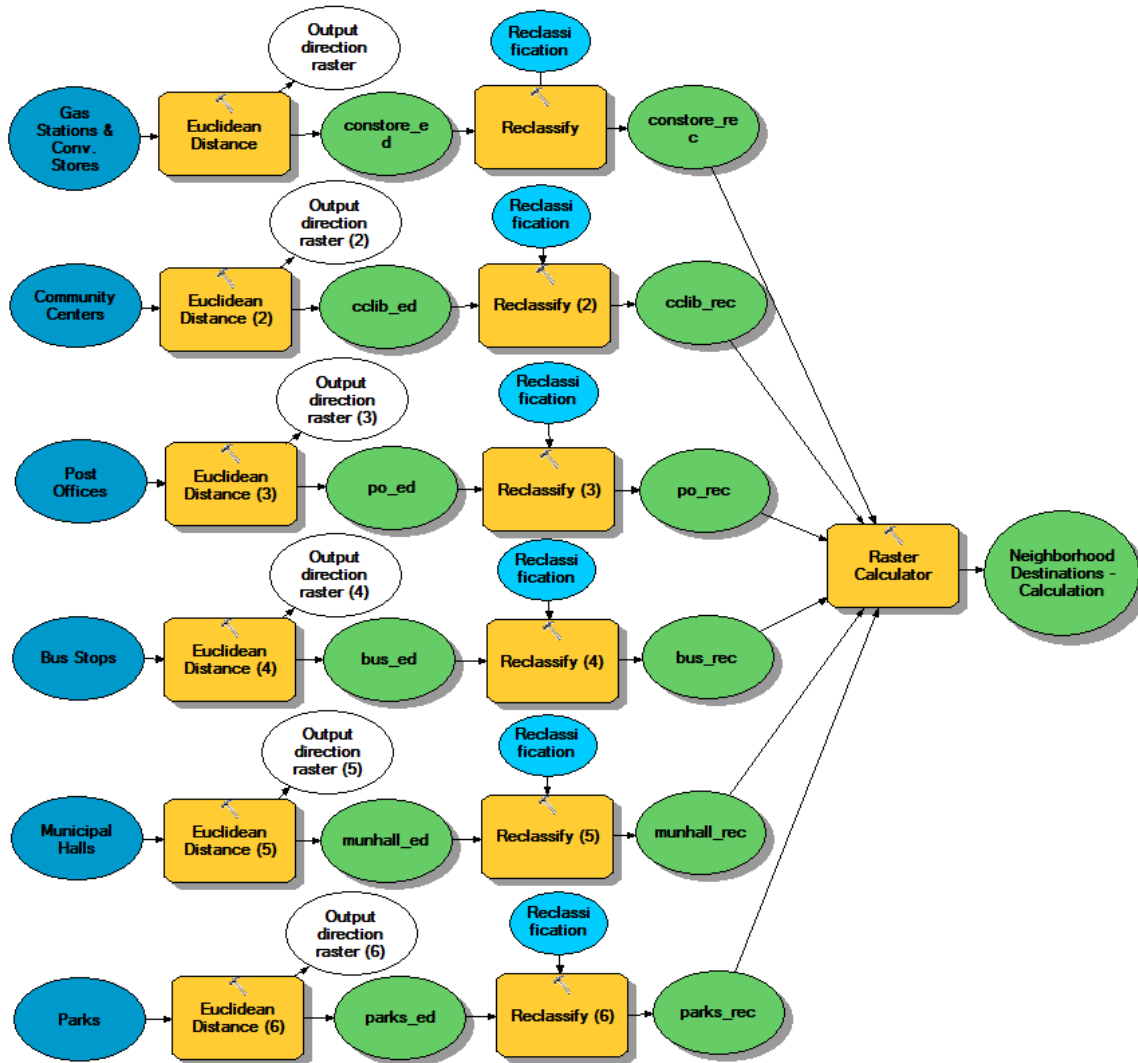
The following is a brief description of each of the six components of the SMTC Pedestrian Demand model.

The Community Core model (Figure A1) reclassifies the results of a kernel density analysis of properties identified as being potential walking destinations. The kernel density analysis calculates a magnitude per unit area from the selected point features. The model groups the data into three categories (low, medium and high density) and then reclassifies the data using the values shown in Table A1. The output is a raster file with values ranging from 0 to 15.





The Critical Destinations model (Figure A2) inputs include the locations of schools, pharmacies and grocery stores. The Euclidean Distance tool creates a raster output file with the straight line distances from each of the critical destinations. The results are grouped into five distance categories in ¼ mile increments and reclassified with a score as shown in Table A1. The model then takes the results from each of the three destination types and adds them together. The output is a raster file with values ranging from 0 to 22.



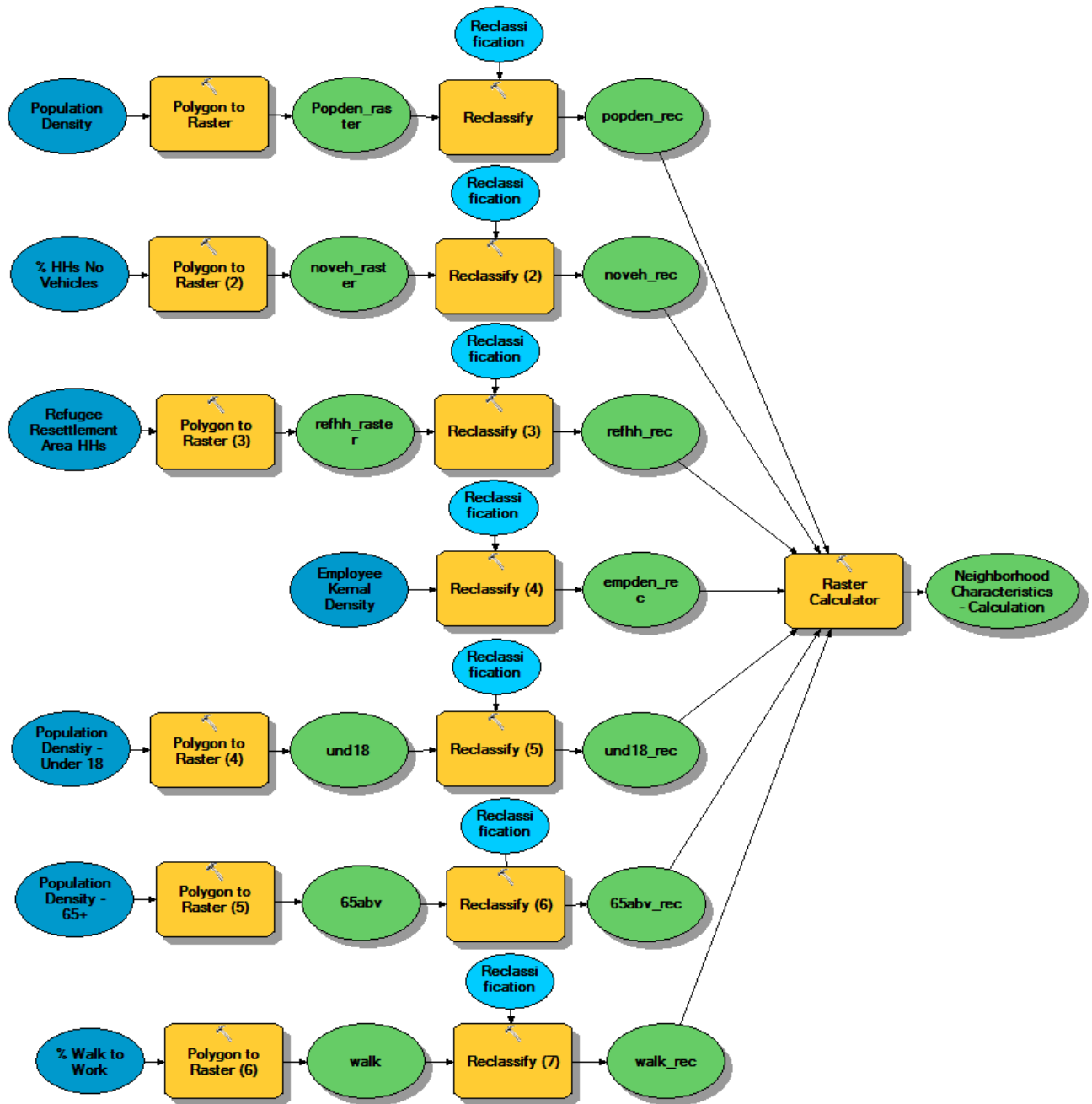
**Figure A3 – Neighborhood Destinations Model**

The Neighborhood Destinations model (Figure A3) uses locations of gas stations/convenience stores, community centers, post offices, municipal halls, parks and bus stops as inputs. Similar to the Critical Destinations model, this model uses the Euclidean Distance tool. The distance value for each of these destinations is grouped into quarter-mile increments from a quarter-mile to one mile and given a score as shown in in Table A1. The model adds the reclassified values and the output raster file scores range from 0 to 18.

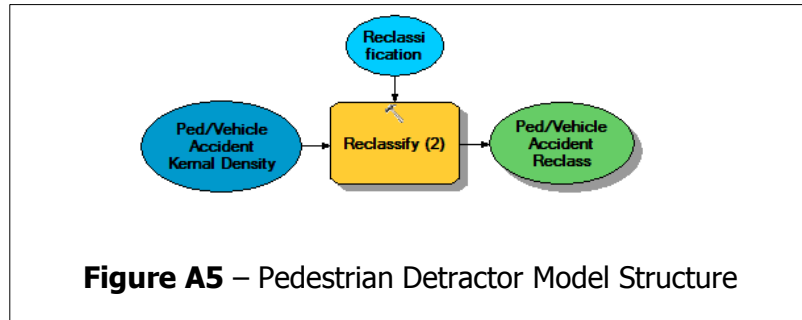


The Neighborhood Characteristics model (Figure A4) includes the following: population density, employee density, percent of households with no vehicles, percent of workers that walk to work, percent of population above 65 years of age, percent of population below 18 year of age and refugee resettlement areas. The model converts the files from vector polygons to a raster format. The input data was reviewed and ranges and scores were determined for each characteristic. The employee density raster was created using a kernel density analysis of business point locations and number of employees at each location. Each of the inputs were then reclassified in groups and given scores as shown in in Table A1. The data ranges and scores for each characteristic were determined based on internet research of other similar analysis and input from the project's study advisory committee and SMTC staff. The output is a raster file with values ranging from 0 to 40.

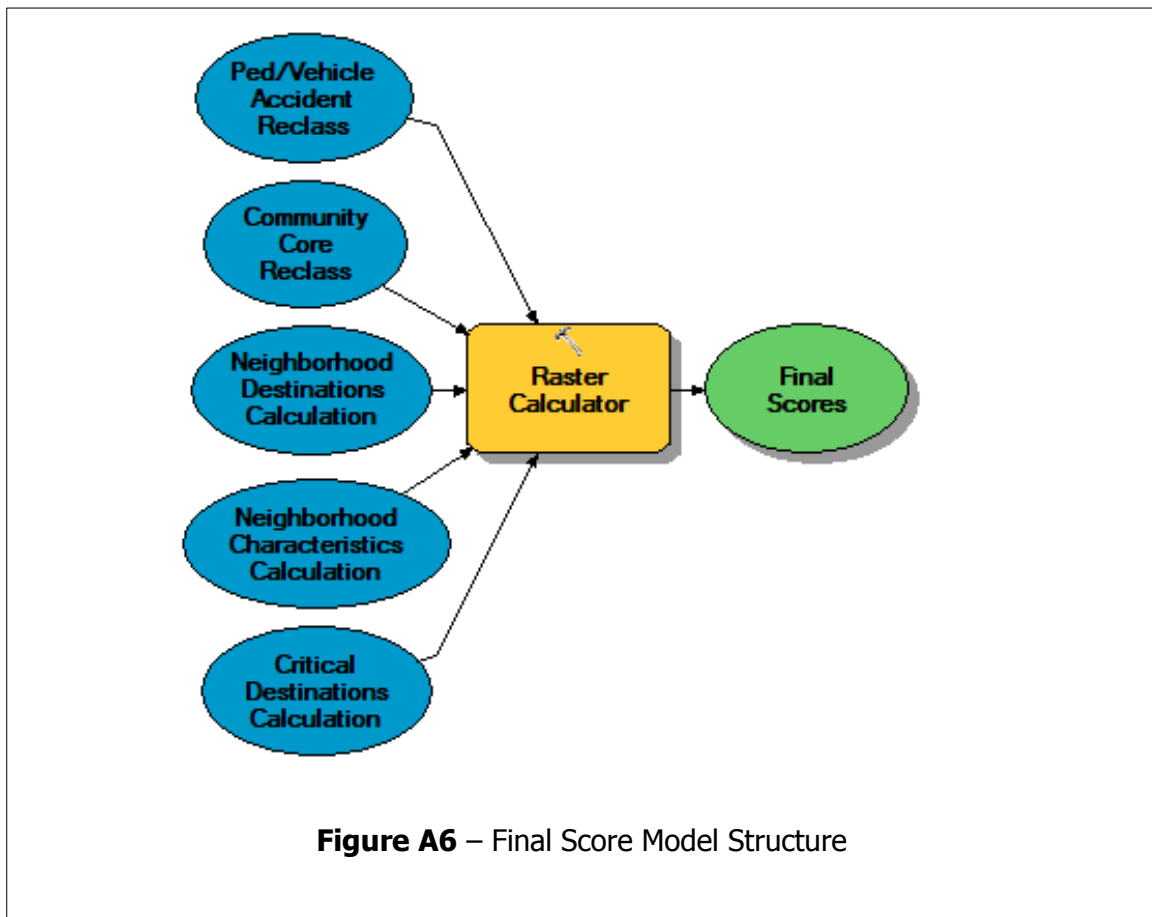
The Pedestrian Detractor model (Figure A5) consisted of only one data set. A raster file was created using a kernel density analysis of pedestrian/vehicle collision data for a five year period (6/07-6/12). The model grouped the data into low, medium and high density areas. The data was then reclassified using the values as shown in in Table A1. The output is a raster file with values ranging from 0-5.

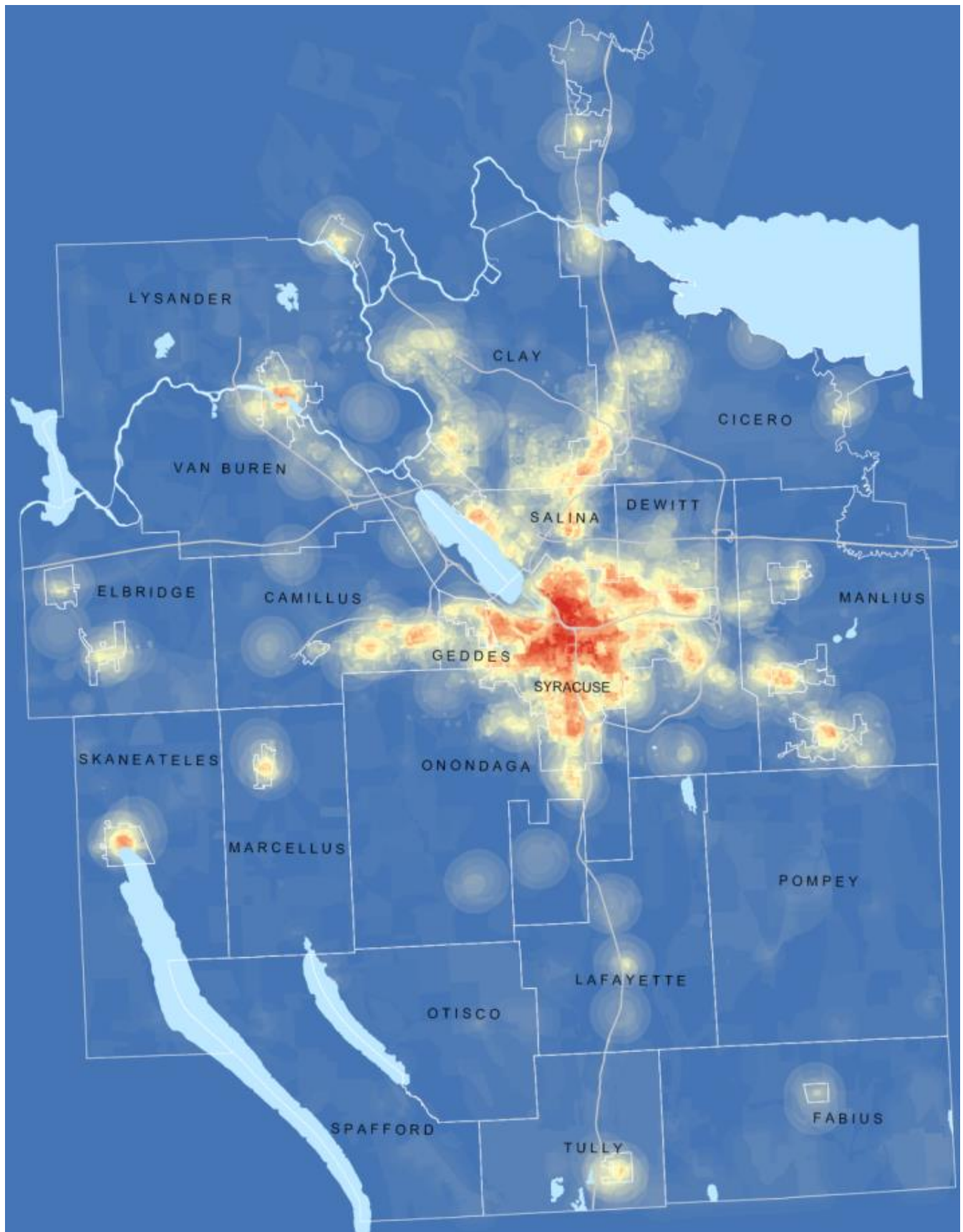


**Figure A4** – Neighborhood Characteristics Model Structure

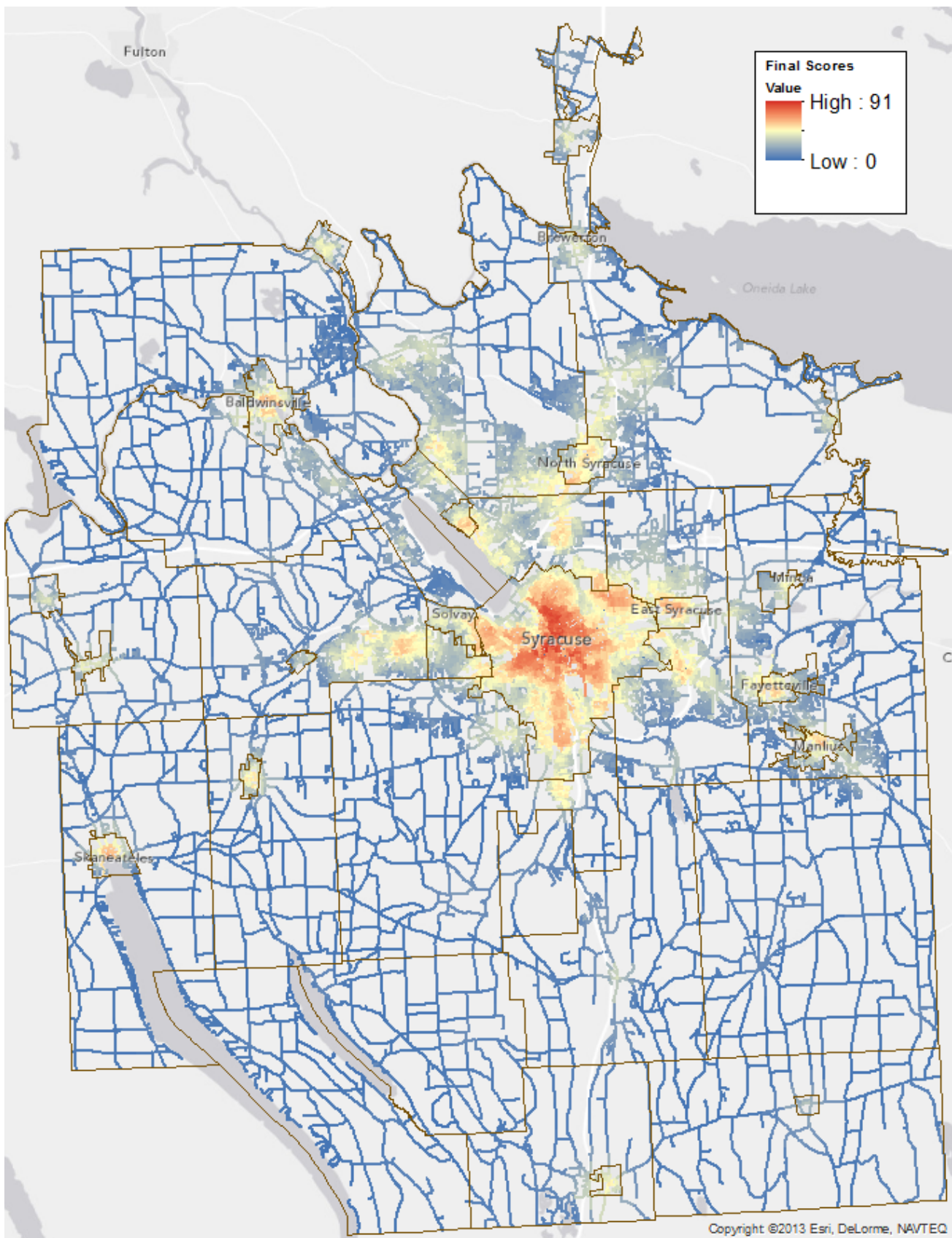


The final component of the model takes the results of the other five models and adds them together (Figure A6). The output is a raster file with values ranging from 0 to 100. The results show that the highest score in the SMTC planning area is 91, which is in the City of Syracuse.





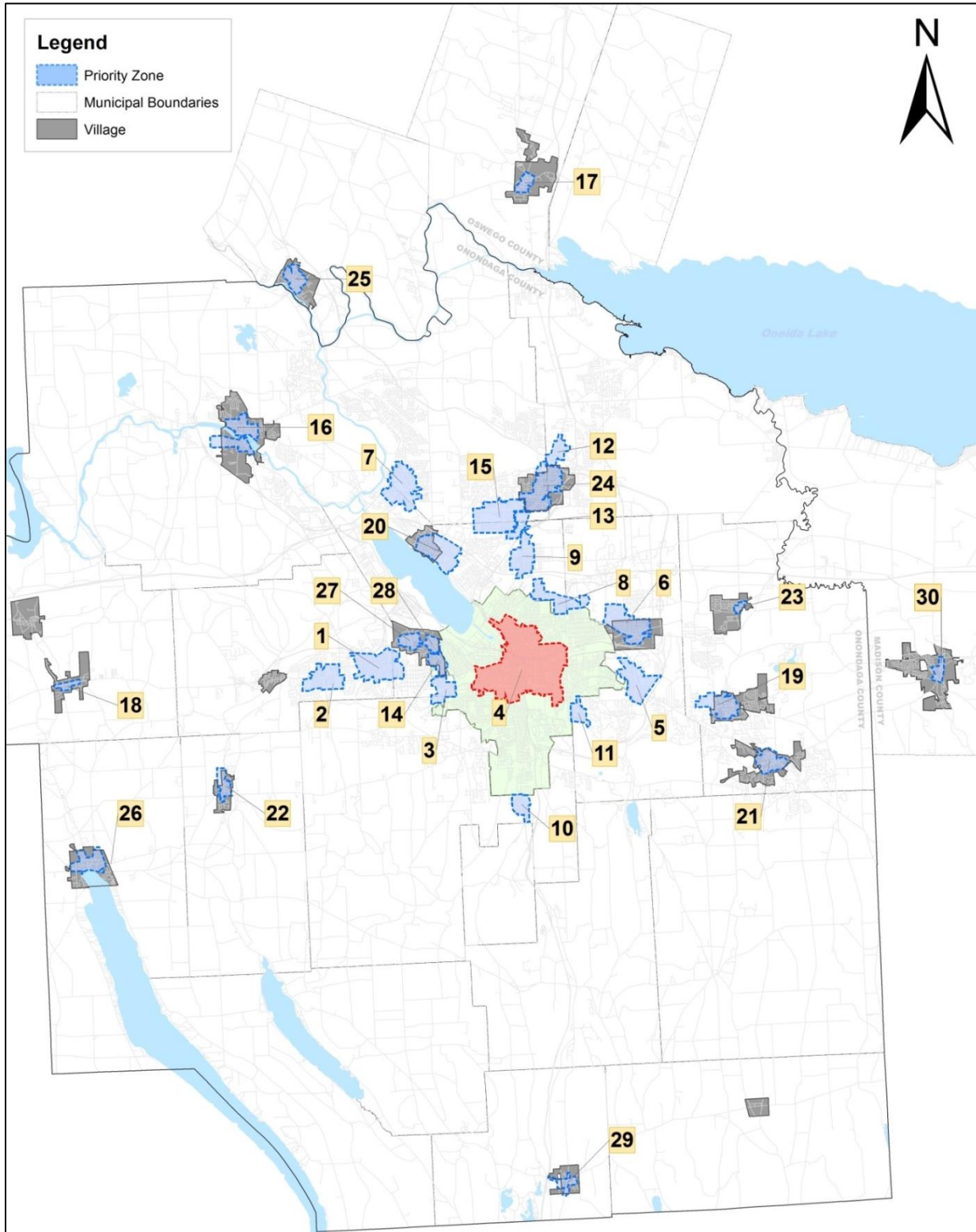
**Figure A7** – Model Outputs



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**Figure A8** – Model Outputs Mapped to Surface Roads





**Figure A9** – Priority Zones based on Model Outputs

## Output

The SMTC Pedestrian Demand model produces a raster file with 100 square meter cells that covers the SMTC planning area. Each cell is coded with a result in the range of 0 to 100 as show in Figure A7. “Hot” colors in Figure A7 (red, orange) indicate higher scores. Cooler colors (light yellow fading to dark blue) represent areas with either lower overall population density, fewer / more spread out destinations, or both.

These raw model outputs were mapped to adjacent road centerlines to better represent potential sidewalk locations. Since pedestrians do not have access to interstates, they were removed from the centerline file for this analysis. A 30-foot buffer was created for each road segment and the ArcGIS Zonal Statistics as Table tool was used to get the minimum, maximum and mean score for each segment. The results were then joined back to the road centerline file. The results are shown in Figure A8.

The model’s results were analyzed at the neighborhood level and Priority Zones were identified, as shown in Figure A9. Priority Zones were defined based on areas with scores of 40 points and above, with nearby destinations considered as well.

Note that Figure A9 extends the study area’s limits to include the Town of Sullivan in Madison County. This area was added to the SMTC’s Metropolitan Planning Area during the development of this project. As a result, data collection and pedestrian demand analysis for the Town of Sullivan were done in 2014, well after the data collection and analysis in the majority of the study area. The Village of Chittenango’s Priority Zone was added as a result of this analysis.



# APPENDIX B – SIDEWALK ORDINANCES

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# **Sidewalk Ordinances for Towns and Villages in the Metropolitan Planning Area**

**Onondaga County Sustainable Streets  
Initiative**

Syracuse Metropolitan Transportation Council  
June 2013

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**REVISED GENERAL ORDINANCES:**

**Chapter 24 – Streets and Sidewalks**

**Article 2 – Snow and Ice**

**Sec. 24-3 – Removal of snow and ice from sidewalks**

1. The owner, agent or occupant of any structure or vacant lot fronting upon any park, street or alley, shall clear or cause to be cleared, the sidewalk along the said premises from all snow and ice that may fall or accumulate thereon every day by six o'clock in the afternoon of the following day, except as hereinafter provided.
2. The owner, agent, or occupant of any structure or vacant lot fronting upon any park, street or alley within the area of the special assessment district, as described in chapter 38 herein, shall within four (4) hours after snow ceases to fall clear or cause to be cleared the sidewalk along the said premises from all snow and ice; the time between 8:00 p.m. to 8:00 a.m. the following day not being included in the above four-hour period nor shall the foregoing be applicable to Sundays. In the event of the accumulation of snow and snow ceases to fall:
  - a. Between 8:00 p.m. and 8:00 a.m. the following day, such snow shall be removed by 12:00 p.m. of said day, except Sundays;
  - b. On Sundays, such snow shall be removed by 12:00 p.m. the following Monday.
3. In case the snow and ice on the sidewalk shall be frozen so hard that it cannot be removed without injury to the pavement, the owner, agent or occupant of any structure or vacant lot fronting thereon may within the time specified in the preceding paragraphs cause the sidewalk to be strewn with salt, sand or some similar suitable material and shall thereafter as soon as the weather shall permit, thoroughly clean such sidewalk.

**Sec. 24-4 – Improper disposal of cleared snow and ice**

No person shall sweep, throw or deposit or cause to be swept, thrown or deposited any snow or ice into any street gutter or public square or park, or on any sidewalk within the city, from lands or premises abutting or adjoining any such street gutter, public square, park or sidewalk.

**Sec. 24-5 – Penalty for violations of sections 24-3, 24-4**

*“Editor’s note— Section 24-5 was repealed by an ordinance adopted on January 6, 1964.”*

**Article 7 – Other Obstructions and Encumbrances; General Prohibitions**

**Sec. 24-30 - Cleaning and maintenance of sidewalks; duty of abutting occupant and owner**

No owner of any land within the city limits shall allow any sidewalk adjoining said land to be at any time other than in good repair and in a good and safe condition. The occupant of each and every tenement or building in the city fronting upon any park, street or alley, or the owner or the agent of the owner of any vacant lot fronting as aforesaid, shall at all times keep the sidewalk along the said premises clean and free from all obstructions of any kind and shall keep closely cut all grass or weeds along said sidewalk.

**Article 9 – Sidewalk Construction**

**Sec. 24-37 – Permit and approved grades and sidelines, required; exception for city work**

Except in the case of city contract work, no person shall lay, relay or repair a sidewalk without first obtaining, before starting the work, a permit in the office of the department of public works. The applicant shall at the



same time request grades and sidelines in the office of the city engineer. No permit shall issue without approval by the city engineer.

## **Article 39 - Specifications for commercial and residential sidewalk construction**

### **24-39 – Specifications for commercial and residential sidewalk construction**

1. *Central Business District.* Sidewalks in the Central Business District of Syracuse, as herein defined, shall be constructed, reconstructed or repaired with concrete and in accordance with the current city assessment sidewalk specifications on file in the office of the city engineer, unless written authorization is issued by the commissioner of public works, authorizing alternate materials to be used on the sidewalk, in the event the work site is not suitable for the aforementioned material reconstruction. The Central Business District is defined as follows: Northern boundary—Erie Boulevard East and West; western boundary—West Street Arterial; southern boundary—Adams Street; and eastern boundary—Almond Street.

2. *Special conditions for repairing or reconstructing sidewalk over cellars or vaults.* Prior to the repair or reconstruction of the cellar or vault, the area must be inspected by the city engineer or his designee as directed by the commissioner of public works to determine if the vault or cellar is in compliance with building codes.

3. *Residential sidewalks and other sidewalk areas not herein specified.* Residential sidewalks and all sidewalk areas not herein specified shall be constructed, reconstructed or surfaced with concrete, street asphalt, fine asphaltic concrete, fine tarvia or such other artificial substance as the department of public works commissioner may direct. Notwithstanding the foregoing, effective September 1, 2003, all residential sidewalks and all sidewalk areas not herein specified shall, when newly constructed or reconstructed, be constructed or reconstructed with concrete except as otherwise provided herein below. In those areas where there are currently a combination of concrete sidewalks and pavers, any reconstruction shall consist of concrete and pavers, of same kind, like and quality in the same pattern which previously existed. Further provided that in cases of economic hardship, the common council shall be authorized to grant a waiver of these requirements upon application to the common council by the property owner. The finished surface must have a smooth, uniform grade, free from irregularities.

### **24-39.1 – Sidewalk construction to facilitate use by handicapped persons**

A sidewalk hereafter constructed or reconstructed on public property for public use within the city of Syracuse, or a person, firm, corporation, nonprofit corporation or organization, shall be constructed in a manner that will facilitate use by physically handicapped persons, at points of intersections between pedestrian and motorized lines of travel, and at other points where necessary to avoid abrupt changes in grade, a sidewalk shall slope gradually to street level so as to provide an uninterrupted line of travel. The city engineer shall prescribe standards of slope gradient, width and slip-resistant qualities which will assure that a sidewalk will accommodate a person in a wheelchair or other handicapped, persons.

The city engineer may waive the aforementioned requirements if, in his opinion, good engineering practice requires such work not be performed at an intersection, and if, in his opinion, such construction creates a safety hazard.

## **Chapter 38 – Special Assessment District**

### **38-1 – Creation of district**

There is hereby created a special assessment district [the Downtown Special Assessment District] within the city of Syracuse. The properties located within the following area shall constitute such district, viz:

All that tract or parcel of land situate in the city of Syracuse, county of Onondaga and state of New York lying within the following boundaries:

Beginning at the intersection of the present northerly line of East Adams Street, with the westerly boundary of Interstate Route #81; thence northerly and westerly, along said westerly and southerly boundary of Interstate Route #81 and the southerly boundary of Interstate Route #690 to its intersection with the easterly line of Onondaga Creek; thence southerly, along said easterly line of Onondaga Creek to its intersection with the present northerly line of West Adams Street; thence easterly, along said northerly lines of West Adams and East Adams Street to the place of beginning.

## **PART S – SPECIAL ACTS:**

### **Chapter 18 – Streets and Sidewalks (Department of Public Works Act)**

#### **18-1 - General powers of commissioner of public works; police to report street defects, etc., to commissioner; general function of city engineer**

1. The Commissioner of Public Works of the City of Syracuse, subject to ordinances of the common council, shall have direction and control of the cleaning of streets, highways, sidewalks, crosswalks, gutters, catch basins, sewers, drains, culverts and bridges of the city, including the watering, flushing and sprinkling of public streets and highways and the laying of dust therein with substances other than water, and the removal of snow and ice therefrom; of the maintenance and ordinary repairing of unpaved streets and of the sewers and sewer system of the city; of the collection and disposition of ashes, refuse and garbage by the city; and of the maintenance and repairing of the public market of the city. He may employ or hire such laborers, teams and trucks and incur such expenditures as may be necessary for the performance of such duties, and pay for same out of moneys appropriated for his department. It shall be his duty to inspect the streets, highways, sidewalks, crosswalks, gutters, catch basins, sewers, drains, culverts, bridges and public market of the city with sufficient frequency to enable him to properly perform such duties.
2. It shall be the duty of the police department to promptly report to the commissioner of public works any and all obstructions upon or defects in the streets, sidewalks and gutters and any violation or failure of performance of any contract for the lighting, sprinkling, watering or flushing of the streets or public places discovered by any member of such department.

#### **18-8 – Sidewalk vaults; authorization and cost**

The common council shall have jurisdiction and authority, without any petition therefore or consent thereto, to request the department of public works commissioner to order the construction and reconstruction of sidewalks, cellars, vaults and gutters upon any street or part thereof and to provide for and defray the expense thereof by assessment upon the property fronting thereon. Where such improvement is ordered on only one side of the street or part thereof, only the property fronting upon that side of the street or part thereof so improved shall be liable to taxation therefore.

#### **18-10 – Same Assessment of costs; collection, billing, etc.**

The cost of construction and reconstruction of sidewalks and gutters shall be assessed pro rata per linear foot of frontage upon the property fronting upon the street or part thereof along which such improvement is ordered to be made. The cost of reconstruction and/or backfilling of any sidewalk cellar or vault shall be assessed against the property owner. Upon the certification to the comptroller of the cost of any such improvement and expenses incident thereto and connected therewith, he shall certify the same to the assessor, who shall thereupon proceed to assess the same and shall file a certified copy of such assessment with the treasurer. The amount of any such assessment, together with interest thereon from the date thereof at the rate of seven (7) per centum per annum, may be paid to the treasurer at any time prior to the first day of July following. A statement of all such assessments remaining unpaid shall on that date be made by the treasurer to the assessors, and the same shall be included and assessed, levied and collected at the same time as a part of the general city tax. The common council may by ordinance direct the cost of any such

improvement and expenses incident thereto and connected therewith shall be assessed, levied and collected in ten (10) equal annual installments, one-tenth of the principal thereof together with interest on all sums unpaid, except the cost of reconstruction and/or backfilling of any sidewalk cellar or vault shall be assessed, levied and collected in fifteen (15) equal annual installments, one-fifteenth of the principal thereof together with interest on all sums unpaid, at the rate of seven (7) per centum per annum, to be assessed, levied and collected at the same time as and as a part of the general city tax of each year, levied subsequent to the completion of said improvement, until the same shall be paid; provided, however, that the amount of any such tax remaining unpaid may at any time prior to the first day of July and subsequent to the 15th day of September in any year be paid to the city treasurer as hereinbefore provided.

**18-11 – Construction of sidewalks or gutters as a general city charge**

Notwithstanding the provisions of sections 8, 9 and 10 hereof [sections 18-8, 18-9 and 18-10 hereof], the common council may, by ordinance with the approval of the board of estimate, authorize the construction of a sidewalk or gutter between intersecting streets of a city block wholly or in part as a general city charge where such sidewalk or gutter is reconstructed incidental to or as a part of a change in grade of such sidewalk or gutter or part thereof to establish a uniform grade within such block. The common council may also by ordinance with like approval of the board of estimate authorize the construction of a sidewalk or gutter in whole or in part as a general city charge in that part of a street upon which fronts property owned and used by a religious corporation or association as defined in subdivision 6 of section 4 of the Tax Law of the State of New York.

The common council may also by ordinance with like approval of the board of estimate, authorize the construction or reconstruction of sidewalks, which term shall include so-called walks or walkways, at locations other than in city streets for public pedestrian travel between streets, and the acquisition of the necessary lands or easements therefore, wholly as a general city charge.

**18-18 – Special Assessment improvements upon petition from abutting property owners – Generally**

The owners of at least one-third of the total number of front feet lineal measurement or at least one-third in number of the owners of property on the street or part thereof upon which it is proposed to make the improvement of sprinkling, watering, flushing or cleaning or constructing or reconstructing sidewalks or constructing a sewer may petition or consent to the making of any such improvement. Also, at least two-thirds of the total number of the owners of property on a street without a concrete base or part thereof may petition or consent that the street or part thereof be regraded and/or be overlaid with a hot-mix asphalt. Such petition or consent must be in writing, signed, executed and acknowledged and proved in like manner as a deed to be recorded. It shall be filed with the city clerk and shall be thereupon referred by the common council to the assessors for examination and certification. If after examination the assessors, or a majority of them, shall report and certify to the common council that the number of property owners required have executed such petition or consent and the common council shall determine to make such improvement, thereupon the same notices shall be served and the same steps and proceedings be had and taken as in the case of a like improvement initiated by the common council without petition or consent of property owners. The certificate of the assessors shall be endorsed upon the petition or consent and shall be presumptive evidence of the facts therein stated.

**18-27 – Duty of property owners to keep abutting sidewalks and gutters, or sidewalk cellars or vaults, safe and free of snow, ice or other obstructions; notice to owners to clean, construct, repair, etc., sidewalks or gutters.**

It shall be the duty of the owner of every lot or piece of land in said city to keep the sidewalks, any sidewalk cellar or vault or vaults and/or gutters in front thereof at all times in good repair and in safe condition for public use and also to remove and clean away all snow and ice and other obstructions therefrom.

In case any sidewalk or gutter in said city shall at any time, in the judgment of the commissioner of public works, require cleaning, constructing, reconstructing, renewing, relaying, repairing or otherwise improving or

in case any sidewalk cellar or vault, in the judgment of the commissioner of public works, requires reconstruction and/or backfilling, the said commissioner of public works may serve a notice upon the owner of the abutting lot requiring him forthwith to clean, or within five (5) days, construct, reconstruct, renew, relay, repair or otherwise improve said sidewalk or gutter or reconstruct and or backfill said sidewalk cellar or vault. Such notice may be served on such owner personally or by leaving the same at his residence with a person of suitable age and discretion, or by mail addressed to such owner at Syracuse. Where there are two (2) or more owners of any such property, service upon one of them shall be sufficient. If such notice to construct, reconstruct, renew, relay, repair, backfill, or otherwise improve shall be served by mail, it shall require the owner to construct, reconstruct, renew, relay, repair or otherwise improve said sidewalk or gutters or reconstruct and/or backfill said sidewalk cellar or vault within ten (10) days after date of such service.

**18-28 – Construction, repair, etc., of sidewalk or gutters, or sidewalk cellars or vaults, by commissioner of public works at owner's expense after notice; removal of snow or ice or repair of railroad crossings by city without notice; collection of expenses of same; time limits for removal of snow or ice**

1.a. If any owner shall neglect or refuse to construct, reconstruct, renew, relay, repair or otherwise improve any sidewalk or gutter or reconstruct and/or backfill any sidewalk cellar or vault within the time limited therefore by said notice, the commissioner of public works shall forthwith construct, reconstruct, renew or relay such sidewalk or gutter or make such repairs or improvements or reconstruct and/or backfill such sidewalk cellar or vault without further notice and without any advertisement or receipt of bids or proposals therefore, in such manner as he shall deem proper and suitable and shall file a certificate of the expense thereof, with a description of the property in front of which such improvement was made, with the comptroller who shall certify the same to the assessors and the same shall thereupon be assessed by them upon such property and shall be assessed, paid, levied and collected in the manner provided by law for the assessment, payment, levy and collection of the cost of construction, and reconstruction of sidewalk and gutters or reconstruction and backfilling of sidewalk cellar or vaults. If any person shall neglect or refuse to clean or remove such snow or ice within the time period herein provided in paragraph (b) or other obstruction from any sidewalk or gutter whether such notice provided for in the last section shall have been given or not; or in case any railroad company shall neglect or refuse to pave, repave or repair between the tracks and the rails thereof and two (2) feet in width outside the rails thereof on any portion of any street in the manner and as said company is required to pave, repave or repair by law or the terms of any franchise granted to it by said city as directed by the commissioner of public works or the common council, or shall neglect or refuse to forthwith remove from any street the snow or ice thrown thereon from its tracks or any obstruction placed or permitted therein by it, the said commissioner of public works shall forthwith clean, repair, pave or repave such street, or part thereof, sidewalk or gutter or reconstruct and/or backfill such sidewalk cellar or vault or remove such ice, snow or obstruction in such manner as he shall deem proper and suitable. Whenever said commissioner shall do such cleaning or make such repairs or improvements or back fill or remove such ice, snow or obstruction, he shall file a certificate of the actual expense thereof with the comptroller who shall certify the same to the assessors and the owner of such railroad company including its rails, tracks, rolling stock, equipment and franchises and the same shall be assessed, levied and collected at the same time as and as a part of the general city tax.

- 1.b.1. Snow and ice shall be cleared or removed before 6:00 p.m. of the day following that such snow or ice shall have fallen, except as hereinafter provided.
- 1.b.2. Within the special assessment district, as defined by Chapter 38 of the Revised General Ordinances of the city of Syracuse, as amended, snow and ice shall be removed as follows: Snow and ice shall be cleaned or removed within four (4) hours after snow ceases to fall, except between 8:00 p.m. to 8:00 a.m. of the following day and Sundays. In the event of the accumulation of snow and snow ceases to fall:
  - i. Between 8:00 p.m. and 8:00 a.m. the following day, such snow shall be removed by 12:00 p.m. of said day except Sunday.
  - ii. On Sundays such snow shall be removed by 12:00 p.m. the following Monday.

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**Chapter 7 – Claims Against the Town**

**7.1 - Written notice of defective condition required for injuries on highways and Town property**

No civil action shall be maintained against the Town, or the Town Superintendent of Highways, or against any improvement district in the Town, for damages or injuries to person or property sustained by reason of any highway, bridge, culvert, or any other property owned by the Town, or any property owned by any improvement district, being defective, out of repair, unsafe, dangerous or obstructed unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge, culvert, or any other property owned by the Town, or any property owned by any improvement district, was actually given to the Town Clerk, or the Town Superintendent of Highways, and that there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of; and no such action shall be maintained for damages or injuries to persons or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge, culvert or any other property owned by the Town, or any property owned by any improvement district in the Town, unless written notice thereof, specifying the particular place, was actually given to the Town Clerk, or the Town Superintendent of Highways, and there was a failure or neglect to cause such snow or ice to be removed or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

**7.2 - Written notice of defective condition required for injuries on Town sidewalks**

No civil action shall be maintained against the Town and/or the Town Superintendent of Highways for damages or injuries to person or property sustained by reason of any defect in the sidewalks of the Town or in consequence of the existence of snow or ice upon any of its sidewalks, unless such sidewalks have been constructed or are maintained by the Town or the Town Superintendent of Highways pursuant to statute, nor shall any action be maintained for damages or injuries to person or property sustained by reason of such defect or in consequence of such existence of snow or ice unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or to the Town Superintendent of Highways and there was a failure or neglect to cause such defect to be remedied, such snow or ice to be removed, or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

**Chapter 26 – Uniform Code Enforcement**

**Article VII – Property and Building Maintenance**

**26.80 – Exterior Building Structure and Property Maintenance**

- A. The exterior surfaces of all buildings, structures and areas of property shall be maintained as follows:
  - 4. Steps, walks, driveways, parking surfaces and similarly improved surfaces shall be maintained such that they are free of any substantial depressions or humps and otherwise afford safe convenient passage.

**Article VIII – Penalties**

**26.100 – Remedies and Penalties**

- B. In addition to the remedies prescribed by Executive Law, § 382, any person, corporation, association, firm or partnership that fails to remedy the condition found to exist in violation of the Uniform code and this Chapter shall be subject to a fine of not more than \$250.00 or imprisonment for a period not exceeding 15 days or to both such fine and imprisonment. Each violation that continues to exist beyond the date fixed in the order of the enforcement official to remedy the violation shall be deemed a separate offense.

**Chapter 39 – Subdivision Regulations**

**Article III – Development Standards**

**39.31 Street – General Planning Standards**

- J. Where the subdivision abuts or fronts on arterial streets, sidewalks may be required and shall be of size and type as approved by the Planning Board.

**39.34 – Blocks**

B. Design Standards

- 2. Blocks over 800 feet in length may be required to have a cross-walk if necessary to facilitate pedestrian circulation to a school, park, recreation area, shopping center or other similar neighborhood facility.

**Article IV – Required Improvements**

**39.42 – Utility and Street Improvements**

A. Utility and street improvements shall be provided in accordance with the following:

- 3. The cross sections and construction design of arterial streets shall be determined by the Town's engineer or the Onondaga County Engineer. Where reverse frontage lots are not provided along an arterial street, four-foot sidewalks may be provided. Sidewalk design and construction methods shall be specified either by the Town's engineer or the Onondaga County Engineer.

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#### **Chapter 124 – Housing Standards**

##### **Part 1 – Residential Premises**

###### **Article VI – Property Maintenance Requirements**

###### **124-37 – Open Areas**

- C. Steps, walks, driveways, parking spaces, and similar paved areas shall be maintained so as to afford safe passage under normal use and weather conditions.

##### **Part 2 – Mobile Homes and Mobile Home Courts**

###### **Article IX – Mobile Home Courts**

###### **124-54 – General Requirements**

- C. Surfacing. Walks, driveways and parking spaces shall be provided with paved and durable surfacing so as to provide safe and easy access under normal use and weather conditions.

##### **Part 3 – Administration and Compliance**

###### **Article XIII – Penalties**

###### **124-71 – Penalties for offenses**

- A. Every person who shall fail to comply with a violation order issued by the Zoning Officer within the time limit stated thereon shall be guilty of an offense and upon conviction shall be punished by a fine of not more than \$250 or by imprisonment for not more than 30 days, or both. Each week that a violation continues shall be a separate offense.
- B. The Town Board may also maintain an action or proceeding in the name of the town in a court of competent jurisdiction to compel compliance with or to restrain by injunction the violation of this chapter or any rule or regulation adopted pursuant hereto, notwithstanding the imposition of the above penalty or punishment for such violation.

#### **Chapter 181 – Streets and Sidewalks**

##### **Article II – Notification of Defects**

###### **181-9 – Prior written notice of defect required to maintain civil action.**

No civil action shall be maintained against any town or town Superintendent of Highways for damages or injuries to person or property sustained by reason of any highway, bridge or culvert being in a defective, out of repair, unsafe, dangerous or obstructed condition unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge or culvert was actually given to the Town Clerk or Town Superintendent of Highways, and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of; but no such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge or culvert, unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Superintendent of Highways and there was a failure or neglect to cause such snow or ice to be removed, or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

#### **Chapter 185 – Subdivision of Land**

##### **Article IV – Development Standards**

###### **185-10 – Street Planning Standards**

- K. Where the subdivision abuts or fronts on arterial streets, sidewalks shall be required, and shall be of size and type as approved by the Planning Board.



## Article V – Required Improvements

### 185-20 – Utility and Street improvements

- A. Utility and street improvements shall be provided in accordance with the following:
  - 3. Arterial streets: cross sections in accordance with the Official Map and Comprehensive Development Plan or as determined by the Planning Board if no such Official Map or Comprehensive Development Plan has been adopted, and construction design as determined by the designated engineer of the Town or Onondaga County Public Works Commissioner. Where reverse frontage lots are not provided along an arterial street, four-foot sidewalks shall be provided. Sidewalk design and construction methods shall be specified either by the engineer designated by the Town or the Onondaga County Public Works Commissioner.

## Chapter 210 - Zoning

### Article XIII – Brewerton Road Corridor: Downtown Core (DC) and Hamlet Gateway (HC) Districts

#### 210-84. Districts and Brewerton Road Corridor Regulating Plan.

- A. Establishment of districts. The Brewerton Road Corridor is hereby divided into the following zoning districts:

- 1. Downtown Core (DC) District.
  - a. Statement of intent. The purpose of this district is to foster a vibrant, pedestrian-oriented character for Brewerton Road (NY Route 11) within the downtown core of the hamlet. In general, the downtown core encompasses existing parcels that front Brewerton Road from approximately Bennett Street to Jerome Street. The physical form and uses are regulated to maintain and enhance the historic Mixed-Use character of the downtown core, while encouraging Infill development that is compatible with that character, providing greater amenities to residents and a range of housing options and Commercial opportunities.

**Figure 210-84-1 — Downtown Core (DC) District.** This district consists of Brewerton's historic downtown main street area with (1) two- to four-Story buildings; (2) small-scale retail, office, service and restaurant use with upper floor residential use; (3) a shallow Build-To-Line and frontage build-out requirement that supports a pedestrian-friendly street; (4) on-street parking, tree lawn with street trees, sidewalks and streetlights; (5) flat roofs with cornices or pitched roofs.

#### 210-90. Landscape and lighting standards and guidelines.

- B. Landscape: pavement standards
  - 2. Sidewalks in the public right-of-way shall be concrete.

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#### Chapter 144 – Mobile Home Courts

##### Article II – Standards for Mobile Home Courts

###### 144-6 – Common Services and Facilities

- B. Sidewalks. Paved sidewalks of a minimum width of 24 inches shall be provided and maintained on each mobile home lot from the mobile home to the street or parking area nearest it.

#### Chapter 155 – Notification of Defects

##### 155-1 – Prior written notice required

No civil action shall be maintained against any town or Town Highway Superintendent for damages or injuries to person or property sustained by reason of any highway, bridge or culvert being defective, out of repair, unsafe, dangerous or obstructed unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge or culvert was actually given to the Town Clerk or Town Highway Superintendent, and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of; but no such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge or culvert, unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Highway Superintendent and there was a failure or neglect to cause such snow or ice to be removed, or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

#### Chapter 197 – Streets and Sidewalks

##### Article I – Snowplowing Regulations

###### 197-3 – Regulations

- A. No person shall plow, shovel, sweep or pile snow, ice or other such materials in or beyond the right-of-way of any street or public highway or cause such to be done so as to interfere with the safety and convenience or public travel or such as to constitute an obstruction of the sight of persons traveling by vehicle or by foot on public streets or sidewalks or on private driveways.
- B. No person shall plow, shovel or pile snow from a private or public driveway in such a manner as to deposit the same in the public roadway or on a public right-of-way or sidewalk or across the street from said driveway or onto the property of another without that person's consent.

###### 197-4 – Penalties for Offenses

Any person, firm or corporation who violates any provisions of this chapter shall be punished as provided in Chapter 1, Article II, § 1-18 [*Unless otherwise specifically provided, the violation of any chapter, rule or regulation or any specific provision or provisions thereof adopted by the Town Board as a part of this Code shall be deemed a violation against such chapter, rule, regulation, or provisions of this Code punishable by a fine not to exceed \$250 or imprisonment of not more than 15 days, or both such fine and imprisonment; provided, however, that for the purpose of conferring jurisdiction upon courts and judicial officers generally, such violation shall be deemed a misdemeanor and for such purpose only all provisions of law relating to misdemeanors shall apply to such violation.*]. General Penalty, and each day such violation shall continue shall constitute a separate offense.

##### Article II – Sidewalks

###### 197-5 – Liability of abutting owner or occupant

The owner or occupant of lands fronting or abutting on any street in the Town of Clay shall maintain and repair the sidewalks adjoining said lands and keep the sidewalk free from obstruction, including snow and ice.

Such owner or occupant shall be liable for any injury or damage by reason of omission, failure or negligence to maintain or repair such sidewalks or to keep them free of obstructions, including snow and ice.

**Chapter 200 – Subdivision of Land**

**200-5 – Required Improvements**

B. Utility and Street Improvements

2. The standards and specifications for each general type of development shall be as follows:
  - a. For multiple dwellings and other residential types other than one-family detached dwellings, improvements shall be in accord with Standard A.
  - b. For one-family detached dwellings in the areas where sanitary sewers are available or accessible, improvements shall be in accord with Standard B.
  - c. For one-family dwellings with lot sufficiently large to meet the requirements of Chapter 182, Sewage Disposal Systems, Individual, of this Municipal Code, and located in the areas where sewers are not available or accessible, improvements shall be in accord with Standard C.
  - d. For commercial, industrial and other types, improvements shall be as determined by the Board with the advice of the Engineer.

C. Schedules of required street improvements and utilities [*abridged*].

<b>Standard</b>			<b>Improvements and Utilities</b>
<b>A</b>	<b>B</b>	<b>C</b>	
			Streets
X	X	X	Sidewalks along arterials and collector streets at such locations as the Planning Board may deem it necessary, as per plans and specifications to be approved by the Engineer

### ONLINE CODE

#### Chapter 161 – Streets and Sidewalks

##### Article II – Notification of Defects

###### 161-8 – Written notice required

No civil actions shall be maintained against the Town or Town Superintendent of Highways for damages or injuries to person or property sustained by reason of any highway, bridge, street, sidewalk, crosswalk or culvert being defective, out of repair, unsafe, dangerous or obstructed unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge, street, sidewalk, crosswalk or culvert was actually given to the Town Clerk or Town Superintendent of Highways and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of. No such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge, street, sidewalk, crosswalk or culvert, unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Superintendent of Highways and there was failure or neglect to cause such snow or ice to be removed, or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

##### Article IV – Curb Cuts

###### 161-25 – Rules

- C. Single- and two-family dwellings
  - 6. Driveways should be graded and paved to allow uninterrupted use of sidewalks.

#### Chapter 164 – Subdivision of Land

##### Part 1 – Subdivision Regulations

##### Article III – Design Standards and Improvements

###### 164-21 – Required Improvements

- A. The following is a complete list of required improvements to be installed either by the developer or by the Town, with the developer paying most of the cost as outlined in Subsection B:
  - 4. Sidewalks.
    - a. Sidewalks shall be installed on one or both sides of a street as the Board may require, depending upon local conditions of public safety.
    - b. Sidewalks shall be constructed in accordance with the detail contained in the current Minimum Standards for Residential/Industrial Street Construction.
- B. The Town may construct all sanitary sewers, sidewalks, streetlights and waterlines to serve the lands within the subdivision, and the developer, on behalf of himself, his successors, administrators or assigns, will guarantee to the Town the payment of all taxes and special assessments which may be levied against the subject premises by the Town on behalf of any and all improvement districts or extensions thereof within which the subject premises or any portion thereof are located until all the lots within the subdivision have been constructed thereon and certificates of occupancy have been issued therefore. The Town will in this regard require that the developer deposit security in a form and amount satisfactory to the Town. The developer shall construct all drainage facilities, streets and other required improvements, and turn them over to the Town at no cost or expense to the Town.

#### Chapter 192 – Zoning

##### Article IXA – Hamlet Districts

###### 162-43.7 – Design Standards

F. Landscaping and sidewalks.

3. A walkway, constructed of concrete or modular unit pavers, shall connect the front entrance to the street, driveway or sidewalk.
4. For all uses requiring site plan review or a specific permit, a concrete sidewalk shall be constructed along each street line for the length of the property.

**Article XVI – Regulations for Specified Uses**

**192-76 – Mixed-Use**

Mixed-use developments shall be subject to the following requirements.

- G. Mixed use is intended to provide a development where residential and commercial uses are integrated into a pedestrian-friendly neighborhood. Project amenities that address this objective include but are not limited to:
1. Sidewalks throughout the subdivision, including walkways within parking lots.

**192-103 – Off-street parking**

E. Location

6. Pedestrian circulation. A continuous internal sidewalk and/or pathway of five feet or more in width shall generally be provided from the walkway along the street to the principal entrance(s) of any building together with linkage to adjacent properties in a continuous path compliant with the Americans with Disabilities Act (ADA) standards.

**192-107 – Excavations, site grading, fillings and clearing**

- A. Lot grading shall be done in such a way as to preserve or enhance the topographic features and to provide positive drainage. All site grading shall be designed to meet the following standards:

Sidewalks: Minimum Slope (percent) – 1%; Maximum Slope (percent) – 6%.

No town code exists to address sidewalks.

No town code exists to address sidewalks.



### ONLINE CODE

#### **Chapter 185 – Streets and Sidewalks**

##### **Article I – Excavations and Sidewalks**

###### **185-7 – Maintenance of sidewalks required**

No owner of any land within the town limits shall allow any sidewalk adjoining said land to be at any time other than in good repair and in a good and safe condition.

###### **185-8 – Snow, ice and other obstructions prohibited**

No owner of any land within the town limits shall allow any accumulation of snow or ice or any obstruction on any sidewalk adjoining said land.

###### **185-9 – Penalties for offenses**

Any person found guilty of a violation of this chapter shall be punishable by a fine of not more than \$250, imprisonment for not more than 15 days, or both such fine and imprisonment.

##### **Article II – Notification of Defects**

###### **185-10 – Written notice required**

Before a civil action for damages or injuries can be brought against the Town of Geddes, its agents and employees or the Town of Geddes Superintendent of Highways, its agents and employees, prior written notice must be given of the defective, unsafe or dangerous condition of a street, highway, bridge, culvert, sidewalk or crosswalk.

[ONLINE CODE](#) (Zoning Code Only)

### Town of Hastings Zoning Law

#### Article 7 – Mobile Home Parks and Campgrounds

##### Section 740 – Mobile Home Park Design

2. A hard surfaced pedestrian walkway of at least 4 feet in width shall be provided along and at least 5 feet from each access road between the entrance to the public highway and either the first unit or such location within the park as may be required to assure pedestrian safety.

#### Article 11 – Site Plan Review

##### Section 1120 – Application

The Code Enforcement Officer shall refer any application for a zoning permit which requires a site plan review to the Planning Board. An application for a site plan review shall be filed with the Planning Board, and the appropriate fee as determined by the fee schedule adopted by Town Board resolution shall be paid to the Town Clerk. The application shall include two original stamped plans and eight (8) copies thereof. A complete application shall include the following:

13. Provision for pedestrian access, including public and private sidewalks;

#### Article 12 – Site Plan Review Standards

##### Section 1250 – Buffer Area Requirements

In H, W, R-2, and C zones, all multiple-family uses and nonresidential uses shall provide sidewalks, street trees and planted areas along roads in keeping with the pattern established for the road and neighboring properties.

## Town of LaFayette

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ONLINE CODE (Subdivision Code Only)

### Town of LaFayette Subdivision Regulations

#### Article 5 – Design Standards and Required Improvements

##### **Section 515 – Sidewalks**

Sidewalks may be required and shall be installed as follows:

1. Sidewalks shall be installed at the expense of the subdivider, at such locations as the Planning Board may deem necessary.
2. Sidewalks must be constructed to comply with the detailed specifications required by the Town Engineer or an Approved Engineer and approved by the Planning Board.
3. Sidewalks shall be concrete or other approved material, and have a minimum width of four (4) feet in residential areas, and five (5) feet in commercial and industrial areas.

##### **Section 535 – Lots**

Pedestrian Easements. In order to facilitate pedestrian access from roads to schools, parks, play areas, or nearby roads, perpetual unobstructed easements at least twenty (20) feet wide may be required by the Planning Board. In heavy traffic areas, sidewalks may also be required.

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ONLINE CODE (Zoning Code Only)

No town code exists to address sidewalks in Town Zoning Ordinance.

## ONLINE CODE

### **Chapter 91 – Mobile Home Parks**

#### **91-16 – Pedestrian Access**

- A. All mobile home parks shall provide safe, convenient, pedestrian access of adequate width for intended use, durable and convenient to maintain, between individual mobile homes, the park streets and all community facilities provided for park residents.
- B. Where a common walk system is provided and maintained between locations and where pedestrian traffic is concentrated, such common walks shall have a minimum width of four feet.
- C. All mobile home stands shall be connected to common walks or to streets or to driveways or parking spaces connecting to a paved street. Such individual walks shall have a minimum width of two feet.

### **Chapter 113 – Streets and Sidewalks**

#### **Article I – Notification of Defects**

##### **113-1 – Defects for which notice required; failure to correct**

No civil action shall be maintained against the Town of Lysander, hereinafter referred to as the "town," or the Town Superintendent of Highways of the town or against any improvement district in the town for damages or injuries to persons or property, including those arising from the operation of snowmobiles, sustained by reason of any highway, bridge, culvert, highway marking, sign or device or any other property owned, operated or maintained by the town or any property owned, operated or maintained by any improvement district therein being defective, out of repair, unsafe, dangerous or obstructed, unless a written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge, culvert, highway marking, sign or device or any other property owned, operated or maintained by the town or any property owned, operated or maintained by any improvement district was actually given to the Town Clerk of the town or to the Town Superintendent of Highways of the town and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of; and no such action shall be maintained for damages or injuries to persons or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge, culvert or any other property owned by the town or any property owned by any improvement district in the town unless a written notice thereof, specifying the particular place, was actually given to the Town Clerk of the town or the Town Superintendent of Highways of the town and there was a failure or neglect to cause such snow or ice to be removed or to make the place reasonably safe within a reasonable time after the receipt of such notice.

### **Chapter 117 – Subdivision of Land**

#### **Article VI – Design Standards**

##### **117-14 – Blocks and Lots**

- A. Blocks
  2. In large blocks with interior parks, in exceptionally long blocks or where access to a school or shopping center is necessary, a crosswalk with a minimum right-of-way of 12 feet and a paved walk six feet in width shall be provided.

#### **Article VII – Required Improvements**

##### **117-21 – Sidewalks**

- A. Sidewalks shall be installed as the Board may require, depending upon local conditions of public safety.
- B. Sidewalks shall be constructed to the following minimum specifications: Sidewalks shall be 3,000 pounds minimum strength concrete, one-to-two-to-four mix or better, with a minimum width of four feet thickness of four inches, except at driveway crossings where the sidewalk shall be increased to a thickness of six inches.

### ONLINE CODE

#### Chapter 123 – Notification of Defects

##### **123-1 – Prior written notice of defects required**

No civil action shall be maintained against any town or Town Superintendent of Highways for damages or injuries to person or property sustained by reason of any highway, bridge or culvert being defective, out of repair, unsafe, dangerous or obstructed unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge or culvert was actually given to the Town Clerk or Town Superintendent of Highways and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of, but no such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge or culvert unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Superintendent of Highways and there was a failure or neglect to cause such snow or ice to be removed or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

#### Chapter 127 – Subdivision of Land

##### **Article IV – Development Standards**

##### **127-14 – General standards for streets**

- J. Where the subdivision fronts on arterial streets, sidewalks shall be required and shall be of the size and type as approved by the Town Engineer.

##### **Article V – Required Improvements**

##### **127-26 – Utility and street improvements**

- A. Utility and street improvements shall be provided in accordance with the following:
3. Arterial streets: cross sections in accordance with the Official Map and Master Plan or as determined by the Planning Board if no such Official Map or Master Plan has been adopted. Construction design shall be as determined by the Town Engineer or such agency of the county as may have authority over highway design. Where reverse frontage lots are not provided along an arterial street, four-foot sidewalks shall be provided. Sidewalk design and construction methods shall be specified either by the Town Engineer or such agency of the county as may have authority over sidewalk design.

## Town of Marcellus

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ONLINE CODE (Subdivision Code Only)

### Town of Marcellus Subdivision Regulations

#### Article 4 – Required Improvements

The following is a list of required improvements to be installed by the Subdivider in connection with Final Plat Approval.

##### **405 – Pedestrian Mobility**

###### A. Sidewalks

1. Sidewalks shall be installed on one or both sides of a Street as the Planning Board may require, depending upon local conditions of public safety.
2. Sidewalks shall be constructed in accordance with provisions of the Americans with Disabilities Act (ADA) and shall comply with the specifications and other requirements for sidewalks most recently approved by resolution of the Town Board.

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ONLINE CODE (Zoning Code Only)

No town code exists to address sidewalks in Town Zoning Ordinance.

## Town of Onondaga

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### Chapter 168 – Notification of Defects

#### Section 168-1 - Definitions and word usage

- A. For the purposes of this chapter, the following words, phrases and terms and their derivations shall have the meanings given herein:

**TOWN PROPERTY** – All Town highways, sidewalks, parking areas, playgrounds, park and all other real property owned, leased, used, occupied or maintained by the Town or over or through which the Town has an easement of right-of-way and all buildings, structures and appurtenances thereto owned, leased, used, occupied or maintained by the Town.

**UNSAFE CONDITION** – Any defective, hazardous, dangerous or obstructed condition, including such conditions as may have been created by an act or omission of an employee or officer of the Town, and including such conditions as may result from inadequate or improper design, maintenance or repair of from the existence of snow or ice.

#### Section 168-2 - General provisions

- A. No civil action shall be brought or maintained against the Town, the Superintendent of Highways of the Town or any other Town officer or employee for damages or injuries to person or property sustained by reason of any Town property being in an unsafe condition unless written notice of such condition was actually given to the Town Clerk or Superintendent of Highways and there was a failure or neglect within a reasonable period of time after the receipt of such notice to repair, remedy or remove the unsafe condition complained of.
- B. The notice required in the preceding Subsection A shall be in writing, shall contain the name, address and signature of the person making the complaint and shall specify the particular place where the unsafe condition is located and the nature of said condition.
- C. The Town Superintendent of Highways shall transmit to the Town Clerk, within 10 days after the receipt thereof, all notices received by him pursuant to this chapter.
- D. The Town Clerk shall keep and maintain an indexed record of all written notices received pursuant to this chapter, which record shall state the date of the receipt of the notice, the nature and location of the conditions stated to exist and the name and address of the person from whom the notice is received. The record of each notice shall be preserved for a period of at least five years after the date it is received.
- E. This chapter shall not be construed as creating or allowing any cause of action or substantive liability against the Town or any of its officers or employees which would not otherwise exist in the absence of this chapter.

### Chapter 253 – Streets and Sidewalks

#### Article I – Removal of Snow and Ice

##### 252-2 – Duty of owner

It shall be the duty of every owner of apartment and multifamily residential development projects in the Town of Onondaga to keep access roadways located on such lands free from snow and ice conditions under control. Any dwellings, apartment houses or other structures must be easily accessible from the public roads. Fire trucks and other emergency vehicles and school buses, as well as the residents thereof, should not encounter difficulty reaching the buildings due to negligence by the owner.

##### 252-3 – Time limit

Snow shall be removed and ice conditions controlled within 12 hours after the cessation of the snowfall or creation of an icy condition.

**252-4 – Notice to be given**

- A. Written notice of violations of the provisions of this article shall be served by the Town Superintendant of Highways or by his authorized agent on the owner or manager of the property on which the violation exists. This notice shall describe the violation and require forthwith the remedying of conditions constituting it.
- B. In the event the owner or manager cannot, with due diligence, be found on the premises or at his place of usual residence, the Town Superintendant of Highways is hereby authorized and directed to cause the snow to be removed or the ice condition controlled at the expense of the Town until the owner is found and required to pay as hereinafter provided .
- C. In the event that notice of violation is served and the violation is not remedied with four hours, the Town Superintendant of Highways is authorized to remove the snow and/or control the ice conditions on said access roadways and notify the Town Clerk of expenses incurred for the amount of labor, equipment, and materials.

**252-5 – Reimbursement for the Town.**

The Town shall be reimbursed for the cost of such snow removal from or ice control on any such access roadways by the owner thereof. The Town Clerk shall bill these property owners for snow removal or ice control to be paid immediately and any such costs, if not paid within 30 days, be assessed against the property and collected as part of the annual tax levy, or in the statutory manner for the collection of civil penalties.

**252-6 – Certain snow removal practices.**

The Town Board further notes that certain snow removal practices are a vexation and annoyance not only to the traveling public but also to owners or occupants of adjoining lands. Snow from such access roads shall not be pushed into public roads or onto the lands of adjoining property owners.

**252-7 – Penalties for offenses.**

Any and every violation of the provisions of this article shall be deemed an offense against this article, punishable by a fine not exceeding \$250 or by imprisonment not to exceed 15 days, or both, for each offense. Each day's continued violation of this article, after written notice thereof, shall constitute a separate and additional violation. In addition to the above provided penalty or in lieu thereof, the Town Board may also maintain an action or proceeding in the name of the town in a court of competent jurisdiction to compel compliance with or to restrain by injunction the violation of such local law.

**Article III – Sidewalk Maintenance (adopted 3-13-2008 by L.L. No. 4- 2008)**

**253-14 – Construction, reconstruction and repair of sidewalks.**

- A. Specifications. The construction, reconstruction and repair of sidewalks, including the materials to be used, the grades and the widths thereof, must be undertaken in accordance with the Town specifications on file with the Town Codes Enforcement Officer. Any construction, reconstructions and/or repair of sidewalks that does not comply with such specifications are hereby prohibited.
- B. Permit. Any property owner, agent or occupant repairing and/or replacing a sidewalk or a section thereof, whether acting independently or upon notice issued as provided in this article, shall obtain a permit from the Town Codes Enforcement Officer prior to such repair and/or replacement. Where required, a permit shall also be obtained from the County Superintendent of Highways for County roads or the State Commissioner of Transportation for state roads.

**253-15. Removal of snow and ice.**



- A. It shall be the joint and several obligation of the owner, agent or occupant of any parcel of real estate upon which a public sidewalk fronts, whether the parcel of real estate is occupied by a structure or not, to keep such sidewalks free from snow and ice for the entire length of the sidewalk fronting such parcel. For purposes of this article, such obligation exists regardless of whether the sidewalk is located on private property of the owner, agent, or occupant, or within the road right-of-way.
- B. Snow and ice shall be removed from the sidewalks within 12 hours after the end of any snowfall, provided, however, that any snow or ice that has ceased to fall or form after 6:00 p.m. of any evening may be removed at any time before 9:00 p.m. the following day.
- C. In the event that snow and/or ice on a sidewalk have become so hard that they cannot be removed without the likelihood of damage to the sidewalk, the owner, agent or occupant of the premises upon which a public sidewalk fronts shall cause sand, salt or other appropriate abrasive element to be put on the sidewalk to make travel thereon reasonably safe. As soon as the conditions allow, all snow and ice shall be immediately removed from the sidewalk.
- D. In addition to the prohibition set forth in section 253-10D of this article, no owner, agent or occupant shall cause any snow or ice to be swept, thrown or deposited onto a fire hydrant, any other parcel of real estate without the permission of the owner of that real estate, or into the road right-of-way between the sidewalk and the road or any street, highway or sidewalk.
- E. Any owner, agent or occupant clearing snow and/or ice from a corner lot shall insure that such snow and/or ice are not piled in a manner as to endanger pedestrians or obstruct the view of motorists.
- F. Notwithstanding any other statute, ordinance, rule and/or regulation, any and all snow and/or ice plowed/removed from any highway right-of-way within the borders of the Town of Onondaga may be plowed/removed to any adjoining sidewalk, walkway, pathway, tarvia and/or right-of-way of such highway right-of-way, which, for the purpose of such snow removal, shall be considered a snow shelf. Highway rights-of-way within the Town shall include any state, county and/or Town road, and there shall be no obligation of the Town, county or state to remove any snow and/or ice from said snow shelf once it is placed there.

**253-16. Maintenance, repair and replacement of sidewalks.**

- A. Duty to keep sidewalks clean. It shall be the joint and several obligations of any owner, agent or occupant of any parcel of real estate upon which a public sidewalk fronts, whether the parcel of real estate is occupied by a structure or not, to keep such sidewalks free from all leaves, dirt, filth and garbage, and to keep the sidewalk in good repair and condition for safe public use for the entire length of the sidewalk fronting such parcel.
- B. Obstructions. No property owner, agent, occupant or any other person shall place or cause to be placed upon any public sidewalk an obstruction of any kind as would interfere with the safe use of the sidewalks, except for temporary loading or unloading, provided that such loading or unloading is completed without delay.
- C. Compliance of privately owned streets required. All sidewalks constructed along any privately owned streets required. All sidewalks constructed along any privately owned streets of any new development shall be subject to this article and shall comply in all respects herewith. Failure to comply with this article in any respect shall constitute sufficient cause for the Town to reject the proposed dedication of any street.

**253-17. Notice of violation.**

- A. Upon becoming aware that any property owner, agent or occupant is in violation of this article, written notice of such violation shall be served by the Town Superintendent of Highways, Town Codes Enforcement Officer or any other law enforcement officer, or by their authorized agent. Such notice shall be served on such property owner, agent or occupant personally or by leaving the same at the subject property with a person of suitable age and discretion or visibly affixing it to the entrance of the property

and thereafter mailing it to the owner of the property at his last known mailing address as listed on the tax records for the property. This notice shall describe the violation and set a time limit for the remedy of the violation.

- B. In the event that notice of the violation is served with regard to the removal of snow, ice, debris or other obstruction and the violation is not remedied within the time limit set forth in the notice, the Town is hereby authorized to remedy the violation.
- C. In the event that notice of the violation is served with regard to the construction, maintenance, repair, repaving or reconstruction of a sidewalk and the violation is not remedied within the time limit set forth in the notice, the Town shall issue an order directing repair of such violation.
- D. Any work performed by the Town in accordance with this article shall be reimbursed to the town by owner of the property upon which said sidewalk fronts. The Town shall notify the Town Clerk of the expenses incurred for labor, equipment and materials used. The Town Clerk shall prepare a bill for the owner including these costs, as well as any other fee incurred by the Town, including but not limited to reasonable engineering and attorneys' fees. The Town Clerk shall bill the owner to pay the bill within 30 days of the date of the bill. Failure of the owner to pay the bill within that period shall result in the assessment of the amount of the bill, including any and all fees and expenses, against the real property to be collected as part of the annual tax levy. Upon written request to the Town Codes Enforcement Officer within 10 days of receipt of the bill, the owner of the property may request a hearing before the Town Codes Enforcement Officer to appeal all or any part of the charges imposed.

#### **253-18. Liability**

- A. Notwithstanding any other provision of law, the owner of real property upon which a public sidewalk fronts, and any agent or occupant to whom the owner has delegated responsibility for sidewalk maintenance and snow removal, shall be liable for any injury to property or personal injury, including death, proximately caused by the failure of such owner, occupant or agent to maintain such sidewalk in a reasonably safe condition. Notwithstanding any other provision of law, the Town shall not be liable for any injury to property or personal injury, including death, proximately caused by the failure of such owner, agent or occupant to maintain such sidewalk in a reasonably safe condition. Failure to maintain such sidewalk in a reasonable safe condition shall include, but not be limited to, the negligent failure to install, construct, reconstruct, repave, repair or replace defective sidewalks and the negligent failure to remove, snow, ice, dirt or other material from the sidewalk.
- B. Nothing in this section shall in any way affect the provisions of any other law or rule governing the manner in which an action or proceeding against the Town is commenced, including any provisions requiring prior notice to the Town of defective conditions.

#### **253-19. Penalties for offenses.**

Any and every violation of the provisions of this article shall be deemed an offense punishable by a fine not exceeding \$250 or 15 days' imprisonment, or both, for each offense. Each day's continued violation of this article, after written notice thereof, shall constitute a separate and additional violation. In addition to the above provided penalty or in lieu thereof, the Town Board may also maintain an action or proceeding in the name of the Town in a court of competent jurisdiction to compel compliance with or to restrain by injunction the violation of this article.

### **Chapter 285 - Zoning**

#### **285-32 - West Seneca Turnpike Corridor design overlay requirements**

- D. Criteria. Among the criteria the Planning Board should consider in making its recommendation to the board of primary jurisdiction are the following:
  - 1. Site design objectives.
    - a. Sites should be developed in a coordinated manner to complement adjacent structures through placement, architecture, colors and size/mass.

- b. Whenever possible, buildings on the same site should be clustered and incorporate plazas, courtyards, pocket parks and other pedestrian use areas.
- c. Sites should be designed to avoid the appearance of domination by automobiles. Positive methods to achieve this concept include:
  - 1. Orienting buildings to fronting streets and placing parking at the rear and/or sides.
  - 2. Designing the required parking area into smaller, discrete, connected lots rather than large, single-use lots.
  - 3. Providing well-defined pedestrian walkways through parking areas and from public sidewalks into the site. Well-defined walkways use pavers, changes in color, texture and composition of paving materials and vertical plantings such as trees and shrubs. The minimum width of walkways shall be five feet.
- d. Where appropriate, site plans shall be designed to provide vehicle and pedestrian connections with adjacent sites.

**285-33 - Off-street parking and garage space**

**D. General requirements**

- 3. In reviewing the proposed construction and use of off-street parking areas, the Town Board shall give consideration to traffic patterns and volume, the safety of pedestrians and persons residing in the vicinity of the parking area, noise and air pollution, surface water drainage and aesthetics and may impose such requirements and conditions as it deems necessary to protect and promote the health, safety and welfare of the people of the Town of Onondaga as well as their property and the general environment.

No town code exists to address sidewalks.

### ONLINE CODE

#### **Chapter 144 – Subdivision of Land**

##### **Article III – Development Standards**

###### **144-11 – Streets**

J. Where the subdivision abuts or fronts on arterial streets, sidewalks shall be required and shall be of the size and type as approved by the Town Engineer.

##### **Article – IV – Required Improvements**

###### **144-20 – Utility and street improvements**

A. Utility and street improvements shall be provided in accordance with the following:

3. Arterial streets: cross sections in accordance with the Official Map and Master Plan, or as determined by the Planning Board if no such Official Map or Master Plan has been adopted, and construction design as determined by the Town Engineer or County Public Works Department. Where reverse-frontage lots are not provided along an arterial street, four-foot sidewalks shall be provided. Sidewalk design and construction methods shall be specified either by the Town Engineer or the County Public Works Department.

ONLINE CODE

**Chapter 180 – Property Maintenance**

**Article I – General Property Maintenance**

**180-4 – Compliance required**

- E. Ground surface hazards or unsanitary conditions: holes, excavations, breaks, projections, objections and excretion of pets and other animals on paths, walks, driveways, parking lots and parking areas and other parts of the premises which are accessible to and used by persons on the premises. Any person, being the owner of such real property in the Town of Salina, shall ensure that all such holes and excavations shall be filled and repaired, walks and steps replaced and other conditions removed where necessary to eliminate hazards or unsanitary conditions.

**Chapter 205 – Streets and Sidewalks**

**Article I – Notification of Defects and Obstructions**

**205-1 – Maintenance of civil actions**

No civil action shall be maintained against the town or any town official for damages or injuries to person or property sustained by reason of any highway, bridge, culvert or other property owned, leased or controlled by the town being defective, out of repair, unsafe, dangerous or obstructed, unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge, culvert or other property owned, leased or controlled by the town was actually given to the Town Clerk or Town Superintendent of Highways and there was a failure or neglect within a reasonable time after giving of such notice to repair or remove the defect, danger or obstruction complained of; and no such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow, ice, defect or defective condition of any property owned, leased or controlled by the town or upon any highway, bridge or culvert, unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Superintendent of Highways and there was a failure or neglect to cause such snow or ice to be removed or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

**Article III – Sidewalks**

**205-7 – Sidewalk repairs; duties of owner; costs**

It shall be the duty and obligation of each owner of a premises to keep in good order and repair the sidewalk in front of his premises or along the side of his premises if on a corner lot. If the owner or occupant shall fail to keep the sidewalk in good repair and order within 30 days after written notice is given to the owner or occupant or posted upon the door of any occupied building on the premises or mailed to the owner of the premises as appears on the tax records of the Town of Salina, the town may provide for such repairs and/or good order to said sidewalk at the expense of the owner of said premises, and the cost shall become a lien upon the premises benefited thereby and shall be collected by the Receiver of Taxes, as provided by law for the collection of taxes and assessments.

**205-8 – Liability of abutting owner or occupant**

The owner or occupant of lands fronting or abutting on any street in the Town of Salina shall maintain and repair the sidewalks adjoining said lands and keep the sidewalk free from obstructions, including snow and ice. Such owner or occupant shall be liable for any injury or damage by reason of omission, failure or negligence to maintain or repair such sidewalks or to keep them free of obstructions, including snow and ice.

**Chapter 210 – Subdivision of Land**

**Article V – Development Standards**

**210-30 – Design standards for streets**

H. Sidewalks along arterial and collector streets and along other streets shall be provided at such locations as the Planning Board may deem necessary, in accordance with plans and specifications of the town.

## Town of Schroepel

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No town code exists to address sidewalks.



## ONLINE CODE

### **Chapter 99 – Mobile Homes and Mobile Home Courts**

#### **99-7 – Environmental Requirements**

##### **I. Walks and Driveways**

1. Each mobile home stand shall be provided with a walkway leading from the stand to the streets or to a driveway or parking space connecting to a paved street. Such walkway shall be provided with a smooth, hard, paved surface and shall have a minimum width of two feet. All common walkways in the mobile home court shall be provided with smooth, hard surface and shall have a minimum width of three feet.

### **Chapter 105 – Notice of Defects**

#### **105-3 – Prior written notice required**

No civil actions shall be maintained against the Town or Town Superintendent of Highways for damages or injuries to person or property sustained by reason of any highway, bridge, street, sidewalk, crosswalk or culvert being defective, out of repair, unsafe, dangerous or obstructed unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge, street, sidewalk, crosswalk or culvert was actually given to the Town Clerk or Town Superintendent of Highways, and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of. No such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge, street, sidewalk, crosswalk or culvert unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Superintendent of Highways and there was failure or neglect to cause such snow or ice to be removed or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

### **Chapter 129 – Streets and Sidewalks**

#### **129-25 – Utilities and other improvements**

- A. Streets shall be graded and improved with pavements, curbs and gutters, pedestrian easements, sidewalks, streetlights and signs, street trees, fire hydrants, culverts and underground utilities, including water, gas, telephone, sanitary sewers, storm sewers and electric power. The Planning Board may waive, subject to appropriate conditions, such improvements and utilities as it considers may be omitted without jeopardy to the public health, safety and general welfare. Such grading, utilities and improvements shall be approved as to design and specifications by the Town Engineer to the extent such design and specifications are not set forth in this chapter and installed without expense to the Town and under supervision of the Superintendent, Town Water Superintendent or the improvement district having jurisdiction, as appropriate.

#### **129-31 – Concrete sidewalks**

- A. All sidewalks which are installed to replace existing sidewalks or installed as new sidewalks along street frontages in alignment with adjacent sidewalks, or between the property line and the pavement or curbline if there is no adjacent sidewalk, shall be four feet in width and constructed of concrete.
- B. The Town of Skaneateles is not responsible for the repair, replacement and/or maintenance (including snow and ice removal) of any such sidewalk. All such responsibility is with the property owner.

### **Chapter 148 – Zoning**

#### **Article IV – Special Permits and Site Plan Review**

##### **148-18 – Site plan review**

- D. Standards and criteria. In reviewing site plans, the Planning Board shall consider the standards set forth below. The Planning Board shall also use as approval criteria the three-volume set of illustrated design

guidelines published by the New York Planning Federation in 1994, entitled "Hamlet Design Guidelines," "Building Form Guidelines" and "Rural Design Guidelines," and shall adapt the recommendations of those documents to the requirements of this chapter.

2. Landscaping

- c. Primary landscape treatment shall consist of shrubs, ground cover and shade trees and shall combine with appropriate walks and street surfaces to provide an attractive development pattern. Landscape plants selected should generally be native to the region and appropriate to the growing conditions of the Town's environment.

### Article XIV – Site Plan Review and Approval

#### 14-5 – Town Board Review of Preliminary Site Plan

The Town Board's review of a preliminary site plan shall include, as appropriate, but not be limited to, the following:

A. General Considerations as to:

2. Adequacy and arrangement of pedestrian traffic access and circulation, walkway structures, control of intersections with vehicular traffic and overall pedestrian convenience. In general, sidewalks shall be required along all dedicated roads on lots within 1,000 feet of a school, park or residential concentration.

ONLINE CODE (Zoning Code Only)

No town code exists to address sidewalks.

## ONLINE CODE

### **Chapter 197 – Notification of Defects**

#### **197-1 – Written notice of defective condition required**

No civil actions shall be maintained against the Town or Town Superintendent of highways for damages or injuries to person or property sustained by reason of any highway, bridge, street, sidewalk, crosswalk or culvert being defective, out of repair, unsafe, dangerous or obstructed unless written notice of such defective, unsafe, dangerous, or obstructed condition of such highway, bridge, street, sidewalk, crosswalk or culvert was actually given to the Town Clerk or Town Superintendent of highways, and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of. No such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge, street, sidewalk, crosswalk or culvert, unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Superintendent of Highways and there was failure or neglect to cause such snow or ice to be removed, or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

### **Chapter 210 – Property Maintenance**

#### **210-4 – Compliance required**

- E. Ground surface hazards or unsanitary conditions: holes, excavations, breaks, projections, objections and excretion of pets and other animals on paths, walks, driveways, parking lots and parking areas and other parts of the premises which are accessible to and used by persons on the premises. Any person being the owner of such real property in the Town of Tully shall ensure that all such holes and excavations shall be filled and repaired, walks and steps replaced and other conditions removed where necessary to eliminate hazards or unsanitary conditions.

### **Chapter 245 – Subdivision of Land**

#### **Article IV – Required Improvements**

##### **245-18 – Utility and street improvements**

- A. Utility and street improvements shall be provided in accordance with the following:
  - 3. Arterial streets: cross sections as determined by the designated engineer of the Town. Sidewalk design and construction methods may be specified either by the designated engineer of the Town or the Planning Board.

## ONLINE CODE

### **Chapter 170 – Streets and Sidewalks**

#### **Part 2 – Notification of Defects**

##### **Article IV – General Provisions**

###### **170-16 – Prior notification required**

No civil actions shall be maintained against any Town or Town Superintendent of Highways for damages or injuries to person or property sustained by reason of any highway, bridge, street, sidewalk, crosswalk or culvert being defective, out of repair, unsafe, dangerous or obstructed, unless written notice of such defective, unsafe, dangerous or obstructed condition of such highway, bridge, street, sidewalk, crosswalk or culvert was actually given to the Town Clerk or Town Superintendent of Highways and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of. No such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge, street, sidewalk, crosswalk or culvert, unless written notice thereof, specifying the particular place, was actually given to the Town Clerk or Town Superintendent of Highways and there was failure or neglect to cause such snow or ice to be removed or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

### **Chapter 200 – Zoning**

#### **Article X – Design Standards**

##### **200-74 – Driveways**

###### **H. Maintenance responsibility**

1. Property owners having access to a Town highway shall be fully responsible for maintenance of their driveway and channelization, including the portion from the highway right-of-way line to the outside edge of the highway shoulder or curblin. The maintenance responsibility includes removal of snow and ice and keeping the portion within the highway right-of-way in a safe condition for the general public. Where the owner of a commercial property is required to construct acceleration, deceleration or turning lanes on the Town highway, the Town may, in the interest of public convenience, provide routine maintenance and remove snow and ice on the portions of these lanes constituting an integral part of the Town highway. Such maintenance shall not absolve the property owner of the overall maintenance responsibility for the reconstruction and major repair of such lanes, if necessary.

### ONLINE CODE (Zoning Code Only)

#### **Article VII – Submission Requirements, Standards and Regulations for Mobile Homes Parks**

##### **Section 7.04 – Standards**

###### **I. Walks**

- i. All parks shall provide safe, convenient, pedestrian access of adequate width for intended use, durable and convenient to maintain, between individual mobile homes, the park streets and all community facilities provided for park residents, including off street parking areas. Walks shall be constructed of a hard and durable surface. Sudden changes in alignment and gradient shall be avoided.
- ii. Where a common walk system is provided and maintained between locations, and where pedestrian traffic is concentrated, such common walks shall have a minimum width of four feet (4').
- iii. All mobile home stands shall be connected to common walks, or to streets, or to driveways or parking spaces connecting to a paved street. Such individual walks shall have a minimum width of two feet (2').

#### **Article X – Subdivision Regulations**

##### **Section 10.13 – Sidewalks**

Sidewalks may be required and shall be installed as follows:

1. Sidewalks shall be installed at the expense of the subdivider, at such locations as the Planning Board may deem necessary.
2. Sidewalks must be constructed to comply with the detail specifications of the Planning Board.
3. Sidewalks shall be concrete or other approved material, and have a minimum width of four (4) feet in residential areas, and five (5) feet in commercial and industrial areas.

#### **Article XI – Miscellaneous Land Use Regulations**

##### **Section 11.02 – Desirable Character of all Premises**

As a general requirement, all premises within the Town of West Monroe shall be maintained in conformity with the provisions of this local law so as to assure the desirable character of the property. This includes, but is not limited to, the following:

- b. Steps, sidewalks, driveways, parking spaces and similar areas shall be kept in a proper state of repair and maintained so as to afford safe passage under normal use and weather conditions.

### Chapter 61 – Streets and Sidewalks

#### 61.2 – Owner to maintain sidewalks.

The owner of any premises shall keep the sidewalks within the street right-of-way in good and safe repair, as defined herein, for users thereof and shall be responsible for all necessary preventative, corrective and day-to-day maintenance to accomplish such result. Any lawsuits or actions for damages due to such deficiencies in sidewalks shall be brought solely against the property owners.

#### 61.3 – Elimination of sidewalks.

The elimination of existing sidewalks within the Village of Baldwinsville is prohibited without specific authorization of the Village Board of Trustees.

#### 61.4 – Defective sidewalks.

- A. A defective sidewalk shall be any sidewalk which has any or all of the following conditions:
1. Unacceptable quality of sidewalk surface, including but not limited to holes, depressions, breaks or protrusions.
  2. Ridges or gaps between adjoining sidewalk blocks.
  3. Differences in elevation of the surface or of adjoining sidewalk blocks of more than ½ inch.
  4. Peeling or crumbling of the sidewalk.
  5. Tilting of the sidewalk or sidewalk blocks except in the case of handicap ramps, driveway approaches or other similar situations.
  6. Missing portions of surface.
- B. The above shall be applicable regardless of the type of sidewalk that exists, whether flagstone, brick, concrete, blacktop or any other material.
- C. All defective sidewalks within the terms stated above are hereby declared to be a public nuisance and shall be repaired or replaced by the property owner(s).

#### 61.7 – Construction materials.

All replacement or new construction of sidewalks shall be made of concrete, unless otherwise approved by the Village Board of Trustees.

#### 61.8 – Material specifications.

Specifications for the following items shall be subject to or performed in accordance with rules and regulations established by the Village Superintendent of Public Works, who shall prepare the same and promptly file them in the office of the Village Clerk:

- A. Minimum dimensions of width and depth of sidewalk blocks in residential and business areas.
- B. Excavation and subbase requirement.
- C. Forming and reinforcement.
- D. Concrete mixture specifications.
- E. Fine and coarse aggregate specifications.
- F. Water quality.
- G. Mixing of concrete ingredients.
- H. Joints.
- I. Finishing.
- J. Protection of wet concrete.
- K. Construction of safeguards, work zone safety and protection.
- L. Handicapped access
- M. Drive way crossings.



- N. Any other matter or item that the Village Engineer or Superintendent of Public Works deems necessary, appropriate or desirable.

**61.11 – Removal of snow and ice.**

- A. Snow and ice shall be removed from all sidewalks within 24 hours after the end of the snowfall.
- B. In case snow and ice on any sidewalk shall be frozen so hard that it cannot be removed without injury to the sidewalk, the owner shall, within 24 hours, cause said sidewalk to be strewn and kept strewn with ashes, sand, sawdust or other suitable material so as to be no longer dangerous to life and limb. As soon as practical thereafter, the sidewalk shall be completely cleared of snow, ice, and other materials strewn thereon, as provided in this chapter
- C. Whenever the owner or occupant of every parcel of real estate adjoining a public sidewalk fails to remove the snow and ice from such sidewalk adjoining such property within the time specified in this chapter, or within 24 hours after being notified in writing by the Enforcement Officer of the Village of Baldwinsville to remove same, a summons may be issued to the property owner and the Superintendent of Public Works may remove said snow or ice from such sidewalk to preserve public health, welfare and safety and notify the Village Clerk of the expense incurred by the amount of labor, equipment and materials used.
- D. The Village Clerk shall promptly present to the owner or occupant of each parcel a bill for the removal of snow and ice as certified by the Superintendent of Public Works. If not paid within 30 days, the cost thereof shall be assessed against the property and become a lien thereon, collectible in the same manner as delinquent Village taxes.

**61.12 – Snow, ice or water falling from buildings.**

The owner(s) of buildings adjacent to public sidewalks shall prevent the falling of snow, ice or water from such buildings upon said public sidewalks.

**61.13 – Deposit of snow or ice.**

- E. The Village Clerk shall promptly present to the violator of this chapter a bill for the removal of snow and ice, as provided for in Subsection D as certified by the Superintendent of Public Works. If not paid within 30 days, the cost shall be assessed against the property and become a lien thereon, collectible in the same manner as delinquent Village taxes.

**61.20 – Penalties for offenses.**

- A. Any person, firm, or corporation which shall violate any of the provisions of sections 61.1 through 61.9 and 61.14 through 61.19 shall be guilty of a violation thereof and shall be subject to a fine not exceeding \$50 for each day a violation exists. Such penalties may be in addition to any other remedies or actions that may be taken by the Village
- B. Any person, firm, or corporation which shall violate any of the provisions of sections 61.10 through 61.13 shall be guilty of a violation thereof and shall be subject to a fine not exceeding \$10 for the first offense, \$25 for the second offense and \$50 for each offense thereafter. Each day a violation exists shall be deemed a separate offense. Such penalties may be in addition to any other remedies or actions that may be taken by the Village.

**61.22 – Downtown sidewalks. (Added 7-6-1995 by L.L. No. 1-1995)**

- A. Notwithstanding any other provision of this chapter to the contrary, the Village shall be responsible for the snow plowing and de-icing of the downtown sidewalks described as follows: the sidewalks that front on the streets of the properties shown and designated on a map of the Village depicting such downtown sidewalks, which map has been approved, and which may be amended from time to time, by resolution of the Board of Trustees of the Village of Baldwinsville, which map has been filed with the Office of the Village Clerk and which is incorporated herein by reference (Amended 2-17-2005 by L.L. No. 1-2005)

- B. The Village shall be solely and only responsible for the snow plowing de-icing on the aforementioned downtown sidewalks.
- C. Except as expressly provided for in this section, in all other respects, the respective adjacent property owners to the downtown sidewalks shall otherwise be responsible for said sidewalks as provided in this chapter.
- D. The Village shall only be liable for its negligent acts or omissions in snow plowing and de-icing the downtown sidewalks as set forth in section 6-628 of the Village law, entitled "Liability of Village in certain actions."

**Re: Section 6.628**

**From New York State Village Law:**

Section 6.628 Liability of village in certain actions. No civil action shall be maintained against the village for damages or injuries to person or property sustained in consequence of any street, highway, bridge, culvert, sidewalk, or crosswalk being defective, out of repair, unsafe, dangerous, or obstructed or for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any sidewalk, crosswalk, street, highway, bridge or culvert unless written notice of the defective, unsafe, dangerous or obstructed condition or of the existence of the snow or ice, relating to the particular place, was actually given to the village clerk and there was a failure or neglect within a reasonable time after the receipt of such notice to repair or remove the defect, danger or obstructions complained of, or to cause the snow or ice to be removed, or the place otherwise made reasonably safe.

## Chapter 94 – Streets and Sidewalks

### Article II – Construction and Repair of Sidewalks

#### Section 94-3. Permit required; exception.

No construction of new sidewalks nor substantial repairs or reconstruction of any existing sidewalks in the Village of Camillus shall be commenced until a building permit has been issued for that purpose by the Code Enforcement Officer of the Village of Camillus; provided, however, that no such building permit shall be required for employees of the Village of Camillus who are performing work on sidewalks as part of their duties for the Village of Camillus.

#### Section 94-3.1. Construction Materials.

From and after the date hereof, all sidewalks constructed within the Village of Camillus shall be constructed of concrete material and all repairs or reconstruction of any existing sidewalks shall be of concrete material.

#### Section 94-3.2. Maximum slope of sidewalks and ramps.

The maximum slope for newly constructed or reconstructed or repaired sidewalks and ramps in the Village of Camillus shall not exceed one (1) in five (5) [gradient of twenty percent (20%)] for all sidewalks not adjacent to the curb and shall not exceed one (1) in twelve (12) [gradient of eight and three-tenths percent (8.3%)] for all sidewalks adjacent to the curb.

#### Section 94-3.3. Costs.

- A. Sidewalk repairs shall be paid fully by the Village of Camillus. The residents should apply to the village, and the cases will be reviewed by the Board on a need basis. If the repairs are necessitated by damages to the sidewalk caused by the abutting or adjoining owner or by anyone acting on behalf of or with the consent of such owner, the Village of Camillus may cause the same to be repaired and assess the cost or the expense thereof against the owner of the adjoining or abutting land.
- B. The reconstruction of existing sidewalks necessitated by the adjoining or abutting shall be at said owner's cost and expense.

#### Section 94-3.4. Notification.

In case of the repair or reconstruction of any existing sidewalk, notice thereof shall be given to the owner of the adjoining or abutting land.

### Article III – Snow, Ice, and Obstructions Removal

#### Section 94-5. Owner to remove snow, ice and obstructions.

The owner of premises, whether such premises are vacant or have been improved, abutting any street where a sidewalk has been laid shall keep the sidewalk in front of such premises free and clear from slippery snow, ice, dirt and other substances, materials and obstructions. The owner shall remove the snow, ice, dirt or other obstruction from the sidewalk sufficiently to create a safe pedestrian path.

#### Section 94-6. Regulations in cases of severe icing.

In case snow and ice on any sidewalks shall be frozen so hard that it cannot be removed without injury to the sidewalk, it shall be strewn and kept strewn with ashes, sand, sawdust or other suitable material so as to be passable to pedestrians and not dangerous to life and limb. As soon as practicable thereafter, the sidewalks shall be cleared of snow, ice, and other material as set forth hereinabove.

#### Section 94-6.1. Removal by village; costs.

- A. Whenever the owner of any parcel of real estate adjoining a public sidewalks fails to remove the snow and ice or other obstructions from such sidewalk adjoining such property within a reasonable time after written notice by the Village of Camillus to remove the same, the village may remove or cause to be

removed said snow and ice or other obstructions from said sidewalk and notify the Village Clerk of the expense incurred by the amount of labor, equipment and materials used.

- B. The Village Clerk shall promptly present to the owner of each parcel a bill for the removal of snow, ice or obstruction as certified by the Village Board of Trustees. If not paid within thirty (30) days, the cost thereof shall be assessed against the property and become a lien thereon collectible in the same manner as delinquent village taxes.

**Section 94-6.2. Certain snow and ice removal operations prohibited.**

No person, firm, or corporation or agent or employee thereof, other than village public works personnel, shall plow, shovel, or blow snow or ice during snow removal operations upon a village street or sidewalk or obstruct a village fire hydrant with ice or snow.

**Section 94-6.3. Penalties for offenses**

- A. Notice of violation; time limit for compliance. Any person, firm, corporation, agent or employee thereof violating any provision of section 94-5 of this Article shall be served by the Village Mayor or the Village Code Enforcement Officer or the Village Superintendent of Public Works with a written notice stating the nature of the violation and providing a period of not less than four (4) hours for the removal of the snow and ice so deposited upon a village sidewalk, street or fire hydrant. The offenders shall, within the period of time stated in such notice, comply therewith.
- B. Penalty provisions. Any person, firm, corporation, agent, or employee thereof who shall continue any violation beyond the time limit established by the notice provided in Subsection A shall be guilty of a violation and, on conviction thereof, shall be punishable by a maximum fine of two hundred fifty dollars ((\$250) or by imprisonment for not more than fifteen (15) days, or both. Each day in which any such violation shall continue shall be deemed a separate offense.
- C. Liability. Any person violating any of the provisions of this Article shall become liable to the village for any expense, loss, or damage occasioned by the village by reason of such violation including removal of said snow and ice by village personnel.

**Section 94-6.4. Notice of defect; civil actions.**

No civil action shall be maintained against the village for damages or injuries to person or property sustained in consequence of the existence of snow or ice on any street, highway, bridge, culvert or sidewalk or crosswalk, unless it appears that written notice of the existence of the snow or ice was actually given to the Village Clerk or to the Mayor or to the Foreman of the Highway Department of the village and there was a failure or neglect within a reasonable time after the giving of such notice to cause the snow or ice to be removed or the place made reasonably safe.

### ONLINE CODE

#### **Chapter 216 – Subdivision of Land**

##### **Article V – Construction of Improvements**

###### **216-26 – Sidewalks**

Sidewalks shall have a minimum width of four feet and shall be required on both sides of a street in all subdivisions where, in the opinion of the Planning Board, they may be essential to pedestrian movement and safety. Sidewalks shall be constructed in all instances along arterial and collector streets and highways indicated on the General Plan and in these regulations.

## ONLINE CODE

### **Chapter 122 – Streets and Sidewalks**

#### **Article I - Sidewalks**

##### **122-1 Apportionment of Costs of Sidewalks**

The cost of sidewalks, whether new or replacement, shall be paid by the Village in accordance with its budgetary process, access to materials, labor and equipment and needs for public safety; however, any person or entity causing damage to a sidewalk, by negligence or intentional action, may be required to restore the sidewalk to its immediate pre-existing condition at such party's sole expense.

#### **Article II – Snow and Ice Removal**

##### **122-3 Responsibility of Property Owner**

A. During times when snow and ice are present, the person or entity occupying the ground floor of a building, and the owner of a vacant lot, shall reasonably keep the sidewalk adjoining such building in such condition that the public may reasonably utilize said sidewalk for its normal purposes. This provision does not impose upon the owner/occupant the responsibility to remove snow and ice continuously during the process of a severe snow storm or during an ice storm. If the Village has not removed all snow and ice from the sidewalk by 11:00 a.m., or has not kept the sidewalk open and reasonably clear of snow and ice thereafter (other than during a severe snow storm or ice storm), the owner or occupant shall remove such snow and ice as soon as reasonably practicable, to permit normal use of said sidewalks.

B. When snow and ice is removed from sidewalks by the Village using plows, it shall be the duty of the occupant/owner, as applicable, to reasonably remove remaining snow and ice from the sidewalk thereafter, to the extent necessary to permit normal use of the sidewalk, to the width established by the plow.

C. In the event ice has accumulated on the sidewalk, the owner/occupant, as applicable, shall reasonably endeavor to provide treatment to the ice as will reasonably permit normal use of the sidewalk.

D. No owner/occupant of real property shall knowingly discharge and direct water in such a fashion as the same will accumulate or freeze on a public road or sidewalk. Removal of such accumulation or ice created by such discharge or direction shall be at the sole cost of the party causing such discharge or direction of water.

##### **122-4 Cost of Removal by Village**

Whenever any owner, lessee, occupant or person having charge of any parcel of real estate shall fail or neglect to remove snow or ice from such sidewalk, as herein provided, the Superintendent of Public Works or the foreman in charge of highways shall cause the same to be removed therefrom without notice, and the bill for the cost of the same shall be mailed to the owner at his last known place of residence, and in case he shall fail to pay the same within 10 days, a statement thereof shall be filed with the Treasurer stating the cost of the work and location of property upon which the cleaning was done, and the said Treasurer shall add the same to the tax roll and it shall be levied against such property and collected in the same manner as other general Village taxes.

##### **122-12 Penalties for Offenses**

Any person committing an offense against the provisions of this chapter shall be guilty of a violation pursuant to the provisions of the Penal Law and, upon conviction thereof, shall be punishable for each offense by a fine of not more than \$250 or by imprisonment for not more than 15 days, or both.

## Chapter 125: Subdivision of Land

### Article V: Improvements

#### Section 125-21 – Standards

D. Sidewalks. Sidewalks shall be required on both sides of collector and primary local service streets as shown in the Village Comprehensive Plan. Construction standards are on file in the Village Clerk's office.

G. Street trees.

(1) At least one street tree shall be planted on every lot in the subdivision. Existing trees of at least three inches caliper may be taken into consideration if shown on the final subdivision plat. New trees shall be located off the street right-of-way and shall be at least three feet from any required sidewalk and 10 feet from any line which is directly under utility wires.

#### Section 125-22 – Modifications

When the Planning Board determines that a modification of required improvements is warranted, such modifications may be approved as part of the final subdivision plat. Modifications such as, but not limited to, the following examples may be approved:

B. Sidewalks may be omitted on one or both sides of the street to the extent deemed appropriate by the Planning Board, except for those streets or portions thereof located within the Commercial Design Overlay District boundaries as illustrated on the official Zoning Map.

### Part 34 – Public Pedestrian Thoroughfares

#### 340 - General Rules for Sidewalks

##### 340.3 - Property Owners and Snow Removal

Property owners shall keep sidewalks adjacent to their property free of obstructions, and shall remove all snow and ice. If any property owner fails to do so within a reasonable length of time, the Village may, upon verbal notice to the property owner, remove the snow or ice and add the cost thereof to the tax levy for that property.

#### 341 - Sidewalk Maintenance

##### 341.0 - Duty to Repair Sidewalks

Property owners are responsible for all necessary maintenance on sidewalks adjacent to their property, and shall keep them in reasonably good and safe repair regardless of the type of sidewalk.

##### 341.1 - Defective Sidewalk Conditions

Defective sidewalks are any:

- 341.10 Irregular surfaces whose surface is peeling or crumbling, or has gaps, holes, depressions, breaks, projections or other irregularities;
- 341.11 Uneven Blocks with ridges or gaps or differences in elevation between adjoining sections
- 341.12 Not Level with sections that aren't level, except for handicap ramps, driveway approaches or similar situations.

##### 341.2 - Notice requirements

##### 341.20 - Jurisdiction to issue Notice of Defects

The Public Works Superintendent, Codes Enforcement/Economic Development Officer or their designated agents may order the repair of defective sidewalks and take remedial action.

##### 341.21 - Inspection and Report

The Public Works Superintendent or Codes Enforcement/Economic Development Officer shall serve notice on the owner of agent and post a copy of the notice in a conspicuous place on the premises. The notice shall contain the following:

- 341.220 the premises where the defective sidewalk is located;
- 341.221 specification of the sidewalk's defects;
- 341.222 designation of the area where repair or replacement must be made;
- 341.223 an order that repairs commence within 40 days of the notice;
- 341.224 the procedure to request a hearing before the Village Board if the owner does not agree with the findings of the Public Works Superintendent or Codes Enforcement/Economic Development Officer, which hearing shall be scheduled not less than 20 business days from the date of service of the written notice;
- 341.225 a statement that, if this order is not complied with, the Village Board is authorized to have the sidewalk repaired and add the cost to the tax levy for the property.

##### 341.3 Work and Materials Requirements

##### 341.35 - Concrete Required

All replacement sidewalks shall be made of concrete.

##### 341.36 - Standards for Constructions

All sidewalk work must conform to regulations established by the Public Works Superintendent and filed with the Village Clerk, which shall include:



- 341.360 minimum width and depth of sidewalk sections in residential and business areas;
- 341.361 excavation and sub-base requirement;
- 341.362 forming and reinforcement;
- 341.363 concrete mixture specifications, fine and coarse aggregate specifications;
- 341.364 water quality;
- 341.365 mixing of concrete ingredients;
- 341.366 joints and finishing;
- 341.367 protection of wet concrete;
- 341.368 construction safeguards;
- 341.369 any other items the Public Works Superintendent deems appropriate.

#### **341.4 - Enforcement**

##### **341.40 - Prohibition of Obstruction**

It shall be unlawful for any person, whether or not interested in the property affected by this Part to hinder or obstruct the Department of Public Works or any person acting on his behalf and including any contractor not performing the work pursuant to this Part.

##### **341.41 - Ineligible Replacements**

Sidewalk work performed by the Village because the owner failed to agree to the work shall be ineligible for any Village sidewalk reimbursement plan.

##### **341.42 - Sidewalk Violation Penalties**

Any one violating this Part shall be subjects to a fine set by resolution of the Village Board, and to any other remedies or actions under this or other laws.

##### **341.43 - Reimbursement for Village Work**

When the Village performs work under this Part, the Public Works Superintendent shall notify the Village Clerk of the cost of this work, and the Village Clerk shall send a bill for this amount plus 25% to the property owner, along with a copy of this Part. Any balance not paid within 30 days shall be added to the tax levy for that property.

##### **341.5 – Village Sidewalk Repair Program**

When a program, as set by resolution of the Village Board, is in effect to share the cost of sidewalk repair with residents, repair of a defective sidewalk through participation in that program shall constitute compliance with this Part.

### ONLINE CODE (Zoning Code Only)

#### **Chapter 117 Streets and Sidewalks**

##### **Article I – Removal of Obstructions**

##### **121-22 – Subdivision of Land**

###### **F. Sidewalks**

1. Sidewalks and or graded areas shall be required depending on road classification and intensity of development in accordance with the requirements set forth in Exhibit 6.
  
- J. Street grade and intersections. Street grade and intersection requirements are specified in the Appendix.
  2. Where sidewalks are optional, they may be required if close to pedestrian generators to continue a walk on an existing street, to link areas or depending on probable future development as indicated in the Master Plan.
  3. In conventional developments, sidewalks shall be placed in the right-of-way, parallel to the street, unless an exception has been permitted to preserve topographical or natural features or to provide visual interest or unless the applicant shows that an alternative pedestrian system provides safe and conventional circulation. In commercial and in high-density residential areas, sidewalks may abut the curb.
  4. In planned developments, sidewalks may be located away from the road system to link dwelling units with other dwelling units, the street and on-site activity centers, such as parking areas. They may also be required parallel to the street for safety and other reasons.
  5. Pedestrianway easements ten (10) feet wide may be required by the Planning Board through the center of blocks more than six hundred (600) feet long to provide circulation or access to schools, playgrounds, shopping or other community facilities.
  6. Sidewalks shall measure four (4) feet in width; wider widths may be necessary near pedestrian generators and employment centers. Where sidewalks abut the curb and cars overhang the sidewalk, widths shall be five (5) feet. The width of graded areas shall be the same as for sidewalks.
  7. Sidewalks and graded areas shall be constructed according to the specifications set forth in 121-33A.

##### **121-88 – Sidewalks and bikeways**

###### **A. Sidewalks and graded areas**

1. Sidewalks shall be four (4) inches thick except at points of vehicular crossing where they shall be at least six (6) inches thick. At vehicular crossings, sidewalks shall be reinforced with welded wire fabric mesh or an equivalent.
2. Concrete sidewalks shall Class C concrete, having a twenty-eight day compressive strength of four thousand five hundred (4,500) pounds per square inch. Other paving materials such as gravel, crushed stone, brick, etc., may be permitted depending on the design of the development.
3. Graded areas shall be planned with grass or treated with other suitable ground cover, and their width shall correspond to that of sidewalks.

[ONLINE CODE](#) (Zoning Code Only)

### Subdivision Regulations

#### Section 17 – Sidewalks

Sidewalks may be required and shall be installed as follows:

1. Sidewalks shall be installed at the expense of the subdivider, at such locations as the Planning Board may deem necessary.
2. Sidewalks must be constructed to comply with the detailed specifications required by the Village Engineer or an Approved Engineer and approved by the Planning Board
3. Sidewalks shall be concrete or other approved material, and have a minimum width of four (4) feet in residential areas and five (5) feet in commercial and industrial areas.

## ONLINE CODE

### Chapter 116 – Notification of Defects

#### 116-2 – Conditions precedent to certain actions

- A. No civil action shall be maintained against the Village of Fayetteville for damages or injuries to person or property sustained in consequence of any street, highway, bridge, culvert, highway marking, sidewalk, crosswalk, sign, device or any other property owned, operated or maintained by the Village being defective, out of repair, unsafe, dangerous or obstructed unless written notice specifying the particular condition and its location was actually given to the Village Clerk of the Village of Fayetteville and there was a failure or neglect to repair or remove the condition complained of within a reasonable time after the receipt of such notice.
- B. No civil action shall be maintained against the Village of Fayetteville for damages or injuries to persons or property sustained in consequence of the existence of snow or ice upon any street, highway, bridge, culvert, highway marking, sidewalk, crosswalk, sign, device or any other property owned, operated or maintained by the Village unless written notice thereof, specifying the particular location, was actually given to the Village Clerk of the Village and there was a failure or neglect to cause such snow or ice to be removed within a reasonable time after the receipt of such notice.
- C. No civil action will be maintained against the Village of Fayetteville for damages or injuries to person or property sustained by reason of any defect in the sidewalks of the Village or in consequence of the existence of snow or ice upon any of its sidewalks, unless such sidewalks have been constructed or are maintained by the Village pursuant to statute.

### Chapter 148 – Streets and Sidewalks

#### 148-7 – Keeping sidewalks and gutters clear

The occupant of each and every house or building fronting upon any street or alley, or the owner or the agent of the owner of any vacant lot fronting as aforesaid, shall at all times keep the sidewalk and gutter along the premises clear and free of all rubbish and obstructions of all kinds and shall also keep closely cut all grass and weeds along the sidewalk, and shall clear such sidewalk of all snow or ice that shall accumulate every day by 9:30 a.m. of each day and cause the same to be kept clean from all snow and ice. Upon default or failure to comply with the provisions of this section, the Village Board of Trustees may cause such sidewalks and gutters to be kept clear and free of rubbish and obstructions or cause such grass or weeds to be cut and cause such sidewalks to be cleared of snow and ice and assess the expense thereof upon the adjoining land as provided by law.

### Chapter 151 – Subdivision of Land

#### Article V – Development Standards

##### 151-10 – Street planning standards

- J. Where the subdivision abuts or fronts on arterial streets, sidewalks shall be required and shall be of the size and type as approved by the Village Engineer.

#### Article VI – Required Improvements

##### 151-20 – Utility and Street Improvements

- A. Utility and street improvements shall be provided in accordance with the following:
  - (3). Arterial streets: cross sections in accordance with the Official Map and Master Plan, or as determined by the Planning Board if no such Official Map or Master Plan has been adopted, and construction design as determined by the Village Engineer or County Public Works Department. Where reverse-frontage lots are not provided along an arterial street, four-foot sidewalks shall be provided. Sidewalk design and construction methods shall be specified by the Village Engineer.

## Chapter 187 – Zoning

### Article IV – Application of District Regulations

#### 187-7 – Statement of district regulations

E. R-B Districts: Residential-Business Districts. This district is to allow a limited range of business uses within a residentially compatible setting. Redevelopment of existing structures shall be allowed and new construction, when consistent with residential character, shall be allowed. The following regulations shall apply in all R-B Districts:

8. Supplemental design standards for the Residential Business District.

(d). Pavement and landscaping. Use and design of both man-made and natural materials for walks, outdoor activity areas and decorative areas should be compatible with the treatment of nearby residential properties. Front and side lawn areas should be maintained and rear yard landscaping should effectively screen parking areas from view of abutting residential properties.

### Subdivision Regulations

#### Section C – Sidewalks

1. Sidewalks shall be installed on one or both sides of a street or road as the Board may require, depending on local conditions or public safety.
2. Sidewalks shall be constructed to the following minimum specifications: Sidewalks shall be 3,000 pounds minimum strength concrete 1-2-4 mix or better with a minimum of four (4') feet width and four (4) inches thickness except at driveway crossings where the sidewalk shall be increased to six (6") inches thickness.

## ONLINE CODE

### **Chapter 263 – Notification of Defects**

#### **263-1 – Prior notification required**

- A. No civil actions shall be maintained against the Village or Village Superintendent of Public Works, nor other employees or offices thereof acting in such capacity, for damages or injuries to person or property sustained by reason of any highway, bridge, street, sidewalk, crosswalk, or culvert being defective, out-of-repair, unsafe, dangerous, or obstructed unless written notice of such defective, unsafe, dangerous, or obstructed condition of such highway, bridge, street, sidewalk, crosswalk, or culvert was actually given to the Village Clerk or Village Superintendent of Public Works and there was a failure or neglect within a reasonable amount of time after the giving of such notice to repair or remove the defect, danger, or obstruction complained of.
- B. No such action shall be maintained for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any highway, bridge, street, sidewalk, crosswalk, or culvert, unless written notice thereof, specifying the particular place, was actually given to the Village Clerk or Village Superintendent of Public Works and there was failure or neglect to cause such snow or ice to be removed or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

### **Chapter 327 – Streets and Sidewalks**

#### **Article IV – Snow and Ice Removal**

##### **327-12 – Prohibited disposal and accumulations**

- B. No person shall permit snow or ice to accumulate upon any building adjacent to a street or sidewalk, and no person shall permit snow or ice to fall from such building upon any street or sidewalk.

#### **Article V – Construction and Repair of Sidewalks**

##### **327-12 – Notice of Repair, Assessment of Costs**

When the Village Board of Trustees shall determine by resolution that a sidewalk has been damaged by the neglect or carelessness of the owner or occupant of land adjoining such sidewalk, and such sidewalk shall be required to be repaired, the Board of Trustees shall cause to be served, either personally or by certified mail, return receipt requested, upon the adjoining landowner, a notice specifying the place and manner and the time, which shall not be less than 30 days, within which the sidewalk is required to be repaired. If such adjoining owner so notified shall not repair the sidewalks as required by the notice, the Village Board of Trustees may cause the same to be so repaired and assess the expense thereof upon the adjoining land. Before repairing such sidewalk, the adjoining owner shall obtain the grade thereof and the specifications therefore from the Superintendent of the Department of Public Works and shall comply therewith. Where the work is done by the Village, the assessment shall be made and collected and taxes levied as provided in Article 5 of the Village Law.

##### **327-14 – Notice to repair; assessments of costs**

When the Village Board of Trustees shall determine by resolution that a sidewalk has been damaged by the neglect or carelessness of the owner or occupant of land adjoining such sidewalk, and such sidewalk shall be required to be repaired, the Board of Trustees shall cause to be served, either personally or by certified mail, return receipt requested, upon the adjoining landowner, a notice specifying the place and manner and the time, which shall not be less than 30 days, within which the sidewalk is required to be repaired. If such adjoining owner so notified shall not repair the sidewalks as required by the notice, the Village Board of Trustees may cause the same to be so repaired and assess the expense thereof upon the adjoining land. Before repairing such sidewalk, the adjoining owner shall obtain the grade thereof and the specifications therefore from the Superintendent of the Department of Public Works and shall comply therewith. Where the

work is done by the Village, the assessment shall be made and collected and taxes levied as provided in Article 5 of the Village Law.

### **327-15 – Sidewalk Specifications**

- A. Sidewalks constructed within the Village of Liverpool shall be of Portland cement concrete, except within the width of approved driveways.
- B. Sidewalks constructed within the width of approved driveways shall be of Portland cement concrete or asphalt concrete.
- C. Sidewalk construction shall not occur when the ambient air or base surface temperature is less than 40° C. or the surface is wet or frozen.
- D. Specifications:
  - (1) Portland cement concrete sidewalk material requirements and composition shall comply with the specifications for Class A concrete in accordance with NYSDOT specification. (a) Portland cement concrete sidewalks shall have a minimum compressive strength at 28 days of 3000 psi. (b) Portland cement concrete sidewalks shall be placed in accordance with the requirements of NYSDOT specifications "Sidewalks, Driveways, Bicycle Paths, Brick Paving, Grouted Stove Paving and Precast Concrete Paving." (c) The Portland cement concrete sidewalks shall be placed to the minimum requirements: [1] The minimum concrete thickness shall be four inches except at driveway crossings where the sidewalk shall have a minimum thickness of six inches. [2] Sidewalk width shall be four feet wide.
  - (2) Asphalt concrete sidewalk material requirements and composition shall comply with the specifications for a Type 3 binder course and a Type 7 top course in accordance with NYSDOT specification, Material "Plant Mix Pavements — General." Mix composition shall be as given in NYSDOT specification "Composition of Bituminous Plant Mixtures." (a) Asphalt concrete sidewalks shall be placed in accordance with the requirements of NYSDOT specifications, constructed to the depths and dimensions as follows: [1] Minimum asphalt thickness shall be 2 1/2 inches consisting of 1 1/2 inches of Type 3 binder course and one inch of Type 7 top course unless otherwise approved by the DPW Superintendent. [2] Sidewalk width shall be four feet wide.
  - (3) Sidewalk subbase course materials shall consist of a single layer of granular material of either a Type 1 or Type 2 subbase course and shall be placed in accordance with NYSDOT specification "Subbase Course." (a) Granular subbase course material shall have a minimum thickness of six inches.
  - (4) Sidewalk line and grade tolerances shall be in accordance with the CABO-ANSI A117.1. (a) Unless otherwise stated in the above standard and approved by the DPW Superintendent, changes in elevation shall be as follows: [1] Changes in elevation of one-fourth-inch or less are allowed without any edge treatment. [2] Changes in elevation between one-fourth-inch and one-half-inch shall be beveled with a slope no greater than one-inch on two-inch. [3] Changes in elevation greater than one-half-inch shall require a ramp in accordance with CABOANSI A117.1, with a maximum slope of a ramp for new construction of one-inch on 12 inches.

### **327-18 – Unsafe Sidewalks**

The following conditions are deemed to create an unsafe sidewalk condition:

- A. Broken, deteriorated or missing sidewalk flags.
- B. Inadequate patch or repair of sidewalk surface.
- C. Abrupt change of elevation or pitch of sidewalk flags.
- D. Holes or depressions in the sidewalk plane or driveway surface.
- E. Sloping or tilting Tarvia driveway surface in relation to the adjacent sidewalk or street surface.
- F. Sloping or tilting of sidewalk flags, except where a ramp is otherwise required.



### **327-19 – Driveway Sidewalk Interface**

- A. New driveways may be of continuous Tarvia or may have concrete sidewalk through the driveway, subject to the following:
  - (1) Where a continuous Tarvia driveway is selected, the existing concrete sidewalk, if any, shall be removed and replaced with asphalt concrete subbase and top coat as specified in § 327-15, and installed to be flat to the existing sidewalk surface within one-fourth-inch. Removal and disposal of the concrete sidewalk material shall be at the property owner's expense.
  - (2) Where the existing concrete sidewalk through a driveway is to remain, the new Tarvia subbase and/or top coat must be installed to be flat to the existing sidewalk surface within one-fourth-inch in any direction. Removal of any materials within the approved driveway area to achieve these specifications shall be at the property owner's expense.
- B. Existing sidewalks and driveways. Existing sidewalks and driveways not constructed to the standards established by this article shall be allowed to continue subject to the following safety requirements:
  - (1) Abrupt grade change between sidewalk flags or sidewalk-driveway intersections shall not exceed three-fourth-inch in height.
  - (2) Gradual or tapered grade changes shall be required for heights between 3/4 inch and 1 1/2 inches, and shall not exceed a 15° slope (3/4 inch vertical drop spread evenly over six inches horizontal distance).
  - (3) Existing driveway surfaces shall not be more than 1 1/2 inches higher than the adjacent sidewalk surface.
- C. Nonconforming driveways. Existing driveways with Tarvia material over a concrete sidewalk will be allowed to continue, subject to the following:
  - (1) The existing driveway was constructed on or before April 1, 1996.
  - (2) The Tarvia surface, regardless of taper, is not more than 1 1/2 inches higher than the adjacent sidewalk grade.
  - (3) Existing Tarvia grade transitions to the adjacent sidewalk grade do not exceed a 15° slope and do not encroach more than 12 inches into the adjacent sidewalk plane.
  - (4) Existing driveway surfaces between 3/4 inch and 1 1/2 inches above the adjacent sidewalk surface, without an existing ramp to the adjacent sidewalk surface, shall have a ramp installed which does not exceed 15° in slope, which shall not encroach onto the adjacent sidewalk surface and shall be contained within the Tarvia area of the approved driveway width.
- D. The property owner has sole responsibility, at their expense, for maintaining the Tarvia or concrete sidewalk surface area, in the sidewalk plane, within the width of the driveway, in a safe and hazard-free condition.
- E. No firm, corporation, partnership or individual shall commence the construction, alteration or repair of any driveway within the Village street right-of-way without first obtaining a permit from the DPW Superintendent, except for the installation of surface sealers over existing driveway surfaces. The DPW Superintendent shall not issue a permit for a driveway which fails to comply with the Zoning Local Law, *Editor's Note: See Ch. 380, Zoning.* as to width and location, as certified by the Code Enforcement Officer.
- F. The DPW Superintendent is authorized to inspect and determine deficiency with the requirements of this article and require repairs to be made, where appropriate, to provide for pedestrian safety.

## **Chapter 334 – Subdivision of Land**

### **Article V – Design Standards and Required Improvements**

#### **334-33 – Pedestrianways**

- A. In order to facilitate safe and convenient pedestrian access from roads to schools, parks, play areas or nearby roads, perpetual unobstructed easements of at least 20 feet in width may be required beyond that required for the road right-of-way.
- B. Sidewalks are required as approved by the Village Engineer.
- C. Sidewalks shall be installed at the expense of the subdivider and shall conform to the specifications found in Article V, Chapter 327, Streets and Sidewalks, and the Village Engineer.

## **Article VI – Financial Guaranties for Public Improvements**

### **334-43 – Required public improvements**

If required by the Planning Board, applicants for subdivision plat approval shall provide the Village with acceptable financial security in an amount sufficient to guarantee the installation of basic public improvements. Such public improvements may include public water supply, sewage disposal systems, storm drains and sewers, roads, pavement markings and traffic signs and signals, sidewalks and other public improvements.

## **Chapter 380 – Zoning**

### **Article III – R-1 Single-Family Residential District**

#### **380-12 – Purpose**

The purpose of the R-1 Single-Family Residential District, as supported by the vision, goals and objectives of the Village of Liverpool Comprehensive Plan 2025, [*Editor's Note: The Comprehensive Plan is on file in the Village offices.*] is to promote and preserve the integrity and character of the R-1 District as a single-family residential neighborhood. The character of the R-1 District is exemplified by its historic homes located under shady groves of mature street trees that offer a parklike neighborhood setting. New infill or rehabilitation of existing homes should be compatible in scale and appearance with and complement existing homes in the same neighborhood. Residential and nonresidential uses should exemplify the peace and quiet of our traditional, walkable, friendly neighborhoods and be interconnected by a well-maintained system of sidewalks that enhance the traditional Village character of this area.

### **Article IV – R-2 Two-Family Residential District**

#### **380-19 – Purpose**

The purpose of the R-2 Two-Family Residential District, as supported by the vision, goals and objectives of the Village of Liverpool Comprehensive Plan 2025, [*Editor's Note: The Comprehensive Plan is on file in the Village offices.*] is to promote and preserve the integrity and character of the R-2 District as a single- and two-family residential neighborhood. The character of the R-2 District is exemplified by its historic homes located under shady groves of mature street trees that offer a parklike neighborhood setting. New infill or rehabilitation of existing homes should be compatible in scale and appearance with and complement existing homes in the same neighborhood. Residential and nonresidential uses should exemplify the peace and quiet of our traditional, walkable, friendly neighborhoods and be interconnected by a well-maintained system of sidewalks that enhance the traditional Village character of this area.

### **Article V – R-3 Multiple-Family Residential District**

#### **380-26 – Purpose**

The purpose of the R-3 Multiple-Family Residential District, as supported by the vision, goals and objectives of the Village of Liverpool Comprehensive Plan 2025, [*Editor's Note: The Comprehensive Plan is on file in the Village offices.*] is to promote and preserve the integrity and character of the R-3 District as a high-density residential neighborhood. The R-3 District should afford a greater variety of housing options for a variety of lifestyles, while maintaining a higher population density compatible with and supportive of neighboring business districts. New infill or rehabilitation of existing homes should be compatible in scale and appearance with and complement existing homes in the same neighborhood. Residential and nonresidential uses should exemplify the peace and quiet of our traditional, walkable, friendly neighborhoods and be interconnected by a well-maintained system of sidewalks that enhance the traditional Village character of this area.

## ONLINE CODE

### **Chapter 1 – General Provisions**

#### **Article II – General Penalty**

##### **1-16 – Penalties for offenses generally**

Except where specific maximum penalties are provided elsewhere in the Code, in a state law or in another resolution or local law of the village for a particular offense, unlawful act or prohibited act, any person who shall commit an offense, unlawful act or prohibited act under any provision of the Code or any provision of any other village resolution or local law referring to these general penalty provisions, by doing any act prohibited or declared to be unlawful thereby or declared to be an offense, unlawful act or prohibited act thereby, or who shall engage in or exercise any business or occupation or do anything for which a license or permit is required thereby without having a valid license or permit therefore as required, or who shall fail to do any act when such provision declares such failure to be an offense, unlawful act or prohibited act shall, upon conviction thereof, be deemed guilty of a violation as defined by the Penal Law of the State of New York, punishable by a fine not exceeding \$250 or by imprisonment for not more than 15 days, or by both such fine and imprisonment.

##### **1-17 – Continuing offenses, unlawful acts or prohibited acts**

The continuation of an offense, unlawful act or prohibited act for each successive day shall constitute a separate violation, and the person or persons allowing or permitting the continuation of the offense, unlawful act or prohibited act may be punished as provided in this Article for each such separate violation.

##### **1-18 – Additional remedies**

The imposition of a penalty as provided above or as specifically provided in any chapter of the Code or other resolution or local law of the village shall be in addition to any injunctive or remedial relief or any civil penalty which is authorized under the laws of the State of New York, with the same force and effect as though provided for herein. Such penalty shall not be deemed to be in lieu of any provision for revocation or suspension of any license or permit.

### **Chapter 75 – Peace and Good Order**

#### **Article II – Property Maintenance**

##### **75-8 – Cleaning of sidewalks**

Every owner or occupant of any dwelling, house, store, shop or other building or of any vacant lot within said Village shall keep the sidewalks in front of the premises so owned or occupied free from snow, ice, dirt or debris of any kind, and, if such person shall neglect or refuse to remove the same from such sidewalk, the same shall be removed by the Street Commissioner at the expense of such owner or occupant, such expense, when allowed by the Trustees, to be a lien upon such premises.

### **Chapter 85 – Streets and Sidewalks**

#### **Article II – Use Regulations**

##### **85-14 – Obstructions**

No person shall encumber the streets or sidewalks of said village with any substance or material, including ice and snow, or pile or deposit the same therein, except by the permission of the Village Board.

##### **85-16 – Sidewalk construction**

No person shall construct a sidewalk unless it conforms to the grade established by the Department of Public Works. No person shall change the grade of an existing sidewalk without permission of the Village Board.

**85-17 – Penalties for offenses**

Any person committing an offense against any provision of this Article shall be punishable as provided in Chapter 1, General Provisions, Article II.

### Chapter 11 - Streets, Sidewalks, and Public Places

#### ARTICLE 1 – IN GENERAL

##### **Section 11-1 - Duty to keep sidewalk, gutter clean; failure to do so**

- a. The occupant of each and every house or building fronting upon any street or alley, or the owner or the agent of the owner of any vacant lot fronting as aforesaid, shall at all times keep the sidewalk and gutter along the said premises clean and free from all rubbish and obstructions of all kinds, and shall also keep closely cut all grass and weed along the sidewalk.
- b. Upon default or failure to comply with the provisions of this section, the board or trustees may cause such sidewalk and gutter to be kept clean and free from rubbish and obstructions or cause such grass and weeds to be cut and assess the expense thereof

##### **Section 11-2 - Duty to remove snow and ice from sidewalks; failure to do so**

The owner or occupant, or person having charge of any house or other building, or lot or lots of ground abutting on any sidewalk within the village shall clear said sidewalk from all snow and ice that shall accumulate by 9:00 a.m. of each day the same shall accumulate and shall cause the same to be kept clean and free from all snow and ice, and upon default or failure to comply with the provisions of this section, the board of trustees may cause such sidewalk to be cleared from snow and ice and assess the expense thereof upon the adjoining land, as provided by law. (G.O. 1980, No. 88)

##### **Section 11-3 - Prevention of accumulation of snow, ice on buildings**

The owners and occupants of all buildings adjacent to the street shall prevent the accumulation of ice, snow or water thereon so that the same shall be liable to fall from such buildings upon the street or sidewalk. (G.O. 1980, No.89)

##### **Section 11-4 - New streets – Requirements generally**

All new streets in the village shall be sixty (60) feet wide and must meet current specifications required by village law. Before a street is accepted and dedicated, a sanitary sewer and water main must be provided. Sidewalks may be required at the option of the board of trustees. (Ord. of 5-14-51)

##### **Section 11-8 - Actions for damage or injury due to defective, unsafe, etc. streets, etc; notice of defects**

No civil action shall be maintained against the village for damages or injuries to person or property sustained in consequence of any street, highway, bridge, culvert, sidewalk or crosswalk being defective, out of repair, unsafe, dangerous or obstructed unless previous to the occurrence resulting in such damages or injury, written notice of the defective, unsafe, dangerous or obstructed condition of said street, highway, bridge, culvert, sidewalk or crosswalk was actually given to the board of trustees or any member thereof, or the village clerk, or the foreman of the highway department of the village and there was a failure or neglect within a reasonable time after the giving of such notice to repair or remove the defect, danger or obstruction complained of. (Ord. of 6-30-60)

##### **Section 11-9 - Action for injury or damage caused by snow, ice on sidewalks, etc.**

No civil action shall be maintained against the village solely in consequence of the existence of snow or ice upon any sidewalk, crosswalk or street unless written notice thereof relating to the particular place was actually given to the foreman of the highway department of the village, or the village clerk, or the board of trustees and there was a failure or neglect to cause such snow or ice to be removed or the place otherwise made reasonably safe within a reasonable time after the receipt of such notice. (Ord. of 6-30-60)

### ONLINE CODE

#### **Chapter 101 – Notification of Defects**

##### **101-2 – Prior written notice of defects required**

No civil action shall be brought or maintained against the village or any employee of the village for damages or injuries to person or property sustained by reason of any village property being in an unsafe condition unless, prior to said injuries, written notice of such condition was actually given to the Village Clerk and there was a failure or neglect within a reasonable period of time after the receipt of such notice to repair, remedy or remove the unsafe condition complained of, or to make the village property reasonably safe.

#### **Chapter 136 – Streets and Public Places; Property Maintenance**

##### **Article III – Sidewalk and General Property Maintenance**

##### **136-14 – Standards of maintenance of sidewalks and general property maintenance**

- B. No owner or occupant of any real property in the Village of Minoa shall permit or allow to be permitted the accumulation of ice and snow on the sidewalks in front of his or her respective property during the wintertime. All such persons shall remove all such snow and/or ice from the sidewalks in front of his or her respective property during the wintertime and, when ice cannot be removed, to cover the same with salt, sand or similar material in such a manner as to enable one to walk thereon with safety.
- E. All owners and occupants of real property in the Village of Minoa shall ensure that ground surface hazards or unsanitary conditions such as holes, excavations, breaks, projections, objections and excretion of pets and other animals on paths, walks, driveways, parking lots and parking areas and other parts of the premises which are accessible to and used by persons on the premises shall be filled and repaired, and walks and steps replaced and other conditions removed where necessary to eliminate hazards or unsanitary conditions and any Illicit Discharge local law *Editor's Note: See Ch. 134, Art. I* .prior or hereafter adopted by the Village. All owners and occupants of real property in the Village of Minoa shall ensure that surface and subsurface waters of every kind, type and size (including, but not limited to, swimming pools, sump pump drains, or drainage and detention basins and ponds, man-made or otherwise) shall be maintained, controlled and when drained, in such a manner as to prevent damage to on-site and adjacent buildings and structures and to prevent the occurrence or continuance of stagnant waters causing offensive odors, growths, or appearances. Gutters, culverts, catch basins, drain inlets, stormwater sewers and sanitary sewers or other satisfactory drainage systems shall be provided and utilized where necessary, appropriate, and as permitted by the Village of Minoa, or other governmental entity having jurisdiction over same. In no case, except where expressly permitted by the Village of Minoa or as part of an established natural drainage flow, shall waters from any rain, storm or surface water drainage systems, or as a result of grading activities, be allowed to pool or settle on or flow over adjoining properties including any public sidewalks, streets, rights-of-way or other public property. The foregoing shall be in addition to and separate from any requirements under Chapter 135 of the Village Code relating to Stormwater Management and Erosion and Sediment Control.

#### **Chapter 140 – Subdivision of Land**

##### **Article V – Improvements**

##### **140-16 – Required improvements**

- D. Sidewalks. All sidewalks shall be required and constructed in accord with the standards, if any, on file in the Village Clerk's office.

### ONLINE CODE

#### **Chapter 154 – Notification of Defects**

##### **154-1 – Prior notice required**

No civil action shall be maintained against the Village of North Syracuse for damages or injuries to persons or property sustained in consequence of any defective, unsafe, dangerous or obstructed condition or for damages or injuries to persons or property solely in consequence of the existence of ice or snow on any real property or personal property located thereon, when such real or personal property is owned or leased by the Village of North Syracuse, unless written notice of the defective, unsafe, dangerous or obstructed condition or of the existence of the snow or ice, which written notice relates to a particular place or thing, was actually given to the Village Clerk and there was a failure or neglect within a reasonable time after receipt of such notice to repair or remove the defect, danger or obstruction complained of or to cause the snow or ice to be removed or the place or thing to be otherwise made reasonably safe.

#### **Chapter 205 – Subdivision of Land**

##### **Article IV – Design Standards**

##### **205-17 – Sidewalks**

- A. Standards. Sidewalks shall be constructed along all streets in residential areas of the subdivision. Sidewalks shall be constructed in accordance with the two-course sidewalk detail and specifications.
- B. Location. Location of required residential area sidewalks shall be one foot inside the street right-of-way line as shown on typical street cross sections, Illustration A, *Editor's Note: Illustration A is on file at the office of the Planning Commission.* or a location within the street right-of-way as approved by the Planning Commission.

##### **Article V – Required Improvements**

##### **205-24 – Sidewalks**

Sidewalks shall be constructed in accordance with the approved Village sidewalk specifications and detail. Sidewalks shall be constructed on both sides of all streets. The Planning Commission, depending upon local conditions or public safety, may permit exceptions to this rule.

### Article I – General Provisions

#### 165-2 – Duty to repair sidewalks

The owner of any premises shall keep the sidewalks within the street right-of-way in good and safe repair, as defined herein, for users thereof and shall be responsible for all necessary preventive, corrective and day-to-day maintenance to accomplish such result. Any lawsuits or actions for damages due to such deficiencies in sidewalks shall be brought solely against the property owner(s).

#### 165-3 – Elimination of sidewalks

The elimination of existing sidewalks within the Village of Phoenix is prohibited without specific authorization of the Village Board of Trustees.

#### 165-4 – Defective Sidewalks

- A. A defective sidewalk shall mean any sidewalk which has any or all of the following conditions:
- (1) Unacceptable quality of sidewalk surface, including but not limited to holes, depressions, breaks or protrusions.
  - (2) Ridges or gaps between adjoining sidewalk blocks.
  - (3) Differences in elevation of the surface or of adjoining sidewalk blocks.
  - (4) Peeling or crumbling of the surface of the sidewalk.
  - (5) Tilting of sidewalk blocks, except in the case of handicap ramps, driveway approaches or other similar situations.
  - (6) Missing portions of surface.
- B. The above shall be applicable regardless of the type of sidewalk that exists, whether flagstone, brick, concrete, blacktop or any other material.
- C. All defective sidewalks within the terms stated above are hereby declared to be a public nuisance and shall be repaired or replaced by the property owner(s).

#### 165-5 – Sidewalk construction and repair

- A Permit Required
- (1) Before engaging upon sidewalk removal, repair, replacement or new construction, the owner of the contractor, on behalf of the owner, must first obtain a permit from the Superintendent of Public Works or his or her designated agent. Applications for said permit shall be furnished by the Superintendent at no charge.
- B Quality; inspection. The property owner shall be responsible for the quality of the finished sidewalk. The Superintendent of Public Works or his or her designee may inspect the project from time to time, and the Superintendent of Public Works may require the owner to remove and replace new construction that does not meet construction standards as set forth herein, and as may be modified from time to time. For all purposes of this Chapter 165, in the absence or vacancy of a Superintendent of Public Works, the Mayor, Village Administrator or other designee shall serve. The Superintendent of Public Works shall be notified before concrete or paving materials are installed to allow for inspection of said installation.
- C Construction Material. All replacement or new construction of sidewalks shall be made of concrete material only.
- D. Material, design and construction specifications. Specifications for all aspects of sidewalk construction, reconstruction, repairs and maintenance shall be subject to and in accordance with standards established from time to time by the Village Superintendent of Public Works.



### **165-6 – Utilities and structures**

The owners of utilities, such as water, sewer, electric, gas, phone, cable television, etc., shall be responsible for any manholes, vaults, pits, valve boxes, etc., that are located within a sidewalk. Said utility owners shall be responsible for sidewalk deficiencies created by the location of their facilities within said sidewalk.

### **165-7 – Snow and ice removal**

It shall be the duty of the owner of every parcel of real estate adjoining a public sidewalk, whether the parcel of real estate is occupied by a structure or not, to keep such sidewalks adjoining such property free from debris, snow and ice.

- A. Time limit for removal. Snow and ice shall be removed from all sidewalks within 24 hours after the end of snowfall.
- B. Icing. In case snow and ice on any sidewalk shall be frozen so hard that it cannot be removed without injury to the sidewalk, the owner shall, within 24 hours, cause said sidewalk to be strewn and kept strewn with ashes, sand, sawdust, or other suitable materials so as to be no longer dangerous to live and limb. As soon as practical thereafter, the sidewalk shall be completely cleared of snow, ice and other materials strewn thereon, as provided in this article.
- C. Removal by Village. Whenever the owner or occupant of every parcel of real estate adjoining a public sidewalk fails to remove the snow and ice from such sidewalk adjoining such property within the time specified in this article or within 24 hours after being notified, in writing, by the Code Enforcement Officer of the Village of Phoenix to remove the same, a summons may be issued to the property owner, and the Superintendent of Public Works may remove said snow or ice from such sidewalk to preserve public health, welfare and safety and notify the Village Clerk of the expense incurred by the amount of labor, equipment and materials used.
- D. Cost of Removal. The Village Clerk shall promptly present to the owner or occupant of each parcel a bill for the removal of snow and ice as certified by the Superintendent of Public Works. If not paid within 30 days, the cost thereof shall be assessed against the property and become a lien thereon, collectible in the same manner as delinquent Village taxes.
- E. Snow, ice and water falling from buildings. The owner(s) of buildings adjacent to public sidewalks shall prevent the falling of snow, ice or water from such buildings upon said public sidewalks.
- F. Deposit or accumulation on sidewalks, streets or private property.
  - (1) No person, firm or corporation shall pile, gather up, plow up or in any way force any snow or ice upon any sidewalk, street, avenue or roadway within the Village of Phoenix or from one sidewalk, street, avenue or roadway onto any other sidewalk, street, avenue or roadway within the Village of Phoenix. It shall be unlawful to cover a fire hydrant with snow or ice.
  - (2) No person, firm, corporation, property owner or occupant shall remove snow or ice from any parcel of real estate and place it upon another parcel of real estate without the express permission of the owner of the parcel of real estate upon which the snow or ice is to be placed.
  - (3) Any person, firm or corporation piling, gathering or plowing up snow or ice on any public street, avenue or roadway shall forthwith remove the same at his, her or its expense upon the direction of the Superintendent of Public works of the Village of Phoenix.
  - (4) Whenever any person, firm or corporation neglects or refuses to remove any snow or ice piled, gathered or plowed up by him, her or it in violation of this article within 24 hours after being notified, in writing, to do so by the Code Enforcement Officer of the Village of Phoenix, a summons may be issued to the property owner, and the Superintendent of Public Works may remove said snow or ice from such street, avenue or roadway to preserve public health, welfare and safety and notify the Village Clerk of the expense incurred by the amount of labor, equipment and materials used.
  - (5) The Village Clerk shall promptly present to the violator of this Subsection F a bill for the removal of snow and ice, as provided for the Subsection F(4), as certified by the Superintendent of Public Works. If not paid within 30 days, the cost thereof shall be assessed against the property and become a lien thereon, collectible in the same manner as delinquent Village Taxes.

- G. In the event of unusually high snowfall or blizzard conditions, the time limit for snow removal cited in Subsection A may be extended Village-wide by the Code Enforcement Officer or by declaration of an emergency by the Mayor or the County Executive.

**165-13.1 – Regulation of inline skates, rollerblades, skateboards, roller skates, and bicycles on public sidewalks; shared expense joint program for sidewalk improvements.**

A. The village Board of Trustees hereby finds and determines the following: (i) Pursuant to 6-620 of New York State Village Law, the Village desires to and hereby implements a shared expense joint sidewalk improvement program. This program shall only be available to property owners replacing or repairing a sidewalk with concrete (and not pavement) materials; (ii) the Village Board of Trustees specifically finds that with respect to replacement or repair of a concrete sidewalks, or part thereof, the value of Village Department of Public Works man-hours is substantially equal to the cost of materials incidental to any such repair or replacement; (iii) the Village Board of Trustees, by resolution duly adopted from time to time, may establish annual capped allocations of funding and/or man-hours of Village Department of Public Works labor representing the Village's donation of this shared expense joint program for sidewalks improvements; (iv) the Village's adoption of this program, however, shall not relieve or otherwise change the obligations or duties of an owner of a parcel of real estate adjacent to a public sidewalk as set forth in this chapter; and (v) in order to effect the foregoing, the Village Board of Trustees shall establish a committee of two members of the Board of Trustees to make recommendations to the Board of Trustees relative to establishment of a priority list of sidewalks in need of repair or replacement.

- (1) The priority list established under 165-13.1A shall be based upon evaluation of:
  - (a) The location of the sidewalk and its relative importance to the village's pedestrian sidewalk network;
  - (b) The relative condition of the sidewalk, the necessity and urgency for its repair or replacement;
  - (c) The ability of the adjoining property owner to pay its proportionate or greater share of the cost, which proportionate share shall in any event not be less than 50% of the total value of the replacement or repair work to be undertaken;
  - (d) Economies of scale and convenience based upon the ability to perform contiguous or nearby sidewalk repairs or reconstruction simultaneously.
- (2) The Village Board of Trustees may allocate on an annual basis a set dollar and/or number of DPW man-hours to be allocated to the shared expense joint sidewalk program, and shall budget accordingly. The foregoing notwithstanding, the Village Board may determine to deviate from any such allocations previously made, as part of the budget approval process or otherwise, in order to address any budgetary or DPW workload concerns.
- (3) The Village Board of Trustees shall likewise establish the specific sidewalk to be repaired or replaced based upon consideration of the priority list established under § 165-13.1A and the budget criteria and man-hours as provided at 165-13.1A(2).

**165-14 – Penalties for Offenses**

- A. Any person, firm or corporation who or which shall violate any of the provisions of this article, except 165-7, shall be guilty of a violation thereof and be subject to a fine not exceeding \$50 for each day a violation exists. Such penalties may be in addition to any other remedies or actions that may be taken by the Village.
- B. Any person, firm or corporation who or which shall violate any of the provisions of 165-7 shall be guilty of a violation thereof and be subject to a fine not exceeding \$10 for the first offense, \$25 for the second offense and \$50 for each offense thereafter. Each day a violation exists shall be deemed a spate offense. Such penalties may be in addition to any other remedies or actions that may be taken by the Village.



### ONLINE CODE

#### Chapter 6 – Claims

##### Article I – Prior Written Notice of Defects

###### **6-2 – Written notice of defective condition required for injuries on Village sidewalks**

No civil action shall be maintained against the Village or any Village employee or official for damages or injuries to person or property sustained by reason of any defect in the sidewalks of the Village or in consequence of the existence of snow or ice upon any of its sidewalks, unless such sidewalks have been constructed or are maintained by the Village pursuant to statute, nor shall any action be maintained for damages or injuries to person or property sustained by reason of such defect or in consequence of such existence of snow or ice unless written notice thereof, specifying the particular place, was actually given to the Village Clerk or to the Village Director of Municipal Operations and there was a failure or neglect to cause such defect to be remedied, such snow or ice to be removed, or to make the place otherwise reasonably safe within a reasonable time after the receipt of such notice.

#### Chapter 183 – Streets and Sidewalks

##### Article I – General Provisions

###### **183-5 – Duty to maintain sidewalks in good state of repair**

It shall be the duty of the owner of property abutting upon a public sidewalk to maintain said sidewalk in a good state of repair and to repair any and all defects therein. If said owner shall fail, neglect or refuse to so maintain such sidewalk, the Village shall be authorized and empowered to do whatever work is necessary to place the sidewalk in satisfactory condition and to charge said abutting owner for the cost of such work.

###### **183-6 – Duty to keep sidewalk clear of snow, dirt and obstructions**

- A. Every owner or occupant of any house or other building, and every owner or person entitled to the possession of any vacant lot, and any person having the charge of any church or other public building in the Village, during the winter season and during the time the snow shall continue on the ground, within 12 hours after a snowfall, shall keep the sidewalk in front of such house, building or lot free from obstruction by snow, and shall also at all times keep such sidewalks clean and free from all dirt, filth and other obstructions or encumbrances.
- B. No sidewalk shall be closed to pedestrian traffic or obstructed by repair and/or maintenance equipment. If repair and/or maintenance of a structure adjoining a sidewalk is necessary, the owner shall make provision to maintain the flow of pedestrian traffic on the adjoining sidewalk and shall protect the safety of those using the sidewalk by erecting a safety barrier and maintaining an enclosed passageway through the work area. A permit for the erection of a safety barrier and enclosed passageway shall be obtained from the Code Enforcement Officer upon presentation of an application and a suitable plan reflecting such detail as may be requested by the Code Enforcement Officer. An approved safety barrier and enclosed passageway shall not extend into or obstruct an adjoining public street.

### Streets and Sidewalks

#### Article I – Debris on Streets and Sidewalks

##### **136-1 – Owner or occupant responsible for keeping sidewalk clean**

The owner or occupant of premises shall keep the contiguous sidewalks free from dirt, filth, weeds and other deleterious or offensive matter

##### **136-3 – Penalties for offenses**

An offense against the provisions of this Article shall be punishable by a fine of not more than two hundred fifty dollars (\$250) or by imprisonment for not more than fifteen (15) days, or both.

##### **136-12 – Removal of pavement, sidewalk or gutter**

No person shall dig, take up or remove any portion of any pavement, sidewalk or gutter without first having obtained written permission from the Board of Trustees or its duly authorized agent.

##### **136-20 – Playing on streets and sidewalks**

No person shall play baseball, football or basketball or slide or coast in or upon any of the streets or sidewalks except such as may be designated by the Board of Trustees.

#### Article IV – Notification of Defects (Adopted at time of adoption of Code)

##### **136-31 – Restriction on liability**

No civil action shall be maintained against the village for damages or injuries to person or property sustained in consequence of any street, highway, bridge, culvert, sidewalk or crosswalk being defective, out of repair, unsafe, dangerous or obstructed or for damages or injuries to person or property sustained solely in consequence of the existence of snow or ice upon any sidewalk, crosswalk, street, highway, bridge or culvert unless written notice of the defective, unsafe, dangerous, or obstructed condition or of the existence of the snow or ice, relating to the particular place, was actually given to the Village Clerk and there was a failure or neglect within a reasonable time after the receipt of such notice to repair or remove the defect, danger or obstruction complained of or to cause the snow or ice to be removed or the place to otherwise be made reasonably safe.

### Chapter 94 – Snow and Ice

#### **Section 94-2 – Duty of property owner and occupant.**

It shall be the duty of the owner and occupant, jointly, of every parcel of real estate adjoining a public sidewalk, whether the parcel of real estate is occupied by a structure or not, to keep such sidewalks adjoining such property free from snow and ice for the full paved width of such sidewalk.

#### **Section 94-3 – Time limit.**

Snow and ice shall be removed within 24 hours after the end of a snowfall. In addition, sidewalks in front of commercial establishments and commercial parking lots shall be kept free of snow and ice at all times between the hours of 9:00 a.m. and 5:00 p.m.

#### **Section 94-4 – Severe icing.**

In case snow and ice on any sidewalks shall be frozen so hard that it cannot be removed without injury to the sidewalk, it shall, within the time specified in Section 94.3, be strewn and kept strewn with ashes, sand, sawdust or other suitable material, so as to be no longer dangerous to life and limb. As soon as practical thereafter, the sidewalks shall be completely cleared of snow, ice and other materials strewn thereon, as provided in this chapter.

#### **Section 94-5 – Removal by village.**

Whenever the owner or occupant of a parcel of real estate adjoining a public sidewalk fails to remove the snow and ice from such sidewalk adjoining such property within the time specified in this chapter or within four hours after notice by the Superintendent of Public Works may remove said snow or ice from such sidewalk and notify the Village Clerk of the expense incurred by the amount of labor, equipment and materials used. The charge shall not be less than the equivalent of one hour's wage for the highest paid hourly village employee.

#### **Section 94-6 – Collection of costs for removal by village.**

The Village Clerk shall promptly present to the owner or occupant of each parcel a bill for the removal of snow and ice as certified by the Superintendent of Public Works. If not paid within 30 days, the cost thereof shall be assessed against the property, added to their tax bill and become a lien thereon, collectible in the same manner as delinquent village taxes.

#### **Section 94-7 – Snow, ice and water falling from buildings.**

The owners or occupants of buildings adjacent to public sidewalks shall take measures to protect the public from the falling snow, ice or water from such buildings.

#### **Section 94-8 – Depositing on streets or sidewalks.**

No person, firm or corporation shall deposit, throw, place or strew, nor shall any person, firm or corporation cause to be deposited, thrown, placed or strewn, any snow or ice upon any street, avenue, roadway or sidewalk within the village.

#### **Section 94-9 – Placing of snow and ice on another's property.**

No person, firm, corporation, property owner or occupant shall remove snow or ice from any parcel of real estate and place it upon another parcel of real estate without the express permission of the owner of the parcel of real estate upon which the snow or ice is to be placed.

#### **Section 94-10 – Penalties for offenses.**

- A. Any person violating any of the provisions of this chapter shall be punished, upon conviction, by a fine not to exceed \$500. Each separate location and each separate incident shall constitute a separate and

distinct violation. In addition, each day of continued violation shall constitute a separate and additional violation hereunder.

- B. In addition to any fine that may be assessed, the village may also institute any action or proceeding to compel compliance with this chapter.

**Section 94-11 – Liability. [Added 2-1-2006 by L.L. No. 1-2006**

- A. Notwithstanding any other provision of law, the owner of real property adjoining any sidewalk, or the agent or occupant to whom the owner has delegated responsibility, shall be liable for any injury to property or personal injury, including death, proximately caused by the failure of such owner, agent, or occupant to maintain such sidewalk in a reasonably safe condition. Notwithstanding any other provision of law, the Village shall not be liable for any injury to property or personal injury, including death, proximately caused by the failure of such owner, agent or occupant to maintain such sidewalk in a reasonable safe condition. Failure to maintain such sidewalk in a reasonably safe condition shall include, but not be limited to , the negligent failure to remove snow and ice from the sidewalk.
- B. This section shall not be construed to apply to the liability of the Village as a property owner of streets and public rights-of-way.
- C. Nothing in this section shall in any way affect the provisions of any other law or rule governing the manner in which an action or proceeding against the Village is commenced, including any provisions requiring prior notice to the Village of defective conditions.

### Article XX – Department of Transportation

#### **Section 20.02 – Commissioner of Transportation; Power and Duties**

Except as may otherwise be provided in the Chart of this Code, the Commissioner of Transportation shall:

- (h) Provide, within the capabilities of the office, such services as may be required for the construction, repair, alteration and demolition of all County highways, bridges, parking fields, drives, buildings, parks and recreational facilities, preserves, erosion, projects, walks and other facilities in the nature of public works within County jurisdiction or where contractually or otherwise appropriate or lawful and where not otherwise specifically assigned in the Charter of this Code;
- (i) Provide, within the capabilities of the office, such services as may be required for the maintenance, supervision, repair and custodial care of all highways, bridges, parking fields, drives, walks and related facilities within County jurisdiction or where contractually or otherwise appropriate and lawful and where not otherwise specifically assigned in the Charter of this code;

#### **Section 20.04 – Division of Highways; Deputy Commissioner Transportation-Highways; Appointment; Term; Powers and Duties**

There shall be within the Department of Transportation a Division of Highways under the direction of a Deputy Commissioner of Transportation-Highways, who shall be appointed in the manner, subject to the conditions and for the term prescribed in Section 20.05 of this Code. The powers and duties of the Deputy Commissioner shall be to:

- (a) be responsible, except where otherwise specifically assigned in the Charter or this Code, for the construction, maintenance, supervision, repair, alteration, demolition, custodial care of, and snow removal from, all County highways, bridges, parking fields, drives, walks and related facilities within County jurisdiction or where contractually or otherwise appropriate and lawful;



# APPENDIX C – MODEL SIDEWALK ORDINANCES

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- Model Regulations: Pedestrian Facilities, from *Planning and Policy Models for Pedestrian and Bicycle Friendly Communities in New York State*, Institute for Healthy Infrastructure, SUNY Albany, June 2007.
- Model Sidewalk Regulations – Zoning & Subdivision, prepared by the Pioneer Valley Planning Commission
- Town of Penfield, Monroe County, Sidewalk Policy, adopted April 23, 1979

*Note: these models are presented solely to present municipalities with alternatives to their existing ordinances, as they relate to pedestrian facilities. The SMTC does not guarantee the legality of these examples.*

# Model Regulations: Pedestrian Facilities

## Purpose:

*Many communities include sidewalks in their master plans and zoning laws, but few provide a comprehensive framework for all aspects of pedestrian infrastructure. The following text addresses the major issues, including sidewalks, crossings, accessibility and maintenance.*

## Proposed Policy:

The community is a pedestrian – friendly community, and will provide and maintain facilities for pedestrians as an integrated part of their 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, crossings 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 five (5') planting strip (or 10' 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 the Pedestrian Plan. All crosswalk, signal and curb ramp features shall comply with the minimum guidelines established in the *NYSDOT 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.

# MODEL SIDEWALK REGULATIONS – ZONING & SUBDIVISION

*Prepared by the Pioneer Valley Planning Commission\**

## ZONING BYLAWS

### 1.0 – SIDEWALK REGULATIONS

#### 1.1 – PURPOSE

The purpose of this bylaw is to promote the health, safety and general welfare of the Town, and to ensure compliance with the following goals:

1. Promoting the safety of pedestrian access, movement, and protection for the physically able, physically challenged, children or seniors (or variously-abled) within the community;
2. Insuring that the ADA guidelines are met for all sidewalk or pathway installations, existing and proposed;
3. Promoting attractive and well-constructed sidewalks or pathways that correspond to the character, aesthetic qualities, natural, environmental, and historical features of developing or existing neighborhoods;
4. Connecting to existing and projected sidewalks or pathways whenever the opportunity arises to insure an interconnected pedestrian system;
5. Insuring that all development actively implements the building of sidewalks for new construction, reconstruction, or rehabilitation.

#### 1.2 – DEFINITIONS

**Crosswalk:** Any portion of a roadway at an intersection or elsewhere that is distinctly indicated for pedestrian crossing. If there is no marking, a sidewalk crossing is implied at each leg of every intersection by the extension of the lateral lines of the sidewalk on each side, or where the sidewalk would be if there is none.

**Driveway:** A private roadway providing access for vehicles to a parking space, garage, dwelling, or other structure.

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\* These model regulations were originally prepared for municipalities in Massachusetts, but have been modified to reflect conditions in New York State. For more information, see:  
[http://www.pvpc.org/val\\_vision/html/toolbox/Part%20III%20Strategies/Model%20Bylaws/Model%20Sidewalk%20Regulations.rtf](http://www.pvpc.org/val_vision/html/toolbox/Part%20III%20Strategies/Model%20Bylaws/Model%20Sidewalk%20Regulations.rtf)

**Infrastructure:** Any public facility, system, or improvement including, without limitation, water and sewer mains and appurtenances, storm drains and structures, streets and sidewalks, trees and landscaping in public right-of-way, utilities, and public safety equipment.

**Pedestrian Friendly:** The presence of facilities and design features that make an environment safe and attractive to pedestrians. These include: walkable distances between uses, (i.e. under ¼ mile); sidewalks, paths and walkways; continuous visual interest (i.e. uninterrupted line of buildings, attractive barrier in front of parking lots, murals on blank walls, infill development, pocket parks, etc.); consumer uses (i.e. restaurants, shops, cinemas, housing); trees for shade; awnings for shelter; buildings and landscaping elements sited to avoid wind tunnel effect, and to provide sheltered areas; visual texture in the streetscape (i.e. interesting storefronts, public art, plantings, pavement patterns, etc.); people presence (i.e. sidewalk cafes, street vendors, late business hours, residents using front porches and yards); good maintenance and inclusion of site amenities; buffers between cars and pedestrians (i.e. planted medians, on-street parking, grade separation); paths connecting adjacent uses; crosswalks and ramps; traffic calming devices; traffic lights; over- and underpasses.

**Sidewalk:** The area between the curb or edge of the street and the property line, whether or not it is improved.

### 1.3 - REGULATIONS

1.31 Sidewalks. Sidewalks shall be constructed in any area of the community where:

- a. Sidewalks are necessary to provide adequate and safe routes for school children to and from their dwellings and to and from educational facilities;
- b. Pedestrian traffic is not adequately accommodated by existing sidewalks;
- c. No sidewalks are in existence;
- d. There is an opportunity to make connections between existing or proposed sidewalks;
- e. The health, welfare, and safety of the public require that adequate sidewalks be provided for the public convenience; and
- f. All new development or redevelopment, construction or reconstruction.

1.32 Pedestrian Circulation Plan. The Planning Board requires inclusion of a pedestrian circulation plan and sidewalk profiles for all proposed subdivisions, site plan reviews and special permits. It shall include:

- a. The location of streets and roads adjacent to the site and proposed roads within the site;
- b. The location of existing walkways and paths on and off the site; the location of bus stops, parking lots, parking spaces, and driveways; the location of recreation facilities, religious structures, schools, industries, retail establishments, offices, and any other destination facilities; the location of residences; and any other structures or uses that may be requested by the Planning Board, DPW or other government body;

- c. Links between sidewalks and pathways within the development, and to neighborhood destinations and existing or projected sidewalks or pathways in the surrounding area.
- d. A description of estimated daily and peak-hour pedestrian trips to be generated by the site and flow patterns for pedestrians showing adequate access to and from the site and adequate circulation within the site; and
- e. An interior traffic and pedestrian circulation plan designed to minimize conflicts and safety problems.

#### 1.33 Standards

- a. Sidewalks shall be at least 4 feet in width and shall meet the requirements set forth in the Americans with Disabilities Act of 1990.
- b. Changes in level up to 1/4 in (6 mm) may be vertical and without edge treatment. Changes in level between 1/4 in and 1/2 in (6 mm and 13 mm) shall be beveled with a slope no greater than 1:2. Changes in level greater than 1/2 in (13 mm) shall be accomplished by means of a ramp that complies with these regulations.
- c. Gratings. If gratings are located in walking surfaces, then they shall have spaces no greater than 1/2 in (13 mm) wide in one direction. If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

#### 1.34 Curb and Intersection Corner Ramps

- a. Engineer shall have included, either within the corner or within the curb area immediately adjacent thereto, ramps allowing access to the sidewalk and street by variously-abled persons.
- b. The ramps referred to in Subsection A shall be constructed in a good and substantial manner and in accordance with the plans and specifications established by the Engineer. The particular plan to be used at a given intersection corner shall be appropriate to the location as determined by the City/Town Engineer.

#### 1.35 Driveways. A driveway shall be considered part of the sidewalk:

- a. After a driveway has been constructed, it shall be deemed a part of the sidewalk whether or not there is a sidewalk improvement extending along the balance of the frontage property, for all purposes of repair or reconstruction. Requirements relating to construction or reconstruction of a sidewalk as provided in this Chapter shall be applicable to reconstruction of a driveway which portion is in the sidewalk area of the right-of-way.
- b. Wherever possible driveway aprons should not intrude into the pedestrian way. The sidewalk cross slope of 1:50 should be maintained across the entire driveway. The driveway apron should be located in the tree belt between the pedestrian way and the roadway.

1.36 Locations for Curb Extensions:

- a. Curb extensions may be used at any corner location, or at any mid-block location where there is a marked crosswalk, provided there is a parking lane into which the curb may be extended. They may include transit stops.
- b. Curb extensions are not generally used where there is no parking lane because of the potential hazard to bicycle travel.
- c. Curbs may be extended into one or both streets at a corner. No obstructions or private use should occur in the curb extension.

1.37 Crosswalks

- a. Crosswalks are a critical element of the pedestrian network to enable sidewalk transportation users to safely and conveniently cross intervening streets. Safe crosswalks support other transportation modes as well; transit riders, motorists, and bicyclists all may need to cross the street as pedestrians at some point in their trip.
- b. Parking is prohibited within a crosswalk.

1.38 Shared Use Pathways

- a. Sidewalks shall be constructed to form connections to and from public schools. These sidewalks or pathways shall be designated for bicycle and other non-motorized transportation use for students in all school grades.
- b. When desirable for public convenience, a pedestrian or bicycle way may be required to connect to a cul-de-sac or to pass through an unusually long or oddly shaped block or otherwise provide appropriate circulation or continuity to a pedestrian or bicycle circulation system.

## **2.0 SUBDIVISION RULES AND REGULATIONS**

### **2.1 - SIDEWALKS**

2.11 Sidewalk requirements:

- a. Sidewalks shall be required on both sides of all new public streets.
- b. Exceptions will be considered under the following conditions:
  - i. Sidewalks shall be required on one side of the street if the right-of-way has severe topographic or natural resource constraints, or the street is a cul-de sac with four or fewer dwelling units.

- ii. In such cases where the sidewalk is excepted to one side of the street, the developer may install an equal number of feet of sidewalk in another area of the community as deemed by the DPW Director, Municipal Engineer, and Planning Board. The developer may as an alternative devote that amount of work to the repair of sidewalk as deemed by the DPW Director, Municipal Engineer, and the Planning Board.
- d. A buffer strip of four feet width between the pedestrian way and the road shall be required for all sidewalks to further provide a safe pedestrian environment. Shade trees shall be planted at thirty-foot intervals in a tree belt established in the buffer strip.
- e. Pedestrian and bicycle ways: When desirable for public convenience, a pedestrian or bicycle way may be required to connect to a cul-de-sac or to pass through an unusually long or oddly shaped block or otherwise provide appropriate circulation or continuity to a pedestrian or bicycle circulation system.
- f. Additional Right-of-Way Improvements: The Planning Board may require right-of-way improvements in excess of the right-of-way improvement requirements set forth in this section, if public right-of-way improvements that directly benefit and are necessary to serve the subject property or development require additional right-of-way improvements.

Adopted: 4/23/79

Amended: 9/21/81, 6/6/83, 9/6/88  
7/17/96 and 5/3/00

## TOWN OF PENFIELD SIDEWALK POLICY

### Purpose

It is the intent of the Town of Penfield to install sidewalks along all Minor Arterial, Major Collector and Minor Collector roads to develop safe pedestrian mobility and enjoyment. This policy encourages the installation of sidewalks along all local streets, including but not limited to new subdivisions. This network of sidewalks is intended to provide a safe linkage of major residential developments to commercial, civic, recreational, educational and employment centers for residents and visitors.

### Primary Sidewalk System

The primary goal of this policy is to install sidewalks along Minor Arterials, Major Collectors, and Minor Collector roadways in the Town of Penfield. These are further defined as follows and are shown in Exhibit 1:

Urban Minor Arterials are highways that move high volumes of traffic from intermediate to long distances within the town and connect the town with other major arterial highways in the metropolitan area. They provide a lower level of travel mobility than principal arterials. The highways that meet this classification and are to be developed with sidewalks along one or both sides include the following:

- Bay Road
- Browncroft Boulevard/Atlantic Avenue (NY Route 286)
- Carter Road
- Empire Boulevard (NY Route 404)
- Five Mile Line Road (County Road 18)
- Nine Mile Point Road (NYS Route 250)
- Panorama Trail (Route 441 to Pittsford Town Line)
- Penfield Road (East of NYS Route 441)
- Plank Road

Rural Major Collectors are roads that serve to link areas of major development with the arterial highway system. They generally carry medium to low traffic volumes within the town and connect the town with adjacent communities. The highways that meet this classification and are to be developed with sidewalks along one or both sides include the following:

- Salt Road

Rural Minor Collectors are roadways that connect major residential developments to the major collector and arterial highway system via short vehicle trips. They may also connect Penfield with minor collectors and local streets in other towns. The highways



that meet this classification and are to be developed with sidewalks along one or both sides include the following:

- Baird Road
- Blossom Road
- Creek Street
- Jackson Road
- Jackson Road Ext.
- Panorama Trail (Route 441 to Route 286)
- Penfield Road (West of NYS Route 441)
- State Road
- Whalen Road
- Watson Road

Local Roads are roadways that primarily provide direct access to abutting land and provide access to the higher order systems. They provide a lower level of mobility. The highways that meet this classification and are to be developed with sidewalks along one or both sides include the following:

- Allen Road
- Beacon Hills Drive
- Carter Road
- Clark Road
- Daytona Avenue
- Dublin Road
- Embury Road
- Fellows Road
- Gebhardt Road
- Gloria Drive
- Huntington Meadow
- Harris Road
- Hatch Road
- Hermance Road
- Hogan Road
- Huber Road
- Kennedy Road
- Liberty Street
- Linden Avenue
- Marchner Road
- Northrup Road
- Penfield Center Road
- Qualtrough Road
- Scribner Road
- Shoecraft Road
- Sweets Corners
- Watson – Hulburt Road

## Secondary Sidewalk System

The secondary goal of this policy is to require the installation of sidewalks along all residential subdivision roadways and other areas of concentration of residential and commercial development. All new development approved by the Town of Penfield is required to install sidewalks along both sides of all local roads not previously noted.

## Annual Sidewalk Program

The Town of Penfield supports the installation of sidewalks along the Primary Sidewalk System through its annual program of sidewalk construction. This program is funded by the Town Board through the allocation of funds from the town's General Fund, grants, and development sidewalk fees collected in accordance with this policy and the plan provided in Exhibit 1, as well as other priorities established by the Town Board.

## Sidewalk Policy

The Town of Penfield anticipates full compliance with this policy by all new development and redevelopment. However, the Town Board may grant a waiver to the Sidewalk Policy where the installation of sidewalks is not prudent at this time, their installation may interfere with other pending projects, or other factors as determined by the Town Board. The developer must request a waiver from this policy, in writing, for consideration by the Town Board. These waivers must be requested prior to final site plan or subdivision approval is granted by the Planning Board and/or any other authorized town official. In lieu of the installation of sidewalks, the developer shall submit the unit fees to the Town of Penfield prior to receipt of any Building Permit, as defined herein. A sidewalk easement is required for all projects, whether a waiver is granted or not, as determined by the Town Sidewalk Coordinator. All earthwork required for the future installation of sidewalks shall be completed, with or without the sidewalk installation, and provided for in the letter of credit.

All definitions and land uses shall comply with the descriptions provided in the Town of Penfield Zoning Ordinances.

**Residential Development in Residential Districts:** \$500.00 per dwelling unit

Where a new lot(s) has been created and no site plan approvals is granted, this policy shall require the granting of sidewalk easements across the frontage of public dedicated roads. The above fees apply only to the number of new units granted site plan approval.

**Non-Residential Development in Residential Districts:** \$4,000.00 per lot

The determination of non-residential development shall be established by the board granting approval or other authorized official in the Town of Penfield.

### Commercial and Industrial Districts:

Fees shall be equal to the cost to install sidewalks along all roadway frontages for the lands owned by the developer for projects where sidewalks do not currently exist. For projects where sidewalks are already in place, either partially or in their entirety, the Sidewalk Coordinator shall determine the extent of sidewalk repair or replacement that shall be completed by the developer, in addition to filling in any missing sidewalk links along the roadway frontages in the vicinity of the development.

The determination of fees for significant redevelopment or renovation shall be at the discretion of the board having jurisdiction or other authorized town official. Whenever the square footage of the redevelopment or renovation work exceeds more than 20% of the current square footage of the property, the redevelopment or renovation would be considered significant and sidewalks would be required in accordance with this Policy.

All fees collected pursuant to any waivers granted by the Town Board shall be placed in the Sidewalk Capital Account specifically for the installation of sidewalks in locations identified by the Town Board.

### **Waiver Procedures**

The waiver procedure shall be as follows:

- Applicant or individual requesting a waiver shall submit a letter to the Director of Building & Planning Services, prior to receiving final site plan or subdivision approval.
- The Director of Building & Planning Services shall consult with the Project Review Committee (PRC) and the Penfield Sidewalk Coordinator for a recommendation to the Penfield Town Board.
- The waiver request, along with any staff recommendations, shall be forwarded to the Penfield Town Board for review in a Town Board worksession.
- Upon review of all information, the Town Board shall determine if a waiver is appropriate and establish the associated fees and/or sidewalk installation that are necessary to comply with this policy.

### **Easements**

The Town of Penfield shall require a minimum seven (7) foot wide easement along all roadways for the construction, replacement, and maintenance of sidewalks along publicly dedicated roads. The Sidewalk Coordinator shall determine where additional easement widths may be required. The easement shall be in a format acceptable to the Town Attorney and shall be recorded at the Monroe County Clerk's Office.

## Maintenance

The Town of Penfield shall be responsible for the maintenance, replacement, and snowplowing of all sidewalks constructed along publicly dedicated roads classified as Minor Arterial, Major Collector, and Minor Collector within the Town of Penfield. Those classifications have been previously identified in this policy and are shown on Exhibit 1.

The Town of Penfield encourages the installation of sidewalks within residential subdivisions or other roadways not designated in Exhibit 1. Along these roadways, the costs associated with the installation, maintenance, replacement and/or repair of sidewalks shall be borne solely by those residents directly benefiting from the sidewalks installed within their particular subdivision. These costs shall be assessed through an additional tax levy to the parcels located in an Intensified Sidewalk District encompassing the properties benefited. The required annual levy shall be based on a recommendation by the Town Sidewalk Coordinator and the Director of Finance to the Town Board.

Where an Intensified Sidewalk District has been formed, the town's policy is to install, maintain, replace and/or repair sidewalks as required. However, at this time, the Town of Penfield will not provide snow plowing service to sidewalks within the Secondary Sidewalk System. If this practice should change in the future, the cost of plowing will be charged to those properties located in the Intensified Sidewalk District.

### *Intensified Sidewalk Districts*

#### **General**

The Town Board shall require the formation of an Intensified Sidewalk District for the following reasons:

- Installation, replacement, and/or maintenance of sidewalks in an existing subdivision.
- Maintenance and/or replacement of sidewalks located in subdivisions or along local-residential roadways that were installed by others.
- Other projects or sidewalk installations as recommended by the town staff, Planning Board, or other advisory agencies.

The developer or a neighborhood representative must petition the Town Board to create an Intensified Sidewalk District. The property owners within the Intensified District that directly benefit from the sidewalks shall bear the cost of the improvement, replacement, and/or maintenance of the sidewalks.

The Town Board has established the annual charge, for the year 2000, for sidewalk maintenance and/or replacement to be \$25.00 per residential unit. The Town Board reserves the right to periodically update this charge as part of their annual budget process.

Non-residential development rates shall be determined by the Town of Penfield Sidewalk Coordinator and approved by the Town Board.

## Process

### NEW SUBDIVISION DEVELOPMENT

Prior to final Planning Board approval, the Town Board shall determine if an Intensified Sidewalk District is required for a development. If desired, the developer shall prepare a map, plan, and report showing the proposed Intensified Sidewalk District.

The cost to install sidewalks, handicap ramps, and crosswalks shall be borne by the developer and shall be covered in the Letter of Credit for the project.

Sidewalks installed along Arterials, Collectors, and Local Roads, as determined by the Town of Penfield Sidewalk Policy and shown in Exhibit 1, shall not be required to form an Intensified Sidewalk District. The installation and maintenance costs for these sidewalks will be funded through the General Fund.

### EXISTING SUBDIVISION DEVELOPMENT

An existing neighborhood may petition the Town Board to install sidewalks along local-residential roadways not designated for sidewalk installations. The Town Sidewalk Coordinator will develop a report and preliminary layout of proposed intensified sidewalk facilities, including, but not limited to:

- Location of sidewalks
- Need for easements
- Relocation or replacement of utilities
- Relocation or replacement of landscaping
- Location and number of cross-walks
- Location and number of handicap accessible ramps
- Preliminary cost estimates
- District financing options

All sidewalk construction will be completed in conformance with the requirements contained in *Town of Penfield Design and Construction Specifications*, latest version.

The Town Board shall require that a minimum of 75% of all resident owners and 75% of assessed valuation within the proposed district shall be in agreement with the conditions set forth in this policy for the formation of the proposed district.

# APPENDIX D – GREEN INFRASTRUCTURE

## Porous Pavement

### Overview

A porous paved surface is one that is designed to absorb stormwater and allow it to return to the ground, as opposed to a non-porous paved surface, which is designed to repel water and direct it toward a storm drain. Porous pavements can be achieved through a variety of different materials, including pervious concrete, porous asphalt, and permeable pavers. The function of the paved porous surface is to act as a hard, durable surface that can be walked or driven on, but that also permits stormwater to pass through it into subsurface layers of crushed stone. While a typical, non-porous pavement section also sits on a bed of crushed stone, this layer is normally compacted to be as dense as possible, providing the strongest possible foundation for the paved surface. With porous pavements, the crushed stone bed is not compacted to this degree. The rock layer is deeper than in standard construction (two to four feet), and it is designed with lots of gaps between the stones: up to 40 percent of the subsurface can be “void” space. Sometimes called a recharge bed, this layer of stones allows water to filter through and into the underlying water table.

Porous asphalt and concrete are frequently compared to a Rice Krispies™ treat, because they consist of relatively coarse particles of

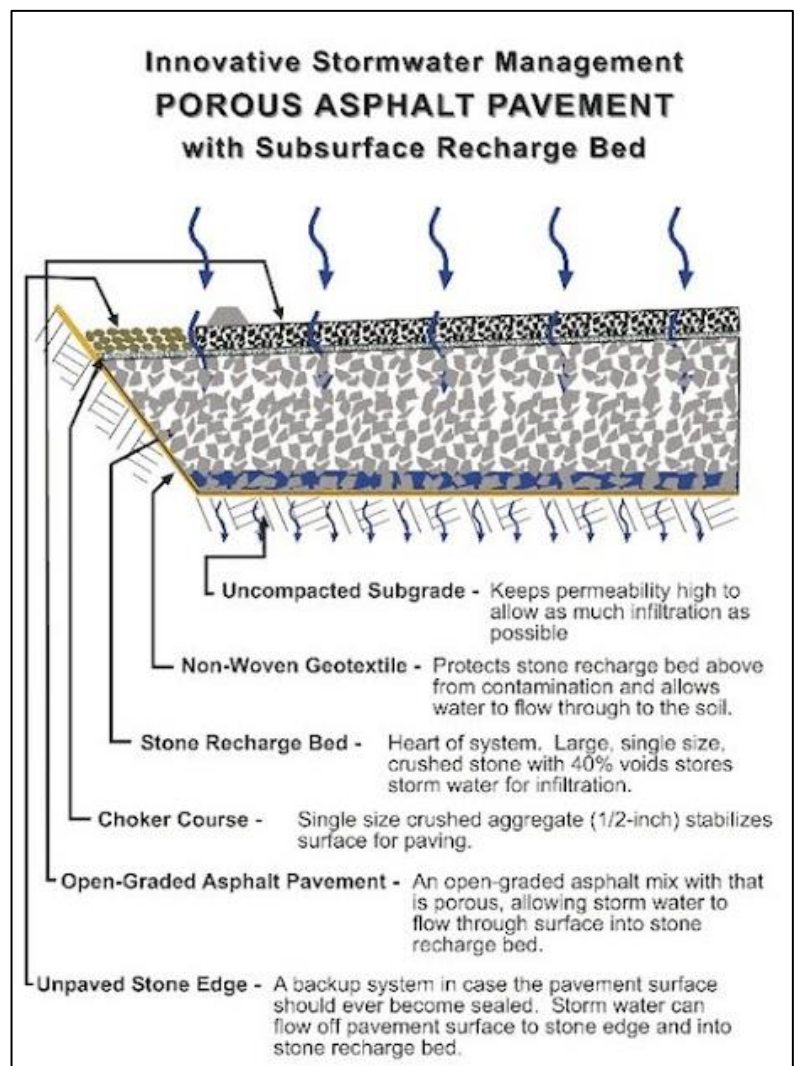


Figure D-7-3: Porous Asphalt Cross-Section

Source: National Asphalt Pavement Association



aggregate (crushed rock) glued together with either asphalt or cement. Fine particles, such as sand, are either not used or are used in smaller proportions than in impervious surfaces. The texture of these pervious surfaces is rougher than impervious concrete or asphalt.

In the case of porous pavers, the paved surface itself is not (necessarily) porous or pervious, but the gaps between the pavers is intended to be wide enough to allow stormwater to pass through. The sand or gravel mixture between the pavers is not glued together with polymeric fillers. While this improves water infiltration, it can also mean that the material between pavers is washed away or vacuumed up during maintenance.

Because of the lack of subgrade compaction, porous pavements are not normally used in mainline roads that carry heavy truck traffic. The depth of the subgrade can be adjusted to provide greater stability, but standard applications are for parking lots, sidewalks and the parking lanes of city streets.

### **Benefits and Costs**

There are numerous benefits associated with porous pavements, including reduced costs for off-site stormwater treatment, reduced need for salting during the winter months and increased traction. Combined with other technologies, such as structural soils or a suspended sidewalk, the use of porous pavement design can reduce or eliminate conflicts between tree roots and sidewalks.



**Figure D-2: Grand Avenue Porous Pavement Sidewalk Test Segment**

*Source: OCWEP / Save the Rain*

## STORMWATER TREATMENT

Porous pavements can significantly reduce stormwater treatment costs. As stated in the National Cooperative Highway Research Program’s *Evaluation of Best Management Practices for Highway Runoff Control*, “Permeable pavements are a unique stormwater control technique because the infrastructure is the BMP.” When implemented properly, porous pavements can reduce the need for other forms of on-site stormwater mitigation, such as retention ponds and drainage to off-site treatment plants. Many studies agree that, when combined with savings in stormwater management, the overall costs of porous pavement are similar to or lower than conventional paving materials.

## ICE AND SNOW CONTROL

When snow melts on a pervious cement sidewalk, it is absorbed by the sidewalk itself and will not freeze on the sidewalk’s surface. For this reason, standard ice control methods, such as the use of rock salt, is either not necessary or can be greatly reduced.

## DURABILITY AND CLIMATE

In cold weather climates such as in Central New York, porous pavements show durability comparable to that of impervious asphalt and concrete. Because porous pavements are designed to allow water flow through, there is insufficient moisture in the paved material to result in pavement heaving or cracking as a result of freeze-thaw cycles. Also, at least one study has shown that porous pavements have a warmer subgrade and fewer freeze-thaw cycles than impervious pavement, possibly as a result of air trapped in the base material.<sup>6</sup> Figure D-3 shows a comparison between two parking lots on a winter day. One hour after plowing, there is less snow on the porous pavement lot (left) than on the dense graded asphalt lot (right). In the context of sidewalks, this may suggest that porous pavement sidewalks would



Figure D-3 - Porous asphalt (left) and dense mixed asphalt (right) parking lots shown one hour after plowing on a 25° F day in February, 2007. Source: University of New Hampshire Stormwater Center



Figure D-4 - Porous asphalt (left) and dense mixed asphalt (right) parking lots shown after a spring rain on snow event Source: University of New Hampshire Stormwater Center

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<sup>6</sup> "Subgrade Temperature and Freezing Cycles in Pervious Pavements", *Cold Regions Engineering 2009, ASCE*. 2009.



## PEDESTRIAN SAFETY

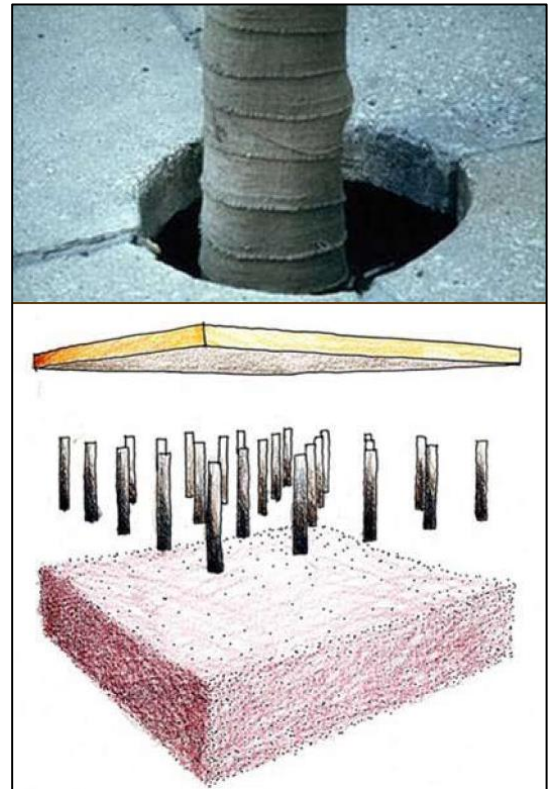
A study in the journal *Safety Science* concludes that there is “preliminary support for the use of pervious concrete as a slip-resistant walking surface in areas of high pedestrian traffic where slip and fall injury are likely during inclement weather.”<sup>7</sup> The study took biomechanical readings of adults as they walked across both porous and non-porous concrete surfaces and determined that the porous surface was more slip-resistant in icy conditions. This suggests that an added advantage to the use of porous pavements in Central New York could be a reduction in pedestrian slip and fall accidents.

## TREE ROOT CONFLICTS

Porous pavement systems include modifying both the walking surface and a considerable amount of subgrade material, which presents an opportunity to give tree roots room to grow without causing cracks and buckling in the sidewalk itself. “Suspended sidewalks” are built on supports that prevent the sidewalk from compacting the soil below. The area below the sidewalk can be filled with well-aerated, high-quality soil.<sup>8</sup>

## CONSTRUCTION COSTS

Estimates of the difference in cost between porous pavement and non-porous pavement vary widely. In theory, there should be very little difference between the costs of the paving materials themselves, because they are produced using the same methods and materials as impervious pavements. However, the limited demand for these products means that they must be manufactured separately and generally in smaller quantities, making it difficult to achieve the economies of scale found in the production of impervious asphalt and concrete. Similarly, the techniques used to install these materials properly can be difficult for contractors to adjust to, because the materials and construction specifications are relatively new and may be unfamiliar to individual contractors.



**Figure D-5: A “suspended” sidewalk is built on vertical stabilizers that provide the sidewalk with structural support while giving tree roots room to grow**

*Source: Urban design for a wind resistant urban forest*

<sup>7</sup> “Slip-related characterization of gait kinetics: Investigation of pervious concrete as a slip-resistant walking surface”, *Safety Science*, January 12, 2013.

<sup>8</sup> *Urban design for a wind resistant urban forest*, University of Florida, Institute of Food and Agricultural Sciences, Florida Cooperative Extension Service, School of Forest Resources and Conservation and the Environmental Horticulture Department, Urban Forest Hurricane Recovery Program series. September 2007.

The question of cost difference is also confounded by the fact that, as noted earlier, porous pavements are a Best Management Practice for stormwater reduction. The stormwater captured in a porous pavement system is stormwater that does not need to be captured and managed elsewhere in a project. Properly planned, sited and constructed, a porous pavement system can mean the elimination of other infrastructure, such as pipes to a sewer system, retention ponds, and swales.

A 2007 article in the journal *Landscape and Urban Planning* identified porous pavement sidewalks and parking lots as the most cost-effective low impact development (LID) system for managing stormwater.<sup>9</sup> This article, focusing on options within a heavily urbanized area, compared porous pavements to green roofs, rainwater harvesting techniques and underground storage tanks.

Comparing only the cost of installing a square foot of porous pavement sidewalk, which is also a stormwater BMP, to the cost of installing a square foot of traditional concrete, which increases impervious surface and adds to total runoff, is misleading. An analysis conducted by the City of Olympia in 2005 took into consideration the total long-term maintenance costs of adding a stormwater retention pond to offset the addition of impervious surface when traditional concrete is used in sidewalks. This analysis indicated that “the cost per yard for traditional concrete sidewalk is \$101.16 per square yard and the cost for pervious concrete sidewalk is \$54.16 per square yard.”<sup>10</sup> This analysis shows higher costs for the installation of a square yard of porous pavement compared to a square yard of traditional concrete: porous pavement is about 50 percent more expensive to install. However, the cost savings for a large project in an urbanized area with few alternatives for stormwater management more than offset these costs.

## CONSTRUCTION ISSUES

Porous concrete is hard to batch and hard to place. A successful project needs good quality control at the batch plant, cement truck drivers who are familiar with the materials and experienced workers to do the application.<sup>11</sup> Locally, because the Save the Rain initiative has funded so many permeable pavement projects, it has meant that several local contractors have gained experience with these materials and processes.

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<sup>9</sup> “Rapid assessment of the cost-effectiveness of low impact development for CSO control”, *Landscape and Urban Planning*, Volume 82, Issue 3, September 24, 2007.

<sup>10</sup> “Traditional versus Pervious Concrete Sidewalks Construction and Maintenance Cost”, memo from City of Olympia Project Engineer II Melissa McFadden to City of Olympia Stormwater Engineering Supervisor Andy Haub. February 11, 2005.

<sup>11</sup> “Porous Concrete Sidewalks - How to Build Sidewalks and not Stormwater Ponds”

“Generally the more engaged the batch plant is in the pervious concrete project, the more likely the product will be successful. A pre-batch meeting with all parties, as well as feedback about the quality of the material batched, is helpful.”<sup>12</sup>

### *Conflicts with Ordinances*

It is not unusual for local ordinances to specify the type of material to be used in sidewalk construction (see [Table 3.3](#)). For example, in the Village of Jordan, regulations specify that sidewalks should be built out of concrete with 3,000 pounds minimum strength and a “1-2-4” mix, which specifies the proportions of cement, fine aggregates and coarse aggregates in the concrete.

To date, in Onondaga County, porous pavement sidewalk installations have occurred largely through variances and other special permissions. As these materials and processes become more widely accepted as a means of both accommodating pedestrians and managing stormwater, local ordinances must adapt and include new types of materials. Until then, planned porous pavement installations should be discussed with local public works officials.

### *Maintenance*

Over time, dirt, dust and debris can reduce porous pavements’ porosity, reducing its effectiveness in absorbing stormwater. Even when clogged, however, studies have shown that “surface infiltration rates usually well exceed 1 inch per hour, which is sufficient in most circumstances for the surface to effectively manage intense stormwater events.”<sup>13</sup>

The Onondaga County Department of Water Environment Protection (OCWEP) recommends using a power vacuum twice a year to remove sediment build-up in porous pavements, maximizing stormwater absorption. OCWEP has developed an extensive set of procedures for maintaining green infrastructure.

An analysis conducted for OCWEP put the cost of renting a small (23 to 30 inch effective vacuuming width) power-driven vacuum sweeper at \$2,000 a month. This analysis also estimates the cost of buying a smaller walk-behind unit, appropriate for use on sidewalks, at between \$9,000 and \$10,000.

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<sup>12</sup> Ibid.

<sup>13</sup> USEPA Stormwater Menu of BMPs, online resource.  
<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=135>

## Location Considerations

Porous pavements work best when stormwater that falls on the porous surface has time to infiltrate into the recharge bed, and in places where sediment loading from adjacent land uses is minimal. In other words, flat areas surrounded by lots of impervious surfaces are optimal locations for something like a porous pavement parking lot. In areas where there is a lot of dirt and dust, these sediments can clog the pavement's pores, reducing infiltration and requiring increased maintenance. Additionally, less costly BMPs, such as swales, may be appropriate in areas where there is sufficient right-of-way to accommodate them into the street's cross-section.

## More Information

- *Porous Concrete Sidewalks - How to Build Sidewalks and not Stormwater Ponds*, ITE District 6 Annual Meeting  
Documents experiences in Olympia, Washington, with porous pavement sidewalks and provides some helpful guidance on planning, constructing and maintaining porous pavements.  
<http://olympiawa.gov/~media/Files/PublicWorks/Water-Resources/ITE%20Pervious%20Concrete%20Sidewalk%20Paper.ashx>
- *Stormwater Menu of Best Management Practices*, National Pollutant Discharge Elimination System, USEPA  
Includes a section summarizing porous pavement specifications, benefits and costs with a short bibliography.  
<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=135>
- *Urban design for a wind resistant urban forest*, University of Florida  
Street tree selection to minimize conflicts between tree roots and sidewalks.  
<http://hort.ufl.edu/woody/documents/EP309.pdf>
- *Stormwater Management Handbook*, US Environmental Protection Agency  
Chapter 5 of this handbook presents examples of streetscape improvements that minimize stormwater runoff, including porous pavement sidewalks and street trees.  
[http://www.epa.gov/dced/pdf/northern\\_kentucky\\_ch5-6.pdf](http://www.epa.gov/dced/pdf/northern_kentucky_ch5-6.pdf)

# APPENDIX E – PRIORITY ZONE SUMMARY

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## CONTENTS

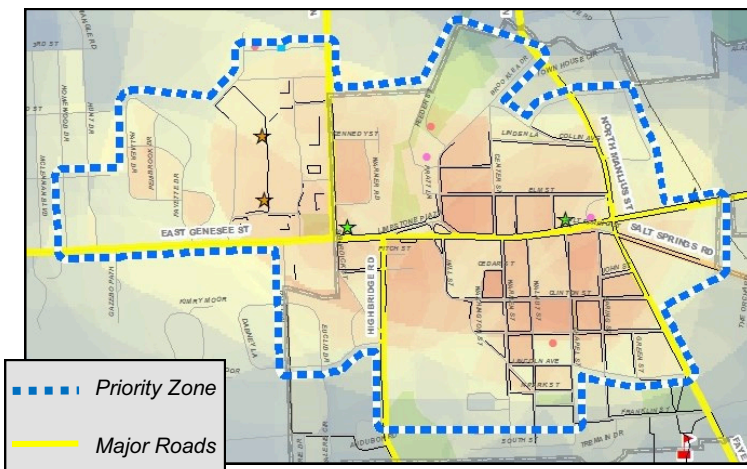
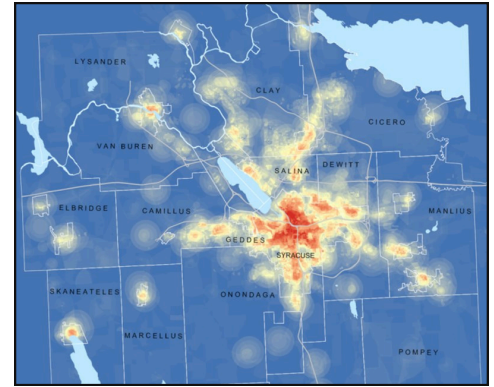
- What is a Priority Zone?
- Priority Zone Overview Map
- Individual Priority Zone Maps

# What is a Priority Zone?

## Syracuse Metropolitan Transportation Council Sustainable Streets Project: Part 1, Sidewalks



In 2013, the Syracuse Metropolitan Transportation Council (SMTC) developed the region's first pedestrian demand model, designed to assist municipalities in prioritizing pedestrian infrastructure investments (sidewalks, pedestrian signals, etc.). This model uses geographic information systems (GIS) software to combine factors like distance to schools, population density and a variety of demographic features. Where these inputs overlap, the model produces higher scores, shown graphically as "hot" areas on a hot-cold map.

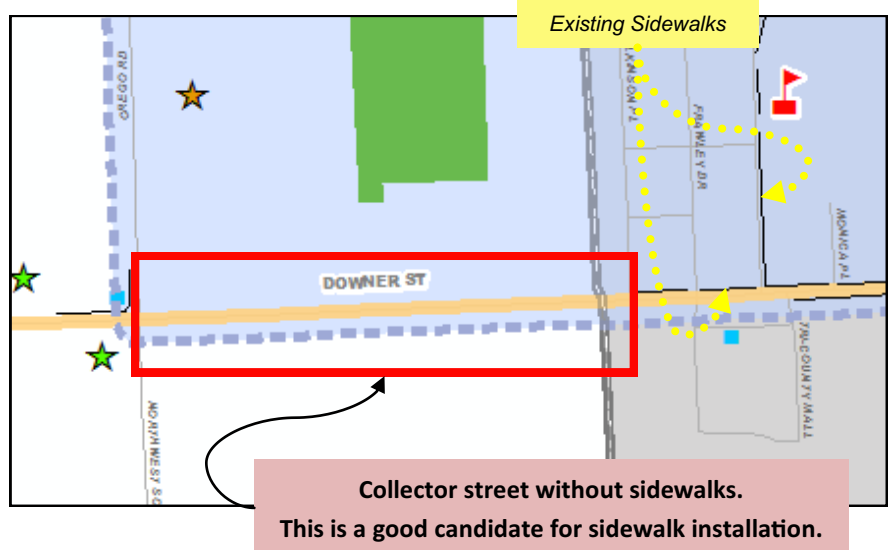


These hotspots form the basis for the Priority Zones: areas identified as having a high potential for pedestrian activity. In the Priority Zones the costs of sidewalks, particularly on major roadways, are likely to be more than outweighed by their benefits.

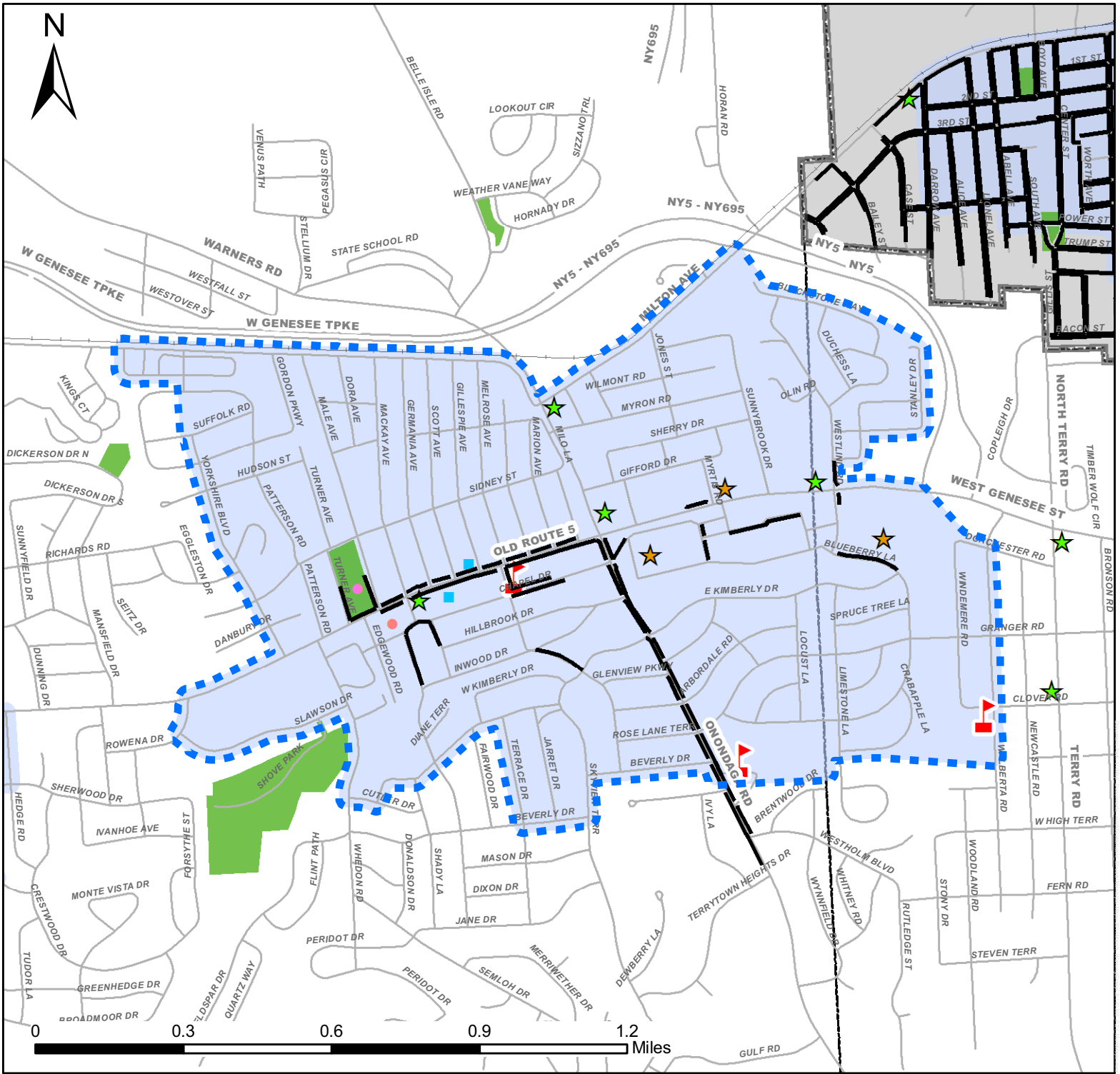
For a map of Priority Zones and existing sidewalks go to: [smtc.maps.arcgis.com](http://smtc.maps.arcgis.com) and find "Sustainable Streets" in the Gallery.

**Priority Zones are intended as a source of guidance for municipal planning. They are not regulatory, and they do not preclude the consideration of sidewalks outside their boundaries.**

As a planning tool at the city, town or village level, the Priority Zones can be combined with the SMTC's sidewalk inventory to focus limited local resources on critical gaps in sidewalk infrastructure, for example along arterial or collector roadways, near schools or adjacent to major commercial areas.







**Destinations**




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Supermarkets
-  Community Ctr./Library
-  Parks
-  Post Office
-  Town/Village/City Hall

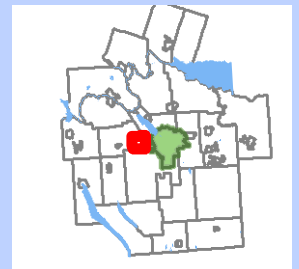
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Camillus - Fairmount**



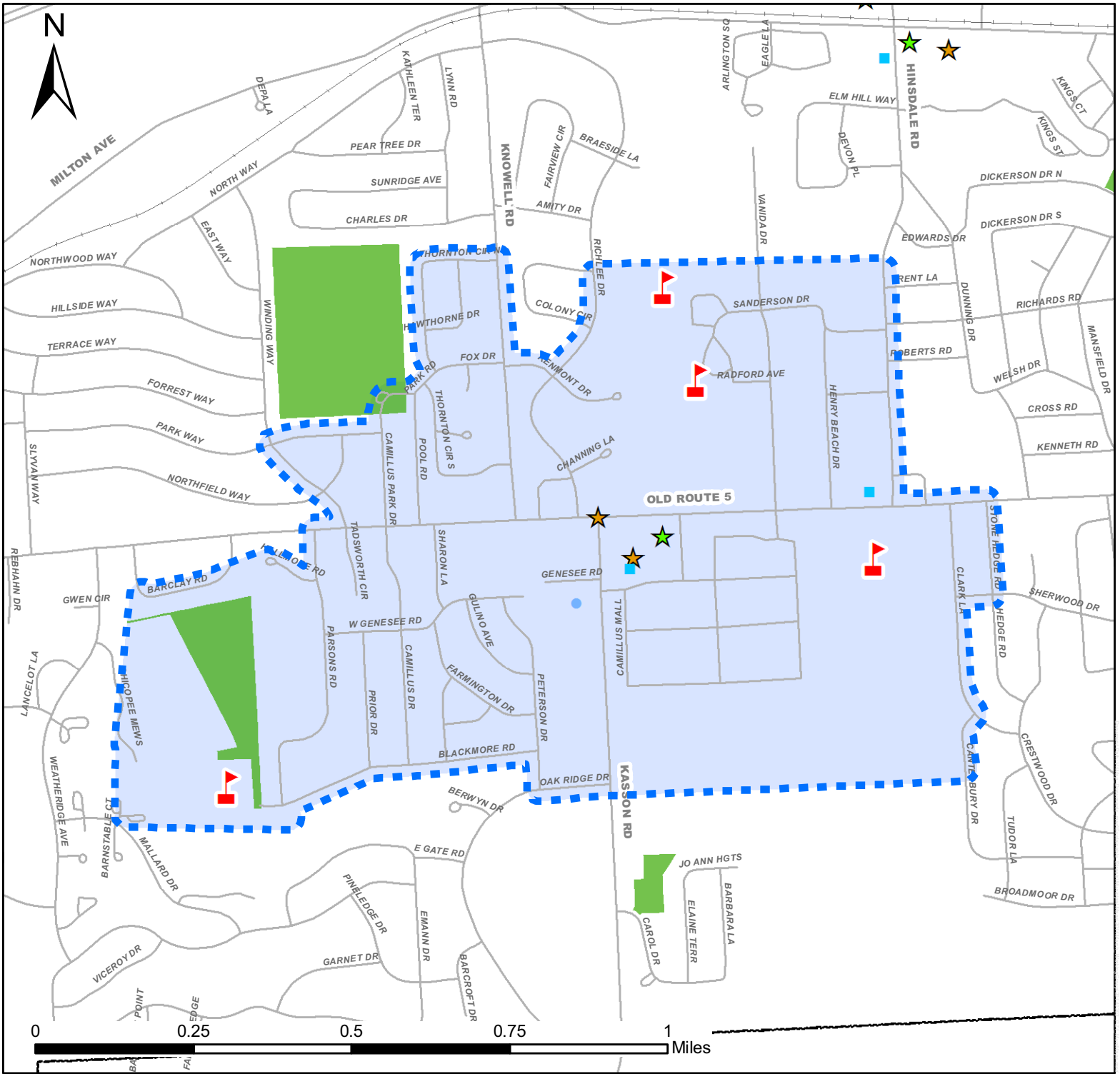
100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org

**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



*This map is for presentation purposes only.  
The SMTC does not guarantee the accuracy or completeness of this map.*



### Destinations




-  Schools
-  Supermarkets
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-  Library
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-  Town/Village/City Hall

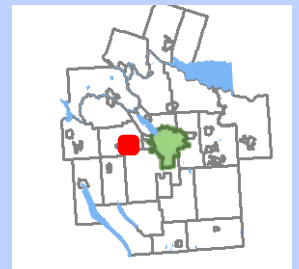
## PRIORITY ZONE 2 Camillus - West Genesee



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org

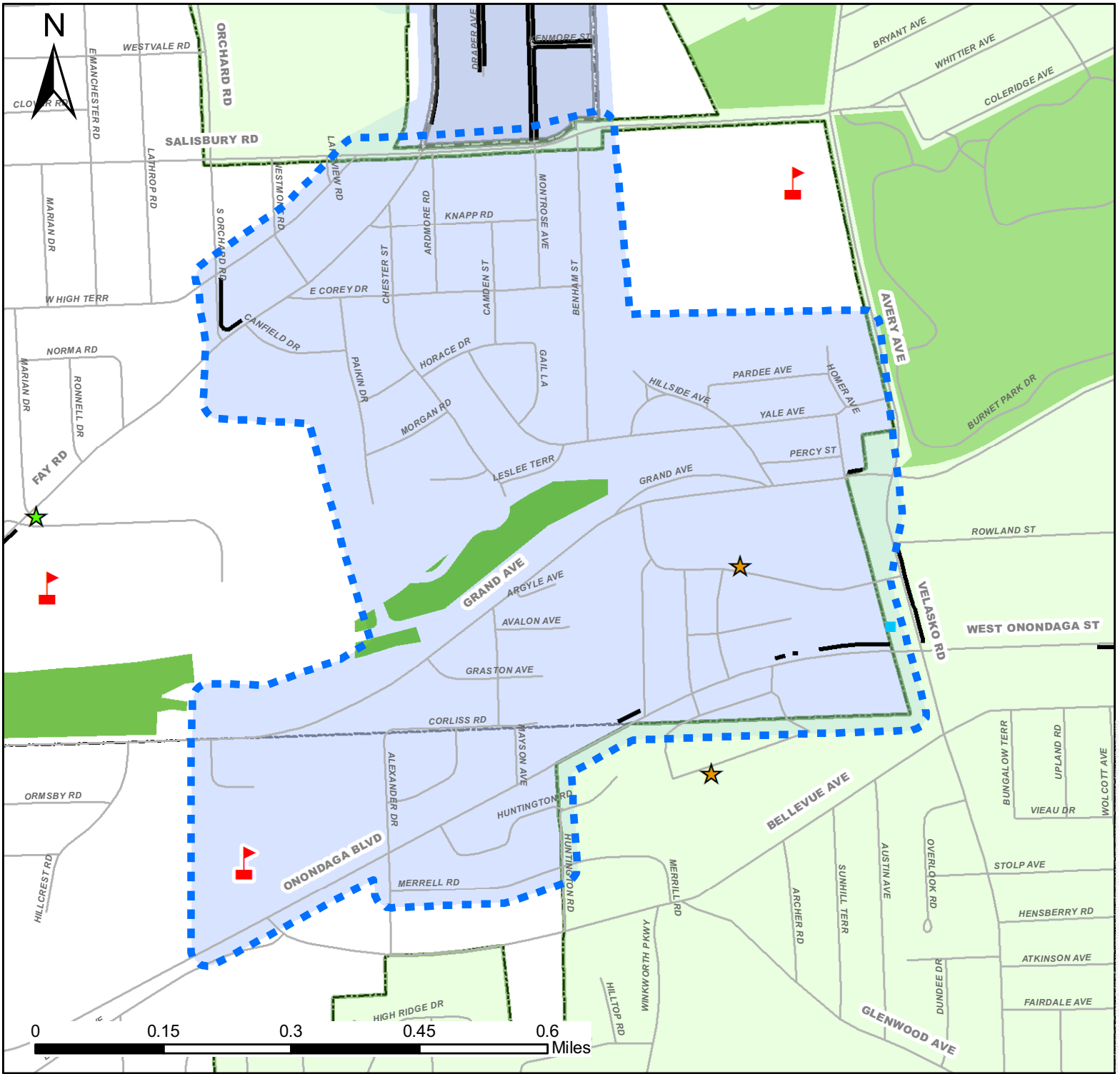
### LEGEND

-  Existing Sidewalks
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The SMTC does not guarantee the accuracy or completeness of this map.*





**Destinations**




-   
 Schools
-   
 Pharmacies
-   
 Convenience Store
-   
 Library
-   
 Community Ctr./Library
-   
 Parks
-   
 Post Office
-   
 Town/Village/City Hall
-   
 Supermarkets

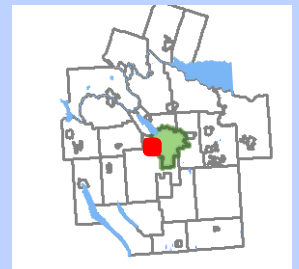
**PRIORITY ZONE 3  
Camillus/Geddes**



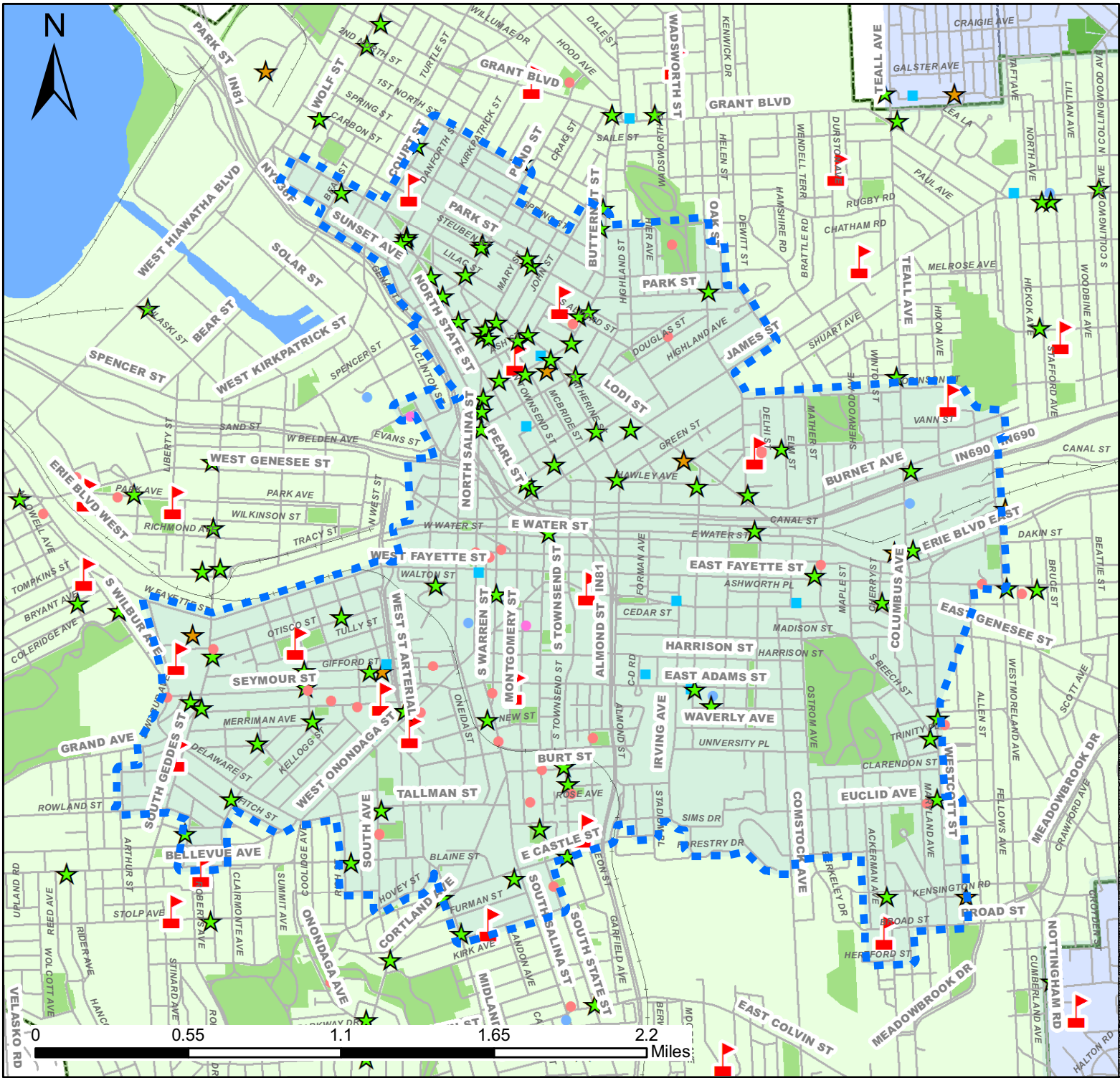
100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org

**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



*This map is for presentation purposes only.  
The SMTC does not guarantee the accuracy or completeness of this map.*



**Destinations**

- Schools
- Convenience Store
- Pharmacies
- Community Ctr./Library
- Parks
- Library
- Supermarkets
- Post Office
- Town/Village/City Hall

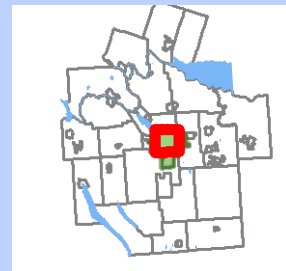
**PRIORITY ZONE 4**  
**City: Maintenance Zone**



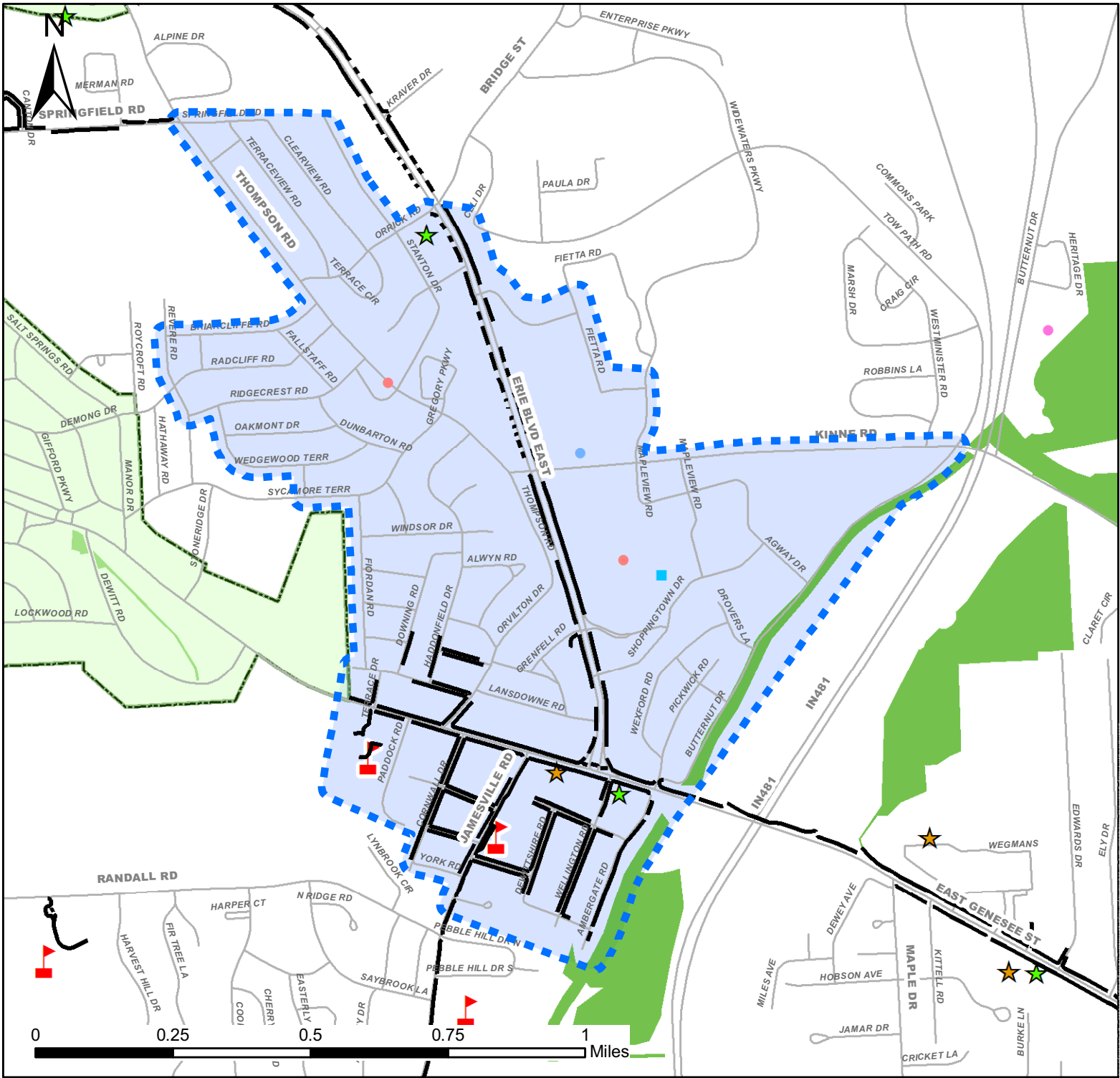
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(315) 422-5716  
Fax: (315) 422-7753  
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**LEGEND**

- Town Boundaries
- City of Syracuse



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**Destinations**

- Schools
- Supermarkets
- Pharmacies
- Community Ctr./Library
- Convenience Store
- Parks
- Library
- Post Office
- Town/Village/City Hall

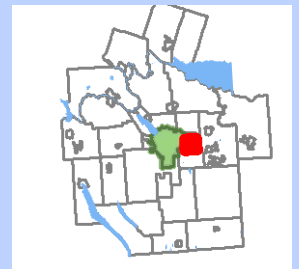
**PRIORITY ZONE 5  
Dewittshire**



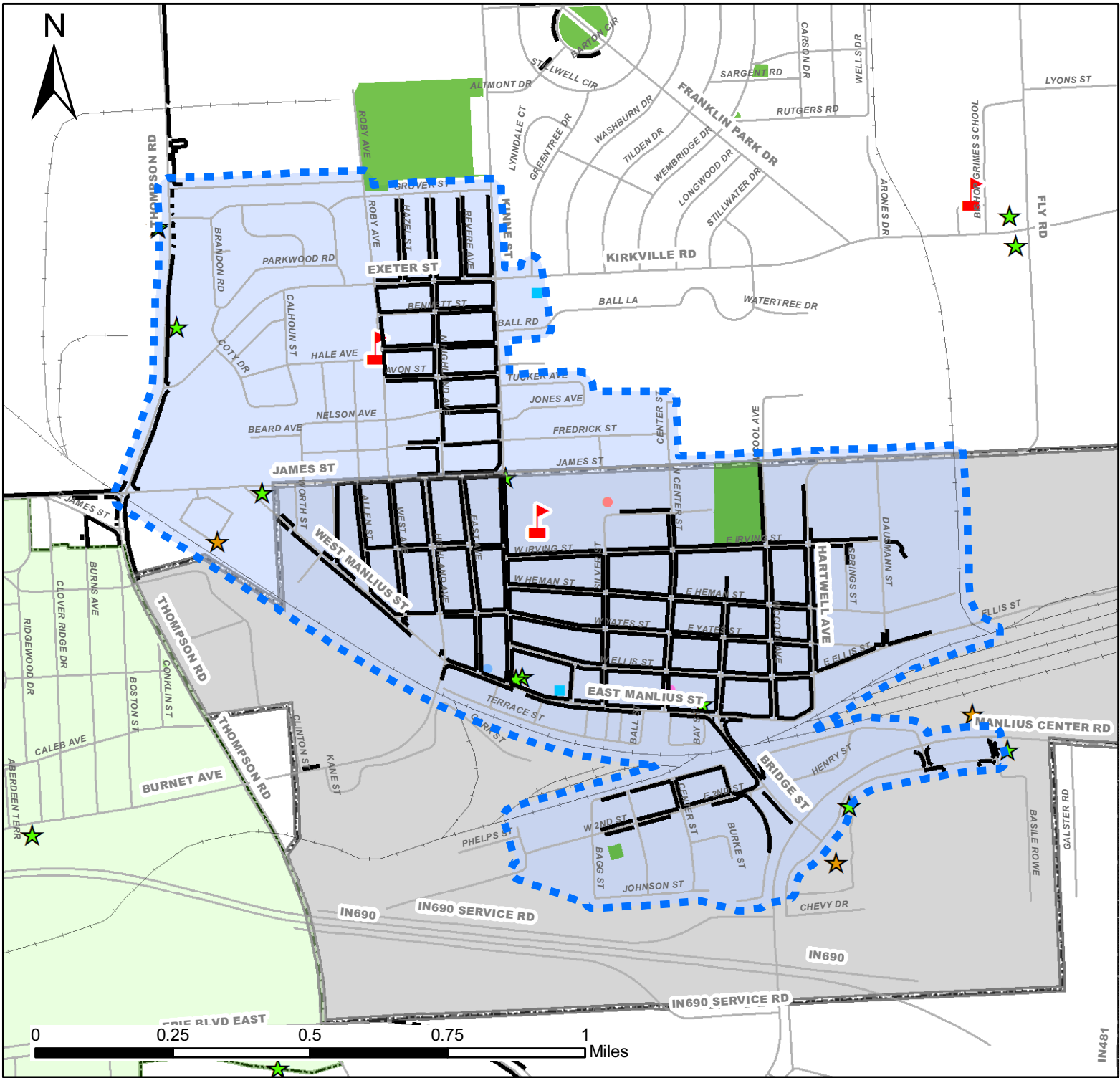
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**LEGEND**

- Existing Sidewalks
- Town Boundaries
- City of Syracuse



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**Destinations**




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Community Ctr./Library
-  Parks
-  Post Office
-  Supermarkets
-  Town/Village/City Hall

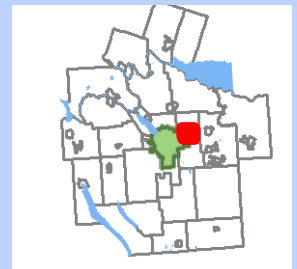
**PRIORITY ZONE 6  
East Syracuse**



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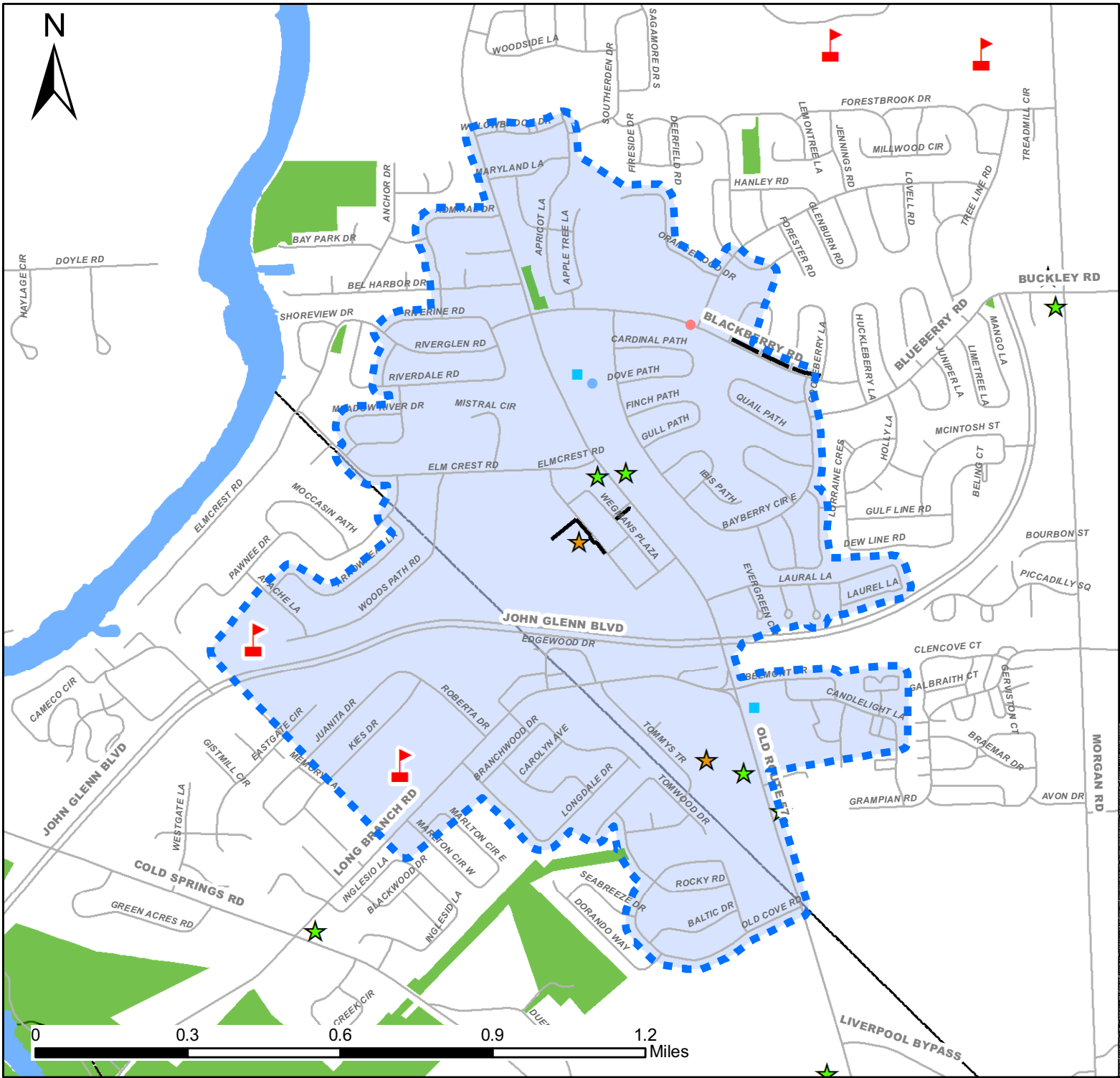
**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



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**Destinations**




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Supermarkets
-  Community Ctr./Library
-  Parks
-  Post Office
-  Town/Village/City Hall

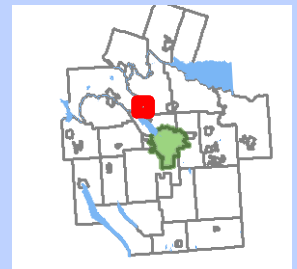
**PRIORITY ZONE 7  
John Glenn / Route 57**



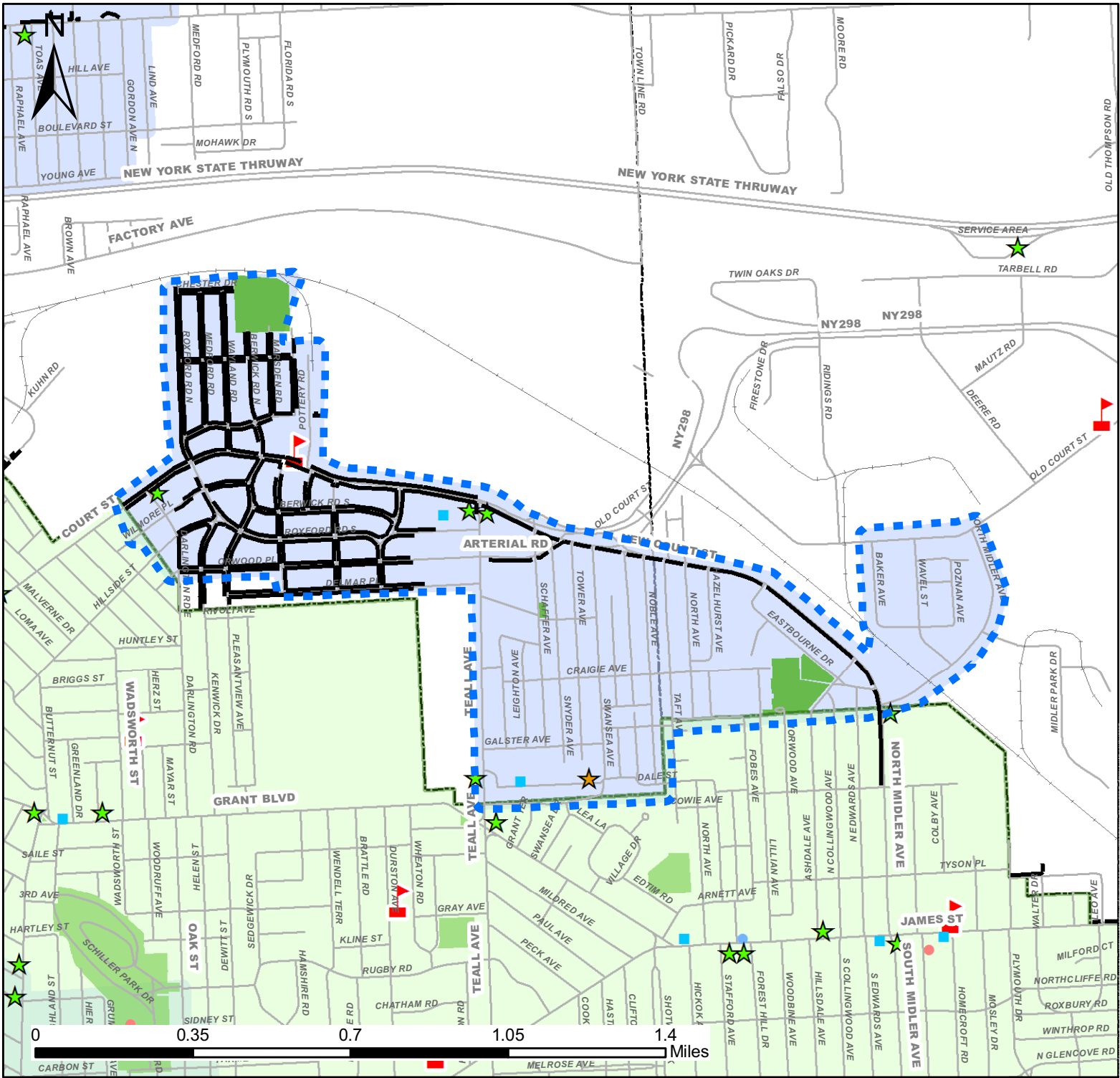
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**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



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**Destinations**




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Community Ctr./Library
-  Parks
-  Post Office
-  Supermarkets
-  Town/Village/City Hall

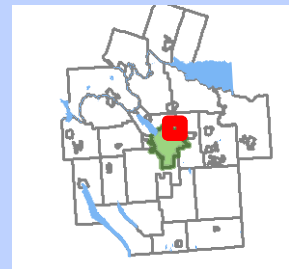
**PRIORITY ZONE 8**  
**Lyncourt**



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**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



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**Destinations**




-   
 Schools
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 Supermarkets
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 Pharmacies
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 Community Ctr./Library
-   
 Convenience Store
-   
 Parks
-   
 Post Office
-   
 Town/Village/City Hall

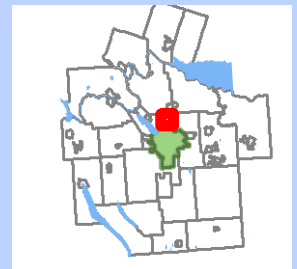
**PRIORITY ZONE 9  
Mattydale**



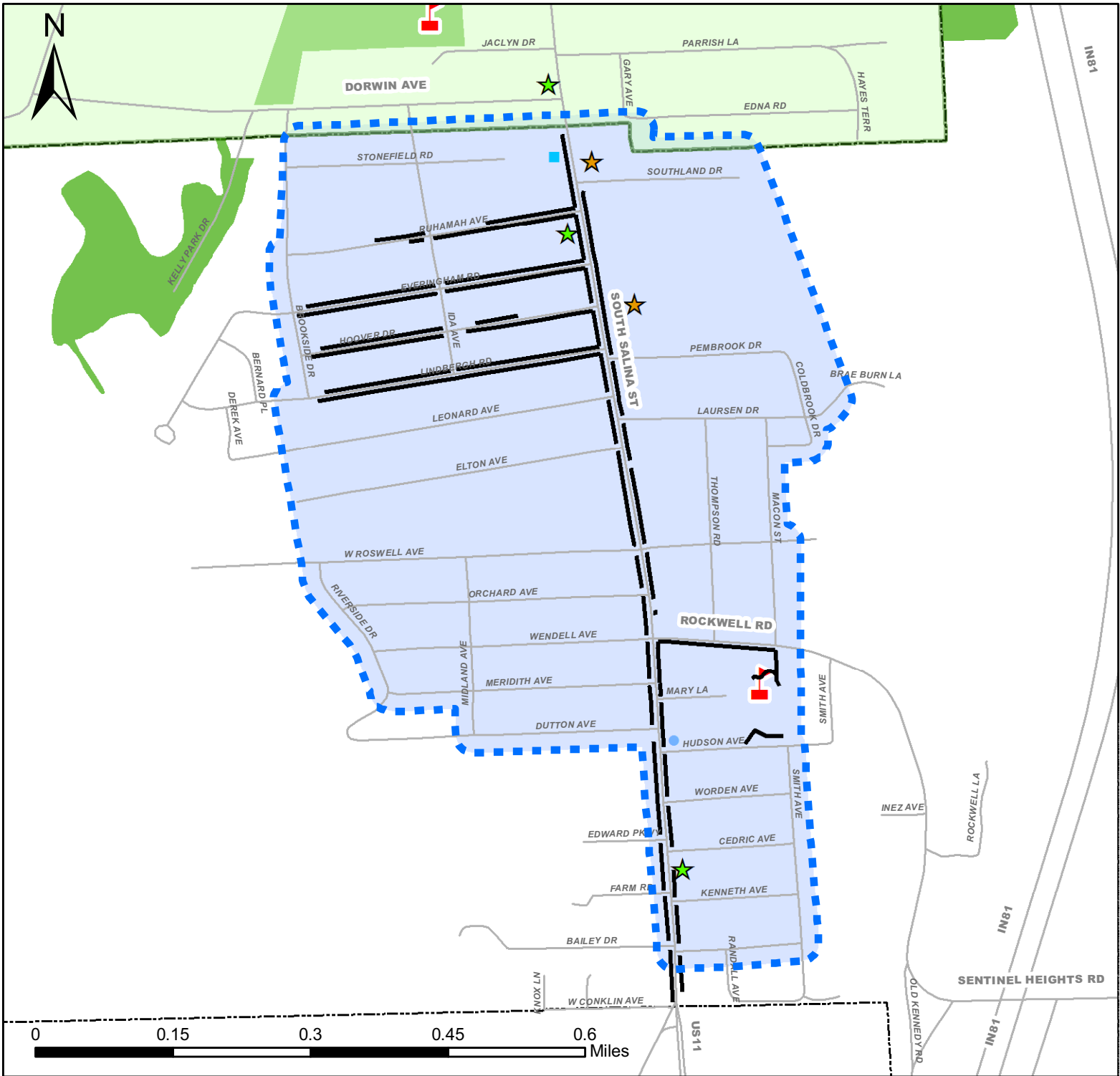
100 Clinton Square  
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 Syracuse, NY 13202  
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**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



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**Destinations**




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Supermarkets
-  Community Ctr./Library
-  Parks
-  Post Office
-  Town/Village/City Hall

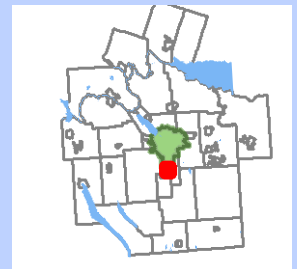
**PRIORITY ZONE 10  
Nedrow**



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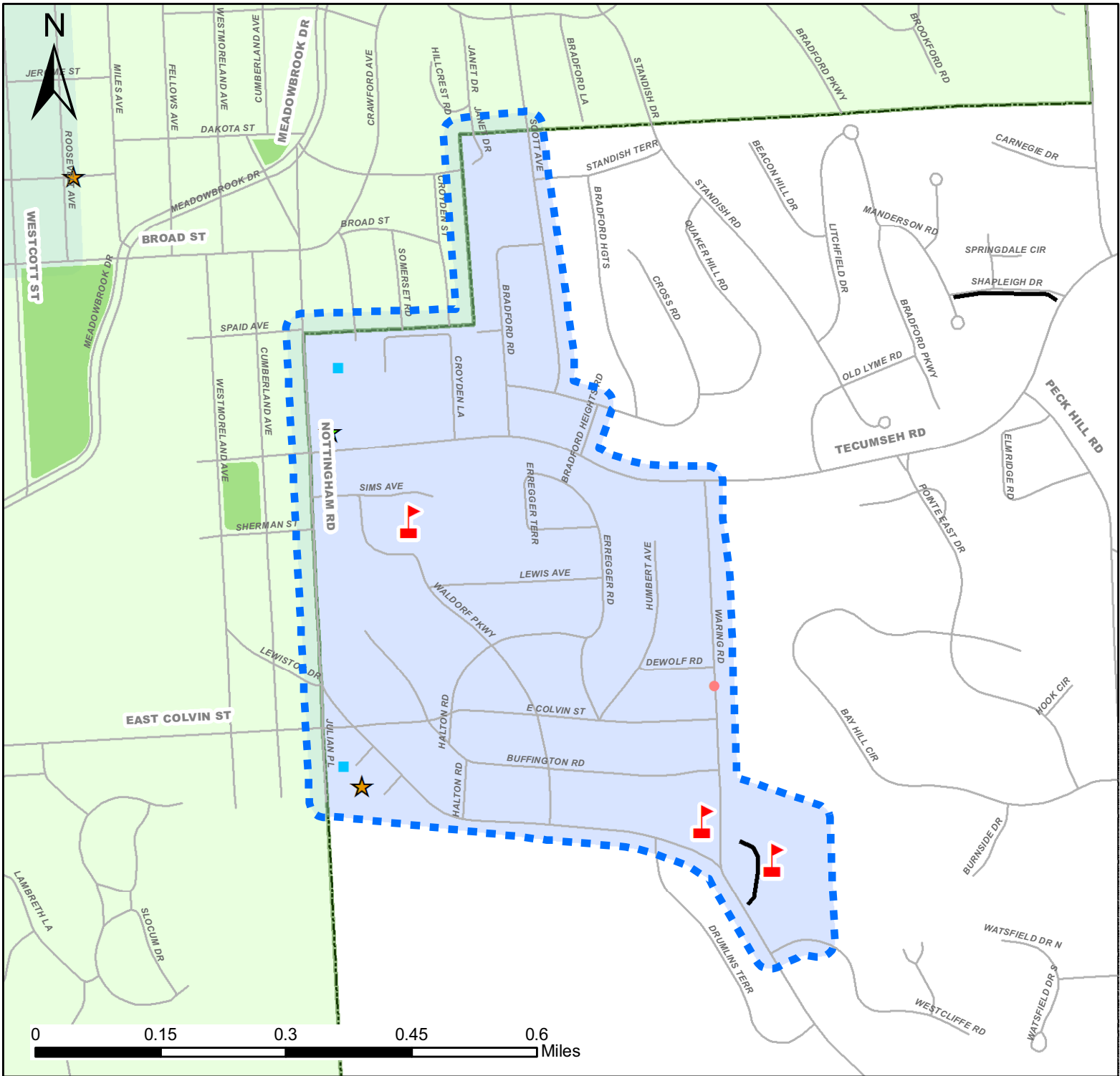
**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



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**Destinations**

- Schools
- Pharmacies
- Convenience Store
- Library
- Supermarkets
- Community Ctr./Library
- Parks
- Post Office
- Town/Village/City Hall

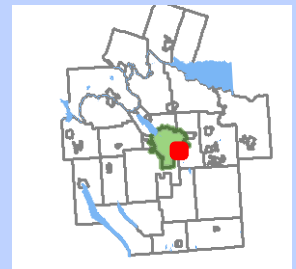
**PRIORITY ZONE 11  
Nottingham / Skytop**



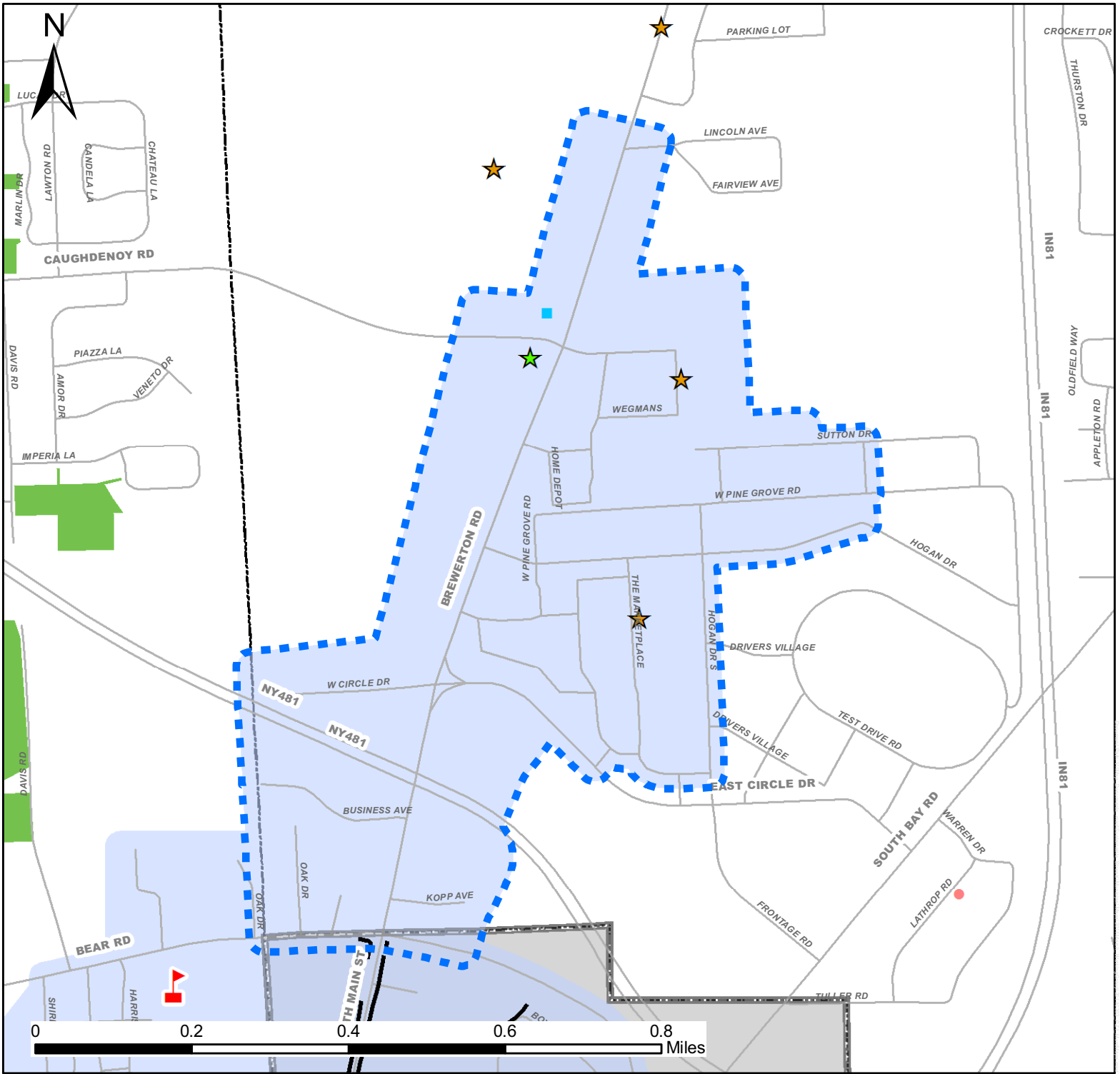
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Fax: (315) 422-7753  
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**LEGEND**

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- Town Boundaries
- City of Syracuse



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

**Destinations**

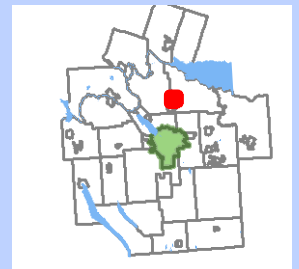
-   
 Schools
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 Pharmacies
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 Convenience Store
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 Library
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 Supermarkets
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 Community Ctr./Library
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 Parks
-   
 Post Office
-   
 Town/Village/City Hall

**PRIORITY ZONE 12**  
**Route 11 / Circle Drive**

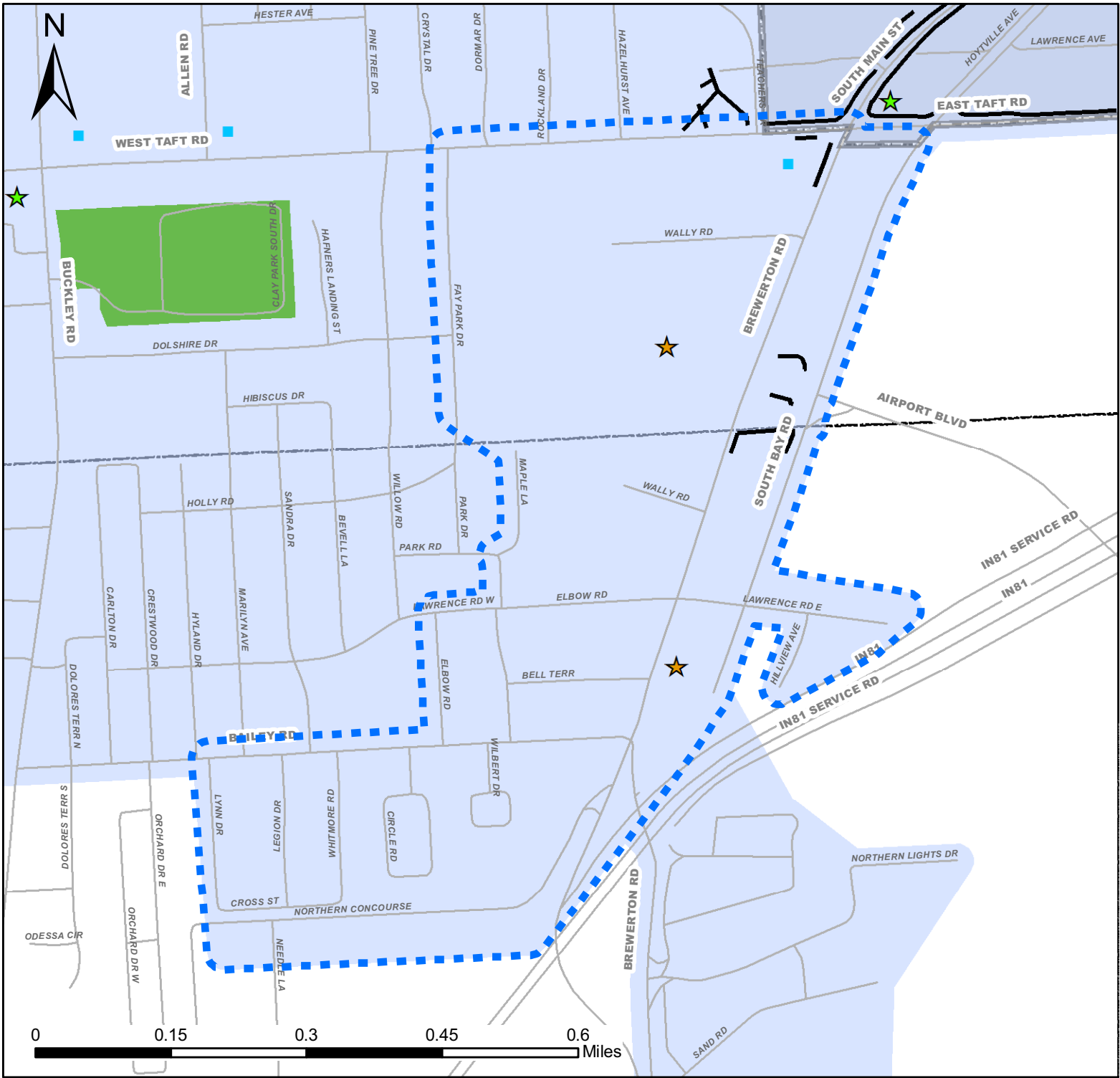
  
 100 Clinton Square  
 126 North Salina St, Suite 100  
 Syracuse, NY 13202  
 (315) 422-5716  
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**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



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

**Destinations**

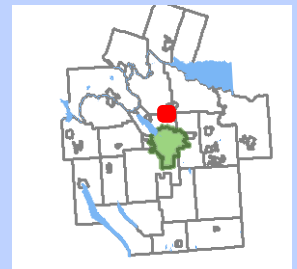
-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Supermarkets
-  Community Ctr./Library
-  Parks
-  Post Office
-  Town/Village/City Hall

**PRIORITY ZONE 13  
Route 11 / South Bay Road**

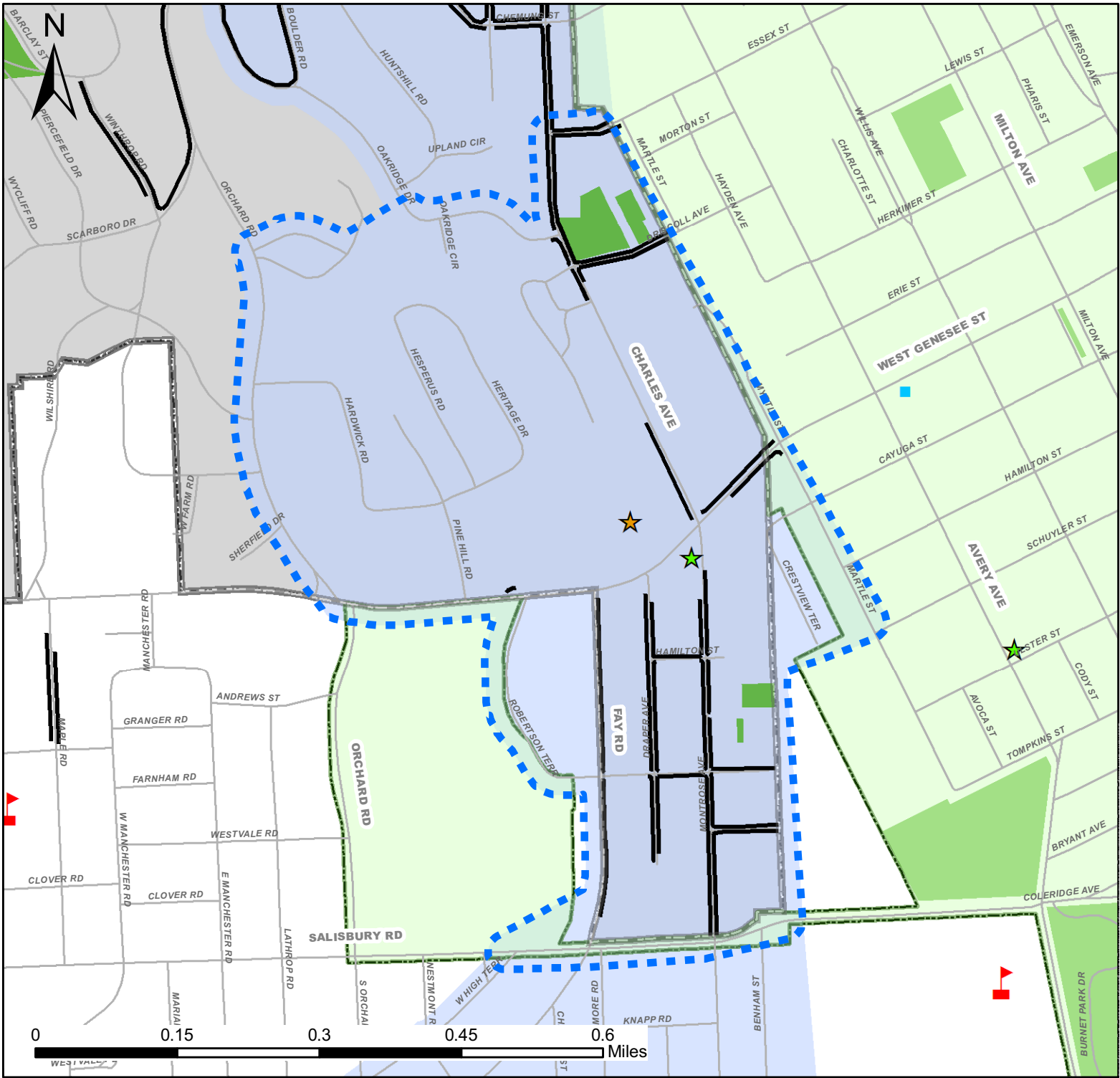
  
 100 Clinton Square  
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 Syracuse, NY 13202  
 (315) 422-5716  
 Fax: (315) 422-7753  
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**LEGEND**

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-  City of Syracuse



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**Destinations**

- Schools
- Supermarkets
- Pharmacies
- Community Ctr./Library
- Convenience Store
- Parks
- Library
- Post Office
- Town/Village/City Hall

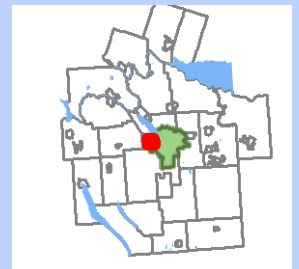
**PRIORITY ZONE 14  
Solvay - Westvale**



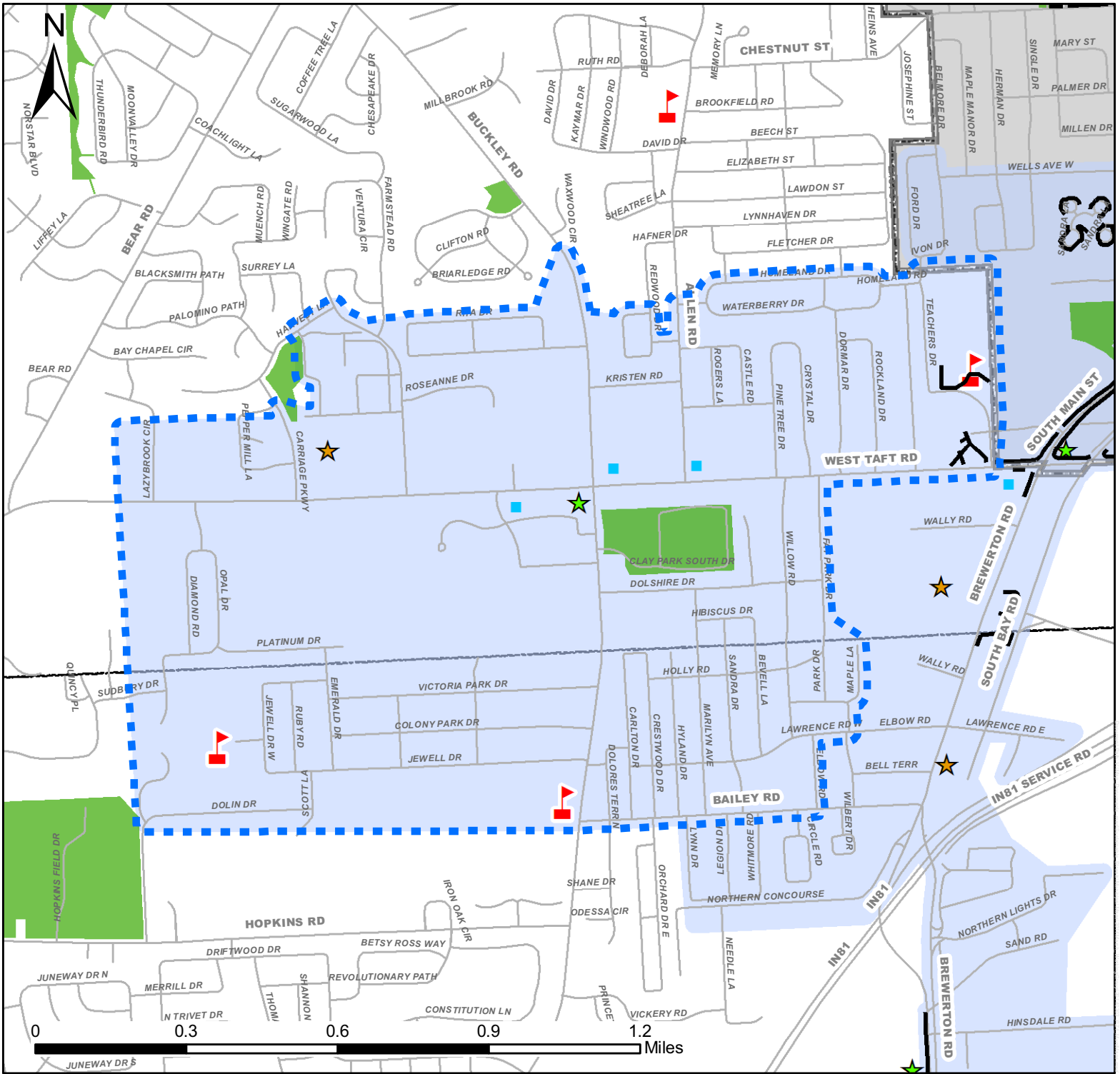
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Fax: (315) 422-7753  
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**LEGEND**

- Existing Sidewalks
- Town Boundaries
- City of Syracuse



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**Destinations**

- Schools
- Supermarkets
- Pharmacies
- Community Ctr./Library
- Convenience Store
- Parks
- Library
- Post Office
- Town/Village/City Hall

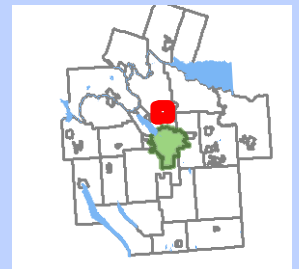
**PRIORITY ZONE 15  
Taft / Buckley Area**



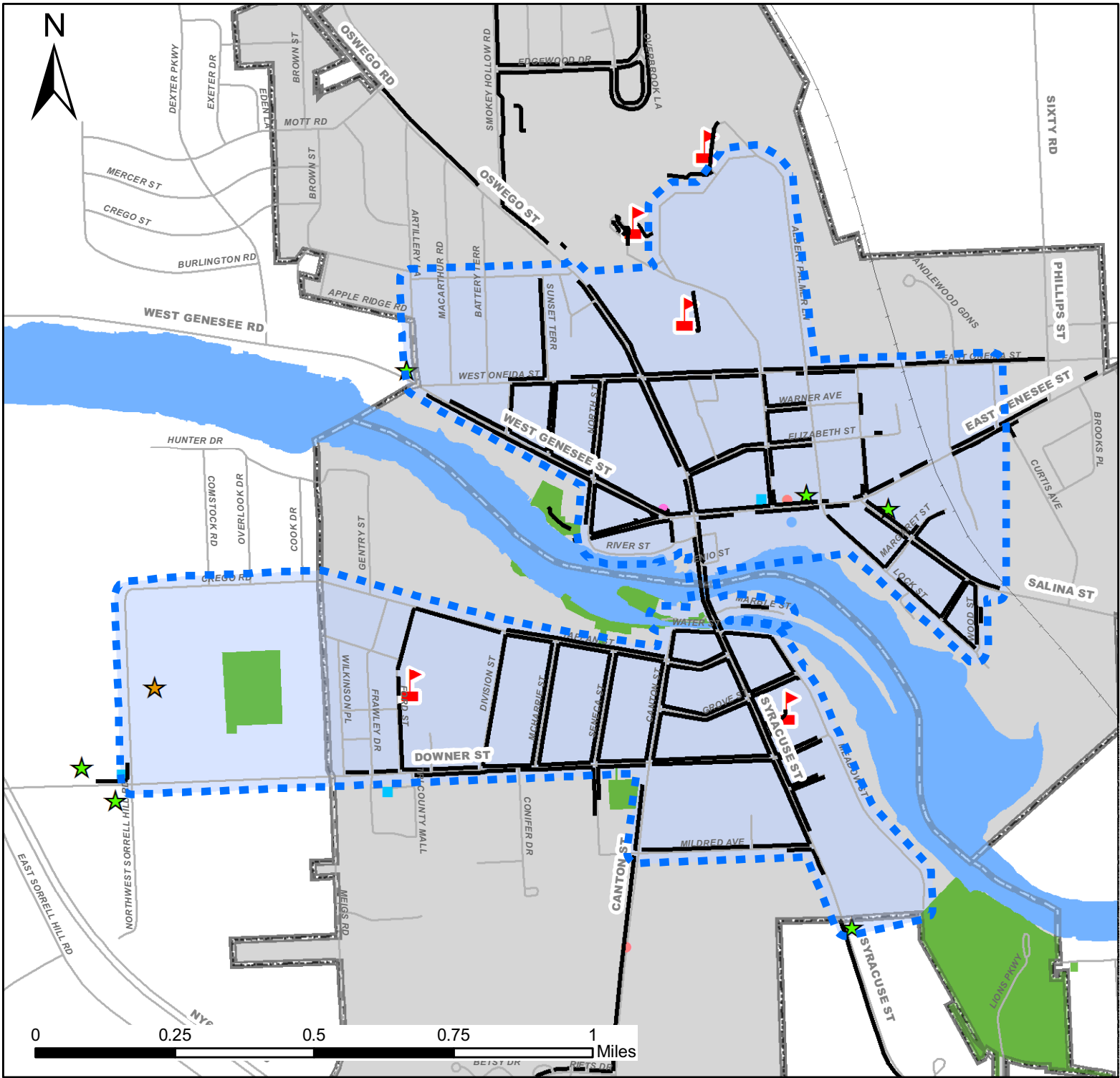
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**LEGEND**

- Existing Sidewalks
- Town Boundaries
- City of Syracuse



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**Destinations**




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Supermarkets
-  Community Ctr./Library
-  Parks
-  Post Office
-  Town/Village/City Hall

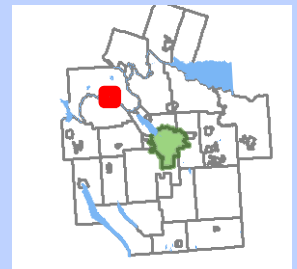
**PRIORITY ZONE 16**  
**Village of Baldwinsville**



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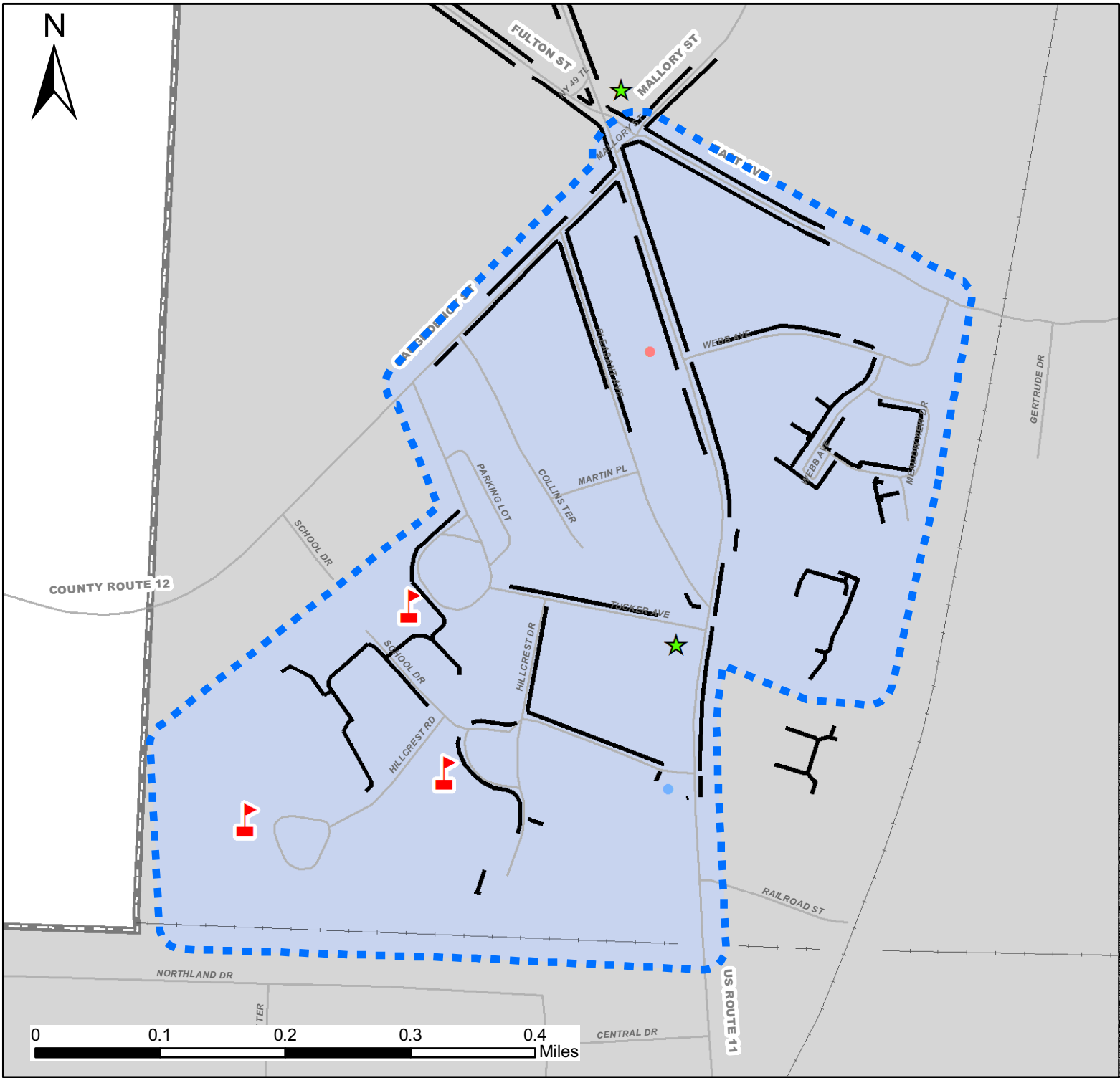
**LEGEND**

-  Existing Sidewalks
-  Town Boundaries
-  City of Syracuse



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**Destinations**




- |                                                                                     |              |                                                                                     |                        |                                                                                     |                   |                                                                                       |                        |
|-------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------|------------------------|
|  | Schools      |  | Pharmacies             |  | Convenience Store |  | Library                |
|  | Supermarkets |  | Community Ctr./Library |  | Parks             |  | Post Office            |
|                                                                                     |              |                                                                                     |                        |                                                                                     |                   |  | Town/Village/City Hall |

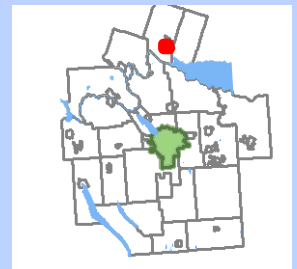
**PRIORITY ZONE 17  
Village of Central Square**



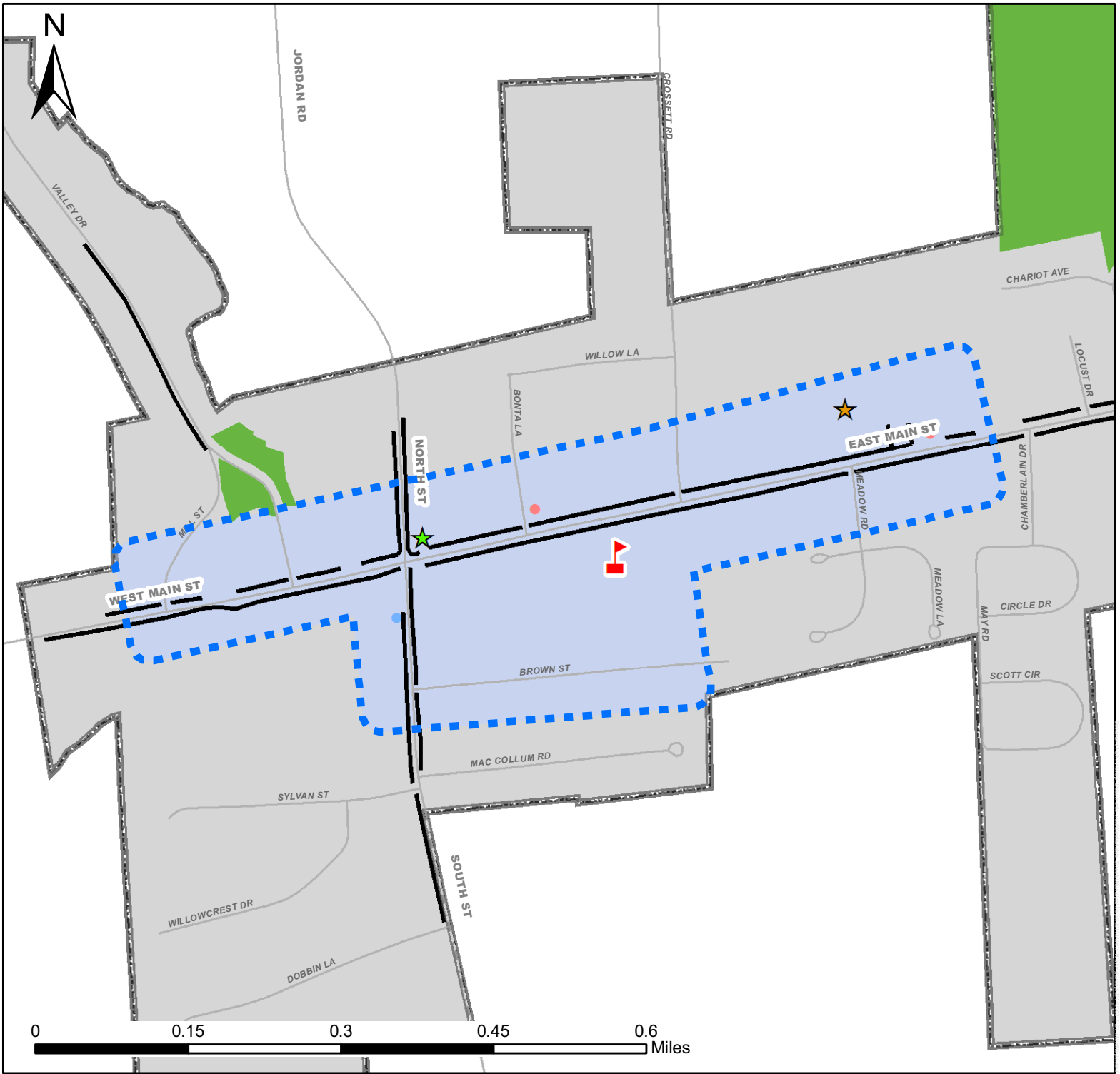
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126 North Salina St, Suite 100  
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**LEGEND**

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-  City of Syracuse



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**Destinations**




- |                                                                                     |              |                                                                                     |                        |                                                                                     |                   |                                                                                       |                        |
|-------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------|------------------------|
|  | Schools      |  | Pharmacies             |  | Convenience Store |  | Library                |
|  | Supermarkets |  | Community Ctr./Library |  | Parks             |  | Post Office            |
|                                                                                     |              |                                                                                     |                        |                                                                                     |                   |  | Town/Village/City Hall |

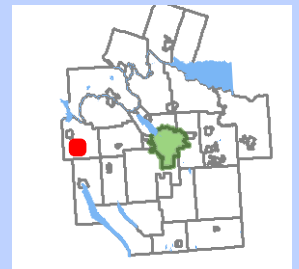
**PRIORITY ZONE 18  
Village of Elbridge**



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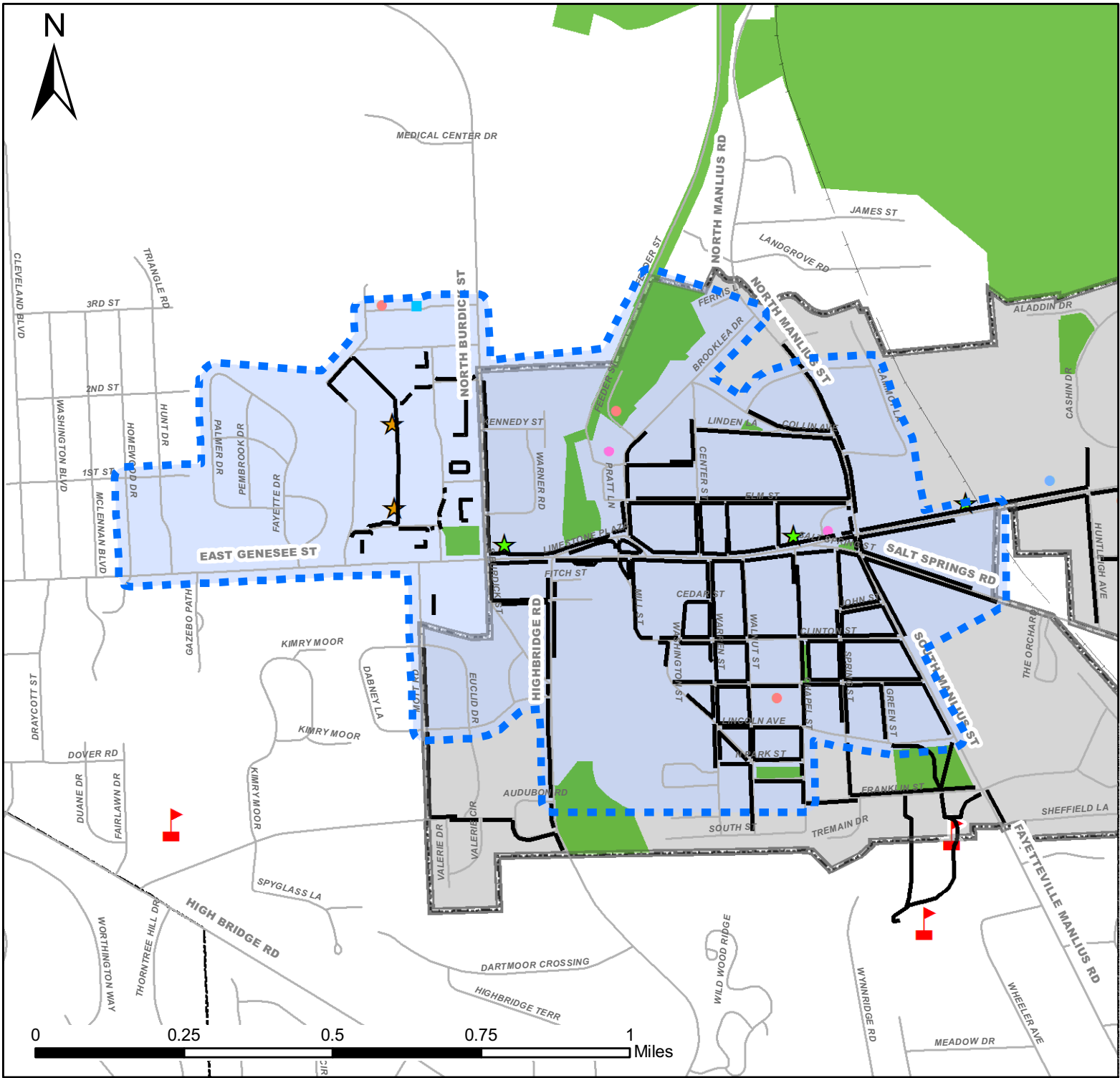
**LEGEND**

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-  Town Boundaries
-  City of Syracuse



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**Destinations**

- Schools
- Supermarkets
- Pharmacies
- Community Ctr./Library
- Convenience Store
- Parks
- Library
- Post Office
- Town/Village/City Hall

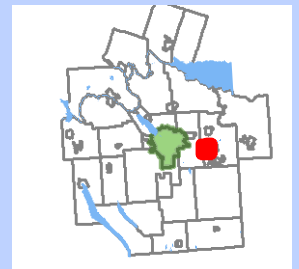
**PRIORITY ZONE 19**  
**Village of Fayetteville**



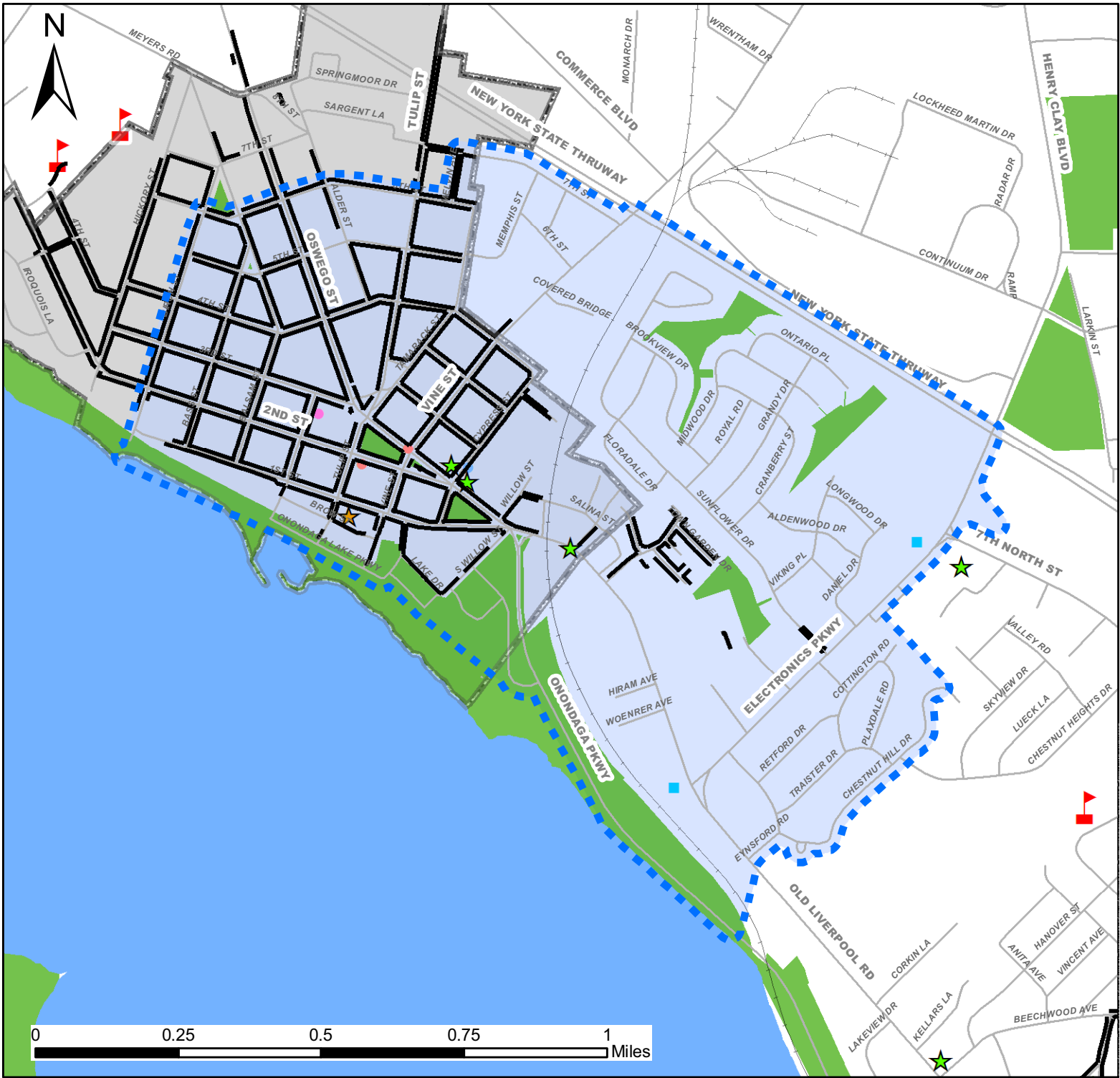
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**LEGEND**

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- Town Boundaries
- City of Syracuse



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**Destinations**



Schools



Pharmacies



Convenience Store



Library



Supermarkets



Community Ctr./Library



Parks



Post Office



Town/Village/City Hall

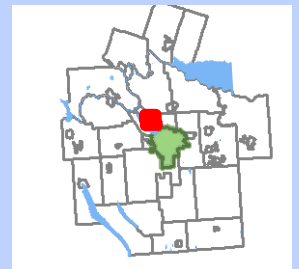
**PRIORITY ZONE 20  
Village of Liverpool**



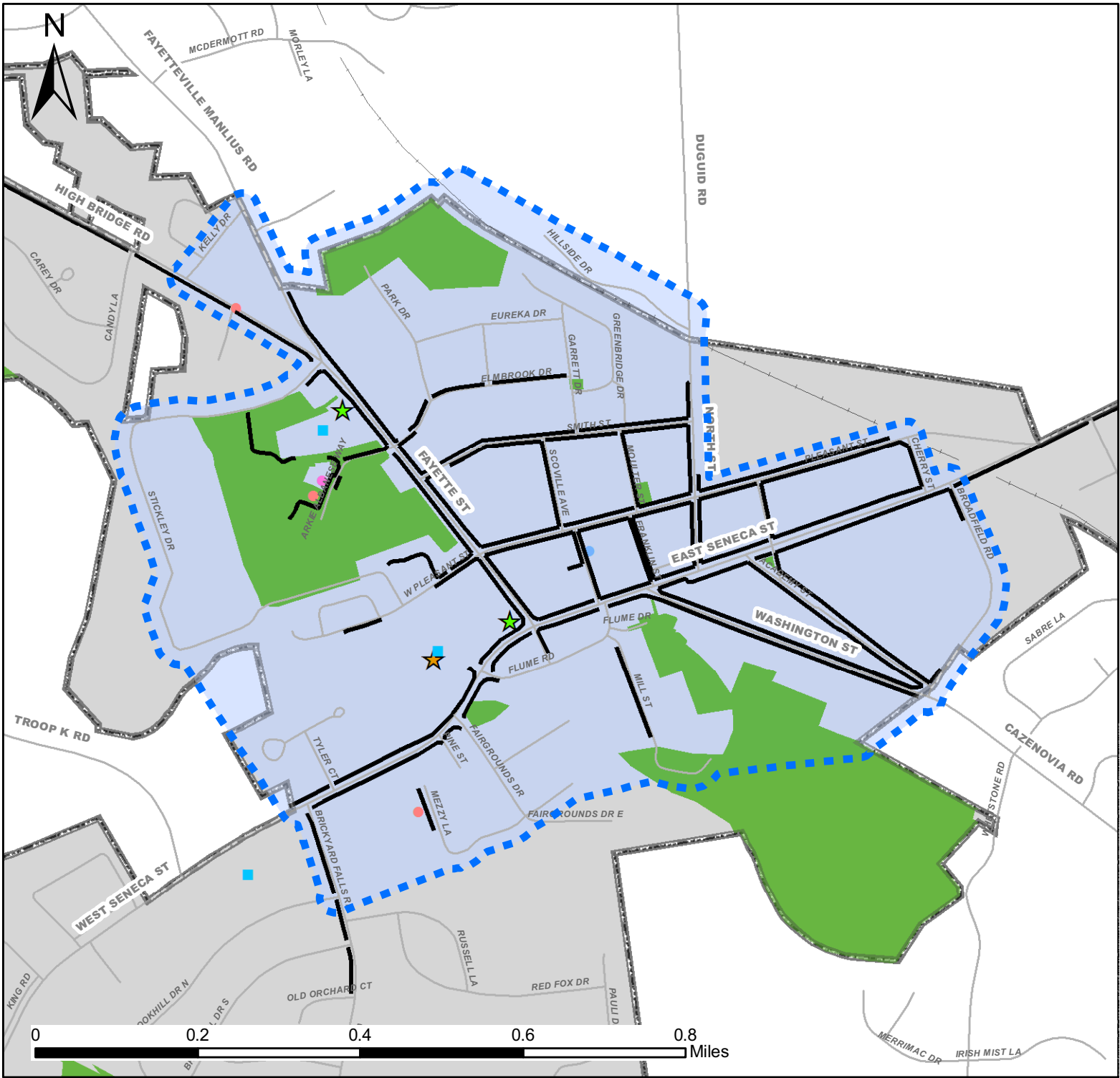
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126 North Salina St, Suite 100  
Syracuse, NY 13202  
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Fax: (315) 422-7753  
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**LEGEND**

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- City of Syracuse



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

**Destinations**

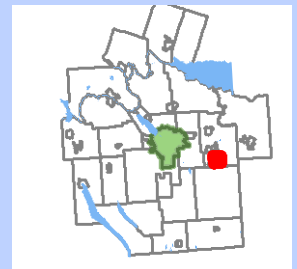
-   
 Schools
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 Pharmacies
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 Convenience Store
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 Library
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 Community Ctr./Library
-   
 Parks
-   
 Post Office
-   
 Supermarkets
-   
 Town/Village/City Hall

**PRIORITY ZONE 21  
Village of Manlius**

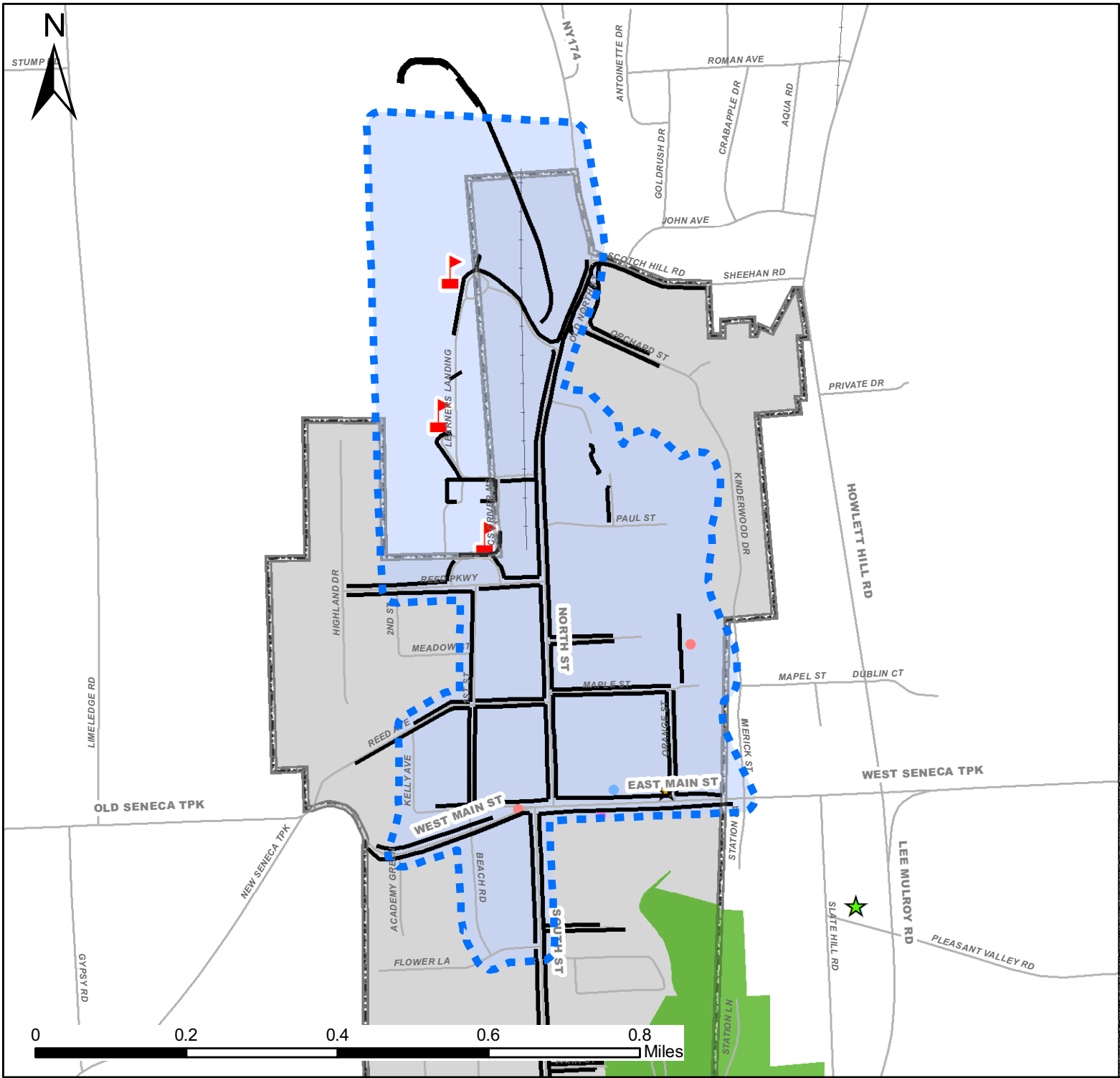
  
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**LEGEND**

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-  Town Boundaries
-  City of Syracuse



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**Destinations**




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Community Ctr./Library
-  Parks
-  Post Office
-  Supermarkets
-  Town/Village/City Hall

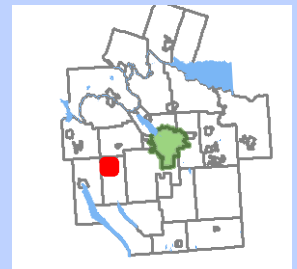
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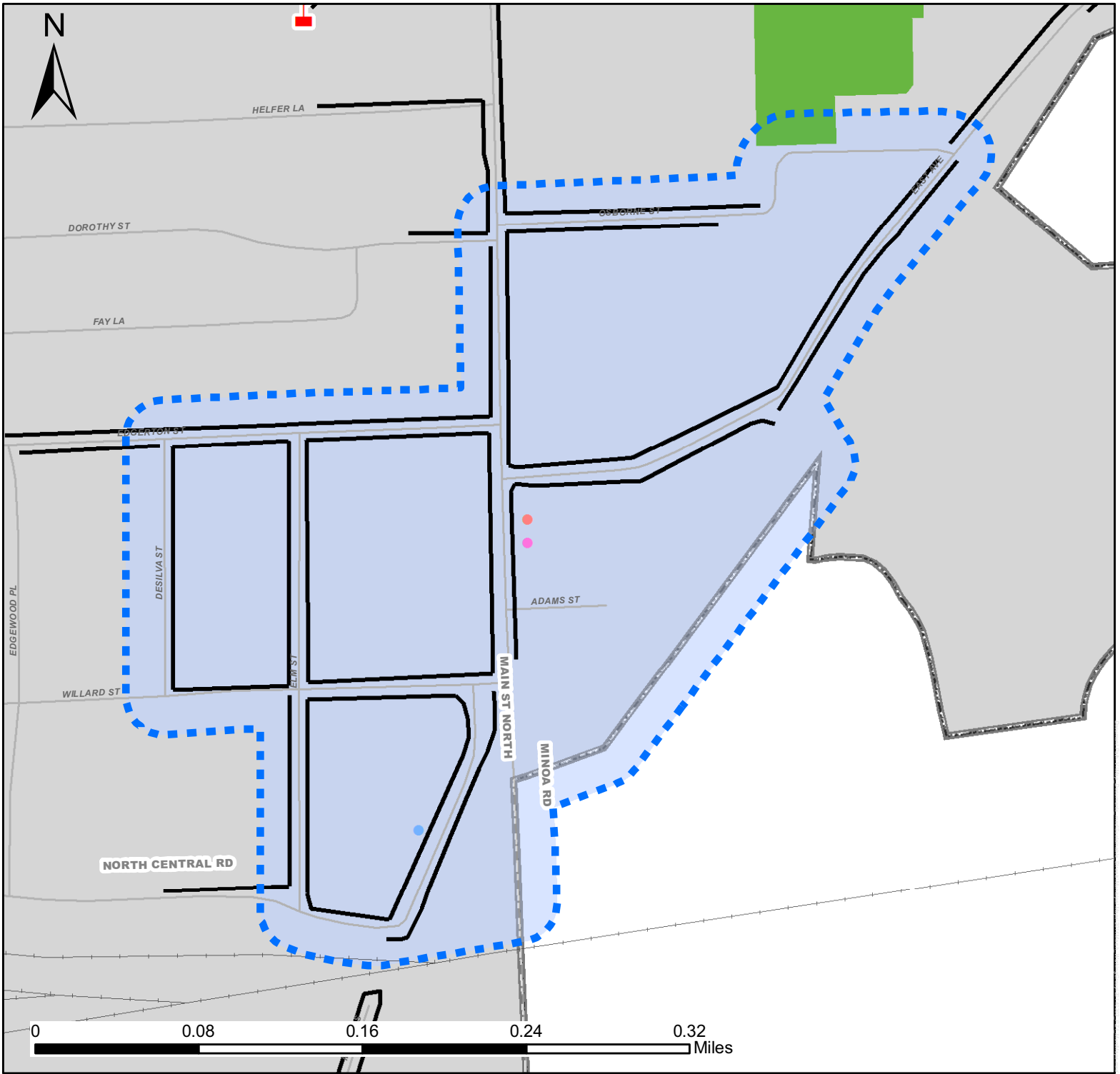
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

-  Schools
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-  Parks
-  Post Office
-  Supermarkets
-  Town/Village/City Hall

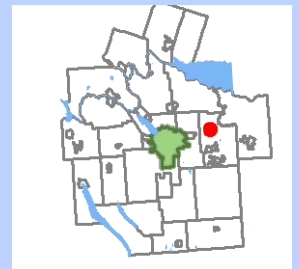
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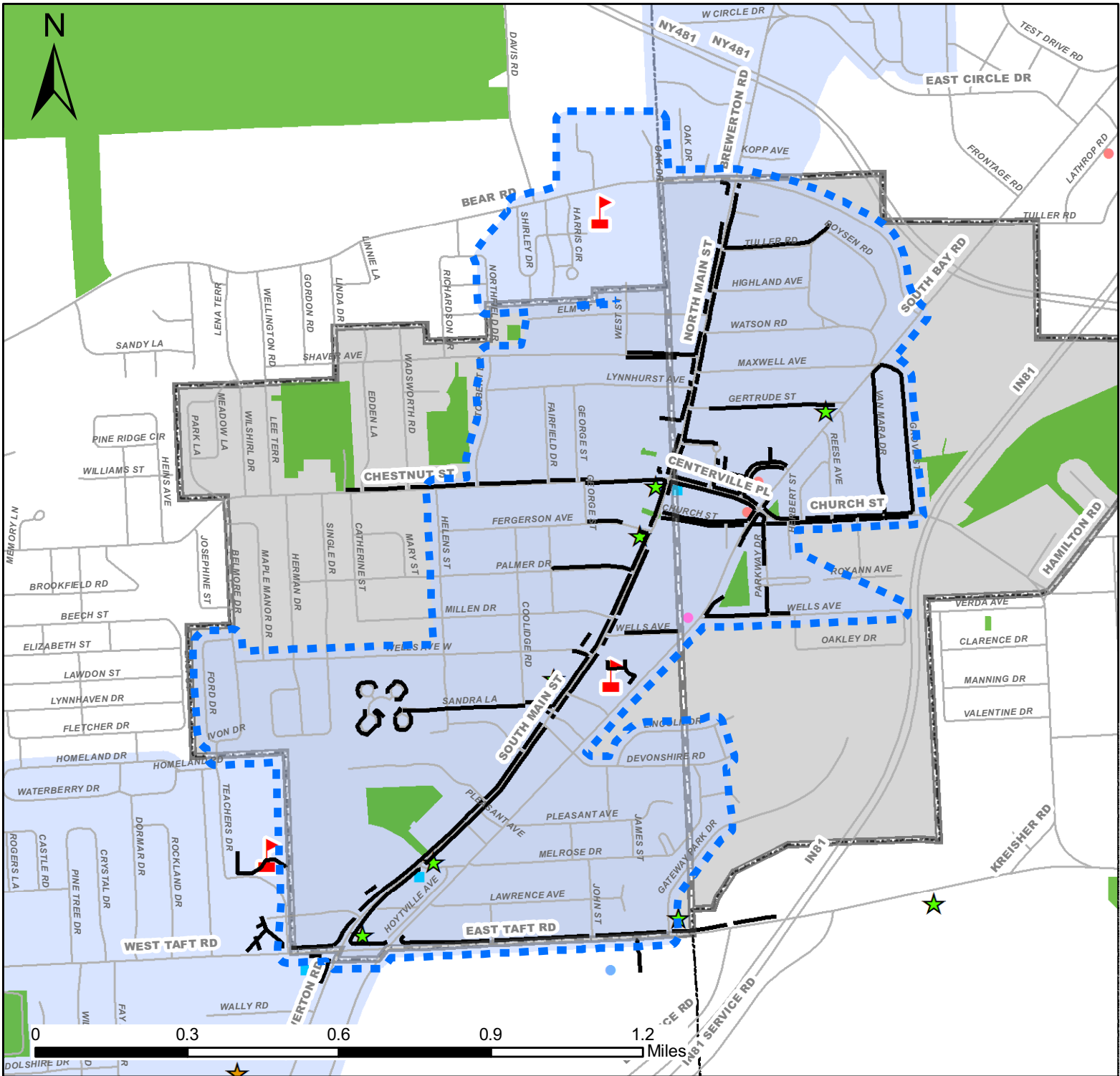
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### Destinations

- Schools
- Pharmacies
- Convenience Store
- Supermarkets
- Community Ctr./Library
- Parks
- Post Office
- Town/Village/City Hall

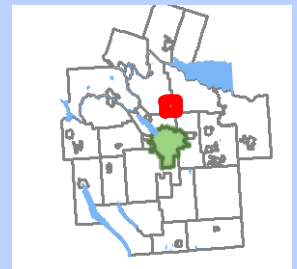
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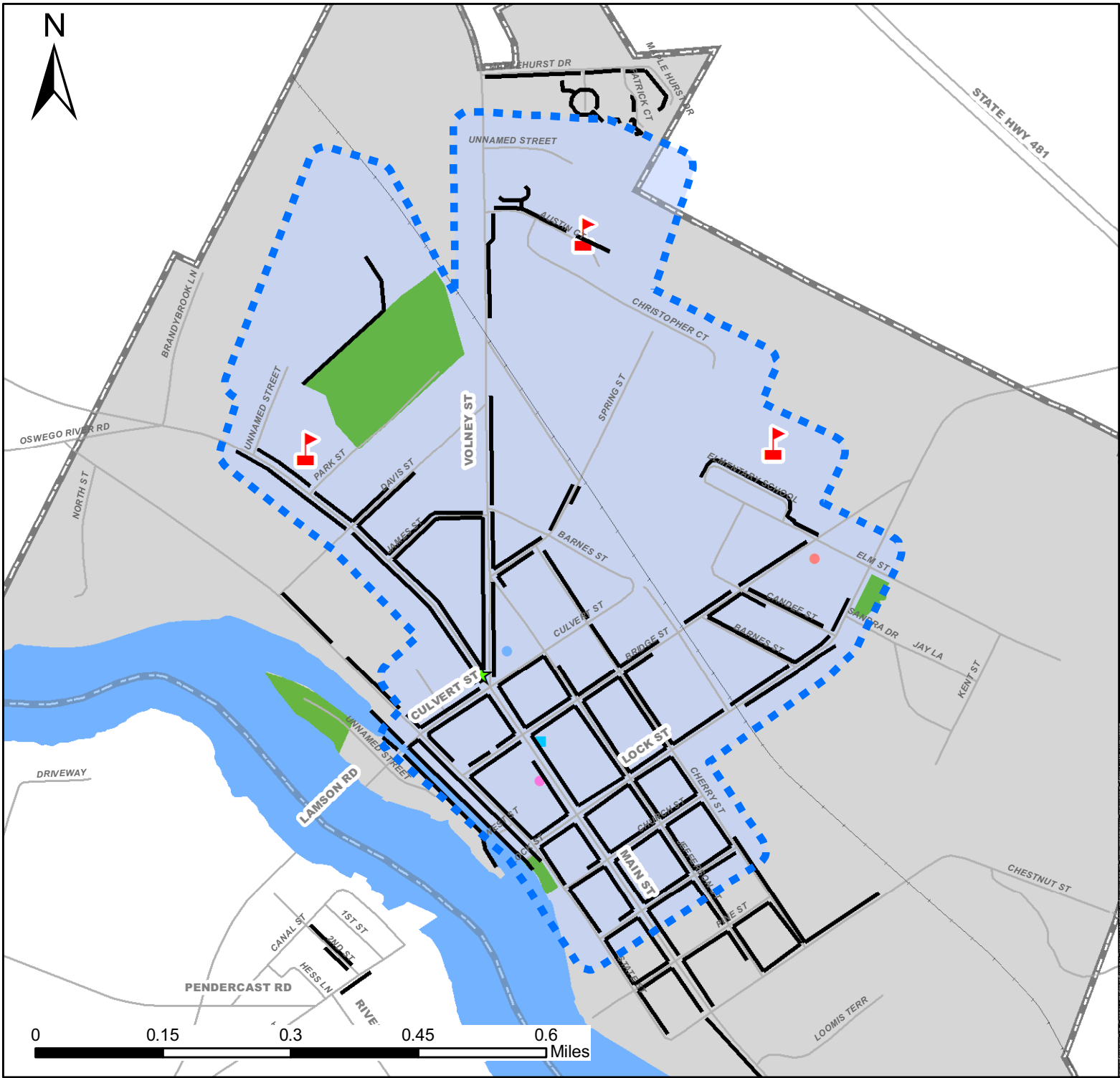
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

-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Community Ctr./Library
-  Parks
-  Post Office
-  Supermarkets
-  Town/Village/City Hall

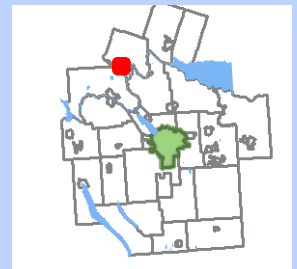
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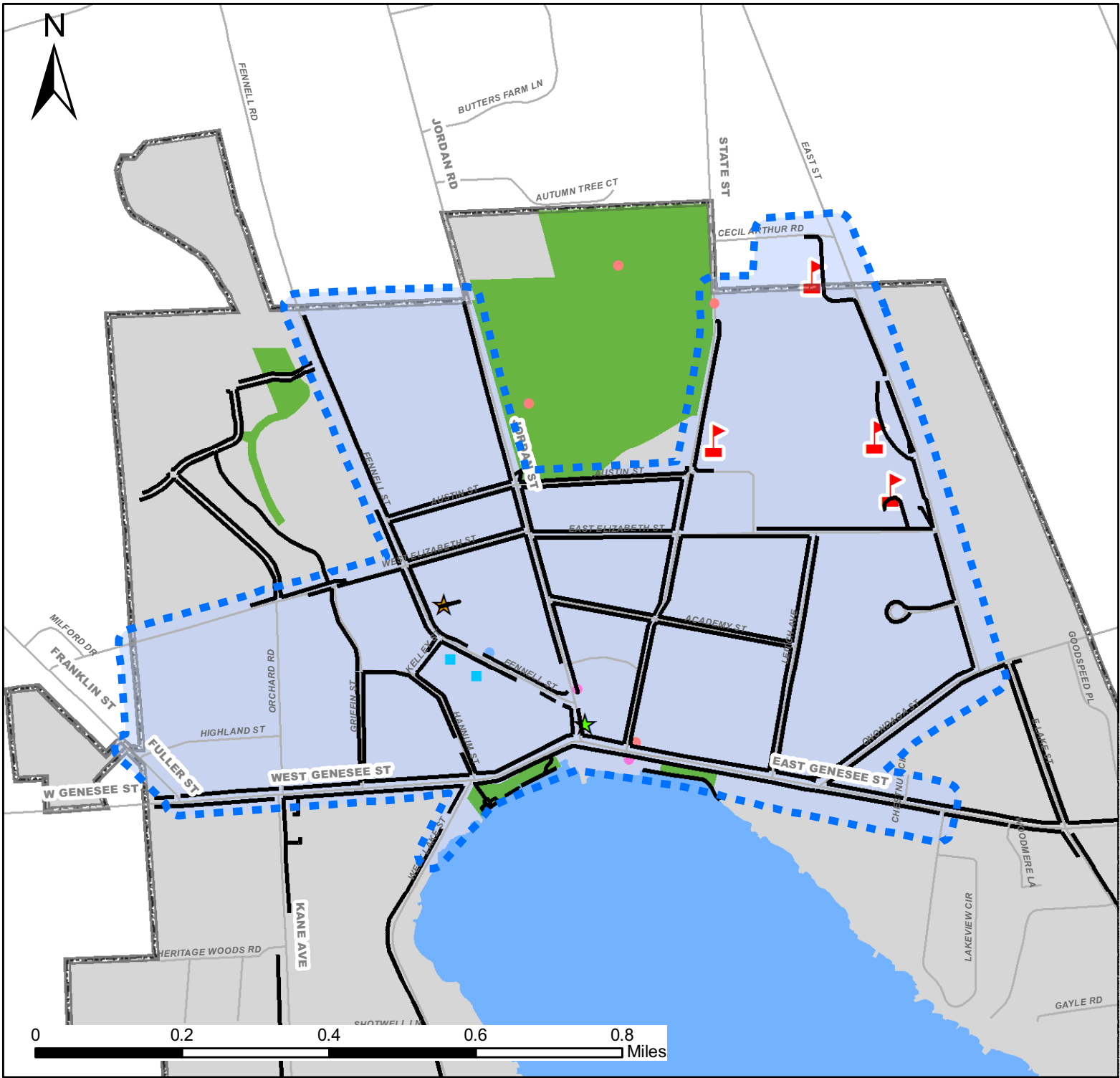
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

-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Community Ctr./Library
-  Parks
-  Post Office
-  Supermarkets
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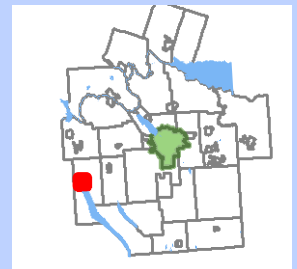
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**Village of Skaneateles**



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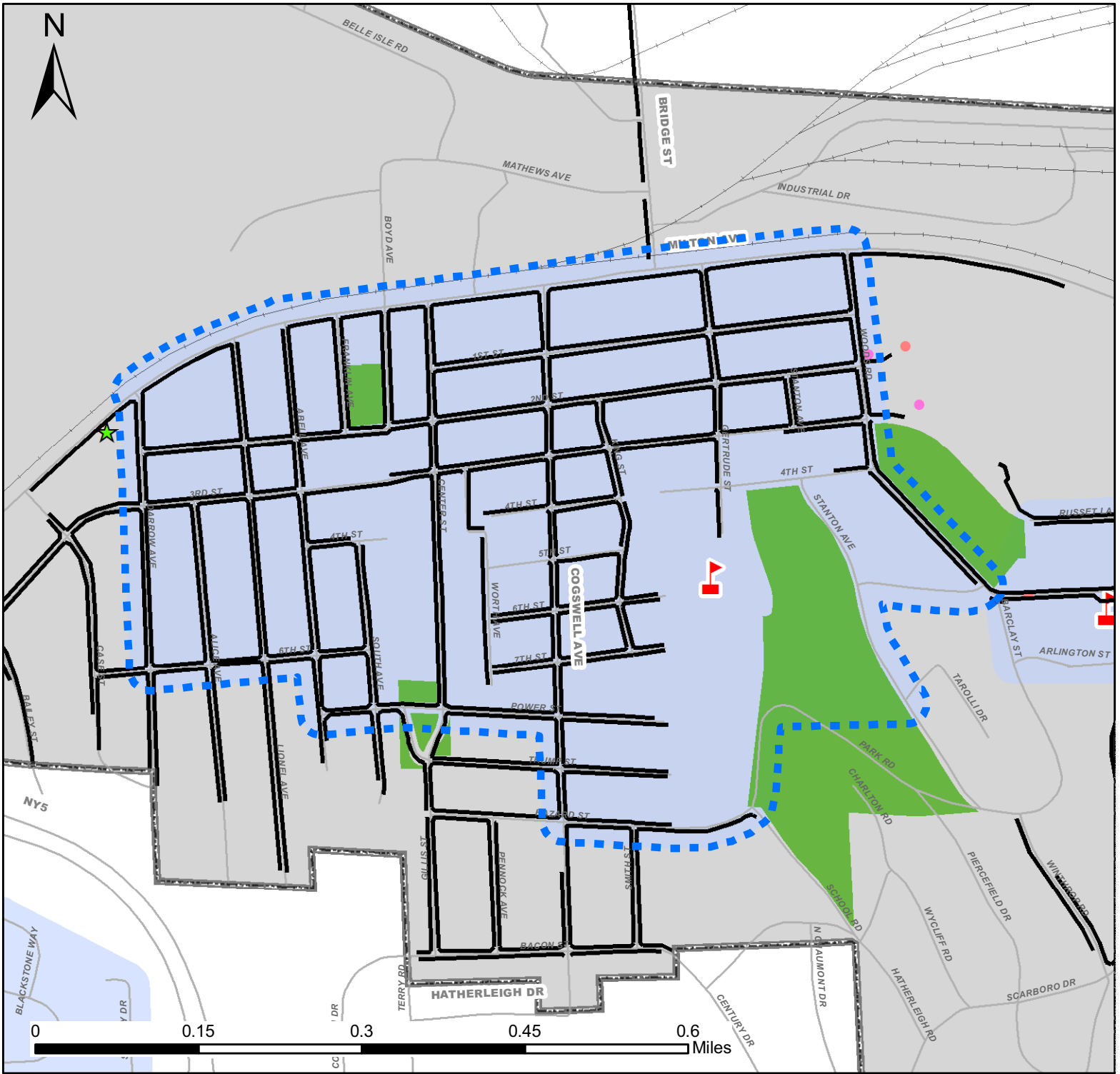
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### Destinations




-  Schools
-  Pharmacies
-  Convenience Store
-  Library
-  Community Ctr./Library
-  Parks
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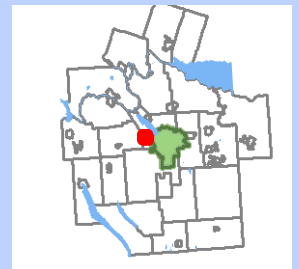
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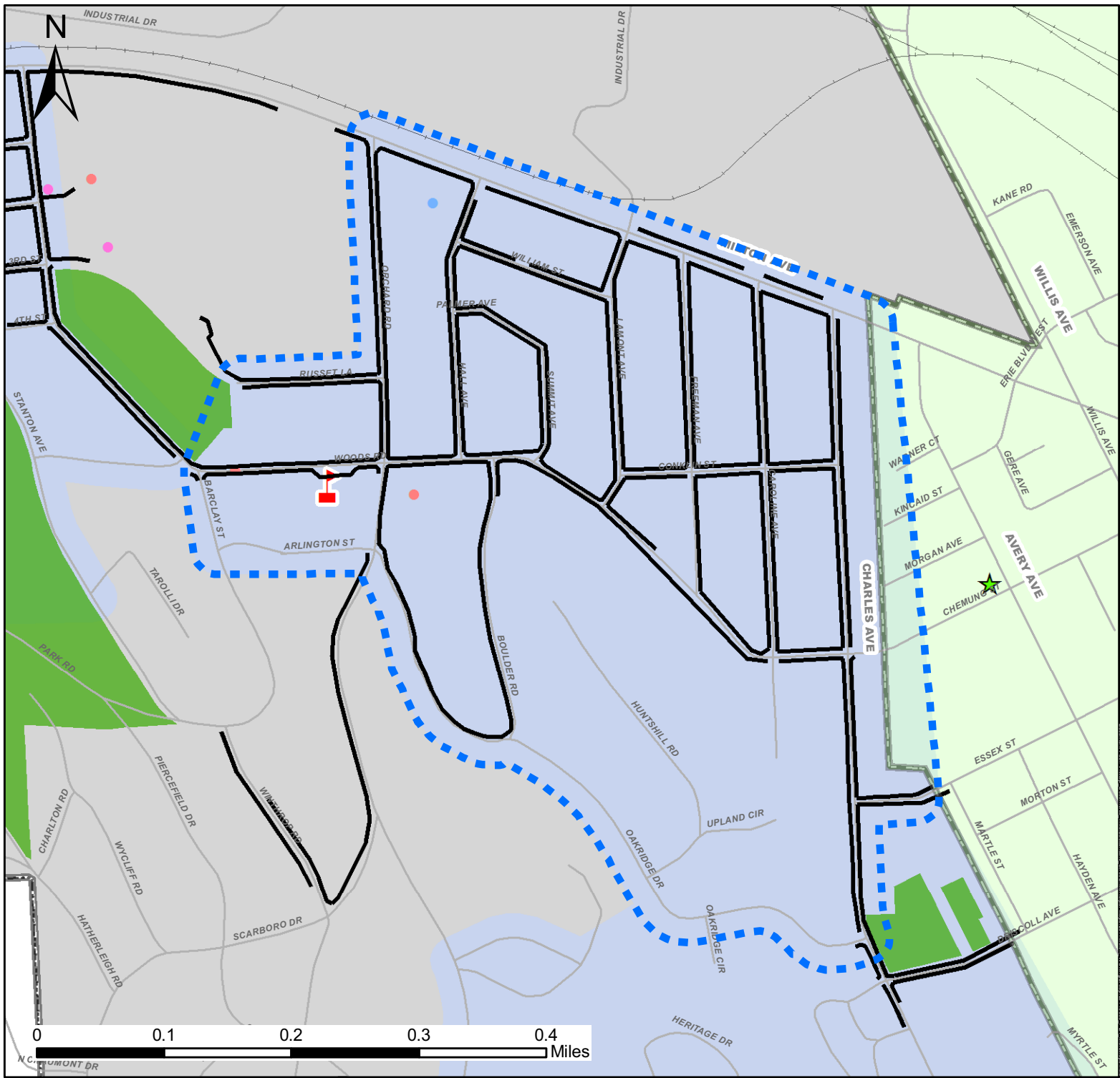
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

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|  | Supermarkets |  | Community Ctr./Library |  | Parks             |  | Post Office            |
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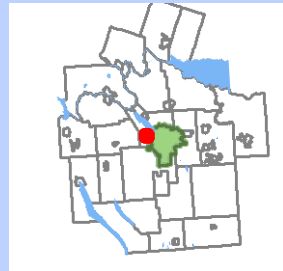
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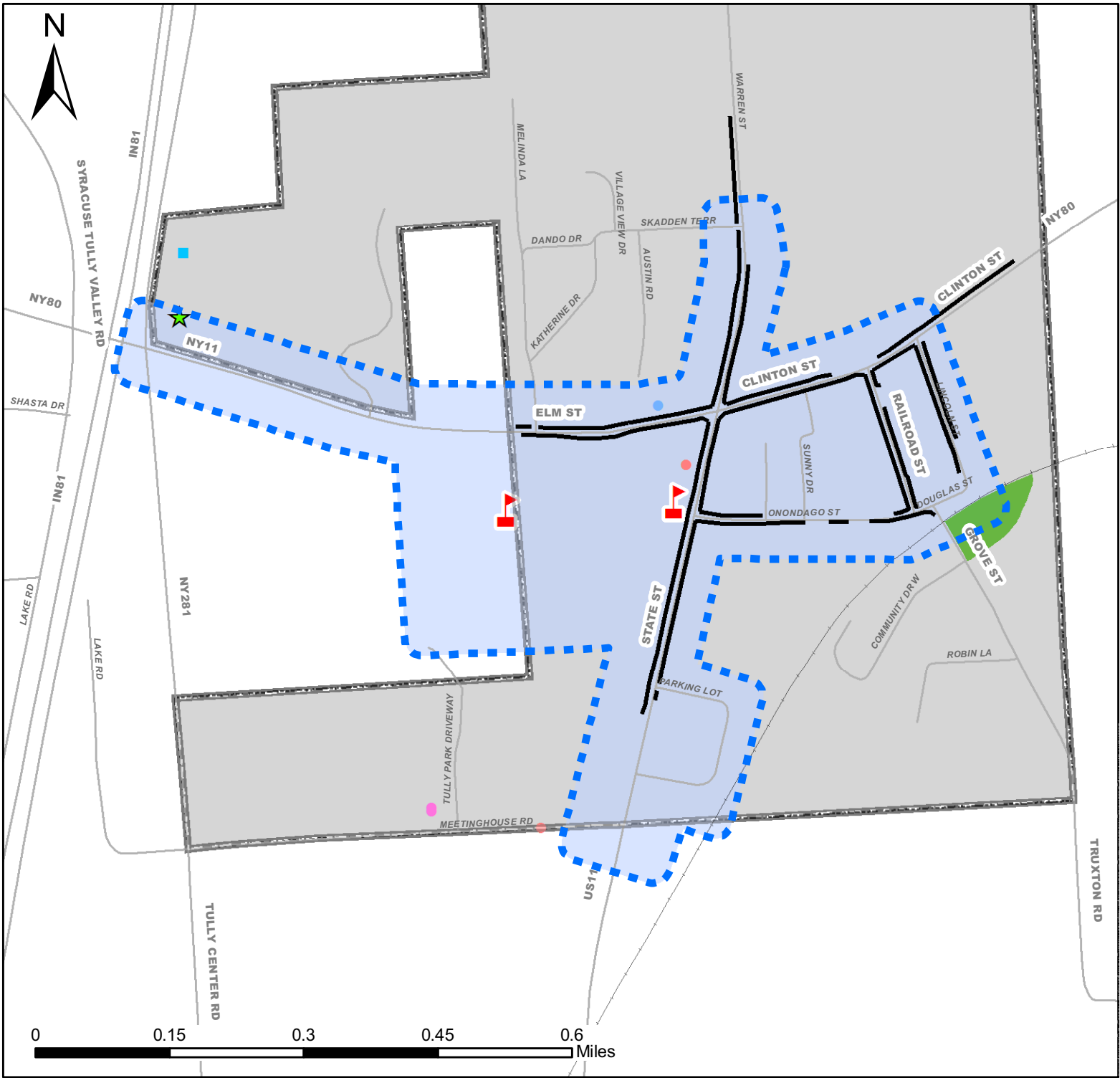
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

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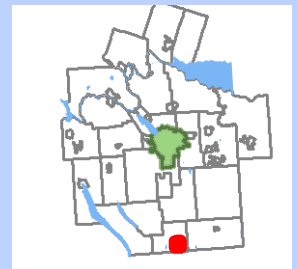
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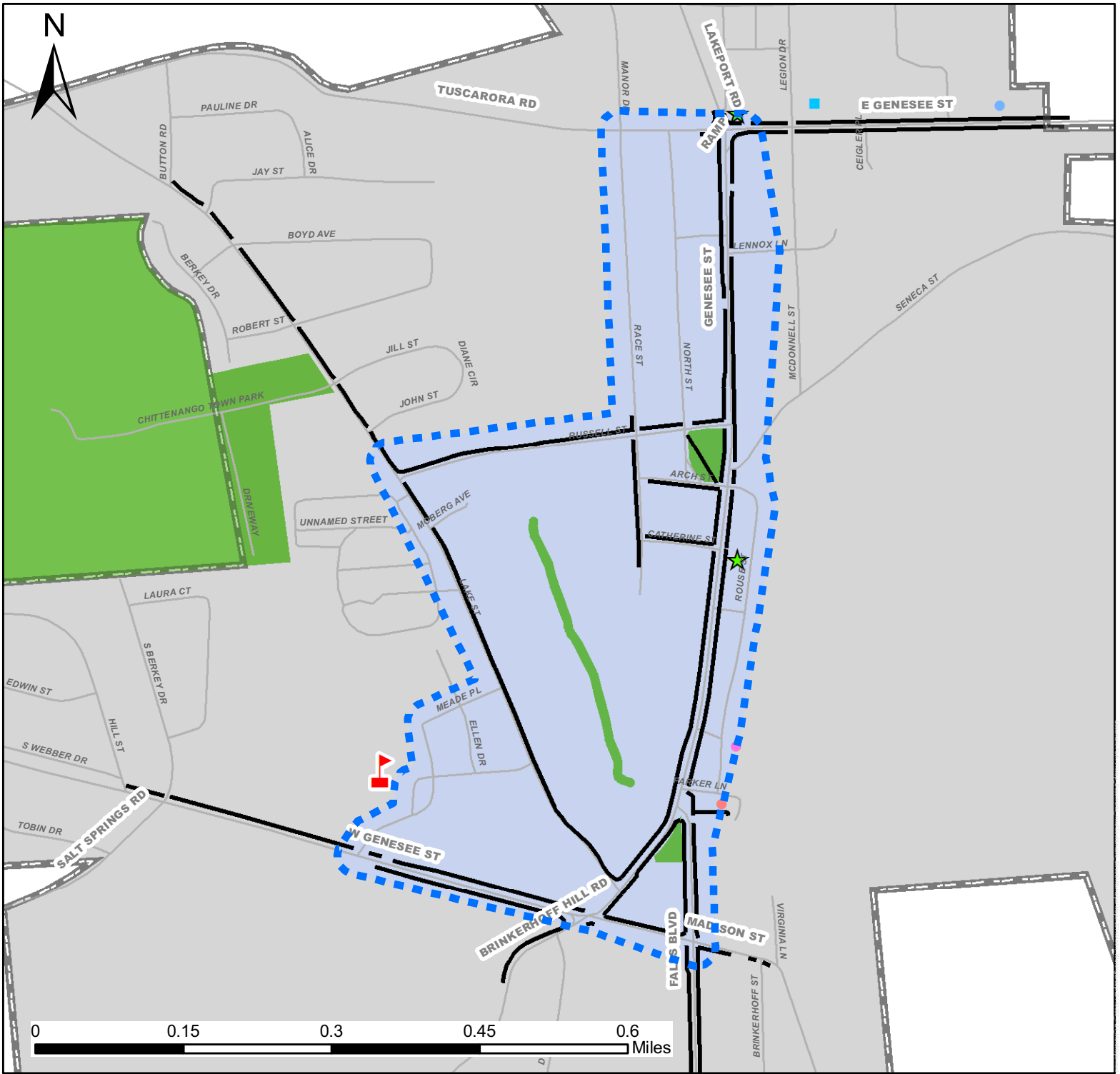
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

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Town/Village/City Hall

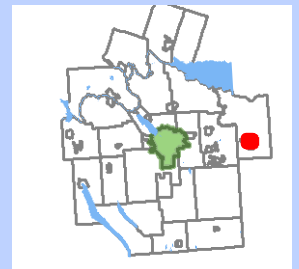
**PRIORITY ZONE 30  
Village of Chittenango**



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# APPENDIX F – SIDEWALK DESIGN PARAMETERS

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As mentioned in Section 1.4, this Reference Manual is not intended to replace the many exhaustive sources of guidance on how to design pedestrian facilities. The resources listed in Section 1.4 will provide layman, planner and designer alike with a wealth of information on the best practices in facility design. Since each situation is unique, these guidelines are a starting point for discussions between residents, business owners and the public entities making improvements.

This appendix is designed to provide a few key concepts from design manuals prepared by the Institute of Transportation Engineers (ITE), the Federal Highway Administration (FHWA) and the New York State Department of Transportation (NYSDOT). The ITE manual *Designing Walkable Urban Thoroughfares* provides particularly exhaustive parameters, since they are customized both by type of street (boulevard, avenue or street) and by context zone (suburban, urban).

## CONTENTS

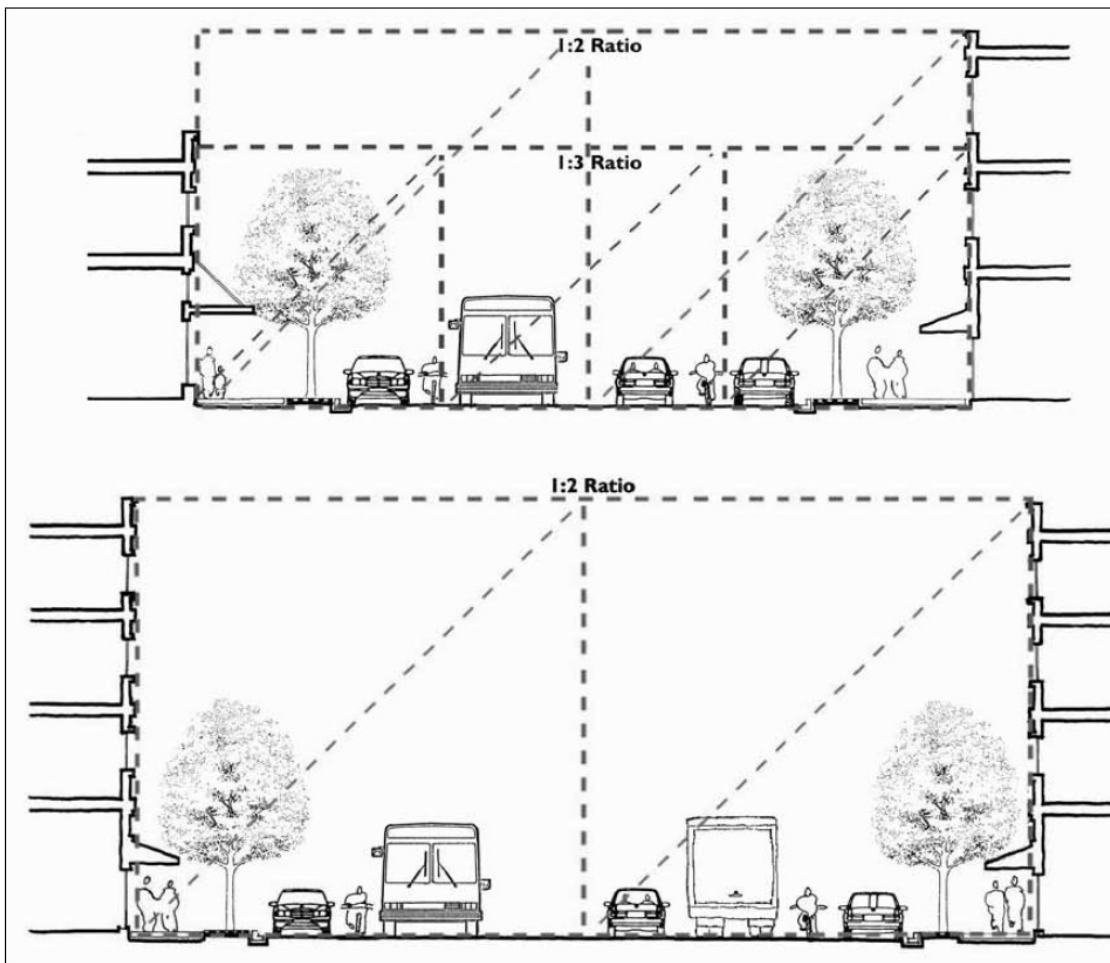
- *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, ITE
  - **Figure 4.2 – Illustration of Height to Width ratios** (from page 46)  
*Pedestrian comfort is enhanced by a sense of enclosure. Streets that are wide relative to the height of adjacent buildings lack this sense of enclosure. ITE’s guidance recommends keeping total width (from the front of one building to the front of the building opposite) to within two to three times the heights of the buildings. Note that in the illustration, the top portion represents a narrower street with a two-story building on the left and a three-story building on the right. The bottom portion of the illustration shows a wider street enclosed by four-story buildings. Both provide a good sense of human scale.*
  - **Rural-Urban Transect** (from page 47)  
*Developed by planning consulting firm Duany Plater-Zyberk & Company, the rural-urban transect helps categorize general land use patterns on a gradient, from the sparsely developed countryside to the heavily developed urban core. The ITE’s guidance uses these context zones to fit the measurements of the public right-of-way to the surrounding land use. **Note** that the ITE’s *Designing Walkable Urban Thoroughfares* manual is, as the name suggests, for use in urban areas and **does not address roadway design in zones C-1 (Natural Zone) or C-2 (Rural Zone).***

- **Table 4.1 – Context Zone Characteristics** (page 49)  
*This table provides further guidance on how to tell one context zone from another.*
- **Table 4.2 – Thoroughfare Type Descriptions** (page 52)  
*In order to apply the guidance in this manual, the user must match both the thoroughfare type and the context zone to ITE’s pre-defined categories. This table helps distinguish one roadway type from another.*
- **Table 4.4 – Urban Thoroughfare Characteristics** (page 54)  
*Like Table 4.1, this table is designed to help the user determine how to classify a given road or roadway segment using the ITE’s scheme. This table includes both general design parameters and desired operating characteristics.*
- **Table 6.2 - Selected Characteristics of Walkable Thoroughfares** (page 68)  
*This table summarizes the roadway characteristics covered by the ITE’s guidance. The middle column (“Walkable Thoroughfares”) briefly outlines the hallmarks of a pedestrian-friendly roadway.*
- **Figure 8.1 - Streetside Zones** (from page 116)  
*The ITE’s guidance splits the public right-of-way into two pieces: the traveled way and the streetside zone. The traveled way is the area between the curbs - the area designed for use by motor vehicles (including parked cars) and bicycles. The streetside zone is made up of the public space beyond the curb, including the edge of the traveled way (edge zone), the portion dedicated to benches, trash receptacles, trees and other furnishings (furnishings zone), the portion designed for the through movement of pedestrians (throughway zone) and the interface between the throughway and the fronts of adjacent buildings (frontage zone). Note that other guidance may use different terminology, such as “buffer zone” instead of furnishings zone and “shy distance” instead of frontage zone.*
- **Table 6.4 – Design Parameters for Walkable Urban Thoroughfares** (pages 70 & 71)  
*This table provides the ITE’s preferred dimensions for both the traveled way and streetside zone, with variations by roadway type and context zone. For example, minimum recommended sidewalk width on a commercial boulevard is six feet in the low density C-3 zone and ten feet in the more heavily developed C-5 zone. This guidance also addresses preferred speed limit, number of lanes, width of on-street parking and other elements critical to walkability. This two-page table summarizes the ITE’s recommendations.*

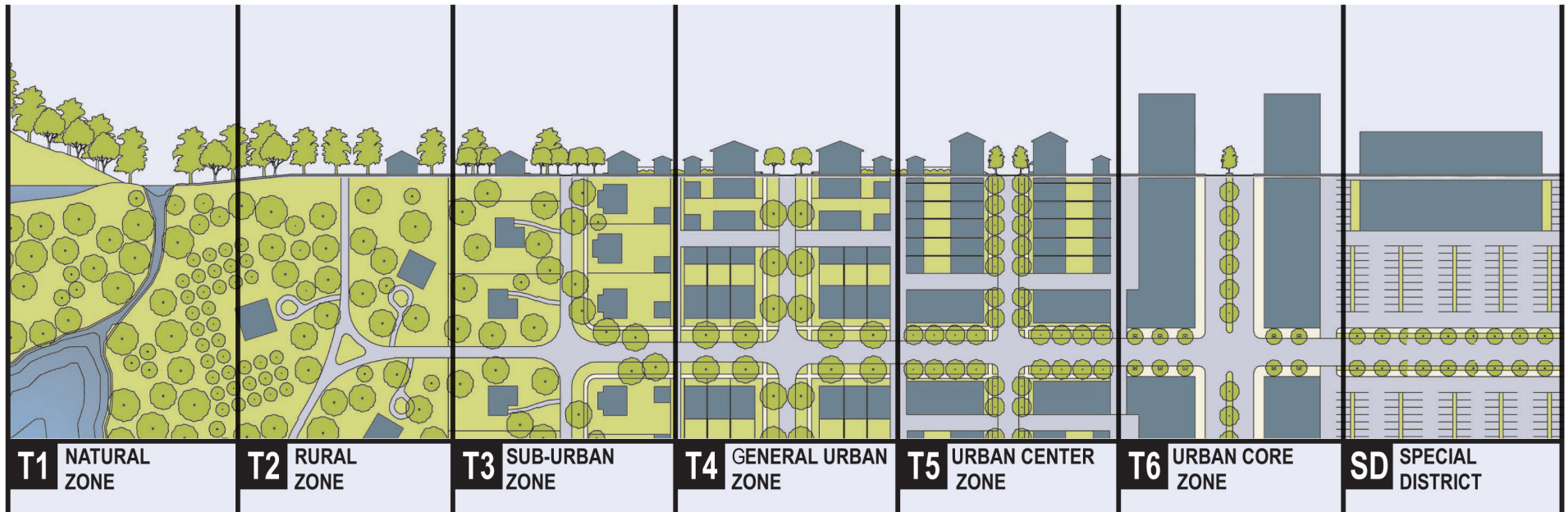
- **Table 9.4 – Recommended Practice for Midblock Crossings** (page 153)  
*This table summarizes ITE’s recommendations for where midblock crossings are and are not appropriate.*
- **Table 10.1 – Pedestrian and Bicycle Features at Signalized Intersections** (page 181)  
*A summary of the elements that should be incorporated into the design of signalized intersections in order to make them safer for cyclists and pedestrians.*
- *Highway Design Manual, Chapter 18: Pedestrian Facility Design, New York State Department of Transportation (NYSDOT)*
  - **Exhibit 18-3 – Pedestrian Level-of-Service** (page 18-10)  
Level of service measures developed for motor vehicles are essentially the ratio of traffic volumes to roadway capacity. Similarly, the idea of pedestrian level of service is to measure the flow of pedestrians (pedestrians per minute per meter) and to measure the amount of space each pedestrian has on the sidewalk (square meters per pedestrian). Together, these metrics indicate whether or not additional sidewalk capacity is needed. As the Highway Design Manual points out, this is generally only an issue in central business districts. In the Study Area, it may also be an issue near Syracuse University, where large numbers of students walk between home and campus daily.
  - **Exhibit 18-4 – Guidelines for Locating Sidewalks in Developed Areas** (page 18-23)  
This is the first of three tables to be included in this appendix that provides broad parameters for the placement of sidewalks on roads based on the mix of land use and roadway characteristics. NYSDOT’s guidelines associate the need for sidewalks with the presence of development. For local roads in residential areas, the only streets on which sidewalks are not recommended (on either side of the street) are in areas of low density with traffic volumes under 400 vehicles a day.
  - **Exhibit 18-9 – Sidewalk Placement within the Right-of-Way** (page 18-30)  
The two examples in this figure provide dimensions and a general design for placing sidewalks in commercial areas and residential areas. Note that, unlike the ITE guidance, this cross-section does not include an identified “edge zone”.
  - **Exhibit 18-20 - Recommendations for Installing Marked Crosswalks and Other Needed Pedestrian Improvements at Uncontrolled Locations** (page 18-53)  
This table summarizes screening criteria for the installation of marked crosswalks at mid-block locations and unsignalized intersections, given the number of lanes being crossed, traffic volume and speed.
- PedSAFE, Federal Highway Administration (FHWA)

- **Table 1 – Recommended Guidelines for New Sidewalks/Walkway Installation**  
Like NYSDOT’s guidance (Exhibit 18-4), FHWA’s guidelines encourage sidewalks on both sides of most streets where there is dense residential development. FHWA adds a decision point for roadways with fewer than 2,000 vehicles per day in low-density residential areas.
- *Design and Safety of Pedestrian Facilities*, ITE
  - **Figure 3-4, Guidelines for Installing Sidewalks** (page 31)  
Like NYSDOT’s guidance, this table from ITE addresses both new and existing streets. This guidance also ties the need for sidewalks to land use (residential, commercial, industrial), housing density and street type (major arterials, collectors, and local streets). In general, the NYSDOT, FHWA and ITE guidance all support sidewalks on major roads in residential, commercial and industrial areas. All three also support the idea that sidewalks are not needed as residential density falls below some threshold, whether it’s measured as distance between houses or housing units per acre.





**Figure 4.2** Illustration of height to width ratios that create a scale on thoroughfares that is comfortable to people and encourages walking (human scale). Human scale ratios fall between 1:3 and 1:2 as measured from the building fronts. Source: Community, Design + Architecture.



**Figure 4.4** Illustration of a gradient of development patterns ranging from rural in Context Zone 1 (C-1), to the most urban in C-6. Source: Duany Plater-Zyberk and Company.

**Table 4.1 Context Zone Characteristics**

<b>Context Zone</b>	<b>Distinguishing Characteristics</b>	<b>General Character</b>	<b>Building Placement</b>	<b>Frontage Types</b>	<b>Typical Building Height</b>	<b>Type of Public Open Space</b>	<b>Transit (Where Provided)</b>
C-1 Natural	Natural landscape	Natural features	Not applicable	Not applicable	Not applicable	Natural open space	None
C-2 Rural	Agricultural with scattered development	Agricultural activity and natural features	Large setbacks	Not applicable	Not applicable	Agricultural and natural	Rural
C-3 Suburban	Primarily single family residential with walkable development pattern and pedestrian facilities, dominant landscape character. Includes scattered commercial uses that support the residential uses, and connected in walkable fashion.	Detached buildings with landscaped yards, normally adjacent to C-4 zone. Commercial uses may consist of neighborhood or community shopping centers, service or office uses with side or rear parking.	Varying front and side yard setbacks	Residential uses include lawns, porches, fences and naturalistic tree planting. Commercial uses front onto thoroughfare.	1 to 2 story with some 3 story	Parks, greenbelts	Local, express bus
C-4 General Urban	Mix of housing types including attached units, with a range of commercial and civic activity at the neighborhood and community scale	Predominantly detached buildings, balance between landscape and buildings, presence of pedestrians	Shallow to medium front and side yard setback	Porches, fences	2 to 3 story with some variation and few taller workplace buildings	Parks, greenbelts	Local, limited stop bus rapid transit, express bus; fixed guideway
C-5 Urban Center	Attached housing types such as townhouses and apartments mixed with retail, workplace and civic activities at the community or sub-regional scale.	Predominantly attached buildings, landscaping within the public right of way, substantial pedestrian activity	Small or no setbacks, buildings oriented to street with placement and character defining a street wall	Stoops, dooryards, storefronts and arcaded walkways	3 to 5 story with some variation	Parks, plazas and squares, boulevard median landscaping	Local bus; limited stop rapid transit or bus rapid transit; fixed-guideway transit
C-6 Urban Core	Highest-intensity areas in sub-region or region, with high-density residential and workplace uses, entertainment, civic and cultural uses	Attached buildings forming sense of enclosure and continuous street wall landscaping within the public right of way, highest pedestrian and transit activity	Small or no setbacks, building oriented to street, placed at front property line	Stoops, dooryards, forecourts, storefronts and arcaded walkways	4+ story with a few shorter buildings	Parks, plazas and squares, boulevard median landscaping	Local bus; limited stop rapid transit or bus rapid transit; fixed-guideway transit
Districts	To be designated and described locally, districts are areas that are single-use or multi-use with low-density development pattern and vehicle mobility priority thoroughfares. These may be large facilities such as airports, business parks and industrial areas.						As applicable

(Based on transect zone descriptions in *SmartCode* Version 9.2, 2008. Source: Duany Plater-Zyberk & Company.)

*Shaded cells represent Context Zones that are not addressed in this report.*

**Table 4.2 Thoroughfare Type Descriptions**

Thoroughfare Type	Functional Definition
<b>Freeway/Expressway/ Parkway</b>	Freeways are high-speed (50 mph +), controlled-access thoroughfares with grade-separated interchanges and no pedestrian access. Includes tollways, expressways and parkways that are high- or medium-speed (45 mph +), limited-access thoroughfares with some at-grade intersections. On parkways, landscaping is generally located on each side and has a landscaped median. Truck access on parkways may be limited.
<b>Rural Highway</b>	High-speed (45 mph +) thoroughfare designed both to carry traffic and to provide access to abutting property in rural areas. Intersections are generally at grade.
<b>Boulevard</b> (see Chapters 8, 9 and 10 for design guidance)	Walkable, low-speed (35 mph or less) divided arterial thoroughfare in urban environments designed to carry both through and local traffic, pedestrians and bicyclists. Boulevards may be long corridors, typically four lanes but sometimes wider, serve longer trips and provide pedestrian access to land. Boulevards may be high-ridership transit corridors. Boulevards are primary goods movement and emergency response routes and use vehicular and pedestrian access management techniques. Curb parking is encouraged on boulevards.  Multiway boulevards are a variation of the boulevard characterized by a central roadway for through traffic and parallel access lanes accessing abutting property, parking and pedestrian and bicycle facilities. Parallel access lanes are separated from the through lanes by curbed islands with landscaping; these islands may provide transit stops and pedestrian facilities. Multiway boulevards often require significant right of way.
<b>Avenue</b> (see Chapters 8, 9 and 10 for design guidance)	Walkable, low-to-medium speed (25 to 35 mph) urban arterial or collector thoroughfare, generally shorter in length than boulevards, serving access to abutting land. Avenues serve as primary pedestrian and bicycle routes and may serve local transit routes. Avenues do not exceed 4 lanes, and access to land is a primary function. Goods movement is typically limited to local routes and deliveries. Some avenues feature a raised landscaped median. Avenues may serve commercial or mixed-use sectors and usually provide curb parking.
<b>Street</b> (see Chapters 8, 9 and 10 for design guidance)	Walkable, low speed (25 mph) thoroughfare in urban areas primarily serving abutting property. A street is designed to (1) connect residential neighborhoods with each other, (2) connect neighborhoods with commercial and other districts and (3) connect local streets to arterials. Streets may serve as the main street of commercial or mixed-use sectors and emphasize curb parking. Goods movement is restricted to local deliveries only.
<b>Rural Road</b>	Low speed (25 to 35 mph) thoroughfare in rural areas primarily serving abutting property.
<b>Alley/Rear Lane</b>	Very low-speed (5 to 10 mph) vehicular driveway located to the rear of properties, providing access to parking, service areas and rear uses such as secondary units, as well as an easement for utilities.

*Shaded cells represent thoroughfare types that are not addressed in this report.*

**Table 4.4 Urban Thoroughfare Characteristics**

Urban Thoroughfare Type	Number of Through Lanes	Desired Operating Speed (mph)	Transit Service Emphasis	Median	Driveway Access	Curb Parking	Pedestrian Facilities [1]	Bicycle Facilities	Freight Mvmt. [2]
Freeway	4 to 6+	45–65	Express	Required	No	No	No	Optional separated pathway or shoulder	Regional truck route
Expressway/Parkway	4 to 6	45–55	Express	Required	No	No	Optional separated pathway	Optional separated pathway or shoulder	Regional truck route
Boulevard	4 to 6	30–35	Express and Local	Required	Limited	Optional	Sidewalk	Bike lanes or parallel route	Regional truck route
Multiway Boulevard	4 to 6	25–35	Express and Local	Required on access lanes	Yes from access lane	Yes on access roadway	Sidewalk		Regional route/local deliveries only on access roadway
Avenue	2 to 4	25–30	Local	Optional	Yes	Yes	Sidewalk	Bike lanes or shared	Local truck route
Street	2	25	Local or none	No	Yes	Yes	Sidewalk	Shared	Local deliveries only
Rural Road	2	25–35	Local or none	No	Yes	No	No	Shared or shoulder	Local deliveries only
Local Street	2	25	Local or none	No	Yes	Yes	Sidewalk	Shared	Local deliveries only
Alley/Rear Lane	1	5–10	None	No	Yes	No	Shared	Shared	Local deliveries only

*Shaded cells represent thoroughfare types that are not addressed in this report.*

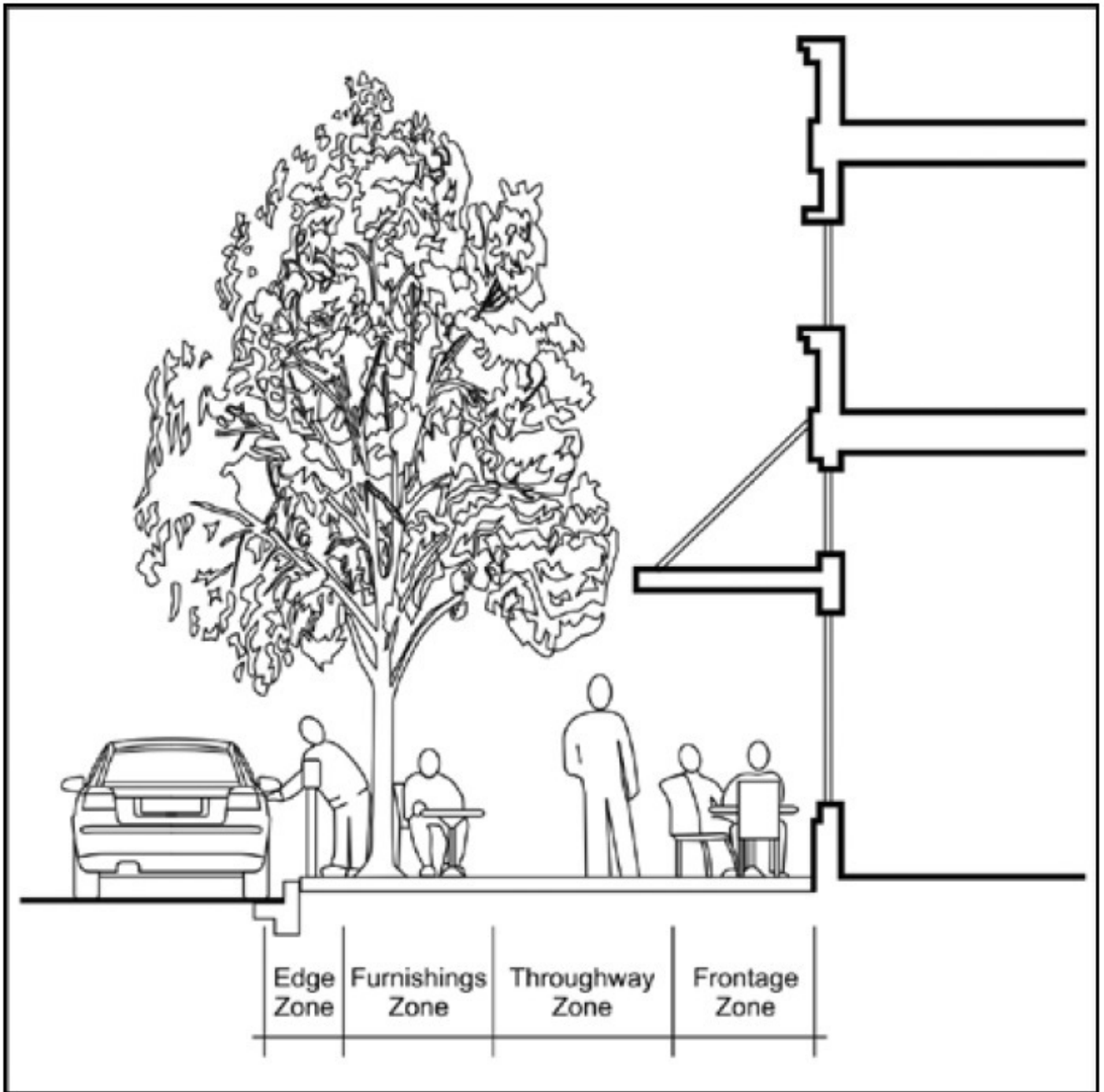
Notes:

[1] Boulevard, Multiway Boulevard, Avenue, and Street thoroughfare types have sidewalks on both sides. Sidewalk width varies as a function of context zone, fronting land use and other factors.

[2] Freight movement is divided into three categories: 1) Regional truck route; 2) Local truck route and 3) Local deliveries only. Cells show highest order of truck movement allowed.

**Table 6.2 Selected Characteristics of Walkable Thoroughfares**

Characteristic	Walkable Thoroughfares	Vehicle-Oriented Thoroughfares
Target speed range	From Table 6.4.	25–35 mph.
Pedestrian separation from moving traffic	Curb parking and streetside furnishing zone.	Optional, typically separation achieved with planting strip.
Streetside width	Minimum 9 feet (residential) and 12 feet (commercial) to accommodate sidewalk, landscaping and street furniture.	Minimum 5 feet.
Block lengths	200–660 feet.	Up to one-quarter mile.
Protected pedestrian crossing frequency (pedestrian signals or high-visibility markings at unsignalized crossings)	200–600 feet.	As needed to accommodate pedestrian demands.
Pedestrian priority at signalized intersection	Pedestrian signals and pedestrian count-down heads, adequate crossing times, shorter cycle lengths and median refuges for very long crossings.	Vehicle priority; may have longer cycle lengths and require two cycles for slower pedestrians to cross wide streets with medians.
Pedestrian crossings	High-visibility crosswalks shortened by curb extensions where there is on-street parking.	Full street width.
Median width	6 feet minimum width at crosswalk, if used as pedestrian refuge, plus 10 feet for left-turn lane, if provided. 14 foot total width for left-turn lane if no refuge needed.	14–18 feet for single left-turn lane; 26–30 feet for double left-turn lane.
Vehicular access across sidewalks	24 feet or less, except if specific frequent design vehicle requires added width.	As needed.
Curb parking	Normal condition except at bus stops and pedestrian crossings.	None.
Curb return radius	10–30 feet; low-speed channelized right turns where other options are unworkable.	30–75 feet; high-volume turns channelized.



**Figure 8.1** Streetside zones. Source: Concept by Community, Design + Architecture, illustration by Digital Media Productions.

**Table 6.4 Design Parameters for Walkable Urban Thoroughfares**

Thoroughfare Design Parameters for Walkable Mixed-Use Areas									
	Suburban (C-3)						General Urban (C-4)		
	Residential			Commercial			Residential		
	Boulevard [1]	Avenue	Street	Boulevard [1]	Avenue	Street	Boulevard [1]	Avenue	Street
<b>Context</b>									
Building Orientation (entrance orientation)	front, side	front, side	front, side	front, side	front, side	front, side	front	front	front
Maximum Setback [2]	20 ft.	20 ft.	20 ft.	5 ft.	5 ft.	5 ft.	15 ft.	15 ft.	15 ft.
Off-Street Parking Access/Location	rear, side	rear, side	rear, side	rear, side	rear, side	rear, side	rear	rear, side	rear, side
<b>Streetside</b>									
Recommended Streetside Width [3]	14.5–16.5 ft.	14.5 ft.	11.5 ft.	16 ft.	16 ft.	15 ft.	16.5-18.5 ft.	14.5 ft.	11.5 ft.
Minimum sidewalk (throughway) width	6 ft.	6 ft.	6 ft.	6 ft.	6 ft.	6 ft.	8 ft.	6 ft.	6 ft.
Pedestrian Buffers (planting strip exclusive of travel way width) [3]	8 ft. planting strip	6–8 ft. planting strip	5 ft. planting strip	7 ft. tree well	6 ft. tree well	6 ft. tree well	8 ft. planting strip	8 ft. planting strip	6 ft. planting strip
Street Lighting	For all thoroughfares in all context zones, intersection safety lighting, basic street lighting, and pedestrian-scaled lighting is recommended. See Chapter 8 (Streetside Design Guidelines) and Chapter 10 (Intersection Design Guidelines).								
<b>Traveled Way</b>									
Target Speed (mph)	25–35	25–30	25	25–35	25–35	25	25–35	25–30	25
Number of Through Lanes [5]	4–6	2–4	2	4–6	2–4	2	4–6	2–4	2
Lane Width [6]	10–11 ft.	10–11 ft.	10–11 ft.	10–12 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.
Parallel On-Street Parking Width [7]	7 ft.	7 ft.	7 ft.	8 ft.	7-8 ft.	7-8 ft.	7 ft.	7 ft.	7 ft.
Min. Combined Parking/Bike Lane Width	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.
Horizontal Radius (per AASHTO) [8]	200–510 ft.	200–330 ft.	200 ft.	200–510 ft.	200–510 ft.	200 ft.	200–510 ft.	200–330 ft.	200 ft.
Vertical Alignment	Use AASHTO minimums as a target, but consider combinations of horizontal and vertical per AASHTO Green Book.								
Medians [9]	4–18 ft.	Optional 4–16 ft.	None	4–18 ft.	Optional 4–18 ft.	None	4–18 ft.	Optional 4–16 ft.	None
Bike Lanes (min./preferred width)	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.
Access Management [10]	Moderate	Low	Low	High	Moderate	Low	Moderate	Low	Low
Typical Traffic Volume Range (ADT) [11]	20,000–35,000	1,500–25,000	500–5,000	20,000–50,000	1,500–35,000	1,000–10,000	10,000–35,000	1,500–20,000	500–5,000
<b>Intersections</b>									
Roundabout [12]	Consider urban single-lane roundabouts at intersections on avenues with less than 20,000 entering vehicles per day, and urban double-lane roundabouts at intersections on boulevards and avenues with less than 40,000 entering vehicles per day.								
Curb Return Radii/Curb Extensions and Other Design Elements	Refer to Chapter 10 (Intersection Design Guidelines)								

**Table 6.4 Notes:**

- Multiway boulevards are a special form of boulevards. Generally they add one-way, 16–20 foot wide access lanes adjacent to the outer curb and separated from the through traffic lanes by a longitudinal island at least 6 ft. wide (10 ft. if accommodating transit stops). Access lanes have curb parallel parking plus one moving traffic/bike lane with a target speed of 15–20 mph. All vehicular traffic on the access lanes is local. See Chapter 6 section on multiway boulevards for additional information.
- For all context zones with predominantly commercial frontage, this table shows the maximum setback for buildings with ground floor retail. In suburban contexts, office buildings are typically set back 5 ft. further than retail buildings to provide a privacy buffer. In general urban and urban center/core areas, office buildings are set back 0–5 ft. Setback exceptions may be granted for important civic buildings or unique designs.
- Streetside width includes edge, furnishing/planting strip, clear throughway, and frontage zones. Refer to Chapter 8 (Streetside Design Guidelines) for detailed description of sidewalk zones and widths in different context zones and on different thoroughfare types. Dimensions in this table reflect widths in unconstrained conditions. In constrained conditions streetside width can be reduced to 12 ft. in commercial areas and 9 ft. in residential areas (see Chapter 5 on designing within constrained rights of way).
- Desired target speeds on avenues serving C–4 and C–5/6 commercial main streets with high pedestrian activity should be 25 mph.
- Six lane facilities are generally undesirable for residential streets because of concerns related to neighborhood livability (i.e., noise, speeds, traffic volume) and perceptions as a barrier to crossing. Consider a maximum of four lanes within residential neighborhoods.
- Lane width (turning, through and curb) can vary. Most thoroughfare types can effectively operate with 10–11 ft. wide lanes, with 12 ft. lanes desirable on higher speed transit and freight facilities. Chapter 9 (Traveled Way Design Guidelines) (lane width section) identifies the considerations used in selecting lane widths. Curb lane width in this report is measured to curb face unless gutter pan/catch basin inlets do not accommodate bicycles, then it is measured from the edge of travel lane. If light rail transit or streetcars are to be accommodated in a lane with motor vehicles, the minimum lane width should be the



**Table 6.4 Design Parameters for Walkable Urban Thoroughfares (continued)**

Thoroughfare Design Parameters for Walkable Mixed-Use Areas									
	General Urban (C-4)			Urban Center/Core (C-5/6)					
	Commercial			Residential			Commercial		
	Boulevard [1]	Avenue	Street	Boulevard [1]	Avenue	Street	Boulevard [1]	Avenue	Street
<b>Context</b>									
Building Orientation (entrance orientation)	front	front	front	front	front	front	front	front	front
Maximum Setback [2]	0 ft.	0 ft.	0 ft.	10 ft.	10 ft.	10 ft.	0 ft.	0 ft.	0 ft.
Off-Street Parking Access/Location	rear, side	rear, side	rear, side	rear	rear	rear, side	rear	rear	rear, side
<b>Streetside</b>									
Recommended Streetside Width [3]	19 ft.	16 ft.	16 ft.	21.5 ft.	19.5 ft.	16 ft.	21.5 ft.	19.5 ft.	16 ft.
Minimum sidewalk (throughway) width	8 ft.	6 ft.	6 ft.	10 ft.	9 ft.	6 ft.	10 ft.	9 ft.	6 ft.
Pedestrian Buffers (planting strip exclusive of travel way width) [3]	7 ft. tree well	6 ft. tree well	6 ft. tree well	7 ft. tree well	6 ft. tree well	6 ft. tree well	7 ft. tree well	6 ft. tree well	6 ft. tree well
Street Lighting	For all thoroughfares in all context zones, intersection safety lighting, basic street lighting, and pedestrian-scaled lighting is recommended. See Chapter 8 (Streetside Design Guidelines) and Chapter 10 (Intersection Design Guidelines).								
<b>Traveled Way</b>									
Target Speed (mph)	25–35	25–30 [4]	25	25–35	25–30	25	25–35	25–30 [4]	25
Number of Through Lanes [5]	4–6	2–4	2–4	4–6	2–4	2–4	4–6	2–4	2–4
Lane Width [6]	10–12 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.
Parallel On-Street Parking Width [7]	8'	7–8 ft.	7–8 ft.	7 ft.	7 ft.	7 ft.	8 ft.	8 ft.	7–8 ft.
Min. Combined Parking/Bike Lane Width	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.
Horizontal Radius (per AASHTO) [8]	200–510 ft.	200–330 ft.	200 ft.	200–510 ft.	200–330 ft.	200 ft.	200–510 ft.	200–330 ft.	200 ft.
Vertical Alignment	Use AASHTO minimums as a target, but consider combinations of horizontal and vertical per AASHTO Green Book.								
Medians [9]	4–18 ft.	Optional 4–18 ft.	None	4–18 ft.	Optional 4–16 ft.	None	4–18 ft.	Optional 4–18 ft.	None
Bike Lanes (min./preferred width)	5 ft. / 6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.	5 ft. / 6 ft.
Access Management [10]	High	Low–Moderate	Low–Moderate	Moderate	Low–Moderate	Low–Moderate	High	Low–Moderate	Low–Moderate
Typical Traffic Volume Range (ADT) [11]	15,000–50,000	1,500–30,000	1,000–15,000	15,000–30,000	1,500–20,000	500–5,000	15,000–40,000	1,500–30,000	1,000–15,000
<b>Intersections</b>									
Roundabout [12]	Consider urban single-lane roundabouts at intersections on avenues with less than 20,000 entering vehicles per day, and urban double-lane roundabouts at intersections on boulevards and avenues with less than 40,000 entering vehicles per day.								
Curb Return Radii/Curb Extensions and Other Design Elements	Refer to Chapter 10 (Intersection Design Guidelines)								

width of the transit vehicle plus 1 ft. of clearance on either side. Most modern streetcars or light rail vehicles (LRT) can be accommodated in an 11 or 12 ft. wide lane but designers need to consider the LRT vehicle's "dynamic envelope" when designing on horizontal curves and intersections.

7. An 8 ft. wide parking lane is recommended in any commercial area with a high turnover of parking.
8. For guidance on horizontal radius—see AASHTO's "green book" section on "Minimum Radii for Low Speed Urban Streets—Sharpest Curve Without Superelevation." Dimensions shown above are for noted target speeds and are found on Exhibit 3–16 (Page 151) in *A Policy on Geometric Design of Highways and Streets* (2004), assuming a superelevation of –2.0 percent reflecting typical cross slope. Depending on design vehicle, horizontal curves may require lane widening to accommodate large vehicle off-tracking. See AASHTO's section on "Traveled Way Widening on Horizontal Curves" for guidance.
9. See also Chapter 9 for additional detail on medians. For curb to curb intersection crossing distances of 60 ft. or more, medians should be at least 6 ft. wide to serve as a pedestrian refuge, otherwise the median should be at least 4 ft. wide. Where left turn lanes are to be provided, median widths should be increased by the width of the turn lane(s). Where left turn lanes are not needed (e.g., long blocks) median widths may be as little as 4 ft.
10. Access management involves providing (i.e., managing) access to land development in such a way as to preserve safety and reasonable traffic flow on public streets. Low, moderate and high designations are used for the level of access restrictions. A high level of access management uses medians to restrict mid-block turns, consolidate driveways and control the spacing of intersections. A low level of access management limits full access at some intersections, but generally uses minimal measures to restrict access.
11. These ranges of typical traffic volumes are intended to help determine the characteristics of thoroughfares. Volumes can fluctuate widely on all thoroughfare types. These ranges are not intended to establish guidelines or upper bounds for designing thoroughfares.
12. Double-lane roundabouts are not recommended in urban areas with high levels of pedestrians and bicyclists.

**Table 9.4 Recommended Practice for Midblock Crossings**

<b>General</b>
The decision to locate a midblock crosswalk will be based on numerous factors. Generally, however, consider providing a marked midblock crossing when protected intersection crossings are spaced greater than 400 feet or so that crosswalks are located no greater than 200 to 300 feet apart in high pedestrian volume locations, and meet the criteria below.
Midblock crossings may be considered when there is significant pedestrian demand to cross a street between intersections, such as connecting to major generators or transit stops.
Midblock crosswalks should be located at least 100 feet from the nearest side street or driveway so that drivers turning onto the major street have a chance to notice pedestrians and properly yield to pedestrians who are crossing the street.
<b>Criteria</b>
Streets with an average daily traffic volume (ADT) of 12,000 vehicles per day or less.
Multilane streets carrying less than 15,000 ADT if a raised pedestrian refuge median is provided.
Operating speeds less than 40 mph.
A minimum pedestrian crossing volume of 25 pedestrians per hour for at least four hours of a typical day.
Adequate sight distance is available for pedestrians and motorists.
<b>Recommendations</b>
Conform to PROWAG guidelines for the disabled and visually impaired.
Unsignalized midblock crosswalks should not be provided on streets where traffic volumes do not have gaps in the traffic stream long enough for a pedestrian to walk to the other side or to a median refuge. At locations with inadequate gaps that also meet MUTCD signalization warrants, consider a signalized midblock crossing.
Consider a signalized midblock crosswalk (including locator tone and audio pedestrian signal output as well as visual pedestrian countdown signal heads) where pedestrians must wait more than an average of 60 seconds for an appropriate gap in the traffic stream. When average wait times exceed 60 seconds, pedestrians tend to become impatient and cross during inadequate gaps in traffic. If this initial threshold is met, check pedestrian signal warrants in the MUTCD.
Provide overhead safety lighting on the approach sides of both ends of midblock crosswalks.
Provide wheelchair ramps or at-grade channels at midblock crosswalks with curbs and medians.
Provide raised median pedestrian refuge at midblock crossings where the total crossing width is greater than 60 feet, and on any unsignalized multi-lane thoroughfare crossing.
Use high-visibility (ladder-style) crosswalk markings to increase visibility longitudinally.
Provide advance stop or yield lines to reduce multiple-threat crashes.
Provide advance crosswalk warning signs for vehicle traffic.
Provide curb extensions at midblock crosswalks with illumination and signing to increase pedestrian and driver visibility.
"Z" crossing configurations should be used for midblock crossings with medians wherever possible (see <b>Figure 9.16</b> ). Provide an at-grade channel in median at a 45-degree angle toward advancing traffic to encourage pedestrians to look for oncoming traffic.
<b>Other Considerations</b>
A strategy to calm traffic speeds in advance of and at a midblock crossing is to raise the pavement to meet the sidewalk elevation by use of gentle ramps (see <b>Figure 9.17</b> ). Consider use of overhead flashing beacons.

Sources:

*Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations*, FHWA, 2002

*Manual on Uniform Traffic Control Devices*, FHWA, 2009 Edition

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

**Table 10.1 Pedestrian and Bicycle Features at Signalized Intersections**

<p><b>Shorter and more visible crosswalks</b></p>	<ul style="list-style-type: none"> <li>• Crosswalks on all approaches;</li> <li>• Longitudinal markings (possible use of colored and/or textured paving);</li> <li>• Reduced overall street widths by reducing the number of travel and turn lanes, or narrowing travel lanes;</li> <li>• Curb extensions with pedestrian push buttons on extensions; and</li> <li>• Median refuges on wide streets (greater than 60 feet) with median push buttons.</li> </ul>
<p><b>Priority for pedestrians, bicyclists, and accessibility</b></p>	<ul style="list-style-type: none"> <li>• Shorter cycle lengths, meeting minimum pedestrian clearances (also improves transit travel times);</li> <li>• Longer pedestrian clearance times (based on 3.5 feet/sec. to set flashing (clearance) time and 3.0 feet/sec for total crossing time);</li> <li>• Reduced conflicts between pedestrians and turning vehicles achieved with:             <ul style="list-style-type: none"> <li>• Pedestrian lead phases;</li> <li>• Scramble phases in very high pedestrian volume locations;</li> <li>• Restricted right turns on red when pedestrians are present during specified hours; and</li> <li>• Allowing right turns during cross-street left turn phases reduces the number of right turn conflicts during pedestrian crossing phase.</li> </ul> </li> </ul>
<p><b>Low speed channelized right turn lanes</b></p>	<ul style="list-style-type: none"> <li>• Adequate sized islands for pedestrian refuge;</li> <li>• Raised pedestrian crossing/speed table within channelized right turn lane; and</li> <li>• Signal control of channelized right turn in high pedestrian volume locations.</li> </ul>
<p><b>Improved pedestrian information</b></p>	<ul style="list-style-type: none"> <li>• Pedestrian countdown timers; and</li> <li>• “Look Before Crossing” markings or signs.</li> </ul>
<p><b>Bicycle features</b></p>	<ul style="list-style-type: none"> <li>• Bicycle lanes striped up to crosswalk (using “skip lines” if vehicular right turns are allowed);</li> <li>• Bicycle detectors on high volume routes, or bicyclist-accessible push buttons;</li> <li>• Adequate clearance interval for bicyclists;</li> <li>• Colored paving in bicycle/vehicle lanes in high-conflict areas; and</li> <li>• “Bike Boxes” (painted rectangle along right hand curb or behind crosswalk) to indicate potential high-conflict area between bicycles continuing through an intersection and right turning vehicles, and to allow bicyclists to proceed through intersection or turn in advance of vehicles.</li> </ul>
<p><b>High-priority transit thoroughfare elements</b></p>	<ul style="list-style-type: none"> <li>• Adaptive Transit Signal Priority (TSP) when transit detected;</li> <li>• Extended green phase on bus route (rapid transit signal priority);</li> <li>• Truncated green phase for cross street;</li> <li>• Re-order phasing to provide transit priority (transit priority not to be given in two successive cycles to avoid severe traffic impacts);</li> <li>• Other bus priority signal phasing (sequencing)</li> <li>• Queue jump lanes and associated signal phasing; and</li> <li>• Curb extension bus stops, bus bulbs.</li> </ul>
<p><b>Accessibility and space for pedestrians</b></p>	<ul style="list-style-type: none"> <li>• Properly placed pedestrian actuation buttons, with audible locator tones;</li> <li>• Detectable warnings;</li> <li>• Two curb ramps per corner depending on radius of curb return and presence of curb extensions;</li> <li>• Clear pedestrian paths (and shoulder clearances) ensuring utilities and appurtenances are located outside pedestrian paths;</li> <li>• Vertical and overhang clearance of street furnishings for the visually impaired;</li> <li>• Properly placed signal poles and cabinets:             <ul style="list-style-type: none"> <li>• Behind sidewalks (in landscaping or in building niches);</li> <li>• In planting strips (furnishings zone); and</li> <li>• In sidewalk or curb extensions, at least three feet from curb ramps.</li> </ul> </li> </ul>
<p><b>Traffic operations for safe speeds and pedestrian convenience</b></p>	<ul style="list-style-type: none"> <li>• Target speeds between 25–35 mph;</li> <li>• Signal progression at target speeds; and</li> <li>• Fewer very long/very short cycle lengths.</li> </ul>
<p><b>Higher priority on aesthetics</b></p>	<ul style="list-style-type: none"> <li>• Textured and colored material within the streetside;</li> <li>• Colored material within crosswalks, but avoid coarse textures which provide rough surfaces for the disabled;</li> <li>• Attractive decorative signal hardware, or specialized hardware; and</li> <li>• Attention to landscaping and integration with green street stormwater management techniques.</li> </ul>

**Exhibit 18-3 Pedestrian Level-of-Service****LOS A**

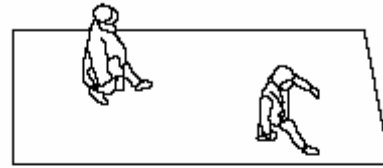
*Pedestrian Space*  $>5.6 \text{ m}^2/\text{p}$  *Flow Rate*  $\leq 16 \text{ p}/\text{min}/\text{m}$

At a walkway LOS A, pedestrians move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.

**LOS B**

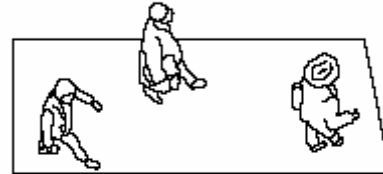
*Pedestrian Space*  $>3.7\text{-}5.6 \text{ m}^2/\text{p}$  *Flow Rate*  $>16\text{-}23 \text{ p}/\text{min}/\text{m}$

At LOS B, there is sufficient area for pedestrians to select walking speeds freely, to bypass other pedestrians, and to avoid crossing conflicts. At this level, pedestrians begin to be aware of other pedestrians, and to respond to their presence when selecting a walking path.

**LOS C**

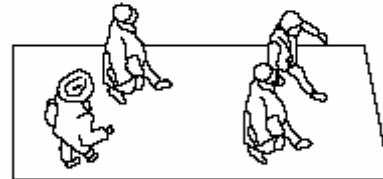
*Pedestrian Space*  $>2.2\text{-}3.7 \text{ m}^2/\text{p}$  *Flow Rate*  $>23\text{-}33 \text{ p}/\text{min}/\text{m}$

At LOS C, space is sufficient for normal walking speeds, and for bypassing other pedestrians in primarily unidirectional streams. Reverse-direction or crossing movements can cause minor conflicts, and speeds and flow rate are somewhat lower.

**LOS D**

*Pedestrian Space*  $>1.1\text{-}2.2 \text{ m}^2/\text{p}$  *Flow Rate*  $>33\text{-}49 \text{ p}/\text{min}/\text{m}$

At LOS D, freedom to select individual walking speed and to bypass other pedestrians is restricted. Crossing or reverse-flow movements face a high probability of conflict, requiring frequent changes in speed and positions. The LOS provides reasonably fluid flow, but friction and interaction between pedestrians is likely.

**LOS E**

*Pedestrian Space*  $>0.75\text{-}1.4 \text{ m}^2/\text{p}$  *Flow Rate*  $>49\text{-}75 \text{ p}/\text{min}/\text{m}$

At LOS E, virtually all pedestrians restrict their normal walking speed, frequently adjusting their gait. At the lower range, forward movement is possible only by shuffling. Space is not sufficient for passing slower pedestrians. Cross- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity, with stoppages and interruptions to flow.

**LOS F**

*Pedestrian Space*  $\leq 0.75 \text{ m}^2/\text{p}$  *Flow Rate* varies  $\text{p}/\text{min}/\text{m}$

At LOS F, all walking speeds are severely restricted, and forward progress is made only by shuffling. There is frequent, unavoidable contact with other pedestrians. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.



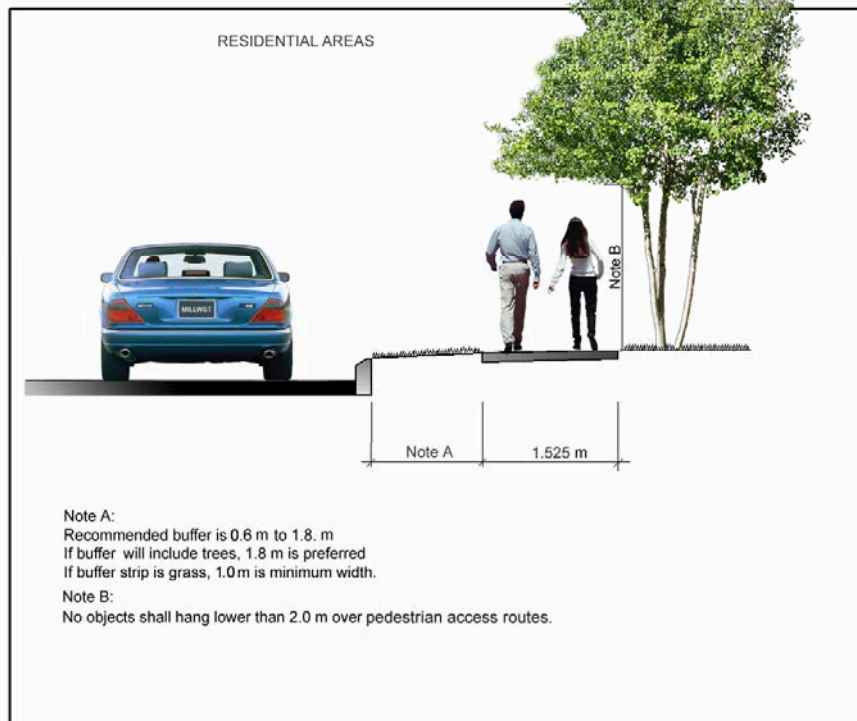
**Exhibit 18-4 Guidelines for Locating Sidewalks in Developed Areas**

Type of Area (land use, roadway functional classification, or density of dwelling units)	Providing Sidewalks on New Streets	Providing Sidewalks on Existing Streets
Commercial, Industrial, and public service (all streets)	Developed sides of these streets	Developed sides of these streets
Residential (along major and minor arterials)	Developed sides of these streets	Developed sides of these streets
Residential (along collectors)	Developed sides of these streets.	Developed sides of these streets.
Residential – neighborhood streets with detached residences less than 30 m apart	Developed sides of these streets	Preferred on both developed sides to prevent unnecessary crossings. If that is not feasible, sidewalks may be built only along one side of the roadway. The sidewalk should be built along the area with more pedestrian generators and destinations.
Residential – neighborhood streets with detached residences an average of 30 m to 60 m apart	Desirable on both developed sides to prevent unnecessary crossings, but needed on at least one side if vehicle traffic exceeds 400 vehicles/day. The sidewalk should be built along the area with more pedestrian generators and destinations.	Desirable on both developed sides to prevent unnecessary crossings, but needed on at least one side if vehicle traffic will exceed 400 vehicles/day. The sidewalk should be built along the area with more pedestrian generators and destinations.
Residential – local roadways with residences further than 60 m apart (see note 4.)	Needed on one side of these roadways when vehicle traffic will exceed 400 vehicles/day. The sidewalk should be built along the side with more pedestrian generators and destinations.	Needed on one side of these roadways if vehicle traffic exceeds 400 vehicles/day. The sidewalk should be built along the side with more pedestrian generators and destinations.

1. Sidewalks frequently extend from the building face to the curb in heavily developed urban areas where structures are continuous and attached. Where sidewalks will be replaced or reconstructed in such areas, designers should pay attention to doorway and basement entrances, stairs, roof drains, utilities, trees, street furniture, snow storage space, etc. Clearance next to the face of buildings is generally recommended to be 0.5 m. ADAAG and the regional landscape architectural staff should be consulted early in the project design. Detailed grading plans with spot elevations and slopes may be useful in areas with limited space and building entrances.
2. Identifying nearby land use, such as schools, parks, shopping centers, and other commercial properties and their associated pedestrian traffic, will help determine whether sidewalks are needed on both sides of the street. See discussion on Pedestrian Generator Checklist Section 18.5.1 and Pedestrian Traffic Forecasting Section 18.5.3.
3. Sidewalks should be provided along both sides of roads, streets, and arterials where pedestrian access is needed or desired to schools, universities, office complexes, commercial establishments, post offices, transportation terminals and transit stops. The designer should discuss this with the regional landscape architectural staff or the Regional Bicycle Pedestrian Coordinator to determine the best sidewalk placement.
4. Professional judgment must be used to determine appropriate locations to begin and/or end sidewalks as development becomes less dense. Sidewalks should have logical termini.

PEDESTRIAN FACILITY DESIGN

Exhibit 18-9 Sidewalk Placement within the Right of Way



**Exhibit 18-20 Recommendations for Installing Marked Crosswalks and Other Needed Pedestrian Improvements at Uncontrolled Locations \***

No. of Lanes and Median Type	Vehicle AADT < 9,000			Vehicle AADT > 9,000 to 12,000			Vehicle AADT > 12,000 to 15,000			Vehicle AADT > 15,000		
	Speed Limit**											
	<50 km/h	57 km/h	65 km/h	<50 km/h	57 km/h	65 km/h	<50 km/h	57 km/h	65 km/h	<50 km/h	57 km/h	65 km/h
2 Lanes	C	C	P	C	C	P	C	C	N	C	P	N
3 Lanes	C	C	P	C	P	P	P	P	N	P	N	N
4 or more Lanes With Raised Median	C	C	P	C	P	N	P	P	N	N	N	N
4 or More Lanes Without Raised Median	C	P	N	P	P	N	N	N	N	N	N	N

Source: *Safety Effects of Marked Vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines*, Federal Highway Administration.

**C = Candidate sites for marked crosswalks.** Before installing new marked crosswalks, an engineering study is needed to determine whether the location is suitable for a marked crosswalk. For an engineering study, a site review may be sufficient at some locations, while a more in-depth study of pedestrian volume, walking speed, vehicle speed, sight distance, vehicle mix, etc., may be needed at other sites. It is recommended that a minimum of 20 pedestrian crossings per peak hour (or 15 or more disabled, elderly, or child pedestrians) exist at a location before placing a high priority on the installation of a marked crosswalk alone.

**P = Possible increase in pedestrian crash risk may occur if crosswalks are added without adequate design features and/or traffic control devices.** These locations should be closely monitored and enhanced with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.

**N = Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased due to providing marked crosswalks alone.** Consider using other treatments where warranted, such as traffic calming treatments, pedestrian signals, various signal phasing and progressions to improve pedestrian safety, ITS and accessible signals, and other substantial improvements to provide safe pedestrian crossing.

- These guidelines include intersection and midblock locations with no traffic signals, stop signs or any warning/regulatory signing on the approach to the crossing. They do not apply to school crossings. A two-way center turn lane is not considered a median

\*\* Where the speed limit exceeds 65 km/h, marked crosswalks alone should not be used at unsignalized locations.



Table 1. Recommended Guidelines for New Sidewalk/Walkway Installation.

Roadway Classification and Land Use	Sidewalk/Walkway	Future Phasing Requirements
Rural Highways (< 400 ADT)	Shoulders preferred, with minimum of 0.9 m (3 ft).	Secure/preserve right-of-way (ROW) for future sidewalks.
Rural Highways (400 to 2,000 ADT)	1.5-m (5-ft) shoulders preferred, minimum of 1.2 m (4 ft) required.	Secure/preserve ROW for future sidewalks.
Rural/Suburban Highway (ADT > 2,000 and less than 1 dwelling unit (d.u.) / .4 hectares (ha) [1 d.u. / acre])	Sidewalks or side paths preferred. Minimum of 1.8-m (6-ft) shoulders required.	Secure/preserve ROW for future sidewalks.
Suburban Highway (1 to 4 d.u. / .4 ha [1 to 4 d.u. / acre])	Sidewalks on both sides required.	
Major Arterial (residential)	Sidewalks on both sides required.	
Urban Collector and Minor Arterial (residential)	Sidewalks on both sides required.	
Urban Local Street (residential – less than 1 d.u. / .4 ha [1 d.u. / acre])	Sidewalks on both sides preferred. Minimum of 1.5-m (5-ft) shoulders required.	Secure/preserve ROW for future sidewalks.
Urban Local Street (residential – 1 to 4 d.u. / .4 ha [1 to 4 d.u. / acre])	Both sides preferred.	Second side required if density becomes greater than 4 d.u. / .4 ha (4 d.u. / acre) or if schools, bus stops, etc. are added.
Local Street (residential – more than 4 d.u. / .4 ha [4 d.u. / acre])	Sidewalks on both sides required.	
All Commercial Urban Streets	Sidewalks on both sides required.	
All Streets in Industrial Areas	Sidewalks on both sides preferred. Minimum of 1.5-m (5-ft) shoulders required.	

1 acre=0.4 hectares (ha)



<b>Land-Use/Roadway Functional Classification/ and Dwelling Unit</b>	<b>New Urban and Suburban Streets</b>	<b>Existing Urban and Suburban Streets</b>
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:**

- 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.
- 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.
- 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.
- 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.

FIGURE 3-4. Guidelines for Installing Sidewalks