



# Siler City, NC Pedestrian Master Plan

2013



Division of  
Bicycle &  
Pedestrian  
Transportation

**Coaly Design**  
Landscape Architecture + Land Planning

# Acknowledgements

## *Citizen Involvement*

A special thanks to the 300+ local residents who participated in this planning process through comment forms, public workshops, and meetings.

## *Key Partners*

The Town of Siler City  
Chatham County  
Chatham County Public Health Department  
The North Carolina Department of Transportation (NCDOT)  
NCDOT Division of Bicycle and Pedestrian Transportation (DBPT)  
Triangle Area Planning Organization (TARPO)  
Community Transformation Grant Program Representatives (CTG)

## *Pedestrian Plan Steering Committee*

Jack Meadows, Town of Siler City  
Bryan Thompson, Town of Siler City  
Bob Mosher, NCDOT DBPT  
Faythe Canson-Clark, Resident  
Donald Dones, Town of Siler City  
Terry Green, Town of Siler City  
Matt Day, AICP CTP, TARPO  
Marcia Grimes, Resident  
Gary Tyson, Town of Siler City  
Joel Caviness, Chatham County Schools  
Darius Sturdivant, NCDOT Division 8  
Michael Zelek, Chatham County Public Health Department  
Mary Dudek, Resident

## *Project Consultants*

Lindsay Smart, AICP, Alta/Greenways  
Charles A. Flink, RLA, Alta/Greenways  
Matt Hayes, AICP, Alta/Greenways  
Anne Eshleman, Alta/Greenways  
Britt Storck, RLA, Alta/Greenways  
Steve Bzomowski, Alta/Greenways  
Allison Bullock, Alta/Greenways  
Kimberly Siran, RLA, Coaly Design



# TABLE OF CONTENTS

## Chapter 1: Project Overview

Purpose .....	1-1
Background .....	1-1
Vision Statement .....	1-2
Goals of the Pedestrian Plan .....	1-2
The Planning Process .....	1-2
Benefits of Walkable Community .....	1-5

## Chapter 2: Current Conditions

Overview .....	2-1
Land Use & Development .....	2-1
Demographic Analysis .....	2-1
Existing Pedestrian Conditions .....	2-12
2005-2013 NCDOT Reported Pedestrian Crash Locations .....	2-16
Opportunities and Challenges .....	2-18
Availability of Healthy Foods in Siler City .....	2-21
Recreational Areas in Siler City .....	2-25
Analysis of Access to Healthy Foods and Recreation Areas .....	2-25
Previous Planning Efforts .....	2-27

## Chapter 3: Network Recommendations

Overview .....	3-1
Methodology .....	3-1
The Pedestrian Network .....	3-3
Analysis of Access to Healthy Food Vendors and Recreation Areas .....	3-22
Project Prioritization Process .....	3-30
Priority Project Recommendation Cut-sheets .....	3-32
Project Cost Estimates .....	3-54

## Chapter 4: Programs & Policies

Overview .....	4-1
Existing Pedestrian-related Programs .....	4-1
New Programmatic Recommendations .....	4-3
Safe Routes to School Toolkit .....	4-11
Pedestrian Policies .....	4-18
Review of Unified Development Ordinance ... ..	4-21
Review of Town Code of Ordinances .....	4-29

## Chapter 5: Implementation Strategies

Overview .....	5-1
Policy Action Steps .....	5-1
Program Action Steps .....	5-2
Infrastructure Action Steps .....	5-3
Key Partners in Implementation .....	5-3
Facility Development Methods .....	5-9
Action Steps for Implementation of the Comprehensive Pedestrian Plan .....	5-15

## Chapter 6: Funding Resources

Overview .....	6-1
Federal Funding Sources .....	6-1
State Funding Sources .....	6-5
Local Government Funding Resources .....	6-9
Private and Non-Profit Funding Sources .....	6-10
Funding Source Summary Table .....	6-15

\*\*\*\*

## Appendix A: Design Guidelines

Overview .....	A-1
Design Needs of Pedestrians .....	A-2
Sidewalks .....	A-3
Sidewalk Widths .....	A-4
Sidewalk Obstructions and Driveway Ramps ..	A-5
Pedestrian Amenities .....	A-6
Pedestrians at Intersections .....	A-7
Marked Crosswalks .....	A-8
Raised Crosswalks .....	A-9
Median Refuge Islands .....	A-10
Minimizing Curb Radii .....	A-11
Curb Extensions .....	A-12
ADA Compliant Curb Ramps .....	A-13
Signalization .....	A-14
Pedestrians at Signalized Crossings .....	A-15
Pedestrian Hybrid Beacon .....	A-16
Pedestrian Signs and Wayfinding .....	A-17
Multi-Use Greenway Trails .....	A-19

General Design Practices .....	A-20
Neighborhood Greenways .....	A-21
Local Neighborhood Accessways .....	A-22
Multi-Use Trails along Roadways .....	A-23
Natural Surface Greenway Trails .....	A-24
Greenways in Active Rail Corridors .....	A-25
Greenways in Inactive Rail Corridors .....	A-26
Greenways in Abandon Rail Corridors .....	A-27
Greenway Crossings .....	A-28
Unsignalized Marked Greenway Crossings ...	A-29
Active Warning Beacons .....	A-30
Route Users to Signalized Crossings .....	A-31

## Appendix B: Public Outreach & Engagement

Overview .....	B-1
Steering Committee Meetings .....	B-1
Stakeholder & Community Meetings .....	B-2
Public Events .....	B-2
Project Resources .....	B-3
Public Comment Form Responses .....	B-6

## Appendix C: Healthy Living Supplement

Overview .....	C-1
Availability of Healthy Foods in Siler City .....	C-1
Recreation Areas in Siler City .....	C-5
Analysis of Existing Access to Healthy Foods and Recreation Areas .....	C-7
Analysis of Proposed Access to Healthy Foods and Recreation Areas .....	C-10



# Tables & Figures

## TABLES

### Chapter 2: Current Conditions

Table 2.1 Siler City Demographic Comparison ..	2-2
Table 2.2 NCDOT Reported Crashes .....	2-16
Table 2.3 Food Vendors in Siler City .....	2-23
Table 2.4 Neighborhoods in Siler City .....	2-23
Table 2.5 Recreation Areas in Siler City .....	2-23
Table 2.6 Existing Connections to Healthy Food Vendors .....	2-24
Table 2.7 Existing Connections to Recreation Areas .....	2-24

### Chapter 3: Network Recommendations

Table 3.1 Pedestrian Network Summary Table .....	3-3
Table 3.2 Priority Intersections .....	3-8
Table 3.3 Existing Connections to Healthy Food Vendors .....	3-22
Table 3.4 Existing Connections to Recreation Areas ..	3-24
Table 3.6 Neighborhood-to-Recreation Areas with Proposed Pedestrian Network .....	3-28
Table 3.7 Summary of Walkable Connections Based on Proposed Pedestrian Network .....	3-28
Table 3.8 Weighted Scores for Project Prioritization Criteria .....	3-30
Table 3.9 Project Prioritization Results .....	3-31
Table 3.10 Priority Project Recommendations .....	3-32
Table 3.11 Priority Project Cost Estimate Information .....	3-54

### Chapter 4: Programs & Policies

Table 4.1 Programmatic Recommendations Table .....	4-15
Table 4.2 Unified Development Ordinance Review and Recommendations .....	4-21
Table 4.3 Town Code of Ordinances Review and Recommendations .....	4-29

### Chapter 5: Implementation Strategies

Table 5.1 Implementation Action Steps .....	5-15
---	------

### Chapter 6: Funding Resources

Table 6.1 Funding Resources Summary Table .....	6-15
---	------

## FIGURES

### Chapter 1: Project Overview

Figure 1.1 Examples of Moderate and Vigorous Physical Activity .....	1-8
--	-----

### Chapter 2: Current Conditions

Figure 2.1 Population Density .....	2-3
Figure 2.2 Racial Minority Population .....	2-5
Figure 2.3 Hispanic Origin Population .....	2-7
Figure 2.4 Median Household Income .....	2-8
Figure 2.5 Walk to Work .....	2-9
Figure 2.6 Zero Car Households .....	2-10
Figure 2.7 Current Pedestrian Environment .....	2-13
Figure 2.8 Downtown Siler City .....	2-15
Figure 2.9 Pedestrian Crash Locations .....	2-17
Figure 2.10 Siler City Food Vendors .....	2-22
Figure 2.11 Existing Connections to Food Vendors ..	2-25
Figure 2.12 Existing Connections to Recreation Areas .....	2-26

### Chapter 3: Network Recommendations

Figure 3.1 Comprehensive Pedestrian Network Recommendations .....	3-4
Figure 3.2 Sidewalk Project Recommendations .....	3-5
Figure 3.3 Sidewalk Project Recommendations on NCDOT-owned Roadways .....	3-6
Figure 3.4 Sidewalk Project Recommendations on Locally-owned Roadways .....	3-7
Figure 3.5 Priority Intersection Locations .....	3-9
Figure 3.6 Signalized Intersection Treatment Concept 1A .....	3-10
Figure 3.7 Signalized Intersection Treatment Concept 1B .....	3-11
Figure 3.8 Non-Signalized Intersection Treatment Concept 2 .....	3-12
Figure 3.9 At-Grade Railroad Crossing Treatment Concept 3 .....	3-13
Figure 3.10 Mid-block Crossing Treatment Concept 4 .....	3-15
Figure 3.11 Recommended Traffic Calming and Gateway Areas .....	3-16
Figure 3.12 Multi-Use Greenway Trail Network Recommendations .....	3-19
Figure 3.13 Multi-Use Greenway Trail Network Recommendations - Western Siler City .....	3-20
Figure 3.14 Multi-Use Greenway Trail Network Recommendations - Eastern Siler City .....	3-21
Figure 3.15 Current Connections to Healthy Food Vendors .....	3-23
Figure 3.16 Current Connections to Recreation Areas .....	3-25
Figure 3.17 Potential Connections to Healthy Food Vendors .....	3-27
Figure 3.18 Potential Connections to Recreation Areas .....	3-29
Figure 3.19 Locations of Priority Project Recommendations .....	3-33
Figure 3.20 Sixth Avenue Project Recommendation .....	3-35
Figure 3.21 E. Raleigh Street Project Recommendation .....	3-37
Figure 3.22 E. Third Street Project Recommendation ..	3-39
Figure 3.23 US Highway 64 Project Recommendation .....	3-41
Figure 3.24 E. Cardinal Street / S. Tenth Avenue Project Recommendation .....	3-43
Figure 3.25 E. Raleigh Street Project Recommendation .....	3-45
Figure 3.26 E. Fifth Street / W. Fifth Street Project Recommendation .....	3-47
Figure 3.27 US Highway 64 Project Recommendation .....	3-49
Figure 3.28 W. Third Street Project Recommendation .....	3-51
Figure 3.29 E. Fourth Street Project Recommendation .....	3-53







*Downtown Siler City, NC*





*Siler City Planning Department, N. Second Avenue, NC*





# 1 Project Overview

## Purpose

This Plan will guide the Town of Siler City, Chatham County, NCDOT, and other local and regional partners in improving infrastructure for pedestrians in Siler City and fostering a 'walking culture' through related programs and policies that support pedestrian transportation, healthy eating and active lifestyles.

## Background

### *NCDOT's Bicycle and Pedestrian Planning Grant Initiative*

In 2012, the Town of Siler City was awarded a matching grant from the North Carolina Department of Transportation (NCDOT) Bicycle and Pedestrian Planning Grant Program. The purpose of the grant is to encourage municipalities to develop comprehensive bicycle plans and pedestrian plans. This program has assisted more than 140 North Carolina communities and is administered through NCDOT's Division of Bicycle and Pedestrian Transportation (DBPT).

### *Centers for Disease Control and Prevention (CDC) Community Transformation Grant Program*

The Centers for Disease Control and Prevention's Community Transformation Grant (CTG) Program's purpose is to improve the health and wellness of all Americans. The

CDC supports and enables awardees to design and implement community-level programs that prevent chronic diseases such as cancer, diabetes, and heart disease. In 2012, CTG was expanded to support areas with fewer than 500,000 people in neighborhoods, school districts, villages, towns, cities, and counties to increase opportunities to prevent chronic diseases and promote health. In an effort to reach more people, approximately \$70 million was awarded to 40 communities to implement broad, sustainable strategies that will reduce health disparities and expand clinical and community preventive services that will directly impact about 9.2 million Americans.<sup>1</sup>

The Chatham County Public Health Department, in partnership with Person County, was awarded CTG program funding and a portion of the funding was provided to Siler City to supplement the NCDOT Bicycle and Pedestrian Grant funding. The scope of work for the Pedestrian Master Plan project was expanded to incorporate health-related data and analysis for the Siler City community. The health-related data and results of analyses are incorporated throughout this Pedestrian Master Plan document, and are included as Appendix C.

This project was made possible through support and funding from the NCDOT, Town of Siler City, the Siler City NCSTEP Community Leadership Team, and the CTG program.

## CHAPTER CONTENTS

*Purpose 1-1*

*Background 1-1*

*Vision & Goals 1-2*

*Planning Process 1-2*

*Benefits of a Walkable Community 1-5*

## Community Initiative

This public input-driven Plan combines past planning efforts with new research and analysis. The result is a complete, up-to-date framework for moving forward with tangible pedestrian improvements.

The Town is committed to becoming pedestrian-friendly. Currently, the new Loves Creek Greenway is under development and future expansions to this multi-use greenway trail are planned. The Town desires to build on the momentum and public support for the recently adopted Downtown Master Plan and the Loves Creek Greenway project to improve the walkability and connectivity of all pedestrian facilities, and improve pedestrian safety throughout the community.

Current pedestrian conditions within Siler City do not adequately serve the needs of its residents. This Plan will provide guidance for enhancing conditions for pedestrians throughout town, particularly in areas identified by the project Steering Committee,



the public, and Town staff. Beyond physical improvements, this Plan also outlines policies and programs to help encourage people to walk more often, drive more safely, and for the community to continue to grow with the needs of pedestrians taken into full consideration.

## Vision and Goals

The following vision statement and goals were developed during the Steering Committee kick-off meeting and were supported by residents of Siler City during public outreach and engagement activities. The vision statement applies to both the Plan itself, and the desired outcome of its implementation.

### *Pedestrian Master Plan Vision Statement*

*The Town of Siler City will be a place where pedestrian connectivity and access is provided to people of all ages, abilities, ethnic and socio-economic backgrounds; where comprehensive pedestrian design is integrated into all future planning and development; where walking is encouraged and supported through a variety of programs; and where multi-modal transportation improvements create safe places for children to travel to school, allow citizens spend more time outdoors engaging in healthy activities, provide access to recreational areas, and enable residents of Siler City to enjoy a high*

### *Goals of the Pedestrian Plan*

- Increase mileage of sidewalks and greenway trails.
- Increase pedestrian safety by reducing the number of pedestrian-related accidents each year.
- Improve sidewalk connectivity by filling gaps in the existing network.
- Reduce existing foot trails/dirt paths by providing new sidewalks and greenway trails.
- Improve transportation system in Siler City for non-motorists.
- Increase pedestrian activity in Siler City.
- Increase funding for pedestrian facilities to offer connections between priority destinations (restaurants, parks, downtown, schools, etc)
- Expand sidewalk system into neighborhoods located outside of the downtown.
- Engage the public to get more residents involved in the community.
- Raise awareness and educate decision-makers, stakeholders, interest groups, and the public on the benefits of sidewalks, greenways trails, and active lifestyles.
- Complete top priority pedestrian projects by 2023 (10-year program).

## The Planning Process

### *The Project Steering Committee*

The project Steering Committee for the pedestrian plan consisted of local staff, NCDOT, Triangle Area Regional Planning Organization (TARPO), interested residents, and key stakeholders. The project Steering Committee met with project consultants four times throughout the process. During the first meeting in March 2013, the Committee focused on project vision and goals, and exiting conditions. During the second meeting in May 2013, the Committee discussed proposed improvements and pedestrian related programs needed in Siler City. The third Steering Committee meeting occurred in July 2013 with a review of the preliminary draft plan. The fourth and final Steering



*Steering Committee Meeting, March 2013*

Committee meeting took place in September 2013, with a review of the Final Pedestrian Master Plan document for presentation to Town Council for adoption.

## **Public Involvement**

In order to gain local knowledge and input, an extensive public outreach and engagement component was included as an integral part of the planning efforts. Public input was gathered through several different means, including the following: Steering Committee meetings, a project website, a project comment form, press releases, and public workshops.

In March 2013, a project website was developed with input and guidance from the Steering Committee. The website was publicly launched following the kick-off meeting. While the majority of the website was developed in English, an entire section describing the pedestrian plan, the planning process, upcoming event dates, the public comment form, and how to obtain more information was also developed in Spanish.

The first public engagement event was held during the 5K Race for Family Peace on May 4, 2013 in downtown Siler City. People were invited to learn about the plan and provide comments regarding where they would like to see improvements for walking around the community. A public input map, comment forms, and posters were provided for review and project consultants answered questions and took comments. Project information cards were also distributed in English and Spanish that provided the online link to the web-based comment form. Many race participants and their family members stopped by the booth to learn about the plan and provide input.



*Above photos from the 5K Race for Family Peace*

The general feedback was highly positive, with many people impressed that Siler City was being proactive in addressing walkability.

Throughout the planning process, meetings were held with Latino groups, business owners, neighborhood leaders, and residents. In March 2013, the consultant team met with El Vinculo to discuss public outreach strategies and to deliver hard copies of the Spanish public comment form version and project information card. Representatives from El Vinculo agreed to distribute these materials and answer questions that arose during the planning process. In April, the consultant team also met with downtown Latino business owners to discuss the project and distribute project materials.

On May 21, 2013 the Town of Siler City hosted a stakeholder meeting with representatives from the community to discuss pedestrian issues and desired improvements around

Town. The main subjects discussed included sidewalk gaps, multi-use greenway trail expansions, the need for safe crossings, lighting, traffic and speed calming, and targeted pedestrian-related programs. The meeting attendees marked up current condition maps and voted on programmatic recommendation priorities.

A second public workshop was held during the August 6, 2013 National Night Out celebration. Three teams of two people attended celebrations at three different neighborhood locations. Each team engaged Siler City residents as those residents participated in festivities and games. Draft plan content was displayed on boards and residents were able to review board information, provide input and ask questions.

### **Public Comment Form**

Two public comment forms, one in English



and one in Spanish, were developed for the Pedestrian Master Plan and were made available in both hard copy and online formats. The comment forms were available online throughout the duration of the project. To maximize responses to the online form, the web address was distributed at public meetings, advertised in press releases, sent out to local interest groups, and included on flyers that were distributed around the Town.

Results of the comment form were collected and tabulated by the consultant to provide insight into local residents' values and opinions about the project. Over 150 responses to the public comment form were collected from town residents. Appendix B "Public Outreach and Engagement" includes a summary of the responses received on these public comment forms.

## ***Data Collection and Analysis***

Collection of existing geographic information systems (GIS) data such as the Town's sidewalk inventory, aerial photography, and planned greenway network, occurred during project kick-off. Locations of food providers were collected by Chatham County Public Health Department as part of the CTG process and provided to the consultant team.

The consultant team conducted thorough on-the-ground field research in April and May 2013. Field research included an intersection inventory, a photographic inventory, the exploration of neighborhoods, schools, parks, existing trails, and the downtown core of Siler City to identify opportunities for connections between neighborhoods, key destinations, food vendors, and recreation areas.

This evaluation of existing data, physical conditions, opportunities, and challenges serves as the foundation for comprehensive recommendations for the development of pedestrian facilities.



*Member of the consultant team evaluating the E. Raleigh Street and S. Tenth Avenue intersection during field work investigations*



*Pedestrian, S. Third Avenue, Siler City*





# Benefits of a Walkable Community

When considering the level of dedication of time and valuable resources that it takes to create a walkable community, it is also important to assess the immense value of pedestrian transportation opportunities. There are economic benefits, quality of life benefits, health benefits, environmental benefits and transportation benefits of Siler City becoming a more walkable community.

Throughout history, physical exercise has been accepted as an effective way of managing a person's mental, emotional and physical state. Walking, in particular, is one of the most highly recommended types of exercise to incorporate into your daily schedule.<sup>1</sup> Some people enjoy the solitude of walking alone. Other people need the stimulation of interacting with others, such as joining a walking or running group.

Walking helps to improve people's health and fitness, enhance environmental conditions, decrease traffic congestion, and will contribute to a greater sense of community.

In a 2011 Community Preference Survey conducted by the National Association of Realtors (NAR), 66% of respondents selected being within walking distance of stores and other community amenities as being important. When given an opportunity to select which community they would most like to live in, a community described as:

**"a mix of single family detached houses, townhouses, apartments, and condominiums on various sized lots, with almost all streets having sidewalks, destinations such as shopping, restaurants, a library, and a school are within a few blocks of your home, and where parking is limited when you decide to drive to local stores, restaurants and other places"**

ranked higher and was found to be more desirable than a community described as:

**"only single family houses on large lots, with no sidewalks, destinations such as shopping, restaurants, a library, and a school are within a few miles of your home, limiting your transportation choices to mainly the automobile, but there is enough parking when you drive to these destinations and public transportation, such as bus, subway, light rail, or commuter rail, is distant or unavailable."**

## *Economic Benefits*

Walking is gaining new interest from communities across the United States after decades of neglect when most attention focused on motor vehicle transportation. As fuel prices rise, making short trips on foot instead of by car becomes more popular. However, due to low existing levels of pedestrian activity and infrastructure funding, walking faces an uphill battle to prove its utility as a viable, efficient mode of transportation. Many of walking's greatest strengths – such as creating attractive, livable streetscapes and increasing community

health through exercise – are not accounted for when evaluating transportation projects. Similarly, many of the external social costs of driving, such as traffic congestion, crashes, and climate change from greenhouse gas emissions, are not sufficiently weighted. Quantifying these factors demonstrates the importance of walking transportation and help compare benefits with costs.

The benefits created by walking increase with use. For each additional mile traveled by walking instead of driving, about one pound of greenhouse gas emissions are prevented, a few less cents are spent on gas, and a person gets a few minutes closer to reaching their recommended healthy levels of physical activity for the week. When walking becomes part of people's daily activity, these benefits add up to create a healthier, more affordable community.



*Downtown shops, Siler City*

## Affordable Transportation

Walking is an affordable form of transportation. A walkable community directly affects a citizen's transportation costs. According to the Pedestrian and Bicycle Information Center (PBIC), of Chapel Hill, NC, the cost of operating a car for a year is approximately \$5,170, while walking is virtually free. The PBIC explains, "When safe facilities are provided for pedestrians and bicyclists, more people are able to be productive, active members of society. Car ownership is expensive, and consumes a major portion of many Americans' income."

A study cited by the Victoria Transport Policy Institute's 2011 "Transportation Affordability" found that households in automobile-dependent communities devote 50% more to transportation (more than \$8,500 annually) than households in communities with more accessible land use and more multi-modal transportation systems (less than \$5,500 annually). Walking becomes even more attractive from an economic standpoint when the rising price of oil (and decreasing availability) is factored into the equation. The unstable cost of fuel reinforces the idea that local communities should be built to accommodate people-powered transportation, such as walking and biking.

## Increased Property Values

There are also economic benefits of a walkable community from a real estate standpoint. The study by CEOs for Cities "Walking the Walk: How Walkability Raises Home Values in U.S. Cities," estimates how much market value homebuyers implicitly attach to houses with higher "Walk Scores". The study looked at



*Historic Home, downtown Siler City*

data for more than 90,000 recent home sales in 15 different markets around the Nation. While controlling for key characteristics that are known to influence housing value, the study showed a positive correlation between walkability and housing prices in 13 of the 15 housing markets studied.<sup>2</sup>

For example, within a new development in Apex, North Carolina, new lots situated on greenways were priced \$5,000 higher than comparable lots off the greenway. In Charlotte, national builders typically charge premiums ranging from "\$1000 to \$5000 for \$120,000-\$200,000 homes bordering open space and greenways."<sup>3</sup>

Multi-use greenway trails can play a part in making communities more walkable, and they too have a positive economic impact.

In a survey of homebuyers by the National Association of Realtors and the National Association of Home Builders, greenway trails ranked as the second most important community amenity out of a list of 18 choices.<sup>4</sup> Additionally, the study found that 'trail availability' outranked 16 other options including security, ball fields, golf courses, parks, and access to shopping or business centers. Findings from the American Planning Association,<sup>5</sup> the Rails-to-Trails Conservancy,<sup>6</sup> and the Trust for Public Land,<sup>7</sup> further substantiate the positive connection between walkability and property values across the country.

## Quality of Life Benefits

Many factors go into determining quality of life for the citizens of a community: the local education system, prevalence of quality employment opportunities, and affordability of housing are all items that are commonly cited. Increasingly, however, citizens claim that access to alternative means of transportation and access to quality recreational opportunities such as parks, trails, greenways, and bicycle routes are important factors for them in determining their overall pleasure within their community. Communities with such amenities can attract new businesses, industries, and in turn, new residents.

Walking is a fundamental social community activity. Members of a community who walk to a destination are more likely meet or make friends or other social or commercial contacts than members of a community who drive to a destination. Provided there are viable alternatives to driving, "Americans are willing



to change their travel habits, as the dramatic increases in gas prices in 2008 have shown. Every day, more commuters switch to public transportation, bicycling and walking in places where prior infrastructure investments have made these options safe and convenient.”<sup>8</sup>

Other impacts include a reduction in overall neighborhood noise levels. According to the National Center for Safe Routes to School, “Walking or biking to school gives children time for physical activity and a sense of responsibility and independence; allows them to enjoy being outside; and provides them with time to socialize with their parents and friends and to get to know their neighborhoods.”<sup>9</sup>



*Community Center Sign, Siler City*

Providing opportunities for pedestrian travel is particularly important for people who are transportation disadvantaged (people with disabilities, elders, children, and people with low incomes). Poor walking conditions can contribute to what is considered “social exclusion,” that is, the physical, economic, and social isolation of vulnerable populations.

In a 2004 Centers for Disease Control and Prevention survey, 1,588 adults answered questions about barriers to walking to school for their youngest child aged 5 to 18 years.<sup>10</sup> The main reasons cited by parents included distance to school, at 62%, and traffic-related danger, at 30%. Strategic additions to municipal trail systems could shorten the distance from homes to schools, and overall pedestrian and bicycle improvements can improve the safety of our roadways.

### **Health Benefits**

As mentioned in the introduction, many people incorporate walking into their daily routines as a way to manage their mental, emotional and physical state. The Centers for Disease Control and Prevention (CDC) recognizes bicycling and walking are common activities that people can participate in to be physically active and increase their health. By walking for transportation, Siler City residents can incorporate meaningful physical activity into their daily schedule. Exercise from bicycling and walking transportation typically falls under moderate intensity physical activity (see Figure 1 on the next page).

For many Siler City residents, meeting the CDC’s recommended minimum guideline of 150 minutes of moderate intensity physical activity per week could be as simple as

commuting or making daily errands by walking. A walk commute of three quarters of a mile each way is sufficient to meet the CDC’s recommended guideline.

In a December 2010 article published by the Mayo Clinic, it is suggested that, “walking, like other exercise, can help you achieve a number of important health benefits such as:

- Lowered low-density lipoprotein (LDL) cholesterol (the “bad” cholesterol)
- Higher high-density lipoprotein (HDL) cholesterol (the “good” cholesterol)
- Lowered blood pressure
- Reduced risk of or improved management type 2 diabetes
- Improved mood
- Feeling strong and fit

Research shows that regular, brisk walking can reduce the risk of heart attack by the same amount as more vigorous exercise, such as jogging.” In addition to research by the Mayo Clinic, a growing number of studies show that the design of our communities—including neighborhoods, towns, transportation systems, parks, trails and other public recreational facilities—affects people’s ability to reach the recommended daily 30 minutes of moderately intense physical activity (60 minutes for youth). In short, a diverse trails network will create better opportunities for active lifestyles.

The increased rate of disease associated with inactivity reduces quality of life for individuals and increases medical costs for



## Figure 1. Examples of Moderate and Vigorous Physical Activity

### Moderate Intensity

- Walking briskly (3 miles per hour or faster, but not race-walking)
- Water aerobics
- Bicycling slower than 10 miles per hour
- Tennis (doubles)
- Ballroom dancing
- General gardening

### Vigorous Intensity

- Race walking, jogging, or running
- Swimming laps
- Tennis (singles)
- Aerobic dancing
- Bicycling 10 miles per hour or faster
- Jumping rope
- Heavy gardening (continuous digging or hoeing)
- Hiking uphill or with a heavy backpack

Source: CDC, *Measuring Physical Activity Intensity* (<http://www.cdc.gov/physicalactivity/everyone/measuring/>).



*Pedestrians, E. Second Street, Siler City*

families, companies, and local governments. The CDC determined that creating and improving places to be active could result in a 25% increase in the number of people who exercise at least three times a week.<sup>11</sup>

This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits. The establishment of a safe and reliable network of sidewalks and trails can have a positive impact on the health of nearby residents. The Rails-to-Trails Conservancy puts it simply: “Individuals must choose to exercise, but communities can make that choice easier.”<sup>12</sup>

## Environmental Benefits

When people choose to get out of their cars and walk, they make a positive environmental impact. They reduce their use of gasoline, which then reduces the volume of pollutants in the air. Other environmental impacts can be improvements in local water quality as fewer automobile-related discharges wind up in the local rivers, streams, and lakes.

Multi-use greenway trails are also part of the pedestrian network, conveying their own unique environmental benefits. Greenways protect and link fragmented habitat and provide opportunities for protecting plant and animal species. Aside from connecting places without the use of air-polluting automobiles, trails and greenways also reduce air pollution by protecting large areas of plants that create oxygen and filter air pollutants such as ozone, sulfur dioxide, carbon monoxide and airborne particles of heavy metal. Finally, greenways improve water quality by creating



*Sewer easements can serve as multi-use greenway trail corridors*

a natural buffer zone that protects streams, rivers and lakes, preventing soil erosion and filtering pollution caused by agricultural and road runoff.

### Reduction in Vehicle Emissions & Fuel Consumption

Providing facilities for walking can help to reduce automobile dependency, which in turn leads to a reduction in vehicle emissions –a benefit for residents of Siler City, and the surrounding environment. As of 2003, 27% of U.S. greenhouse gas emissions are attributed to the transportation sector, and personal vehicles account for almost two-thirds (62%) of all transportation emissions.<sup>13</sup> Primary emissions that pose potential health and environmental risks are carbon dioxide, carbon monoxide, volatile organic compounds (VOCs), nitrogen oxides (NO<sub>x</sub>), and benzene. Children and senior citizens are particularly sensitive to the harmful affects

of air pollution, as are individuals with heart or respiratory illnesses. Increased health risks such as asthma and heart problems are associated with vehicle emissions.<sup>14</sup>

Decreasing the dependency on daily motor vehicle trips and increasing the availability of alternative travel methods such as walking can reduce emissions and assist in improving air quality. Replacing two miles of driving each day with walking or bicycling will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.<sup>15</sup> The recommended pedestrian network presented in Chapter 3 will enable citizens to consider replacing two miles of driving with walking or bicycling because the new infrastructure will link neighborhoods to important basic needs destinations, such as grocery stores, schools, retail areas, and parks.

Other studies have likewise shown air quality benefits as a result of increased walking and





*W. Third Street, Siler City*

bicycling rates and reduced vehicle miles traveled:

- As of 2008, roughly 9.5 percent of all U.S. trips are made by walking or bicycling. A modest increase in walking and bicycling to 13 percent of all trips would save 3.8 billion gallons of gasoline each year and reduce CO<sub>2</sub> emissions by 33 million tons. A substantial increase in walk and bike rates to 25 percent of all trips would save 10.3 billion gallons of gasoline and prevent 91 million tons of CO<sub>2</sub> emissions.<sup>16</sup>
- Minneapolis-St. Paul, MN: If bicycles were used for half of the short trips made on good weather days, the Twin Cities could prevent 300 deaths and save \$57 million in annual medical costs due to reduced air pollution and increased physical activity. Collectively, 11 major Midwest cities would save \$7 billion in medical costs each year and prevent 1,100 deaths.<sup>17</sup>

- A five percent increase in the walkability of a neighborhood is associated with a per capita 32.1 percent increase in active travel, 6.5 percent fewer miles driven, 5.6 percent fewer grams of nitrogen oxides (NO<sub>x</sub>) emitted, and 5.5 percent fewer grams of volatile organic compounds (VOCs) emitted.<sup>18</sup>
- By providing a variety of transportation choices, citizens of Siler City will also have a sense of contributing to the solution of reducing air and noise emissions.

### **Improved Water Quality and Wildlife Habitat**

There are a multitude of environmental benefits from trails, greenways, and open spaces that help to protect the essential functions performed by natural ecosystems. Multi-use greenway trails are often included as part of greenway or green space corridors, offering transportation options while also contributing to environmental quality. Green space corridors help link fragmented tracts of land to provide larger habitats for wildlife while also protecting sensitive natural features, natural processes, and ecological integrity. These tracts of open space also contribute to cleaner air by preserving stands of plants that create oxygen and filter air pollutants such as ozone, sulfur dioxide, carbon monoxide, and airborne particles of heavy metals. Vegetation within the green space corridors also creates a buffer to protect streams, rivers, and lakes, preventing soil erosion and filtering pollution caused by agricultural and roadway runoff.<sup>19</sup> Trails that are built within green space corridors give bicyclists, pedestrians, and other non-



*Pedestrians, MLK Jr. Blvd., Siler City*





motorized trail users access to these natural areas and provide safe off-road facilities for walking and bicycling. These corridors also provide opportunities for restoring wildlife habitat in areas that have been previously disturbed.

### **Energy Conservation and Independence**

According to the National Association of Realtors and Transportation for America, 89% of Americans believe that transportation investments should support the goal of reducing energy use.<sup>20</sup> The transportation sector currently accounts for 71 percent of all U.S. petroleum use, with 40 percent of daily trips made within two miles or less and 28 percent less than one mile.<sup>21</sup> Providing alternative modes of travel has the potential to reduce dependency on foreign oil and promote more energy-efficient transportation choices in communities. Most of the short trips made in the U.S. are single-occupancy vehicle trips that could potentially be made on foot or by bicycle.

### **Transportation Benefits**

According to the U.S. Environmental Protection Agency, fewer children walk or bike to school than did so a generation ago. In 1969, 48 percent of students walked or biked to school, but by 2001, less than 16 percent of students between 5 and 15 walked or biked to or from school.<sup>22</sup>

According to the Federal Highway Administration, the basic cost of a single mile of urban, four-lane highway is between \$20 million and \$80 million. In urban bottlenecks where congestion is the worst, common restrictions such as the high cost

of purchasing right of way and the need to maintain traffic for a large number of vehicles can boost that figure to \$290 million per mile or more.<sup>23</sup> By contrast, the costs of bicycle and pedestrian facilities range anywhere from a few thousand dollars per mile to rarely more than \$1 million, with great variability between types of infrastructure and based on local circumstances.<sup>24</sup>

A National Household Travel Survey found that roughly 40 percent of all trips taken by car are less than two miles.<sup>25</sup>

Nearly two-thirds of all households say they have satisfactory shopping available within walking distance of their home and 57 percent of parents with children 13 years or younger live within one mile of a public elementary school.<sup>26</sup> By replacing short car trips with bicycle trips, residents have a significant positive impact on local traffic and congestion. Traffic congestion reduces mobility, increases auto-operating costs, adds to air pollution, and causes stress in drivers. Furthermore, every car trip replaced with a pedestrian trip reduces U.S. dependency on fossil fuels, which is a national goal. Currently, out of every dollar drivers spend on gasoline, at least \$0.35 flow into foreign economies.<sup>27</sup>

According to the Brookings Institution, the number of older Americans is expected to double [between 2000 and 2025].<sup>28</sup> All but the most fortunate seniors will confront an array of medical and other constraints in their mobility even as they continue to seek both an active community life, and the ability to age in place. Trails built as part of the pedestrian transportation network generally do not allow for motor vehicles. However, they do

accommodate motorized wheelchairs, which is an important asset for the growing number of senior citizens who deserve access to independent mobility.

Creating a walkable community provides greater and safer mobility all residents, especially the non-driving population. According to the U.S. Census Bureau, there are more than 60 million Americans who do not drive because they are not old enough. Another 30 million adults are not licensed to drive for a variety of reasons including economics, age, disability, and choice. Eight million Americans above the age of 60 do not have a driver's license, and there are other licensed drivers who just choose not to drive.<sup>29</sup>

There are 90+ million non-drivers in the U.S. and providing sidewalks to increase mobility for these 90+ million historically underserved citizens will enhance environmental conditions, improve overall health and contribute to a greater sense of community.



## Endnotes from Chapter 1: Project Overview

- Centers for Disease Control and Prevention. Community Transformation Grants. <http://www.cdc.gov/communitytransformation/>
- CEOs for Cities. (2010) Walking the Walk: How Walkability Raises Home Values in U.S. Cities
- <http://www.charmeck.org/mecklenburg/county/ParkandRec/Greenways/Documents/1benefits.pdf>
- National Association of Realtors and National Association of Home Builders (2002). Consumer's Survey on Smart Choices for Home Buyers.
- How Cities Use Parks for Economic Development, 2002.
- Economic Benefits of Trails and Greenways, 2005.
- Economic Benefits of Parks and Open Space, 1999.
- Active Transportation for America: The Case for Federal Investment in Bicycling and Walking. Rails to Trails Conservancy and Bikes Belong Coalition 2008 / Sissel, S., Cost per Highway Mile, 2008.
- National Center for Safe Routes to School. (2006). National Center for Safe Routes to School Talking Points.
- Centers for Disease Control and Prevention. The Importance of Regular Physical Activity for Children. Accessed in 2005 from [www.cdc.gov/nccdphp/dnpao/index.html](http://www.cdc.gov/nccdphp/dnpao/index.html).
- Centers for Disease Control and Prevention. The Importance of Regular Physical Activity for Children. Accessed in 2005 from [www.cdc.gov/nccdphp/dnpao/index.html](http://www.cdc.gov/nccdphp/dnpao/index.html).
- Rails-to-Trails Conservancy. (2006) Health and Wellness Benefits.
- Office of Transportation and Air Quality, Environmental Protection Agency. (2006). Greenhouse Gas Emissions from the U.S. Transportation Sector: 1990-2003. Report number EPA 420 R 06 003
- Health Effects Institute (2010). Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects. Special Report 17.
- Federal Highway Administration. (1992). Benefits of bicycling and walking to health.
- Gotchi, T. & Mills, K. (2008). Active transportation for America. Rails-to-Trails Conservancy. Retrieved from [http://www.railstotrails.org/resources/documents/whatwedo/atfa/ATFA\\_20081020.pdf](http://www.railstotrails.org/resources/documents/whatwedo/atfa/ATFA_20081020.pdf).
- Grabow, M.L., Spak, S.N., Holloway, T., Stone, B., Mednick, A.C., & Patz, J.A. (2011). Air quality and exercise-related health benefits from reduced car travel in the Midwestern United States. *Environmental Health Perspectives*, 120(1): 68-76.
- Frank, L.D., Sallis, J.F., Conway, T.L., Chapman, J.E., Saelens, B.E., and Bachman, W. (2006). Many Pathways from Land Use to Health: Associations between Neighborhood Walkability and Active Transportation, Body Mass Index, and Air Quality. *Journal of the American Planning Association* 72(1): 75-87.
- Arendt, R. (1994). *Rural by Design*. American Planning Association, Chicago, Illinois.
- National Association of Realtors and Transportation for America. (2009). 2009 Growth and Transportation Survey. [http://t4america.org/docs/011609\\_pr\\_nart4poll.pdf](http://t4america.org/docs/011609_pr_nart4poll.pdf)
- Bureau of Transportation Statistics. (2010). Transportation Statistics Annual Report 2010. Retrieved from: [http://www.bts.gov/publications/transportation\\_statistics\\_annual\\_report/2010/](http://www.bts.gov/publications/transportation_statistics_annual_report/2010/)
- U.S. EPA. Travel and Environmental Implications of School Siting. 2003.
- Active Transportation for America: The Case for Federal Investment in Bicycling and Walking. Rails to Trails Conservancy and Bikes Belong Coalition 2008 / Sissel, S., Cost per Highway Mile, 2008.
- Krizek, K. Guidelines for Analysis of Investments in Bicycle Facilities, 2006.
- 'Daily Trip Distances' chart from the Bicycle and Pedestrian Information Center website, [www.pedbikeinfo.org](http://www.pedbikeinfo.org).
- U.S. Census Bureau, American Housing Survey for the United States: 2005. 2006
- Active Transportation for America: The Case for Federal Investment in Bicycling and Walking. Rails to Trails Conservancy and Bikes Belong Coalition. 2008.
- Brookings Institution. 2003. The Mobility Needs of Older Americans: Implications for Transportation Reauthorization.
- U.S. DOT Distribution of Licensed Drivers. 2001.







*Pedestrians walking to downtown Siler City, NC*







*Siler City Gateway Sign, US Highway 64 West*





## 2 Current Conditions

### Overview

In order to propose a comprehensive pedestrian system for Siler City, it is critical to examine the existing pedestrian environment. A pedestrian system consists of several types of facilities including sidewalks, crosswalks, curb ramps, pedestrian countdown timers, multi-use greenway trails, and railroad crossings, thus an analysis of all of these facilities is required. Siler City's geographic characteristics, existing roadway and land use configurations, and existing sidewalk facilities significantly affect the viability of pedestrian transportation and recreation, and the everyday decisions of pedestrians and motorists.

### Land Use & Development

Siler City experienced economic and residential growth throughout the 19th century. Two poultry processing plants largely supported the Siler City economy by employing hundreds of plant workers, and by procuring poultry from local area farmers. Like many North Carolina communities, the growth has plateaued in recent years, affording Siler City an opportunity to assess the existing transportation network and pedestrian environment.

Siler City is located along US Highway 64 in Chatham County, due west of Pittsboro. US Highway 64 runs east-west through the northern portion of the community, and

commercial development along US Highway 64 provides residents and visitors motor vehicle access to many commercial and retail establishments.

Downtown Siler City is south of the US Highway 64 corridor and is experiencing a revival, due in part to the Town's encouragement and support of the new farmers market, the development of a regulation-size soccer field, and several new locally owned businesses opening. The Town also recently received facade grant funding and recently adopted a Downtown Master Plan, discussed later in this chapter.

### Demographic Analysis

The needs and demands of different populations in Siler City related to walking can be better understood through an analysis of demographic information. 2010 U.S. Census Bureau data and 2007-2011 U. S. Census Bureau, American Community Survey (ACS) data were obtained and analyzed during the current conditions evaluation of this Pedestrian Master Plan. Data sets such as population density, minority populations, citizens without access to a vehicle, people who walk to work, and median household income were mapped by Census Block or Block Group.

Demographic analysis was performed in order to recognize potential "communities of concern." For the purposes of this Pedestrian

### CHAPTER CONTENTS

*Overview (2-1)*

*Land Use & Development (2-1)*

*Demographic Analysis (2-1)*

*Existing Pedestrian Conditions (2-12)*

*2005-2013 NCDOT Reported Crash Locations (2-16)*

*Opportunities & Challenges (2-18)*

*Availability of Healthy Foods in Siler City (2-21)*

*Recreation Areas in Siler City (2-25)*

*Analysis of Access to Healthy Foods and Recreation Areas (2-25)*

*Previous Planning Efforts (2-27)*

Plan, "communities of concern" are areas where the percentage of populations in these categories in Siler City are greater than that of the county-wide average for Chatham County.

According to Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," Siler City should identify and limit, to the greatest extent possible, disproportionately high and adverse human health or environmental effects that their programs, policies, and activities have on minority populations and low-income populations. A strong pedestrian network will be designed to ensure all residents benefit to the greatest extent possible.

It is important to note that impacts from transportation projects can be either positive or negative. For example, positive impacts could be improved access to a

recreational greenway trail or alternative mode of transportation. An example of a negative impact could be disruption to nearby residents and businesses during the construction period. As different pedestrian facility projects progress through the planning and design stages, these areas should be carefully addressed.

### Population Characteristics & Density

As of the 2011 U.S. Census estimate, Siler City had a total population of 7,972. In Siler City, females represent 50.9 percent of the population and males 49.1 percent. Over half of the population (58.1 percent) falls between the ages of 18 and 65 years old.

Figure 2.1 on page 2-3 shows population density by U.S. Census Block in Siler City. The most densely populated areas are located adjacent to Siler City’s downtown core. There are additional densely populated areas in the northwest corner of Siler City near the US 64 and N. Glenn Avenue intersection as well as the eastern side of Siler City in the Loves Creek neighborhood near the Alston Bridge Rd and Kent Rd intersection. In southern Siler City near W. Raleigh Street and W. Third Street, there is a Census Block with 9.5 persons per acre. Providing safe access between highly populated areas and destinations such as commercial centers, and downtown should be considered high priorities for Siler City.

### Minority Populations (Racial & Ethnic)

The racial and ethnic minority populations in Siler City are calculated as percentages of the total population for each U.S. Census Block. The determination of what is disproportionately high and adverse human health or environmental effect as discussed by E.O.

**Table 2.1: Siler City Demographic Comparison**

Siler City Demographics (US Census Bureau)	Source	Estimate	% of Total
Total Population	2010 Decennial Census	7,887	100
Hispanic/Latino Population		3,928	49.8
Minority Population		1,956	24.8
Population Living Below the Poverty Line	ACS 5-Year (2007-2011)	1,609	20.4
Chatham County		N/A	11.4
North Carolina		N/A	16.1
Median Household Income per Year		\$33,305	N/A
Chatham County		\$56,935	N/A
North Carolina	\$46,291	N/A	N/A

12898 is context dependent. The approach used in the development of this Pedestrian Master Plan to identify communities of concern is only based on available U.S. Census Block data and the proportion of protected populations that they contain. All future project development processes should include additional efforts to utilize local knowledge of individual neighborhoods to identify potential populations that might have been missed during this Census-based analysis.

### Racial Minority Populations

The table above presents population characteristics for Siler City, Chatham County, and the State of North Carolina. According to the 2010 U.S. Census, 17.5 percent of the total Chatham County population is considered to be a racial minority. In Siler City, 24.8 percent of the total population is considered to be of a racial minority.

Detailed analysis of U.S. Census Blocks in Siler City identified numerous Census Blocks

with percent of racial minority populations greater than 17.5 percent, the Chatham County threshold. According to E.O. 12898, these U.S. Census Blocks can be considered “communities of concern.”

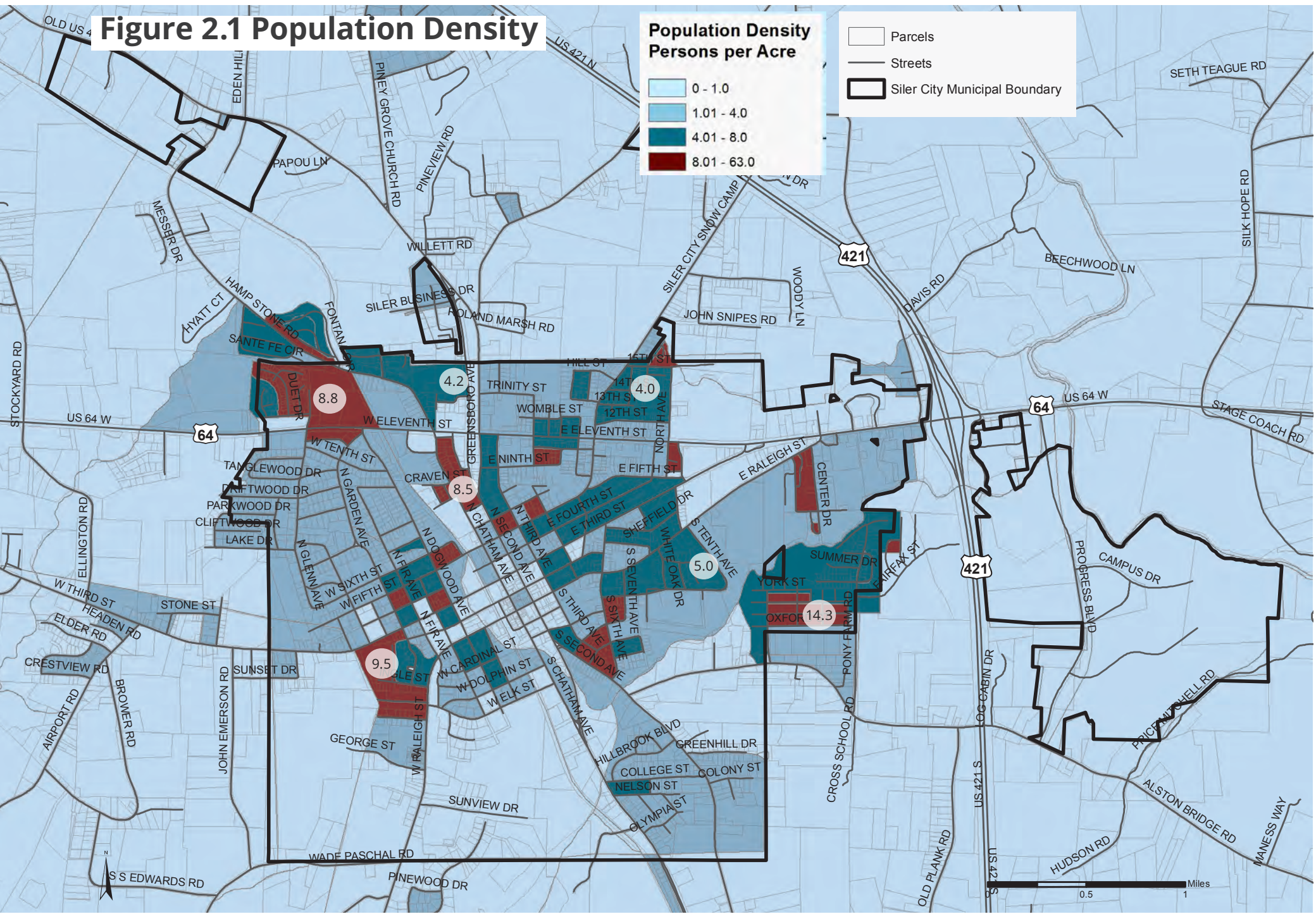
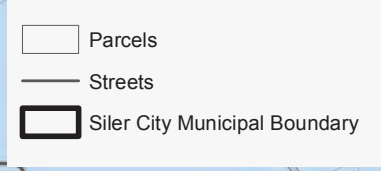
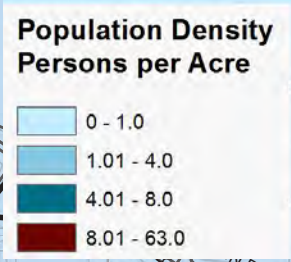
Figure 2.2 on page 2-5 is a map of racial minority populations within Siler City. With the exception of the southern and southwestern areas of Siler City, high concentrations of minority populations exist throughout the community. Several areas have concentrations of minority populations nearing 100 percent.

The Racial Minority Populations map depicts four categories of persons per acre. The first category is Census Blocks that contain minority populations of 9 percent or less and is shown in the lightest blue color. The second category has higher population percentages between 9 and 13 percent and is shown in turquoise, and the Census Blocks shown in the darkest blue color have percentages of minority populations between 13 and 17.5 percent, the third category. All Census Blocks





# Figure 2.1 Population Density





shown in red are in the fourth category, with populations of minorities greater than 17.5 percent.

### Hispanic or Latino Ethnicity/Origin Population

According to the 2010 U.S. Census, approximately 13.2 percent of the Chatham County population and 49.8 percent of Siler City's population are considered to be of Hispanic or Latino ethnicity/origin. Figure 2-3 on page 2-7 illustrates the concentrations of the Hispanic population in Siler City. If the percentage of Hispanic population in a Census Block was greater than 13.2 percent, than the Census Block is shown in red on the map, as a "community of concern." As shown in Figure 2.3, on page 2-7, most Census Blocks in Siler City include Hispanic populations higher than the Chatham County average. Furthermore, some areas highlighted in red have concentrations of Hispanic populations at or near 100 percent.



*Pedestrians, Beaver Street, Siler city*

### Median Household Income Levels

Median household income is mapped by U.S. Census Block Group, as data are not available at the Census Block level. According to 2007-2011 U.S. Census ACS data, the median household income for Chatham County is \$56,935, while the median household income for Siler City is \$33,305. Median household income levels for Siler City Block Groups are illustrated in Figure 2.4 on page 2-8 and range from \$23,591 to \$53,846. Because all Block Groups located in Siler City have median household income levels below the Chatham County median household income threshold of \$56,935, the Siler City median household income threshold of \$33,305 was used to highlight "communities of concern." These areas should be given special consideration during the project prioritization process because lower-income residents may be more likely to rely on walking as a primary form of transportation.

As shown in red in Figure 2.4, on page 2-8, the majority of households in Siler City have median household income levels below the \$33,305 threshold, and based on this assessment should be considered "communities of concern." To ensure convenient walking opportunities, a strong pedestrian network should be in place to safely connect lower-income residents to healthy food vendors and other important destinations in Siler City to access basic needs.

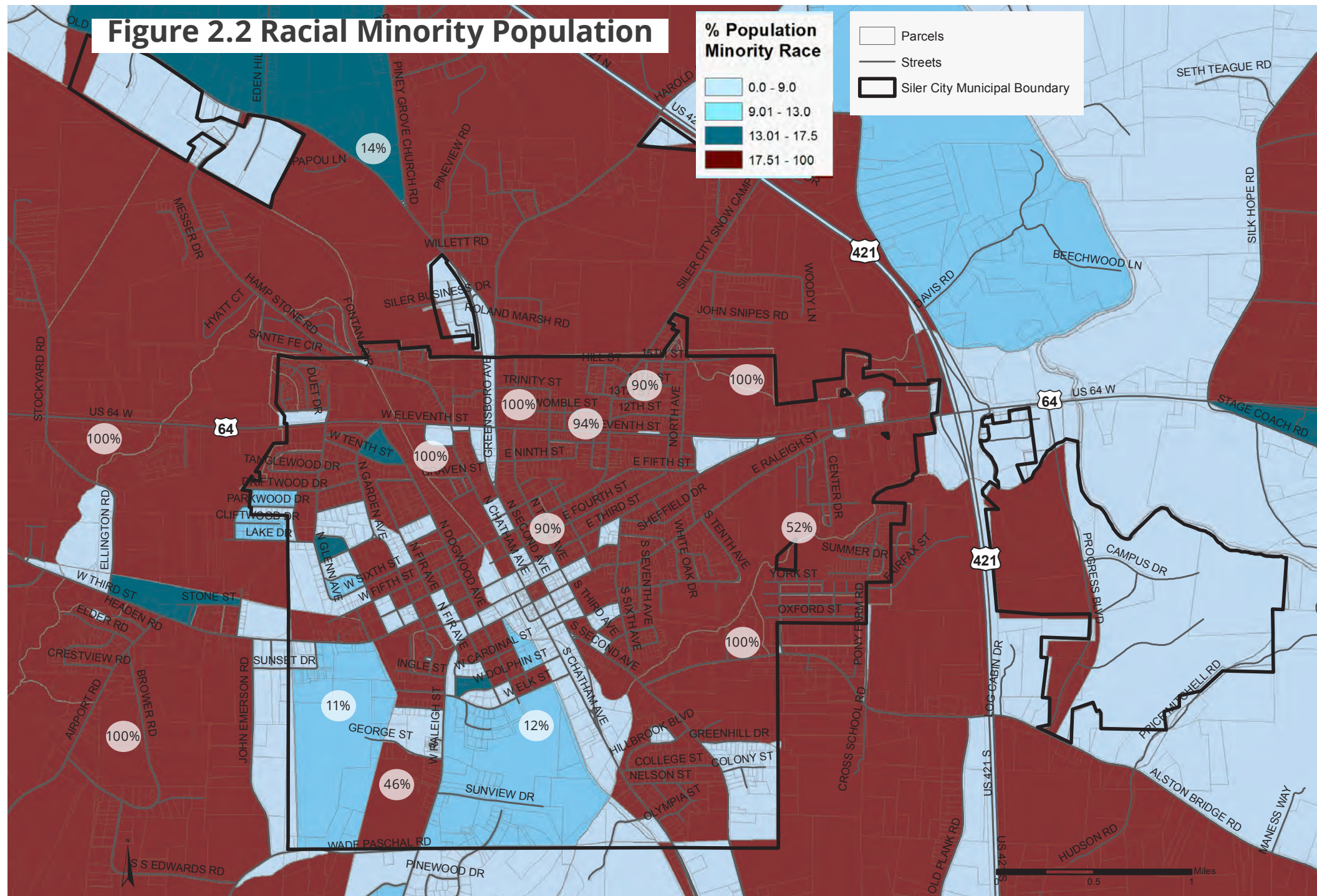
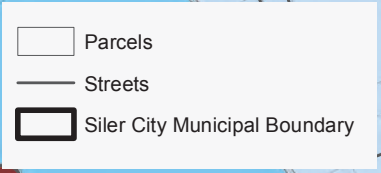
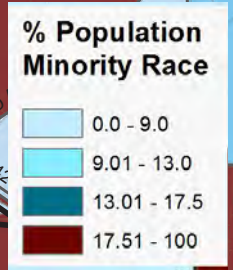


*Pedestrians, Dolphin Street, Siler City*





# Figure 2.2 Racial Minority Population



## Persons in Poverty

In addition to considering Median Household Income levels in Siler City, the consultant team obtained Poverty Level statistics from the 2007-2011 U.S. Census, ACS. The U.S. Census determines poverty status by comparing annual income to a set of dollar values called poverty thresholds that vary by family size, number of children, and age of householder. If a family's before-tax income is less than the dollar value of their threshold, then that family and every individual in it, are considered to be in poverty.

For people not living in families, poverty status is determined by comparing the individual's income to his or her poverty threshold. The percentage of people living below the poverty level in Siler City is 20.4 percent. Poverty levels were not mapped as part of this Pedestrian Master Plan, however, these data were included in the review of current conditions and taken into account during the development of the pedestrian network recommendations presented in Chapter 4.

### PERSONS LIVING BELOW THE POVERTY LEVEL

*The percentage of people living below the poverty level in Siler City is 20.4 percent.*

## Commute by Walking Populations

Based on 2007-2011 U.S. Census ACS estimates, Figure 2.5 on page 2-9 depicts the percent of the population that walks to work. The Census Block Groups shown in red in the eastern portion of Siler City have over three percent of workers commuting by walking. The Census Block Group shown in dark blue has over two percent of workers that commute by walking. Outside these areas, less than 1 percent of the population commutes to work by walking, as shown in the light blue color. The need for improved walkability exists in areas where populations commute to work on foot, as well as where populations currently do not commute to work by walking. Improved facilities and access would enable residents to consider walking to their place of employment or other high priority destinations.



*S. Sears Avenue & E. Tenth Street, Siler City*

## Population with No Access to Vehicle (Zero Car Households)

Figure 2.6, on page 2-10, illustrates the concentrations of Zero Car Households in and around Siler City. Based on 2007-2011 U.S. Census ACS estimates, more than 10 percent of the population in several Census Block Groups (as high as 23.6 percent in one Census Block Group) do not have access to a vehicle, and can be referred to as "zero car households." These residents rely on walking or another form of non-motorized transportation. As shown in red, high concentrations of populations with no access to a vehicle exist throughout Siler City. Only small areas in the western and southern parts of Siler City show lower levels of zero-car households; less than 3.5 percent (blue) and 0 percent (light blue).

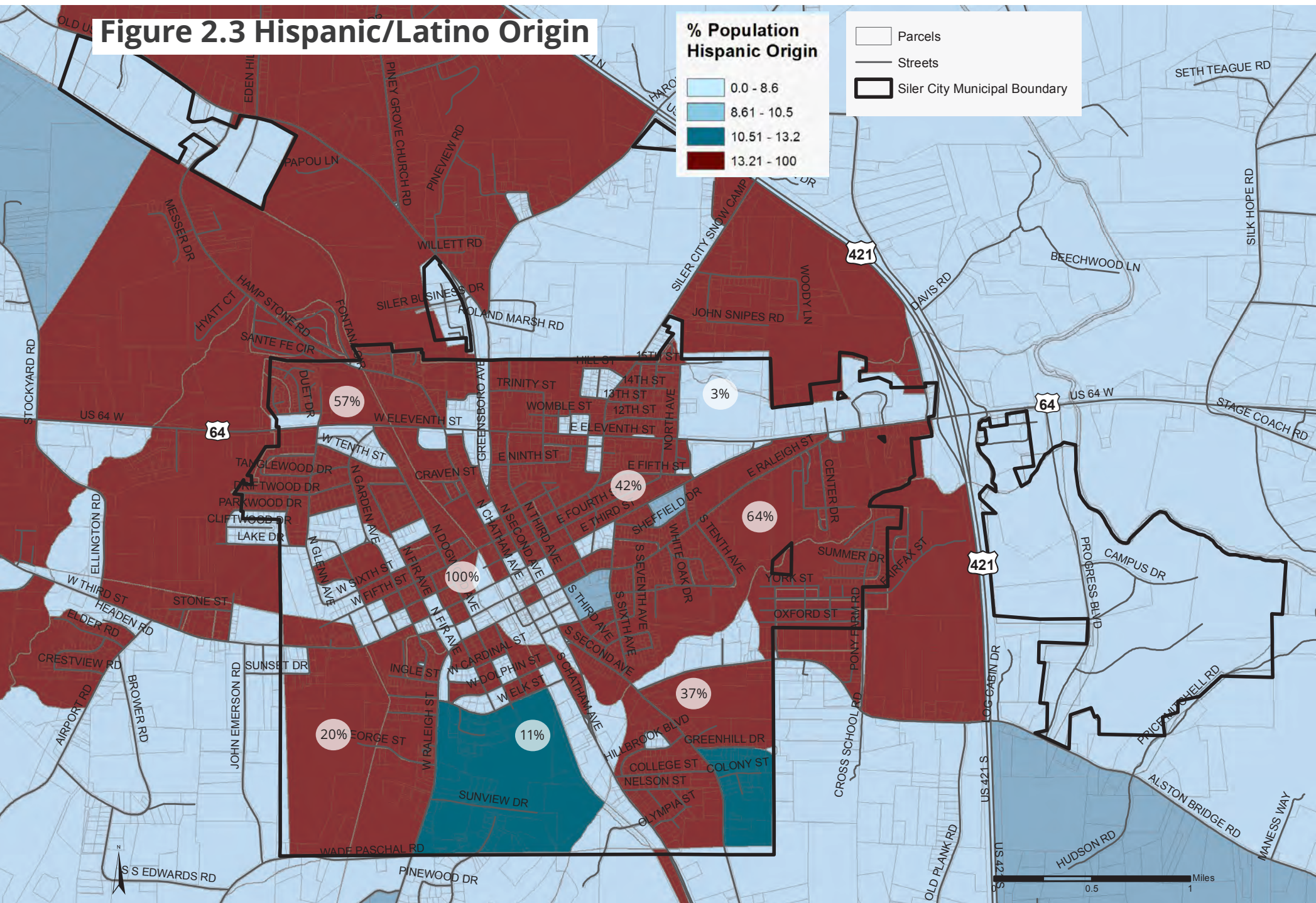
## Access to Transit

There are limited transit facilities in Siler City. A bus service runs between Siler City and Pittsboro three times per day during the business week. The pick-up/drop-off locations are located at Wal-Mart and Chatham County Community College (CCCC), both located on the eastern end of Siler City. The lack of transit services through the Town of Siler City is another reason why access to pedestrian facilities and alternative forms of transportation are very important considerations, especially for those residents without motor vehicles and the other non-driving populations.



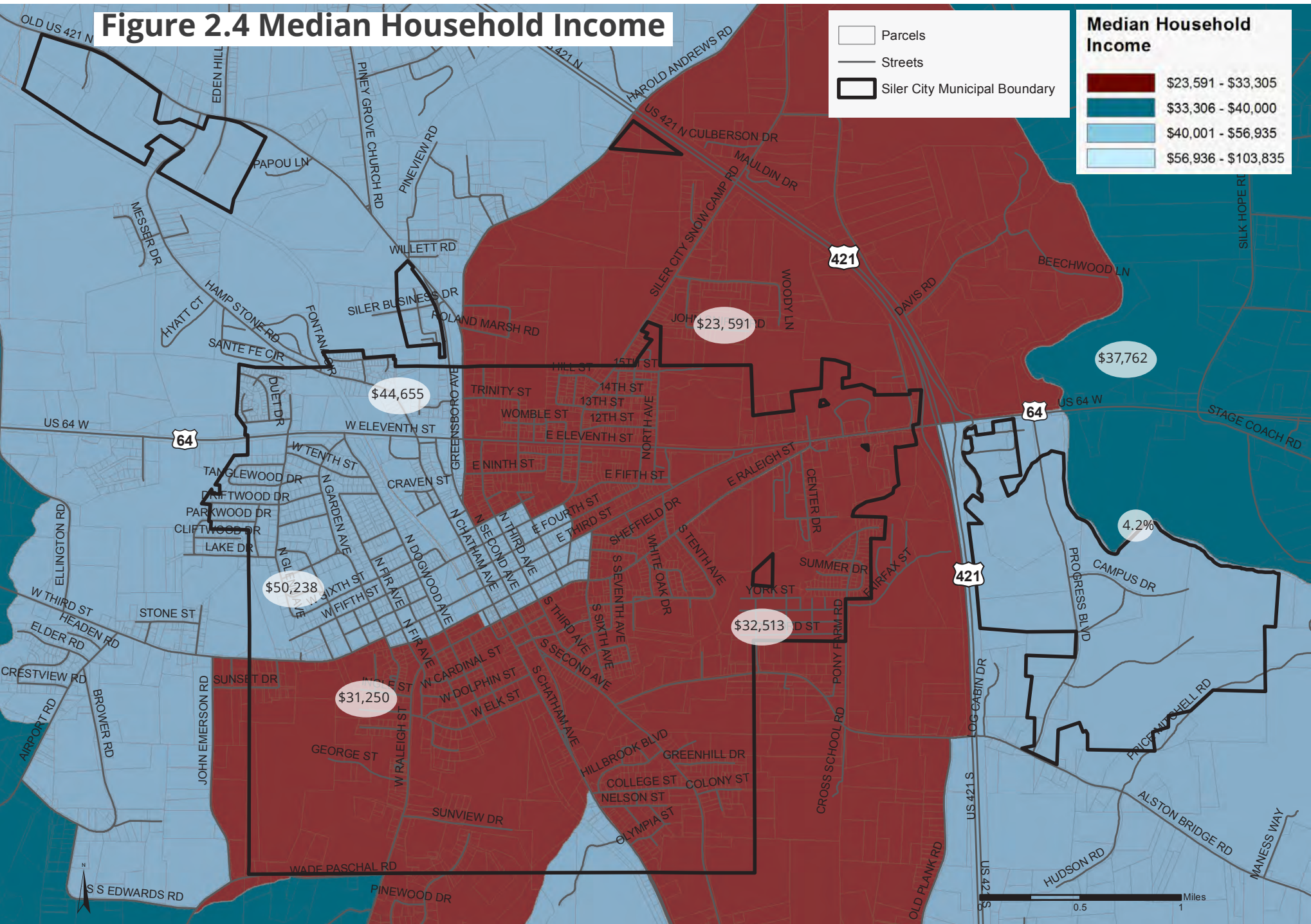


**Figure 2.3 Hispanic/Latino Origin**



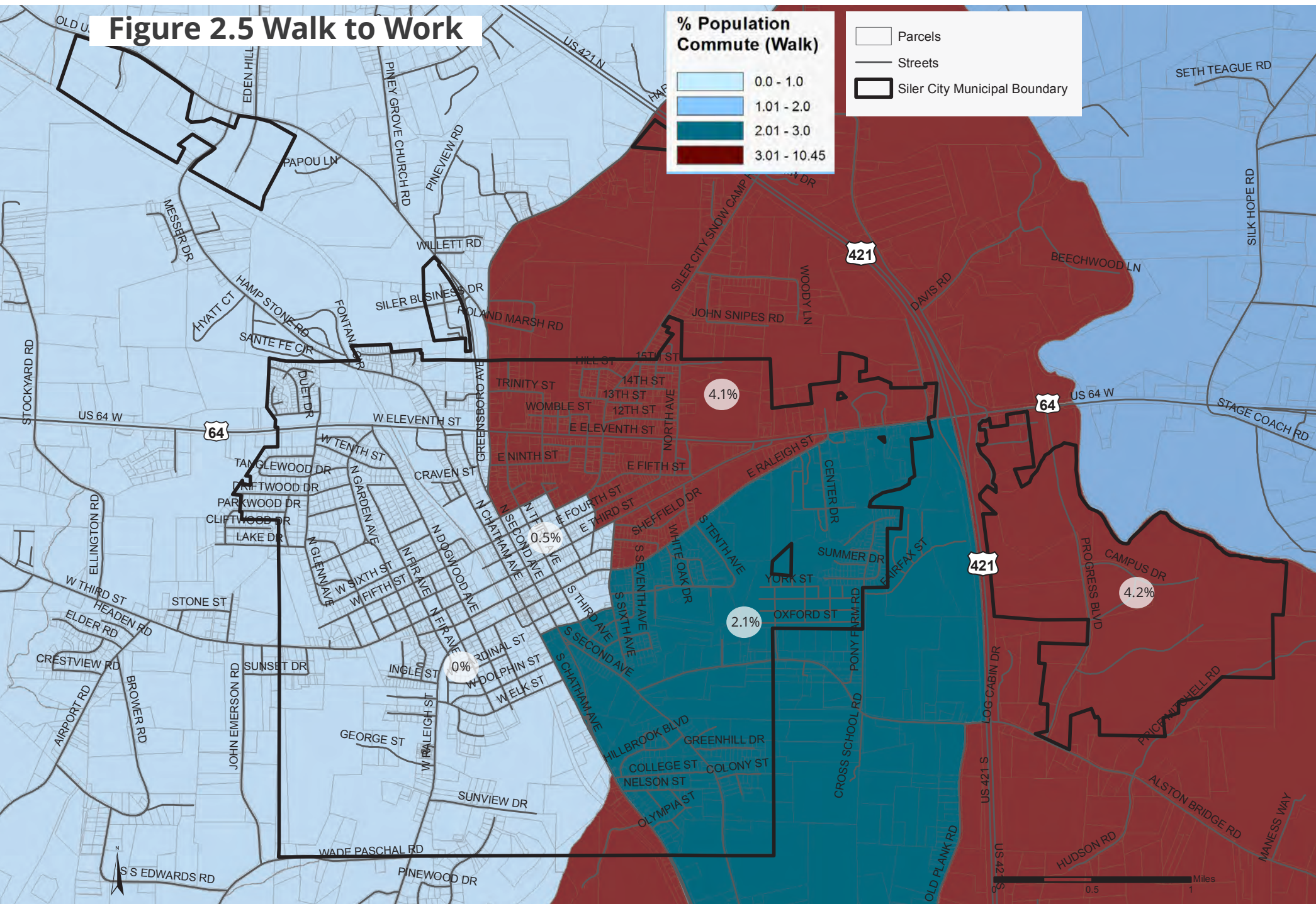


# Figure 2.4 Median Household Income



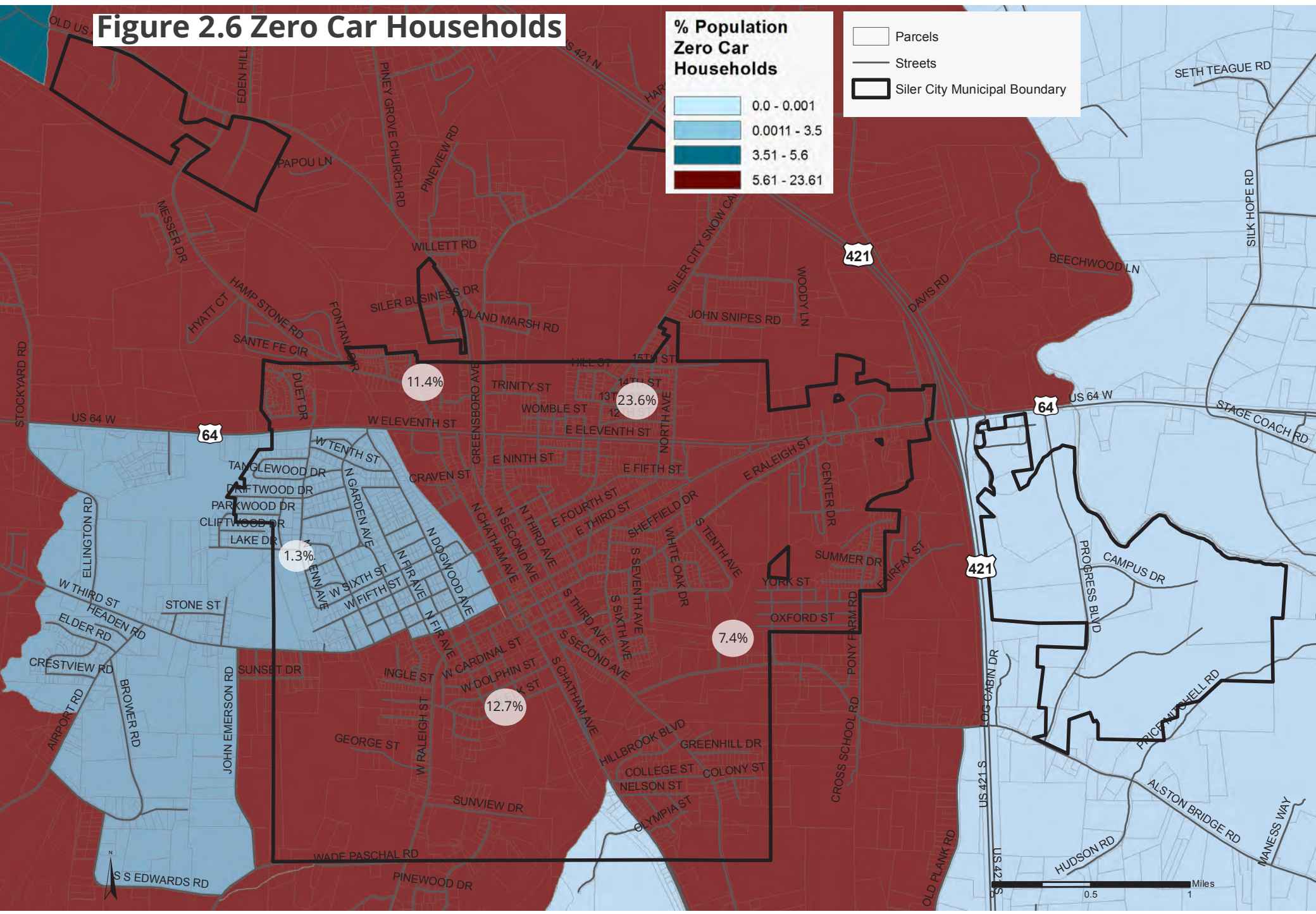


# Figure 2.5 Walk to Work





**Figure 2.6 Zero Car Households**





## ***Benefits and Challenges***

During the planning process, it was crucial to consider the needs of all populations living in Siler City. The need for improved pedestrian access and mobility is greatest where multiple communities of concern described in this section overlap, as these are places where the maximum number of residents would benefit from the development of pedestrian facilities. Lower-income and minority populations are found throughout the Town of Siler City, especially in the northeastern and eastern sections. These are important areas to consider for the recommendations of this Plan; especially as these areas are located within or very close to Census Block Groups that contain higher levels of people who do not have access to a vehicle or commute to work by walking. Pedestrian facilities in these areas will allow for improved commuting and healthy living opportunities along with the ability to connect with other sections of Siler City including downtown.

All segments of the population who live in Siler City may endure some short-term construction-related impacts related to visual changes, noise, and alterations in access during the construction of pedestrian facilities. Neither minority, low-income, nor those without access to a vehicle in Siler City are likely to endure disproportionate negative impacts due to possible developments. Another consideration to note is that pedestrian facilities and amenities are often highly sought in proximity to housing locations. Studies have shown that such developments typically lead to increased property values.<sup>1</sup> While this generally shows

the significant value communities place on pedestrian developments, this also raises property tax assessments which could be burdensome to lower-income households.

In conjunction with E.O. 12898, sidewalks, multi-use paths and other pedestrian facilities, that offer safe, affordable, and convenient transportation opportunities to the residents and citizens of Siler City will be of great benefit to the populations discussed in this section as well as the community as a whole. This allows dynamic connections not only to physical locations and healthy living opportunities within Siler City, but also to diverse populations with improved opportunities to mix, share, and catalyze new endeavors and enhance growing opportunities across town. The most resilient and innovative communities are able to thoroughly connect with and tap into their most important resource – people – and developing a pedestrian network that achieves this, will be an efficient and effective step forward for the Town of Siler City.

Should the development of any pedestrian facilities utilize federal funding, future documentation for compliance with the National Environmental Policy Act (NEPA) may be required. During the NEPA process for a transportation-related project, a variety of issues will be evaluated, including an Environmental Justice (EJ) analysis pursuant to E.O. 12898. In addition, the development of a NEPA document would require public participation and local coordination throughout, with EJ issues to be identified and addressed.



*New sidewalk along W. Raleigh Street*

# Existing Pedestrian Conditions

## *Fieldwork Observations*

### US Highway 64

The Town of Siler City features a well established pedestrian network throughout the downtown core. The northern portion of Town is separated from the downtown core by US Highway 64, an arterial roadway that provides access to the Town's commercial areas. US Highway 64 consists of four travel lanes through Siler City, and carries a relatively high volume of traffic (24,000 vehicles per day as of 2010 data), with high numbers of trucks. Although the posted speed limit is 45 MPH, during field work investigations traffic seemed to flow at a faster speed. The planned future US Highway 64 Bypass is anticipated to change traffic patterns along US Highway 64. Numerous residential neighborhoods and shopping areas create a need and desire for pedestrian access along and across US 64, but many intersections and crossing facilities are not safe for pedestrians. In some areas, gaps in the sidewalk network and a lack of safe crossings make pedestrian travel difficult.

*Pedestrians travel on existing sidewalk along the north side of US Highway 64 in Siler City*













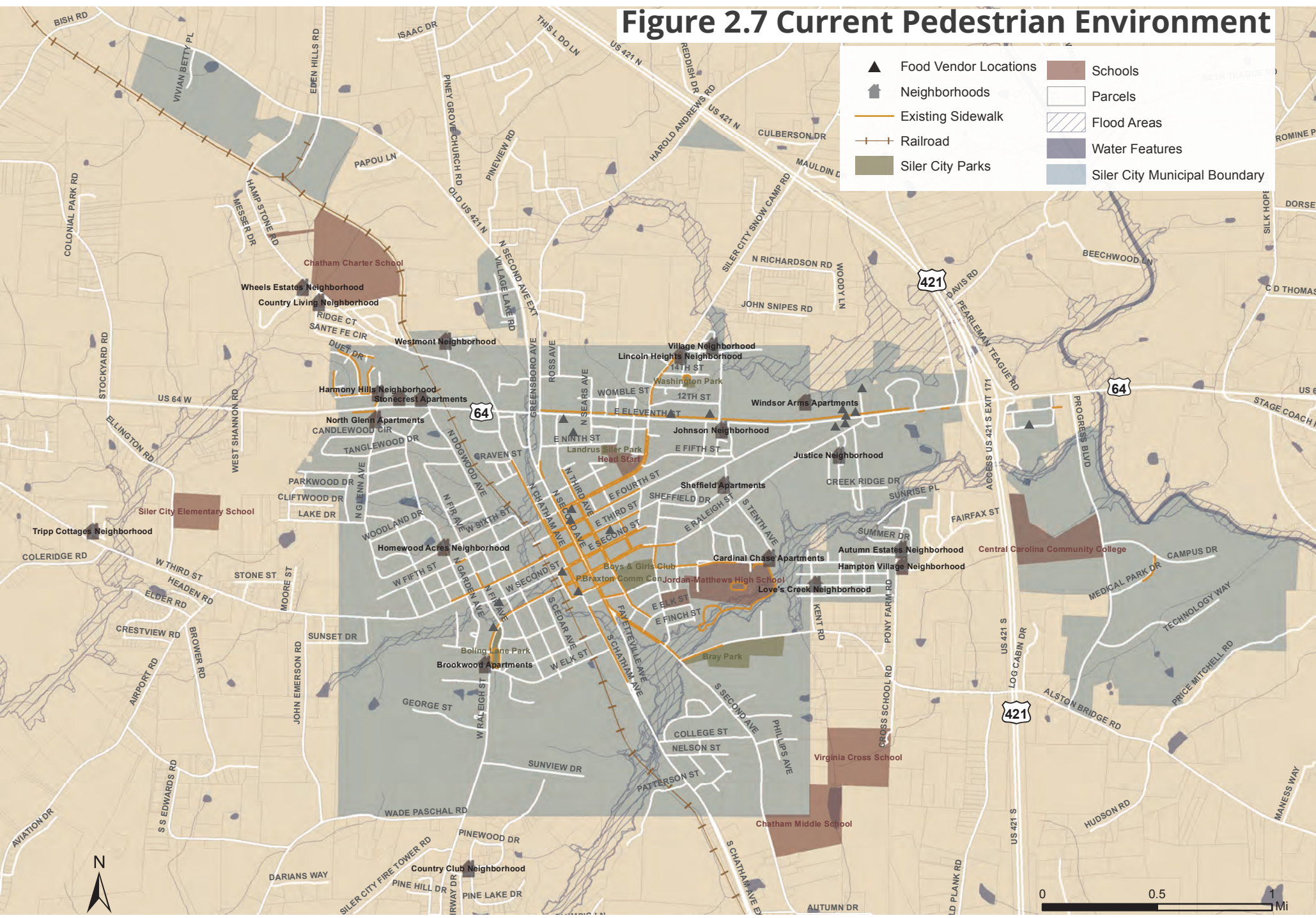
*Pedestrians wait to cross the intersection of US Highway 64 and Martin Luther King Jr. Blvd. in Siler City*





# Figure 2.7 Current Pedestrian Environment

	Food Vendor Locations		Schools
	Neighborhoods		Parcels
	Existing Sidewalk		Flood Areas
	Railroad		Water Features
	Siler City Parks		Siler City Municipal Boundary





## Sidewalk Connectivity

Many roadways that connect downtown with neighborhood areas and other key destinations such as schools, grocery stores, and recreation areas are without sidewalks, or only have sidewalk on one side of the road. Example roadways with inadequate sidewalks include, but are not limited to the following:

- Chatham Avenue
- East Third Street
- East Raleigh Street
- US Highway 64
- West Raleigh Street
- North and South Second Avenue
- West Fifth Street
- Alston Bridge Road
- Elk Street
- North Glenn Avenue
- North Fir Street
- West Second Street

The areas surrounding Jordan-Matthews High School, SAGE Academy/Head Start, Bray Park, Paul Braxton Community Center, Boling Lane Park, and residential neighborhoods lack adequate sidewalks, crosswalks, and traffic calming measures. The existing sidewalk network, roadway network, parcels, schools, and other key destinations are shown on Figure 2.7 on page 2-13 and Figure 2.8 on page 2-15.

## Pedestrian Activity

Numerous pedestrians were observed around Siler City, particularly near many of the locally-owned shops in downtown, along US Highway 64 and in the area around the Post Office. While safe crossing facilities currently do not exist, many pedestrians were seen navigating across the various at-grade railroad crossings in downtown.

Safe connections between downtown Siler City and neighborhood areas located adjacent to the downtown do not exist. The sidewalk network does not extend outward from the downtown to these neighborhoods and people are often seen walking along existing sidewalks and then continuing to walk in the street once the sidewalk terminates.



*A pedestrian navigates crossing US 64 at an intersection without a crosswalk*

## Intersections

While many intersections are signalized, the majority of the intersections lack crossing treatments such as pedestrian countdown signals, pedestrian refuge medians, or high-visibility crosswalks. During fieldwork investigations, the consultant team evaluated pedestrian safety and accessibility at 36 intersections in Siler City. Intersections were initially selected by mapping NCDOT pedestrian crash data in GIS, and were further assessed based on feedback received from the Steering Committee and from public input received throughout the planning process.

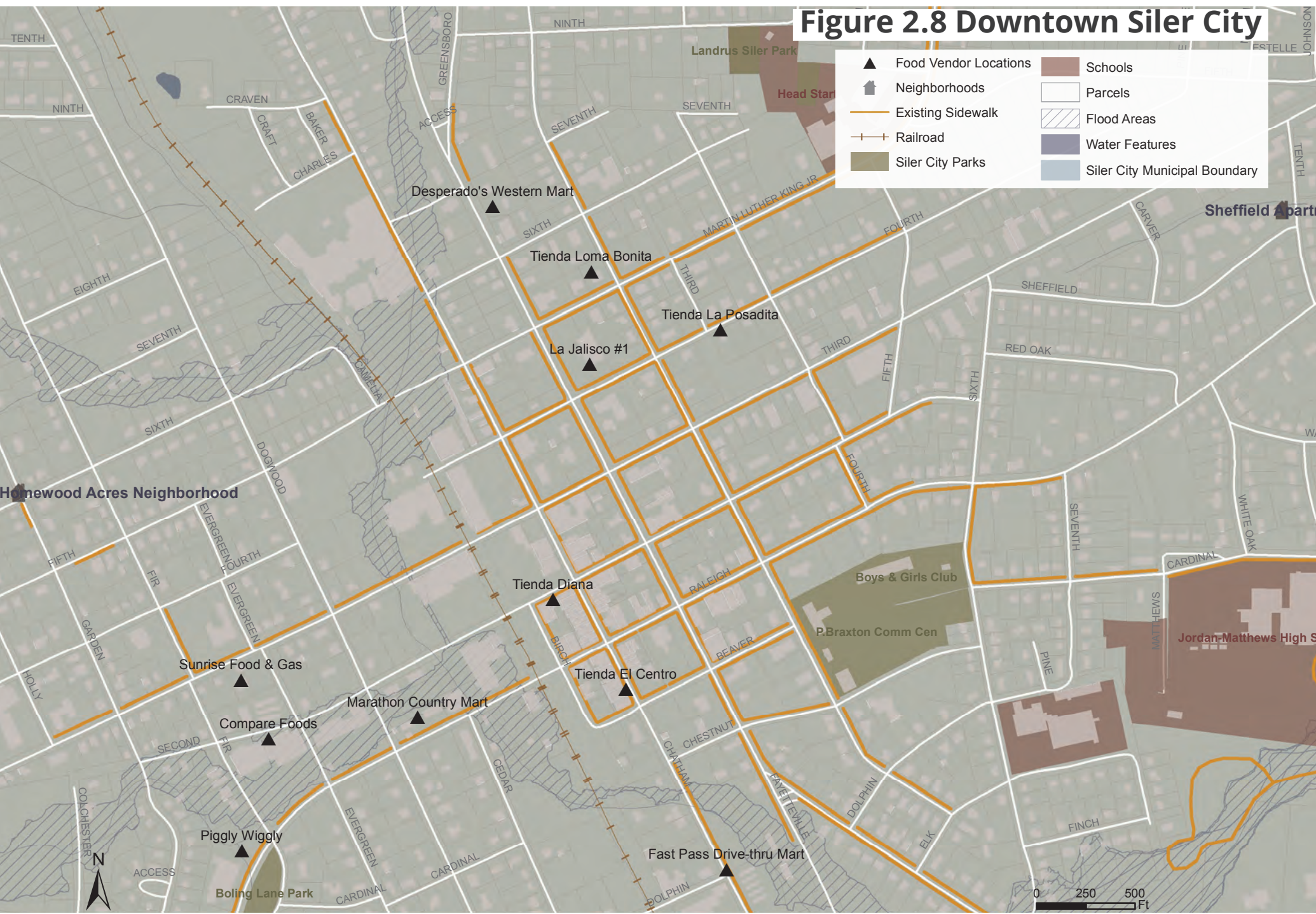


*S. Third Avenue intersection without a curb ramp or crosswalk*



# Figure 2.8 Downtown Siler City

	Food Vendor Locations		Schools
	Neighborhoods		Parcels
	Existing Sidewalk		Flood Areas
	Railroad		Water Features
	Siler City Parks		Siler City Municipal Boundary





# 2005-2013 NCDOT Reported Pedestrian Crashes

Data for pedestrian crashes involving motor vehicles from 2005-2013 was provided by NCDOT and geocoded by the consultant. It is important to note that not all pedestrian crashes are reported to the police, and only reported crashes are included in this evaluation. The 22 crashes are presented in Table 2.2 and are mapped in Figure 2.9 on page 2-17. One of the crashes resulted in a fatality, two resulted in disabling injury, 13 resulted in an injury, and no injury was reported for the remaining crashes.

The locations of all 22 crashes were assessed during field work investigations. Existing intersection crossing conditions and pedestrian facility connectivity were noted, as well as any barriers to pedestrian or motorist safety. Examples of existing barriers to pedestrian travel in Siler City are presented on page 2-20. The recommendations presented in Chapter 3 take into account the locations of the 22 crashes and the results of the field work assessment of each crash location.

Table 2.2: NCDOT Reported Crashes

Crash ID	Roadway Name	Crash Severity
1	S. Chatham Avenue	No Injury
2	W. Raleigh Street	Possible Injury
3	N. Sears Avenue	Evident Injury
4	Walmart Supercenter	Evident Injury
5	US Highway 64	Possible Injury
6	12th Street	No Injury
7	Old Plank Road	Evident Injury
8	S. Tenth Ave	Evident Injury
9	US Highway 64	Disabling Injury
10	US Highway 64	Killed
11	Fifteenth Street	No Injury
12	E. Raleigh St	No Injury
13	Sheffield Drive	Evident Injury
14	N. Chatham Ave	Evident Injury
15	E. Tenth Street	Evident Injury
16	E. Fourth Street	Disabling Injury
17	N. Second Avenue	Possible Injury
18	Walmart Supercenter	No Injury
19	Pony Farm Road	Evident Injury
20	Walmart Supercenter	No Injury
21	US Highway 64	Evident Injury
22	US Highway 64	Possible Injury



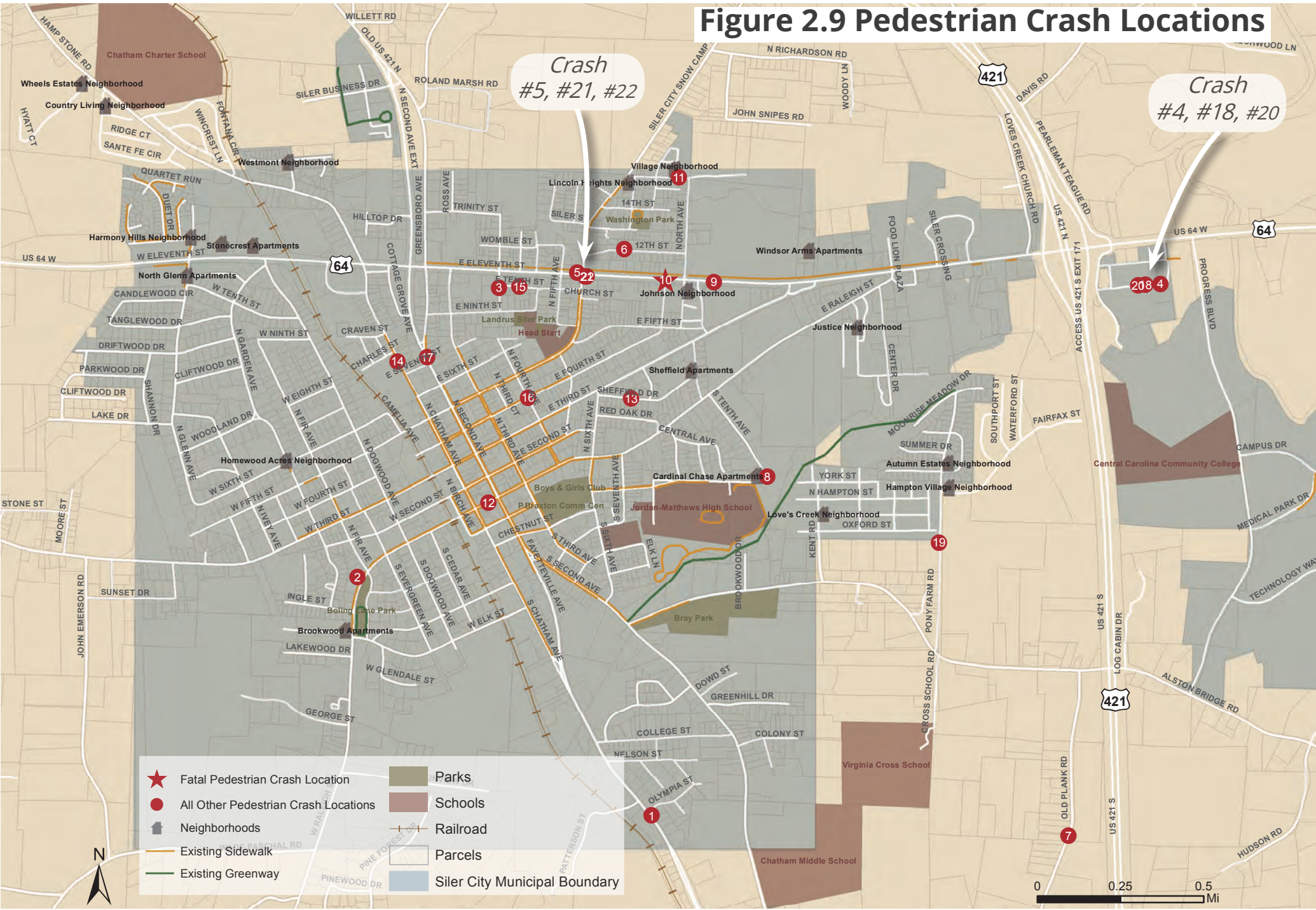
*Top photo: A pedestrian crosses a signalized intersection without safe crossing treatments*

*Bottom photo: Pedestrians wait to cross US Highway 64 at an intersection without safe crossing treatments*





# Figure 2.9 Pedestrian Crash Locations



# Opportunities & Challenges

An analysis of Siler City's pedestrian conditions identified a number of elements that are considered opportunities and challenges for creating a walkable community. An opportunity represents a situation or condition that is favorable to pedestrian access, either today or in the future. A challenge represents a situation or condition that is a potential limitation or restriction on pedestrian access. This section identifies the opportunities and challenges associated with the existing pedestrian environment in Siler City, as noted by the consultant teams field review and input from the public, staff, and key stakeholders.

One of the key challenges is that US Highway 64 travels through the northern section of Siler City and is a multi-lane, high vehicle speed roadway that presents a challenging environment for pedestrians. The width of the roadway and the speed of its traffic make it uncomfortable to walk along and challenging to cross on foot. However, pedestrians continue to move through the Town as evidenced by multiple worn pedestrian paths of desire, as many pedestrian generators and destinations are located in the area.

## Key Opportunities

- Local roadways with low traffic volumes in neighborhoods throughout the Town
- High numbers of pedestrians in and around downtown and in some residential neighborhoods (such as the N. Glenn Neighborhood, Brookwood Apartments Neighborhood, Cardinal Chase Apartments Neighborhood, and Sheffield Apartments Neighborhood)
- The compact nature of the downtown, with people living within walking distance of destinations
- On-going initiatives to improve Siler City's downtown business district, to create a pedestrian-oriented core that acts as an amenity, and to draw more people to visit businesses and destinations

## Key Challenges

- Roadways that act as barriers to pedestrians, especially US Highway 64
- Many intersections without ADA-accessible facilities (curb ramps, etc.)
- Sidewalk gaps in high priority locations.
- Existing sidewalks deteriorating and/or blocked by obstructions (vegetation, utilities)
- Lack of shade and pedestrian lighting along many roadways
- Lack of crosswalks at signalized and unsignalized intersections
- Lack of safe connections between neighborhood areas, healthy food opportunities, and recreation areas (see page 2-21)



*Pedestrian, E. Raleigh Street, Siler City*





# Photographic Inventory of Existing Opportunities



*Siler City's compact downtown core means that most destinations are within walking distance of each other*



*Residents in Siler City enjoy the existing trail in Siler City Park. The new Loves Creek Greenway will also offer walking and bicycling opportunities for residents*



*With improvements, a low-volume neighborhood street can offer an ideal environment for walking*



*Existing sidewalks connect pedestrians to important destinations such as the Piggly Wiggly grocery store*



# Physical Barriers to Walking

*Sidewalk gaps create a disjointed pedestrian network and force pedestrians to the edge of drainage swales or in the roadway*



*The majority of intersections in Siler City lack crossing treatments, and where crossing treatments do exist, crosswalks are faded and pedestrian signals are not operating properly*

*At-grade railroad crossings create hazardous and unsafe conditions for pedestrians, especially in areas where the existing sidewalk ends without crossing the railroad tracks*



*Multi-lane, high vehicle-speed US Highway 64 is difficult to traverse on foot and unpleasant to walk along due to the lack of sidewalk connectivity*





## Availability of Healthy Foods in Siler City

One critical function of a connected pedestrian network is to provide access from neighborhoods to grocery stores. Many residents of Siler City walk to the grocery store by necessity, but do not currently have complete infrastructure on which to walk. Further, not every grocery store offers healthy food choices, so those that can access stores along sidewalks still may not have access to healthy food options. The review of access to healthy food options began with identifying the locations of 21 neighborhoods in Siler City. The names and locations of the 21 neighborhoods are presented in Table 2.4 on page 2-23.

### Healthy Food Evaluation Process

Two University of North Carolina at Chapel Hill Masters Candidates in the Department of Health Behavior evaluated 45 food vendors in Siler City. The evaluation of food vendors included corner stores, grocery stores, supermarkets, gas stations, tiendas, dollar stores, the farmers' market, pharmacies, and roadside stands. The locations of the food vendors are mapped in Figure 2.10 on page 2-22 and each food vendor label corresponds with a store number in Table 2.3 on page 2-23.

#### Fresh Fruits and Vegetables Evaluation

The primary focus of the evaluation was to inventory the healthy food options available from each food vendor. The inventory was based on two dimensions, the first dimension was the availability of fresh fruits and

vegetables. Fresh fruits and vegetables could not be not frozen, canned, or processed. The fresh fruits and vegetable dimension consisted of three categories (*none, 1-4 types, 5 or more types*) which were based on the number of types of fresh fruits and vegetables sold.

The threshold of five or more fresh fruits and vegetables was established because the United States Department of Agriculture (USDA) recommends that adults consume that many servings of fresh fruits and vegetables daily. Five or more fresh fruits and vegetables, is considered the *highest category, or "top tier" for healthy food vendors*. "Top tier" food vendors are denoted with an asterisk in Table 2.3 on page 2-23.

The second category (1-4 types of fruits and vegetables) was used to differentiate those stores that had *some* fresh produce availability, and is referred to as *"mid-tier" for healthy food vendors*.

Food vendors that offered no fresh fruits and vegetables were assigned to the third category, *"none."*

#### "My Plate" Evaluation

The second dimension of the evaluation of healthy food options in Siler City was determined based on the availability of the ingredients necessary to create a "My Plate" meal. To determine each store's "My Plate" dimension, the USDA recommendations for food intake were used. *A store had to sell at least one food item from all five food groups (fruits, vegetables, grains, protein, and dairy) to achieve "My Plate" status*. Fruits and vegetables may be fresh, canned, or frozen for My Plate criteria. For the grain category,

a store had to sell at least one high fiber option, such as whole grain bread or brown rice. Stores that sold fresh eggs, dried beans, canned beans in water, unsalted nuts, canned tuna in water, or low-fat meat (e.g. raw skinless chicken or extra lean ground beef) satisfied the protein criteria. Finally, a store had to sell milk to meet the dairy criteria.<sup>2</sup> Stores that did not offer at least one food item from all five food groups are considered *"No My Plate" vendors*.

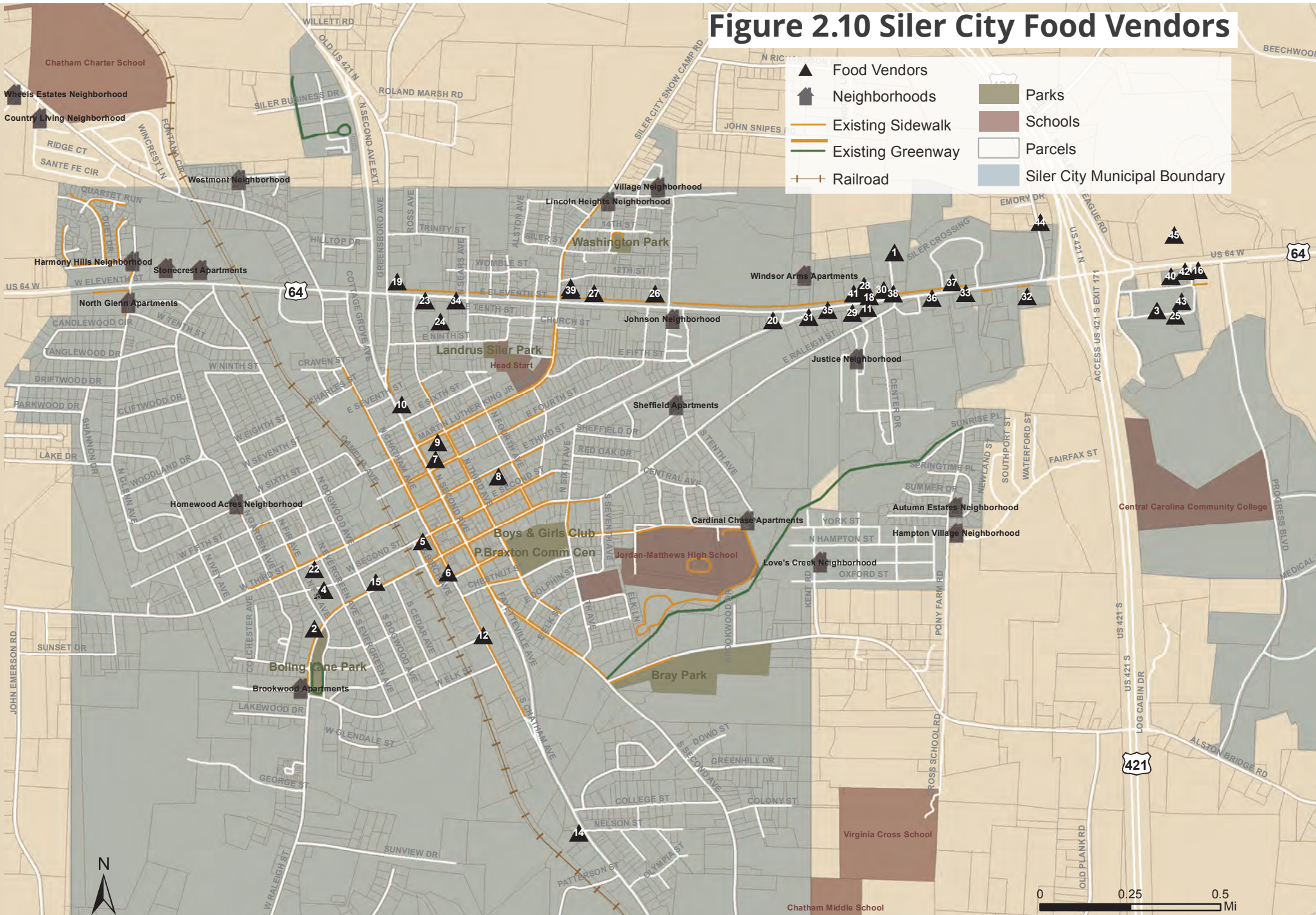
### Food Vendor Classification Process

Using the two dimension evaluation approach, each food vendor was first assigned a fresh fruits and vegetable (FFV) category (top tier: *greater than or equal to 5 FFV*, mid tier: *less than 5 FFV*, or *no FFV*), and was then classified as a "My Plate" or "No My Plate" vendor. The six possible scoring categories resulted from the classification process are in the box below. Food vendors that meet "My Plate" criteria and sell five or more types of FFV are called healthy food vendors and labeled with a fork and knife surrounded by a black circle on maps provided in this plan.

- 0: No My Plate, no FFV
- 1: No My Plate, <5 FFV
- 2: No My Plate, ≥5 FFV
- 3: My Plate, no FFV
- 4: My Plate, <5 FFV
- 5: My Plate, ≥5 FFV



# Figure 2.10 Siler City Food Vendors





**Table 2.3: Food Vendors in Siler City**

Store #	Store Name	Store #	Store Name
1	Food Lion*	29	CVS
2	Piggly Wiggly*	30	Walgreens
3	Walmart*	31	ABC Store
4	Compare Foods*	32	Bojangles Restaurant
5	Tienda Diana	33	Burger King
6	Tienda El Centro*	34	Crossroads Grill
7	La Jalisco #1*	35	Domino's Pizza
8	Tienda La Posadita*	36	KFC/ Taco Bell
9	Tienda Loma Bonita*	37	McDonald's
10	Desperado's Western Mart	38	Pizza Hut/Wing Street
11	Fast Lane	39	Rite Stop Fried Chicken
12	Fast Pass Drive-thru Mart	40	Smithfield's BBQ and Chicken
13	Kangaroo Express	41	Sonic
14	Marathon	42	Subway
15	Marathon Country Mart	43	Subway (in Walmart)
16	Murphy Express	44	Waffle House
17	Mystik	45	Wendy's
18	Park 'n Shop #13		
19	Park 'n Shop #15		
20	Quick Way Mart		
21	Silk Hope Services		
22	Sunrise Food & Gas		
23	Wilco to Go		
24	Dollar General		
25	Dollar Tree		
26	Family Dollar		
27	Sloan Farm		
28	Sloan Farm 2		

\* "top tier" healthy food vendors

**Table 2.4: Neighborhoods in Siler City**

Neighborhood Name
Loves Creek Neighborhood
Justice Neighborhood
Country Living Neighborhood
Hampton Village Neighborhood
Homewood Acres Neighborhood
Autumn Estates Neighborhood
Wheels Estates Neighborhood
Cardinal Chase Apartments
North Glenn Apartments
Harmony Hills Neighborhood
Stonecrest Apartments
Cateland Place Apartments
Lincoln Heights Neighborhood
Westmont Neighborhood
Country Club Neighborhood
Tripp Cottages Neighborhood
Sheffield Apartments
Windsor Arms Apartments
Brookwood Apartments
Village Neighborhood
Johnson Neighborhood

**Table 2.5: Recreation Areas in Siler City**

Recreation Area Name
Boling Lane Park
Washington Avenue Park
Bray Park
Paul Braxton Community Center
Landrus Siler Park
Ernest Ramsey Gym



# Recreation Areas in Siler City

Parks, recreation facilities, and open spaces provide benefits to residents, and the natural environment. Parks typically include small neighborhood and pocket parks, trails, greenways, large planned spaces and regional parks, and forested areas within and around cities. Recreation facilities include playgrounds, ball fields, tennis courts, and gymnasiums. Open spaces can be as diverse as agricultural land, forests, gardens, arboretums, and institutional grounds. They provide people with formal and informal gathering places to be physically active, socialize, relax, build community, and connect with the natural world. They make urban areas more inviting for living, working and relaxing. And, they provide environmental benefits, such as stormwater management,

erosion control, buffering between built and natural environments, and wildlife habitat.<sup>3</sup>

Siler City has plans to construct the future Loves Creek Greenway and anticipates the new greenway will be constructed by June 2015. Additionally, there are six recreation areas within the Town limits. The six locations are listed in Table 2.5 on page 2-23. The six recreation areas - Boling Lane Park, Washington Avenue Park, Bray Park, Paul Braxton Community Center, Landrus Siler Park, and Ernest Ramsey Gym- offer diverse opportunities for active living.

## Analysis of Access to Healthy Foods and Recreation Areas

In this context, an analysis of neighborhood access to healthy food vendors and recreation areas was performed to show available connections based on the existing pedestrian network. The “top tier” healthy food vendors consisting of eight total vendors, and the six recreation areas were included in the analysis.

Twenty-one neighborhoods (Table 2.4) were identified as starting points for access. This analysis serves as the benchmark for the comparison of future connections that will be potentially available when the proposed pedestrian network is developed. Further analysis and discussion of the connections created by the proposed network is included in Chapter 3.

Figure 2.11 on page 2-24 exhibits existing connections between neighborhoods and “top tier” healthy food vendors.

Figure 2.12 on page 2-26 exhibits existing connections between neighborhoods and recreation areas.

Tables 2.6 and 2.7 below describe which neighborhood areas currently have pedestrian access to healthy food options and recreation areas. The connection distance between the neighborhood and food vendor or recreation area is included for each existing connection. Only two neighborhood areas have pedestrian access to a healthy food vendor, and one neighborhood area has pedestrian access to a recreation area.

**Table 2.6: Existing Connections to Healthy Food Vendors**

Neighborhood	Top Tier for Healthy Foods		
	Compare Foods	Food Lion	Piggly Wiggly
Brookwood Apartments	0.3		0.2
Windsor Arms Apartments		0.4	

*Note: Unit of measurement for connection length is miles.*

**Table 2.7: Existing Connections to Recreation Areas**

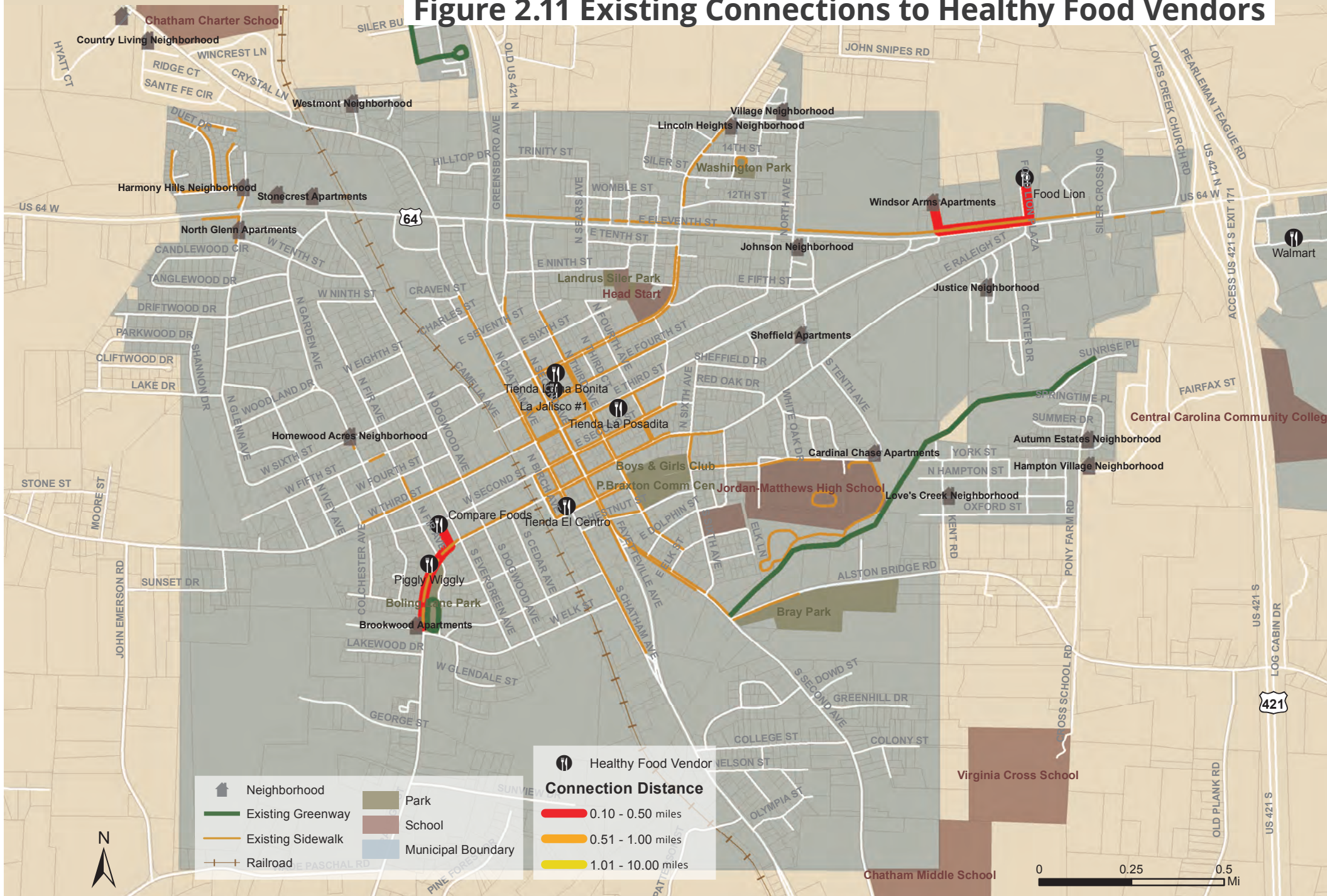
Neighborhood	Recreation Areas					
	Washington Park	Boling Lane Park	Bray Park	Ernest Ramsey Gym	Landrus Siler Park	Paul Braxton Community Center
Brookwood Apartments		0.1				

*Note: Unit of measurement for connection length is miles.*



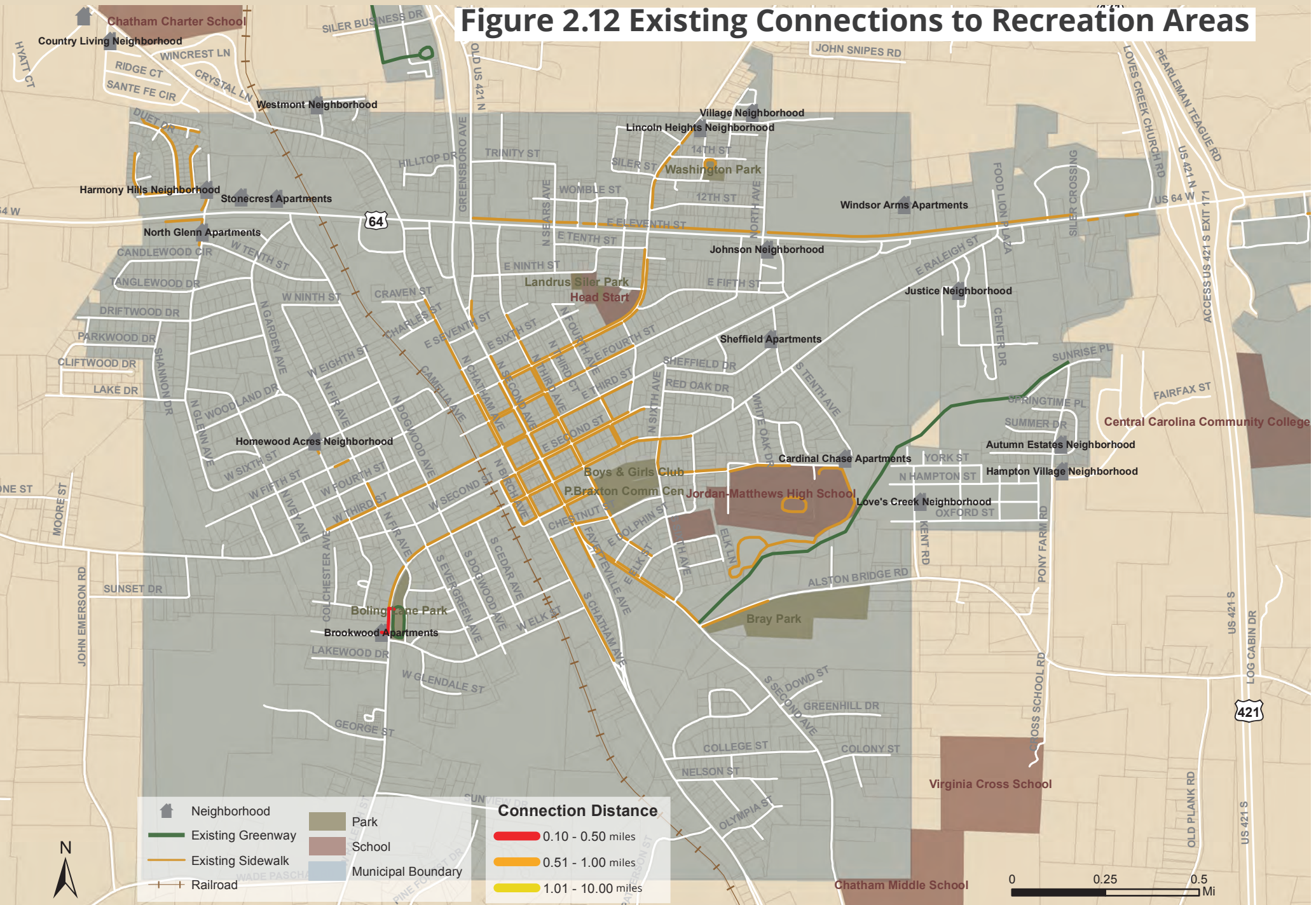


# Figure 2.11 Existing Connections to Healthy Food Vendors





# Figure 2.12 Existing Connections to Recreation Areas



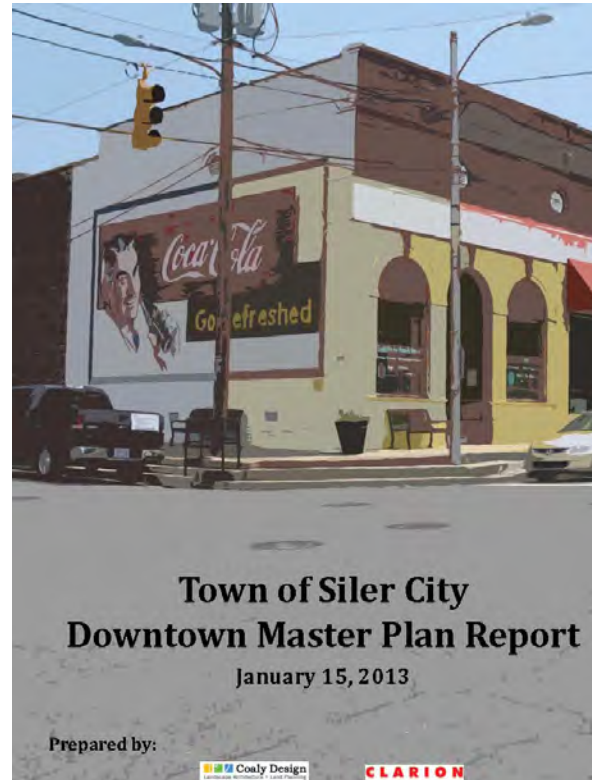


# Previous Planning Efforts

## *Siler City Downtown Master Plan Report*

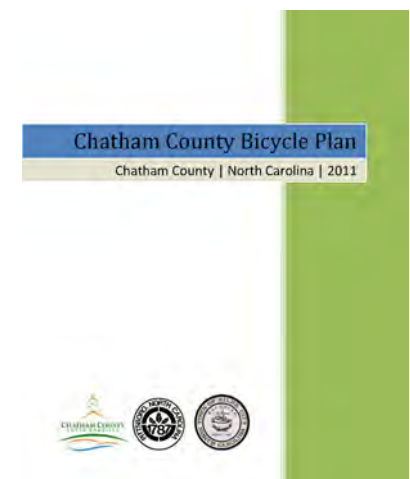
Siler City's Downtown Master Plan intends to guide enhancements of the downtown by improving the aesthetic quality and investing in economic development. The plan achieves this through a list of prioritized recommendations established by a Coaly Design and Clarion consultants, subcommittee group, and public involvement. The plan includes four primary demonstration projects, with project #1 and #3 integrally tied to the state of the street network. Project #1 addresses the land adjacent to the Norfolk Southern rail line along Birch Avenue between Raleigh Street and Second Street. The plan proposes streetscape improvements at this location, including a sidewalk and street trees with a six-foot ADA accessible walking path and wooden observation platforms internal to the site. The Project #3 project is a series of streetscape improvements on Second Avenue between 2nd and 3rd Streets. Proposed improvements as stated in the downtown plan include restriping to accommodate on-street parking and bike lanes, removing the two-foot grass strip to widen the sidewalk, and additional trees along the curb for pedestrian shade and aesthetic improvement to the street. Additionally, curb radii extensions are proposed in order to provide a bicycle and pedestrian safety zone,

shorten crossing distance, and accommodate ramps for persons with disabilities. This plan also considers a number of revisions to existing ordinances and secondary projects that consider the pedestrian experience and improve the current streetscape.



## *Chatham County Bicycle Plan*

The first official bicycle plan for Chatham County, published in 2011, identifies facilities, programs and policy recommendations to improve bicycling conditions in the County that includes Siler City. This plan includes an extensive analysis of existing conditions in order to advise an improved street network for safer and more accessible facilities for all types of bicyclists. Although this plan specifically addresses bicyclists, much of the analysis and many of the recommendations apply to pedestrians as well. This includes recommendations for multi-use paths or greenways that accommodate bicyclists and pedestrians as well as traffic calming devices that slow vehicular traffic and make roads safe for all non-motorized transportation. Programs including education, encouragement and enforcement also address the behavioral component and compliance of all road users, which in effect addresses the safety of all vulnerable road users, including both bicyclists and pedestrians.

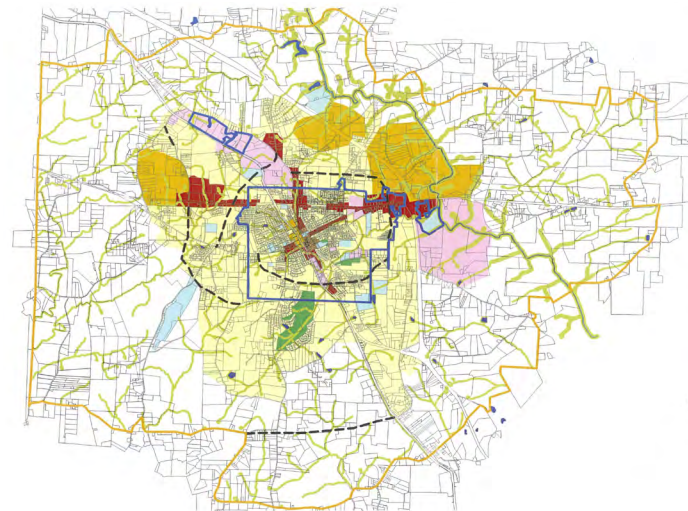


## Siler City Design Development Plan

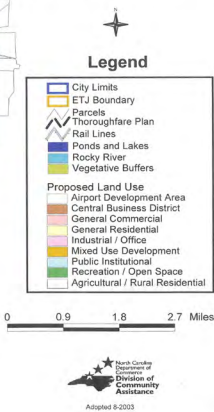
This document, published in 1980 by the Department of Landscape Architecture at North Carolina State University, develops a comprehensive community plan that aims to improve the quality of life of citizens of Siler City by addressing economic growth, promoting an environmentally sound and visually attractive community, conserving small town character and revitalization of the downtown. Accomplishing these goals entails a number of transportation and streetscape components according to the plan including: specific entry treatments that welcome visitors to Siler City; greenways that utilize the floodplain area for recreation purposes and provide pedestrian links between residential and commercial destinations; improved streetscape in residential areas; and restrictions on the existing highway commercial strip with controlled access and a vegetative buffer. The plan also has a chapter that focuses on the Central Business District, illustrating and describing the streetscape and pedestrian environment of each block in this area.

## Siler City Land Development Plan

The Land Development Plan provides a vision for future growth and development of the town and helps execute the vision through goals and policies. The plan includes goals for residential, commercial, industrial, mixed-use, open space and special planning areas, tying in transportation elements to almost all of these. For residential areas, the plan identified the need for walkable, interconnected neighborhoods through infill development and a local street plan to ensure adequate street planning and internal circulation. Commercial goals include improving vehicular access to commercial areas through driveway regulations such as driveway consolidation. Goals for open space include a greenway system of trails for multiple users, increased pedestrian safety in the downtown through improved sidewalks, and a visually defined downtown through a signage system.



Town of Siler City  
Future Land Use Map



## 2013 Chatham County Comprehensive Transportation Plan

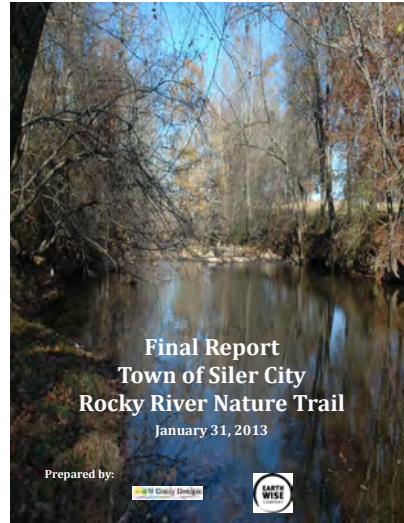
NCDOT is currently developing the 2013 Chatham County Comprehensive Transportation Plan. The plan will present transportation project recommendations that will include pedestrian facilities as well as improvements to roadways. Coordination between the Town of Siler City, NCDOT, and the consulting team for the Pedestrian Master Plan occurred throughout the planning process and the draft CTP recommendations were reviewed during the development of the Pedestrian Master Plan.

If the Pedestrian Master Plan is adopted by the Town of Siler City prior to the completion of the 2013 CTP, NCDOT should review the recommendations of this Plan to ensure consistency and regional connectivity.



## Rocky River Nature Trail Feasibility Study and Concept Plan (2012)

The Rocky River Nature Trail is a Town STEP (Small Town Economic Prosperity) project that was completed in late 2012, by Coaly Design and Earthwise. The project provided a feasibility study and concept plan for a mile-long section of trail along the Rocky River in the Central Carolina Business Campus. The study's investigation found the trail is feasible to build and provided a conceptual trail layout with trail head locations. The project is currently on hold as the land was owned by the County but has since been sold to a private land owner.



## Endnotes from Chapter 2: Current Conditions

1. Cortright, J. (2009). Walking the Walk: How walkability raises housing values in U.S. cities. CEOs for Cities.
2. United States Department of Agriculture. <http://www.choosemyplate.gov/>.
3. American Planning Association. Planning and Community Health Research Center. <http://www.planning.org/nationalcenters/health/parks.htm>.



*Pedestrians walk along the roadway in areas of Siler City that lack sidewalk connections between neighborhoods and destinations*





*Existing sidewalk network in downtown Siler City*





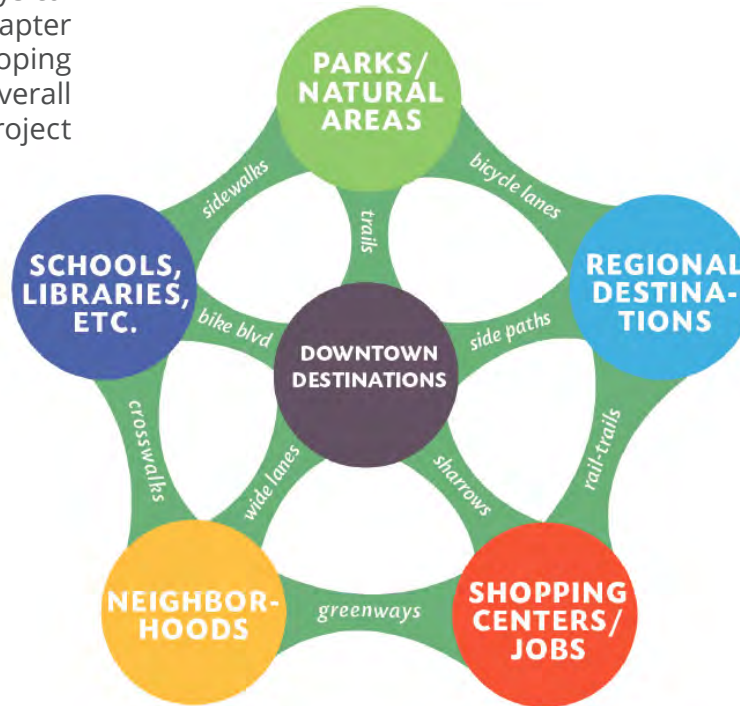
# 3 Network Recommendations

## Overview

This chapter contains a series of recommended changes to the Town of Siler City's physical environment that will create a more connected, comprehensive pedestrian network. The recommended pedestrian network provides a connected system of sidewalks, greenways (multi-use paths), and crossing improvements that connect to schools, parks, community centers, business corridors, libraries, shopping centers, and other key destinations. The network serves multiple users and interests, and improves access for residents of varying physical capabilities, ages, and skill levels. The chapter describes the methodology for developing the network recommendations, the overall pedestrian network, and key project recommendations.

## Methodology

The guiding philosophy for devising the comprehensive pedestrian network is the hubs and spokes model. Pedestrian corridors (spokes) should connect to trip attractors (hubs), such as parks, schools, downtown, shopping areas, commercial centers, and other pedestrian corridors. The network then becomes a practical solution for pedestrian connectivity. The 'hubs and spokes' model (shown below) conceptually illustrates how destinations in Siler City will be linked through various types of pedestrian facilities.



## CHAPTER CONTENTS

*Overview (3-1)*

*Methodology (3-1)*

*The Pedestrian Network (3-3)*

- *Overall Sidewalk Recommendations (3-3)*
- *Intersection Improvements (3-8)*
- *Gateway Corridors & Traffic Calming (3-16)*
- *Multi-Use Greenway Trails (3-18)*

*Analysis of Access to Healthy Food Vendors and Recreation Areas (3-22)*

*Project Prioritization Process (3-30)*

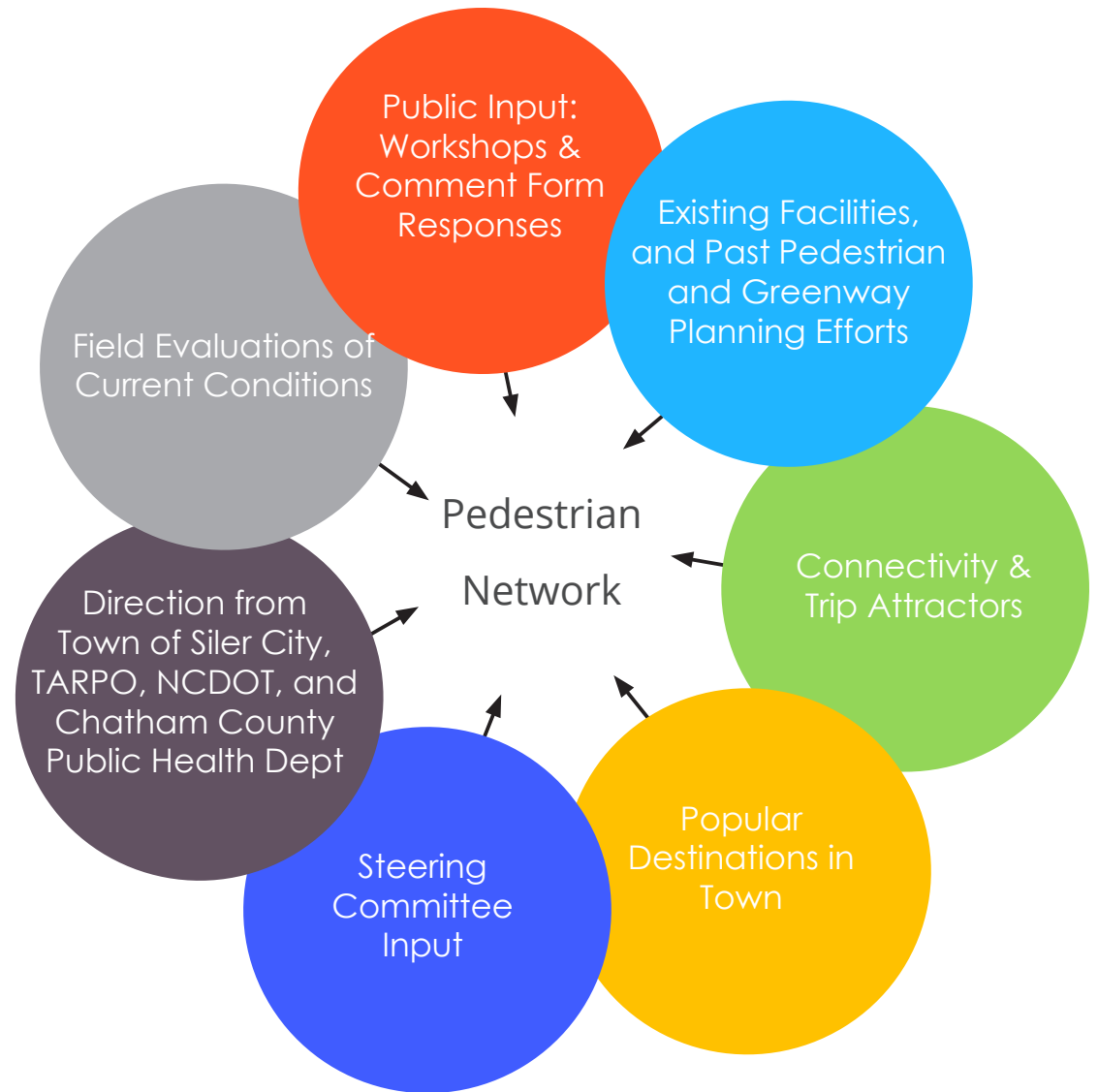
*Priority Project Cut-sheets (3-32)*

*Project Cost Estimates (3-32 and 3-54)*

A variety of resources were consulted during the development of the recommended pedestrian network, including:

- Previous plans and studies
- Maps developed from GIS data (demographic data, sidewalk gap analysis)
- Input from the Steering Committee
- Input obtained during public involvement events
- Fieldwork inventory and evaluation
- Identification of pedestrian trip attractors, with additional analysis of access to food vendors

The graphic to the right illustrates the approach that was taken during the planning process to obtain input from a variety of sources. As described in Chapter 2, field work included an examination of conditions at major intersections along primary corridors, and a consideration of sidewalk connectivity. Map review and analysis was conducted at Steering Committee meetings and public meetings to pinpoint specific areas in need of pedestrian improvements. All recommendations are developed at a planning level and will need a more detailed project-level review prior to implementation.





# The Pedestrian Network

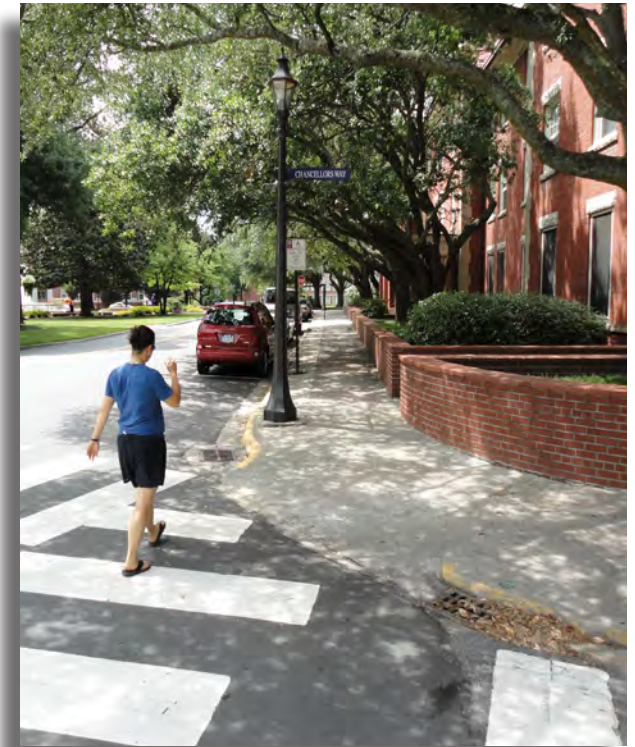
The Proposed Pedestrian Network Maps, included throughout this chapter, depict existing and proposed pedestrian infrastructure improvements. Proposed improvements include sidewalks, greenways, crossing improvements, gateway areas, and traffic calming projects. Although the map does not depict sidewalks on every street, this Plan recommends that the Town develop a policy to ultimately require or provide sidewalks on both sides of all major roads and on at least one side of local streets where warranted by density and/or system connectivity (See Chapter 4 for policy recommendations).

Figure 3.1 on page 3-4 presents the overall comprehensive recommendations for the pedestrian network. This map includes recommendations for sidewalks, multi-use greenway trails, intersection improvements, priority gateway areas, and traffic calming areas. The following pages of this chapter provide further detail on each of these recommendations.

## Overall Sidewalk Recommendations

The recommended sidewalks aim to expand upon the existing network of sidewalks to provide a continuous system that connects destinations along roadways. To complete the sidewalk network along existing streets, special emphasis should be given to completing sidewalk gaps and providing sidewalks on routes serving major pedestrian destinations. In the near term, sidewalks on at least one side of collector and arterial streets within the developed areas of the Town should be the primary goal. In the longer term, sidewalks on both sides of all arterial and collector streets should be an objective that can be achieved during new development as well as through spot-improvements made by Siler City.

The sidewalk recommendations are shown in Figure 3.2 on page 3-5. Understanding that the implementation process for projects on locally-owned roadways differs from the implementation process for projects on NCDOT-owned roadways, Figures 3.3 and 3.4 highlight sidewalk recommendations based on roadway ownership.



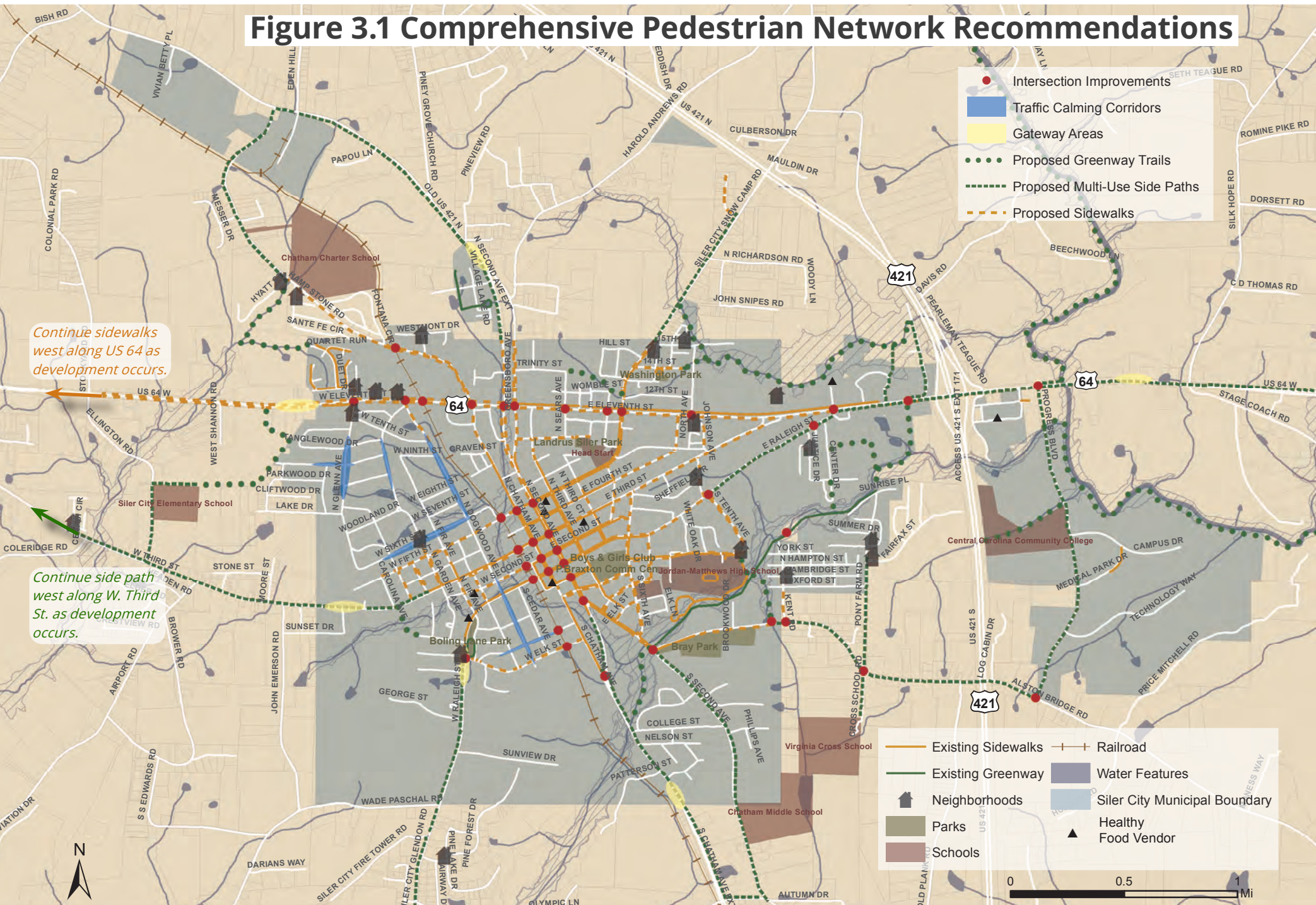
*A comfortable and safe pedestrian network should include sidewalks, intersection crossing treatments, pedestrian-scale lighting and shade trees, as shown in the picture above.*

**Table 3.1: Pedestrian Network Summary Table**

Pedestrian Network	Length (miles)
Existing Sidewalk Mileage	13.66
Existing Greenway Mileage	2.30
Proposed Sidewalk Mileage	19.31
Proposed Greenway Mileage	34.46
# of Intersection Improvement Recommendations	38 intersections



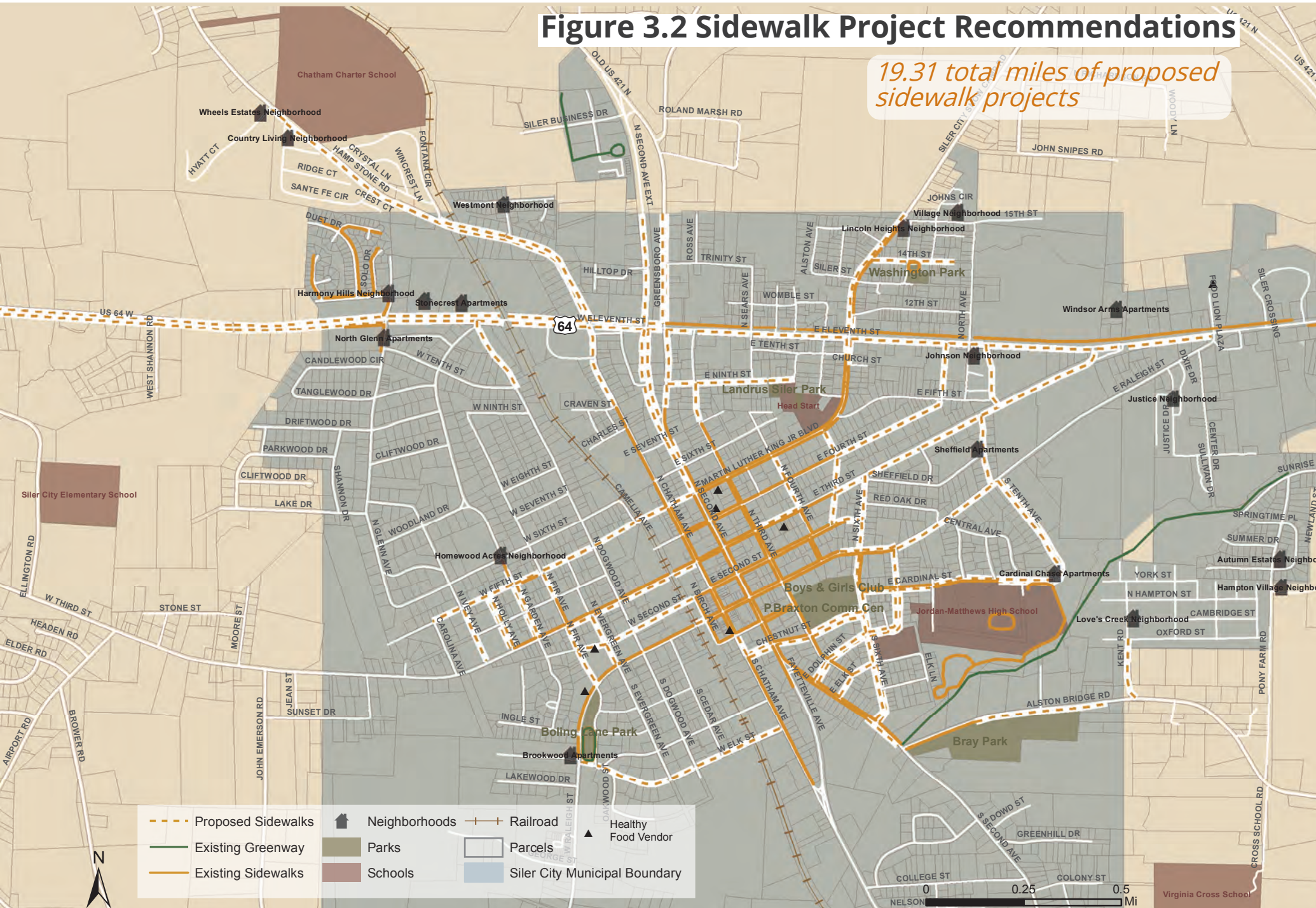
# Figure 3.1 Comprehensive Pedestrian Network Recommendations





# Figure 3.2 Sidewalk Project Recommendations

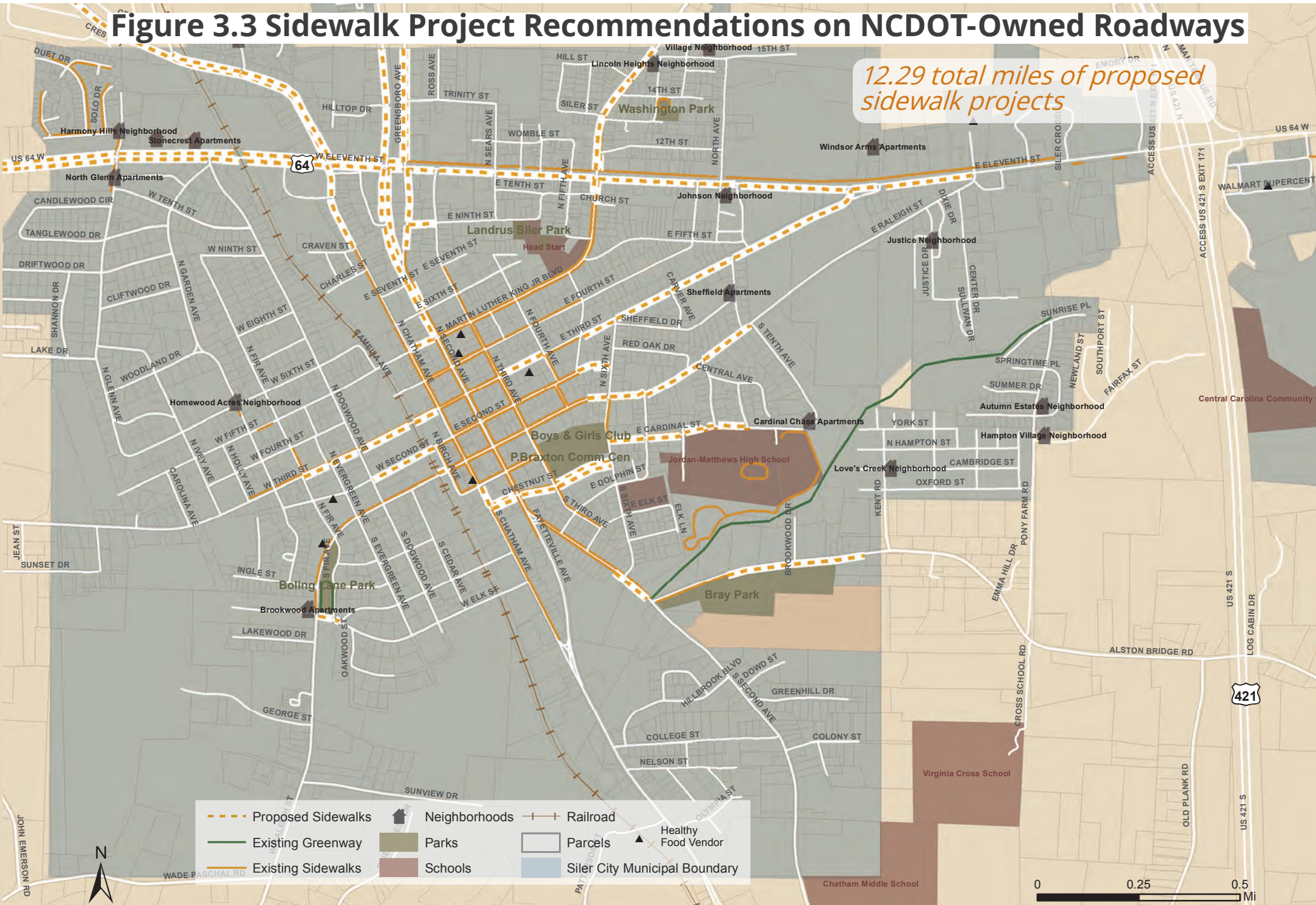
*19.31 total miles of proposed sidewalk projects*





# Figure 3.3 Sidewalk Project Recommendations on NCDOT-Owned Roadways

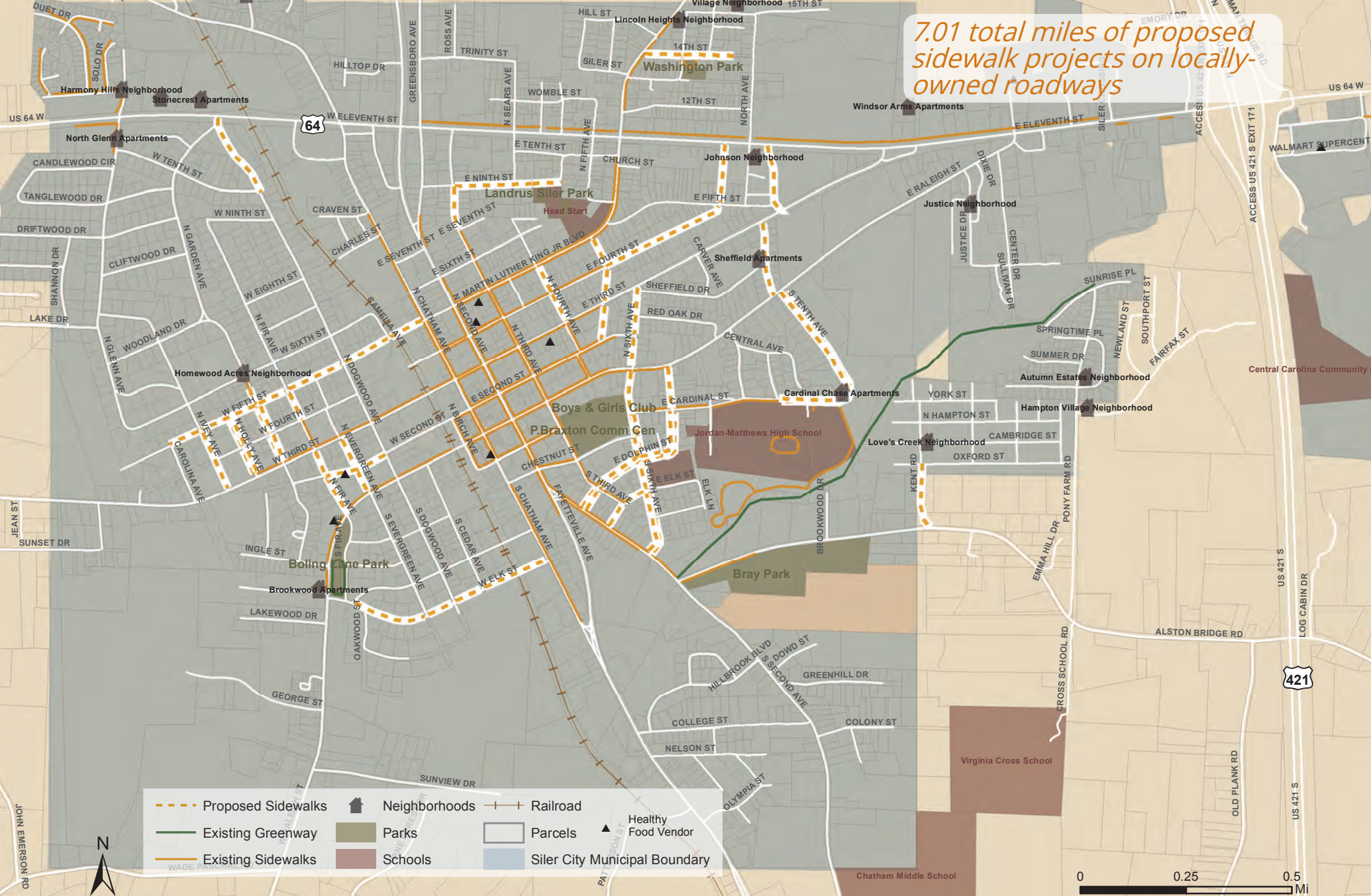
*12.29 total miles of proposed sidewalk projects*





# Figure 3.4 Sidewalk Project Recommendations on Locally-Owned Roadways

*7.01 total miles of proposed sidewalk projects on locally-owned roadways*



## Intersection Improvements

The consultant team evaluated pedestrian safety and accessibility at key intersections in Siler City. Intersections were assessed based on field work observations, community input, and feedback received from the Steering Committee during the project kick-off meeting.

The majority of intersections that were evaluated, including at-grade railroad crossings, are in need of new and/or retrofitted pedestrian crossing facilities, including new or enhanced pedestrian markings, signals, ADA ramps, and/or improved sidewalks. These intersections should be the focus of detailed study and recommendations in concert with NCDOT and Norfolk Southern Railroad.

The five primary intersection treatment concepts presented in this chapter have been developed to serve as a guide during implementation for Siler City. Each of the 38 intersections evaluated during this Pedestrian Master Plan have a corresponding intersection treatment type recommendation. Siler City should not limit intersection improvements to only these 38 intersections, and should apply recommendations presented by the intersection treatments concepts as appropriate to other intersections in Siler City. Appendix A, Design Guidelines provides further guidance for intersection treatments.

The 38 intersections that were evaluated are listed in Table 3.2. Each treatment type is graphically described on pages 3-10 through 3-16.

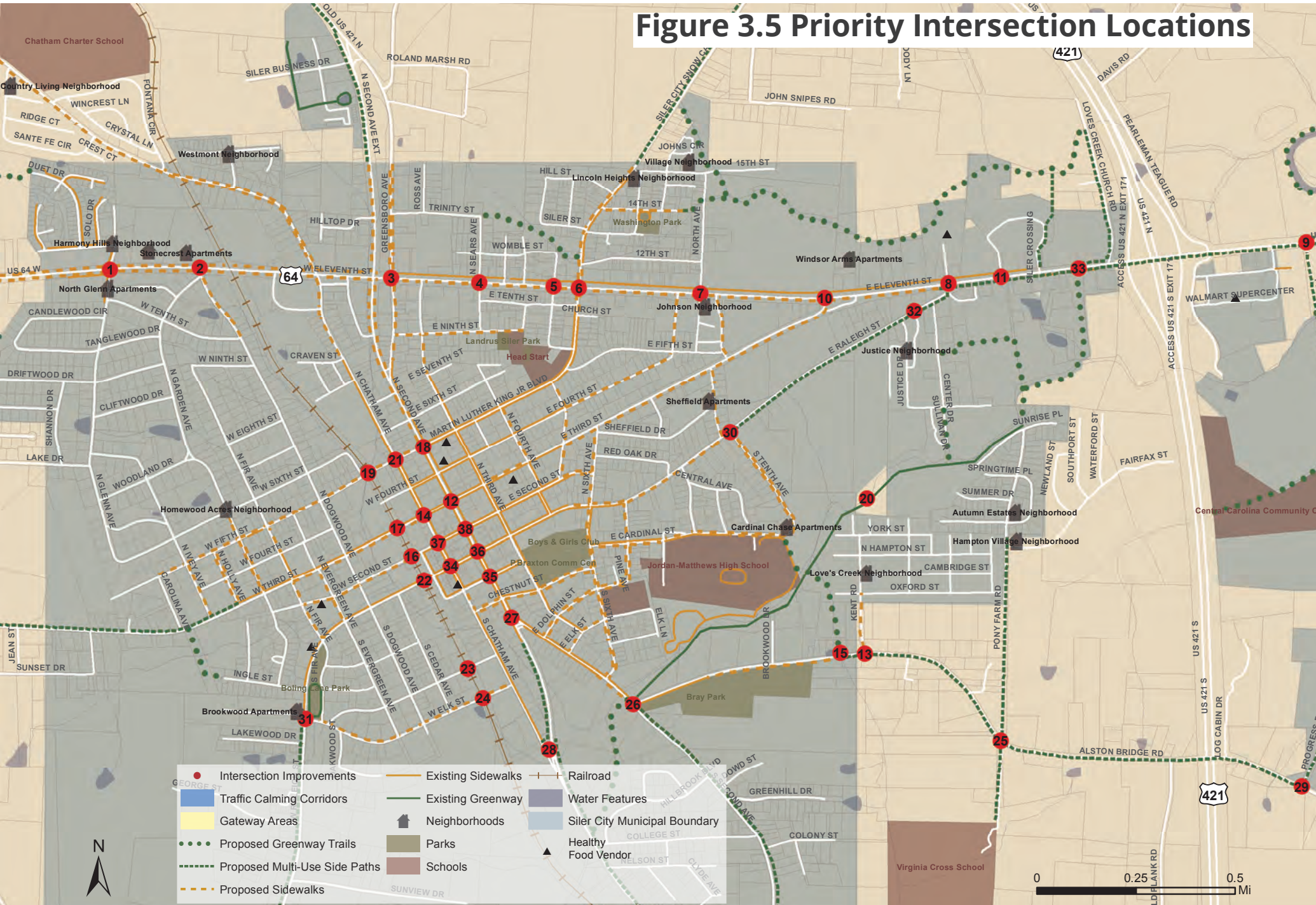
Table 3.2: Priority Intersections

ID #	Roadway	Intersecting Roadway	Treatment Concept
1	US 64	Glenn Ave	2
2	US 64	Dogwood Ave	2
3	US 64	N Greensboro Ave	1B
4	US 64	Sears Ave	2
5	US 64	N Fifth Ave	2
6	US 64	MLK Jr Blvd	1B
7	US 64	North Ave	2
8	US 64	E Raleigh St	1B
9	US 64	Progress Blvd	2
10	US 64	E Third St	1A
11	US 64	Siler Crossing	1A
12	N Second Ave	E Third St	1A
13	Alston Bridge Rd	Kent St	2
14	E Third St	N Chatham Ave	1A
15	Alston Bridge Rd	Future Greenway	4
16	W Second St	Railroad	3
17	W Third St	Railroad	3
18	N Second Ave	MLK Jr Blvd	1A
19	MLK Jr Blvd	Railroad	3
20	Loves Creek Greenway	Creek Crossing	Boardwalk/Bridge
21	N Chatham Ave	E Fifth St	1A
22	W Raleigh St	Railroad	3
23	W Dolphin St	Railroad	3
24	W Elk St	Railroad	3
25	Alston Bridge Rd	Pony Farm Rd	2, 4
26	S Second Ave	Alston Bridge Rd	2
27	S Second Ave	Fayetteville St	2
28	S Chatham Ave	Fayetteville St	2
29	Alston Bridge Rd	Progress Blvd	2, 4
30	S Tenth St	Future Greenway	2, 4
31	W Raleigh St	W Elk St	2
32	E Raleigh St	Future Greenway	2
33	US 64	Future Greenway	Mid-Block / HAWK signal
34	S Chatham Ave	W Raleigh St	1A
35	S Second Ave	Beaver St	1A
36	S Second Ave	E Raleigh St	1A
37	N Chatham Ave	E Second St	1A
38	N Second Ave	E Second St	1A





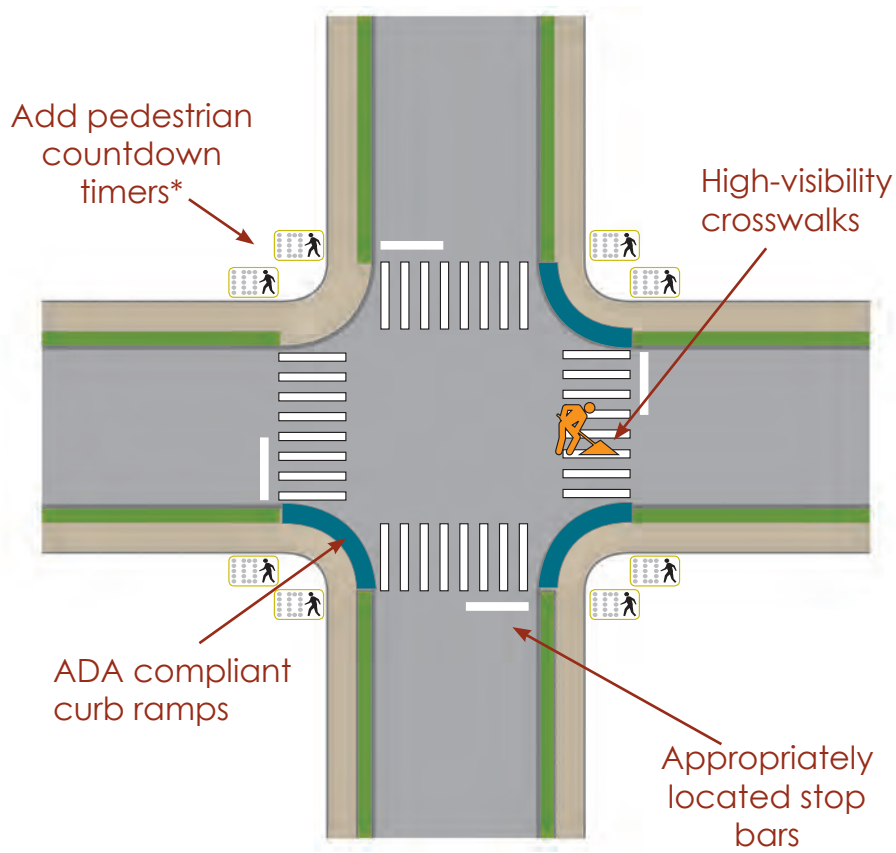
# Figure 3.5 Priority Intersection Locations





# Figure 3.6 Signalized Intersection Treatment Concept 1A

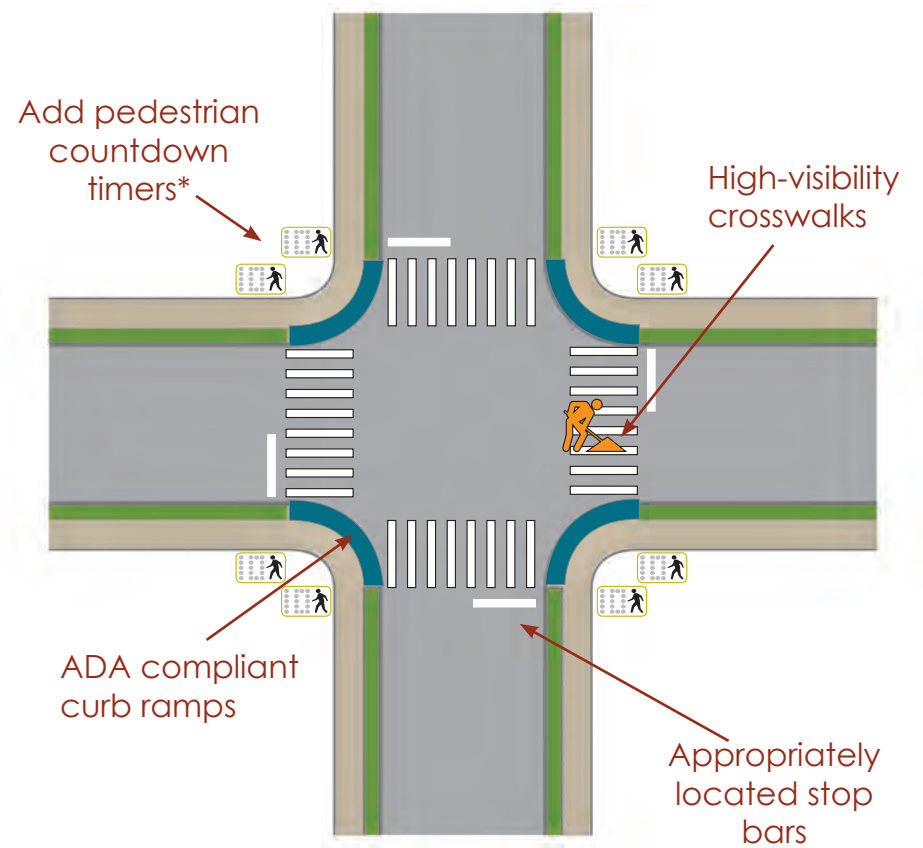
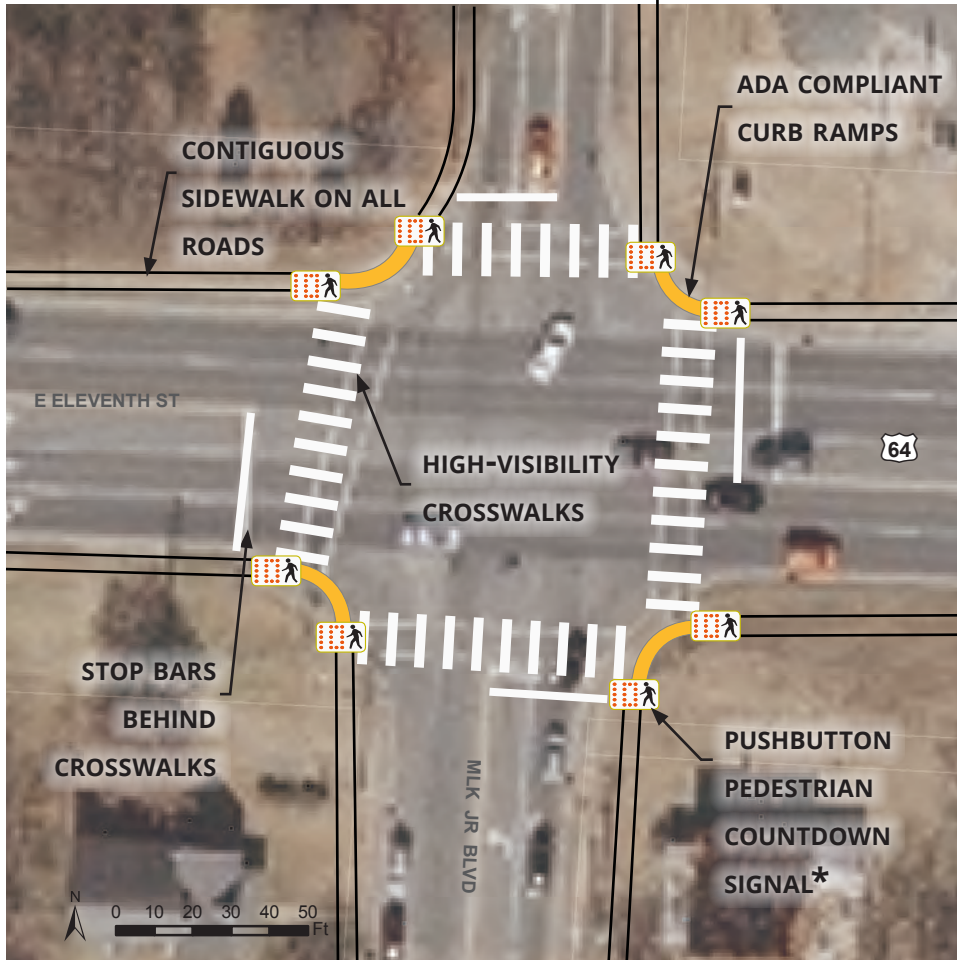
## E. Second Street & S. Second Avenue Intersection



\*Pedestrian pushbuttons for pedestrian countdown signals may be installed at signalized intersections that are not along US 64. Quick response to the pushbutton or feedback to the pedestrian (e.g.- indicator light comes on) should be programmed into the system. When used, pushbuttons should be well-signed and within reach and operable from a flat surface for pedestrians in wheelchairs and with visual disabilities.



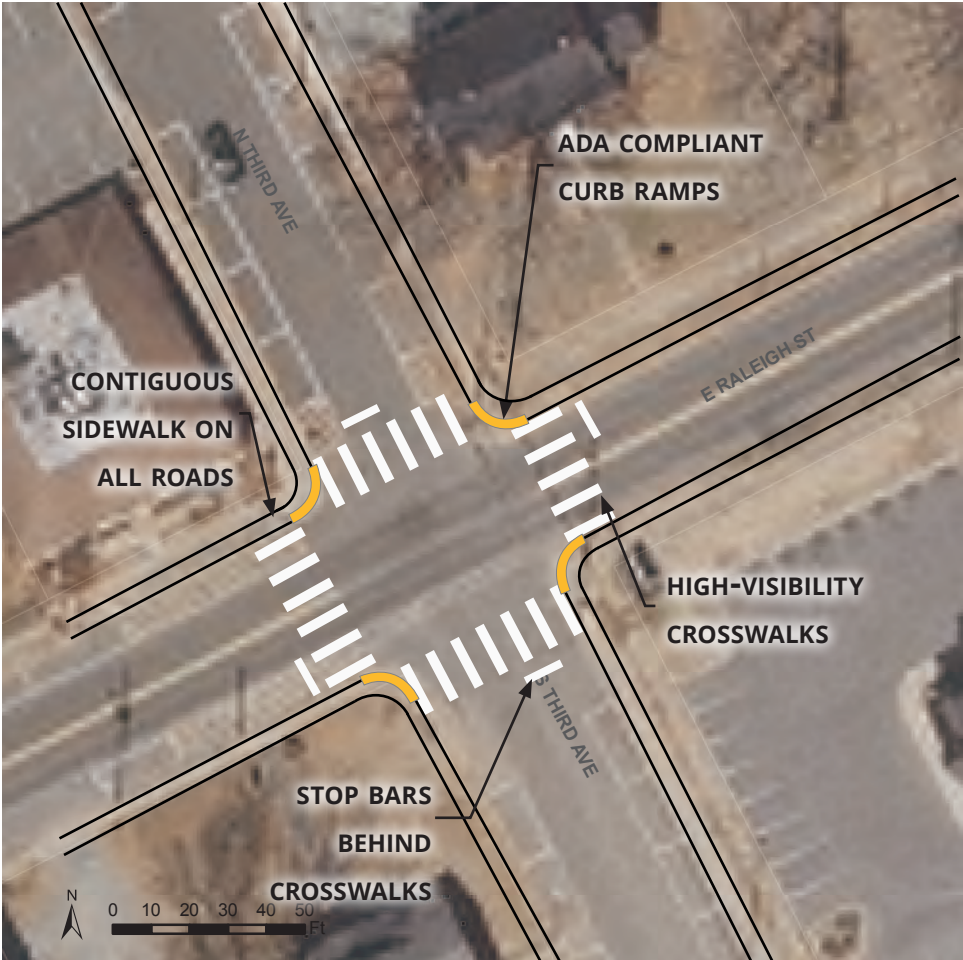
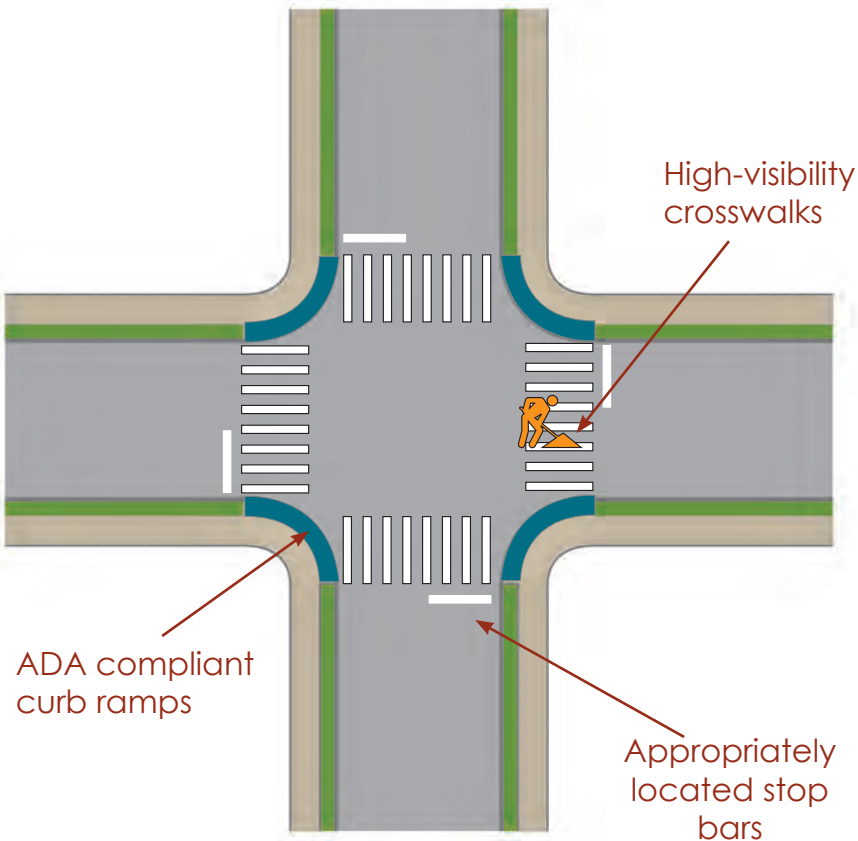
**Figure 3.7 Signalized Intersection Treatment Concept 1B**  
**US 64 & Martin Luther King Jr Blvd Intersection**



\*Along US 64, shorter cycle lengths and longer walk intervals would provide better service to pedestrians and encourage better signal compliance. For optimal pedestrian service, fixed-time signal operation at each intersection along US 64 should be implemented. The countdown can begin at the beginning of the WALK phase, perhaps flashing white or yellow, or at the beginning of the clearance, or DON'T WALK phase. The timing of these or other pedestrian signals needs to be adapted to the given situation.

# Figure 3.8 Non-Signalized Intersection Treatment Concept 2

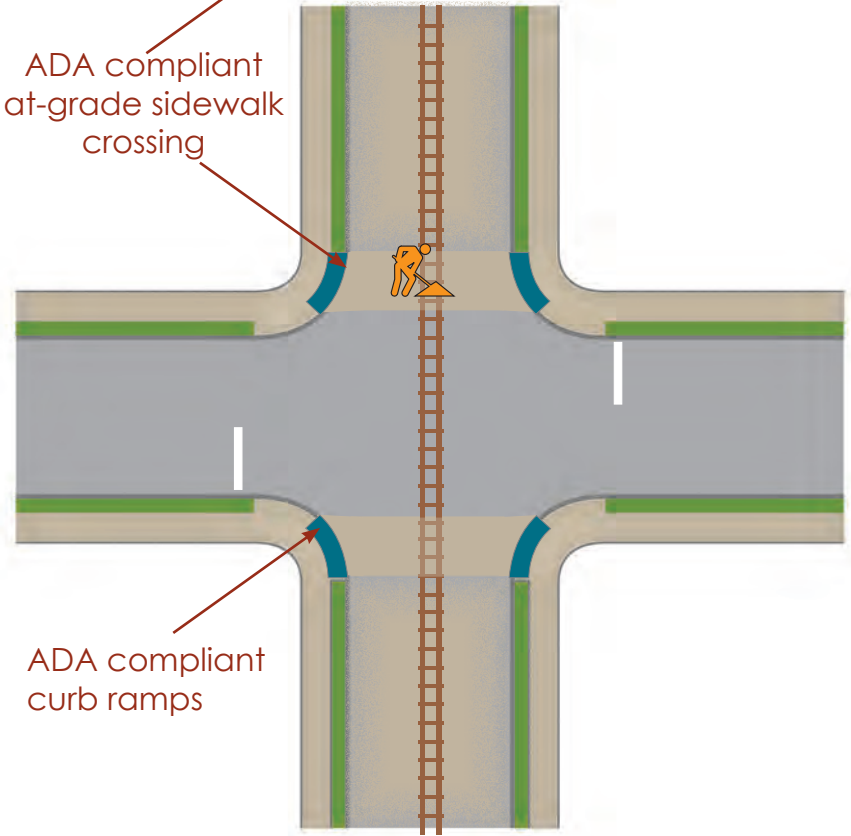
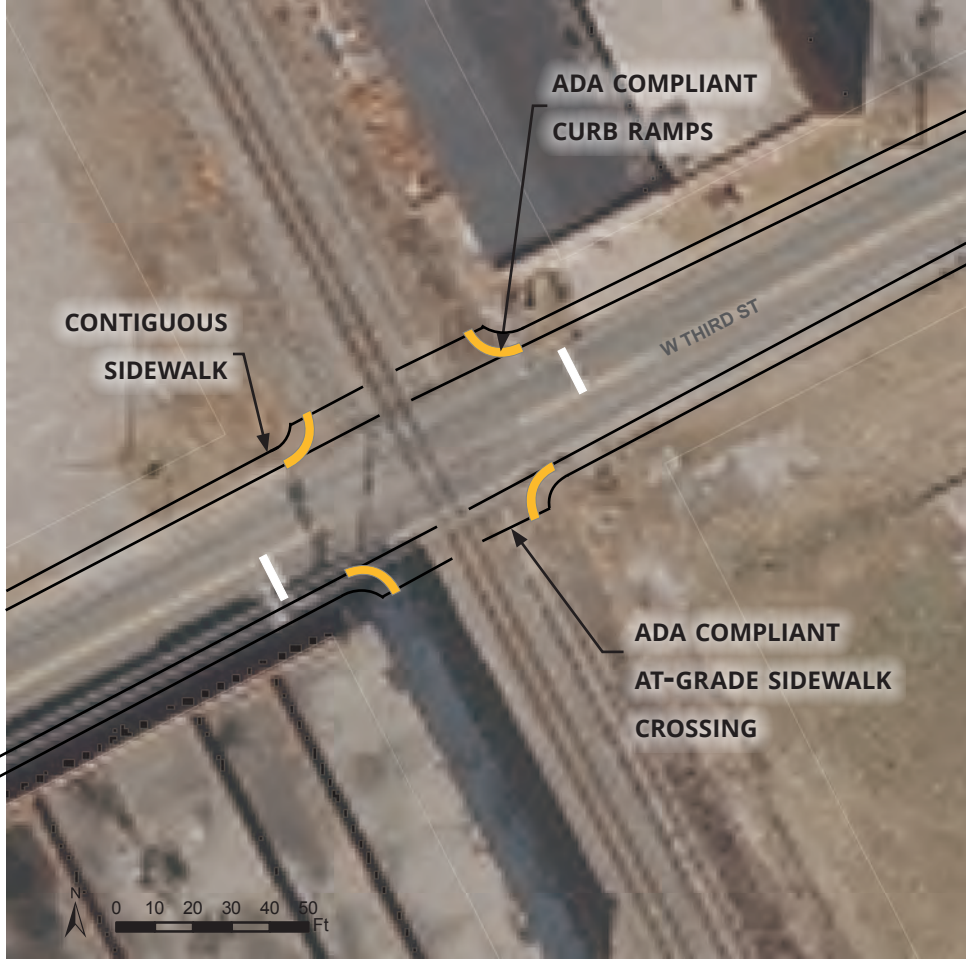
## E. Raleigh Street & S. Third Avenue Intersection





# Figure 3.9 At-Grade Railroad Crossing Treatment Concept 3

## W. Third Street & Norfolk Southern Railroad Intersection



## Advanced Visualization Presenting Intersection Treatment Concept #3 for the West Third Street At-Grade Railroad Crossing



*Existing*



*Simulation of proposed at-grade railroad crossing on W. Third Street*



**Figure 3.10 Mid-Block Crossing Treatment Concept 4**  
**S. Second Avenue & Future Love's Creek Greenway Crossing**







## Gateway Corridors

A gateway corridor can serve as a welcoming entrance way into the Town. In many cases, a gateway corridor is the first impression residents and visitors have of the community and as such, should be inviting and attractive.

As described earlier in this chapter, consistency with previous plans is a key element in the methodology used to develop the recommendations in this plan. The Vision Statement of the Town's Downtown Master Plan is, "to create a vibrant downtown that honors traditions and encourages innovation, enabling residents, businesses, and tourism to flourish." The Downtown Master Plan further defines this vision statement and supports the vision statement with goals that strive to improve the aesthetic quality of downtown Siler City, encouraging growth and development through improved aesthetic appearance.

Several corridors were identified during the pedestrian planning process as potential gateways into Siler City. Recommendations for these gateway corridors include sidewalks on both sides of the street, a "welcome" sign, street trees, landscaped center medians, landscaped sidewalk buffers, driveway access management policies, wayfinding signage, and pedestrian level lighting. The gateway corridor areas are shown on Figure 3.11. Further information and additional resources for gateway treatments can be referenced in Appendix A of this plan.

## Traffic Calming Opportunities

Traffic calming is the name for road design strategies that can be implemented to reduce vehicular traffic speed and volumes, create a more pedestrian-friendly environment, and allow residential and commercial streets to better balance their multiple uses. The type of projects can range from a few minor changes to major rebuilding of a street network.

Types of traffic calming techniques vary from community to community and state to state. Techniques that are typically utilized include (but are not limited to) speed limit reduction, speed alert and enforcement, warning signage, gateway signage, raised crosswalks, planted center median islands, mini traffic circles, textured pavement treatments such as cobblestones or bricks, bicycle lanes, curb extensions, road diets, and reducing lane widths as appropriate.

There are several neighborhood areas in Siler City where traffic calming projects could be implemented. Before implementing any traffic calming projects, the Town's Police Department and Public Works Department should analyze each corridor and evaluate the potential impacts of implementing a traffic calming technique.

N. Glenn Avenue and other roadway corridors in the western area of Siler City were identified through public and stakeholder comments as a priority location for traffic calming. Many roadway corridors in this area feature narrow, unstriped streets with drainage swales on

both sides of the roadway. The neighborhood roadways that don't serve as arterial roads may not warrant the construction of sidewalks and should be considered for traffic calming treatments.

Further information and additional resources for traffic calming techniques and treatments can be referenced in Appendix A of this plan.



*Mini traffic circle in Shoreline, Washington*



*Textured pavement speed table.  
Photo from Victoria Transport Policy  
Institute.*

## Multi-use Trails

The term “multi-use trails” refers to both greenway trails and side paths built in open space or stream corridors, or along a roadway that accommodate pedestrians, cyclists, and a variety of other non-motorized trail users (such as roller bladers). Greenspace corridors often become opportunities for off-road transportation facilities with simultaneous benefits. They help protect the environment, enable an alternate mode of transportation, encourage healthy living, provide opportunities for recreation, and generate economic activity. Greenway trails that are built within greenspace corridors give bicyclists, pedestrians, and other non-motorized trail users access to natural areas. Greenspace corridors provide opportunities to restore wildlife habitat in areas that have been previously disturbed, protect forests and water quality, and offer ample opportunities for environmental education.

### Recommended Multi-Use Trails in Siler City

Potential multi-use trail opportunities exist in Siler City along existing sewer easements, Love’s Creek, Rocky River, their tributaries, and along roadway. The following pages include maps and descriptions of where multi-use trail connections should occur. The multi-use trail recommendations presented in the maps throughout this chapter are planning level analyses, and each corridor, waterway crossing, roadway crossing, and railroad crossing will require additional evaluation during the feasibility and design phases of a project.

## Multi-Use Greenway Trails

A multi-use greenway trail, or “greenway trail” for short, is defined as a linear corridor of land that is typically more recreational in character and consists of trails along stream corridors and other open space (e.g., utility corridors such as power line easements and sewer easements, railroad right-of-way). Greenway trails are typically designed to accommodate a variety of trail users, including bicyclists, walkers, hikers, joggers, skaters, horseback riders, and those confined to wheelchairs. Greenway trails are closed to motorized traffic and designed for two-way travel by bicyclists and pedestrians. Such trails can be constructed of many different materials, however, for trails that serve the purpose of transportation, hard surfaces such as asphalt or concrete are recommended. As described in Appendix A: Design Guidelines, a greenway trail intended to function as a transportation facility, should be an all-weather surface and accessible within urban, suburban, and rural areas.

Each trail project will also require close coordination with nearby property owners. Design features such as landscaped screening, fencing, and other treatments should be considered to help ensure privacy where desired.

### Multi-Use Side Paths

A multi-use side path, or “side path” for short, is a type of multi-use trail that follows a road corridor but is separated from on-road traffic. Side paths are more transportation-oriented in character and used by bicyclists and pedestrians. Where side paths are proposed in Siler City, factors such as the distance

between destinations, adjacent land use, and population density were considered.

Multi-use trails offer families and novice bicyclists a comfortable environment to pursue active transportation and healthy living activities. Therefore, a comprehensive network of multi-use trails that includes greenway trails and side paths is an integral part of the overall pedestrian network, and its development should be a priority of the Town of Siler City.



*Existing greenway trail in Sanford, NC*

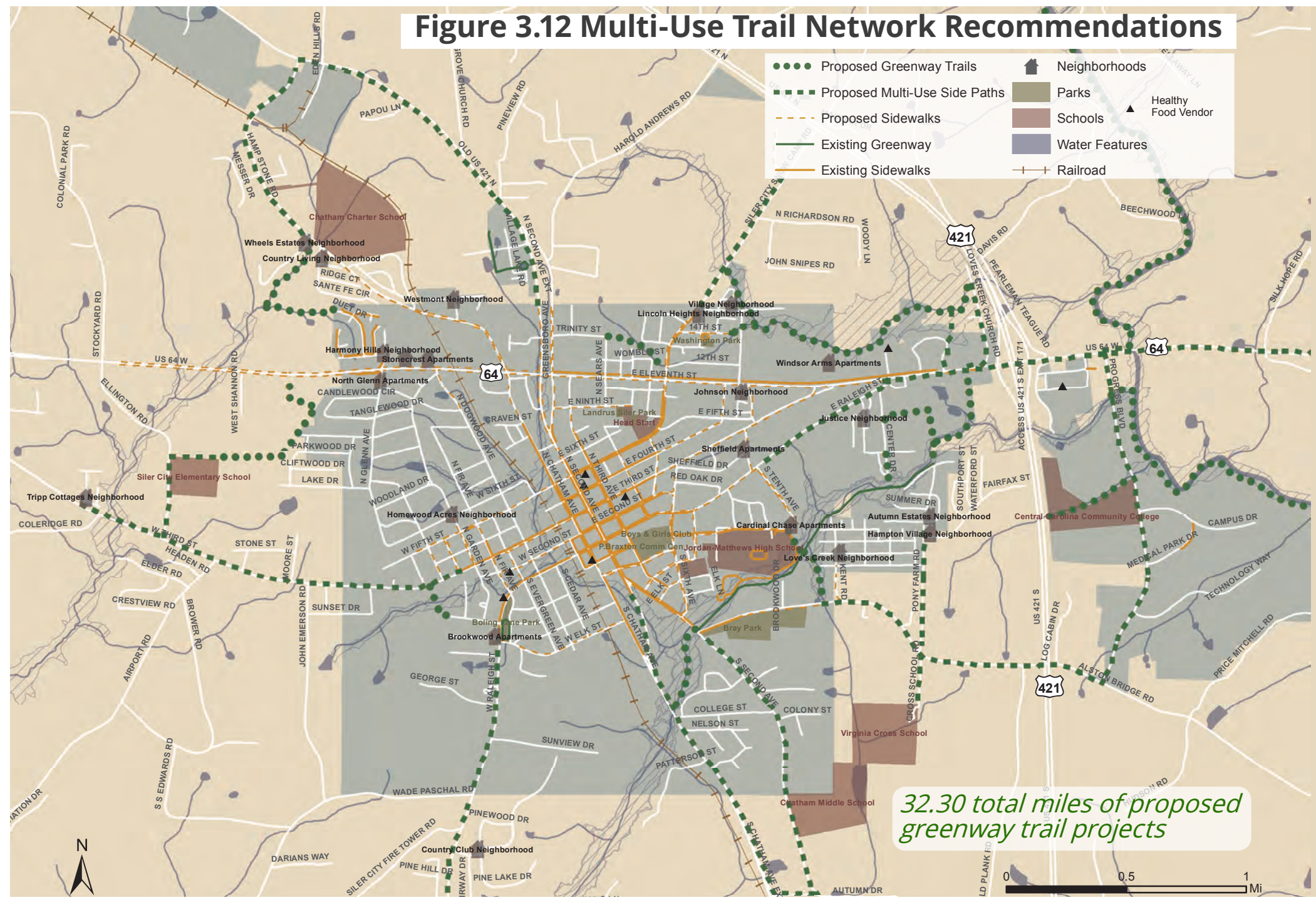


*Existing side path in Conover, NC*



# Figure 3.12 Multi-Use Trail Network Recommendations

- Proposed Greenway Trails
- Proposed Multi-Use Side Paths
- - - Proposed Sidewalks
- Existing Greenway
- Existing Sidewalks
- ▲ Neighborhoods
- Parks
- Schools
- Water Features
- Railroad
- ▲ Healthy Food Vendor

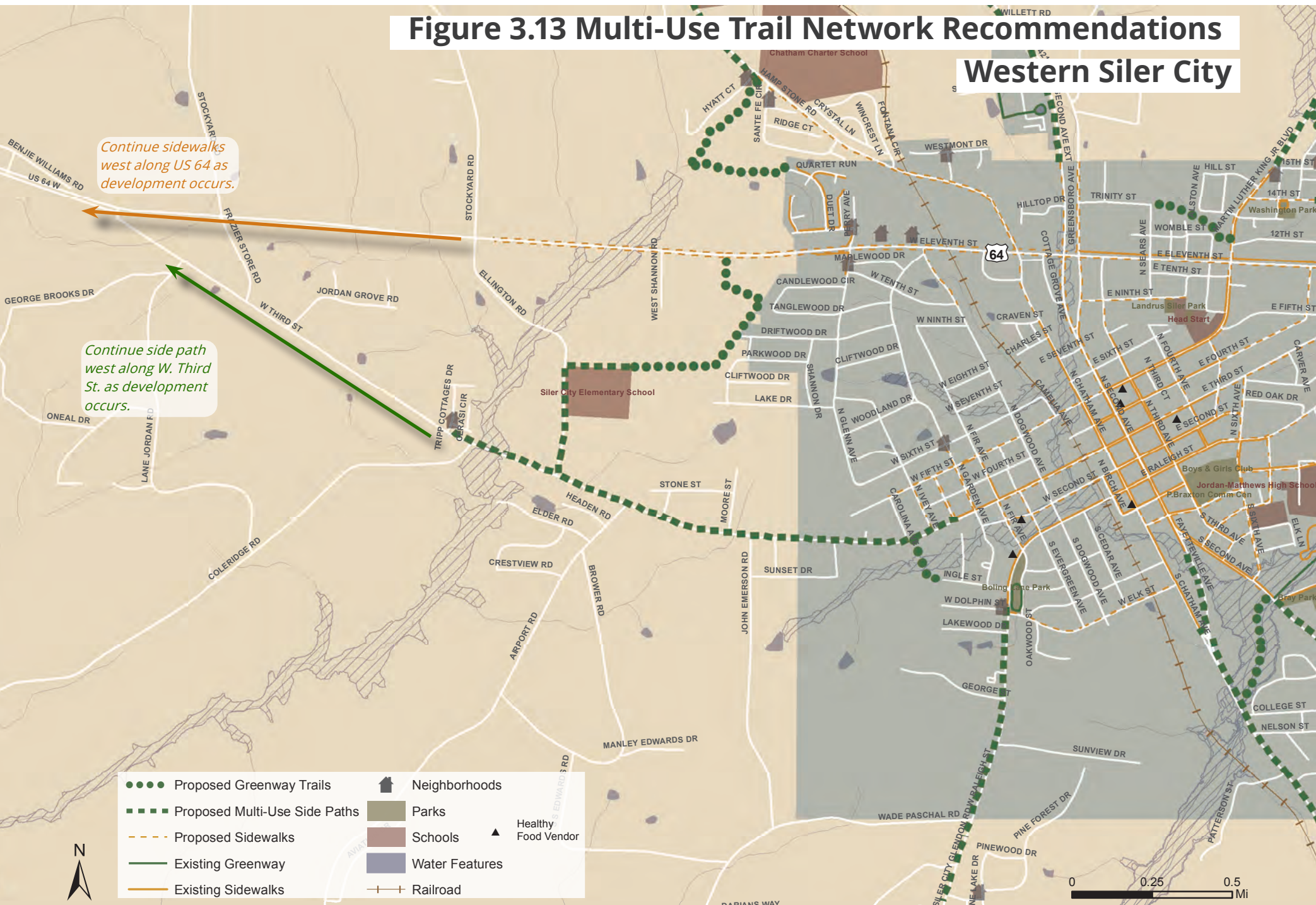


*32.30 total miles of proposed greenway trail projects*



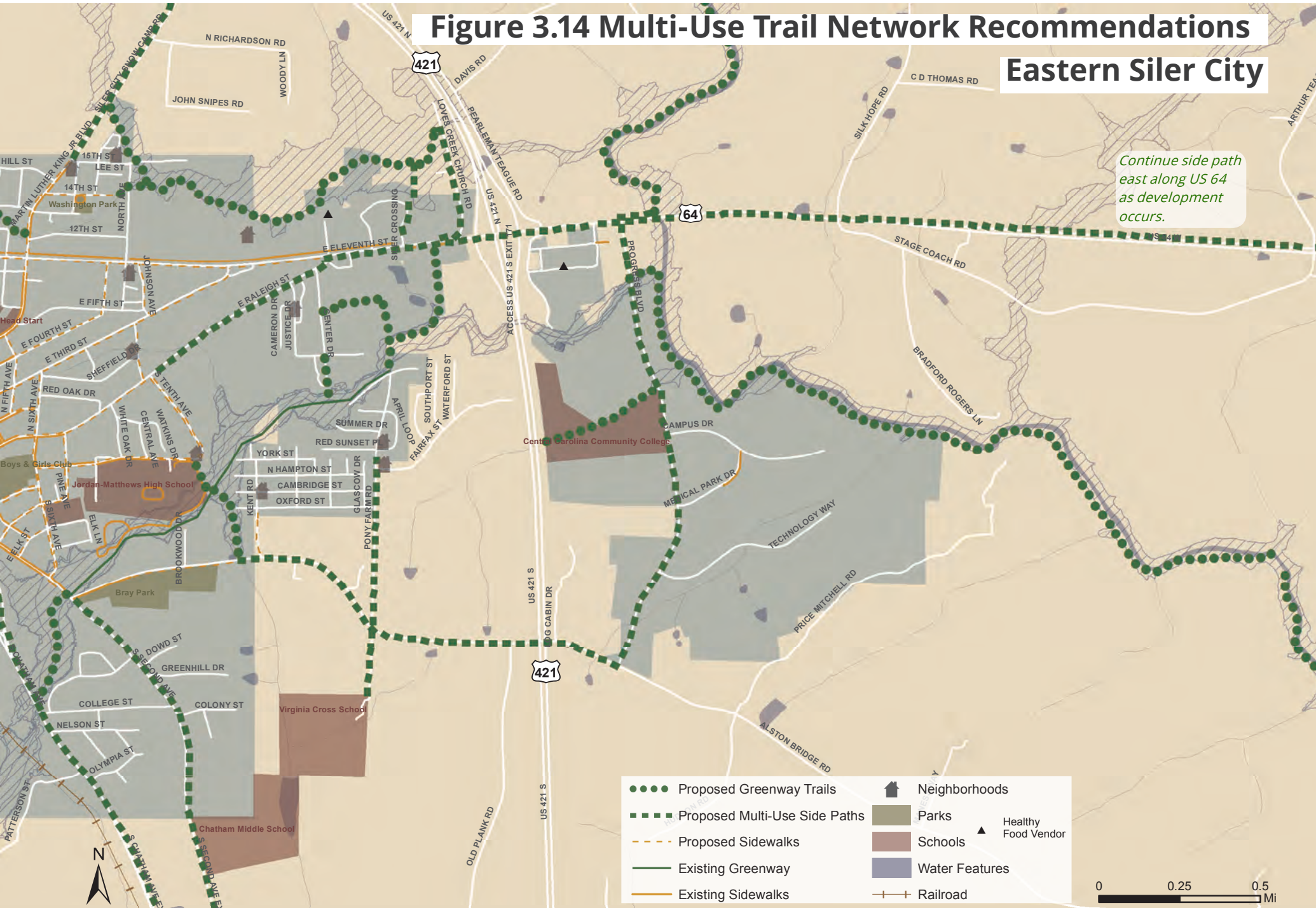
# Figure 3.13 Multi-Use Trail Network Recommendations

## Western Siler City





# Figure 3.14 Multi-Use Trail Network Recommendations Eastern Siler City



# Analysis of Access to Healthy Food Vendors and Recreation Areas

The analysis of connections between neighborhood areas, recreation areas, and healthy food options (described in detail in Chapter 2 of this Plan) revealed that the pedestrian network recommended in this plan would greatly increase safe access to healthy foods and opportunities for recreation for residents of Siler City. Table 3.3 and Figure 3.15 display the connections currently possible between neighborhoods and healthy food vendors with existing sidewalks and crossings. Table 3.4 on page 3-24 and Figure 3.16 on page 3-25 display the connections currently possible between neighborhoods and recreation areas with existing sidewalks and crossings.

In many locations, small gaps prevent a connection that is nearly complete. This is especially notable around the downtown area. Several grocery stores offer healthy foods in the downtown core and several neighborhoods border it, but short gaps in the sidewalk network prevent a complete connection. Another notable location is the east side of US 64/Eleventh Street. The lack of crossing at the cluster of stores located here prevents access by neighborhoods south of US 64/Eleventh Street.

Table 3.5 and Figure 3.17 present the viable connections between neighborhoods and healthy food stores with the proposed network in place. The proposed network links all twenty-one neighborhoods with each of the nine grocery stores classified in the top tier.

Table 3.6 and Figure 3.18 present the viable connections between neighborhoods and recreation areas with the proposed network in place.

The proposed network increases the number of complete connections between healthy food vendors and neighborhoods from six (6) to 189. Of the 189 connections, 5 are less than half a mile in length. An additional 24 are less than a mile in length.

The proposed network increases the number of complete connections between recreation areas and neighborhoods from one (1) to 147. Of the 147 connections, 3 are less than half a mile in length. An additional 16 are less than a mile in length. The number of connections by mileage are summarized in Table 3.7.

Table 3.7 demonstrates the substantial impact the proposed pedestrian network will have on Siler City residents' access to healthy food options and recreational areas. Connections to healthy food options and opportunities for active living should be available to all residents in Siler City. Implementing the improvements recommended in this Pedestrian Master Plan will significantly increase walkability and access to basic needs for all populations in Siler City.

**Table 3.3: Existing Connections to Healthy Food Vendors**

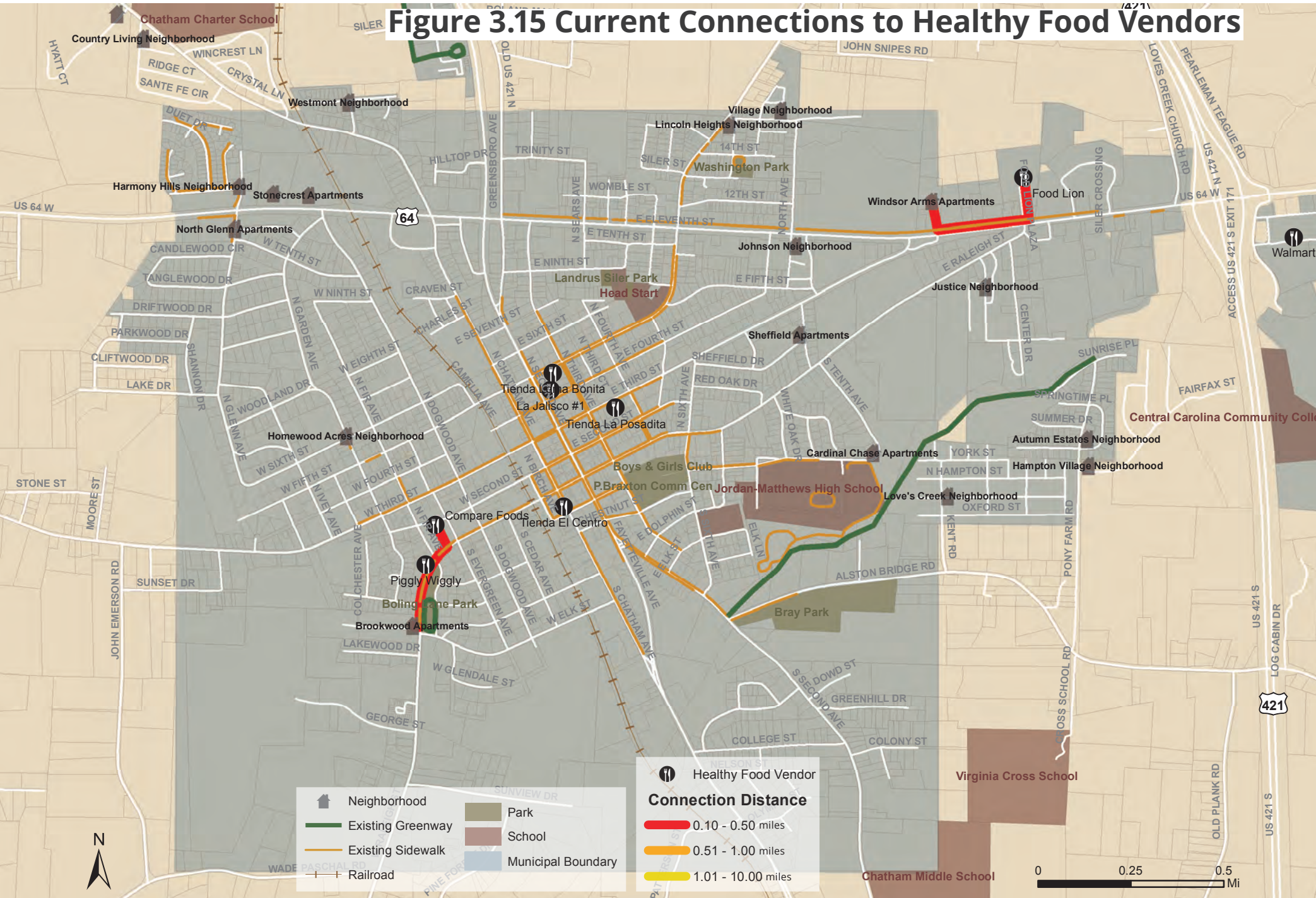
Neighborhood	Top Tier for Healthy Foods		
	Compare Foods	Food Lion	Piggly Wiggly
Brookwood Apartments	0.3		0.2
Windsor Arms Apartments		0.4	

*Note: Unit of measurement for connection length is miles.*





**Figure 3.15 Current Connections to Healthy Food Vendors**

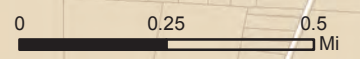


	Neighborhood		Park
	Existing Greenway		School
	Existing Sidewalk		Municipal Boundary
	Railroad		

Healthy Food Vendor

**Connection Distance**

- 0.10 - 0.50 miles
- 0.51 - 1.00 miles
- 1.01 - 10.00 miles





**Table 3.4: Existing Connections to Recreation Areas**

Recreation Areas						
Neighborhood	Washington Park	Boling Lane Park	Bray Park	Ernest Ramsey Gym	Landrus Siler Park	Paul Braxton Community Center
Brookwood Apartments		0.1				

*Note: Unit of measurement for connection length is miles.*



*Boling Lane Park, Siler City*

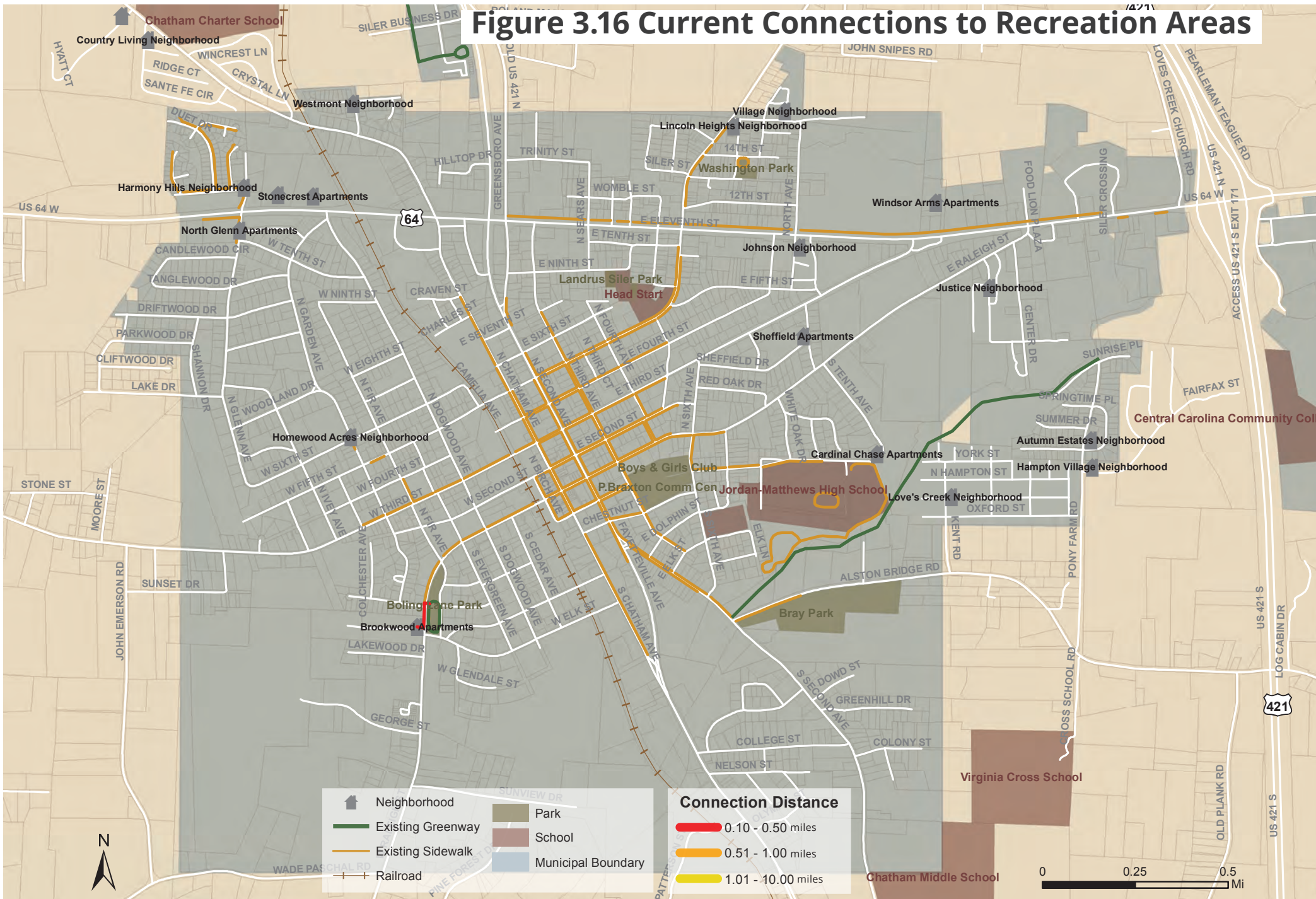


*Bray Park, Siler City*





# Figure 3.16 Current Connections to Recreation Areas



**Table 3.5: Neighborhood-to-Healthy Foods Connections with the Proposed Pedestrian Network**

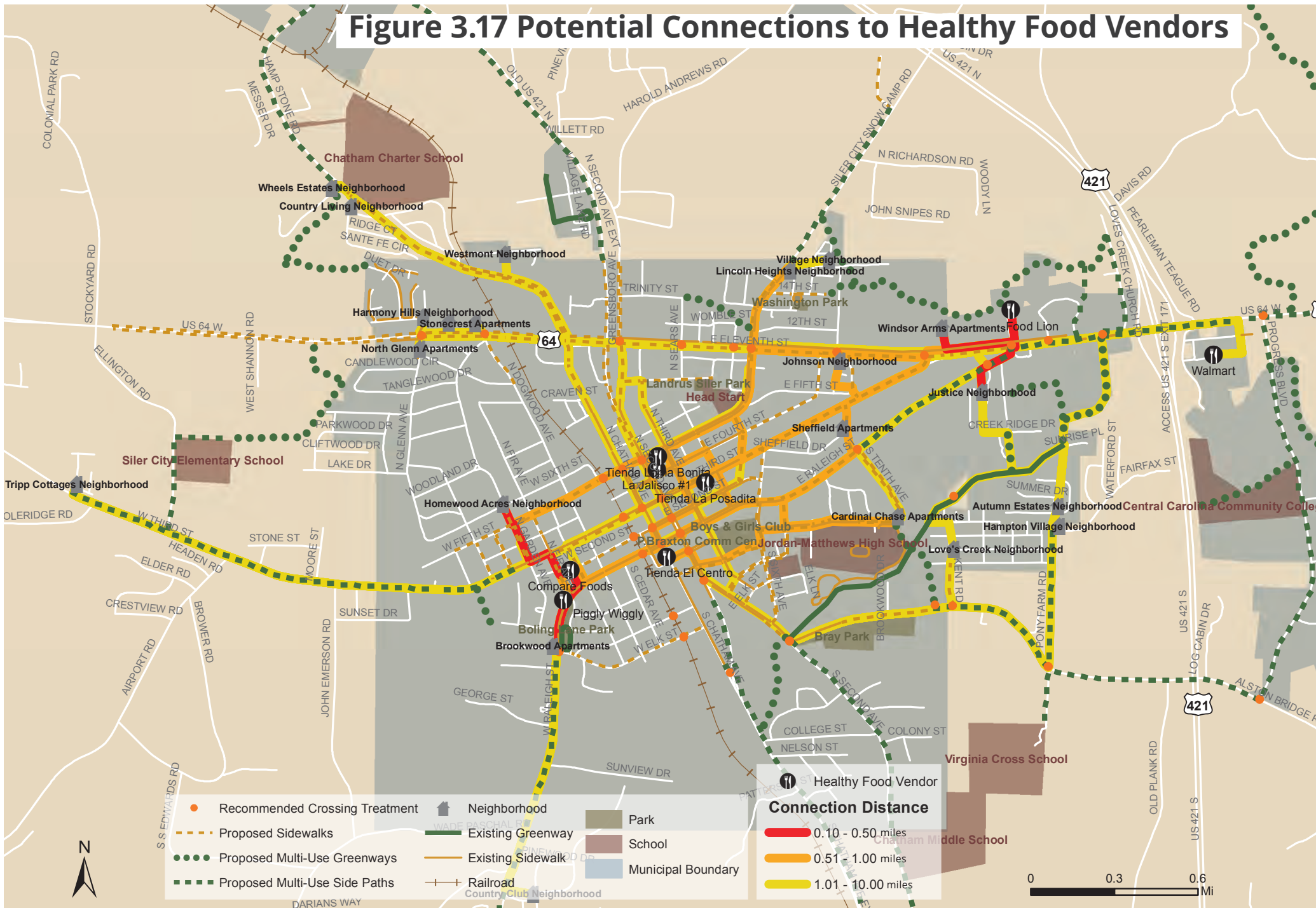
Top Tier for Healthy Foods								
Neighborhood	Compare Foods	Food Lion	La Jalisco #1	Piggly Wiggly	Tienda El Centro	Tienda La Posadita	Tienda Loma Bonita	Walmart
Autumn Estates Neighborhood	2.6	1.2	2.3	2.6	2.2	2.1	2.4	1.4
Brookwood Apartments	0.3	2.2	1.0	0.2	0.6	1.0	1.0	3.1
Cardinal Chase Apartments	1.4	1.1	1.1	1.4	1.0	0.9	1.2	2.0
Cateland Place Apartments	1.8	2.2	1.2	1.9	1.5	1.4	1.2	3.1
Country Club Neighborhood	1.3	3.2	2.0	1.2	1.6	2.0	2.0	4.1
Country Living Neighborhood	2.1	3.3	1.6	2.2	1.9	1.9	1.6	4.2
Hampton Village Neighborhood	2.6	1.3	2.4	2.6	2.2	2.2	2.5	1.5
Harmony Hills Neighborhood	1.9	2.3	1.3	2.0	1.7	1.5	1.3	3.2
Homewood Acres Neighborhood	0.4	2.3	0.7	0.5	0.9	0.9	0.7	3.2
Johnson Neighborhood	1.5	0.8	1.0	1.6	1.2	0.9	0.9	1.7
Justice Neighborhood	1.8	0.4	1.5	1.8	1.5	1.3	1.5	1.3
Lincoln Heights Neighborhood	1.6	1.4	1.0	1.7	1.3	0.9	0.9	2.3
Love's Creek Neighborhood	1.9	1.3	1.7	1.9	1.4	1.6	1.8	2.0
North Glenn Apartments	1.9	2.3	1.3	2.0	1.6	1.5	1.3	3.2
Sheffield Apartments	1.3	0.9	0.9	1.3	1.0	0.7	0.9	1.8
Stonecrest Apartments	1.6	2.1	1.1	1.8	1.4	1.3	1.1	3.0
Tripp Cottages Neighborhood	2.0	3.8	2.5	2.1	2.4	2.5	2.5	4.7
Village Neighborhood	1.7	1.5	1.1	1.8	1.5	1.1	1.1	2.4
Westmont Neighborhood	1.5	2.7	1.1	1.7	1.3	1.4	1.1	3.6
Wheels Estates Neighborhood	2.2	3.4	1.7	2.3	2.0	2.0	1.7	4.2
Windsor Arms Apartments	1.8	0.4	1.3	1.9	1.5	1.1	1.4	1.4

*Note: Unit of measurement for connection length is miles. Connections shorter than a half mile are highlighted in green; connections between half a mile and one mile are highlighted in orange.*





# Figure 3.17 Potential Connections to Healthy Food Vendors



**Table 3.6: Neighborhood-to-Recreation Areas Connections with the Proposed Pedestrian Network**

Neighborhood	Recreation Areas						
	Boling Lane Park	Boys & Girls Club	Bray Park	Ernest Ramsey Gym	Landrus Siler Park	P.Braxton Comm Center	Washington Park
Autumn Estates Neighborhood	2.7	1.9	1.4	2.1	2.7	2.1	2.2
Brookwood Apartments	0.1	1.1	1.4	1.3	1.5	0.8	1.9
Cardinal Chase Apartments	1.5	0.5	1.1	1.1	1.6	0.8	1.4
Cateland Place Apartments	2.0	1.8	2.2	1.4	1.1	1.5	1.5
Country Club Neighborhood	1.1	2.1	2.4	2.3	2.5	1.8	2.9
Country Living Neighborhood	2.3	2.3	2.6	1.9	2.1	2.0	2.6
Hampton Village Neighborhood	2.7	2.0	1.4	2.2	2.8	2.1	2.3
Harmony Hills Neighborhood	2.1	1.9	2.3	1.5	1.2	1.7	1.6
Homewood Acres Neighborhood	0.6	1.3	1.7	1.0	1.1	1.1	1.6
Johnson Neighborhood	1.7	0.9	1.5	0.6	1.2	1.1	0.7
Justice Neighborhood	1.9	1.1	1.6	1.2	1.9	1.3	1.4
Lincoln Heights Neighborhood	1.8	1.2	1.8	0.6	1.2	1.2	0.3
Love's Creek Neighborhood	2.0	1.3	0.6	1.9	2.2	1.3	2.3
North Glenn Apartments	2.1	1.9	2.3	1.5	1.2	1.6	1.6
Sheffield Apartments	1.4	0.6	1.2	0.7	1.3	0.8	1.0
Stonecrest Apartments	1.9	1.6	2.1	1.3	0.9	1.4	1.4
Tripp Cottages Neighborhood	2.2	2.8	3.2	2.8	3.0	2.6	3.4
Village Neighborhood	1.9	1.3	2.0	0.7	1.3	1.3	0.4
Westmont Neighborhood	1.8	1.7	2.1	1.4	1.6	1.5	2.0
Wheels Estates Neighborhood	2.4	2.4	2.7	2.0	2.2	2.1	2.7
Windsor Arms Apartments	2.0	1.2	1.8	1.1	1.7	1.3	1.1

Note: Unit of measurement for connection length is miles. Connections shorter than a half mile are highlighted in green; connections between half a mile and one mile are highlighted in orange.

**Table 3.7: Summary of Walkable Connections Based on Proposed Pedestrian Network**

Connections to Healthy Foods			
Network	<0.5 miles	0.5 - 1 mile	Total
Existing Network	3	0	3
Proposed Network	5	21	168

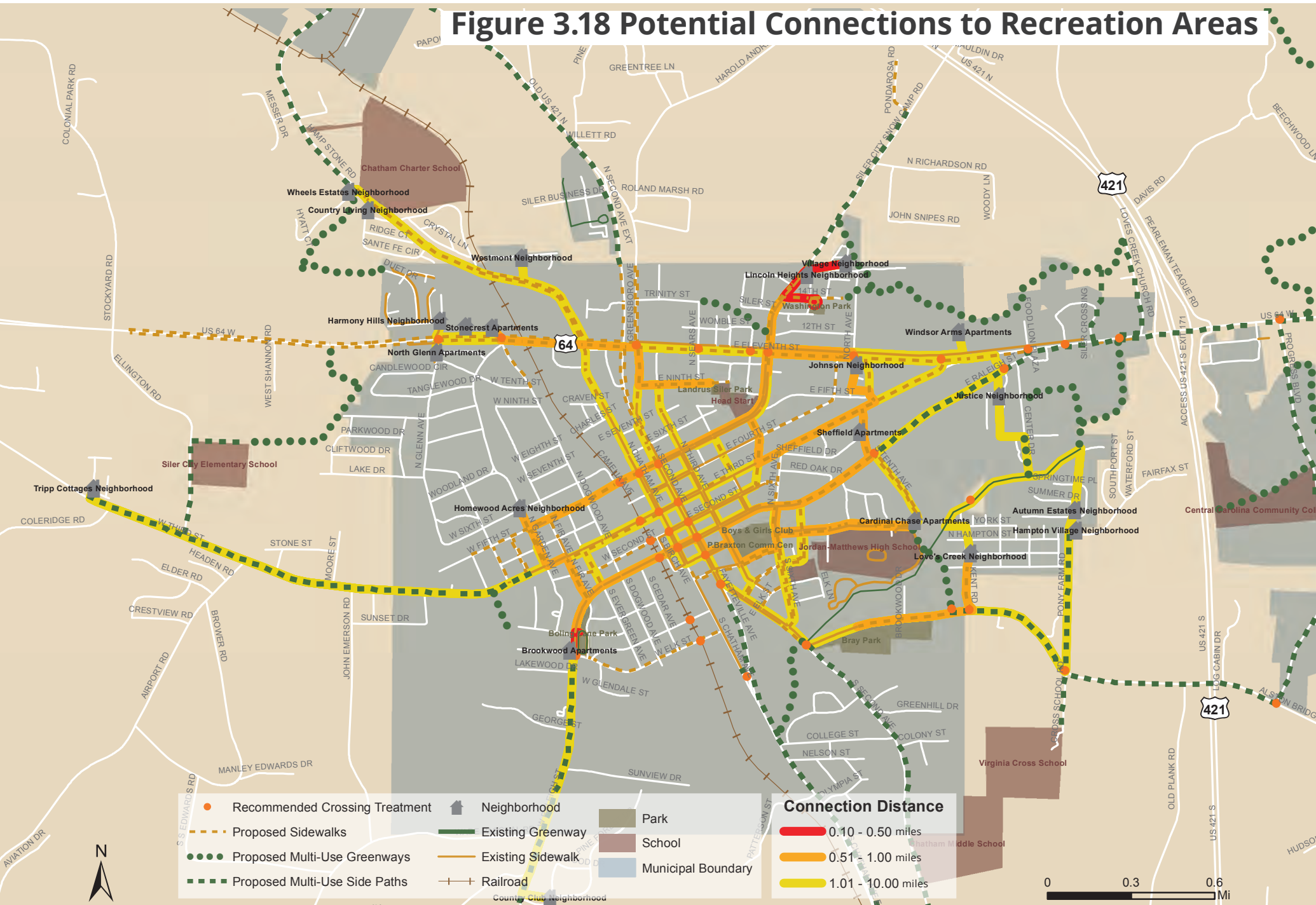
Connections to Recreation Areas			
Network	<0.5 miles	0.5 - 1 mile	Total
Existing Network	1	0	1
Proposed Network	3	16	147

Note: Unit of measurement for connection length is miles.





# Figure 3.18 Potential Connections to Recreation Areas



# Project Prioritization Process

The prioritization process began with input from Steering Committee members during the project kick off meeting. The consultant team then reviewed previous planning documents for Siler City and Chatham County and extracted information on priority projects listed in each planning document. During field work investigations the consultant team evaluated and ground-truthed the information obtained from the previous planning efforts.

Extensive public input was collected during the development of this Pedestrian Master Plan, including information gathered during the public outreach events, and through the responses to the online comment form. All input and opinions on high priority project areas in Siler City were taken into account during the project prioritization process.

After field work investigations were conducted, Steering Committee members were asked to assign a score to each prioritization criterion. The scores were then averaged, and a final weighted score for each criterion was determined. The criteria listed below were custom designed for Siler City, based on public input, Steering Committee input, and available data. The results of the scoring exercise are presented in Table 3.8.

Top priority projects were identified based on the comprehensive project prioritization process described in this section, and the

final ten projects highlighted in this chapter were determined by the Steering Committee, taking into account public opinion, previous planning efforts, guidance local staff representatives, and the knowledge and expertise of the consultant team. Table 3.9 demonstrates the scores for each priority project.

The final priority projects were reviewed and discussed during a meeting with NCDOT Division 8 representatives, Town staff and NCDOT's DBPT. The final priority projects were inventoried and divided into logical segments based on input from the public, Steering Committee, local staff and connections between destinations. The final priority projects segments are presented beginning on page 3-28.

**Table 3.8 Weighted Scores for Project Prioritization Criteria**

Prioritization Criteria	Weighted Score
Reported Pedestrian Crash Location	4.57
Connectivity/access to Proposed Facilities	4.00
Lower-income Areas (US Census)	3.93
Direct Access to/from an Existing Trail or Sidewalk	3.86
High Density Areas (US Census)	3.79
Park or Recreation Center Proximity (1/2 mile radius)	3.79
Low-vehicle Access Areas (US Census)	3.50
Elem., Middle, and High School Proximity (1/2 mile radius)	3.43
Limited English Proficiency Areas (US Census)	3.21
Minority Population Areas (US Census)	3.14
Top 1-3 Recommendations from 2013 Public Comments	3.14
Direct Access to Healthy Food Opportunities	3.14
Ethnicity/Origin Population Areas (US Census)	3.00
Direct Access to Major Shopping Centers/Business Areas/Downtown	2.93
High Chronic Disease Rate Areas	2.93
Areas of Elderly (65+ years old) Population	2.86
Areas of Youth (<18 years old) Population	2.71
Corresponds to Previous Recommendation (CTP, other plans, etc.)	2.57





**Table 3.9: Priority Project Prioritization Results**

				<i>Weighted Scores</i>								
ID #	Roadway	From	To	Crash	Connectivity	Low Income	Ex Facility	High Density	Park Proximity	Zero Car Household	Schl Proximity	Lim English
1	N. Sixth Ave / S. Sixth Ave	E. Third St	S. Second Ave	4.57	4	3.93	3.86	3.79	3.79	3.5	3.43	3.21
2	E. Raleigh St	S. Tenth Ave	US 64	4.57	4	3.93	3.86	3.79	3.79	3.5	3.43	0
3	E. Third St	N. Fifth Ave	US 64	4.57	4	3.93	3.86	0	3.79	3.5	3.43	3.21
4	US 64	MLK Jr. Blvd	E. Raleigh St	4.57	0	3.93	3.86	3.79	0	3.5	3.43	0
5	E. Cardinal St / S. Tenth Ave	S. Sixth Ave	E. Raleigh St	4.57	4	3.93	3.86	3.79	3.79	3.5	3.43	0
6	E. Raleigh St	S. Sixth Ave	S. Tenth Ave	4.57	4	3.93	3.86	0	3.79	3.5	3.43	3.21
7	E. Fifth St / W. Fifth St	Carolina Ave	N. Second Ave	4.57	4	0	3.86	3.79	3.79	0	3.43	3.21
8	US 64	N. Chatham Ave	MLK Jr. Blvd	4.57	4	3.93	3.86	0	0	3.5	3.43	3.21
9	W. Third St	N. Chatham Ave	N. Fir Ave	0	4	0	3.86	3.79	3.79	0	3.43	3.21
10	E. Fourth St	N. Fifth Ave	US 64	4.57	4	3.93	3.86	0	3.79	3.5	3.43	3.21

ID #	Roadway	From	To	Minority	Public	Food	Ethnicity	Shopping	Elderly Pop	Youth Pop	Prev Rec	TOTAL
1	N. Sixth Ave / S. Sixth Ave	E. Third St	S. Second Ave	3.14	0	0	3	0	2.86	2.71	0	45.79
2	E. Raleigh St	S. Tenth Ave	US 64	3.14	3.14	3.14	3	2.93	0	2.71	0	48.93
3	E. Third St	N. Fifth Ave	US 64	3.14	3.14	0	3	2.93	2.86	2.71	0	48.07
4	US 64	MLK Jr. Blvd	E. Raleigh St	3.14	3.14	3.14	3	2.93	2.86	2.71	2.57	46.57
5	E. Cardinal St / S. Tenth Ave	S. Sixth Ave	E. Raleigh St	3.14	0	0	3	0	2.86	2.71	0	42.58
6	E. Raleigh St	S. Sixth Ave	S. Tenth Ave	3.14	3.14	0	3	0	2.86	2.71	0	45.14
7	E. Fifth St / W. Fifth St	Carolina Ave	N. Second Ave	3.14	0	3.14	3	0	2.86	2.71	0	41.50
8	US 64	N. Chatham Ave	MLK Jr. Blvd	3.14	3.14	0	3	0	2.86	2.71	2.57	43.92
9	W. Third St	N. Chatham Ave	N. Fir Ave	3.14	3.14	3.14	3	2.93	2.86	2.71	0	43.00
10	E. Fourth St	N. Fifth Ave	US 64	3.14	0	0	3	0	0	2.71	0	39.14



# Project Cut Sheets

The following pages offer details for the ten (10) priority project recommendations shown in Figure 3.19 on page 3-33 and listed in Table 3.10 below. The purpose of these project sheets is to provide a clear picture of this Plan’s recommendations. The photo rendering illustrations represent a typical treatment scenario of this Plan’s recommendations and recommended implementation strategies.

**Table 3.10: Priority Project Recommendations**

ID #	Roadway	From	To	Project Length (ft)	Prioritization Score
1	N. Sixth Ave / S. Sixth Ave	E. Third St	S. Second Ave	5,304.70	45.79
2	E. Raleigh St	S. Tenth Ave	US 64	3,517.70	45.79
3	E. Third St	N. Fifth Ave	US 64	3,880.60	44.93
4	US 64	MLK Jr. Blvd	E. Raleigh St	4,500.40	43.43
5	E. Cardinal St / S. Tenth Ave	S. Sixth Ave	E. Raleigh St	6,404.70	42.58
6	E. Raleigh St	S. Sixth Ave	S. Tenth Ave	2,286.50	42.00
7	E. Fifth St / W. Fifth St	Carolina Ave	N. Second Ave	4,005.20	41.5
8	US 64	N. Chatham Ave	MLK Jr. Blvd	4,055.00	40.78
9	W. Third St	N. Chatham Ave	N. Fir Ave	1,750.90	39.86
10	E. Fourth St	N. Fifth Ave	US 64	2,395.50	39.14

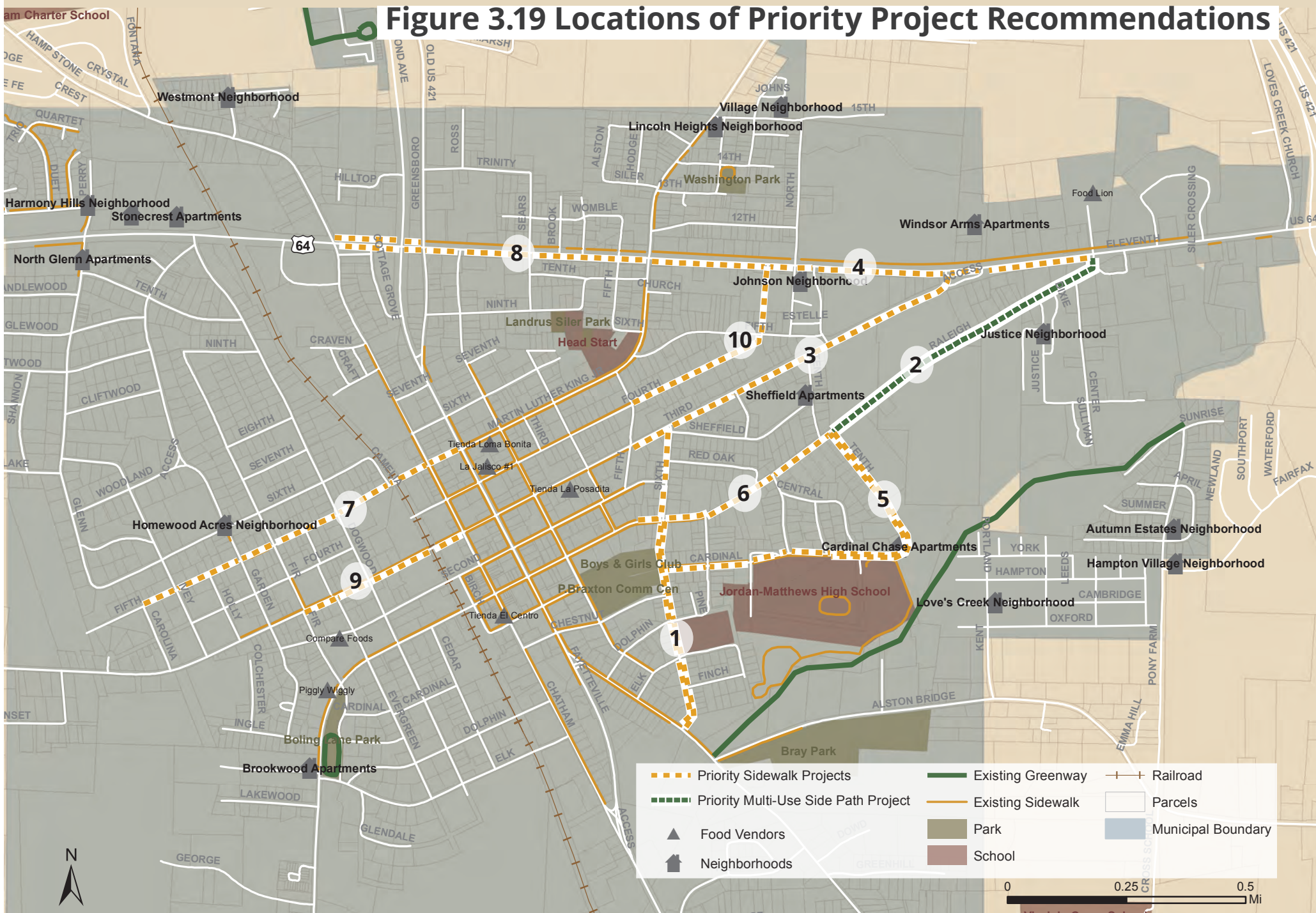
# Project Cost Estimates

Each project cut sheet offers a *planning level* cost estimate for the priority project. The cost estimates were developed by applying the Intersection Treatment Concept recommendations presented on pages 3-10 through 3-16 of this Chapter to the appropriate intersections along the priority project corridor, adding the cost of constructing concrete sidewalk or asphalt multi-use trail, and the inclusion of a potential contingency or mobilization fee. The cost estimates are based on the most recently available per unit cost information obtained from NCDOT Division 8 Engineering staff. Project costs vary over time and by geography. Further evaluation during project design will be needed to determine exact project costs. A summary table (Table 3.11) of cost estimates for the ten priority projects is included at the end of this Chapter.





# Figure 3.19 Locations of Priority Project Recommendations



# 1. Sixth Avenue between E. Third Street and S. Second Avenue

Priority Project Score: 45.79

Project Distance: 5,304.74 feet

Roadway Corridor Ownership: Siler City

Nearby Destinations and Key Connections:

- Paul Braxton Community Center
- Boys and Girls Club
- Jordan Matthews High School
- Cardinal Chase Apartments
- Existing Sidewalk on S. Second Avenue
- Existing Sidewalk on E. Raleigh Street
- Existing Sidewalk on E. Cardinal Street

Planning Level Cost Estimate: \$173,430



*N. Sixth Avenue near E. Third Street*

## Project Recommendation

- E. Third Street to E. Raleigh Street
  - Sidewalk one side
  - High-visibility crosswalks
  - ADA compliant curb ramps
- E. Raleigh Street to S. Second Ave
  - Sidewalk both sides
  - High-visibility crosswalks
  - ADA compliant curb ramps

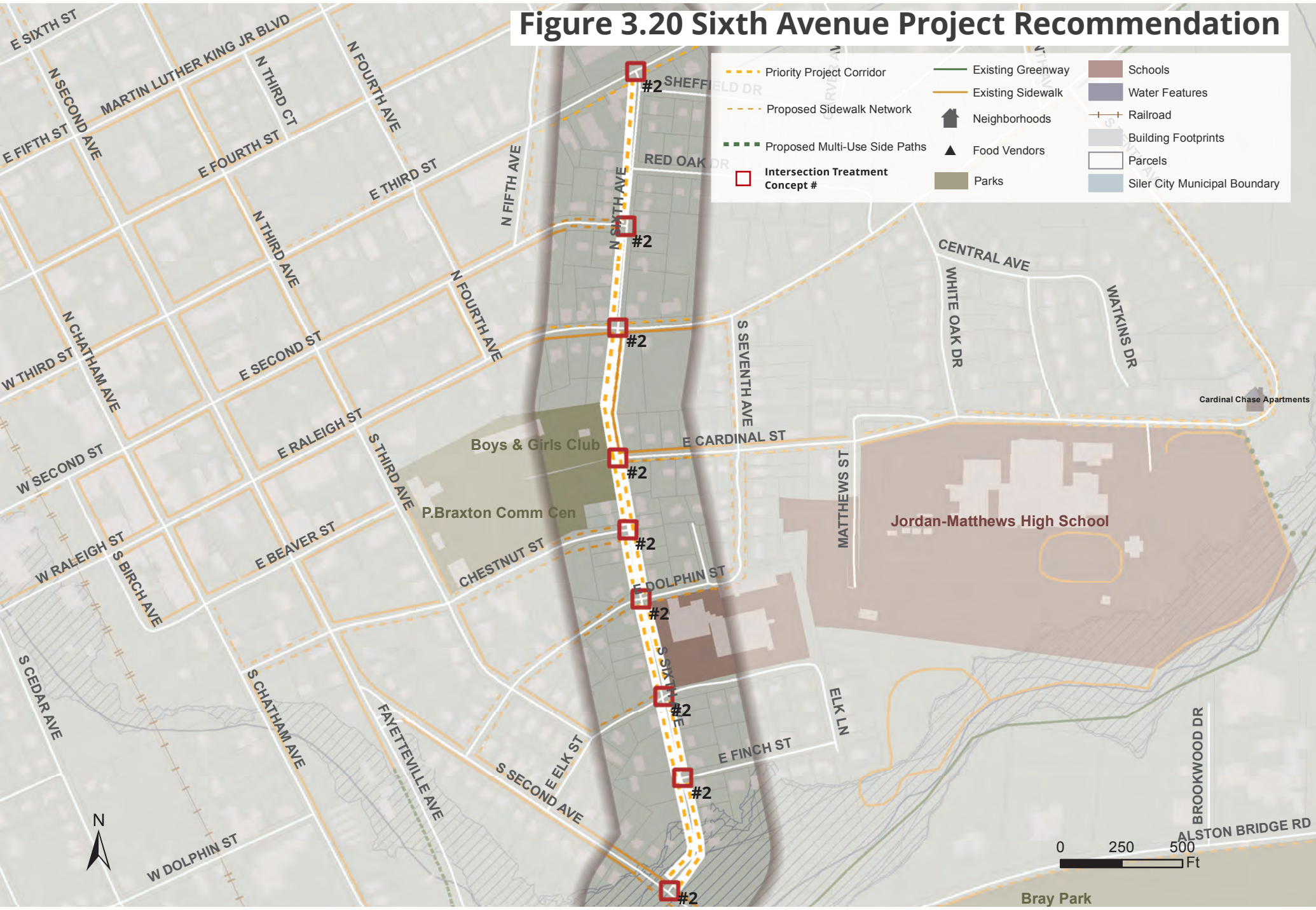
## Intersection Treatment Information

- There are nine roadway crossings or intersections along the Sixth Avenue priority project corridor. Each crossing is identified by a red square on Figure 3.20.
- All nine crossings along this corridor are unsignalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. Crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.





# Figure 3.20 Sixth Avenue Project Recommendation





## 2. E. Raleigh Street between S. Tenth Avenue and US Highway 64

Priority Project Score: 45.79

Project Distance: 3,518 feet

Roadway Corridor Ownership: NCDOT

Nearby Destinations and Key Connections:

- Justice Brothers Neighborhood
- Sheffield Apartments
- US Highway 64 Commercial Centers
- Laundromat

Planning Level Cost Estimate: \$126,128

### Project Recommendation

- Multi-Use Side Path
- High-visibility crosswalks
- ADA compliant curb ramps
- Wayfinding Signage

### Intersection Treatment Information

- There are six roadway crossings or intersections along the E. Raleigh Street priority project corridor. Each crossing is identified by a red square on Figure 3.21.
- Five of the six crossings along this corridor are un-signalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. The crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.
- There is one intersection, at US Highway 64 that is a signalized intersection. The crossing facilities should be designed as illustrated by Intersection Treatment Concept 1B on page 3-11.





# Figure 3.21 E. Raleigh Street Project Recommendation



	Priority Project Corridor		Existing Greenway		Schools
	Proposed Sidewalk Network		Existing Sidewalk		Water Features
	Intersection Treatment Concept #		Neighborhoods		Railroad
			Food Vendors		Building Footprints
			Parks		Parcels
					Siler City Municipal Boundary

### 3. E. Third Street between N. Fifth Avenue and US Highway 64

Priority Project Score: 44.93

Project Distance: 3,881 feet

Roadway Corridor Ownership: NCDOT

Nearby Destinations and Key Connections:

- Sheffield Apartments
- Existing sidewalk along E. Third Street
- US Highway 64 Commercial Centers

Planning Level Cost Estimate: \$141,022

#### Project Recommendation

- Sidewalk one side
- High-visibility crosswalks
- Clearly designated pedestrian crossing areas across driveways and curb-cuts
- ADA compliant curb ramps

#### Intersection Treatment Information

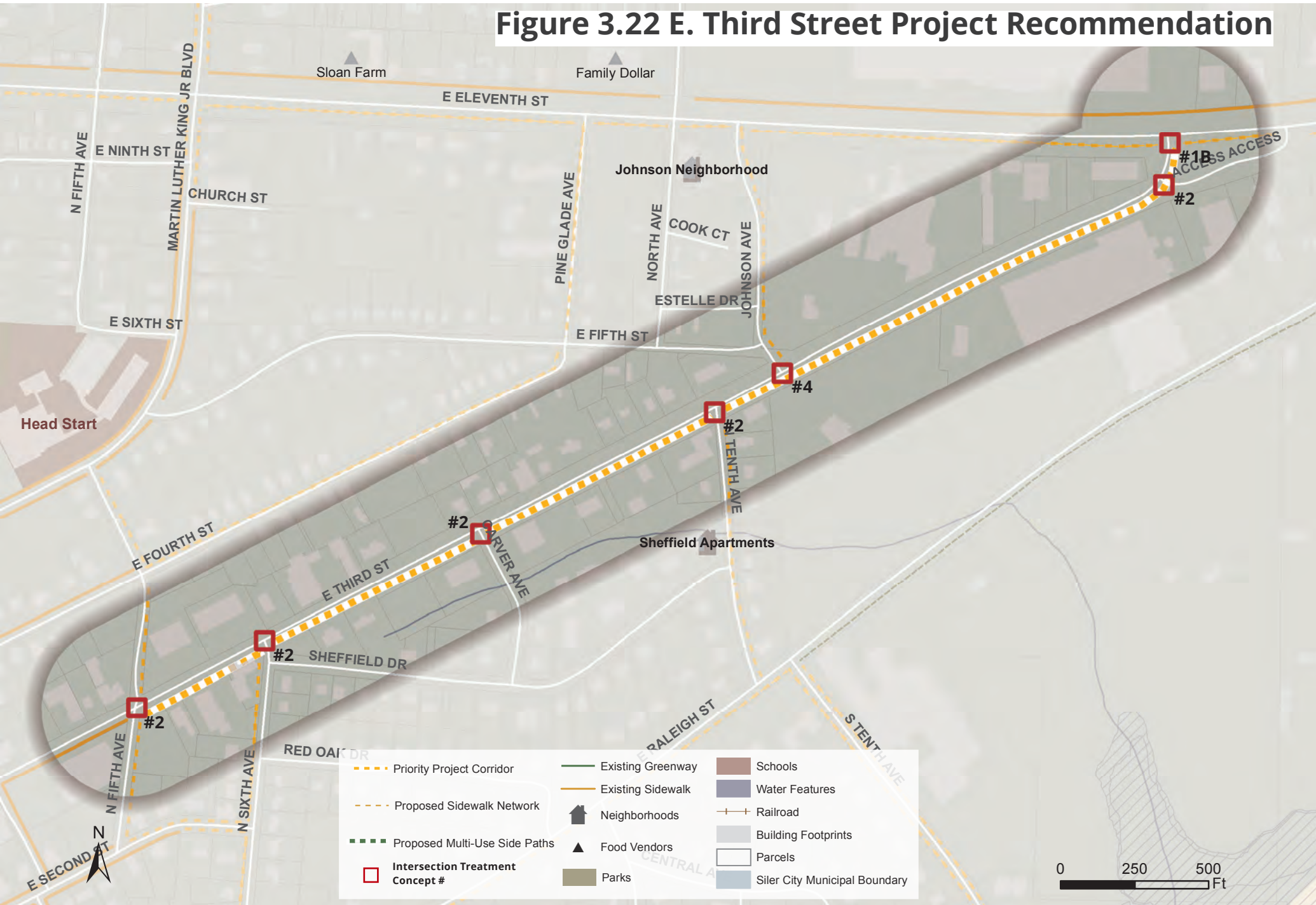
- There are seven roadway crossings or intersections along the E. Third Street priority project corridor. Each crossing is identified by a red square on Figure 3.22.
- Five of the seven crossings along this corridor are un-signalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. The crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.
- The crossing at Johnson Avenue is a mid-block crossing, similar to Intersection Treatment Concept #4 on page 3-15. The crossing facilities should be designed as illustrated by Intersection Treatment Concept #4.

■ There is one intersection, at US Highway 64 that is a signalized intersection. The crossing facilities should be designed as illustrated by Intersection Treatment Concept #1B on page 3-11.





# Figure 3.22 E. Third Street Project Recommendation



## 4. US Highway 64 between Martin Luther King Jr. Blvd and E. Raleigh Street

Priority Project Score: 44.43

Project Distance: 4,500 feet

Roadway Corridor Ownership: NCDOT

Nearby Destinations and Key Connections:

- Johnson Neighborhood
- US Highway 64 Commercial Centers

Planning Level Cost Estimate: \$286,415

### Project Recommendation

- Sidewalk one side
- High-visibility crosswalks
- Clearly designated pedestrian crossing areas across driveways and curb-cuts
- ADA compliant curb ramps

### Intersection Treatment Information

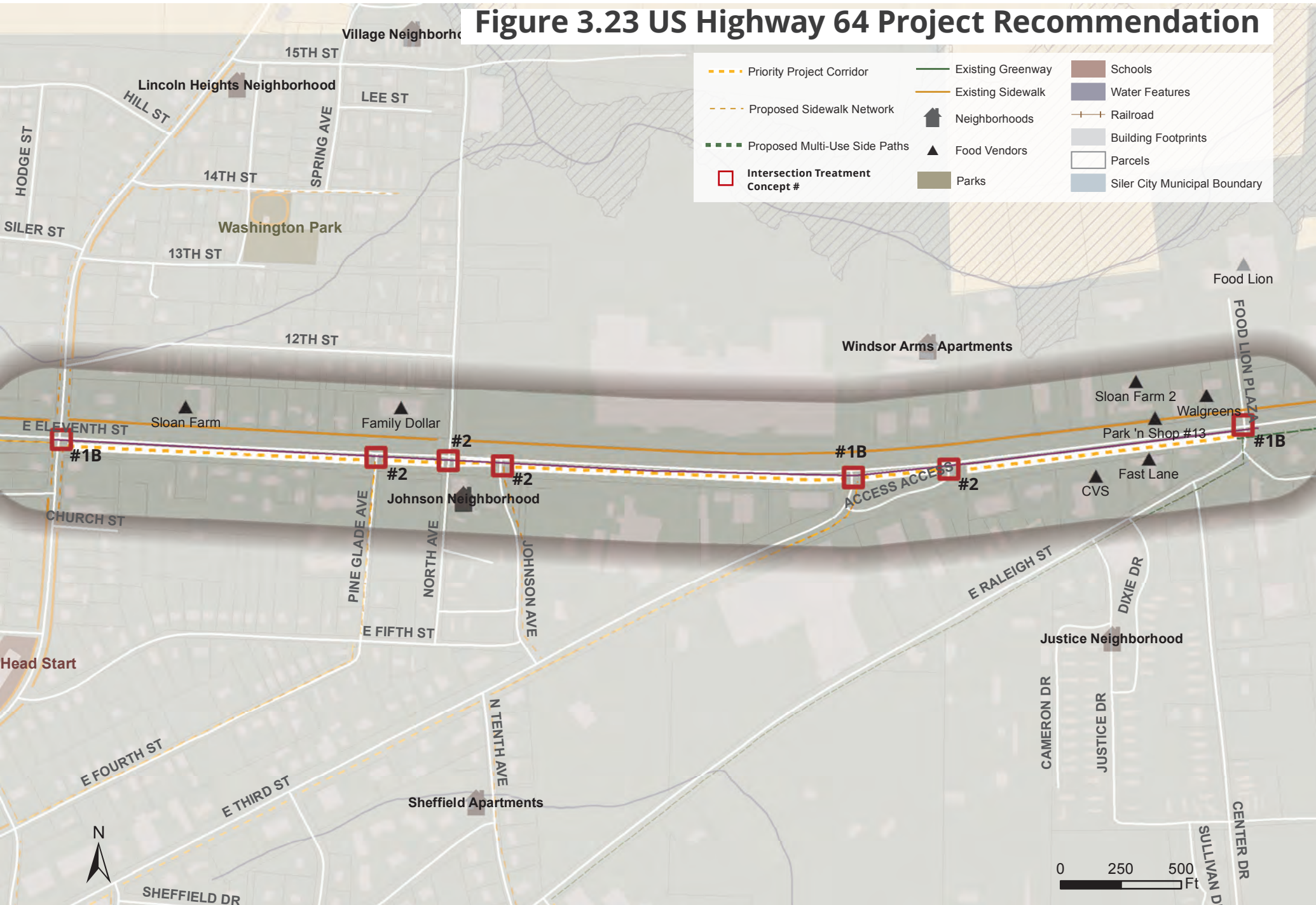
- There are seven roadway crossings or intersections along the US Highway 64 priority project corridor. Each crossing is identified by a red square on Figure 3.23.
- Four of the seven crossings along this corridor are un-signalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. The crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.
- Three of the seven crossings along this corridor are signalized intersections. The crossing facilities for these intersections should be designed as illustrated by Intersection Treatment Concept #1B on page 3-11.



*US Highway 64, near the intersection of Pine Glades Avenue*



# Figure 3.23 US Highway 64 Project Recommendation



Priority Project Corridor	Existing Greenway	Schools
Proposed Sidewalk Network	Existing Sidewalk	Water Features
Proposed Multi-Use Side Paths	Neighborhoods	Railroad
Intersection Treatment Concept #	Food Vendors	Building Footprints
	Parks	Parcels
		Siler City Municipal Boundary



## 5. E. Cardinal Street/ S. Tenth Avenue between S. Sixth Avenue and E. Raleigh Street

Priority Project Score: 42.58

Project Distance: 6,404 feet

Roadway Corridor Ownership: NCDOT & Siler City

Nearby Destinations and Key Connections:

- Paul Braxton Community Center
- Boys and Girls Club
- Jordan Matthews High School
- Cardinal Chase Apartments
- Existing Sidewalk on E. Cardinal Street
- Existing Sidewalk on Sixth Avenue

Planning Level Cost Estimate: \$166,027



### Project Recommendation

- S. Sixth Avenue to Central Avenue
  - Sidewalk one side
  - High-visibility crosswalks
  - ADA compliant curb ramps
- Central Avenue to E. Raleigh Street
  - Sidewalk both sides
  - High-visibility crosswalks
  - ADA compliant curb ramps

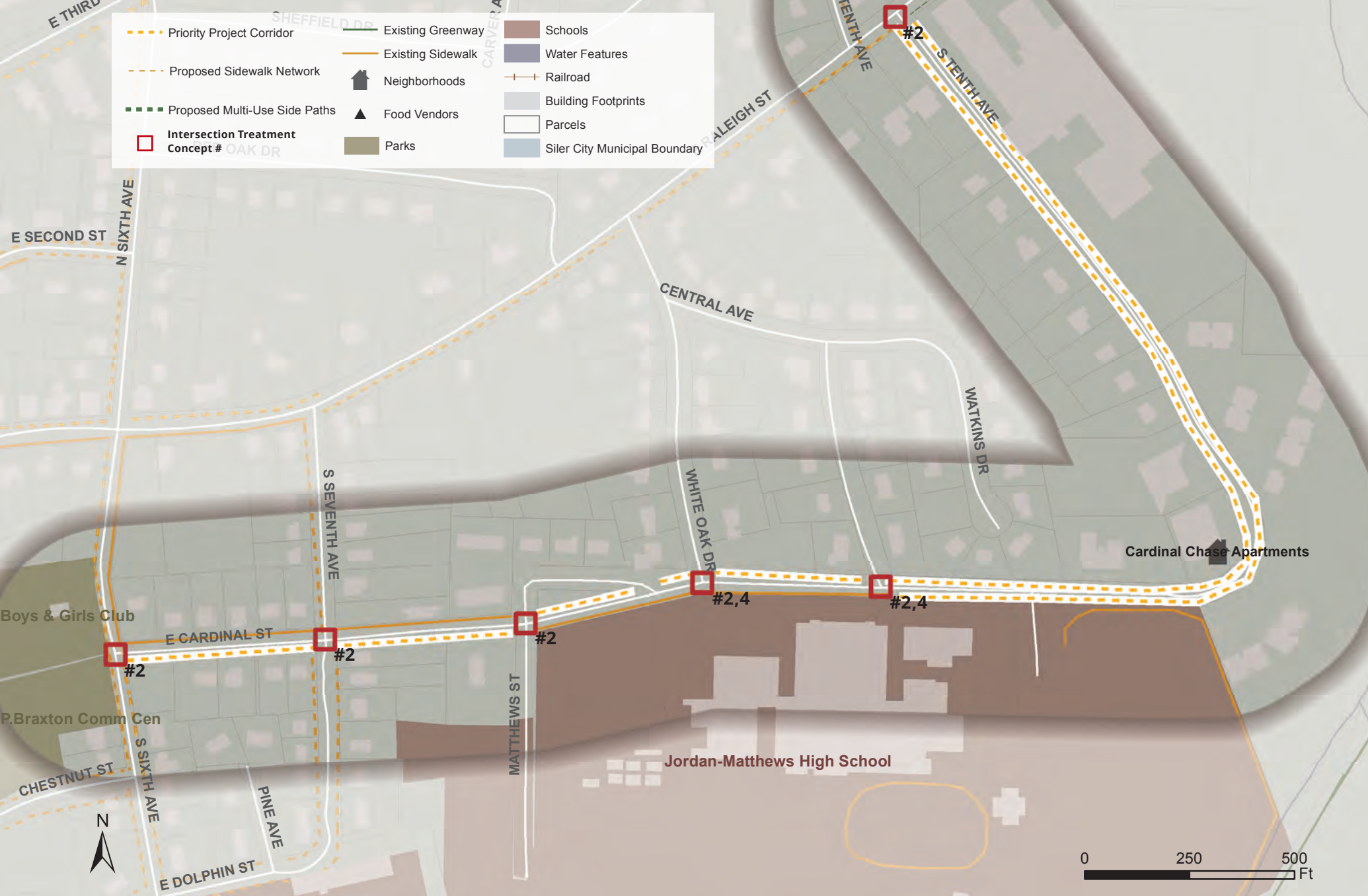
### Intersection Treatment Information

- There are six roadway crossings or intersections along the E. Cardinal Street priority project corridor. Each crossing is identified by a red square on Figure 3.24. Each of the crossings along this corridor are un-signalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. The crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.
- Additionally, mid-block crossings should be created at White Oak Drive and Central Drive, and should be designed as illustrated by Intersection Treatment Concept #4.





# Figure 3.24 E. Cardinal Street/ S. Tenth Avenue Project Recommendation



## 6. E. Raleigh Street between S. Sixth Avenue and S. Tenth Avenue

Priority Project Score: 42.00

Project Distance: 2,286.5 feet

Roadway Corridor Ownership: NCDOT

Nearby Destinations and Key Connections:

- Laundromat
- Existing Sidewalk on Sixth Avenue
- Existing Sidewalk on E. Raleigh Street

Planning Level Cost Estimate: \$69,551

### Project Recommendation

- Sidewalk one side
- High-visibility crosswalks
- ADA compliant curb ramps

### Intersection Treatment Information

- There are four roadway crossings or intersections along the E. Raleigh Street priority project corridor. Each crossing is identified by a red square on Figure 3.25.
- All four crossings along this corridor are unsignalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. Crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.



*E. Raleigh Street near White Oak Drive.*



# Figure 3.25 E. Raleigh Street Project Recommendations

Priority Project Corridor	Existing Greenway	Schools
Proposed Sidewalk Network	Existing Sidewalk	Water Features
Proposed Multi-Use Side Paths	Neighborhoods	Railroad
Intersection Treatment Concept#	Food Vendors	Building Footprints
	Parks	Parcels
		Siler City Municipal Boundary



## 7. E. Fifth Street/ W. Fifth Street between Carolina Avenue and N. Second Avenue

Priority Project Score: 41.5

Project Distance: 4,005.2 feet

Roadway Corridor Ownership: Siler City

Nearby Destinations and Key Connections:

- Downtown Siler City
- Homewood Acres Neighborhood
- Existing Sidewalk on N. Chatham Avenue

Planning Level Cost Estimate: \$222,676

### Project Recommendation

- Sidewalk one side
- High-visibility crosswalks
- ADA compliant curb ramps

### Intersection Treatment Information

- There are eight roadway crossings or intersections along the E. Fifth Street priority project corridor. Each crossing is identified by a red square on Figure 3.26.
- Five of the crossings along this corridor are un-signalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. Crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.

### Intersection Treatment Information (cont'd)

- Two of the crossings along this corridor are signalized intersections, similar to Intersection Treatment Concept #1A on page 3-10. Crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #1A.
- There is one at-grade railroad crossing along this corridor, similar to Intersection Crossing Treatment #3. Crossing facilities should be designed for the crossing as illustrated by Intersection Treatment Concept #3.



*E. Fifth Street near Dogwood Avenue*







## 8. US Highway 64 between N. Chatham Avenue and Martin Luther King Jr. Blvd.

Priority Project Score: 40.78

Project Distance: 4,005 feet

Roadway Corridor Ownership: NCDOT

Nearby Destinations and Key Connections:

- US Highway 64 Commercial Centers

Planning Level Cost Estimate: \$230,326

### Project Recommendation

- N. Chatham Avenue to N. Greensboro Avenue
  - Sidewalk on both sides
  - High-visibility crosswalks
  - Clearly designated pedestrian crossing areas across driveways and curb-cuts
  - ADA compliant curb ramps
- N. Greensboro Avenue to Martin Luther King Jr. Blvd
  - Sidewalk on one side
  - High-visibility crosswalks
  - Clearly designated pedestrian crossing areas across driveways and curb-cuts
  - ADA compliant curb ramps



Existing

### Intersection Treatment Information

- There are seven roadway crossings or intersections along the US Highway 64 priority project corridor. Each crossing is identified by a red square on Figure 3.27.
- Two of the seven crossings along this corridor are signalized intersections, similar to Intersection Treatment Concept #1B on page 3-11. The crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #1B.
- Four of the seven crossings along this corridor are un-signalized intersections. The crossing facilities for these intersections should be designed as illustrated by Intersection Treatment Concept #2 on page 3-12.

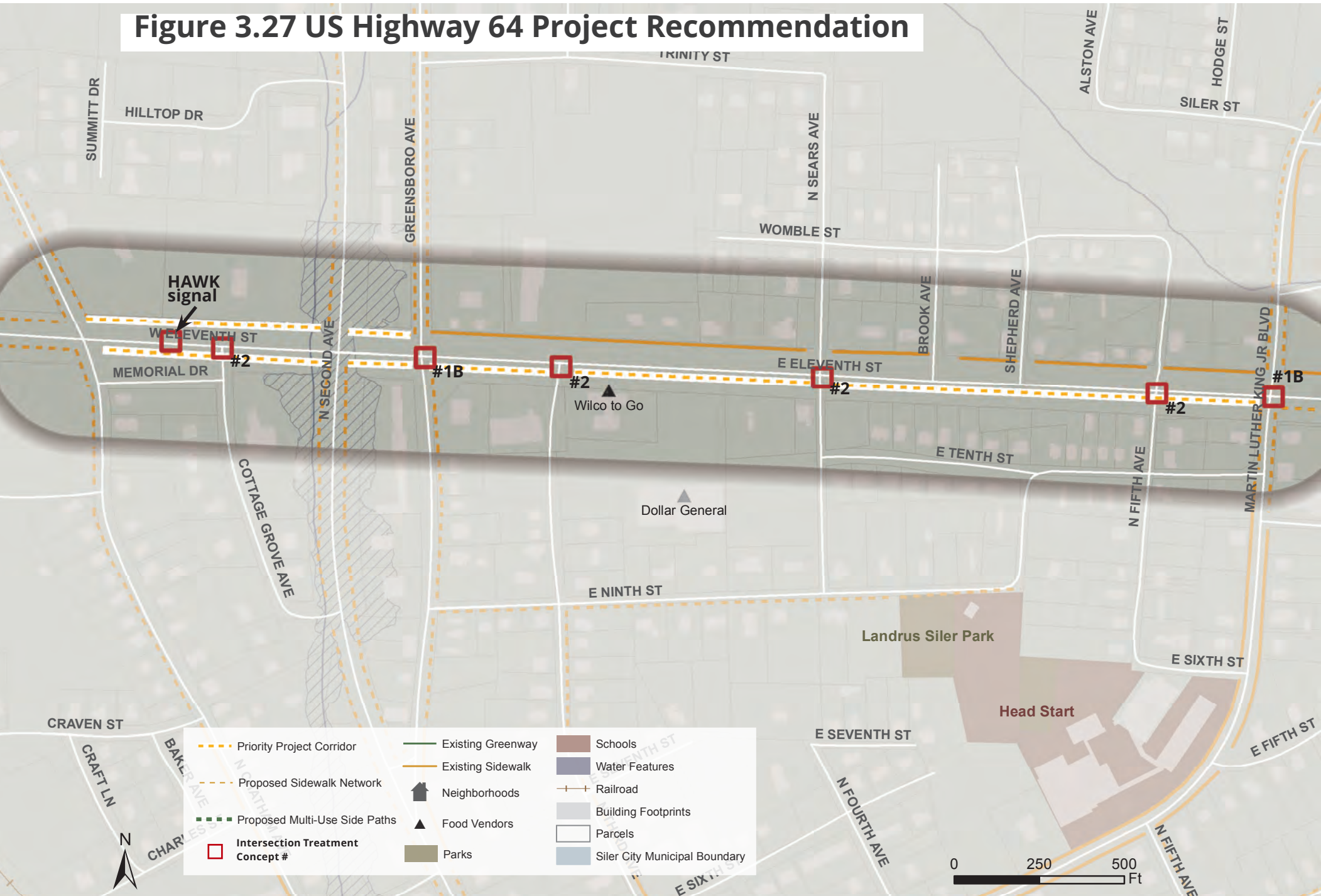
- Additionally, a pedestrian hybrid beacon, or HAWK beacon (High-Intensity Activated crossWalk beacon) just east of the N. Chatham Avenue overpass is recommended. A HAWK beacon in this location, as shown in the simulation below, will provide a safe crossing opportunity for pedestrians and cyclists in this area who need access to/from the neighborhoods along N. Chatham Avenue, Memorial Drive and Cottage Grove Ave. The only other options for crossing US 64 would be over 600 ft to the east at the N. Second Ave intersection, or over 3,000 ft to the west, at the N. Glenn Ave intersection.



Simulation



# Figure 3.27 US Highway 64 Project Recommendation



## 9. W. Third Street between N. Chatham Avenue and N. Fir Avenue

Priority Project Score: 39.86

Project Distance: 1,750.9 feet

Roadway Corridor Ownership: NCDOT

Nearby Destinations and Key Connections:

- Existing sidewalk along N. Chatham Avenue
- Downtown Siler City

Planning Level Cost Estimate: \$131,549

### Project Recommendation

- Sidewalk one side
- High-visibility crosswalks
- Clearly designated pedestrian crossing areas across driveways and curb-cuts
- ADA compliant curb ramps

### Intersection Treatment Information

- There are five roadway crossings or intersections along the W. Third Street priority project corridor. Each crossing is identified by a red square on Figure 3.28.
- Three of the five crossings along this corridor are un-signalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. The crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.

- There is one intersection, at North Chatham Avenue that is a signalized intersection. The crossing facilities should be designed as illustrated by Intersection Treatment Concept #1A on page 3-11.
- There is one at-grade railroad crossing along this corridor, similar to Intersection Crossing Treatment #3. Crossing facilities should be designed for the crossing as illustrated by Intersection Treatment Concept #3.





# Figure 3.28 W. Third Street Project Recommendation






## 10. E. Fourth Street between N. Fifth Avenue and US Highway 64

Priority Project Score: 39.14

Project Distance: 2,395.5 feet

Roadway Corridor Ownership: Siler City

Nearby Destinations and Key Connections:

- Head Start
- Landrus Siler Park
- US Highway 64 Commercial Centers
- Existing Sidewalk on E. Fourth Street

Planning Level Cost Estimate: \$60,227

### Project Recommendation:

- Sidewalk one side
- High-visibility crosswalks
- ADA compliant curb ramps

### Intersection Treatment Information:

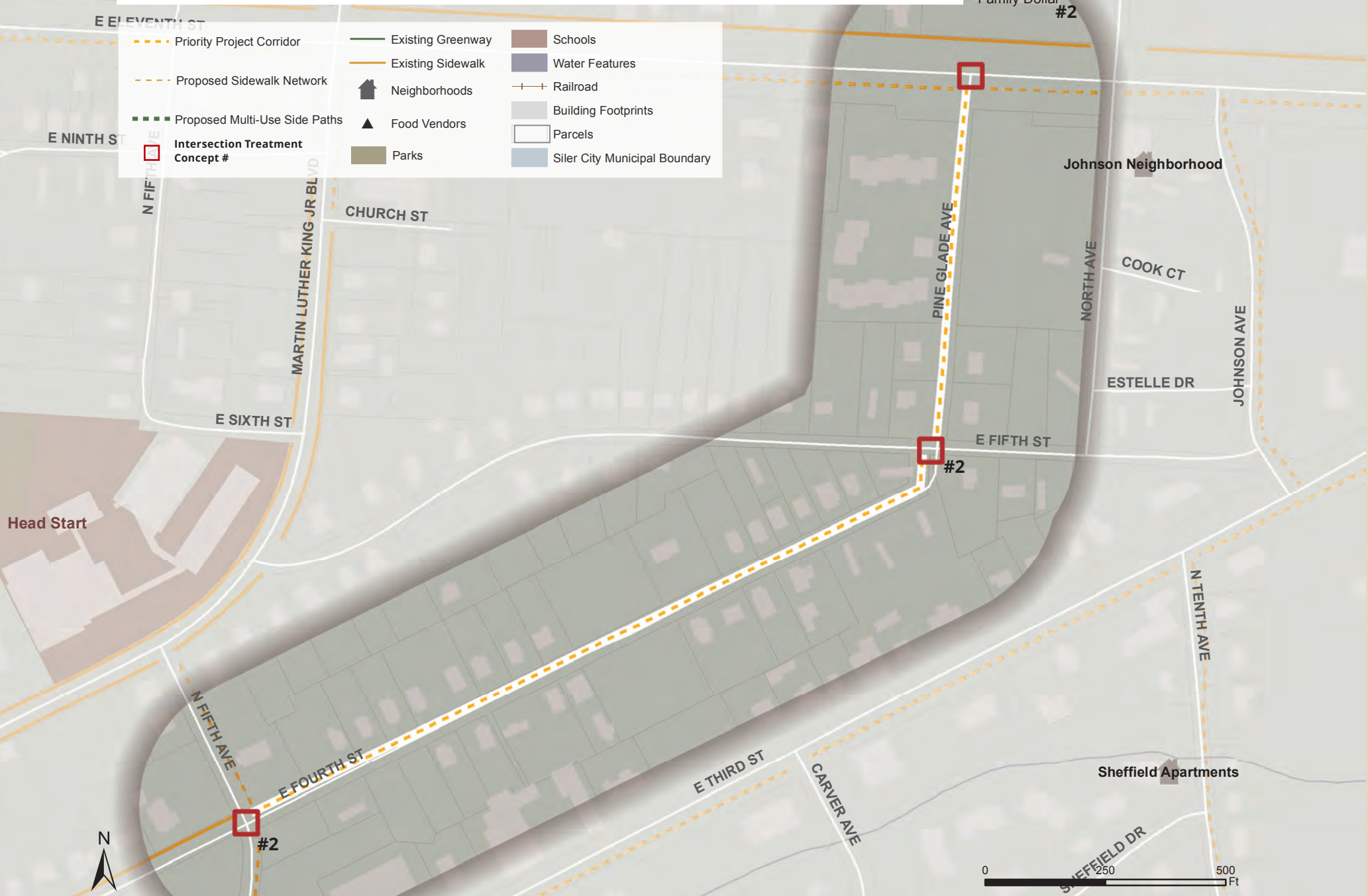
- There are three roadway crossings or intersections along the E. Fourth Street priority project corridor. Each crossing is identified by a red square on Figure 3.29.
- The three crossings along this corridor are unsignalized intersections, roadway or driveway crossings, similar to Intersection Treatment Concept #2 on page 3-12. Crossing facilities should be designed for each crossing as illustrated by Intersection Treatment Concept #2.



*Sidewalks along this segment of E. Fourth Street would provide a safe route for pedestrian travel between downtown Siler City and the commercial centers located along US Highway 64.*



# Figure 3.29 E. Fourth Street Project Recommendation



**Table 3.11: Priority Project Cost Estimate Information**

ID #	Priority Project Name	From	To	Project Length (feet)	Concrete Sidewalk Cost \$27 / per Sq Yard	Asphalt Multi-Use Side Path Cost \$33 / per TON	Aggregate Base Course Cost \$20 / per TON	# of Crosswalks	High-visibility Thermo Plastic Crosswalk Marking \$68 / per marking*	# of Curb Ramps	ADA Curb Ramps \$1200 / per curb ramp	# of Pedestrian Countdown timers	Pedestrian Countdown Timers \$6000 / per timer	Wayfinding Signage \$170 / per sign	Total Cost Estimate (\$)**
1	N. Sixth Ave / S. Sixth Ave	E. Third St	S. Second Ave	5,304.70	\$79,569	0	0	26	\$8,840	52	\$62,400	0	0	0	\$173,430.53
2	E. Raleigh St	S. Tenth Ave	US 64	3,517.70	0	\$7,145	\$28,647	9	\$4,284	18	\$21,600	8	\$48,000	\$4,476	\$126,128.85
3	E. Third St	N. Fifth Ave	US 64	3,880.60	\$58,208	0	0	10	\$4,420	20	\$24,000	6	\$36,000	0	\$141,022.23
4	US Hwy 64	MLK Jr. Blvd	E. Raleigh St	4,500.40	\$67,504	0	0	10	\$4,420	32	\$38,400	22	\$132,000	0	\$286,415.15
5	E. Cardinal St / S. Tenth Ave	S. Sixth Ave	E. Raleigh St	6,404.70	\$96,057	0	0	17	\$7,514	34	\$40,800	0	0	0	\$166,027.40
6	E. Raleigh St	S. Sixth Ave	S. Tenth Ave	2,286.50	\$34,289	0	0	9	\$4,590	18	\$40,800	0	0	0	\$69,551.04
7	E. Fifth St / W. Fifth St	Carolina Ave	N. Second Ave	4,005.20	\$60,073	0	0	17	\$6,358	36	\$43,200	14	\$84,000	0	\$222,676.26
8	US Hwy 64	N. Chatham Ave	MLK Jr. Blvd	4,055.00	\$60,823	0	0	14	\$9,860	28	\$33,600	16	\$96,000	0	\$230,326.04
9	W. Third St	N. Chatham Ave	N. Fir Ave	1,750.90	\$26,262	0	0	12	\$6,528	28	\$33,600	8	\$48,000	0	\$131,549.49
10	E. Fourth St	N. Fifth Ave	US 64	2,395.50	\$35,931	0	0	6	\$2,040	12	\$14,400	0	0	0	\$60,227.37

\*Cost estimates for crosswalks vary from intersection to intersection, depending on the width of the roadway.

\*\*A 15% contingency cost for potential mobilization fee has been included in the total price.





Page Intentionally Left Blank for Printing





*E. Fifth Street Pedestrian*





# 4 Programs and Policies

## Overview

Meeting the goals of this Pedestrian Master Plan will not only require new facilities; it also requires implementation of pedestrian-related programs and policies. A comprehensive approach is necessary to create a pedestrian-friendly community. The approach must focus on overall livability and walkability in all planning decisions involving land use, growth, and transportation. Programs that encourage walking, educate about safety, and enforce safe behavior are also key components.

## Existing Pedestrian Programs

### Indoor Walking Program

The Parks and Recreation Department operates an Indoor Walking Program at Paul Braxton Gym and Ernest Ramsey Gym on weekday mornings from 6-10 am. The gyms are open to anyone seeking an indoor facility for walking.

**Recommendation:** Organize a local outdoor walking or running group that meets regularly at one or both gyms or at a local park. This informal group could be advertised on local bulletin or information boards and through the Recreation Director's weekly report. These clubs could be specialized to attract different interest groups. Examples include:

- Mother's Morning Club (moms with strollers)

- Siler City Wednesday Walks (weekly walk during lunch break or after work)
- Lunch Bunch (workers who walk or run during their lunch hour)

### National Walking Day

Siler City participates in National Walking Day, held annually in the spring. Local activities include an all-day event at Boling Lane Park and Western Chatham Senior Center. The program also includes a half-week walking challenge to encourage participants to increase their walking frequency and mileage.

**Recommendation:** Expand National Walk Day by including a Pedestrian Safety Roadshow. The objectives of this program are to increase awareness of pedestrian safety and walkability issues, provide information about what makes a safe and walkable community, and channel community concerns into a plan of action for addressing pedestrian issues. The Siler City Police Department could assist by handing out educational materials on pedestrian laws and safety.



## CHAPTER CONTENTS

*Overview (4-1)*

*Existing Pedestrian Programs (4-1)*

*New Programmatic Recommendations and Resources (4-3)*

*Safe Routes to School Toolkit (4-11)*

*Programmatic Recommendations Table (4-15)*

*Pedestrian Policies (4-18)*

*Review of Unified Development Ordinance (4-21)*

*Review of Town Code of Ordinances (4-29)*

## American Heart Association Triangle Heart Walk

Chatham Hospital hosts a local walk on its campus as part of the regional American Heart Association Triangle Heart Walk in August. Anyone can join the walk and participation is free.

**Recommendation:** Encourage local businesses to join a Heart Walk team or create their own. Advertise the event through local media, including the Town website and local papers or newsletters.



## Youth & Adult Athletic Programs

The Town offers a number of athletic programs for children and teenagers, including youth football, basketball, volleyball, wrestling, cheerleading, T-ball, baseball, and softball. The Paul Braxton Ballfield has been renovated to include a regulation-size soccer field for local soccer teams. Adults can participate in Town-run athletic programs such as the adult basketball league, "Over 40" basketball, and Zumba Fitness workouts.

**Recommendation:** Expand youth and adult athletic program offerings to also include pedestrian fitness and education programs. Education should span all age groups. Local community groups could partner and consider adding the following fitness and educational program/event offerings:

- Walking School Buses to athletic practice
- A Pedestrian Safety Roadshow at the soccer field
- Fun runs and walks led by Jordan Matthews High School Cross Country Team volunteers
- A Family Field Day at Paul Braxton Ballfield

## 5K for Family Peace

This annual 5K and Kids' Fun Run is held at the Siler City Police Department and offers a family-friendly event for runners and walkers. Proceeds benefit Siler City Elementary, Virginia Cross Elementary, and Family Violence and Rape Crisis Services.

**Recommendation:** Pedestrian facilities, especially trails, could be used for events that promote other causes, such as health awareness. Not only does the event raise money and publicity for a specific cause, but it encourages and promotes

healthy living and an active lifestyle, while increasing awareness of pedestrian activities. Reach out to non-profit organizations to expand the offering of these events.

## Relay for Life of West Chatham

Relay for Life of West Chatham is part of a global cancer awareness and cancer research fundraising movement. The local event is held each spring at Bray Park.

**Recommendation:** Offer additional public walking and running events throughout the year to encourage regular pedestrian activity in Siler City. See the "Programmatic Recommendations and Resources" section for other awareness days and events that Siler City could host.

## 3rd Friday Art Walk

The Town hosts a downtown art walk on the third Friday of each month from 6-9 PM, where local artists and shops are featured along a designated walkway through downtown. This event attracts people to the downtown, creates opportunities to socialize and meet new people, and promotes local artists.

**Recommendation:** To build on the momentum from the Art Walk and recent facade grants for downtown buildings, create "add-on" programs that support these initiatives. These could include an Historic Downtown Walking Tour, an Open Streets event where a section of downtown is closed to car traffic for the evening, a pedestrian education and encouragement information booth, or other pedestrian programs.



*The monthly Art Walk promotes Siler City shops and artists while increasing the pedestrian presence downtown*



# New Programmatic Recommendations and Resources

Pedestrian-related programs fall into four main categories: education, encouragement, enforcement, and evaluation. The programs listed in this chapter are provided to demonstrate the variety of opportunities available for promoting walking and active lifestyles in Siler City. The City should work closely with local volunteers and community organizations to implement events and activities, research new program ideas, and improve upon existing programs.

## *Bicycle and Pedestrian Advocacy Committee*

Siler City should support the creation of a local bicycle and pedestrian committee. The Plan's Steering Committee is a good starting point for establishing this group. Even though this is a pedestrian plan, the needs and objectives of bicycle and pedestrian advocates are closely related, and stand to benefit mutually from their combined efforts. Local advocacy groups are beneficial resources for promoting safety, providing feedback on opportunities for and challenges with the bicycle and pedestrian network, and coordinating events and outreach campaigns (such as the programs outlined throughout this section). Advocacy groups also play a critical role in encouraging and evaluating the progress of overall plan implementation.



*Information booths can be used at local events to distribute pedestrian education materials*

## Education

### *Public Education and Educational Devices*

Siler City could develop a variety of safety materials and distribute them throughout the community. Educational materials focus on safe behaviors, rules, and responsibilities. Information may include bulleted keys for safe pedestrian travel and habits, safe motor vehicle operation around pedestrians, and general facility rules and regulations. This safety information is often available for download from national pedestrian advocacy organizations, such as the Pedestrian and Bicycle Information Center website, [www.walkinginfo.org](http://www.walkinginfo.org). Furthermore, NCDOT is preparing a series of pedestrian education and enforcement materials which will be available for distribution to state jurisdictions in the fall of 2013.

The Information can be distributed through brochures, newsletters, newspapers, bumper stickers, and other print media that can be inserted into routine mailings. It can also be posted on municipal websites and shown on local cable access television.



## Coordinated Campaigns

Through cooperation with NCDOT, Siler City and local organizations should provide strong education, encouragement, enforcement, and evaluation campaigns whenever a major bicycle and/or pedestrian improvement occurs. When a major improvement is made, the roadway environment changes and proper interaction between all users is critical for overall safety. This type of outreach could take place through the local media outlets, on-site, or at special events.

## Internal Education

“Internal” education refers to the training of people who are involved in the actual implementation of the Pedestrian Plan. Key Town staff, members of the Town Board, pedestrian plan Steering Committee, NCDOT Division staff, and Chatham County staff should all be included in training sessions whenever possible. This training could cover aspects of the transportation and development process, including planning, design, development review, construction, and maintenance. This type of ‘inreach’ can be in the form of brown bag lunches and attendance at special sessions or conferences. Even simple meetings to go over the Pedestrian Plan and communicate its strategies and objectives can prove useful for staff and newly elected officials that may not have otherwise learned about the plan. Guidance and materials for internal education methods is available from the NCDOT Bicycle and Pedestrian Division and the Institute for Transportation Research and Education (ITRE).

Below are several training course examples:

[www.michaelronkin.com/courses](http://www.michaelronkin.com/courses)

[www.pps.org/training/custom-tailored-training/](http://www.pps.org/training/custom-tailored-training/)

[www.fhwa.dot.gov/context/trainingguide/ExistingClasses.htm](http://www.fhwa.dot.gov/context/trainingguide/ExistingClasses.htm)



## Designing Pedestrian Facilities for Accessibility

This program provides an overview of the Americans for Disabilities Act (ADA) and provides detailed information on policies and design guidance related to accessibility. The Division last offered the course in 2006.

## Environmental and Historic Education / Interpretation

Educational programs and interpretive signage could be developed along future trails and pedestrian routes. Greenway trails provide opportunities for learning outside the classroom. Specific programs that focus on water quality and animal habitat are popular examples. Events such as learning walks about specific animals or insects, tree identification, wildflower walks, environmental issues, stewardship education, and sustainability could be led by area experts. Also, simple educational signage would offer interactive learning opportunities for people who use the trail.



*Stickers and posters developed for the NCDOT Watch for Me NC pedestrian education campaign*



*Environmental and Historic Education signage teaches citizens about the valuable resources and sensitive environments in the town*





**Crossing Streets Safely**

This week in school your child learned ...

How to cross the street safely:

1. CROSS WITH AN ADULT.
2. IDENTIFY safe places to cross. Cross where it is easy for you to see vehicles traveling in the road.
3. STOP at the edge or curb of the street. Never step from behind a parked car.
4. LOOK AND LISTEN for traffic in all directions. When looking left-right-left for traffic, try to touch your chin to your shoulder to make sure you get a good view. This is called a "shoulder check." Wait until there is no traffic coming, then begin crossing the street.
5. CROSS IN A STRAIGHT LINE and keep looking for traffic. Walk quickly, but do not run.

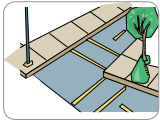


**Remember:**

Although you might be able to quickly determine whether it is safe to cross the street, your child may not know or understand why it is safe. Help children understand and learn safe behaviors by practicing them each time you cross the street.

Looking at the picture, ask your child to identify where a person should cross the street.

- Ask them to point to the "edge" of the street. What do you do at the edge of the street?
- Ask them to show you how they would cross in straight line to get to the other side of the street.



MK-1 WZ

*Did you know?*

Children in kindergarten and first grade have difficulty:

- Controlling impulses and concentrating.
- Judging when it is safe to cross the street.
- Staying focused on one task, such as safely crossing the road, and
- Understanding the differences between safe and unsafe crossings.

# Let's Go NC!



## Let's Go NC - Pedestrian Curriculum

Let's Go NC is a bicycle and pedestrian safety skills program for children in North Carolina. The pedestrian component is based on the National Traffic and Safety Highway Administration (NHTSA) pedestrian curriculum. Both components are modified for North Carolina and to instruct children in grades K-5. The program encourages children to be healthy and active by teaching the skills necessary for safe walking. The curriculum is currently under development and includes Safe Routes to School Components, classroom curriculum materials, and videos and exercises.

## Eat Smart Move More NC

Eat Smart, Move More is a statewide movement that promotes increased opportunities for healthy eating and physical activity wherever people live, learn, earn, play and pray. In 2011, the Chatham County Public Health Department received a grant to implement physical activity programs in 3 Chatham County schools. Siler City schools could build upon this local success and apply for Eat Smart, Move More grants to incorporate physical activity programs into local schools.



## Education Resources

**America Walks** is a national coalition of local advocacy groups dedicated to promoting walkable communities. Their mission is to foster the development of community-based pedestrian advocacy groups, to educate the public about the benefits of walking, and, when appropriate, to act as a collective voice for walking advocates. They provide a support network for local pedestrian advocacy groups.

<http://americawalks.org>



**"One text or call, you can wreck it all"** is a campaign of the USDOT to discourage texting and cellphone usage while driving. Downloadable materials, research and facts are available online.

<http://www.distraction.gov>

**Stepping Out** is an online resource for mature adults to learn about ways to be healthy by walking more often, and walking safely.

**Pedestrian Safety** is program of the National Highway Traffic Safety Administration (NHTSA) designed to improve the safety of pedestrians through education, enforcement, and outreach programs. The website includes materials pertaining to school age children available for download.

<http://www.nhtsa.gov/Pedestrians>

**Safe Kids** Worldwide is a global network of organizations whose mission is to prevent accidental childhood injury, a leading killer of children 14 and under. More than 450 coalitions in 15 countries bring together health and safety experts, educators, corporations, foundations, governments and volunteers to educate and protect families. Visit their website to receive information about programs, involving media events, device distribution and hands-on educational activities for kids and their families.



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

**Speed Campaign Tool Kit.** The intent of this NHTSA tool kit is to provide marketing materials, media tools, and marketing ideas for communities to distribute to fit local needs and objectives while at the same time partnering with other states, communities, and organizations all across the country on a speed management program. It includes messaging and templates you may choose from to support your speed management initiatives. Free TV and radio materials, posters, billboards, and other media materials can be downloaded here:

<http://www.nhtsa.gov/Driving+Safety/Enforcement+&+Justice+Services>

**Pedestrian and Bicycle Safety:** Pedestrian information related to children from the FHWA.

[http://safety.fhwa.dot.gov/ped\\_bike/](http://safety.fhwa.dot.gov/ped_bike/)

**Eat Smart, Move More** is a statewide movement that promotes increased opportunities for healthy eating and physical activity wherever people live, learn, earn, play and pray.

<http://www.eatsmartmovemorenc.com/>

**The NCDOT Division of Bicycle and Pedestrian Transportation** has an extensive selection of how-to manuals, informative guidebooks, and kits that provide comprehensive information on a variety of topics. These educational materials may be used by the general public, event organizers, teachers, or others. All are downloadable in PDF version. Manuals and guidebooks that are available in hard copy may be requested through the Safety Materials Order Form:

[www.ncdot.gov/bikeped/safetyeducation/manuals/](http://www.ncdot.gov/bikeped/safetyeducation/manuals/) [www.ncdot.org/transit/bicycle/](http://www.ncdot.org/transit/bicycle/)

For more information and program examples, visit the following websites:

- [www.pedbikeinfo.org](http://www.pedbikeinfo.org) (Pedestrian and Bicycle Information Center)
- [www.bicyclinginfo.org](http://www.bicyclinginfo.org) (Pedestrian and Bicycle Information Center)
- [www.bikewalk.org/workshops](http://www.bikewalk.org/workshops) (National Center for Bicycling and Walking)
- [www.saferoutesinfo.org](http://www.saferoutesinfo.org) (Safe Routes to School)
- [www.active-living.org](http://www.active-living.org) (Partners for Active Living)
- <http://www.campo-nc.us/bikepedestrian.html> (Capital Area MPO)
- [www.smartcommutechallenge.org](http://www.smartcommutechallenge.org) (Triangle Area - Smart Commute Challenge)

- [www.usa.safekids.org](http://www.usa.safekids.org) (Safe Kids Worldwide)
- [www.eatsmartmovemorenc.com](http://www.eatsmartmovemorenc.com) (Eat Smart, Move More)
- [www.worldcarfree.net](http://www.worldcarfree.net) (Worldcarfree)
- [www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html](http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html) (National Resource Guide on Laws Related to Pedestrian and Bicycle Safety)







## Encouragement School Programs

Many programs focus on developing safer pedestrian facilities around schools. Programs can be adopted by parents and schools to provide initiatives for walking.

Community leaders, parents and schools across the U.S. are using Safe Routes to School programs to encourage and enable more children to safely walk and bike to school. The National Center for Safe Routes to School aims to assist these communities in developing successful Safe Routes programs and strategies. The Center offers a centralized resource of information on how to start and sustain a Safe Routes to School program, case studies of successful programs as well as many other resources for training and technical assistance. For more information on Safe Routes to School, refer to the SRTS toolkit included in this chapter.

## Awareness Days & Events

A specific day of the year can be devoted to a theme to raise awareness and celebrate issues relating to that theme. A greenway and

its amenities can serve as a venue for events that will put the greenway on display for the community. Popular city events serve as excellent opportunities to include pedestrian information distribution.

The following are examples of other national events that can be used to increase use of pedestrian facilities:

### ***Walk to Work Day / International Car Free Day***

(September 22) Designate one day a year for people to walk to work to help advance programs, promote active living, and raise awareness for environmental issues. Walk to Work Day can be at the end of an entire week or month of pedestrian promotional activities, including fitness expos, walking and jogging group activities, running and bicycling races and rides, etc.

### ***Strive Not to Drive Day***

This event example, from the Town of Black Mountain, NC, is an annual event to celebrate and promote the Town's pedestrian achievements for the year throughout their region. Awards for pedestrian commuters, as well as booths, contests, and other events are organized through their local MPO Bicycle and Pedestrian Task Force and the Land-of-Sky Regional Council. A similar event could be held in Siler City as the Pedestrian Plan is implemented.



### ***National Trails Day***

This event is held every year in June. Other events, competitions, races, and tours can be held simultaneously to promote future greenways in Siler City.



*Safe Routes to School programs teach children safe walking behaviors and encourage an active, healthy lifestyle*

## ***Earth Day***

Earth Day is April 22nd every year and offers an opportunity to focus on helping the environment. Efforts can be made to encourage people to help the environment by walking to destinations and staying out of their vehicles. This provides an excellent opportunity to educate people of all ages.

## ***Pedestrian Activities/Promotion within Local Organizations***

Siler City has numerous organizations that could help to promote pedestrian activities (e.g. the Siler City Merchants Association and the Police Department). Education, enforcement, and encouragement programs can be advertised and discussed in local organization newsletters, seminars, and meetings. Such organizations could even organize their own group walks, trail clean-ups, and other activities listed in this section.

## ***Adopt-a-Trail***

Local clubs and organizations provide great volunteer services for maintaining and patrolling trails. This idea could be extended to follow tour routes or specified streets/sidewalks. A sign to recognize the club or organization could be posted as an incentive to sustain high quality volunteer service. The Boy Scouts of America serve as a good model for participation in this type of program.

## ***Walk-Friendly Community (WFC) Designation***

The Walk Friendly Communities program, administered by the Highway Safety Research Center's Pedestrian and Bicycle Information Center (PBIC), is a national recognition program developed to encourage towns and cities across the U.S. to establish or recommit to supporting



safer walking environments. The WFC program recognizes communities that are working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort.

## ***Revenue Generating Events***

Siler City should consider holding events that can help fund future facilities. Program and event ideas that could be used to generate revenue in Siler City include:

- Races/triathlons (fees and/or donations)
- Educational walks/nature walks/historic walks (fees and/or donations)
- Fund-raisers including dinners/galas
- Concerts (fees and/or donations)
- Events coinciding with other local events such as fairs, festivals, or historic/folk events

## ***Hold an Open Streets Event***

Usually held on a weekend day, open street events temporarily close streets to cars and open them up to people walking, bicycling, skating, playing sports, and so on. These events have been very successful in cities across North America.



For more information about open street events visit:

<http://openstreetsproject.org/>



*An open streets event promotes health and community while celebrating bicycling and walking, such as this Open Streets event in Carrboro, NC*



### **“Weekend Walkabout” Program**

Walking programs such as “Weekend Walkabout” are regularly occurring events that promote walking while also bringing attention to pedestrian infrastructure. “Weekend Walkabouts” walking routes should highlight safe and inviting places to walk in the public realm (rather than private or enclosed facilities such as walking tracks) and should be three miles or less in length. These events are ideal for families and seniors.

### **Walking Youth Engagement Contest**

Students in grade four, five, or six would be the best age group for this contest. By partnering with the state, school districts could coordinate to schedule a poster, Photovoice, YouTube, and other audio/visual media and develop a “scoring” criteria. Students would be tasked with creating media that highlights the benefits and value of walking. A selection panel made up of representatives from the Town and the school will choose the winner of the contest.

## **Encouragement Resources**

**National Walk our Children to School Day** is usually held in October with the objective to encourage adults to teach children to practice safe pedestrian behavior, to identify safe routes to school, and to remind everyone of the health benefits of walking. To register walking events, go to the main webpage, and follow the International Walk to School link:

[www.walktoschool-usa.org](http://www.walktoschool-usa.org)

### **Walk a Child to School in North Carolina.**

A growing number of community groups throughout the nation, such as health professionals, ‘Smart Growth’ advocates, traffic safety groups, local PTAs, and elected officials, are promoting walking to school initiatives. In North Carolina, Walk a Child to School Programs have gained a foothold and are growing each year. To date more than 5,000 students in 12 communities in the state have participated.

<http://www.walktoschool.org>

**Kidswalk-to-School** is a resource guide to help communities develop and implement a year-long walk-to-school initiative; sponsored by the Centers for Disease Control and Prevention.

<http://www.cdc.gov/nccdphp/dnpa/kidswalk/>

**Preventing Pedestrian Crashes** Preschool/Elementary School Children’ provides information to parents on pedestrian risks for preschool and elementary school children. Information about the Safe and Sober Campaign is available on the NHTSA website.

<http://www.nhtsa.gov/Driving+Safety/Enforcement+&+Justice+Services>



*A “Weekend Walkabout” program encourages walking throughout town and is ideal for families and seniors*

# Enforcement

## Motorist Enforcement

Based on observed patterns of behavior, local police can use targeted enforcement to focus on key issues such as motorists speeding, not yielding to pedestrians in crosswalks, parking on sidewalks, etc. The goal is for pedestrians and motorists to recognize and respect each other's rights on the roadway.

The NCDOT Division of Bicycle and Pedestrian Transportation funded a study on pedestrian issues, including school zone safety, and decided to establish a consistent training program for law enforcement officers responsible for school crossing guards. According to the office of the North Carolina Attorney General, school crossing guards may be considered traffic control officers when proper training is provided as specified in G.S. 20-114.1.

## Speed Feedback Signs

These signs serve as a traffic calming device when used temporarily at strategic roadway locations. The Town should use speed feedback signs on streets with new pedestrian facilities and should include information about requesting a speed feedback sign on the City's website.

## Enforcement Actions

- Local police should use targeted enforcement to focus on key issues such as motorists speeding, not yielding to pedestrians in crosswalks, parking on sidewalks, etc.
- Establish a crossing guard program for peak school hours and for peak pedestrian activity
- Require crossing guards to complete an NCDOT Crossing Guard Training Program.



*Speed feedback signs remind drivers to slow down near schools and along neighborhood streets*

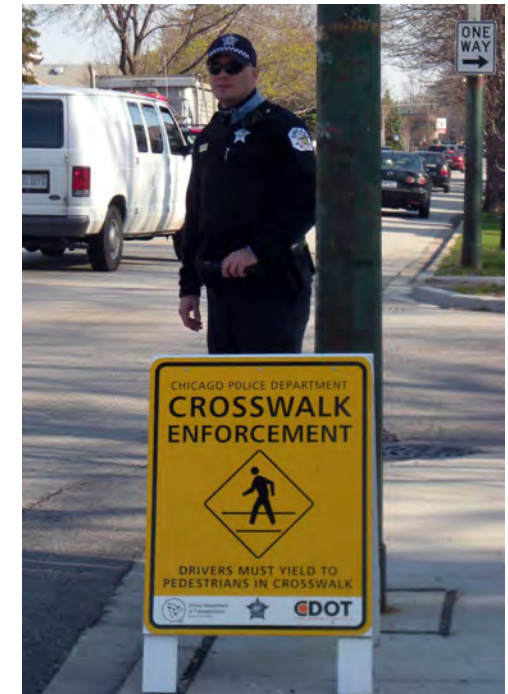
## Enforcement Resources

- NCDOT School Crossing Guard Program: [www.ncdot.org/transit/bicycle/safety/programs\\_initiatives/crossing.html](http://www.ncdot.org/transit/bicycle/safety/programs_initiatives/crossing.html)
- NCDOT's A Guide to North Carolina Bicycle and Pedestrian Laws: [www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html](http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html)

## Evaluation

### Pedestrian Needs Checklist

A Pedestrian Needs Checklist would ensure the full participation and timely review of the NCDOT Bicycle and Pedestrian Transportation staff in the development of new projects which have the potential to benefit pedestrians. One component of the checklist would be to increase pedestrian related amenities at intermodal facilities and any existing or future Park & Ride facilities. There are many examples of checklists available online in the form of Complete Streets Checklists.



*The Siler City Police Department can assist with crosswalk enforcement and other pedestrian safety issues*



*Students enjoy the walk to School during Walk to School Day*



### **Facility Inspection and Maintenance**

There are minimum standards acceptable for sidewalk facility conditions. Setting and maintaining minimum condition standards will enable all users to use facilities safely. Siler City can require sidewalk inspection when properties are sold to reduce liability for property owners, who can be held liable if someone is injured on the sidewalk in front of their property. The City could set up a hotline to effectively and efficiently collect information regarding problematic facilities.

## **Safe Routes to School Toolkit**

Safe Routes to School (SRTS) is a program with a simple goal: helping more children get to school safely by walking and bicycling. Envision active kids using safe streets, helped by engaged adults (from teachers to parents to police officers), surrounded by responsible drivers.

Safe Routes to School programs use a variety of strategies to make it easy, fun and safe for children to walk and bike to school. These strategies are often called the “Five E’s.”

**Education:** programs designed to teach children about traffic safety, bicycle and pedestrian skills, and traffic decision-making.

**Encouragement:** programs that make it fun for kids to walk and bike. These programs may be challenges, incentive programs, regular events (e.g. “Walk and Bike Wednesdays”) or classroom activities.

**Engineering:** physical projects that are built to improve walking and bicycling conditions.

**Enforcement:** law enforcement strategies to improve driver behavior near schools.

**Evaluation:** strategies to help understand program effectiveness, identify improvements, and ensure program sustainability.

This plan recommends that Siler City and its elementary schools seek grants to participate in a SRTS program to help promote and encourage active transportation choices for children to go to and from school.

### **Who is This Toolkit For?**

This Toolkit is for any adult who wants to improve traffic safety and air quality around schools, help children be more physically active and “ready to learn” and improve our neighborhoods.

Whether you are a parent, a teacher, a school administrator, a neighbor, a public health professional, city staff, or a city official, this Toolkit will provide you with facts and figures, as well as ideas, inspiration and proven techniques. This Toolkit covers the Why, Who and How of Safe Routes to School.



*A Walkability Checklist would help to ensure that new transportation projects in Siler City include pedestrian accommodations*

## ***Benefits of Walking and Bicycling to School (Why)***

Active kids are healthy kids, and walking or bicycling to school is an easy way to make sure that children get daily physical activity. Benefits to children include:

- Increased physical fitness and cardiovascular health
- Increased ability to focus on school
- A sense of independence and confidence

SRTS also benefits neighborhoods:

- Improved air quality as fewer children are driven to school
- Decreased crashes and congestion as fewer children are driven to school
- More community involvement as parents, teachers and neighbors get involved and put “eyes on the street”

Schools also benefit:

- Fewer discipline problems because children arrive “ready to learn”
- Fewer private cars arriving to drop off and pick up children
- Opportunities to integrate walking, bicycling and transportation topics into curriculum (e.g. “Walk & Bike Across America,” mapping lessons, graphs and charts of distance walked or biked)



## ***Local Resources (who)***

Local Safe Routes to School programs are sustained by parents, community leaders, and citizens to improve the health and well-being of children by enabling and encouraging them to walk and bicycle to school. Recently, the state of North Carolina has started the NC Safe Routes to School Program based off of the national program. The state has funding for infrastructure improvements within two miles of schools. This funding can also be used towards the development of school related programs to improve safety and walkability initiatives. The state requires the completion of a competitive application to apply for funding and a workshop at the school to determine what improvements are needed. [www.saferoutesinfo.org](http://www.saferoutesinfo.org)







## *The Five E's Tools (how)*

### **Education**

Safe Routes to School refers to a variety of multi-disciplinary programs aimed at increasing the number of students walking and bicycling to school. Education programs are an essential component of a Safe Routes to School program. Education programs generally include outreach to students, parents and guardians, and motorists. Students are taught bicycle, pedestrian and traffic safety skills. Parents and motorists receive information on transportation options and driving safely near schools. A menu of SRTS education programs include:

- Safety education classes
- Bicycle rodeos
- Classroom lessons and activities
- School zone traffic safety campaign
- Bus safety campaign

### **Encouragement**

Encouragement programs focus on bringing the fun back to walking and bicycling while increasing public awareness of the benefits of walking and biking to school. Events and activities help increase the number of students walking and biking to school. The activities often include a variety of special events and contests, outreach campaigns and presentations to school and community groups. Encouragement programs can be used to educate parents, school personnel, students and the community about the health and safety benefits of a successful Safe Routes to School program.

Encouragement programs do not need much funding, but their success depends on a school champion or group of volunteers for sustained support. Some examples include:

- Walk and bike to school day/week/month
- Suggested route to school maps
- Friendly walk and bike to school incentive programs
- Walking school buses
- Bike trains

### **Engineering Tools**

The environment near the school is often a determining factor when a parent or guardian decides whether or not to allow their child to walk or bicycle to school. There are a variety of engineering solutions available to enhance pedestrian and bicyclist safety and comfort near schools. Engineering improvements are implemented to slow cars, increase the visibility of students walking and biking, and make it easier for students to cross the street. While

some engineering efforts can be costly, many, such as posting signs and striping crosswalks or bike lanes, are relatively inexpensive. Some of the following examples of engineering improvements are described in detail in **Appendix A: Design Guidelines:**

- High visibility school zone signage
- Sidewalks
- Trails and greenways
- High visibility crossing markings
- Pedestrian scale lighting
- Advance stop lines and yield lines at mid-block crosswalks
- Pedestrian Countdown Signals
- Medians and pedestrian refuge islands
- Curb extensions/bulb-outs
- Speed tables and speed humps

### Enforcement Tools

Enforcement tools are aimed at ensuring compliance with traffic and parking laws in school zones. Enforcement activities help to reduce common poor driving behavior, such as speeding, failing to yield to pedestrians, turning illegally, parking illegally and other violations. Enforcement strategies, in conjunction with education efforts, are intended to clearly demonstrate what is expected of drivers of motor vehicles and to hold them accountable for the consequences of their actions. While most enforcement is the responsibility of police and other law enforcement, there are numerous complementary strategies that can be undertaken by school officials, crossing guards, parents and volunteers. Some examples include:

- School safety patrols and crossing guards

- Crosswalk enforcement
- School parking “citation”
- Neighborhood speed watch

### Evaluation

Evaluation of the Safe Routes to School program is important to understand the effectiveness of the program, identify improvements that are needed and ensure that the program can continue in the long-term. Evaluation can measure shifts in travel behavior, changes in attitudes toward biking and walking, awareness of the Safe Routes to School program, grant money received and projects completed. Evaluation tools include:

- Student and parent surveys before and after targeting programs
- School site audits



*Trained crossing guards help children get safely to and from school*



*Example of a pedestrian refuge island*



**Table 4.1: Programmatic Recommendations**

Strategy	Target Audience	Lead Facilitator	Partnerships for Success	Time Frame	Duration	Projected Cost
<b><i>Education</i></b>						
Safe Routes to School	Schoolchildren	Siler City schools; School administration; District administration	Town of Siler City; National Center for Safe Routes to School, El Vinculo	Short-term	Ongoing	\$\$
Public Education and Educational Devices	General public	Town of Siler City	Town agencies; Siler City schools; NCDOT, El Vinculo	Short-term	Ongoing	\$
Bicycle and Pedestrian Advocacy Committee	General public	Town administration; Town Council	Siler City Planning & Community Development Dept; Parks & Recreation	Short-term	Ongoing	\$\$
Coordinated Campaigns	General public	Siler City Planning & Community Development Dept	NCDOT; TARPO	Medium-term	Ongoing	\$\$-\$\$\$
Internal Education	Town staff; Law enforcement	Siler City Planning & Community Development Dept	NCDOT; TARPO; HSRC; ITRE	Medium-term	Annual	\$\$\$
Designing Pedestrian Facilities for Accessibility Course	Town staff	Siler City Planning & Community Development; Public Works & Utilities	NCDOT	Medium-term	Annual	\$
Environmental and Historical Education / Interpretation	General public	Siler City Parks & Recreation Dept	Town of Siler City; DENR	Medium-term	Ongoing	\$
Let's Go NC - Pedestrian Curriculum	Schoolchildren	Siler City schools	School administration; District administration; Town of Siler City	Medium-term	Ongoing	\$
Eat Smart Move More NC	Schoolchildren; General public	Siler City schools; School administration	Town agencies; Chatham County Public Health Dept, El Vinculo	Medium-term	Ongoing	\$
<b><i>Encouragement</i></b>						
Open Streets Event	General public	Siler City Parks & Recreation; Siler City Planning & Community Development	Local advocacy groups; Non-profits; Businesses, El Vinculo	Short-term	Biannual	\$\$\$
"Weekend Walkabout" Program	General public	Siler City Parks & Recreation; Neighborhoods; Non-profits	Local advocacy groups, El Vinculo	Short-term	Weekly	\$
School Programs	Schoolchildren	Siler City schools; School administration	Town agencies; Siler City Police Department; Chatham County Public Health Dept	Short-term	Ongoing	\$\$-\$\$\$
Walk to Work Day / International Car-Free Day	Commuters	Town of Siler City; Town agencies	Local non-profit; Local running and cycling clubs	Medium-term	Annual	\$

Strategy	Target Audience	Lead Facilitator	Partnerships for Success	Time Frame	Duration	Projected Cost
<b><i>Encouragement (cont'd.)</i></b>						
Strive Not to Drive Day	General public	Town of Siler City; Town agencies, El Vinculo	Local non-profit; Local running and cycling clubs	Medium-term	Annual	\$
National Trails Day	General public	Siler City Parks & Recreation Dept, El Vinculo	DENR	Medium-term	Annual	\$
Earth Day	General public	Siler City Parks & Recreation Dept, El Vinculo	DENR	Medium-term	Annual	\$
Pedestrian Activities / Promotion within Local Organizations	General public	Local non-profit; Siler City Merchants Association; NC Arts Incubator, El Vinculo	Town agencies; local businesses	Medium-term	Ongoing	\$
Adopt-a-Trail	Advocacy groups; Non-profits; Businesses	Siler City Parks & Recreation Dept	DENR	Medium-term	Ongoing	\$
Walk-Friendly Community (WFC) Designation	General public	Siler City Planning & Community Development Dept	Town agencies; Town administration	Medium-term	Annual	\$
Revenue Generating Events	General public	Town of Siler City, El Vinculo	Siler City Merchants Association; Chatham Chamber of Commerce; Advocacy groups; Non-profits	Medium-term	Biannual	\$\$\$
Walking Youth Engagement Contest	Children and teens	Siler City schools	Local advocacy groups; Non-profits	Medium-term	Annual	\$\$





Strategy	Target Audience	Lead Facilitator	Partnerships for Success	Time Frame	Duration	Projected Cost
<b><i>Enforcement and Evaluation</i></b>						
Motorist Enforcement	Motorists	Siler City Police Department	Town of Siler City	Short-term	Ongoing	\$\$
Speed Feedback Signs	Motorists	Siler City Police Department	Town agencies	Short-term	Ongoing	\$\$\$
Pedestrian Needs Checklist	Town staff	Siler City Public Works & Utilities Dept	Siler City Planning & Community Development; Police Department; Chatham County staff; NCDOT	Medium-term	Ongoing	\$\$
Facility Inspection and Maintenance	Town staff	Siler City Public Works & Utilities Dept	Siler City Planning & Community Development; Parks & Recreation Dept	Medium-term	Annual	\$\$\$\$



## Pedestrian Policies

Town planning staff should become familiar with (and, in many cases, continue to support) the following policies and regulations. Walkability should be an item considered with all future development and growth decisions. More people will walk when their proximity to key destinations is reasonable. For example, a mixed use development will engage more walking while the development of a school at the outskirts of town will promote less walking and more driving. Suggested policy statements and paragraphs by category are provided below.

### Complete Streets

**Goal:** Adopt a “Complete Streets” approach and philosophy that all streets and development on streets be designed and operated to enable safe access for all users, ages, and abilities.

- Ensure that transportation agencies, planners, engineers, and developers design and operate the entire right of way to enable safe access for all users including transit users, drivers, pedestrians, bicyclists, as well as for seniors, children, and people with disabilities.

- Educate leaders, business owners, residents, and all stakeholders of the benefits of Complete Streets including: livability, safety, increased social interaction, increased economic activity, attractiveness, healthier living, less pollution, and increased access.
- Follow NCDOT’s Complete Streets Policy, Implementation and Design Guideline development. The City should ensure that these practices are followed and that local NCDOT Division staff are aware of these new guidelines.

### Pedestrian Network and Connectivity

**Goal:** Create and maintain a pedestrian network that provides direct connections between city center, trip attractors, schools, and residential/commercial areas.

- To the maximum extent possible, make walkways accessible to people with physical disabilities.
- Develop a system of informational and directional signage for pedestrian facilities and greenways.
- Provide sidewalks on all roads surrounding schools with safe crosswalks.
- Provide pedestrian access through cul-de-sacs and large parking lots, which are typical obstacles to pedestrian connectivity.
- Accommodate pedestrians and bicyclists on future roadway bridges, underpasses, and interchanges and on any other roadways that are impacted by a bridge, underpass, or interchange project (except on roadways where they are prohibited by law).

*Policies that encourage pedestrian-friendly design help to make streets and other public spaces safer for all users.*





## Safety

**Goal:** Strive to maintain a complete, safe sidewalk network free of broken or missing sidewalks, curb cuts, or curb ramps and that include safety features such as traffic calming, lighting, and sidewalk repairs.

- Provide raised medians or pedestrian refuge islands where practical, at crosswalks on streets with more than three lanes, especially on streets with high volumes of traffic. They should be six- to ten-feet wide.
- Monitor and identify pedestrian facilities that are not ADA-compliant including missing, damaged, or non-compliant curb ramps, stairs, or sidewalk segments of inadequate width and create a plan for improving them.
- Develop a traffic calming program to slow traffic through downtown and on major residential corridors, making them aware that they share the corridors with pedestrians.
- Make pedestrian crossings a priority and initiate improvements recommended in **Chapter 4**. Consider variations in pavement texture and clear delineation of crosswalks. Also, ensure that crosswalks are properly lit at night.
- Implement pedestrian-scale lighting at regular intervals in areas of high pedestrian activity to promote pedestrian safety and discourage criminal activity.

- Develop and expand the City's maintenance program of sidewalk repairs, debris removal, and trimming of encroaching vegetation.
- Follow design guidelines in **Appendix A** to the maximum extent possible. For example, the buffer space between the sidewalk and the curb and gutter should be maximized within the available right-of-way.

## Aesthetics Comfort and Enjoyment

**Goal:** Encourage the inclusion of art, historic, and natural elements along with street furniture and landscaping in pedestrian improvement projects.

- Require street trees and planting buffers between the sidewalk and the street along all new roadways and sidewalk construction. Keep all vegetation trimmed.
- Encourage and/or require private owners (of residences and businesses) to keep their area in and around the sidewalk free of debris and litter.
- Require benches, shelters, sheltered transit stops, trees, and other features to facilitate the convenience and comfort of pedestrians.
- Require pedestrian scale lighting along greenways and most traveled sidewalks across the city.

## Land Use and Development

**Goal:** Promote land uses and site designs that make walking convenient, safe, and enjoyable.

- Encourage a mix of uses through building, zoning, and development codes to connect entrances and exits to sidewalks, and eliminate "blank walls" to promote street level activity.
- Require sidewalks have a minimum width of five feet but where pedestrian traffic is higher, including near schools, senior centers, multi-family housing, and commercial areas or where sidewalks connect or overlap with recommended on-road greenway connections.
- Require applicable buildings to build to the sidewalk. Also, prohibit parking lots from being developed in front of buildings where possible to develop pedestrian oriented areas.
- Promote parking and development policies that encourage multiple destinations within an area to be connected by pedestrian trips. Specifically, promote the connectivity of parking lots between businesses for increased safety and avoidance of roadway traffic.
- Disallow parked vehicles from blocking pedestrian walkways.

## Greenways

**Goal:** Establish greenways as part of Siler City's public infrastructure.

Define 'Greenways' as part of the Siler City's public infrastructure. Greenways are public infrastructure that provide important functions to not only offer transportation alternatives, but to protect public health safety and welfare. Within flood-prone landscapes, greenways offer the highest and best use of floodplain land, mitigate the impacts from frequent flooding and offer public utility agencies access to floodplains for inspection, monitoring and management. Greenways filter pollutants from stormwater and provide an essential habitat for native vegetation that serves to cleanse water of sediment. Greenway trails provide viable routes of travel for cyclists and pedestrians and serve as alternative transportation corridors for urban and suburban commuters. Greenways serve the health and wellness needs of our community, providing close-to-home and close-to-work access to quality outdoor environments where residents can participate in doctor prescribed or self-initiated health and wellness programs. All of these functions make greenways a vital part of community infrastructure.

- Require subdividers to provide natural buffers along both sides of all perennial streams. Public greenway trails with limited disturbance along perennial and intermittent streams are excellent uses for these spaces and should be dedicated during the subdivision process.

- Encourage utility corridor development practices that allow for maximum compatibility with pedestrian and bikeway corridors. Land and easements purchased for the purpose of providing utilities (such as water and sewer) can serve a greater community benefit if developed to accommodate a multi-use trail.





**Table 4.2: Unified Development Ordinance Review and Recommendations**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
IV.45.c.	...detailed or technical design requirements and construction specifications relating to various types of improvements (streets, sidewalks, etc.) are set forth in one or more of the appendices in this ordinance.	See Appendix C
IV.46.b.4.	Before submitting an application for a conditional-use permit authorizing a development that consists of or contains a major subdivision, the developer shall submit to the administrator <b><i>a sketch plan of each subdivision, drawn approximately to scale. The sketch plan shall contain: 4) The tentative street and lot arrangement.</i></b>	Should be amended to reflect the sidewalk widths, zones, furnishing/plantings, and parking.
IV.57.c.2.	If a development that is to be built in phases or stages includes improvements that are designed to relate to, benefit, or be used by the entire development (such as a swimming pool or tennis courts in a residential development) then, as part of his application for development approval, the developer shall submit a proposed schedule or completion of such improvements...(2)	Need to define "amenities." Sidewalks should be excluded from this provision.
IV.63	...responsible for maintaining all common areas, improvements, or facilities required by this ordinance...this means that private roads and parking areas, water and sewer lines, and recreational facilities must be properly maintained...	Should be amended to include sidewalks, curb ramps and landings.
IV.68.2	Certificate of Ownership and Dedication: I hereby freely adopt this plan of subdivision and dedicate to public use all areas shown on this plat as streets, alleys, walks, parks, open space, and easements, except those specifically indicated as private and that I will maintain all such areas...	Should be amended to include sidewalks, curb ramps and landings.
IV.69	Approval of a plat does not constitute acceptance by the town of the offer of dedication of any streets, sidewalks, parks, or other public facilities shown in the plat...	
IV.70	Protection against Defects.	
V.83.c.1	Special Exception Permits: Issuance of the permit will not create a threat to the public health or safety.	Should be amended to ensure provision of adequate, safe pedestrian facilities, i.e. sidewalks, curb ramps, crossing treatments and connections to public roadway or existing pedestrian facilities.
V.83.d.1	Special exception permit for minimum setbacks	Should be amended to include commercial land uses in addition to residential purposes in residential districts.



**Table 4.2: Unified Development Ordinance Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
XI.153.1	Multifamily Downtown Development: A site plan including phasing, building height, dimensions, landscaping, parking, etc.	Should be amended to include pedestrian circulation plan as part of site plan.
XI.153.3	Multifamily Downtown Development: Illustration of the physical design features or themes used to unify the development and to provide compatibility <b>and connectivity</b> to neighboring developments.	
XI.153.9	Multifamily Downtown Development: Must meet ADA requirements including ADA-compliant curb ramps.	
XI.153.10	Multifamily Downtown Development: The on-site <b>pedestrian circulation system</b> must be lighted to a level where residents can safely use the system at night. Such lighting shall be subject to the lighting standards.	This is the first mention of a pedestrian circulation system. Should be amended to elaborate on what this system entails, and define characteristics of the system in addition to lighting. This should provide reference to lighting standards that should be included in an appendix to the ordinance.
XI.153.13	Multifamily Downtown Development: Parking Lot and pedestrian pathways must be paved.	Should be amended to reference ADA standards for parking lots.
XI.153.15	Broken screen Type C is required along all streets.	
XI.153.16	Multifamily Downtown Development: A property maintenance code must be submitted that details responsibility and restrictive covenants.	Should be amended to list responsibilities for maintaining pedestrian throughways, property access points, building entrances/exits, wayfinding/signage, lighting and landscaping
XI.153. 18	Multifamily Downtown Development: Final plat, site plan, building plan, zoning permit, and building permit approval by Town Staff shall be required prior to any construction.	Should be amended to require that the site plan includes pedestrian circulation plan.
XI.154.5	The vegetation shall be complete visual barrier.	This could create unsafe condition for motorists and pedestrians at least at intersections and near driveway areas.
XI.156.a.5	Recurring Special Events: Event will not substantially interrupt vehicular <b>or pedestrian traffic</b> in the immediate area nor block traffic lanes or closed streets.	
XI.156.a.10	Recurring Special Events: ...a site plan, of sufficient detail to insure compliance with required standards shall be submitted to the Planning Department for review and approval.	Should be amended to include pedestrian circulation plan as part of site plan.
XII.167	Minimum Lot Size	Larger lot sizes can promote auto-oriented designs and outcomes. Consider





**Table 4.2: Unified Development Ordinance Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
XII.168	Residential Density	Density restrictions can promote auto-oriented designs and outcomes.
XII.169	Minimum Lot Width	Minimum lot widths can promote auto-oriented designs and outcomes.
XII.170	Building Setback Requirements	Building setback minimums can discourage active pedestrian frontages.
XII.174.a	If any portion of a tract lies within an area designated on any officially adopted town plan as part of a <b><i>proposed public park, greenway, or bikeway, and before the tract is developed</i></b> , the owner of the tract, with the concurrence of the town, dedicates to the town that portion of the tract so designated, then, when the remainder of the tract is developed for residential purposes, the permissible density at which the remainder may be developed shall be calculated in accordance with the provisions of this section.	Should be amended to include pedestrian facilities in list of proposed project types.
XIII.180.a	...all residential developments shall provide (through dedication or reservation) recreational areas in the form of <b><i>miniparks</i></b> in an amount equal to .0025 acres per person expected to reside in that development.	Should be amended to include that safe pedestrian connections (sidewalk, greenway trail, crossing treatments) must also be provided to the recreational areas.
XIII.181.a	The purpose of the minipark is to provide adequate active recreational facilities to serve the residents of the immediately surrounding neighborhood within the development. The following ... shall be deemed to serve active recreational needs: tennis courts, racquetball courts, swimming pools, sauna and exercise rooms, meeting or activity rooms within clubhouses, basketball courts, swings, slides and play apparatus.	Should be amended to include the American Planning Association’s description of parks and recreational facilities. Described as, “Parks typically include small neighborhood and pocket parks, trails, greenways, large planned spaces and regional parks, and forested areas within and surrounding cities. Recreation facilities take in playgrounds, ball fields, tennis courts, and gymnasiums. Open spaces can be as diverse as agricultural land, forests, gardens, arboretums, and institutional grounds.”
XIII.181.b	At least 15 percent of the minipark must be satisfied by the construction of "tot lots"	
XIII.181.e	Each minipark shall be <b><i>centrally located and easily accessible so that it can be conveniently and safely reached</i></b> and used by those persons in the surrounding neighborhood it is designed to service.	Should be amended to be more specific. Language should be included that describes proximity to parking lots, roads, driveways, etc.



Table 4.2: Unified Development Ordinance Review and Recommendations ~ (cont'd)

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
XIII.182.b	Usable open space means an area that (2) is not devoted to roadway, parking area, or sidewalk, (3) is left in its natural or undisturbed state if wooded, <b><i>except for the cutting of trails for walking or jogging</i></b> , or, if not wooded at the time of development is <b><i>landscaped for ball fields, picnic areas, or similar facilities</i></b> , or is properly vegetated and landscaped... (5) Is legally and practically accessible to the residents of the development out of which the required open space is taken, or to the public if dedication of the open space is required...	Subdivided residential developments of less than 25 dwelling units are exempt from the 5% set aside for open space requirement. Consider requiring a sliding scale percentage open space dedication for subdivided residential developments of less than 25 dwelling units.
XIII.184.a	If any portion of any lot proposed for residential development lies within an area designated on the <b><i>officially adopted recreation master plan</i></b> as a neighborhood park or part of the greenway system or bikeway system, the area so designated (not exceeding 5 percent of the total lot area) shall be included as part of the area set aside to satisfy the requirement of 182. This area shall be dedicated to public use.	Should be amended to require designation of land or open space if any portion of any lot for residential, <b>commercial, retail, manufacturing and industrial</b> development, lies within an area designated on <b>any officially adopted Town plans</b> , as a neighborhood park or part of the <b>pedestrian system</b> , greenway system or bikeway system...
XIV.196.a.1	All driveway entrances and other openings onto streets within the town's planning jurisdiction shall be constructed so that (1) vehicles can enter and exit from the lot in question without posing any substantial danger to themselves, <b><i>pedestrians</i></b> , or vehicles traveling in abutting streets...	Should be amended to be more specific. Language should be added to provide specific guidance for pedestrian crossings and signage, or reference Design Guidelines included in Pedestrian Master Plan.
XIV.199.a	Street right-of-ways are designed and developed to serve several functions (ii) to <b><i>provide a safe and convenient passageway for pedestrian traffic.</i></b>	
XIV.199.b/c	"Minor" streets as defined in 193.b.1 are not required to have any sidewalks. "local," "subcollector," and "collector" streets are only required to have sidewalks on one side.	Should be amended to require sidewalks on both sides of the street for "Subcollectors" and "Collectors" given average annual daily traffic volumes, speed limits, destinations and dwelling units accessed. Consider requiring sidewalks be installed with new development on at least one side of the street for local and minor streets.
XIV.199.d	The sidewalks required shall be at least five feet in width and constructed according to the specifications set forth in Appendix C, excepted that the permit-issuing authority may permit the installation of walkways constructed with other suitable materials when it concludes that (1) such walkways would serve the residents of the development as adequately as concrete sidewalks; and (2) Such walkways would be more environmentally desirable or more in keeping with the overall design of the development.	





**Table 4.2: Unified Development Ordinance Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
XIV.199.e	Whenever the permit-issuing authority finds that a means of pedestrian access is necessary from the subdivision to schools, parks, playgrounds, or other roads or facilities, and that such access is not conveniently provided by sidewalks adjacent to the streets, the developer may be required to reserve an unobstructed easement of at least 10 feet in width to provide such access.	This appears to be inconsistent with the requirement set forth in 199.2. Five feet are required under 199.2.
XIV.200.a	Subcollector, local, and minor residential streets shall be <b><i>curved whenever practicable to the extent necessary to avoid conformity of lot appearance.</i></b>	This imposes challenges on those travelling by foot in terms of walking distance and navigability. The curvature of the street network has little to no bearing on the "conformity of lot appearance." Consider amending language to ensure that crossing distances and turning radii at intersections adhere to Design Guidelines included in Pedestrian Master Plan.
XIV.200.b/c	<b><i>Cul-de-sacs and loop streets are encouraged so that through traffic on residential streets is minimized.</i></b>	Cul-de-sacs and loop streets make travel by foot particularly difficult and inconvenient. Pedestrian/ bike cut throughs should be created where cul-de-sacs and loop streets currently exist, to enable more direct access and connectivity for pedestrians and bikes. The same effect can be achieved at intersections with in-street traffic diverters.
XIV.200.f	Streets shall be laid out so that residential blocks do not exceed 1,000 feet, unless no other practicable alternative is available.	Consider reducing maximum block length to encourage more pedestrian trips, and creating better access to basic needs.
XIV.202	Construction standards and specifications for streets, <b><i>sidewalks, and curbs</i></b> and gutters shall be designated by the town Public Works Director.	Should be amended to reference Design Guidelines included in the Pedestrian Master Plan. The Design Guidelines are based on AASHTO, NACTO, and MUTCD standards and guidelines.



**Table 4.2: Unified Development Ordinance Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
XIV.203	Public Streets and Private Roads in Subdivisions	Lot development maximum encourages larger lot sizes. There is mention of sidewalk requirements for private subdivided developments. Should be amended to require sidewalks on at least one side of all new private subdivided developments, and any recommendations pertaining to pedestrian access, safety, travel and connections included in any officially adopted town planning documents.
XIV.204.a	Within unsubdivided developments, all private roads and access ways shall be designed and constructed to facilitate <b><i>the safe and convenient movement</i></b> of motor vehicle and <b><i>pedestrian traffic</i></b> .	This policy contradicts what is stated in XIV.200.a/ b/c. These sections should be amended for consistency.
XIV.204.c	In all unsubdivided residential development, sidewalks shall be provided linking dwelling units with other dwelling units, the public street, an on-site activity centers such as parking areas, laundry facilities, and recreational areas and facilities. Notwithstanding the foregoing, <b><i>sidewalks shall not be required where pedestrians have access to a road that serves not more than nine dwelling apartments</i></b> .	Should be amended to require sidewalks in all new unsubdivided residential developments. Sidewalks should be required on at least one side of the street for minor and local roadways, and on both sides of the streets for subcollector and collector roadways.
XIV.204.d	Whenever the permit-issuing authority finds that a means of pedestrian access is necessary from an unsubdivided development to schools, parks, playgrounds, or other roads or facilities and that such access is not conveniently provided by sidewalks adjacent to the roads, <b><i>the developer may be required to reserve an unobstructed easement of at least 10 feet to provide such access</i></b> .	Should be amended “the developer <b>will</b> be required to reserve an unobstructed easement of at least 10 feet to provide such access.”
XIV.204.e	The sidewalks required by this section shall be at least four feet wide and constructed according to the specification set forth in the Appendix except that the permit-issuing authority may permit the installation of walkways constructed with other suitable materials when it concludes...	Should be amended to increase minimum sidewalk width to five feet, as this is inconsistent with Appendix C.
XIV.205.	Whenever curb and gutter construction is used on public streets, wheelchair ramps for the handicapped shall be provided at intersections and other major points of pedestrian flow. Wheelchair ramps and depressed curbs shall be constructed in accordance with published standards of the North Carolina State Building Code.	Should be amended to provide similar requirements for private developments, as well as safe crossing treatments such as crosswalks, and where appropriate, pedestrian countdown timers and in-roadway signage.
XV.226.a	All public streets, sidewalks, and other common areas or facilities in <b><i>subdivisions</i></b> ... shall be sufficiently illuminated to ensure the security of property and safety of persons using such streets, sidewalks, and other common areas or facilities.	





**Table 4.2: Unified Development Ordinance Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
XV.226.c	All roads, driveways, sidewalks, parking lots, and other common areas and facilities in <b><i>un-subdivided</i></b> developments shall be sufficiently illuminated to ensure the security of property and safety of person using such roads, driveways, sidewalks, parking lots and other common areas and facilities.	
XV.229.b	All utility facilities shall be constructed in such a manner as to minimize interference with pedestrian or vehicular traffic and to facilitate maintenance without undue damage to improvements or facilities located within the development.	
XV.232.b.3	Dumpsters shall be screened if and to the extent that, in the absence of screening, they would be clearly visible to (3) persons travelling on any public street, sidewalk, or other public way.	
XVI.243.10	Setbacks from streams outside designated floodplains: Notwithstanding the above, the permit issuing authority may allow areas within required buffers to be counted toward usable open-space requirements and may allow such area to be used for passive recreational uses such as walking.	Areas in floodplains should count toward the 5% open space dedication requirement for subdivisions.
XVII.262	Signs Permitted in the C-C and B-1 District	
XVIII.280.b.2	The permit-issuing authority may allow deviations from the parking requirements set forth in subsection 279(e) when it finds that (2) a business is primarily oriented to <b><i>walk-in trade</i></b> .	Should be amended to provide further clarification.
XVIII.283.c	Every vehicle accommodation area shall be designed so that vehicles cannot extend beyond the perimeter of such area onto adjacent properties or public rights-of-way. Such areas shall be designed so <b><i>that vehicles do not extend over sidewalks</i></b> or tend to bump against or damage any wall, vegetation, or other obstruction.	
XVIII.283.d	Circulation areas shall be designed so that vehicles <b><i>can proceed safely without posing a danger to pedestrians</i></b> or other vehicles and without interfering with parking areas.	Should be amended to include design standards that enable motorists to proceed safely.
XVIII.286.b	All such satellite parking spaces except spaces intended for employee use) must be located within 400 feet of a public entrance of a principal building housing the use associated with such parking, or within 400 feet of the lot on which the use associated with such parking is located if the use is not housed within any principal building. Satellite parking spaces intended for employee use may be located within any reasonable distance.	This language sets maximum (walking) distances, and should also address the quality and safety of the connection between the parking lot and building.



**Table 4.2: Unified Development Ordinance Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold <i>italic</i> . Attention is drawn to <i>italicized</i> text.	Comments/Suggested Language
XIX.298	Descriptions of Screens	Strong emphasis on visual/physical separation. Similar to windows, "broken screening" (Type C) can enhance visibility("eyes on the street") which contributes to the attractiveness and safety/ security of the building and pedestrian walking environment.
Appendix C-3. a/b/c	Sight Distances at Intersections	Should be amended to also include guidelines for designing driveways for visibility.
Appendix C-4	Radius at Street Intersections: At street intersections, the intersections of the paved surfaces shall be rounded with a minimum radius. Where streets intersect at less than right angles, a greater radius may be required.	Should be amended to define the minimum radius and describe the purpose of a minimum radius, i.e., for buses, trucks, or private autos, etc. Right angle intersections do not necessarily constitute greater turn radii, since larger radii allow for higher vehicle speeds, and increased risk for pedestrians. Turning radii guidance is provided in the Design Guidelines of the Pedestrian Master Plan.
Appendix C-12	Sidewalks: Sidewalk construction shall be similar to street construction with subgrade compacted to 100 percent AAASHO T99. Concrete sidewalks shall be four inches thick (increasing to six inches thick at driveway entrances), and shall be at least five feet wide. Expansion joints shall be provided every 30 feet; false joints at 10 feet.	Typo: AAASHO should be changed to AASHTO.
Appendix C-13	Wheel Chair Ramps: Where required, wheel chair ramps shall be constructed.	Should be amended to provide clarification as to where wheel chair ramps are required. Title II of the Americans with Disabilities Act (ADA) requires that state and local governments ensure that persons with disabilities have access to the pedestrian routes in the public right of way. An important part of this requirement is the obligation whenever streets, roadways, or highways are altered to provide curb ramps where street level pedestrian walkways cross curbs.





**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
3.1.3-1	No person shall advertise any goods, wares, or merchandise of any kind for sale by crying out the same on the streets or sidewalks of the town. No person shall advertise any goods, wares or merchandise, or any event of any kind, by crying out the same, or by using any megaphone, bell, or other noise making device on any street or sidewalk..	
3.1.3-3	It shall be unlawful for any person to advertise, or attempt to advertise, by marking or painting on any of the streets or sidewalks within the town.	
3.1.3-7	No person shall post any bills, posters, signs or advertisements on any telegraph, telephone, electric light or other pole along any of the streets of the town; provided, that this section shall not be construed to include street signs, placed on the poles by the town for designating the name of streets. Each sign, poster, bill or advertisement posted in violation of this section shall constitute a separate offense.	Nowhere in this section does it advise where bills, posters, signs or advertisements should be posted. Should be amended to include a provision for community bulletin boards, for neighborhood events, garage/moving sales, other non-commercial transaction, lost pets and so forth.
3.1.3-9	No person shall erect or place any sign or banner of wood, cloth, metal or other material across any street or sidewalk in the town without a sign permit. Consult ____ for information regarding permitted signage type and installation.	Should be amended to specify that the permit should detail the type of sign, banners or billboards allowed with respect to size, illumination, placement, installation, etc.
3.1.3-10	Signs, banners, billboards and similar structures and objects directly relating to charitable, historical, religious or other civic services and nonprofit activities may be installed in the public rights-of-way upon a permit issued by the town manager, or chief of police; provided however, that the board of commissioners shall have the power to revoke any such permit. Consult____information regarding permitted signage type and installation.	Permit should detail the type of sign, banners or billboards allowed with respect to size, illumination, placement, installation, etc.
10.II.10-30		
11.I.11-2	It shall be unlawful for any person to place any obstruction in any waterway so that the water shall accumulate on any street, alley, sidewalk, or other public-right-of-way, or in any other manner to obstruct the flow of water through or from any street, alley, sidewalk, or other public-right-of-way, of the town, whether such obstruction is placed upon his own property or that of any other.	



**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
11.II.11-32	<p>The following enumerated and described conditions are hereby found, deemed and declared to constitute a detriment, danger and hazard to the health, safety, morals and general welfare of the inhabitants of the town and are found, deemed and declared to be public nuisances wherever the same may exist whether in the public right-of-way or within two hundred (200) feet of residential or commercial property lines, and the creation, maintenance or failure to abate such nuisances is hereby declared unlawful: (1) Any condition which is a breeding ground or harbor for mosquitoes or a breeding ground or harbor for rats or other pests, (2) Any place of weeds, grass, or other noxious vegetation over eight inches in height that is within two hundred feet of the property line of an inhabited residence or business firm, (3) An open place of collection of stagnant/standing water where insects tend to breed, (4) An open place of concentration of combustible items such as mattresses, boxes, paper, automobile tires and tubes, garbage, trash, refuse, brush, old clothes, rags or any other combustible materials or objects of a like nature, (5) An open place of collection of garbage, food waste, animal waste or any other rotten or putrescible matter of any kind, (6) Privies, (7) Any furniture, appliances or other metal products of any kind of nature openly kept which have rough or jagged edges of metal or glass. (8) Any accumulation of rubbish, trash, old building materials, or junk causing or threatening to cause a fire hazard, or causing or threatening to cause the accumulation of stagnant water, or causing or threatening to cause the inhabitation of mice, snakes or vermin of any kind which is or may be dangerous or prejudicial to the public health. (9) Any condition detrimental to the public health which violates the rules and regulations of the county health department.</p>	<p>Should be amended to clarify location of said public nuisances. Attention should be given to not outlaw water fountains or other public/private water features. It is the responsibility of the property owner to ensure fountains and water features are functional, properly maintained, and not serving as a breeding ground for mosquitoes or other insects.</p>
11.IV.11-84	<p>It shall be unlawful for any person to smoke in any building or facility or portion of a building or facility within 25 feet of entrances now or hereafter owned, leased, operated, occupied, managed or controlled by the town.</p>	





**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
15.I.15-9a.	<p>For purposes of this section, wheeled apparatuses shall include but are not necessarily limited to the following: automobiles, trucks, motorcycles, go-carts, motor-driven bikes, all terrain vehicles, mini-bikes, scooters, coasters, golf carts, riding lawn mowers, motorized farm and construction equipment vehicles, and any other self-propelled vehicle as well as roller skates, skateboards, roller blades, and any other non-motorized wheeled apparatus. For the purposes of this section, bicycles and tricycles are excluded from this definition, but may nonetheless be excluded in certain areas with appropriate signage.</p>	
15.I.15-9b.	<p>It shall be unlawful for any person to drive, park, ride or use any wheeled apparatus upon or within any town sidewalk, walkway, town parking lot (except for bicycles, licensed automobiles, trucks and motorcycles), or any other public or private property which is not a public street or highway except in the following instances (1) Where such wheeled apparatus is being driven, ridden, or used upon property of the owner, resident, or occupant or by an authorized visitor when such visitor is accompanied by or has written authorization in his or her possession from the owner, resident, or occupant of such property. (2) Where such use is permitted in accordance with the town's UDO. (3) Where the use of any such wheeled apparatus is specifically allowed by the town in an area specifically designated for such use. (4) Where the wheeled apparatus is a wheelchair or other personal mobility device. (5) Where the wheeled apparatuses are skateboards, roller skates or roller blades used on sidewalks, outside of the central business district.</p>	<p>Unclear as to why it's unlawful for all wheeled apparatus (except licensed autos, trucks and motorcycles) to drive, park, or ride in parking lots. Need to clarify this. Bicycling should not be permitted on sidewalks, walkways, especially in the CBD. Consider adding bicycles to (5).</p>
15.I.15-9c.	<p>It shall be unlawful for any person to drive, park, ride, or use any wheeled apparatus upon or within any town park, greenway, or bicycle path except in areas so designated, signed, and/or marked for use by wheeled apparatuses, and except for maintenance and/or other activities under the direction of and authorized by the town.</p>	
15.I.15-10	<p>No person upon roller skates or riding in or by means of any coaster, toy vehicle or similar device shall go upon any roadway, except while crossing a street at a crosswalk or intersection, and except upon streets set aside as play streets.</p>	<p>A definition of "play street" should be included in the Code of Ordinances.</p>



**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
15.III.15-61.a	<p>The town manager shall have the power to designate, lay off, and indicate by appropriate signs and markings: parking spaces and zones, no parking zones, limited parking zones, reserved parking zones, zones in which vehicles shall be parked at an angle to the curb, loading zones, safety zones, school zones, hospital zones, quiet zones, traffic zones and other than the above, speed limits, truck routes, through streets, stop streets and intersections, yield right-of-way intersections, one-way streets, streets to be laned for traffic, play streets, bus stops and taxicab stands... intersections at which traffic shall be controlled by traffic signals, intersections at which left turns and/or right turns and "U" turns shall be prohibited, and intersections at which markers, buttons or other indications shall be placed to indicate the course to be travelled by vehicles traversing or turning at such intersections.</p>	<p>Should be amended to reflect a more multi-modal approach to designating signs and markings.</p>
15.III.15-61.b	<p>Whenever any designation is made in accord with this section, the town manager shall erect and install such signs, markings, lines, signals and other traffic-control devices as may be necessary to clearly indicate such designation and to put drivers of vehicles appropriate roadway users on notice of the restriction, limitation or prohibition resulting from such designation.</p>	<p>Should be amended to reflect a more multi-modal approach to designating signs and markings.</p>
15.III.15-63	<p>No provision of this chapter for which signs are required shall be enforced against an alleged violator if, at the time and place of the alleged violation, an official sign is not in proper position and sufficiently legible to an ordinarily observant person. Whenever a particular section does not state that signs are required, such section shall be effective without signs being placed to give notice thereof.</p>	<p>Does this apply to unmarked crosswalks?</p>
15.II.15-74	<p>Whenever authorized signs are placed designating any street or part thereof as a school zone pursuant to section 15-61, drivers of vehicles using such street shall exercise the greatest care for the protection of children.</p>	
IV.15-96	<p>It should be unlawful for any person to drive any motor vehicle upon or across any sidewalk, driveway, filling station or other commercial driveway or other similar surface located at the corner of any intersection protected by a traffic light or other traffic signal or sign, for the purpose of evading the regulations governing the turning of motor vehicles at intersections.</p>	





**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold <i>italic</i> . Attention is drawn to <i>italicized text</i> .	Comments/Suggested Language
IV.15-97	No driver of a vehicle shall enter an intersection or a marked crosswalk unless there is sufficient space on the other side of the intersection or crosswalk to accommodate the vehicle he is operating without obstructing so as to obstruct the passage of other vehicles or pedestrians, notwithstanding any traffic-control signal indication to proceed.	Prioritize pedestrian safety over driver convenience.
IV.15-98	The driver of a vehicle shall not drive within, occupy or park in any sidewalk area except to proceed through at a permanent or temporary driveway.	
15.IV. 15-100	The driver of a vehicle shall not back it into any intersection , or over a crosswalk, nor shall he back it otherwise unless such movement can be made in safety, and unless ample warning has been given by hand and horn or other signals.	
15.V.15-121	Speed Limits Generally	Siler City has the authority to further reduce speed limits as appropriate on local streets. NCDOT only has authority over the state highway system.
15.V. 15-124.a	(a) It shall be unlawful for any person to operate or drive any vehicle at a speed greater than twenty (20) miles per hour in any school zone during a period of time of thirty (30) minutes prior to and thirty (30) minutes following the times when such school begins and ends its daily schedule. (b) For the purposes of this section, a school zone shall be deemed to be that portion of any street abutting any school property for a distance not to exceed five hundred (500) feet on either side of such school property.	
15.VI.15-146	No person shall stop, stand or park a vehicle, except when necessary to avoid conflict with other traffic or in compliance with the directions of a police officer or traffic-control device, in any of the following places: (1) On any sidewalk. (2) Within an intersection. (3) On a crosswalk, (10) Within fifteen (15) feet in either direction of the entrance to a hotel, theater, hospital, sanatorium or any public building; unless such parking shall specifically be authorized.	
15.VI.15-153	The driver of a vehicle emerging from an alley, driveway or building shall stop such vehicle immediately prior to driving onto a sidewalk, or into the sidewalk areas extending across any alley way, and upon proceeding shall yield the right-of-way to all pedestrians on the sidewalk; and upon entering the roadway, he shall yield the right-of-way to all vehicles approaching the roadway.	



**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
17.1.17-16	<p>Loitering and Disorderly Conduct on public property: Public streets are intended to be used for vehicular and some pedestrian travel...Public streets and sidewalks must remain open for travel and law-abiding citizens must not be discouraged or intimidated from using such streets and sidewalks. There are (3) identifiable conditions which discourage legitimate public use of public property. First of all, under some circumstances unruly groups simply impede the flow of vehicular and pedestrian traffic. Secondly, aggressive panhandling and like activity by individuals under certain circumstances can discourage the lawful use of the public streets and sidewalks and not only disrupt nearby businesses, but also create areas where, as the public leaves, prostitution, drug-related activity and other similar illicit behavior is likely to move in. Thirdly, soliciting for drug-related activities will create public areas controlled by the criminal element of the community if allowed to go unchecked. This section is intended to restore the use of the streets, sidewalks and other public parks and public areas within the city to use by law-abiding citizens.</p>	<p>This section is fairly clear, and well-organized, and is included here for its relevance to the pedestrian environment.</p>
22.22-8	<p>It shall be unlawful for any person to play or loiter around any railroad tracks or yards, or in, over or about the cars or engines standing about such yards or tracks, to get on or attempt to get on board any car or engine while the same is in motion within the town.</p>	
25.1.25-1	<p>No person shall remove, injure, deface or mar in any manner whatsoever, any of the streets, sidewalks, poles, signs, culverts, ditches, buildings, fountains, trees, etc. of the town. The town shall have the right and privilege to repair any such removal, injury, defacement or mar, and assess the cost thereof against the offender.</p>	<p>Should be amended to include responsibility for general maintenance of these facilities and streetscape features and amenities.</p>
25.1.25-2	<p>(a) No person shall congregate on or obstruct in any manner any of the streets or sidewalks in the town in such number or in such manner as to hinder or delay the travel thereon on foot or otherwise. In such case it shall be the duty of the police to cause such congregation to disperse or obstruction to be removed and keep such streets and sidewalks clear for the travel of the public. (b) This section shall not be construed so as to prohibit the members of the police department to barricade, rope off or otherwise obstruct any street or sidewalk in the town when the same may become necessary for the protection, health or welfare of the citizens of the town.</p>	





**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold <i>italic</i> . Attention is drawn to italicized text.	Comments/Suggested Language
25.I.25-3.	No person shall unload boxes or packages of goods, wares and merchandise on any sidewalk in the town; provided however, that if any person has no accessible backdoor or cellar through which he can unload his goods, merchandise, etc., then he shall be allowed to load and unload in the street in front of his place of business, and immediately convey his boxes, packages, etc., across the sidewalk to or from his store or place of business.	Perhaps specify loading/unloading in the furnishing zone (rather than pedestrian through zone, or frontage).
25.I.25-4	No license issued by the town for any fruit, vegetable, candy or other stands or stores shall carry the privilege of using any street, alley or sidewalk for or as a store, display of goods, wares or merchandise or for other store purposes. It shall be unlawful for the person in charge of any such business to so store or display such goods, wares or merchandise.	Would this extend to restaurant/café outdoor seating where sidewalk widths allow?
25.I.25-5	No person shall ride, pull, push or drive any wheeled apparatus (as defined in 15.I.15-9a), except a baby carriage or wheelchair, or other personal mobility device, on any of the sidewalks within the central business district.	
25.I.25-7	It shall be unlawful for any person to erect or maintain any awning or other similar object in front of any building extending over the sidewalks, which has a clearance of less than seven (7) feet above the level of any sidewalk, or which extends over the travelled portion of the street in front of the building to which it may be attached; provided however, that stationary awning arms shall be at least eight (8) feet above the level of the sidewalk.	Would/should this apply to umbrellas for sidewalk seating? bus shelters?
25.I.25-9	No person shall erect or maintain any gate or door which opens outwardly on any street or sidewalk in town.	
25.I.25-11	It shall be the duty of the zoning enforcement officer to notify all persons about to erect any building, sidewalk, wall or fence near the street, or any public way or alley, not to encroach upon such street, sidewalk, public way or alley, and if in the opinion of the town, any such obstruction is being, or has been constructed on any street, sidewalk, public way or alley, the town shall cause a survey of the line of such street or alley to be made by a competent surveyor, and if such survey shall show that the street or alley is obstructed by any such building, sidewalk, wall or fence, the owner shall be required to pay the costs of the survey and shall be required to remove all obstructions at once.	If there is no fee, fine, or penalty associated with such an encroachment, the Town should consider imposing such a penalty if the encroachment impacts the safety or travel of pedestrians, cyclists or motorists.



**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold italic. Attention is drawn to italicized text.	Comments/Suggested Language
25.1.25-11	No person shall close or cause to be closed for traffic or any other purpose any street, sidewalk, or alley except on permission of the board of commissioners, and then only when taking such precautions as to safeguard the public, as may be directed by the town authorities, provided however, that the town may so close any street or alley if the public safety may require the same.	
25.1.25-13	It shall be unlawful for any person to spill or cause to be spilled from any vehicle any crushed rock, earth, concrete, sand, asphalt, petroleum products, wood scraps, shavings, feathers, paper or other material which might damage or litter the surface of the streets, sidewalks, alleys or other public ways of the town. it shall be the duty of the person hauling such material to provide tight vehicles, and not to load to such an extent or in such a manner that they will spill on or litter the streets, sidewalks, sidewalks, alleys or other public ways in town.	If there is no fee, fine, or penalty associated with such a spill, the Town should consider imposing such a penalty if the spill impacts the safety or travel of pedestrians, cyclists or motorists.
25.1.25-14	No person shall throw, place or deposit any glass, rocks, metals or other sharp cutting substances, or any injurious obstruction in, or upon, any of the public streets, sidewalks, alleys, or other public ways of the town.	If there is no fee, fine, or penalty associated with litter upon the public streets, sidewalks, alleys, or other public ways of the town, the Town should consider imposing such a penalty if the litter impacts the safety or travel of pedestrians, cyclists or motorists.
25.1.25-15	It shall be unlawful for any person to break and remove the street curbing in any of the town's improved streets; provided, however, it shall be permissible to remove such curbing as may be necessary for a driveway, curb ramp or other entrance or access way to private property if permission therefor is first obtained from the public works director.	
25.1.25-16	(a) All buildings fronting on any street or alley in the town shall be numbered in some conspicuous place by the owner thereof, according to the map made by the public works director and on file in his office, all odd numbers being on one side of the street and all even numbers on the other. (b) Any person desiring to have a number put on his building shall first apply to the public works director for the proper number, and any person failing or refusing to put the proper number on his building or putting the wrong number thereon, or failing or refusing to comply with any other requirement of this section shall be guilty of a misdemeanor.	





**Table 4.3: Siler City Town Code of Ordinances Review and Recommendations ~ (cont'd)**

Ordinance	Existing Ordinance Text (Abridged) Suggested additions shown in bold <i>italic</i> . Attention is drawn to italicized text.	Comments/Suggested Language
25.II.25-53	(1) A minimum right-of-way wide of fifty (50) feet dedicated for street purposes. In addition, the board may require a right-of-way width greater than fifty (50) feet if such street is to be used as a major thoroughfare or where greater widths are required by a major street plan or sidewalks. (2) A minimum right-of-way width of twenty (20) feet for all service alleys.	The Town should review minimum ROW width requirements and if necessary amend ROW width requirements based on functional class of roadway, users, etc. Alternatively, consider a minimum sidewalk width requirement.
25.II.25-54	Specific Improvements Required	Should be amended to include specific improvements for sidewalk construction and improvements.
25.III. 25-66	(5) Sidewalk surfacing according to town specifications for a width of not less than ten (10) feet.	It is not clear as to whether "street improvements" as defined in this section, also apply to sidewalks (Section 25-70 suggests that they are not included, whereas 25-71 (below) suggests that they are included). Should be amended for consistency.
25.III.25-71	(a) Property owners along streets which are surfaced and have curbs and gutters shall be responsible for replacing any driveway or walkway within the street right-of-way as a result of new street construction improvements. Driveway entrances and aprons at the curb line will be constructed by the town at the location designated by the property owner and the cost thereof will be included in the total cost assessed for street improvements.	
25.III.25-99	No person shall plant, grow or maintain in any restricted area any plant, hedge, shrub or other growth, except trees, at a height greater than three (3) feet from the street gutter flow line.	Definition should be amended to restrict plantings near curbside loading zones or passenger boarding/alighting areas.
25.III.25-100	Any trees planted, grown and maintained in any restricted area shall not have branches or foliage extending from the trunk thereof at a height lower than fifteen (15) feet from the street gutter flow line.	Definition should be amended to include maximum breadth of foliage/canopy (diameter), so as not to restrict pedestrian scale lighting.







*New sidewalk along W. Raleigh Street*





# 5 Implementation Strategies

## Overview

This chapter defines a structure for managing the implementation of the Town of Siler City Pedestrian Master Plan. Implementing the recommendations within this Plan will require leadership and dedication to pedestrian facility development on the part of a variety of agencies. Equally critical, and perhaps more challenging, will be meeting the need for a recurring source of revenue. Even small amounts of local funding could be very useful and beneficial when matched with outside sources. Most importantly, the Town of Siler City within the region need not accomplish the recommendations of this Plan by acting alone; success will be realized through collaboration with state and federal agencies, the private sector, and non-profit organizations. Funding resources that may be available to Siler City are presented in Chapter 6 of this Plan.

Given the present day economic challenges faced by local governments (as well as their state, federal, and private sector partners), it is difficult to know what financial resources will be available at different time frames during the implementation of this Plan. However, there are still important actions to take in advance of major investments, including key organizational steps, the initiation of education and safety programs, and the development of strategic, lower-cost pedestrian facilities. Following through on these priorities will allow the key stakeholders

to prepare for the development of the regional network over time while taking advantage of strategic opportunities, as they arise. Key action steps fall into three categories: policies, programs, and infrastructure. Each of the recommendations that constitute these categories have been presented in the previous chapters of this Plan. Infrastructure recommendations are presented in Chapter 3, and policy and program recommendations are presented in Chapter 4. More detailed action steps tied to each of these categories are found in the table at the end of this chapter along with the responsible agency and expected time frame for completion.

## Policy Action Steps

Several policy steps are crucial to the success of future facility development. These steps will legitimize the recommendations found in this Plan and enable the right-of-way acquisition necessary to carry out those recommendations.

### *Adopt This Plan*

Adoption procedures vary from community to community depending on existing plans and policies. In each jurisdiction, the planning board (as applicable) should review and recommend the plan to its governing body, which in turn must consider and officially incorporate the recommended pedestrian improvements of this plan into its land-use plans. The following entities should consider adopting this plan:

## CHAPTER CONTENTS

*Overview (5-1)*

*Policy Action Steps (5-1)*

*Programmatic Action Steps (5-2)*

*Infrastructure Action Steps (5-3)*

*Key Partners in Implementation (5-3)*

*Facility Development Methods (5-9)*

*Implementation Action Steps Table (5-15)*

- The Town of Siler City
- Chatham County
- The Triangle Area Rural Planning Organization

Adoption of this Plan also signifies that the design guidelines provided in Appendix A are established as pedestrian facility standards for each of the adopting agencies. This will establish consistency in design across jurisdictional boundaries, ensuring that future facilities will be developed with consistency and will accommodate a variety of user types.

This Plan and its recommended on- and off-road facilities should be approved by the NCDOT and NCDENR, and they should be included in the future planning of each agency. This Plan's recommendations should be integrated into an update to the Comprehensive Transportation Plan for Chatham County. NCDOT should refer to this document when assessing the impact for future projects and plans.

## ***Establish Land Right-of-Way Acquisition Mechanisms***

It is recommended that each local zoning and subdivision ordinance be amended to ensure that, as developments are planned and reviewed, the pedestrian facilities and greenway corridors identified in this Plan are protected. This would entail amending development regulations to have developers set aside land for trails whenever a development proposal overlaps with the proposed facilities, as adopted. Siler City staff should ensure that an effective review of all pedestrian and bicycle elements of proposed developments takes place.

In addition, local policies should be revised so that all new sewer and utility easements allow for public access for trail users, as a matter of right. Although many easements do not currently prohibit greenway development, they do require the approval of landowners, increasing the complexity of trail development in these easements.

Greenway trail right-of-way acquisition can be accomplished through a number of other methods where trail recommendations run through currently developed areas. Wherever acquisition is successful, property owners should be approached and informed by the implementing agency (e.g., the municipality, the county, NCDENR, etc.) in advance of the design process.

## **Programmatic Action Steps**

While policies provide a legal basis for on- and off-road facility development, the program recommendations included in Chapter 3 of this Plan will build community support for the creation of new facilities and establish a strong walking and bicycling culture.

### ***Form a Bicycle and Pedestrian Advisory Commission***

The Town of Siler City should establish a Bicycle and Pedestrian Advisory Commission (BPAC) to assist in the implementation of this Plan. The Town Planning & Community Development Department would oversee this group. The BPAC would be comprised of both commuting and recreational cyclists, bicycle and pedestrian advocates, and it should champion the recommendations of this Plan. Formation of the BPAC will also represent a significant step toward becoming a Walk Friendly Community. The BPAC would provide a communications link between the citizens of the community and the government. The BPAC should meet periodically to assist Town staff in community outreach, marketing, and educational activities recommended by this Plan.

### ***Become Designated as a Walk Friendly Community***

A long term goal for Siler City should be for the Town to seek a “Walk Friendly Community” (WFC) designation. The Walk Friendly Community campaign is an award program

that recognizes municipalities that actively support pedestrian activities and safety. A Walk Friendly Community provides safe accommodation for walking and encourages its residents to walk for transportation and recreation. The program is maintained by the University of North Carolina Highway Safety Research Center’s Pedestrian and Bicycle Information Center with support from a variety of partners. In North Carolina, Davidson, Cary and Charlotte have each become designated as bronze level Walk Friendly Communities.

The development and implementation of this Plan is an essential first step toward becoming a Walk Friendly Community. With ongoing efforts and the short- term work program recommended here, the Town should be in a position to apply for and receive WFC status within a few short years.

### ***Communication and Outreach***

A subgroup of the BPAC should be created to establish a communication campaign to celebrate successes as facilities are developed and otherwise raise awareness of the overall pedestrian network and its benefits. A key first task of this group is to design and implement a pedestrian and bicycle wayfinding system. Please refer to Appendix A: Design Guidelines for more information about signage and wayfinding.

### ***Establish a Monitoring Program***

From the beginning, and continuously through its life, the BPAC should brainstorm specific benchmarks to track through a monitoring program and honor their completion with public events and media coverage. Monitoring





should be supported by the programmatic recommendations included in Chapter 4, such as a pedestrian and bicycle needs checklist and a facility inspection and maintenance program. Benchmarks should be revisited and revised periodically as the pedestrian facility network evolves.

## Infrastructure Action Steps

While establishing the policies and programs described, Siler City should move forward with the design and construction of priority projects, described in Chapter 3. They should also work to identify funding for long-term, higher-cost projects.

### *Identify Funding*

Achieving the vision defined within this Plan will require, among other things, a stable and recurring source of funding. Communities across the country that have successfully engaged in pedestrian programs have relied on multiple funding sources to achieve their goals. No single source of funding will meet the recommendations identified in this Plan. Instead, stakeholders will need to work cooperatively with municipality, state, and federal partners to generate funds sufficient to implement the program.

A stable and recurring source of revenue is needed that can then be used to leverage grant dollars from state, federal, and private sources. The ability of local agencies to generate a source of funding for pedestrian facilities depends on a variety of factors, such as taxing capacity, budgetary resources,

voter preferences, and political will. It is very important that these local agencies explore the ability to establish a stable and recurring source of revenue for facilities.

Donations from individuals or companies are another potential source of funding. The BPAC should establish an Adopt-A-Greenway program as a mechanism to collect these donations for the development of the greenway trail recommendations discussed in Chapter 3. In addition to a formalized program, a website should be set up as an easy way for individuals to donate smaller amounts. Federal and state grants should be pursued along with local funds to pay for necessary ROW acquisition and project design, construction, and maintenance expenses. “Shovel-ready” designed projects should be prepared in the event that future federal funds become available. Additional recommended funding sources may be found in Chapter 6: Funding Resources.

### *Complete Short-Term Priority Projects*

By quickly moving forward on priority projects, Siler City will demonstrate their commitment to carrying out this Plan and will better sustain the enthusiasm generated during the public outreach stages of the planning process. Refer to Chapter 3: Network Recommendations for priority project ranking and the prioritization methodology.

## Key Partners in Implementation

The following are suggested roles for the core stakeholders involved in implementation. Actual roles may vary depending on how this Plan is implemented over time and the ongoing level of interest and involvement by specific stakeholders.

### *Role of State Agencies (NCDENR and NCDOT)*

As key supporting partners in the development of this Plan, NCDOT and NCDENR should continue to play a role in implementation, including participation in the following tasks.

The NCDOT Division of Bicycle and Pedestrian Transportation should be prepared to provide guidance and technical support to local NCDOT offices that are implementing pedestrian-related facilities, such as sidewalks, multi-use paths in roadway corridors, roadway crossings, and improvements that increase safety for pedestrians and bicyclists crossing bridges on state roadways.

NCDOT should also continue to work with local and regional planners to coordinate upcoming and future roadway projects with pedestrian and trail recommendations.

NCDENR should be a supporting partner and provide guidance on recommendations, such as pedestrian interface with natural resource areas and proper alignment of trails through sensitive and regionally significant environmental features.

## *Role of the Local NCDOT, Division 8*

Division 8 of the NCDOT is responsible for the construction and maintenance of pedestrian facilities on NCDOT-owned and maintained roadways in the Town of Siler City, except where it allows for the Town to do so with encroachment agreements. Division 8 should be prepared to:

- Recognize this Plan as an adopted plan of the Town of Siler City, and assist in the integration of this Plan's recommendations into an update to the NCDOT's CTP for Chatham County.
- Become familiar with the pedestrian facility recommendations for NCDOT roadways in this Plan (Chapter 3); take initiative in incorporating this Plan's recommendations into the Division's schedule of improvements whenever possible.
- Become familiar with the standards set forth in Appendix A of this Pedestrian Plan as well as state and national standards for pedestrian facility design; construct and maintain pedestrian facilities using the highest standards allowed by the State (including the use of innovative treatments on a trial basis).
- Notify the Town of Siler City Public Works & Utilities Department of all upcoming roadway reconstruction, resurfacing and restriping projects in Siler City, by no later than the design phase and provide sufficient time for comments from the planning staff.
- If needed, seek guidance and direction from the NCDOT Division of Bicycle and Pedestrian Transportation on issues related to this Plan and its implementation.



## *Role of the Triangle Area Rural Planning Organization (RPO)*

The RPO is the transportation planning agency serving the Town of Siler City and the surrounding communities. Local governments are represented by an elected official on the Transportation Advisory Committee (TAC) and staff members, NCDOT, and FHWA staff comprise the Technical Coordinating Committee (TCC). The RPO should be prepared to:

- Become familiar with the recommendations of this Plan and support its implementation.
- Oversee long range transportation planning and ensure the development of a multi-modal transportation network.
- Ensure recommendations from this Pedestrian Plan are integrated into regional planning and project implementation.







*Mural in downtown Siler City*

- Follow upcoming roadway reconstruction and resurfacing projects and work early in the design process with Town and NCDOT staff to ensure pedestrian facilities are incorporated into the design.
- Keep up with current and changing funding sources and opportunities such as Safe Routes to School.

### ***Role of the Town Board***

The Town Board will be responsible for adopting this Plan. Through adoption, the Town's leadership would further recognize the value of pedestrian transportation and put forth a well-thought out set of recommendations for improving public safety and overall quality of life (see the 'Benefits of a Walkable Community' in Chapter 1). By adopting this Plan, the Town Board would also signify that they are prepared to support the efforts of other key partners in the Plan's implementation, including the work of Town departments and NCDOT Division 8.

### ***Role of the Town of Siler City Planning & Community Development Department***

The planning staff handles comprehensive planning, zoning and code enforcement. The department will take primary responsibility for the contact with new development to implement the Plan, with support from the Public Works & Utilities Department. The staff should be prepared to:

- Communicate and coordinate with local developers on adopted recommendations for pedestrian facilities, including paved multi-use trails.
- Assist the Public Works & Utilities Department in communicating with the NCDOT and regional partners.
- Maintain and update the pedestrian and bicycle facility GIS database which includes sidewalks, greenways, bicycle facilities and crossing facilities.

### ***Role of the Town of Siler City Public Works & Utilities Department***

The Public Works & Utilities Department handles the responsibility for the construction and maintenance of pedestrian facilities on Town-owned and maintained roadways, as well as on NCDOT roadways, where encroachment agreements are secured. The department also operates and maintains traffic signalization, traffic signs, and markings. The department should be prepared to:

- Communicate and coordinate with other Town departments and the BPAC on priority pedestrian projects.

- Become familiar with the design standards set forth in Appendix A of this Pedestrian Master Plan, as well as state and national standards for pedestrian facility design.
- Secure encroachment agreements for work on NCDOT-owned and maintained roadways.
- Assist with local roadway projects and ensure pedestrian accommodations are being made.
- Design, construct, and maintain pedestrian facilities.
- Communicate and coordinate with NCDOT Division 8 on this Plan's recommendations for NCDOT-owned and maintained roadways. Provide comment and reminders about this Plan's recommendations no later than the design phase.
- Work with Division 8 to ensure that when NCDOT-owned and maintained roadways in Siler City are resurfaced or reconstructed, that this Plan's adopted recommendations for pedestrian facilities are included on those streets. If a compromise to the original recommendation is needed, then contact NCDOT Division of Bicycle and Pedestrian Transportation for guidance on appropriate alternatives.

### ***Role of the Town of Siler City Parks & Recreation Department***

The Town of Siler City Parks and Recreation Department operates five parks, two gymnasiums, community center, and swimming pool. They also sponsor seasonal activities such as football, soccer, baseball, softball, volleyball, basketball, tennis, instructional classes, summer programs for you ages 6 to 18, swimming lessons, and a program for senior citizens.



*Siler City Public Works Crews*

The Parks and Recreation Department should be prepared to:

- Meet with the BPAC; provide progress updates for plan implementation and gather input regarding pedestrian and trail related issues
- Pursue grants for funding priority projects and priority programs
- Select and carry out walking-related programs; Work with locale advocacy groups and the BPAC to assist in organizing walking/running events, educational activities, and enforcement programs
- Communicate and coordinate with Chatham County and neighboring municipalities and counties on regional trail facilities such as the CTT; partner for joint funding opportunities
- Identify safety concerns and work with residents to improve trail safety and the perception of safety



*Playground in Siler City*







*Mural in downtown Siler City*

### ***Role of the Town of Siler City Police Department***

The Town of Siler City Police Department is responsible for providing the community the highest quality law enforcement service and protection to ensure the safety of the citizens and visitors to Siler City. The Police Department should be prepared to:

- Become experts on pedestrian-related laws in North Carolina
- Develop pedestrian/bicycle unit of pedestrian/bicycle-trained law enforcement officers to utilize existing equipment
- Continue to enforce not only pedestrian-related laws, but also motorist laws that affect the safety of pedestrians, such as speeding, running red lights, aggressive driving, etc.
- Participate in pedestrian-related education programs

- Review safety considerations with the Public Works & Utilities Department as projects are implemented

### ***Role of the Bicycle Pedestrian Advisory Committee***

The Committee should be prepared to:

- Meet with staff from the RPO, Planning & Community Development, and the Public Works & Utilities departments
- Evaluate progress of the Plan's implementation and offer input regarding pedestrian-related issues; assist Town staff in applying for grants and organizing pedestrian-related events and educational activities
- Build upon current levels of local support for pedestrian issues and advocate for local project funding

### ***Role of Developers***

Developers in Siler City can play an important role in facility development whenever a project requires the enhancement of transportation facilities or the dedication and development of sidewalks, trails or crossing facilities. Developers should be prepared to:

- Become familiar with the benefits, both financial and otherwise, of providing amenities for walking and biking (including trails) in residential and commercial developments
- Become familiar with the standards set forth in Appendix A of this Plan, as well as state and national standards for pedestrian facility design
- Be prepared to account for a pedestrian circulation and connectivity in future developments



*Bicycle Police example*

## Role of Local & Regional Stakeholders

Stakeholders for pedestrian facility development and related programs, surrounding jurisdictions, El Vínculo Hispano, the Chatham County Public Health Department, the Chatham County School system, and local economic development organizations play important roles in the implementation of this plan. Local and regional stakeholders should be prepared to:

- Become familiar with the recommendations of this Plan, and communicate & coordinate with the Town for implementation, specifically in relation to funding opportunities, such as grant writing and developing local matches for facility construction
- Chatham County should coordinate with the City on regional trail development and SRTS grants
- The local school system and school leaders should assist in carrying out SRTS workshops, programs, and also assist in SRTS grant applications

## Role of Local Residents, Clubs and Advocacy Groups

Local residents, clubs and advocacy groups play a critical role in the success of this plan. They should be prepared to:

- Continue offering input regarding pedestrian issues in Siler City
- Assist Town staff and BPAC by volunteering for pedestrian-related events and educational activities and participate in such activities
- Assist Town staff and the BPAC by speaking at Town Board meetings and advocating for local pedestrian project and program funding



*Siler City Local Government*

## Role of Volunteers

Services from volunteers, student labor, and seniors, or donations of material and equipment may be provided in-kind, to offset construction and maintenance costs. Formalized maintenance agreements, such as an Adopt-a-Trail (or greenway) or Adopt-a-Highway can be used to provide a regulated service agreement with volunteers. Other efforts and projects can be coordinated as needed with senior class projects, scout projects, interested organizations, clubs or a neighborhood's community service group. Advantages of utilizing volunteers include reduced or donated planning and construction costs, community pride and personal connections to the Town's greenway and pedestrian networks.



*Tienda in downtown Siler City*





*El Vínculo Hispano - Hispanic liaison in downtown Siler City*

any other local transportation improvements. While doing this, the Town should be aware of the different procedures for local and state roads.

### ***NCDOT Transportation Improvement Program***

The Transportation Improvement Program (TIP) is an ongoing program at NCDOT which includes a process asking localities to present their transportation needs to state government. Pedestrian facility and safety needs are an important part of this process. Every other year, a series of TIP meetings are scheduled around the state. Following the conclusion of these meetings, all requests are evaluated. Pedestrian improvement requests, which meet project selection criteria, are then scheduled into a four-year program as part of the state’s long-term transportation program.

There are two types of projects in the TIP:

**Incidental and independent.** Incidental projects are those that can be incorporated into a scheduled roadway improvement project. Independent are those that can stand alone such as a trail project, not related to a particular roadway.

The Town of Siler City, guided by the priority projects within this Plan, should present pedestrian projects along state roads to the TARPO and NCDOT. Local requests for small pedestrian projects, such as crosswalks and smaller segments of sidewalk, can be directed to the TARPO or the local NCDOT Division 8 office.

## **Facility Development Methods**



*Bicycle Club example*

This section describes different construction methods for the proposed pedestrian network outlined in Chapter 3. Note that many types of transportation facility construction and maintenance projects can be used to create new pedestrian facilities. It is much more cost-effective to provide pedestrian facilities during roadway construction and re-construction projects than to initiate the improvements later as “retrofit” projects.

To take advantage of upcoming opportunities and to incorporate pedestrian facilities into routine transportation and utility projects, the Town should keep track of NCDOT’s projects and

## ***Local Roadway Construction or Reconstruction***

Pedestrians should be accommodated any time a new road is constructed or an existing road is reconstructed. All new roads with moderate to heavy motor vehicle traffic should have sidewalks and safe intersections. The Town of Siler City should take advantage of any upcoming construction projects, including roadway projects outlined in local comprehensive and transportation plans. Also, case law surrounding the ADA has found that roadway resurfacing constitutes an alteration, which requires the addition of curb ramps at intersections where they do not yet exist.

## ***Residential And Commercial Redevelopment***

The construction of sidewalks and safe crosswalks should be required during development. Construction of pedestrian facilities that corresponds with site construction is more cost-effective than retro-fitting. In commercial development, emphasis should also be focused on safe pedestrian access into, within, and through large parking lots.

This ensures the future growth of the pedestrian network and the development of safe communities.

## ***Retrofit Intersections and Roadways with New Pedestrian Facilities***

There may be critical locations in the pedestrian network that have pedestrian safety issues or are essential links to destinations. In these locations,



*Greenway construction example*

it may be justifiable to add new pedestrian facilities before an intersection or roadway is scheduled to be repaved or reconstructed.

In some places, it may be relatively easy to add crosswalk markings but others may require constructing curb extensions, building refuge islands or ADA compliant curb ramps. Retrofitting intersections with curb dimensions or roadways with side paths create challenges. Improvements in these locations are typically recommended in the long-term.

Some roads may require a “road diet” solution in order to accommodate pedestrian facilities. Road diets involve removing vehicle travel lanes and replacing these lanes with on-road bicycle facilities and sidewalks or side paths. These are generally recommended only in situations where the vehicular traffic count can be safely and efficiently accommodated with a reduced number of travel lanes. Further study may



*Downtown Siler City*





*Birch Avenue and Raleigh Street intersection*

be necessary for recommended road diets to ensure that capacity needs are balanced against pedestrian needs, maintaining expected levels of service for each.

### ***Rail-to-Trail Process***

Many communities in the Southeastern United States, and North Carolina in particular, are beginning to more frequently pursue the development of greenway trail projects along former railroad corridors, known as “rail to trail” projects, through the federal process of “railbanking.”

The following information on “railbanking” was obtained from the Rails-to-Trails Conservancy website. Railbanking takes place during the rail corridor abandonment process. Official negotiations with the railroad begin after the railroad submits an initial notification to abandon the line (similar to a letter of intent to abandon) to the Surface Transportation Board (STB). Negotiations end with either railbanking or line abandonment.

Railroads must follow one of three abandonment procedures that the STB has developed: Regulated Abandonment (the most stringent and least common), Individual Exemption or Class Exemption. Railroads that follow the Individual Exemption procedure will file a Petition for Exemption, which is used when the transaction is of “limited scope,” or when regulation of the transaction is “not needed to protect the shippers from the abuse of market power.” Class Exemptions, currently the most common option, apply if the line has not been in use for two or more years, or if the STB finds there is no vital interest in continuing rail service on that line.

Under the railbanking statute, a railroad is allowed to remove all of its equipment, with the exception of bridges, tunnels, and culverts, from a corridor and to turn the corridor over to any qualified private organization or public agency that has agreed to maintain the corridor for future rail use. This property transfer precludes abandonment.

In 1990 the U.S. Supreme Court unanimously ruled, in the case of *Preseault v. United States*, that preserving a corridor for future rail use through railbanking is a legitimate exercise of governmental power. Although the corridor will no longer have tracks and ties, it is still being used for railroad purposes, legally speaking. This means that a railroad can legally transfer all forms of its ownership, including easements, to a trail group.

Any railroad may legally decide to re-establish rail service on a railbanked corridor. Should that occur, the trail managing agency would be entitled to compensation from the railroad that wants to reestablish rail service. In most cases, a



*Intersection construction example*



trail group could expect to receive fair market value for the property as well as payment for all improvements. However, this issue may need to be specifically addressed in the initial contract with the abandoning railroad, since it may want to develop other payment terms.

As railbanking is voluntary, Siler City will need to convince the railroad that railbanking the corridor is in the railroad's best interest. This is particularly important because most railroad personnel have historically relied on the piecemeal sale of a corridor as their preferred method for disposing of a corridor.

Information on railbanking obtained from:

[http://www.railstotrails.org/our Work/trailBuilding/toolbox/information Summaries/how\\_to\\_railbank.html](http://www.railstotrails.org/our-Work/trailBuilding/toolbox/information-Summaries/how_to_railbank.html)

## ***Bridge Replacement***

Provisions should always be made to include a walking facility as a part of vehicular bridges, underpasses, or tunnels, especially if the facility is part of the Pedestrian Network. All new or replacement bridges should accommodate pedestrians with wide sidewalks on both sides of the bridge. Even though bridge construction and replacement does not occur regularly (especially in Siler City) it is important to consider these policies for long-term pedestrian planning.

NCDOT bridge policy states that sidewalks shall be included on new NCDOT road bridges with curb and gutter approach roadways. A determination of providing sidewalks on one or both sides is made during the planning process. Sidewalks across a new bridge shall be a minimum of five to six feet wide with a minimum handrail height of 42".



*Abandoned rail bed example*

Potential bridge replacement locations include multiple bridges on US 64 (11th Street) running east/west through Siler City as well as the N Chatham Avenue bridge over US 64. The US 64 bridge over US 421 should be considered for a future side path connection across US 421.

Bridge replacement projects on controlled access freeways where pedestrians and bicyclists are prohibited by law should not include facilities to accommodate pedestrians and bicyclists. In cases, however, where a bridge replacement project on a controlled access freeway impacts a non-controlled access roadway (i.e., a new overpass over an arterial roadway), the project should include the necessary access for pedestrians and bicyclists on the non-limited access roadway (e.g., paved shoulders, sidewalks, and pedestrian/bicycle crossing improvements).



*Rail trail example*







*Railroad crossing at Raleigh St*



*US 64 Bridge*

### **At-Grade Railroad Crossings**

Railroad crossings are particularly hazardous to those who rely on wheeled devices for mobility (railroad crossings have flangeway gaps that allow passage of the wheels of the train, but also have the potential to catch wheelchair casters and bicycle tires). In addition, rails or ties that are not embedded in the travel surface create a tripping hazard.

Several crossings of the Norfolk and Southern railroad line occur through downtown Siler City. As roadway improvements for these sections are planned, the Town Public Works & Utilities Department and NCDOT should work with Norfolk and Southern to ensure railroad crossing improvements are communicated and prioritized during the planning and design process.

### **Signage and Wayfinding Projects**

Signage programs that include informational, warning, and regulatory signage along specific routes or in an entire community can be updated to include wayfinding signage, to make it easier for people to find destinations. Pedestrian-scale signage as a component of a wayfinding signage program should be installed along roadways independently of other signage projects or as a part of a more comprehensive wayfinding improvement project. More information on signage design standards can be found in Appendix A of this plan.

### **Maintenance**

All facilities, including sidewalks and crosswalks require regular maintenance to reduce the damage caused over time by the effects of weather, use, and surrounding human and natural infrastructure (such as tree roots). A connected sidewalk system is useless if maintenance is neglected and sidewalks degrade or marked crosswalks fade. Walkway maintenance includes: fixing potholes, sidewalk decay, damaged benches, and restriping crosswalks.

In order to maintain passable sidewalk conditions, it is important to have a system in place to identify maintenance needs on existing sidewalks. Options include:

- Devoting a branch of the Public Works & Utilities department to sidewalk inspection and repair

- Developing a public reporting system where pedestrians can report maintenance issues
- Establishing maintenance of existing sidewalks and crosswalks as part of the overall pedestrian facility component of the capital improvement program

Typical pedestrian facility maintenance problems include:

- Step separation (vertical displacement at any point in the walkway that could cause pedestrians to trip or prevent wheelchair or stroller wheels from rolling smoothly)
- Badly cracked concrete/asphalt
- Settled areas that trap water (depressions in sidewalk or curb ramp that hold water)
- Tree root damage
- Vegetation overgrowth
- Obstacles in sidewalk
- Pedestrian countdown signal malfunction
- Faded, invisible marked crosswalk
- Damaged ancillary facilities such as benches, garbage cans, and pedestrian scale lighting

It is recommended that the Town of Siler City take a three-step approach to pedestrian facility maintenance. First, the Town should provide a hotline and/or maintenance request form to accept residents complaints for improvement and repair. Residents complaints should be given first consideration for improvement or repair if the reporting involves a safety or access issue. Secondly, the Town should devote some of its Public

Works and Utilities staff to conducting routine sidewalk and crosswalk inspection. Public Works and Utilities staff will need to work closely with NCDOT staff to ensure sidewalk and crosswalk maintenance on all roads in Siler City as part of regular practice. Third, the Town should make it the responsibility of individual property owners to maintain clear sidewalks, free of debris and vegetation.





**Table 5.1 Implementation Action Steps Table**

Action Step	Lead Agency	Support	Details	Phase
Present Plan to Town	Project Consultants	Planning & Community Development Staff	Presentation to Town BOC in Summer 2013	Short term
Adopt this plan	Town Board	Planning & Community Development Staff, Project Consultants	Through adoption, the Plan becomes an official planning document of the Town. Adoption shows that the Town of Siler City has undergone a successful, supported planning process.	Short term
Present this Plan to other local and regional bodies and agencies.	Planning & Community Development Staff	BPAC	This Plan should be presented to other local and regional bodies and agencies. Possible groups to receive a presentation might include the regional transportation and greenway planners, health clubs and fitness facilities, schools and youth organizations, environmental clubs, civic organizations, chambers of commerce, and large neighborhood groups.	Short term
Present this Plan's recommendations to NCDOT Division and District Offices, as well as other Departments.	Planning & Community Development Staff	NCDOT Bike/Ped Division	This Plan should be presented to other NCDOT Divisions, Districts and Departments to integrate this Plan's recommendations into an update to the Comprehensive Transportation Plan (CTP).	Short term
Designate Staff	Town Board & Town Manager	Leadership of Town/ Town Departments	Designate staff to oversee the implementation of this plan and the proper maintenance of the facilities that are developed. It is recommended that a combination of existing Planning & Community Development and Public Works & Utilities Staff oversee the day-to-day implementation of this plan.	Short term
Create a Bicycle and Pedestrian Advisory Committee (BPAC)	Town	Planning & Community Development Staff	The committee should help coordinate the implementation of this Plan, develop programs, listen to community needs, promote the pedestrian network, and keep positive momentum going.	Short term
Provide police officers with educational material to hand out with warnings	Police Department	NCDOT Bike/Ped Division	Provide officers with an informational handout to be used during pedestrian and bicycle-related citations and warnings.	Short term



**Table 5.1 Implementation Action Steps Table ~ (cont'd)**

Action Step	Lead Agency	Support	Details	Phase
Adopt the Recommendations for Amendments to the Town Code of Ordinances & UDO	Town Board	Planning & Community Development Staff, Town Public Works & Utilities, Town Legal, NCDOT Bike/Ped Division	Changing current policy has the greatest long-term implication of any action that a government can take to alter its future conditions. By doing so, it implies that the community is committed to providing an efficient multi-modal transportation network such that access, mobility, and safety needs of motorists, pedestrians, and bicyclists are accommodated.	Short term
Launch Programs as New Projects are Built	BPAC	Planning & Community Development Staff	Assist in the coordination of education and encouragement programs, such as Bicycle/ Pedestrian Month Activities.	Ongoing/ Medium term
Begin Semi-annual Meeting With Key Project Partners	Planning & Community Development Staff	Town Departments, NCDOT, BPAC, and local & regional stakeholders	Key project partners should meet on a semi-annual basis to evaluate the implementation of this Plan. Meetings could also occasionally include on-site tours of locations where facilities are recommended. TARPO meetings could also serve as an opportunity to coordinate.	Ongoing/ Medium term
Seek Multiple Funding Sources and Begin Facility Development	Planning & Community Development Staff	Finance Director, BPAC	Chapter 3 contains recommended projects. See Chapter 6 for potential funding opportunities.	Ongoing/ Medium term
Design Orientation	Town Engineer and NCDOT Division 8	NCDOT Bike/Ped Division	Become familiar with the guidelines featured in Appendix A of this Plan, as well as state and national standards for pedestrian facility design.	Fall 2013
Develop Pedestrian Facility and Trail Specifications	Public Works & Utilities Staff	Planning & Community Development Staff	Town staff could prepare these using the design guidelines in Appendix A.	Ongoing/ Medium term
Notify Town Planning & Community Development staff of all upcoming roadway reconstruction or resurfacing/restriping projects, no later than the design phase.	Public Works & Utilities Director, and NCDOT Division 8	Planning & Community Development Staff, NCDOT Bike/Ped Division, & NCDOT Chatham County Maintenance Engineer	Provide sufficient time for comments. Incorporate pedestrian recommendations from this Plan. If a compromise to the original recommendation is needed, then contact NCDOT Division of Bicycle and Pedestrian Transportation for guidance on appropriate alternatives. Also, coordinate with the NCDOT Chatham County Maintenance Engineer, on the Annual Resurfacing Plan's 3-year project list.	Ongoing/ Medium term





**Table 5.1 Implementation Action Steps Table ~ (cont'd)**

Action Step	Lead Agency	Support	Details	Phase
Develop a long term funding strategy	Town Manager & Finance Director	Planning & Community Development Staff & Town Board	To allow continued development of the overall system, capital and Powell Bill funds for pedestrian facility construction should be set aside every year, even if only a small amount (small amounts of local funding can be matched to outside funding sources). Funding for an ongoing maintenance program should also be included in the Town's operating budget.	Medium term
Ensure planning efforts are being integrated regionally	Planning & Community Development Staff	Regional planning organizations, neighboring municipalities, BPAC	Combining resources and efforts with surrounding municipalities, regional entities, and stakeholders is mutually beneficial, especially with trail development. Communicate and coordinate with the regional partners on regional trails and pedestrian facilities and partner on joint-funding opportunities. After adoption by the Town, this document should also be recognized in regional transportation plans.	Ongoing/ Medium term
Apply for further Safe Routes to School Grants and Infrastructure Funding	Planning & Community Development Staff	NCDOT Division 8 & BPAC	Establish 'walking school buses' 'bike-to-school' groups or other similar activities for children through the Safe Routes to School Program. Inquire about pedestrian infrastructure funding for projects within 1.5 miles of schools through NCDOT Division 8.	Medium term
Explore possibility of a regional multi-modal coordinator	Town Manager	Planning & Community Development Staff, BPAC, regional planning organizations, and neighboring municipalities	Explore the possibility of partnership with neighboring municipalities or the RPO in hiring a regional Multi-Modal Transportation Coordinator	Medium term
Become familiar with the pedestrian facility recommendations for NCDOT roadways in this Plan (Chapter 4); take initiative in incorporating this Plan's recommendations into the Division's schedule of improvements.	NCDOT Division 8	Planning & Community Development Staff, NCDOT Bike/Ped Division	Construct and maintain all pedestrian facilities using the highest standards allowed by the State including Complete Streets guidelines (as well as considering the possibility of using innovative treatments on a trial-basis). Seek guidance and direction from the NCDOT Division of Bicycle and Pedestrian Transportation on issues related to this Plan and its implementation.	Ongoing





*Pedestrians near E. Ninth Street*





# 6 Funding Resources

## Overview

When considering possible funding sources for the Town of Siler City's pedestrian projects, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. It will be necessary to consider several sources of funding, that when combined, will support full project completion. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and non-profit sectors. A summary table of funding sources is included at the end of this appendix. It should be noted that this section reflects the funding available at the time of writing. The funding amounts, fund cycles, and even the programs themselves are susceptible to change without notice.



U.S. Department  
of Transportation

**Federal Highway  
Administration**

## Federal Funding Sources

Federal funding is typically directed through state agencies to local governments either in the form of grants or direct appropriations. Federal funding typically requires a local match of anywhere from five percent to 50 percent, but there are sometimes exceptions, such as the recent American Recovery and Reinvestment Act stimulus funds, which did not require a match. The following is a list of possible Federal funding sources that could be used to support construction of pedestrian and bicycle improvements.

### *Moving Ahead for Progress in the Twenty-First Century (MAP-21)*

The largest source of federal funding for pedestrian and bicycle projects is the USDOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal-Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty-First Century (MAP-21) was enacted in July 2012 as Public Law 112-141. The Act replaces the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 - June 2012.

MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27 month period between July 2012 and September 2014. It is not possible to guarantee the continued availability of any listed MAP-21 programs,

## CHAPTER CONTENTS

*Overview (6-1)*

*Federal Funding Sources (6-1)*

*State Funding Sources (6-5)*

*Local Government Funding Sources (6-10)*

*Private and Non-Profit Funding Sources (6-11)*

*Funding Source Summary Table (6-15)*

or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and thus may continue to provide capital for active transportation projects and programs.

In North Carolina, federal monies are administered through the North Carolina Department of Transportation (NCDOT) and Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

There are a number of programs identified within MAP-21 that are applicable to pedestrian and bicycle projects. These programs are discussed below.

For more information, visit: <http://www.fhwa.dot.gov/map21/summaryinfo.cfm>

## ***Transportation Alternatives***

Transportation Alternatives (TA) is a new funding source under MAP-21 that consolidates three formerly separate programs under SAFETEA-LU: Transportation Enhancements (TE), Safe Routes to School (SRTS), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, and rail-trails. TA funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TA does not provide a guaranteed set-aside for this activity as SAFETEA-LU did.

Average annual funds available through TA over the life of MAP-21 equal \$814 million nationally, which is based on a 2% set-aside of total MAP-21 allocations. Note that state DOT's may elect to transfer up to 50% of TA funds to other highway programs, so the amount listed on the website represents the maximum potential funding. Remaining TA funds (those monies not re-directed to other highway programs) are disbursed through a separate competitive grant program administered by NCDOT. Local governments, school districts, tribal governments, and public lands agencies are permitted to compete for these funds.

Each State Governor is given the opportunity to "opt out" of the Recreational Trails Program. However, as of the date of the writing of this Plan, only Florida and Kansas have "opted out" of the RTP. For all other states, dedicated funds for recreational trails continue to be provided as a subset of TA. MAP-21 provides \$85 million nationally for the RTP.

For the complete list of eligible activities, visit: [http://www.fhwa.dot.gov/environment/transportation\\_enhancements/legislation/map21.cfm](http://www.fhwa.dot.gov/environment/transportation_enhancements/legislation/map21.cfm)

For funding levels, visit: <http://www.fhwa.dot.gov/MAP21/funding.cfm>

## ***Surface Transportation Program***

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of bicycle and pedestrian improvements are eligible, including on-street bicycle facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded bicycle and pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. 50% of each state's STP funds are sub-allocated geographically by population to the MPOs; the remaining 50% may be spent in any area of the state.

For more information, visit: <http://www.fhwa.dot.gov/map21/stp.cfm>

## ***Highway Safety Improvement Program***

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides \$2.4 billion nationally for projects and programs that

help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural roads set-aside unless safety statistics demonstrate that fatalities are increasing on these roads. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds.

For more information: <http://www.fhwa.dot.gov/map21/hsip.cfm>

## ***Congestion Mitigation/ Air Quality Program***

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. States with no non-attainment areas may use their CMAQ funds for any CMAQ or STP eligible project. These federal dollars can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. Communities located in attainment areas who do not receive CMAQ funding apportionments may apply for CMAQ funding to implement projects that will reduce travel by automobile. Siler City area is not currently non-attainment or maintenance, and therefore not eligible for CMAQ at this time.

For more Information: <http://www.fhwa.dot.gov/map21/cmaq.cfm>





## **Federal Transit Administration (FTA) Metropolitan and Statewide Planning**

This program provides funding for statewide and metropolitan coordinated transportation planning. Federal planning funds are first apportioned to State DOTs. State DOTs then allocate planning funding to MPOs. Eligible activities include pedestrian or bicycle planning to increase safety for non-motorized users, and to enhance the interaction and connectivity of the transportation system across and between modes.

For more information: <http://www.fhwa.dot.gov/map21/mp.cfm>

## **Enhanced Mobility of Seniors and Persons with Disabilities**

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. Eligible subrecipients are private non-profit organizations, governmental authorities where no non-profit organizations are available.

For more information: [http://www.fta.dot.gov/documents/MAP-21\\_Fact\\_Sheet\\_-\\_Enhanced\\_Mobility\\_of\\_Seniors\\_and\\_Individuals\\_with\\_Disabilities.pdf](http://www.fta.dot.gov/documents/MAP-21_Fact_Sheet_-_Enhanced_Mobility_of_Seniors_and_Individuals_with_Disabilities.pdf)

## **Partnership for Sustainable Communities**

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to “improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure (“Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health”).

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including both TIGER I and TIGER II grants). North Carolina jurisdictions should track Partnership communications and be prepared to respond proactively to announcements of new grant programs. Initiatives that speak to multiple livability goals are more likely to score well than initiatives that are narrowly limited in scope to bicycle improvement efforts.

For more information: <http://www.epa.gov/smartgrowth/partnership/>

Resource for Rural Communities: [http://www.sustainablecommunities.gov/pdf/Supporting\\_Sustainable\\_Rural\\_Communities\\_FINAL.PDF](http://www.sustainablecommunities.gov/pdf/Supporting_Sustainable_Rural_Communities_FINAL.PDF)



## **Land and Water Conservation Fund**

The Land and Water Conservation Fund (LWCF) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. The program is administered by the Department of Environment and Natural Resources as a grant program for states and local governments. Maximum annual grant awards for county governments, incorporated municipalities, public authorities, and federally recognized Indian tribes are \$250,000. The local match may be provided with in-kind services or cash.

More information: [http://www.ncparks.gov/About/grants/lwcf\\_main.php](http://www.ncparks.gov/About/grants/lwcf_main.php)



## ***Rivers, Trails, and Conservation Assistance Program***

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation funds available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development in North Carolina locales indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

More information: <http://www.nps.gov/ncrc/programs/rtca/> or contact the Southeast Region RTCA Program Manager Deirdre “Dee” Hewitt at (404) 507-5691

## ***National Scenic Byways Discretionary Grant Program***

The National Scenic Byways Discretionary Grants program provides merit-based funding for byway-related projects each year, utilizing one or more of eight specific activities for roads designated as National Scenic Byways, All-American Roads, State scenic byways, or Indian tribe scenic byways. The activities are described in 23 USC 162(c). This is a discretionary program; all projects are selected by the US Secretary of Transportation.

Eligible projects include construction along a scenic byway of a facility for pedestrians and bicyclists and improvements to a scenic byway that will enhance access to an area for the purpose of recreation. Construction includes the development of the environmental documents, design, engineering, purchase of right-of-way, land, or property, as well as supervising, inspecting, and actual construction.

More information: <http://www.bywaysonline.org/grants/>



## ***Federal Lands Transportation Program***

The FLTP funds projects that improve access within Federal lands (including national forests, national parks, national wildlife refuges, national recreation areas, and other Federal public lands) on federally owned and maintained transportation facilities. \$300 million per fiscal year has been allocated to the program for 2013 and 2014.

More information: <http://www.fhwa.dot.gov/map21/fltp.cfm>

## ***Energy Efficiency and Conservation Block Grants***

The Department of Energy's Energy Efficiency and Conservation Block Grants (EECBG) may be used to reduce energy consumptions and fossil fuel emissions and for improvements in energy efficiency. Section 7 of the funding announcement states that these grants provide opportunities for the development and implementation of transportation programs to conserve energy used in transportation including development of infrastructure such as bike lanes and pathways and pedestrian walkways. Although the current grant period has passed, more opportunities may arise in the future.

More information: <http://www1.eere.energy.gov/wip/ecbg.html>





# State Funding Sources

The funding sources covered in this section were updated in the Fall of 2013 and reviewed for accuracy by NCDOT Division 8 staff as well as staff from the NCDOT's Division of Bicycle and Pedestrian Transportation. However, at the time of development of this plan, the Strategic Transportation Investment initiative was under review by the Joint Legislative Transportation Oversight Committee. Therefore, the status of future funding sources is subject to change. The availability of these funding resources should be confirmed during the implementation of a project.

## North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program

The NCDOT's State Transportation Improvement Program is based on the Strategic Transportation Investments bill, signed into law in 2013. The Strategic Transportation Investments (STI) initiative introduces the Strategic Mobility Formula, a new way to fund and prioritize transportation projects to ensure they provide the maximum benefit to our state. It allows NCDOT to use its existing revenues more efficiently to fund more investments that improve North Carolina's transportation infrastructure, create jobs and help boost the economy.

The Strategic Transportation Investments initiative is scheduled to be fully implemented by July 1, 2015. Projects funded for construction before then will proceed as scheduled under the current Equity Formula; projects slated for after that time will be ranked and programmed according to the



new formula. The new Strategic Mobility Formula assigns projects for all modes into one of three categories: Statewide Mobility, Regional Impact, and Division Needs. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are ranked on the following five criteria:

- Safety
- Access
- Demand or density
- Constructability
- Benefit/cost ratio

This ranking largely determines which projects are included in the department's State Transportation Improvement Program (STIP). The STIP is a federally mandated transportation planning document that details transportation improvements prioritized by stakeholders for inclusion in the Work Program over the next ten years. The STIP is updated every two years.

The STIP contains funding information for various transportation divisions of NCDOT including: highways, aviation, public transportation, rail, bicycle and pedestrians, and the Governor's Highway Safety Program. Access to many federal funds require that

projects be incorporated into the STIP. The STIP is the primary method for allocating state and federal transportation funds. However, beginning July 1, 2015, state funds cannot be used to match federally funded projects. Only Powell Bill or local funds can be used as a match for federally funded bicycle and pedestrian projects.

For more information on STI: [www.ncdot.gov/strategictransportationinvestments/](http://www.ncdot.gov/strategictransportationinvestments/)

To access the STIP: <https://connect.ncdot.gov/projects/planning>.

For more about the STIP process: <http://www.ncdot.org/performance/reform/>

## Incidental Projects

Bicycle and pedestrian accommodations such as bike lanes, sidewalks, intersection improvements, widened paved shoulders and bicycle and pedestrian-safe bridge design are frequently included as incidental features of highway projects.

In addition, bicycle-safe drainage grates are a standard feature of all highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds or with a local fund match. More information: <http://www.ncdot.gov/bikeped/funding/process/>



## **Spot Safety Program**

The Spot Safety Program is a state funded public safety investment and improvement program that provides highly effective low cost safety improvements for intersections, and sections of North Carolina's 79,000 miles of state maintained roads in all 100 counties of North Carolina. The Spot Safety Program is used to develop smaller improvement projects to address safety, potential safety, and operational issues. The program is funded with state funds and currently receives approximately \$9 million per state fiscal year. Other monetary sources (such as Small Construction or Contingency funds) can assist in funding Spot Safety projects, however, the maximum allowable contribution of Spot Safety funds per project is \$250,000.

The Spot Safety Program targets hazardous locations for expedited low cost safety improvements such as traffic signals, turn lanes, improved shoulders, intersection upgrades, positive guidance enhancements (rumble strips, improved channelization, raised pavement markers, long life highly visible pavement markings), improved warning and regulatory signing, roadside safety improvements, school safety improvements, and safety appurtenances (like guardrail and crash attenuators).

A Safety Oversight Committee (SOC) reviews and recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SOC to select projects for recommendation to the BOT include, but are not limited to, the frequency of correctable crashes, severity of crashes, delay, congestion, number of signal warrants met, effect on pedestrians and schools, division and region priorities, and public interest.

For more information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>

## **Pedestrian Funds**

Each of the 14 NCDOT Highway Divisions administers \$100,000 in pedestrian funds within its jurisdiction. These funds are used for new sidewalk construction. A written request should be submitted to the Division Engineer providing technical information such as justification, location, improvements being requested, timing, etc., for thorough review.

## **High Hazard Elimination Program**

The Hazard Elimination Program is used to develop larger improvement projects to address safety and potential safety issues. The program is funded with 90% federal funds and 10% state funds. The cost of Hazard Elimination Program projects typically ranges between \$400,000 and \$1 million. A Safety Oversight Committee (SOC) reviews and recommends Hazard Elimination projects to the Board of Transportation (BOT) for approval and funding. These projects are prioritized for funding according to a safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction. Once approved and funded by the BOT, these projects become part of the department's State Transportation Improvement Program (STIP).

More information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>

## **NCDOT Contingency Fund**

The Statewide Contingency Fund is a \$10 million fund administered by the Secretary of Transportation. The Division Engineer elicits written requests from municipalities, counties, businesses, schools, citizens, legislative members and NCDOT staff. The appeals are reviewed on their merits by the Contingency and Small Urban Funds Committee, which makes recommendations for funding to the Secretary. Written requests must provide technical information such as justification, location, improvements being requested, timing, etc., for thorough review.

More information: [https://connect.ncdot.gov/resources/safety/Teppl/Pages/Teppl-Topic.aspx?Topic\\_List=F19](https://connect.ncdot.gov/resources/safety/Teppl/Pages/Teppl-Topic.aspx?Topic_List=F19)

## **Small Urban Funds**

Each of the 14 NCDOT Highway Divisions administers \$2 million of funds for small-scale improvement projects in urban areas. Projects must be within 2 miles of city limits and have a maximum cost of \$250,000. Requests for small urban funds may be made by municipalities, counties, businesses, school and industrial entities. A written request should be submitted to the Division Engineer providing technical information such as justification, location, improvements being requested, timing, etc., for thorough review.





## Spot Improvement Program

The Division of Bicycle and Pedestrian Transportation (DBPT) budgets \$500,000 per year for “spot” safety improvements throughout North Carolina. Eligible improvements include drain grate replacement, bicycle loop detectors, pedestrian signals and other small-scale improvements. These funds are used for small-scale projects not substantial enough to be included in the STIP. Proposals should be submitted directly to the Division of Bicycle and Pedestrian Transportation.



## Small Construction Funds

Each of the 14 NCDOT Highway Divisions administers \$357,000 of small construction funds. The purpose of these funds is to finance improvements on the State System (US, NC, and SR routes) to be used for projects anywhere in the counties. These funds are used to fund a variety of transportation projects for municipalities, counties, businesses, schools, and industries throughout the state. There is a \$250,000 maximum amount per request per fiscal year. Any project with a total cost greater than \$150,000 requires a resolution or a letter of support for the project from the local jurisdiction.

*The former NCDOT Statewide Discretionary Funding program has been consolidated into this funding mechanism.*

More information: <http://www.nctransportationanswers.org/ourforms/SMALLCONSTRUCTIONFORM.pdf>

## Governor's Highway Safety Program

The Governor's Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries and fatalities is required as a condition of continued funding. This funding source is considered to be “seed money” to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. State Highway Applicants must use the web-based grant system to submit applications.

More information: <http://www.ncdot.org/programs/ghsp/>

## Bicycle and Pedestrian Planning Grant Initiative

The Bicycle and Pedestrian Planning Grant Initiative is a matching grant program administered through NCDOT that encourages municipalities to develop comprehensive bicycle plans and pedestrian plans. The Division of Bicycle and Pedestrian Transportation (DBPT) and the Transportation Planning Branch (TPB) sponsor this grant. All North Carolina municipalities are eligible and are encouraged to apply. Funding allocations are determined on a sliding scale based on population. Municipalities who currently have bicycle plans or pedestrian plans, either through this grant program or otherwise, may also apply to update their plan provided it is at least five years old.

More information: <https://connect.ncdot.gov/municipalities/PlanningGrant/Pages/default.aspx>

## Eat Smart, Move More North Carolina Community Grants

The Eat Smart, Move More (ESMM) NC Community Grants program provides funding to local communities to support their efforts to develop community-based interventions that encourage, promote and facilitate physical activity. The current focus of the funds is for projects addressing youth physical activity. Funds have been used to construct trails and conduct educational programs.

More information: <http://www.eatsmartmovemorenc.com/Funding/CommunityGrants.html>



## The North Carolina Division of Parks and Recreation

The North Carolina Division of Parks and Recreation and the State Trails Program offer funds to help citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking and horseback riding to river trails and off-highway vehicle trails.

More information: <http://www.ncparks.gov/About/grants/main.php>



### ***NC Parks and Recreation Trust Fund (PARTF)***

The Parks and Recreation Trust Fund (PARTF) provide dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities and public authorities, as defined by G.S. 159-7, are eligible applicants.

A local government can request a maximum of \$500,000 with each application. An applicant must match the grant dollar-for-dollar, 50% of the total cost of the project, and may contribute more than 50%. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match.

For more information: [http://www.ncparks.gov/About/grants/partf\\_main.php](http://www.ncparks.gov/About/grants/partf_main.php)

### ***NC Department of Environment – Recreational Trails and Adopt-A-Trail Grants***

The State Trails Program is a section of the N.C. Division of Parks and Recreation. The program originated in 1973 with the North Carolina Trails System Act and is dedicated to helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking and horseback riding to river trails and

off-highway vehicle trails. The Recreation Trails Program awards grants up to \$75,000 per project. The Adopt-A-Trail Program awards grants up to \$5,000 per project.

### ***Powell Bill Funds***

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.4. Powell Bill funds shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways. Beginning July 1, 2015 under the Strategic Transportation Investments initiative, Powell Bill funds may no longer be used to provide a match for federal transportation funds such as Transportation Alternatives.

### ***Community Development Block Grant Funds***

Community Development Block Grant (CDBG) funds are available to local municipal or county governments that qualify for projects to enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low- and moderate-income. State CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) to the state of North Carolina. Some urban counties and cities in North Carolina receive CDBG funding directly from HUD. Each year, CDBG provides funding to local governments for

hundreds of critically-needed community improvement projects throughout the state. These community improvement projects are administered by the Division of Community Assistance and the Commerce Finance Center under eight grant categories. Two categories might be of support to pedestrian and bicycle projects in ‘entitlement communities’: Infrastructure and Community Revitalization.



### ***Clean Water Management Trust Fund (CWMTF)***

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection, eligible for application by a state agency, local government, or non-profit. At the end of each year, a minimum of \$30 million is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies and conservation non-profits to help finance projects that specifically address water pollution problems. Funds may be used for planning and land acquisition to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits.

For more information: <http://www.cwmtf.net/#appmain.htm>





## ***Safe Routes to School Program (managed by NCDOT, DBPT)***

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding.

The state of North Carolina was allocated \$15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. In 2009, more than \$3.6 million went to 22 municipalities and local agencies for infrastructure and non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding.

For more information: <http://www.ncdot.gov/download/programs/srts/SRTS.pdf> or contact DBPT/NCDOT at (919) 807-0774.

## ***Rivers, Trails and Conservation Assistance Program***

The Rivers, Trails and Conservation Assistance Program (RTCA) is a National Park Service program which provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation funds available. Projects are prioritized for assistance based on criteria that include conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments.

## ***Urban and Community Forestry Grant***

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space.

The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to a more effective and efficient management of urban and community forests. Grant requests should range between \$1,000 and \$15,000 and must be matched equally with non-federal funds. Grant funds may be awarded to any unit of local or state government, public educational institutions, approved non-profit 501(c)(3) organizations and other tax-exempt

organizations. First-time municipal applicant and municipalities seeking Tree City USA status are given priority for funding.

For more about Tree City USA status, including application instructions, visit: [http://ncforestservice.gov/Urban/urban\\_grant\\_overview.htm](http://ncforestservice.gov/Urban/urban_grant_overview.htm)



# Local Government Funding Sources

Municipalities often plan for the funding of pedestrian and bicycle facilities or improvements through development of Capital Improvement Programs (CIP). In Raleigh, for example, the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from \$100,000 to \$500,000, administered through the Recreation and Parks Department. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the following: capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each category is described below. A variety of possible funding options available to North Carolina jurisdictions for implementing pedestrian and bicycle projects are described below. However, many will require specific local action as a means of establishing a program, if not already in place.

## *Capital Reserve Fund*

Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose of the fund, the duration of the fund, the approximate amount of the fund, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants and donations for the specified use.

## *Capital Project Ordinances*

Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.

## *Local Improvement Districts (LIDs)*

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.

## *Municipal Service District*

Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the town-wide property tax, and to use the proceeds to provide services in the district. Downtown revitalization projects are one of the eligible uses of service districts, and can include projects such as street, sidewalk, or bikeway improvements within the downtown taxing district.

## *Tax Increment Financing*

Project Development Financing bonds, also known as Tax Increment Financing (TIF) is a relatively new tool in North Carolina, allowing localities to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding

development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Streets, streetscapes, and sidewalk improvements are specifically authorized for TIF funding in North Carolina. Tax Increment Financing typically occurs within designated development financing districts that meet certain economic criteria that are approved by a local governing body. TIF funds are generally spent inside the boundaries of the TIF district, but they can also be spent outside the district if necessary to encourage development within it.

## *Other local funding options*

- Bonds/Loans
- Taxes
- Impact fees
- Exactions
- Installment purchase financing
- Partnerships





# Private and Non-Profit Funding Sources

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are several examples of private funding opportunities available.

## *Land for Tomorrow Campaign*

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals and community groups committed to securing support from the public and General Assembly for protecting land, water and historic places. The campaign is asking the North Carolina General Assembly to support issuance of a bond for \$200 million a year for five years to preserve and protect its special land and water resources. Land for Tomorrow will enable North Carolina to reach a goal of ensuring that working farms and forests; sanctuaries for wildlife; land bordering streams, parks and greenways; land that helps strengthen communities and promotes job growth; historic downtowns and neighborhoods; and more, will be there to enhance the quality of life for generations to come.

For more information: <http://www.landfortomorrow.org>

## *The Robert Wood Johnson Foundation*

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To assure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs
- For more specific information about what types of projects are funded and how to apply, visit [www.rwjf.org/applications/](http://www.rwjf.org/applications/)



Robert Wood Johnson Foundation

## *North Carolina Community Foundation*

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, the foundation also manages a number

of community affiliates throughout North Carolina, that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. The foundation also manages various scholarship programs statewide.

For more information: <http://nccommunityfoundation.org/>

NORTH CAROLINA  
COMMUNITY FOUNDATION



## *Walmart State Giving Program*

The Walmart Foundation financially supports projects that create opportunities for better living. Grants are awarded for projects that support and promote education, workforce development/economic opportunity, health and wellness, and environmental sustainability. Both programmatic and infrastructural projects are eligible for funding. State Giving Program grants start at \$25,000, and there is no maximum award amount. The program accepts grant applications on an annual, state by state basis January 2nd through March 2nd.

Online resource: <http://foundation.walmart.com/apply-for-grants/state-giving>

## ***The Rite Aid Foundation Grants***

The Rite Aid Foundation is a foundation that supports projects that promote health and wellness in the communities that Rite Aid serves. Award amounts vary and grants are awarded on a one year basis to communities in which Rite Aid operates. A wide array of activities are eligible for funding, including infrastructural and programmatic projects.

Online resource: <https://www.riteaid.com/about-us/community-service/rite-aid-foundation>

## ***Z. Smith Reynolds Foundation***

This Winston-Salem-based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. They have two grant cycles per year and generally do not fund land acquisition. However, they may be able to offer support in other areas of open space and greenways development.

For more information: [www.zsr.org](http://www.zsr.org)

## ***Bank of America Charitable Foundation, Inc.***

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

For more information: [www.bankofamerica.com/foundation](http://www.bankofamerica.com/foundation)

## ***Duke Energy Foundation***

Funded by Duke Energy shareholders, this non-profit organization makes charitable grants to selected non-profits or governmental subdivisions. Each annual grant must have:

- An internal Duke Energy business “sponsor”
- A clear business reason for making the contribution

The grant program has three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training and research around environmental and energy efficiency initiatives.

For more information: <http://www.duke-energy.com/community/foundation.asp>

## ***American Greenways Eastman Kodak Awards***

The Conservation Fund’s American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying or political activities.

For more information: [www.conservationfund.org](http://www.conservationfund.org)

## ***National Trails Fund***

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a \$200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America’s cherished public trails. To date, American Hiking has granted more than \$240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from \$500 to \$10,000 per project.

Projects the American Hiking Society will consider include:

- Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements
- Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage
- Constituency building surrounding specific trail projects - including volunteer recruitment and support

For more information: <http://www.americanhiking.org/national-trails-fund/>





## ***The Conservation Alliance***

The Conservation Alliance is a non-profit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about \$35,000 each. Since its inception in 1989, The Conservation Alliance has contributed \$4,775,059 to environmental groups across the nation, saving over 34 million acres of wild lands.

The Conservation Alliance Funding Criteria: The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation. The Alliance does not look for mainstream education or scientific research projects, but rather for active campaigns. All projects should be quantifiable, with specific goals, objectives and action plans and should include a measure for evaluating success. The project should have a good chance for closure or significant measurable results over a fairly short term (one to two years). Funding emphasis may not be on general operating expenses or staff payroll.

More information: <http://www.conservationalliance.com/grants>



## ***National Fish and Wildlife Foundation (NFWF)***

The National Fish and Wildlife Foundation (NFWF) is a private, nonprofit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation awards matching grants under its Keystone Initiatives to achieve measurable outcomes in the conservation of fish, wildlife, plants and the habitats on which they depend. Awards are made on a competitive basis to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year. Grants generally range from \$50,000-\$300,000 and typically require a minimum 2:1 non-federal match.

Funding priorities include bird, fish, marine/coastal, and wildlife and habitat conservation. Other projects that are considered include controlling invasive species, enhancing delivery of ecosystem services in agricultural systems, minimizing the impact on wildlife of emerging energy sources, and developing future conservation leaders and professionals.

For more information: <http://www.nfwf.org/pages/grants/home.aspx>

## ***The Trust for Public Land***

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well-being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

More information: <http://www.tpl.org>



## ***BlueCross BlueShield of North Carolina Foundation (BCBS)***

Blue Cross Blue Shield (BCBS) focuses on programs that use an outcome approach to improve the health and well-being of residents. The Health of Vulnerable Populations grants program focuses on improving health outcomes for at-risk populations. The Healthy Active Communities grant concentrates on increased physical activity and healthy eating habits. Eligible grant applicants must be located in North Carolina, be able to provide recent tax forms and, depending on the size of the nonprofit, provide an audit.

For more information: <http://www.bcbsncfoundation.org/>

## ***Alliance for Biking & Walking: Advocacy Advance Grants***

Bicycle and pedestrian advocacy organizations play the most important role in improving and increasing biking and walking in local communities, states, and provinces. Advocacy Advance Grants enable state and local bicycle and pedestrian advocacy organizations to develop, transform, and provide innovative strategies in their communities. Thanks to remarkable support from SRAM, Planet Bike, and Bikes Belong, the Alliance for Biking & Walking has awarded more than \$500,000 in direct grants, technical assistance and scholarships to advocacy organizations across North America since the Advocacy Advance Grant program's inception. In 2009 and 2010, these one-year grants were awarded twice annually to startup organizations and innovative campaigns to dramatically increase biking and walking. Through the Advocacy Advance Partnership with the League of American Bicyclists, the Alliance also provided necessary technical assistance, coaching, and training to supplement the grants.

For more information, visit [www.peoplepoweredmovement.org](http://www.peoplepoweredmovement.org)

## ***Local Trail Sponsors***

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and

can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

## ***Corporate Donations***

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

## ***Private Individual Donations***

Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Municipalities typically create funds to facilitate and simplify a transaction from an individual's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

## ***Fundraising / Campaign Drives***

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

## ***Volunteer Work***

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.





**Table 6.1 Funding Source Summary Table**

Funding Source	Potential Uses		
	Planning	Programming	Design/Construction
<b>Federal Funding</b>			
Transportation Alternatives	x	x	x
Surface Transportation Program			x
Highway Safety Improvement Program		x	x
Congestion Mitigation/ Air Quality		x	x
FTA Section 5303, 5304, 5305 Metropolitan and Statewide Planning Program	x		
FTA Enhanced Mobility of Seniors and Individuals with Disabilities			
Partnership for Sustainable Communities	x	x	x
Land and Water Conservation Fund	x		x
Rivers, Trails, and Conservation Assistance Program	x		
National Scenic Byways Discretionary Grant Program			x
Federal Lands Transportation Program			x
Energy Efficiency and Conservation Block Grants	x		x
<b>State Funding</b>			
NCDOT State Transportation Improvement Program			x
Incidental Projects			x
Spot Safety Program (anywhere is eligible, but more likely in dense areas)			x
Pedestrian Funds			x
High Hazard Elimination Program (anywhere is eligible, but more likely in dense areas)			x
NCDOT Contingency Fund			x
Small Urban Funds			x
Spot Improvement Program			x
Small Construction Funds			x
Governor's Highway Safety Program			x
Bicycle and Pedestrian Planning Grant Initiative	x	x	
Eat Smart, Move More North Carolina Community Grants		x	x



**Table 6.1 Funding Source Summary Table ~ (cont'd)**

Funding Source	Potential Uses		
	Planning	Programming	Design/Construction
<b>State Funding (cont'd.)</b>			
The North Carolina Division of Parks and Recreation			x
The North Carolina Parks and Recreation Trust Fund (PARTF)			x
Adopt-A-Trail Program			x
Powell Bill Funds			x
Community Development Block Grant	x	x	x
Clean Water Management Trust Fund (CWMTF)	x	x	x
Safe Routes to School Program	x	x	x
Rivers, Trails and Conservation Assistance Program	x		
Urban and Community Forestry Grant	x		x
<b>Local Funding</b>			
Capital Reserve Fund			x
Capital Project Ordinances			x
Local Improvement Districts (LIDs)			x
Municipal Service District			x
Tax Increment Financing			x
Installment Purchase Financing			x
Sales Tax	x		x
Property Tax	x		x
Excise Tax			x
Occupancy Tax			x
Fees			x
Stormwater Utility Fees			x
Streetscape Utility Fees			x
Impact Fees			x
Exactions			x
In-Lieu-Of Fees			x
Bonds and Loans			x
Revenue Bonds			x
General Obligation Bonds (cities, counties and service districts)			x
Special Assessment Bonds			x
State Revolving Fund Loans			x





**Table 6.1 Funding Source Summary Table ~ (cont'd)**

Funding Source	Planning	Potential Uses	
		Programming	Design/Construction
<b>Private/Non-Profit Funding</b>			
The Robert Wood Johnson Foundation	x	x	
North Carolina Community Foundation	x	x	
Walmart State Giving Program	x	x	x
The Rite Aid Foundation Grant		x	x
Z Smith Reynolds Foundation			x
Bank of America Charitable Foundation Inc	x	x	
Duke Energy Foundation		x	
American Greenways Eastman Kodak Awards	x	x	x
National Trails Fund		x	x
The Conservation Alliance	x	x	
The Trust for Public Land	x	x	
Blue Cross Blue Shield of North Carolina Foundation		x	x
Alliance for Biking and Walking: Advocacy Advance Grants			x
Health and Wellness Trust Fund: Fit Community Program		x	x
Local Trail Sponsors			x
Corporate Donations	x	x	x
Private Individual Donations	x	x	x
Fundraising/ Campaign Drives	x	x	x
Volunteer Work	x	x	x





*Siler City resident and local business owner. N. Chatham Avenue, Siler City*





# A Design Guidelines

## Overview

The sections that follow serve as an inventory of pedestrian design treatments and provide guidelines for their development. These treatments and design guidelines are important because they represent the tools for creating a pedestrian-friendly, safe, accessible community. The guidelines are not, however, a substitute for a more thorough evaluation by a landscape architect or engineer upon implementation of facility improvements. Some improvements may also require cooperation with the NCDOT for specific design solutions. The following standards and guidelines are referred to in this guide.

The Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) is the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings.

American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design and Operation of Pedestrian Facilities, provides guidance on dimensions, use, and layout of specific pedestrian facilities, including sidewalks and street crossings.



Meeting the requirements of the Americans with Disabilities Act (ADA) is an important part of any pedestrian facility project. The United States Access Board's proposed Public Rights-of-Way Accessibility Guidelines (PROWAG) and the 2010 ADA Standards for Accessible Design (2010 Standards) contain standards and guidance for the construction of accessible facilities.

Should the national standards be revised in the future and result in discrepancies with this chapter, the national standards should prevail for all design decisions. A qualified engineer or landscape architect should be consulted for the most up-to-date and accurate cost estimates.



**The NCDOT Complete Streets Planning and Design Guidelines, Pedestrian and Bicycle Information Center, AASHTO, the MUTCD, nationally recognized bikeway standards, and other sources have all informed the content of this chapter.**

## APPENDIX CONTENTS

- Overview (A-1)*
- Design Needs of Pedestrians (A-2)*
- Sidewalks (A-3)*
- Sidewalk Widths (A-4)*
- Sidewalk Obstructions and Driveway Ramps (A-5)*
- Pedestrian Amenities (A-6)*
- Pedestrians at Intersections (A-7)*
- Marked Crosswalks (A-8)*
- Raised Crosswalks (A-9)*
- Median Refuge Islands (A-10)*
- Minimizing Curb Radii (A-11)*
- Curb Extensions (A-12)*
- ADA Compliant Curb Ramps (A-13)*
- Signalization (A-14)*
- Pedestrians at Signalized Crossings (A-15)*
- Pedestrian Hybrid Beacon (A-16)*
- Pedestrian Signs and Wayfinding (A-17)*
- Greenways (A-19)*
- General Design Practices (A-20)*
- Neighborhood Greenways (A-21)*
- Local Neighborhood Accessways (A-22)*
- Multi-use Paths Along Roadways (A-23)*
- Natural Surface Greenways (A-24)*
- Greenways in Active Rail Corridors (A-25)*
- Greenways in Inactive Rail Corridors (A-26)*
- Greenways in Abandoned Rail Corridors (A-27)*
- Greenway Crossings (A-28)*
- Unsignalized Marked Crossings (A-29)*
- Active Warning Beacons (A-30)*
- Route Users to Signalized Crossings (A-31)*

# Design Needs of Pedestrians

## *Types of Pedestrians*

Pedestrians in Siler City have a variety of characteristics and the transportation network in the community should accommodate a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical characteristics, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. They also perceive the environment differently at various stages of their cognitive development. Older adults walk more slowly and may require assistive devices for walking stability, sight, and hearing. Table A.1 to the right summarizes common pedestrian characteristics for various age groups.

The MUTCD recommends a normal walking speed of three and a half feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to three feet per second for areas with older populations and persons with mobility impairments. While the type and degree of mobility impairment varies greatly across the population, the transportation system should accommodate these users to the greatest reasonable extent.

Table A-1: Pedestrian Characteristics by Age

Age	Characteristics
<b>0-4</b>	Learning to walk Requires constant adult supervision  Developing peripheral vision and depth perception
<b>5-8</b>	Increasing independence, but still requires supervision Poor depth perception
<b>9-13</b>	Susceptible to "dart out" intersection dash Poor judgment Sense of invulnerability
<b>14-18</b>	Improved awareness of traffic environment Poor judgment
<b>19-40</b>	Active, fully aware of traffic environment
<b>41-65</b>	Slowing of reflexes
<b>65+</b>	Difficulty crossing street Vision loss Difficulty hearing vehicles approaching from behind





# Sidewalks

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel that is separated from vehicle traffic. Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped planting strip area. Sidewalks are a common application in both urban and suburban environments.

Attributes of well-designed sidewalks include the following:

**Accessibility:** A network of sidewalks should be accessible to all users.

**Adequate width:** Two people should be able to walk side-by-side and pass a third comfortably. Different walking speeds should be possible. In areas of intense pedestrian use, sidewalks should accommodate a high volume of walkers.

**Safety:** Design features of the sidewalk should allow pedestrians to have a sense of security and predictability. Sidewalk users should not feel they are at risk due to the presence of adjacent traffic.

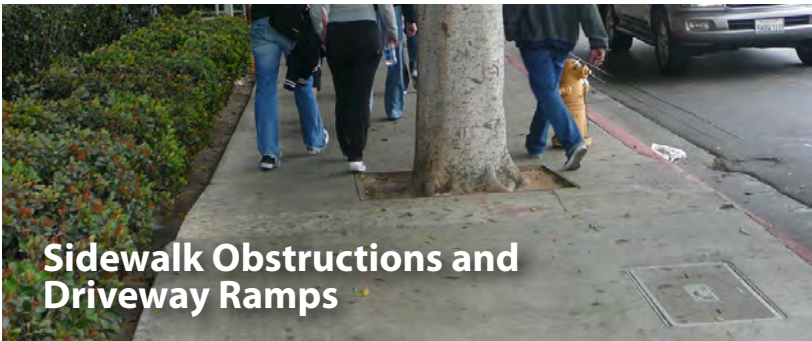
**Continuity:** Walking routes should be obvious and should not require pedestrians to travel out of their way unnecessarily.

**Landscaping:** Plantings and street trees should contribute to the overall psychological and visual comfort of sidewalk users, and be designed in a manner that contributes to the safety of people.

**Drainage:** Sidewalks should be well graded to minimize standing water.

**Social space:** There should be places for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can safely participate in public life.

**Quality of place:** Sidewalks should contribute to the character of neighborhoods and business districts.



# Sidewalk Widths

## Description

The width and design of sidewalks will vary depending on street context, functional classification, and pedestrian demand. Below are preferred widths of each sidewalk zone according to general street type. Standardizing sidewalk guidelines for different areas of the city, dependent on the above listed factors, ensures a minimum level of quality for all sidewalks.

## Discussion

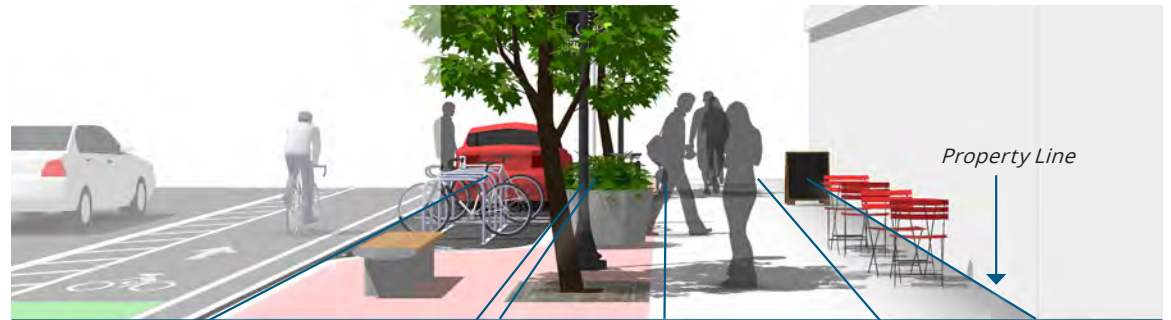
It is important to provide adequate width along a sidewalk corridor. Two people should be able to walk side-by-side and pass a third comfortably. In areas of high demand, sidewalks should contain adequate width to accommodate the high volumes and different walking speeds of pedestrians. The Americans with Disabilities Act requires a 4 foot clear width in the pedestrian zone plus 5 foot passing areas every 200 feet.

## Materials and Maintenance

Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped boulevard. Surfaces must be firm, stable, and slip resistant.

## Additional References and Guidelines

- USDOJ. (2010). ADA STANDARDS FOR ACCESSIBLE DESIGN.
- UNITED STATES ACCESS BOARD. (2007). PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).
- NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.



Street Classification	Parking Lane/ Enhancement Zone	Furnishing/ Green Zone	Pedestrian Through Zone	Frontage Zone	Total Sidewalk Area
Local Streets	7 feet	4 - 8 feet	5 - 6 feet	N/A	9 - 12 feet
Commercial Areas	8 - 10 feet	6 - 8 feet	6 - 12 feet	2 - 8 feet	14- 28 feet
Arterials and Collectors	8 - 10 feet	6 - 8 feet	4 - 12 feet	2 - 4 feet	12 -24 feet

Areas that have significant accumulations of snow during the winter may prefer a wider furnishing zone for snow storage.

Six feet enables two pedestrians (including wheelchair users) to walk side-by-side, or to pass each other comfortably

Total sidewalk area excludes parking dimensions

*Recommended dimensions shown here are based on the NCDOT Complete Streets Planning and Design Guidelines. Exact dimensions should be selected in response to local context and expected/ desired pedestrian volumes.*





# Sidewalk Obstructions and Driveway Ramps

## Description

Obstructions to pedestrian travel in the sidewalk corridor typically include driveway ramps, curb ramps, sign posts, utility and signal poles, mailboxes, fire hydrants and street furniture.

## Guidance

- Reducing the number of accesses reduces the need for special provisions. This strategy should be pursued first.
- Obstructions should be placed between the sidewalk and the roadway to create a buffer for increased pedestrian comfort.

## Discussion

Driveways are a common sidewalk obstruction, especially for wheelchair users. When constraints only allow curb-tight sidewalks, dipping the entire sidewalk at the driveway approaches keeps the cross-slope at a constant grade. However, this may be uncomfortable for pedestrians and could create drainage problems behind the sidewalk.

## Materials and Maintenance

Excessive cracks, gaps, pits, settling, and lifting of the sidewalk creates a pedestrian tripping hazard and reduces ADA accessibility; damages sidewalks should be repaired.

## Additional References and Guidelines

USDOJ. (2010). ADA STANDARDS FOR ACCESSIBLE DESIGN.

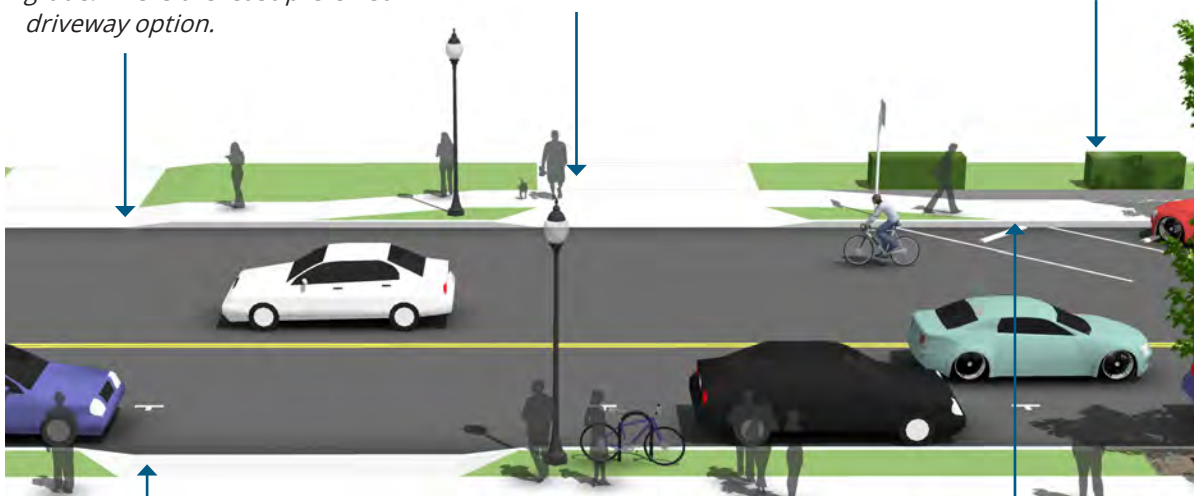
UNITED STATES ACCESS BOARD. (2007). PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).

AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.

*Dipping the entire sidewalk at the driveway approaches keeps the cross-slope at a constant grade. This is the least-preferred driveway option.*

*Where constraints preclude a planter strip, wrapping the sidewalk around the driveway allows the sidewalk to still remain level.*

*When sidewalks abut hedges, fences, or buildings, an additional two feet of lateral clearance should be added to provide appropriate shy distance.*



*Planter strips allow sidewalks to remain level, with the driveway grade change occurring within the planter strip.*

*When sidewalks abut angled on-street parking, wheel stops should be used to prevent vehicles from overhanging in the sidewalk.*

# Pedestrian Amenities

## Description

A variety of streetscape elements can define the pedestrian realm, offer protection from moving vehicles, and enhance the walking experience. Pedestrian amenities should be placed in the furnishing zone on a sidewalk corridor. Signs, meters, and tree wells should go between parking spaces. Key features are presented below.

## Street Trees

In addition to their aesthetic and environmental value, street trees can slow traffic and improve safety for pedestrians. Trees add visual interest to streets and narrow the street's visual corridor, which may cause drivers to slow down. It is important that trees do not block light or the vision triangle.

## Street Furniture

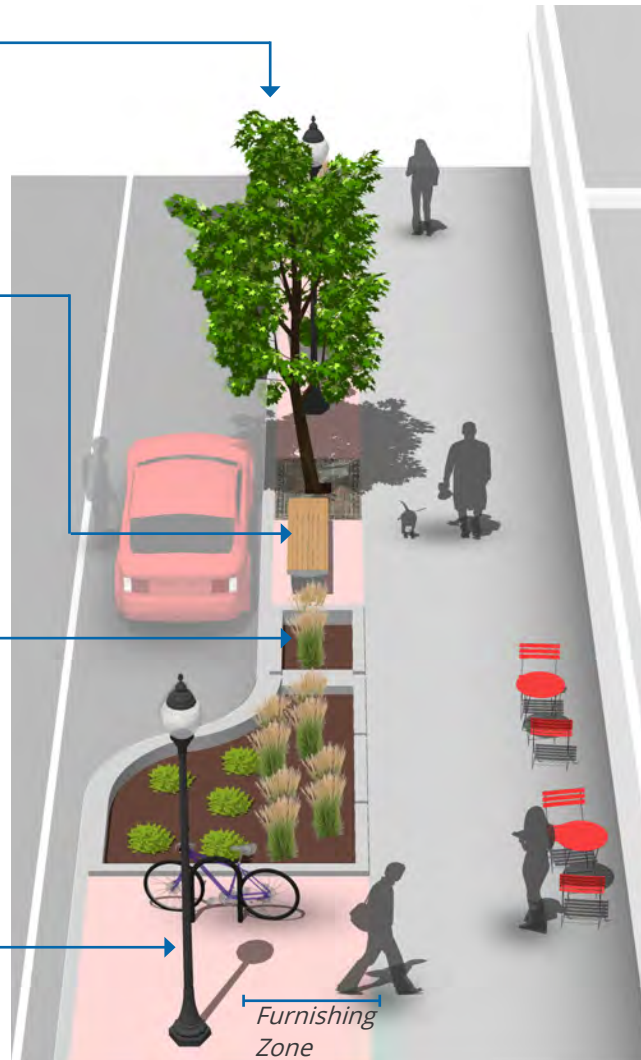
Providing benches at key rest areas and viewpoints encourages people of all ages to use the walkways by ensuring that they have a place to rest along the way. Benches should be 20" tall to accommodate elderly pedestrians comfortably. Benches can be simple (e.g., wood slats) or more ornate (e.g., stone, wrought iron, concrete). If alongside a parking zone, street furniture must be 3 feet from the curbface.

## Green Features

Green stormwater strategies may include bioretention swales, rain gardens, tree box filters, and pervious pavements (pervious concrete, asphalt and pavers). Bioswales are natural landscape elements that manage water runoff from a paved surface. Plants in the swale trap pollutants and silt from entering a river system.

## Lighting

Pedestrian scale lighting improves visibility for both pedestrians and motorists - particularly at intersections. Pedestrian scale lighting can provide a vertical buffer between the sidewalk and the street, defining pedestrian areas.



## Materials and Maintenance

Establishing and caring for your young street trees is essential to their health. Green features may require routine maintenance, including sediment and trash removal, and clearing curb openings and overflow drains.

## Additional References and Guidelines

UNITED STATES ACCESS BOARD. (2007). PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).  
NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.



# Pedestrians at Intersections

Attributes of pedestrian-friendly intersection design include:

**Clear Space:** Corners should be clear of obstructions. They should also have enough room for curb ramps, for transit stops where appropriate, and for street conversations where pedestrians might congregate.

**Visibility:** It is critical that pedestrians on the corner have a good view of vehicle travel lanes and that motorists in the travel lanes can easily see waiting pedestrians.

**Legibility:** Symbols, markings, and signs used at corners should clearly indicate what actions the pedestrian should take.

**Accessibility:** All corner features, such as curb ramps, landings, call buttons, signs, symbols, markings, and textures, should meet accessibility standards and follow universal design principles.

**Separation from Traffic:** Corner design and construction should be effective in discouraging turning vehicles from driving over the pedestrian area. Crossing distances should be minimized.

**Lighting:** Adequate lighting is an important aspect of visibility, legibility, and accessibility.

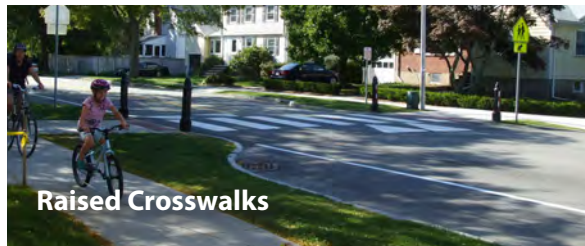
These attributes will vary with context but should be considered in all design processes. For example, suburban and rural intersections may have limited or no signing. However, legibility regarding appropriate pedestrian movements should still be taken into account during design.



Marked Crosswalks



Minimizing Curb Radii



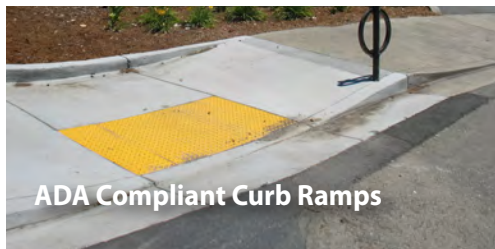
Raised Crosswalks



Curb Extensions



Median Refuge Islands



ADA Compliant Curb Ramps

# Marked Crosswalks

## Description

A marked crosswalk signals to motorists that they must stop for pedestrians and encourages pedestrians to cross at designated locations. Installing crosswalks alone will not necessarily make crossings safer especially on multi-lane roadways.

At mid-block locations, crosswalks can be marked where there is a demand for crossing and there are no nearby marked crosswalks.

## Guidance

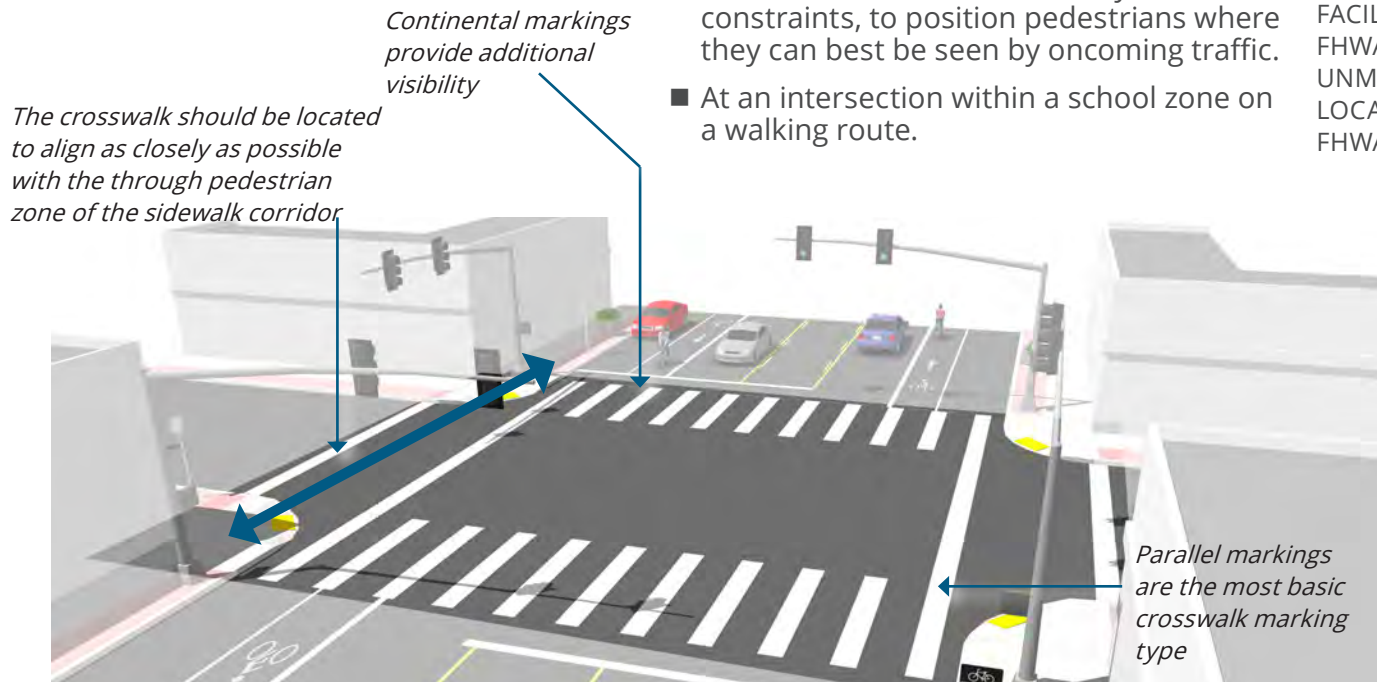
- At signalized intersections, all crosswalks should be marked. At unsignalized intersections, crosswalks may be marked under the following conditions:
- At a complex intersection, to orient pedestrians in finding their way across.
- At an offset intersection, to show pedestrians the shortest route across traffic with the least exposure to vehicular traffic and traffic conflicts.
- At an intersection with visibility constraints, to position pedestrians where they can best be seen by oncoming traffic.
- At an intersection within a school zone on a walking route.

## Materials and Maintenance

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority. Thermoplastic markings offer increased durability compared to conventional paint.

## Additional References and Guidelines

- FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. (3B.18)
- AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.
- FHWA. (2005). SAFETY EFFECTS OF MARKED VS. UNMARKED CROSSWALKS AT UNCONTROLLED LOCATIONS.
- FHWA. (2010). CROSSWALK MARKING FIELD



## Discussion

Continental crosswalk markings should be used at crossings with high pedestrian use or where vulnerable pedestrians are expected, including: school crossings, across arterial streets for pedestrian-only signals, at mid-block crosswalks, and at intersections where there is expected high pedestrian use and the crossing is not controlled by signals or stop signs.





# Raised Crosswalks

## Description

A raised crosswalk or intersection can eliminate grade changes from the pedestrian path and give pedestrians greater prominence as they cross the street. Raised crosswalks should be used only in very limited cases where a special emphasis on pedestrians is desired, and application should be reviewed on case-by-case basis.

## Guidance

- Use detectable warnings at the curb edges to alert vision-impaired pedestrians that they are entering the roadway.
- Approaches to the raised crosswalk may be designed to be similar to speed humps.
- Raised crosswalks can also be used as a traffic calming treatment.

## Discussion

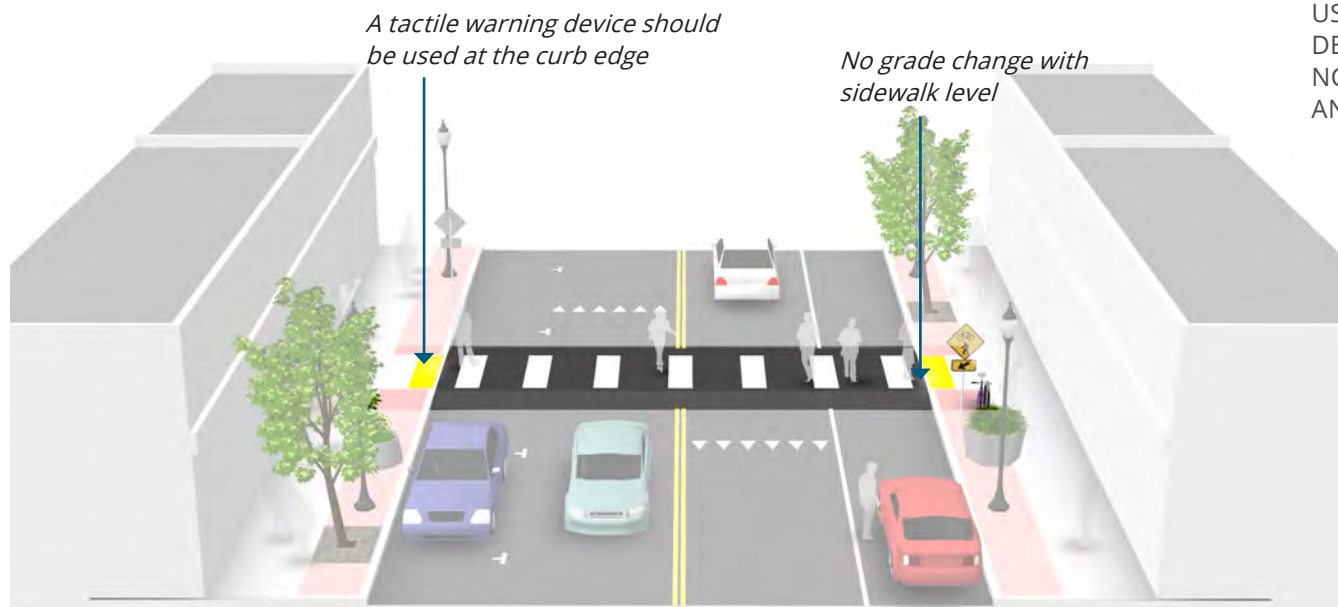
Like a speed hump, raised crosswalks have a traffic slowing effect which may be unsuitable on emergency response routes.

## Materials and Maintenance

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority.

## Additional References and Guidelines

- FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. (3B.18)
- AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.
- USDOJ. (2010). ADA STANDARDS FOR ACCESSIBLE DESIGN.
- NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.



# Median Refuge Islands

## Description

Median refuge islands are located at the mid-point of a marked crossing and help improve pedestrian safety by allowing pedestrians to cross one direction of traffic at a time. Refuge islands minimize pedestrian exposure by shortening crossing distance and increasing the number of available gaps for crossing.

## Guidance

- Can be applied on any roadway with a left turn center lane or median that is at least 6' wide.
- Appropriate at signalized or unsignalized crosswalks
- The refuge island must be accessible, preferably with an at-grade passage through the island rather than ramps and landings.
- The island should be at least 6' wide between travel lanes (to accommodate bikes with trailers and wheelchair users) and at least 20' long.
- On streets with speeds higher than 25 mph there should also be double centerline marking, reflectors, and "KEEP RIGHT" signage.

## Discussion

If a refuge island is landscaped, the landscaping should not compromise the visibility of pedestrians crossing in the crosswalk. Shrubs and ground plantings should be no higher than 1 ft 6 in.

On multi-lane roadways, consider configuration with **active warning beacons** for improved yielding compliance.

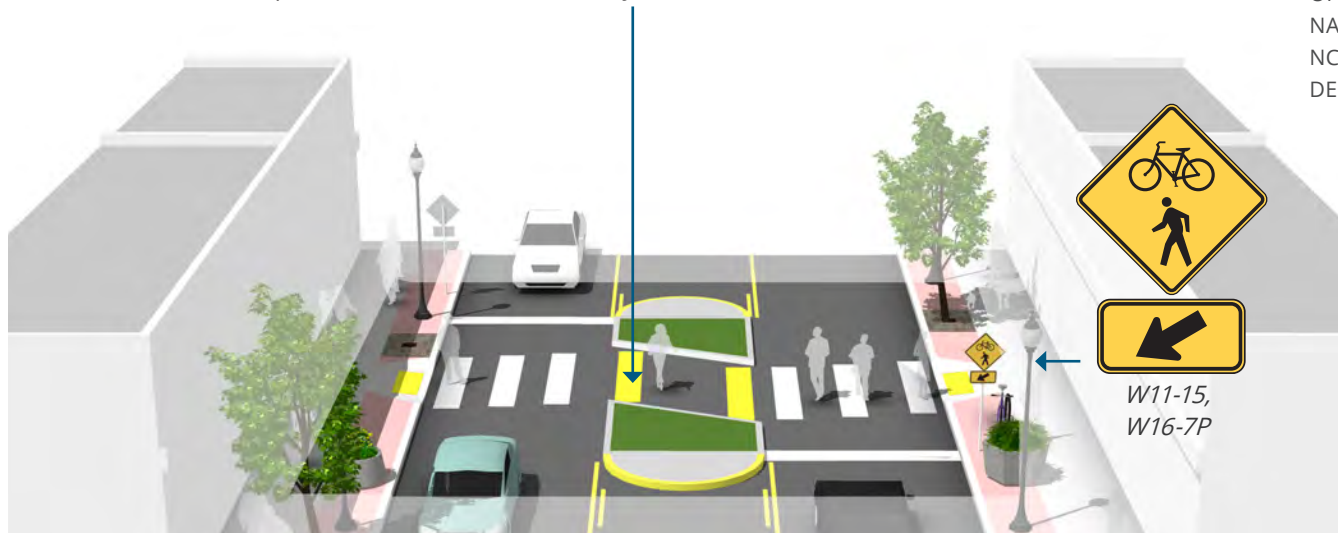
## Materials and Maintenance

Refuge islands may collect road debris and may require somewhat frequent maintenance. Refuge islands should be visible to snow plow crews and should be kept free of snow berms that block access.

## Additional References and Guidelines

- FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.
- NACTO. (2012). URBAN BIKEWAY DESIGN GUIDE.
- NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.

*Cut through median islands are preferred over curb ramps, to better accommodate bicyclists.*





# Minimizing Curb Radii

## Description

The size of a curb's radius can have a significant impact on pedestrian comfort and safety. A smaller curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crossing distance and requires vehicles to slow more on the intersection approach. During the design phase, the chosen radius should be the smallest possible for the circumstances.

## Guidance

- The radius may be as small as 3 ft where there are no turning movements, or 5 ft where there are turning movements, adequate street width, and a larger effective curb radius created by parking or bike lanes.

## Discussion

Several factors govern the choice of curb radius in any given location. These include the desired pedestrian area of the corner, traffic turning movements, street classifications, design vehicle turning radius, intersection geometry, and whether there is parking or a bike lane (or both) between the travel lane and the curb.

## Materials and Maintenance

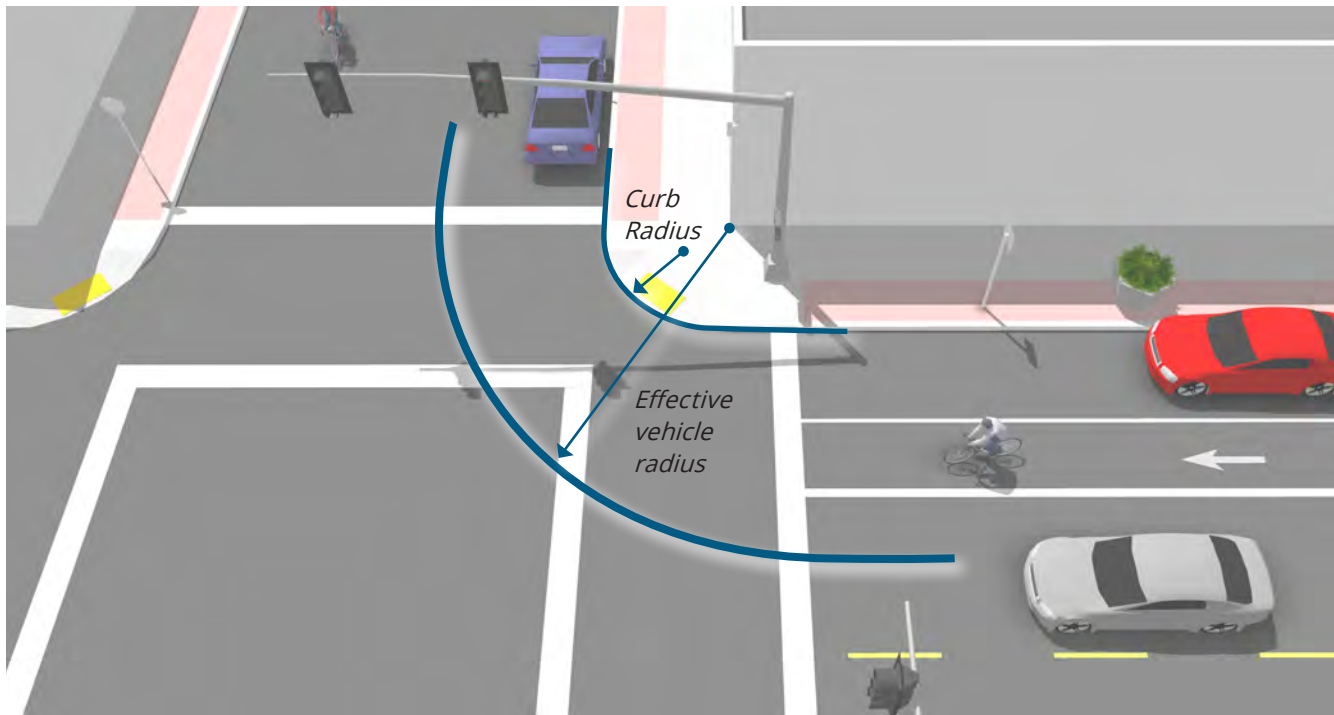
Improperly designed curb radii at corners may be subject to damage by large trucks.

## Additional References and Guidelines

AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.

AASHTO. (2004). A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS.

NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.



# Curb Extensions

## Description

Curb extensions minimize pedestrian exposure during crossing by shortening crossing distance and giving pedestrians a better chance to see and be seen before committing to crossing. They are appropriate for any crosswalk where it is desirable to shorten the crossing distance and there is a parking lane adjacent to the curb.

## Guidance

- In most cases, the curb extensions should be designed to transition between the extended curb and the running curb in the shortest practicable distance.
- For purposes of efficient street sweeping, the minimum radius for the reverse curves of the transition is 10 ft and the two radii should be balanced to be nearly equal.
- Curb extensions should terminate one foot short of the parking lane to maximize bicyclist safety.

## Discussion

If there is no parking lane, adding curb extensions may be a problem for bicycle travel and truck or bus turning movements.

## Materials and Maintenance

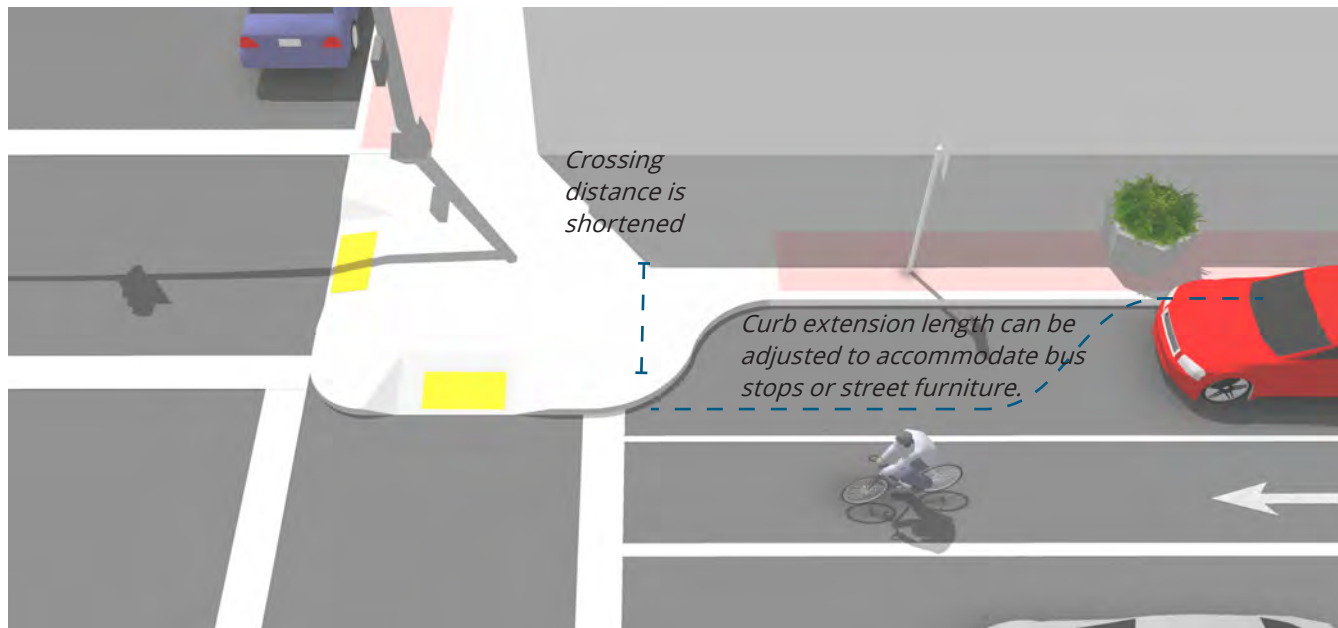
Planted curb extensions may be designed as a bioswale, a vegetated system for stormwater management.

## Additional References and Guidelines

AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.

AASHTO. (2004). A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS.

NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.





# ADA Compliant Curb Ramps

## Description

Curb ramps are the design elements that allow all users to make the transition from the street to the sidewalk. There are a number of factors to be considered in the design and placement of curb ramps at corners. Properly designed curb ramps ensure that the sidewalk is accessible from the roadway. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access.

Although diagonal curb ramps might save money, they create potential safety and mobility problems for pedestrians, including reduced maneuverability and increased interaction with turning vehicles, particularly in areas with high traffic volumes. Diagonal curb ramp configurations are the least preferred of all options.

## Guidance

- The landing at the top of a ramp shall be at least 4 feet long and at least the same width as the ramp itself.
- The ramp shall slope no more than 1:50 (2.0%) in any direction.
- If the ramp runs directly into a crosswalk, the landing at the bottom will be in the roadway.
- If the ramp lands on a dropped landing within the sidewalk or corner area where someone in a wheelchair may have to change direction, the landing must be a minimum of 5'-0" long and at least as wide as the ramp, although a width of 5'-0" is preferred.

## Discussion

The edge of an ADA compliant curb ramp will be marked with a tactile warning device (also

known as truncated domes) to alert people with visual impairments to changes in the pedestrian environment. Contrast between the raised tactile device and the surrounding infrastructure is important so that the change is readily evident. These devices are most effective when adjacent to smooth pavement so the difference is easily detected. The devices must provide color contrast so partially sighted people can see them.

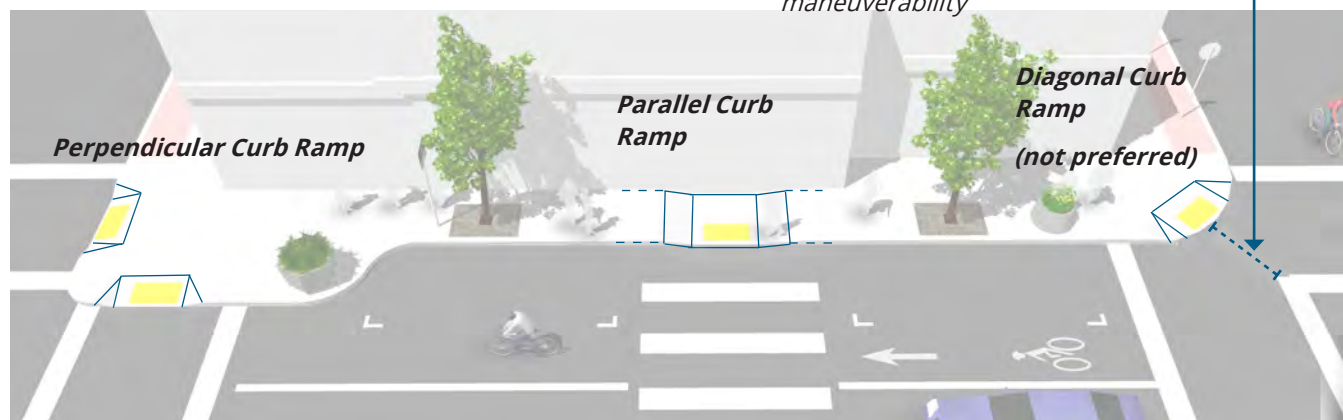
## Materials and Maintenance

It is critical that the interface between a curb ramp and the street be maintained adequately. Asphalt street sections can develop potholes at the foot of the ramp, which can catch the front wheels of a wheelchair.

## Additional References and Guidelines

UNITED STATES ACCESS BOARD. (2002). ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES.  
UNITED STATES ACCESS BOARD. (2007). PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).  
USDOJ. (2010). ADA STANDARDS FOR ACCESSIBLE DESIGN.

*Diagonal ramps shall include a clear space of at least 48" within the crosswalk for user maneuverability*



*Crosswalk spacing not to scale. For illustration purposes only.*

# Signalization

Crossing beacons and signals facilitate crossings of roadways for pedestrians and bicyclists. Beacons make crossing intersections safer by clarifying when to enter an intersection and by alerting motorists to the presence of pedestrians and bicyclists.

Flashing amber warning beacons can be utilized at unsignalized intersection crossings. Push buttons, signage, and pavement markings may be used to highlight these facilities for pedestrians, bicyclists and motorists.

Determining which type of signal or beacon to use for a particular intersection depends on a variety of factors. These include speed limits, traffic volumes, and the anticipated levels of pedestrian and bicycle crossing traffic.

An intersection with crossing beacons may reduce stress and delays for crossing users, and discourage illegal and unsafe crossing maneuvers.





# Pedestrians at Signalized Crossings

## Description

### Pedestrian Signal Head

- All traffic signals should be equipped with pedestrian signal indications except where pedestrian crossing is prohibited by signage.
- Countdown signals should be used at all signalized intersections to indicate whether a pedestrian has time to cross the street before the signal phase ends.

### Signal Timing

- Providing adequate pedestrian crossing time is a critical element of the walking environment at signalized intersections. The MUTCD recommends traffic signal timing to assume a pedestrian walking speed of 4' per second, meaning that the length of a signal phase with parallel pedestrian movements should provide sufficient time for a pedestrian to safely cross the adjacent street.
- At crossings where older pedestrians or pedestrians with disabilities are expected, crossing speeds as low as 3' per second may be assumed.
- In busy pedestrian areas such as downtowns, the pedestrian signal indication should be built into each signal phase, eliminating the requirement for a pedestrian to actuate the signal by pushing a button.

## Discussion

When push buttons are used, they should be located so that someone in a wheelchair can reach the button from a level area of the sidewalk without deviating significantly from the natural line of travel into the crosswalk, and marked (for example, with arrows) so that it is clear which signal is affected.

In areas with very heavy pedestrian traffic, consider an all-pedestrian signal phase to give pedestrians free passage in the intersection when all motor vehicle traffic movements are stopped.

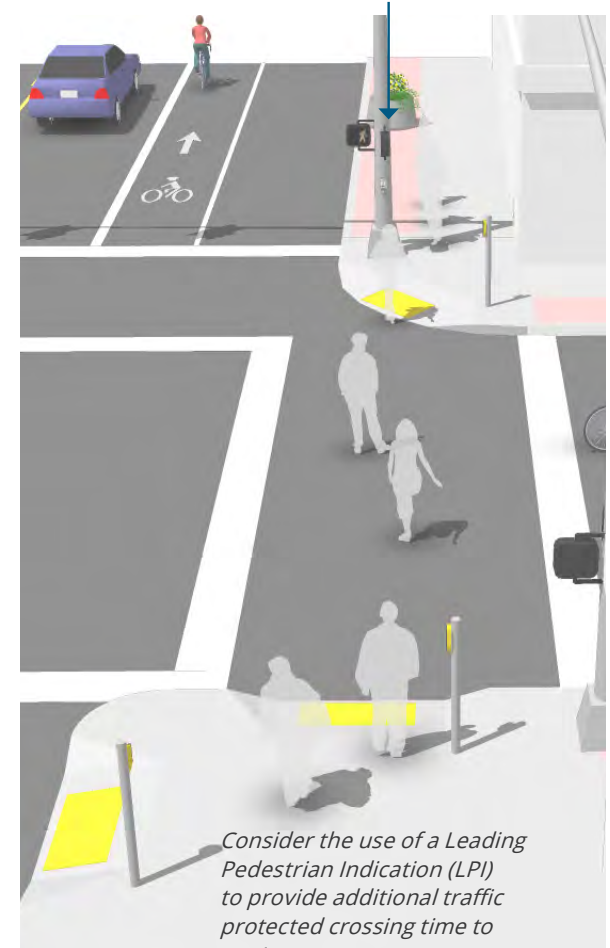
## Materials and Maintenance

It is important to repair or replace traffic control equipment before it fails. Consider semi-annual inspections of controller and signal equipment, intersection hardware, and loop detectors.

## Additional References and Guidelines

UNITED STATES ACCESS BOARD. (2007). PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).  
AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.  
NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.

*Audible pedestrian traffic signals provide crossing assistance to pedestrians with vision impairment at signalized intersections*



*Consider the use of a Leading Pedestrian Indication (LPI) to provide additional traffic protected crossing time to pedestrians*

# Pedestrian Hybrid Beacon

## Description

Hybrid beacons are used to improve non-motorized crossings of major streets. A hybrid beacon consists of a signal-head with two red lenses over a single yellow lens on the major street, and a pedestrian signal head for the crosswalk.

## Guidance

- Hybrid beacons may be installed without meeting traffic signal control warrants if roadway speed and volumes are excessive for comfortable pedestrian crossings.

- If installed within a signal system, signal engineers should evaluate the need for the hybrid signal to be coordinated with other signals.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.

## Discussion

Hybrid beacon signals are normally activated by push buttons, but may also be triggered by infrared, microwave or video detectors. The maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street.

Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.

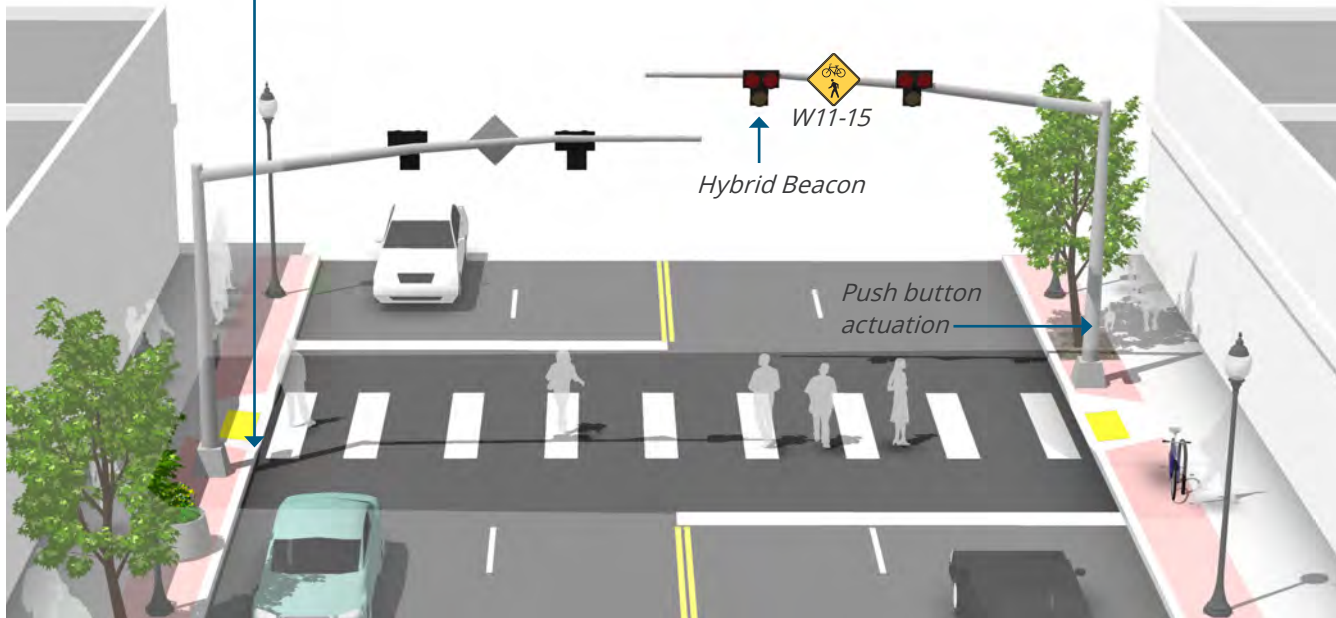
## Materials and Maintenance

Hybrid beacons are subject to the same maintenance needs and requirements as standard traffic signals. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

## Additional References and Guidelines

- FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- NACTO. (2012). URBAN BIKEWAY DESIGN GUIDE.
- NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.

*Should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs*





# Pedestrian Signs and Wayfinding

Signage provides important safety and wayfinding information to motorists and pedestrian residents and tourists. From a safety standpoint, motorists should be given advance warning of upcoming pedestrian crossings or of traffic calming areas. Signage of any type should be used and regulated judiciously. An inordinate amount of signs creates visual clutter. Under such a condition, important safety or wayfinding information may be ignored resulting in confusion and possible pedestrian vehicle conflict. Regulations should also address the orientation, height, size, and sometimes even style of signage to comply with a desired local aesthetic.

## Regulatory Signage

Regulatory signage is used to inform motorists or pedestrians of a legal requirement and should only be used when a legal requirement is not otherwise apparent (AASHTO, 2004: Guide for the Planning, Design, and Operation of Pedestrian Facilities).

## Warning Signage

Warning signage is used to inform motorists and pedestrians of unexpected or unusual conditions. When used, they should be placed to provide adequate response times. These include school warning signs and pedestrian crossing signs.

## Informational and Wayfinding Signage

Informational and wayfinding signage can provide information providing guidance to a location along a trail or other pedestrian facility. Wayfinding signage should orient and communicate in a clear, concise and functional manner. It should enhance pedestrian circulation and direct visitors and residents to important destinations. In doing so, the goal is to increase the comfort of visitors and residents while helping to convey a local identity.

Maintenance of signage is as important as walkway maintenance. Clean, graffiti free, and relevant signage enhances guidance, recognition, and safety for pedestrians.

*Below: Wayfinding signs promote aesthetics as well as provide important information (image from Stefton, UK: <http://www.sefton.gov.uk>)*



Regulatory Signs



School, Warning, and Informational Signs



S1-1



S3-1



W11-2



W15-1



I-4

Sign	MUTCD Code	MUTCD Section	Conventional Road	
Yield here to Peds	R1-5	2B.11	450x450 (18x18)	Regulatory
Yield here to Peds	R1-5a	2B.11	450x600 (18x24)	
In-Street Ped Crossing	R1-6, R1-6a	2B.12	300x900 (12x36)	
Peds and Bikes Prohibited	R5-10b	2B.36	750x450 (30x18)	
Peds Prohibited	R5-10c	2B.36	600x300 (24x12)	
Walk on Left Facing Traffic	R9-1	2B.43	450x600 (18x24)	
Cross only at Crosswalks	R9-2	2B.44	300x450 (12x18)	
No Ped Crossing	R9-3a	2B.44	450x450 (18x18)	
No Hitch Hiking	R9-4	2B.43	450x600 (18x24)	
No Hitch Hiking (symbol)	R9-4a	2B.43	450x450 (18x18)	
Bikes Yield to Peds	R9-6	9B.10	300x450 (12x18)	School, Warning, Informational
Ped Traffic Symbol	R10-4b	2B.45	225x300 (9x12)	
School Advance Warning	S1-1	7B.08	900x900 (36x36)	
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.41	750x750 (30x30)	
Playground	W15-1	2C.42	750x750 (30x30)	
Hiking Trail	I-4	--	600x600 (24x24)	

1. Larger signs may be used when appropriate.
2. Dimensions are shown in millimeters followed by inches in parentheses and are shown as width x height.
3. First dimension in millimeters; dimensions in parentheses are in inches.
4. All information in table taken directly from MUTCD.

For a step-by-step guide to help non-professionals participate in the process of developing and designing a signage system, as well as information on the range of signage types, visit the Project for Public Places website:

[http://www.pps.org/info/amenities\\_bb/signage\\_guide](http://www.pps.org/info/amenities_bb/signage_guide)



# Greenways

A greenway (also known as a shared-use path) allows for two-way use by pedestrians, skaters, bicyclists, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Path facilities can also include amenities such as lighting, signage, and fencing (where appropriate).

Key features of greenways include:

- Frequent access points from the local road network.
- Directional signs to direct users to and from the path.
- A limited number of at-grade crossings with streets or driveways.
- Terminating the path where it is easily accessible to and from the street system.
- Separate treads for pedestrians and bicyclists when heavy use is expected.

## Neighborhood Greenways

Also included in this section is a facility called a Neighborhood Greenway. Unlike conventional greenways, this facility is not a separate path, but is rather a calm street designed for a broad spectrum of users. Traffic calming treatments for neighborhood greenways are selected as necessary to create appropriate automobile volumes and speeds, and to provide safe crossing opportunities of busy streets.



# General Design Practices

## Description

Greenways can provide a desirable facility for users of all skill levels preferring separation from traffic, particularly for recreation. Greenways should generally provide directional travel opportunities not provided by existing roadways.

## Guidance

### Width

- 8 feet is the minimum allowed for a two-way greenway path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users. A separate track (5' minimum) can be provided for pedestrian use.

### Lateral Clearance

- A 2 foot or greater shoulder on both sides of the path should be provided. An additional foot of lateral clearance (total of 3') is required by the MUTCD for the installation of signage or other furnishings.

### Overhead Clearance

- Clearance to overhead obstructions should be 8 feet minimum, with 10 feet recommended.

## Striping

When striping is required, use a 4 inch dashed yellow centerline stripe with 4 inch solid white edge lines. Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.

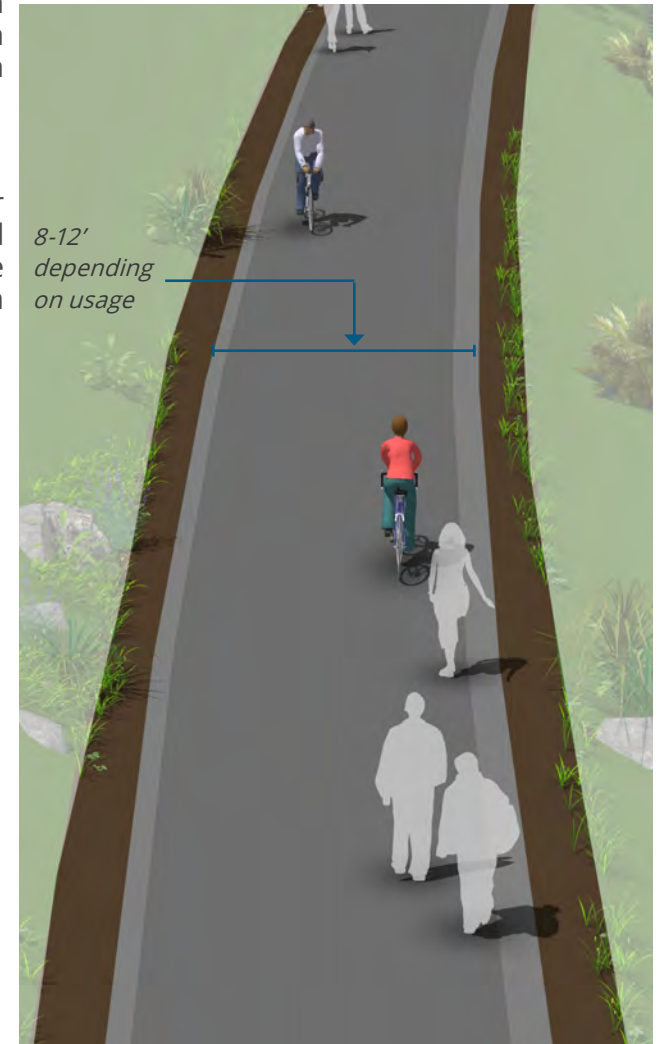
## Materials and Maintenance

Asphalt is the most common surface for greenways. Thicker asphalt sections and a well-prepared subgrade will reduce deformation over time and reduce long-term maintenance costs.

## Additional References and Guidelines

AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES. FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. FLINK, C. (1993). GREENWAYS: A GUIDE TO PLANNING DESIGN AND DEVELOPMENT. NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.

*Terminate the path where it is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street.*





# Neighborhood Greenways

## Description

Neighborhood greenways are low-volume, low-speed streets modified to enhance bicyclist comfort by using treatments such as signage, pavement markings, traffic calming and/or traffic reduction, and intersection modifications. These treatments allow through movements of bicyclists while discouraging similar through-trips by non-local motorized traffic.

## Guidance

Signs and pavement markings are the minimum treatments necessary to designate a street as a neighborhood greenway.

Neighborhood greenways should have a maximum posted speed of 25 mph. Use traffic calming to maintain an 85th percentile speed below 22 mph.

Implement volume control treatments based on the context of the neighborhood greenway, using engineering judgment. Target motor vehicle volumes range from 1,000 to 3,000 vehicles per day.

Intersection crossings should be designed to enhance safety and minimize delay for bicyclists.

## Discussion

Neighborhood greenway retrofits to local streets are typically located on streets without existing signalized accommodation at crossings of collector and arterial roadways. Without treatments to assist pedestrian crossing, these intersections can become major barriers along the neighborhood greenway and compromise safety.

Traffic calming can deter motorists from

driving on a street. Anticipate and monitor vehicle volumes on adjacent streets to determine whether traffic calming results in inappropriate volumes.

## Materials and Maintenance

Maintenance needs for bicycle signs are similar to other signs. Signs will need periodic replacement due to wear.

## Additional References and Guidelines

- ALTA PLANNING + DESIGN AND IBPI. (2009). BICYCLE BOULEVARD PLANNING AND DESIGN HANDBOOK.
- BIKESAFE. (NO DATE). BICYCLE COUNTERMEASURE SELECTION SYSTEM.
- EWING, REID. (1999). TRAFFIC CALMING: STATE OF THE PRACTICE.
- EWING, REID AND BROWN, STEVEN. (2009). U.S. TRAFFIC CALMING MANUAL.

### Signs and Pavement

**Markings** identify the street as a pedestrian and bicycle priority route.



### Partial Closures

and other volume management tools limit the number of cars traveling on the neighborhood greenway.

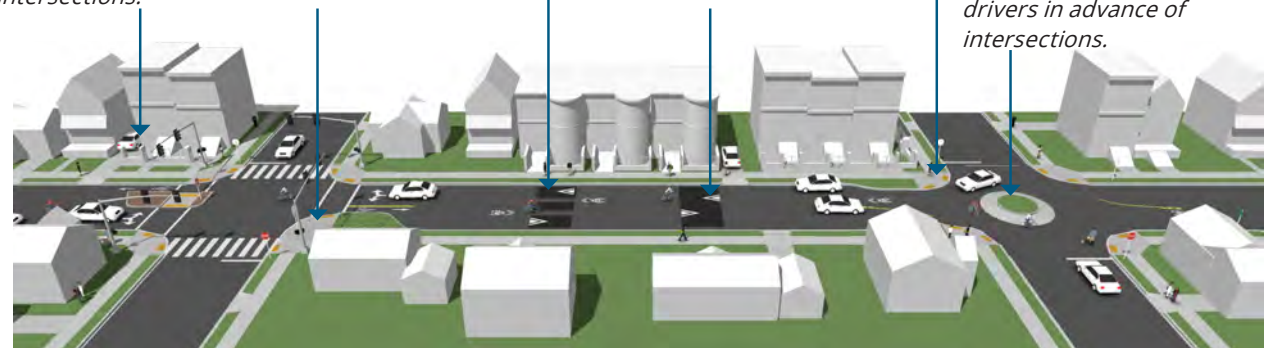
### Enhanced Crossings

use signals, beacons, and road geometry to increase safety at major intersections.

**Speed Humps** manage driver speed.

**Curb Extensions** shorten pedestrian crossing distance.

**Mini Traffic Circles** slow drivers in advance of intersections.



# Local Neighborhood Accessways

## Description

Neighborhood accessways provide residential areas with direct pedestrian access to parks, trails, greenspaces, and other recreational areas. They most often serve as small trail connections to and from the larger trail network, typically having their own rights-of-way and easements.

Additionally, these smaller trails can be used to provide pedestrian connections between dead-end streets, cul-de-sacs, and access to nearby destinations not provided by the street network.

## Guidance

- Neighborhood accessways should remain open to the public.
- Trail pavement shall be at least 8' wide to accommodate emergency and maintenance vehicles, meet ADA

requirements and be considered suitable for multi-use.

- Trail widths should be designed to be less than 8' wide only when necessary to protect large mature native trees over 18" in caliper, wetlands or other ecologically sensitive areas.
- Access trails should slightly meander whenever possible.

## Discussion

Neighborhood accessways should be designed into new subdivisions at every opportunity and should be required by City/County subdivision regulations.

For existing subdivisions, neighborhood and homeowner association groups are encouraged to identify locations where

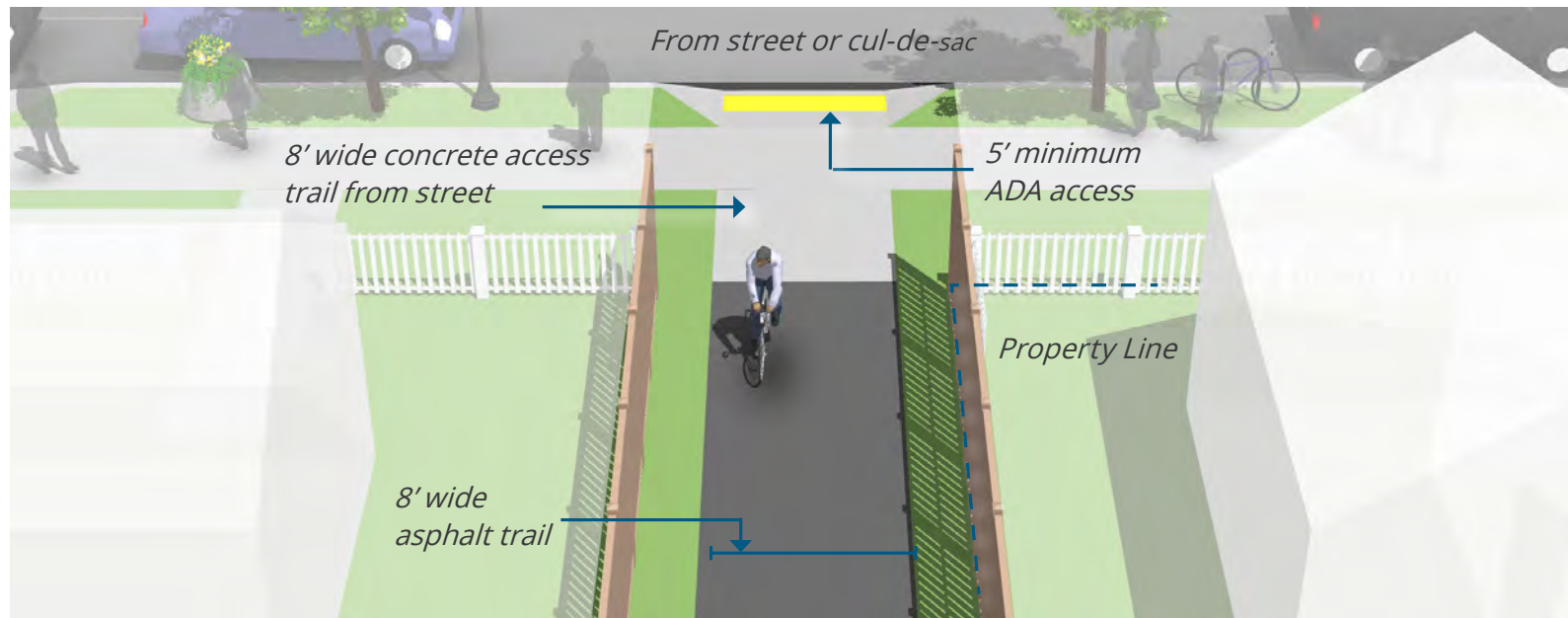
such connects would be desirable. Nearby residents and adjacent property owners should be invited to provide landscape design input.

## Materials and Maintenance

Asphalt greenways should be designed with sufficient surfacing structural depth for the subgrade soil type to support maintenance and emergency vehicles.

## Additional References and Guidelines

AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES. FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. FHWA. (2006). FEDERAL HIGHWAY ADMINISTRATION UNIVERSITY COURSE ON BICYCLE AND PEDESTRIAN TRANSPORTATION. LESSON 19: GREENWAYS AND SHARED USE PATHS.





# Multi-Use Paths Along Roadways

## Description

A multi-use path allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles.

Along roadways, these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding where bicyclists enter or leave the path.

The AASHTO Guide for the Development of Bicycle Facilities generally recommends against the development of multi-use paths directly adjacent to roadways.

## Guidance

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users such as joggers, bicyclists, rollerbladers and pedestrians. A separate track (5' minimum) can be provided for pedestrian use.
- Bicycle lanes should be provided as an alternate (more transportation-oriented) facility whenever possible.

## Discussion

When designing a bikeway network, the presence of a nearby or parallel path should not be used as a reason to not provide adequate shoulder or bicycle lane width on the roadway, as the on-street bicycle facility will generally be superior to the "sidepath" for experienced bicyclists and those who are cycling for transportation purposes.

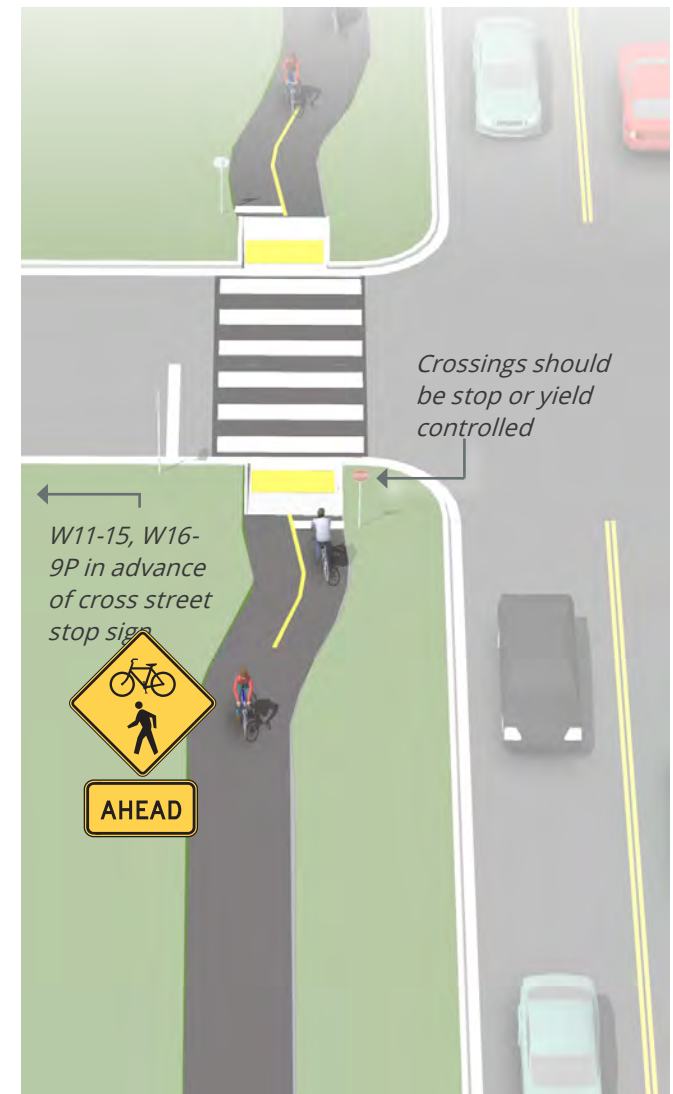
## Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

## Additional References and Guidelines

AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES.  
NACTO. (2012). URBAN BIKEWAY DESIGN GUIDE. SEE ENTRY ON RAISED CYCLE TRACKS.  
NCDOT. (1994). BICYCLE FACILITIES PLANNING AND DESIGN GUIDELINES.

*Pay special attention to the entrance/exit of the path as bicyclists may continue to travel on the wrong side of the street.*



# Natural Surface Greenways

## Description

Sometimes referred to as footpaths or hiking trails, the natural surface trail is used along corridors that are environmentally-sensitive but can support bare earth, wood chip, or boardwalk trails. Natural surface trails are a low-impact solution and found in areas with limited development or where a more primitive experience is desired.

Guidance presented in this section does not include considerations for bicycle users. Natural surface trails designed for bicycle users are typically known as single track trails.

## Guidance

Trails can vary in width from 18 inches to 6 feet or greater; vertical clearance should be maintained at nine-feet above grade.

Base preparation varies from machine-worked surfaces to those worn only by usage.

Trail surface can be made of dirt, rock, soil, forest litter, or other native materials. Some trails use crushed stone (a.k.a. “crush and run”) that contains about 4% fines by weight, and compacts with use.

Provide positive drainage for trail tread without extensive removal of existing vegetation; maximum slope is five percent (typical).

## Discussion

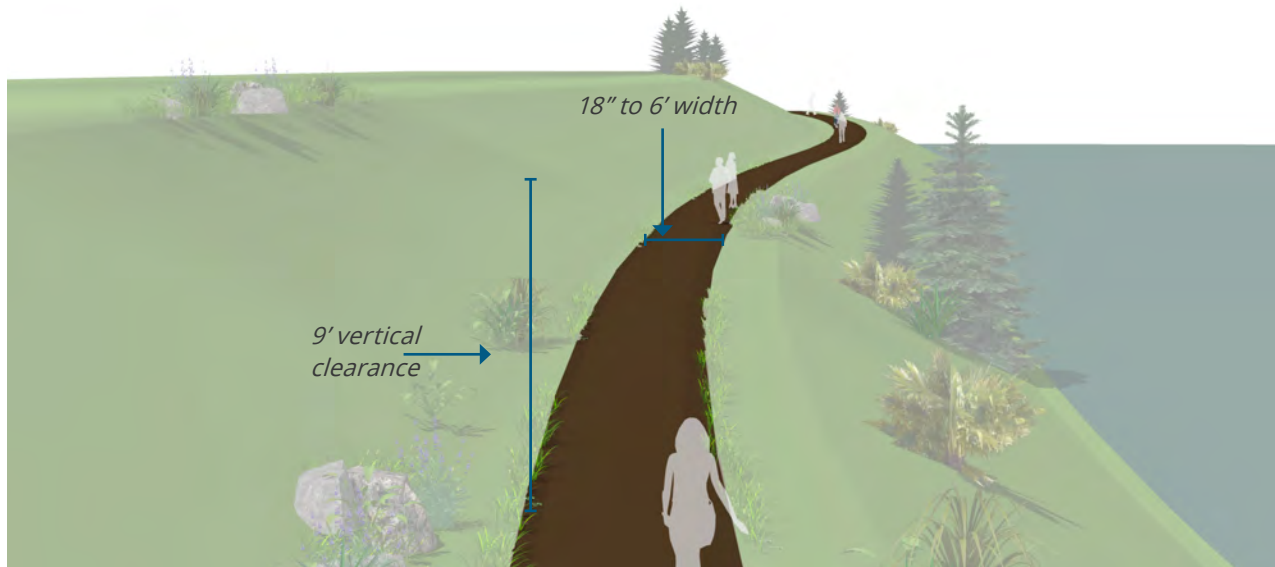
Trail erosion control measures include edging along the low side of the trail, steps and terraces to contain surface material, and water bars to direct surface water off the trail; use bedrock surface where possible to reduce erosion.

## Materials and Maintenance

Consider implications for accessibility when weighing options for surface treatments.

## Additional References and Guidelines

FLINK, C. (1993). GREENWAYS: A GUIDE TO PLANNING DESIGN AND DEVELOPMENT.





# Greenways in Active Rail Corridors

## Description

Rails-with-Trails projects typically consist of paths adjacent to active railroads. It should be noted that some constraints could impact the feasibility of rail-with-trail projects. In some cases, space needs to be preserved for future planned freight, transit or commuter rail service. In other cases, limited right-of-way width, inadequate setbacks, concerns about safety/trespassing, and numerous mid-block crossings may affect a project's feasibility.

## Guidance

Greenways in active rail corridors should meet or exceed general design standards. If additional width allows, wider paths, and landscaping are desirable.

If required, fencing should be a minimum of 5

feet in height with higher fencing than usual next to sensitive areas such as switching yards. Setbacks from the active rail line will vary depending on the speed and frequency of trains, and available right-of-way.

## Discussion

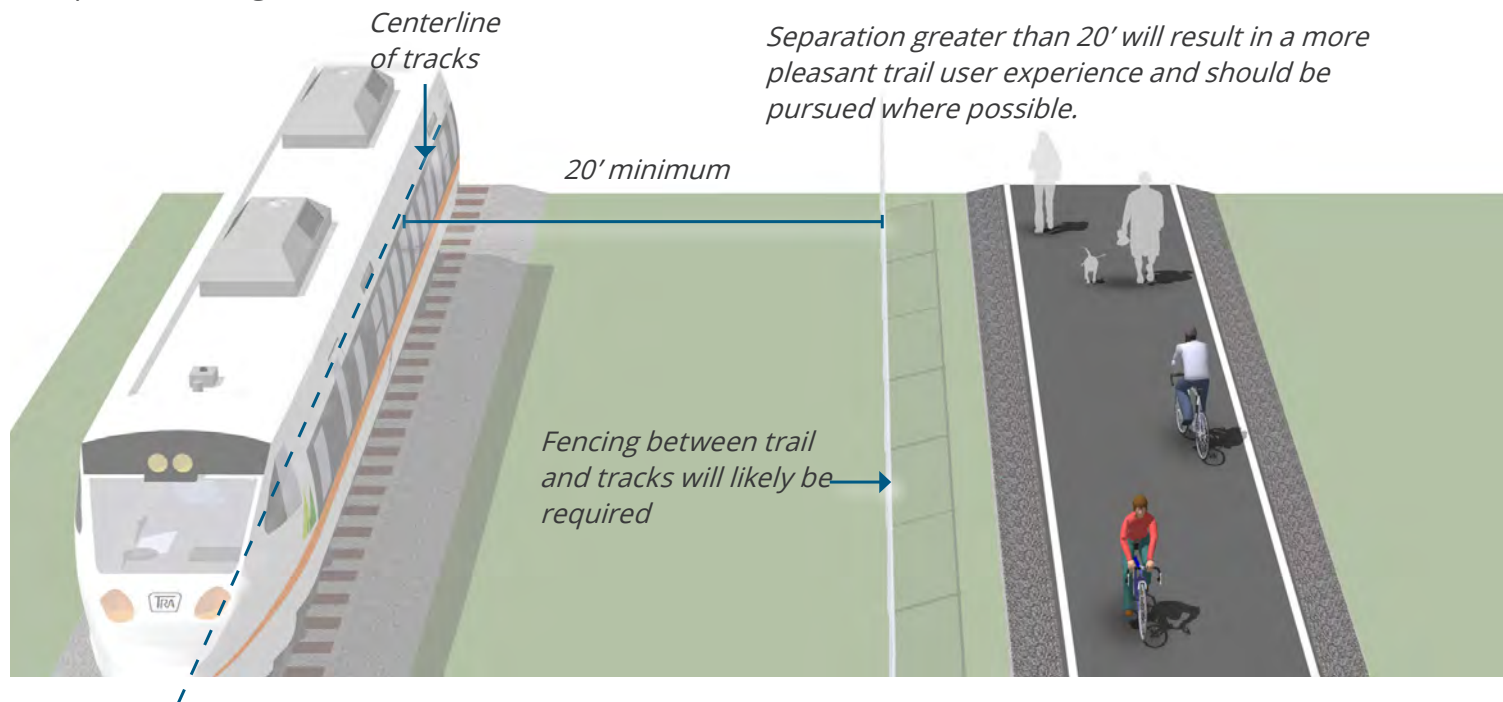
Railroads typically require fencing with all rail-with-trail projects. Concerns with trespassing and security can vary with the amount of train traffic on the adjacent rail line and the setting of the greenway, i.e. whether the section of track is in an urban or rural setting.

## Materials and Maintenance

Concrete paths may cost more to build than asphalt paths but do not become brittle, cracked and rough with age, or deformed by roots.

## Additional References and Guidelines

AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES. FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. FHWA. (2002). RAILS-WITH-TRAILS: LESSONS LEARNED.



# Greenways in Inactive Rail Corridors

## *Description*

Commonly referred to as Rails-to-Trails or Rail-Trails, these projects convert vacated rail corridors into greenway paths. Rail corridors offer several advantages, including relatively direct routes between major destinations and generally flat terrain.

In some cases, rail owners may rail-bank their corridors as an alternative to a complete abandonment of the line, thus preserving the rail corridor for possible future use.

The railroad may form an agreement with any person, public or private, who would like to use the banked rail line as a trail or linear park until it is again needed for rail use. Municipalities should acquire abandoned rail rights-of-way whenever possible to preserve the opportunity for greenway development.

## *Guidance*

Greenways in abandoned rail corridors should meet or exceed general design practices. If additional width allows, wider paths, and landscaping are desirable.

In full conversions of abandoned rail corridors, the sub-base, superstructure, drainage, bridges, and crossings are already established. Design becomes a matter of working with the existing infrastructure to meet the needs of a rail-trail.

If converting a rail bed adjacent to an active rail line, see Greenways in Active Rail Corridors

## *Discussion*

It is often impractical and costly to add material to existing railroad bed fill slopes. This results in trails that meet minimum path widths, but often lack preferred shoulder and lateral clearance widths.

Rails-to-trails can involve many challenges including the acquisition of the right of way, cleanup and removal of toxic substances, and rehabilitation of tunnels, trestles and culverts. A structural engineer should evaluate existing railroad bridges for structural integrity to ensure they are capable of carrying the appropriate design loads.

## *Materials and Maintenance*

The use of concrete for paths has proven to be more durable over the long term compared to asphalt. Saw cut concrete joints, rather than troweling, to improve the experience of path users.

## **Additional References and Guidelines**

- AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE
- FLINK, C. (1993). GREENWAYS: A GUIDE TO PLANNING DESIGN AND DEVELOPMENT.
- NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.





# Greenways in Abandoned Rail Corridors

## Description

Commonly referred to as Rails-to-Trails or Rail-Trails, these projects convert vacated rail corridors into off-street paths. Rail corridors offer several advantages, including relatively direct routes between major destinations and generally flat terrain.

In some cases, rail owners may rail-bank their corridors as an alternative to a complete abandonment of the line, thus preserving the rail corridor for possible future use.

The railroad may form an agreement with any person, public or private, who would like to use the banked rail line as a trail or linear park until it is again needed for rail use. Municipalities should acquire abandoned rail rights-of-way whenever possible to preserve the opportunity for trail development.

## Guidance

Greenways in abandoned rail corridors should meet or exceed general design practices. If additional width allows, wider paths, and landscaping are desirable.

In full conversions of abandoned rail corridors, the sub-base, superstructure, drainage, bridges, and crossings are already established. Design becomes a matter of working with the existing infrastructure to meet the needs of a rail-trail.

If converting a rail bed adjacent to an active rail line, see Greenways in Existing Active Rail Corridors.

## Discussion

It is often impractical and costly to add material to existing railroad bed fill slopes. This results in trails that meet minimum path widths, but often lack preferred shoulder and lateral clearance widths.

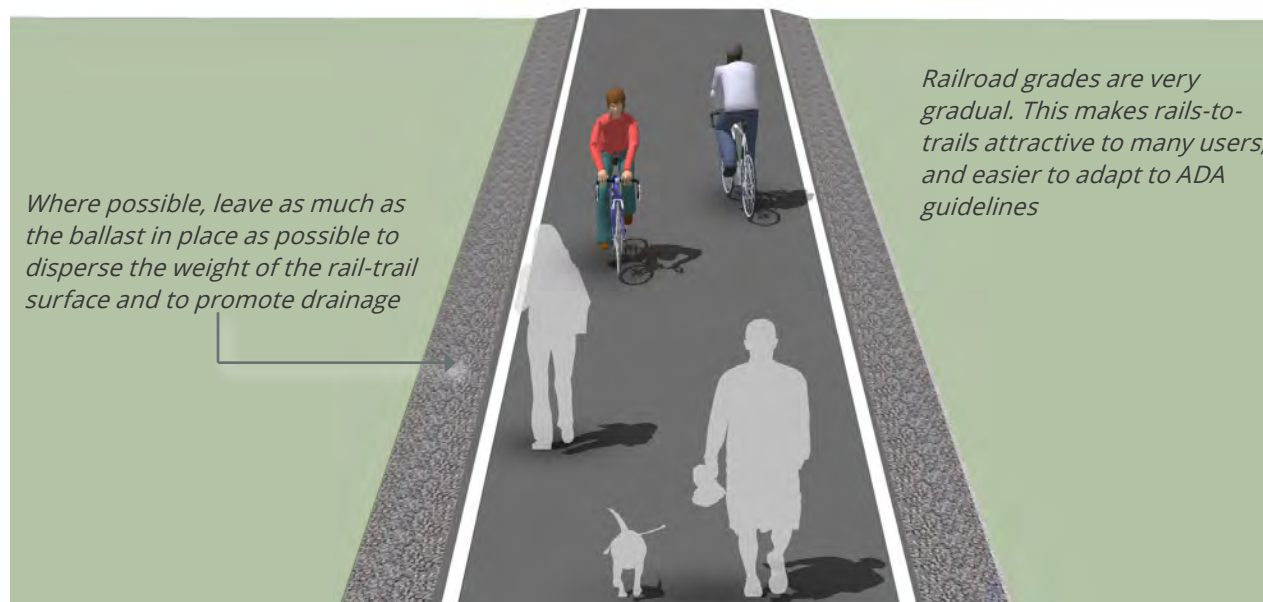
Rail-to-trails can involve many challenges including the acquisition of the right of way, cleanup and removal of toxic substances, and rehabilitation of tunnels, trestles and culverts. A structural engineer should evaluate existing railroad bridges for structural integrity to ensure they are capable of carrying the appropriate design loads.

## Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

## Additional References and Guidelines

AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES. FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. FLINK, C. (1993). GREENWAYS: A GUIDE TO PLANNING DESIGN AND DEVELOPMENT.

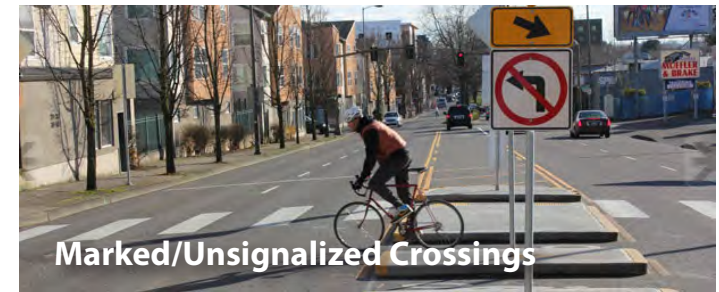


# Greenway Crossings

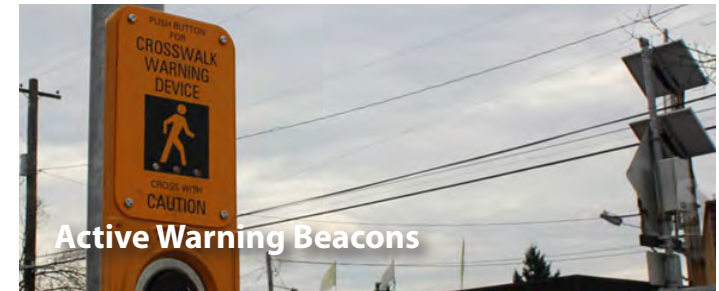
At-grade roadway crossings can create potential conflicts between path users and motorists, however, well-designed crossings can mitigate many operational issues and provide a higher degree of safety and comfort for path users. This is evidenced by the thousands of successful facilities around the United States with at-grade crossings. In most cases, at-grade path crossings can be properly designed to provide a reasonable degree of safety and can meet existing traffic and safety standards. Path facilities that cater to bicyclists can require additional considerations due to the higher travel speed of bicyclists versus pedestrians.

Consideration must be given to adequate warning distance based on vehicle speeds and line of sight, with the visibility of any signs absolutely critical. Directing the active attention of motorists to roadway signs may require additional alerting devices such as a flashing beacon, roadway striping or changes in pavement texture. Signing for path users may include a standard "STOP" or "YIELD" sign and pavement markings, possibly combined with other features such as bollards or a bend in the pathway to slow bicyclists. Care must be taken not to place too many signs at crossings lest they begin to lose their visual impact.

A number of striping patterns have emerged over the years to delineate path crossings. A median stripe on the path approach will help to organize and warn path users. Crosswalk striping is typically a matter of local and State preference, and may be accompanied by pavement treatments to help warn and slow motorists. In areas where motorists do not typically yield to crosswalk users, additional measures may be required to increase compliance.



**Marked/Unsignalized Crossings**



**Active Warning Beacons**



**Route Users to Existing Signals**



# Unsignalized Marked Crossings

## Description

An unsignalized marked crossing typically consists of a marked crossing area, signage and other markings to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, pathway traffic, use patterns, vehicle speed, road type, road width, and other safety issues such as proximity to major attractions.

When space is available, using a median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the safe crossing of one side of the street at a time.

## Guidance

Refer to the FHWA report, "Safety Effects of Marked vs. Unmarked Crosswalks at

Uncontrolled Locations" for specific volume and speed ranges where a marked crosswalk alone may be sufficient.

Where the speed limit exceeds 40 miles per hour, marked crosswalks alone should not be used at unsignalized locations.

Crosswalks should not be installed at locations that could present an increased risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices.

## Discussion

Marked crosswalks alone will not make crossings safer, nor will marked crosswalks necessarily result in more vehicles stopping for pedestrians. Whether or not marked

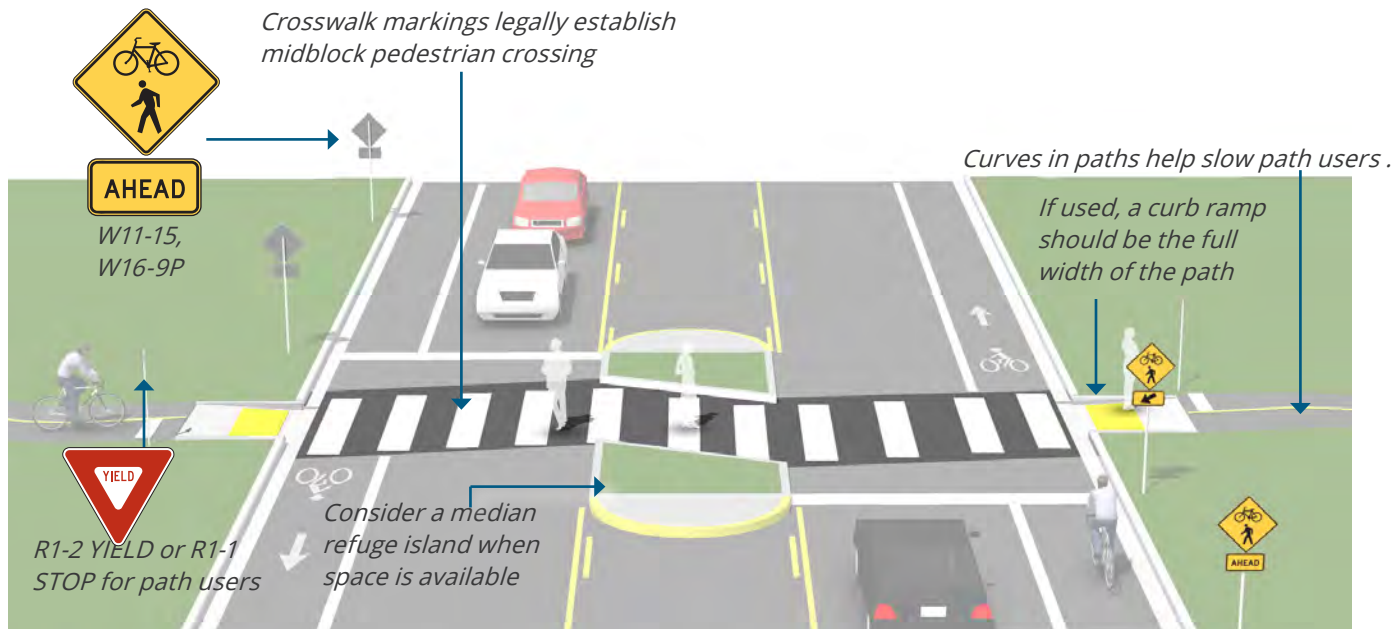
crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g. raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions, etc.) as needed to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding which treatment to use.

## Materials and Maintenance

Locate markings out of wheel tread when possible to minimize wear and maintenance costs.

## Additional References and Guidelines

- AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES.
- FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- NC DOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.



# Active Warning Beacons

## Description

Enhanced marked crossings are unsignalized crossings with additional treatments designed to increase motor vehicle yielding compliance on multi-lane or high volume roadways.

These enhancements include pathway user or sensor actuated warning beacons, Rectangular Rapid Flash Beacons (RRFB) shown below, or in-roadway warning lights.

## Guidance

- Guidance for Unsignalized Marked Crossings applies.
- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.

- Warning beacons shall initiate operation based on user actuation and shall cease operation at a predetermined time after the user actuation or, with passive detection, after the user clears the crosswalk.

## Discussion

Rectangular rapid flash beacons show the most increased compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88%. Additional studies of long term installations show little to no decrease in yielding behavior over time.

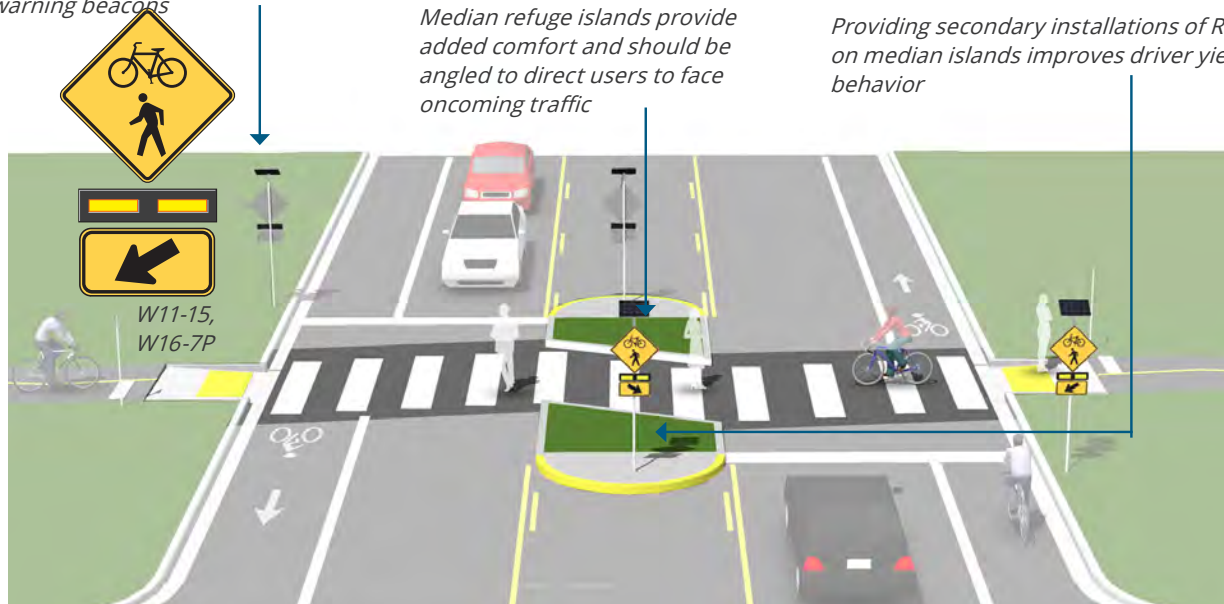
## Materials and Maintenance

Depending on power supply, maintenance of active warning beacons can be minimal. If solar power is used, signals should run for years without issue.

## Additional References and Guidelines

NACTO. (2012). URBAN BIKEWAY DESIGN GUIDE.  
FHWA. (2009). MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.  
FHWA. (2008). MUTCD - INTERIM APPROVAL FOR OPTIONAL USE OF RECTANGULAR RAPID FLASHING BEACONS (IA-11) NCDOT. (2012). COMPLETE STREETS PLANNING AND DESIGN GUIDELINES.

*Rectangular Rapid Flash Beacons (RRFB) dramatically increase compliance over conventional warning beacons*





# Route Users to Signalized Crossings

## Description

Path crossings within approximately 400 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection to avoid traffic operation problems when located so close to an existing signal. For this restriction to be effective, barriers and signing may be needed to direct path users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.

## Guidance

Path crossings should not be provided within approximately 400 feet of an existing signalized intersection. If possible, route path directly to the signal.

## Discussion

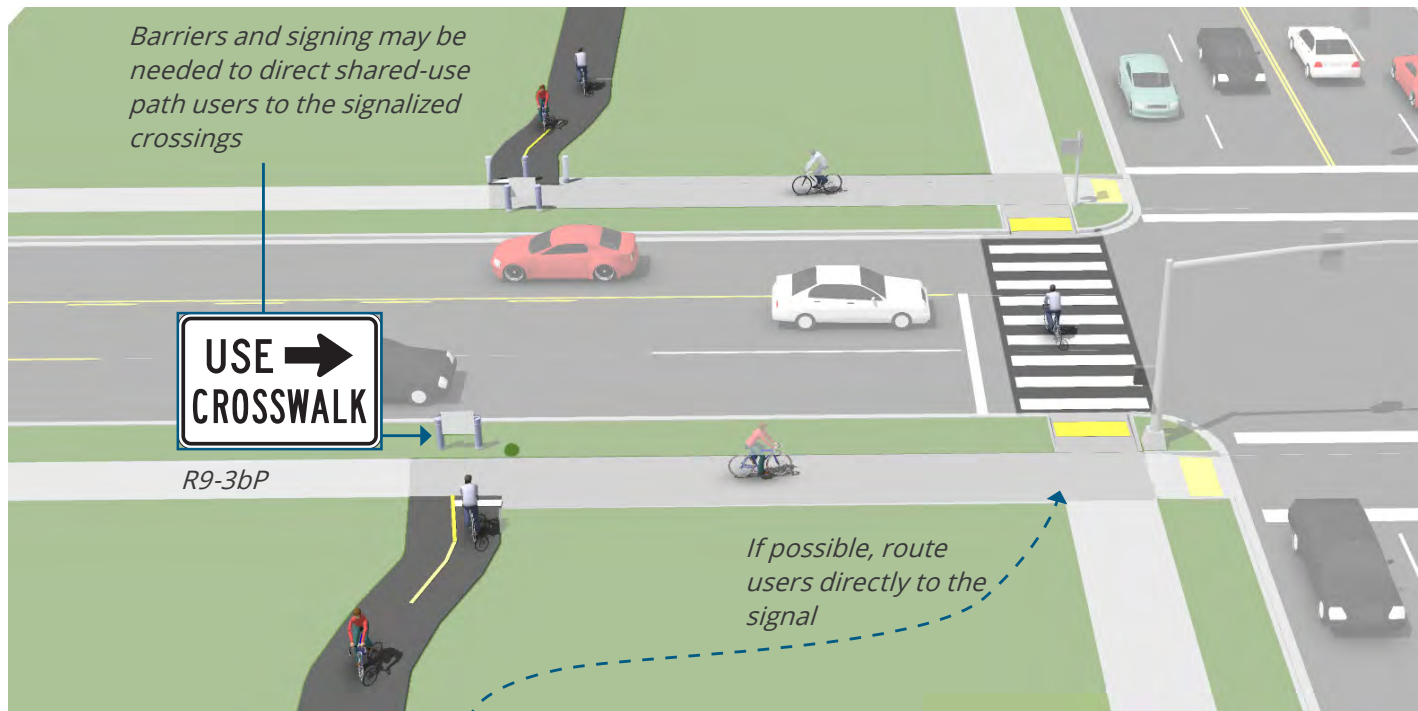
In the US, the minimum distance a marked crossing can be from an existing signalized intersection varies from approximately 250 to 660 feet. Engineering judgement and the context of the location should be taken into account when choosing the appropriate allowable setback. Pedestrians are particularly sensitive to out of direction travel and jaywalking may become prevalent if the distance is too great.

## Materials and Maintenance

Municipalities should maintain comprehensive inventories of the location and age of bicycle wayfinding signs to allow incorporation of bicycle wayfinding signs into any asset management activities.

## Additional References and Guidelines

- AASHTO. (2012). GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES.
- AASHTO. (2004). GUIDE FOR THE PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES.



*Siler City Pedestrian Plan Steering Committee Meeting, May 7, 2013*





# B Public Outreach & Engagement

## Overview

Public engagement involved numerous components to spread awareness of the Pedestrian Master Plan and to ensure a variety of local perspectives containing essential insight were appropriately incorporated into the plan. Various mediums and resources were constructed so that all residents and stakeholders in Siler City and the surrounding areas had the opportunity to participate.

The public engagement component of this Plan included the following:

1. Steering Committee Meetings
2. Stakeholder Meetings
3. Public Outreach Events
4. Project Information Resources
  1. Project website with Hispanic Community outreach section
  2. Project comment forms in English and Spanish
  3. Project information cards in English and Spanish
  4. Static informational project display board

## Steering Committee Meetings

The Steering Committee was involved throughout the planning process. During the kick-off meeting, the group reviewed and provided feedback on the project website, project comment form, established a vision statement and goals for the plan, and discussed the timeline and schedule of the planning process. Members of the Steering Committee worked with the consultant team to mark up local and regional maps to identify gaps in the current network, on safe crossing locations and other high priority areas. Input from the Steering Committee is reflected throughout the recommendations of this planning document.



*Siler City Pedestrian Plan Steering Committee Meeting, March 21, 2013*

## APPENDIX CONTENTS

- Overview (B-1)*
- Steering Committee Meetings (B-1)*
- Stakeholder & Community Meetings (B-2)*
- Public Events (B-2)*
- Project Resources (B-3)*
- Public Comment Form Responses (B-6)*



*Siler City Pedestrian Plan Steering Committee Meeting, July 9, 2013*

# Stakeholder & Community Meetings

Throughout the planning process, meetings were held with Latino groups, business owners, neighborhood leaders, and residents. In March of 2013, the consultant team met with El Vinculo to discuss public outreach strategies and to deliver hard copies of the Spanish public comment form version and project information card. Representatives from El Vinculo agreed to distribute these materials and answer questions that arose during the planning process. In April, the consultant team also met with downtown Latino business owners to discuss the project and distribute project materials.

On May 21, 2013 the Town of Siler City hosted a stakeholder meeting with representatives from the community to discuss pedestrian issues and desired improvements around Town. The main subjects discussed included sidewalk gaps, multi-use greenway trail expansions, the need for safe crossings, lighting, traffic and speed calming, and targeted pedestrian-related programs. The meeting attendees marked up current condition maps and voted on programmatic recommendation priorities.

In June of 2013, Town staff met with NCDOT Division 8 representatives, and a representative from NCDOT's DBPT to discuss the Pedestrian Master Plan goals, planning process, preliminary pedestrian network recommendations and the top 10

high priority projects. Each project located on NCDOT-owned roadways were reviewed and implementation strategies were discussed.

## Targeted Outreach

To ensure the full and fair participation by all communities in the planning and decision-making process, a targeted public outreach strategy specific to the population groups that exist in Siler City was developed early in the planning process. This strategy involved face-to-face meetings, letters, emails, and phone calls to the following groups, organizations and affiliations:

1. Chatham County Schools
2. Piedmont Health
3. Court Yard Coffee and Soda in Siler City
4. Siler City Country Club Facebook
5. Triangle Fitness of Siler City
6. Siler City Boy Scouts
7. Boys and Girls Club Siler City
8. Siler City Merchant Association
9. Chatham County Economic Development Corporation
10. Chatham County Habitat for Humanity in Siler City
11. Siler City Lions Club
12. Chatham County Chamber of Commerce
13. Siler City Rotary Club
14. Siler City NC STEP

15. Churches:

- a. Siler City First Methodist Church
- b. First Baptist Church of Siler City
- c. Siler City Pentecostal
- d. Community Baptist Church
- e. Rocky River Baptist Church
- f. Faith Baptist Church
- g. Wesleyan Church
- h. City Church, Siler City

16. Mobile Home Park Neighborhood Managers/Owners

## Public Events

In anticipation of the expected attendance for all public outreach and engagement events, the consultant team had staff at the booth who could communicate in Spanish to Hispanic/Latino residents. Spanish language project materials were brought to the events and efforts were made to connect and collect input from Spanish-speaking residents.

At all meetings, events, and workshops, public input was obtained in the form of map markups, written comments, verbal question and answer sessions, and discussions between citizens, consultant staff and representatives of the Steering Committee.

In addition, hardcopy public comment forms in English and in Spanish were distributed for hand written responses during each meeting. These were important opportunities to connect to a wide range of citizens in the area.





## 5K Race for Family Peace

The first public engagement event was held during the 5K Race for Family Peace on May 4th, 2013 in downtown Siler City. People were invited to learn about the plan and provide comments regarding where they would like to see improvements for walking around the community. A public input map, comment forms, and posters were provided for review and project consultants answered questions and took comments. Project information cards were also distributed in English and Spanish that provided the online link to the web-based comment form. Many race participants and their family members stopped by the booth to learn about the plan and provide input. The general feedback was highly positive, with many people impressed that Siler City was being proactive in addressing walkability.

## National Night Out

A second public workshop was held during the August 6th, 2013 National Night Out celebration. Three teams of two people attended celebrations at three different neighborhood locations. The Siler City Pedestrian Master Plan information booths at each of the three locations (Downtown, E. Fifth Street, and Washington Park) consisted of two large boards (attached to opposite sides of one large board) with maps and project information as well as one smaller board showing general examples of pedestrian infrastructure. The two large boards consisted of project vision and goals, one large overall map showing existing and proposed network recommendations,

one close-up of the downtown area, and advanced visualizations showing possibilities for priority project recommendations.

Between all three sites, the consultant team and volunteer members of the Steering Committee engaged over 100 people. Numerous suggestions by citizens reaffirmed draft recommendations displayed on the project boards. One citizen suggested the addition of a greenway recommendation along Indian Creek; the citizen currently uses a small path to hike in this area and would be excited for the corridor to be more accessible to the general public. Many others generally commented on the need to bring housing and business opportunities back to the downtown area. This could happen in conjunction with the enhancement of the pedestrian network and infrastructure.

*Photos from National Night Out*



*Photo from the 5K Race for Family Peace*



# Project Resources

A number of resources were developed to enhance project awareness and participation. These tools also played a significant role in ensuring all members of the general public would have the opportunity to participate.

## Project Website

A project website was developed to provide further project information, another avenue for public input, maps, contact information, and additional resources. The public comment form page of the website featured a section in Spanish, offering an opportunity for the Latino community in Siler City to become engaged and participate in the planning process.

## Public Comment Form

A comment form was developed in English and Spanish, and was made available in both hardcopy and online formats. The comment form was available online throughout the duration of the project. To maximize responses to the online form, the web address was distributed at public meetings, advertised in press releases, sent out to local interest groups, and included on flyers that were distributed around the City. Over 150 residents completed either the English or the Spanish comment form.

Results of the comment form were collected and tabulated by the Consultant to provide insight into local residents' values and opinions about the project. The results are included beginning on page B-6 of this Appendix.

## Project Information Cards

The information cards shown on this page were designed in both English and Spanish to spread awareness of the project as well as where further information and project contacts could be found. With a diverse general public having access to different avenues of communication opportunities, these public engagement components provided mediums through which all voices of the Siler City community could be heard.



**Pedestrian Master Plan**  
**Siler City, NC**

**Help Us Make Siler City More Walkable!**

Where do you wish you could walk in Siler City?  
Where do you want to see crosswalks?  
Where should the next greenway trail be?

We want to hear from you!! Use this link to send us your opinions through the online comment form:  
<https://www.surveymonkey.com/s/SilerCityPedPlan>

**Learn More About the Project:**  
[www.silercitypedplan.com](http://www.silercitypedplan.com)

Project Contact: Mr. Jack Meadows  
Director of Planning & Community Development  
Phone: 919-742-2323  
Email: [jmeadows@silercity.org](mailto:jmeadows@silercity.org)



**Plan Integral de Peatones**  
**Siler City, NC**

S. Tenth Avenue Visualization

**¡Imagine una Siler City más fácil de caminar!**  
¡Aprenda donde estará la próxima vía verde!  
¡Vea qué proyectos se han propuesto para su vecindario!  
¡Descubra nuevos lugares seguros para caminar con su familia y sus amigos!  
**Se Encuentre Más, Visitenos en el Internet:**

**[www.silercitypedplan.com/espanol.html](http://www.silercitypedplan.com/espanol.html)**

Contacto:  
Mr. Sergio Borrayo  
Teléfono: 919-742-2323  
Email: [sborrayo@silercity.org](mailto:sborrayo@silercity.org)







Contacto: Mr. Sergio Borrayo: sborrayo@silercity.org

Página Web: www.silercitypedplan.com/espanoldeol.html

1. ¿Cómo considera las condiciones existentes para peatones (andenes, senderos, cruces, etc) en Siler City? (Selecione una opción)

Excelentes    Aceptables    Deficientes

2. Siler City debería ser una comunidad donde (Seleccione una opción):

- Existán andenes sólo en vías principales
- Existán andenes en las calles de los vecindarios
- Existán andenes en todas las calles
- Exista una red de vías verdes que permita el acceso a destinos importantes en la ciudad
- La gente deba caminar en la calle

3. Siler City debería requerir que los constructores de complejos comerciales y residenciales incluyan andenes en todos sus proyectos.

Si    No

4. ¿Qué requerimientos deberían ser aplicados para los proyectos de construcción, reconstrucción, y/o desarrollo? (Marque todos los que apliquen)

- Anulación de los reparadores
- Para rallar el tráfico tales como señales de PARE
- Andenes
- Señales automáticas para peatones
- Arbolización de andenes
- Iluminación adecuada
- Señalización para peatones
- Vegetación para separar los andenes de las vías
- Lugares seguros para caminar en los centros comerciales
- Conexiones peatonales entre los vecindarios, centros comerciales, parques y otros destinos
- Cruces peatonales demarcados en las intersecciones

5. ¿Se deberían utilizar fondos públicos (subsidios, impuestos, fondos de mejoramiento, etc.) para mejorar los espacios e infraestructura peatonal?

Si    No

6. ¿Cuál corredor vial, lugar o vecindario en Siler City considera usted son los menos seguros para peatones?

7. ¿Cuál intersección considera usted es la menos segura para cruzar por peatones? (Marque una casilla)

- Calle 31 St & Avenida 6<sup>th</sup>
- Calle 4to E. & Avenida 31<sup>st</sup> N.
- Calle 11 E. & Pine Glades
- Calle Raleigh S & Ave 10<sup>th</sup> S.
- Avenida Sears S. & Calle 10 E
- Calle 11 E. & MK

8. ¿Con qué frecuencia camina usted? (Marque una opción)

- Nunca
- Algunas veces por semana
- Algunas veces al mes
- 5+ veces por semana

9. ¿Caminaría usted con más frecuencia si existieran más andenes, caminos y cruces seguros para peatones?

Si    No

10. ¿Con qué propósito camina usted ahora o le motivaría a caminar en el futuro?

- Recreación y deporte
- Disfrutar de la naturaleza
- Como medio de transporte
- Para ir a la escuela
- Visitar a la familia
- Visitar a la escuela

Sexo:  Mujer     Hombre

Edad:  -18     18-26     27-35     36-44     45-54     55-64     65-74     75+

(¿Cuál intersección es la más segura para usted?)

11. ¿Dónde camina o dónde le gustaría caminar en Siler City? (Marque todos los que apliquen)

- Al centro
- Al trabajo
- Iglesia
- Biblioteca
- Escuelas
- Centros comerciales
- Parques
- Caminos y vías verdes
- Centros recreativos
- Restaurantes
- Entretenimiento
- Tienda
- Restaurantes de comidas rápidas
- Farmacia/Drogeria
- Gimnasio
- Casa de amigos o familiares
- En el barrio o mi cuadra
- No camino ni voy en bicicleta a ninguno de esos lugares
- A ningún lugar en particular solo por ejercicio o recreación
- Otro (calle, camino, lugar, etc.)

12. ¿Por qué razones no camina usted más seguido? (Marque todas las que apliquen)

- Falta de protección (vegetación) entre el andén y la vía
- Falta de andenes y Laminas Ancho de las Vías
- Falta de cruces y señales de tráfico
- Falta de señales automáticas para peatones
- Falta de iluminación
- Falta de señalizaciones
- Tráfico y velocidad
- Andenes en mal estado
- Inseguridad
- Comportamiento de los conductores

Regrese la encuesta diligenciada a: Dirección P.O. Box 769, Siler City, NC 27344 | Oficina: 311 North 2nd Avenue, Room 301, Siler City, NC 27344



Project Contact: Mr. Jack Meadows: jmeadows@silercity.org

Project Website: http://www.silercitypedplan.com

1. How do you rate present pedestrian conditions (sidewalks, trails, crosswalks, etc) in Siler City? (Check one box below)

Excellent    Fair    Poor

2. Siler City should be a community where: (Check all that apply)

- Sidewalks are only provided on major roadways
- Sidewalks are provided on neighborhood roadways
- Sidewalks are provided on all roadways
- Individuals and families can use greenway trails to get to important destinations
- People have to walk in the street.

3. Siler City should require commercial and residential developers to construct sidewalks, trails, and ancillary facilities such as bus stops during development.

Yes    No

4. Which pedestrian design elements should be required with future construction, reconstruction, and/or developments? (Check all that apply)

- Traffic Calming such as Speed Tables and Stop Signs
- Sidewalks
- Pedestrian Countdown Signals
- Street Trees
- Adequate Lighting
- Pedestrian Signage
- Landscaped Median Refuges
- Grass Buffer between Sidewalk and Roadway
- Safe Walking Spaces within Shopping Centers
- Pedestrian Connectivity between Neighborhoods, Shopping Centers, Parks, and Other Destinations
- Marked Crosswalks

5. Should public funds (grants, taxes, capital improvement funds, etc.) be used to improve pedestrian options and facilities?

Yes    No

6. In your opinion, which road, location or neighborhood in Siler City is the least safe for pedestrians?

7. In your opinion, which intersection is the least safe for pedestrians to cross? (Check one box below)

- Third St & 6th Ave
- E. 11th St & MK
- E. 11th St & Pine Glades
- E. 4th St & N. 3rd Ave
- S. Sears Ave & E. 10th St
- E. Raleigh St & S. 10th Ave

8. How often do you walk now? (Check one)

- Never
- Few times per month
- Few times per week
- 5+ times per week

9. Would you walk more often if more sidewalks, trails, and safe roadway crossings were provided for pedestrians?

Yes    No

10. For what purposes do you walk now, and/or would you want to walk for in the future?

- Fitness or Recreation
- Spending Time Outdoors
- Transportation to a Destination
- Social Visits
- Walking to School

Other:

11. Where do you walk, or where would you like to walk in Siler City? (Check all that apply)

- Downtown
- Place of Work
- Place of Worship
- School
- Shopping
- Parks
- Restaurants
- Entertainment
- Pharmacy/Drug Store
- Trails and Greenways
- Gym
- Friends/Relative's House
- Supermarkets
- Fast Food Restaurant
- Convenience/Small Grocery Store
- Non-Fast Food Restaurants
- Libraries / Public Rec Centers
- In My Neighborhood/On My Street
- No Destination / Just for Exercise or Fun
- Other (road, trail, place, etc.):
- I don't walk to any of these places/for any of these reasons

12. What factors discourage walking in Siler City? (Check all that apply)

- Lack of Landscaping or Buffer between Sidewalk and Road
- Lack of Sidewalks & Trails
- Width of Roads
- Lack of Crosswalks at Traffic Signals
- Lack of Pedestrian Countdown Signals
- Lack of Street Lighting
- Lack of Nearby Destinations
- Automobile Traffic & Speed
- Aggressive Driver Behavior
- Sidewalks in Need of Repair
- Criminal Activity

Return Completed Form To: Mailing Address: P.O. Box 769, Siler City, NC 27344 | Physical Address: 311 North 2nd Avenue, Room 301, Siler City, NC 27344

Photo from the 5K Race for Family Peace



Photos from National Night Out



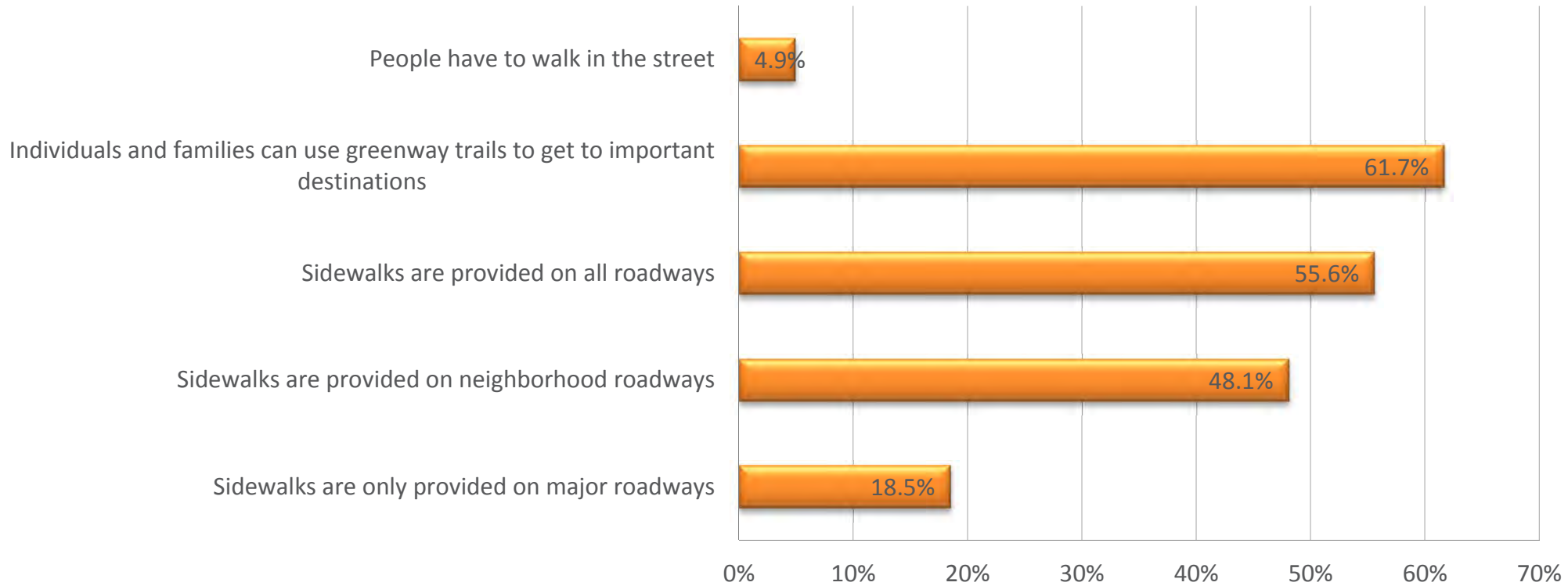
# Results of the 2013 Pedestrian Master Plan Public Comment Form

1. How do you rate present pedestrian conditions in Siler City? (Select one)

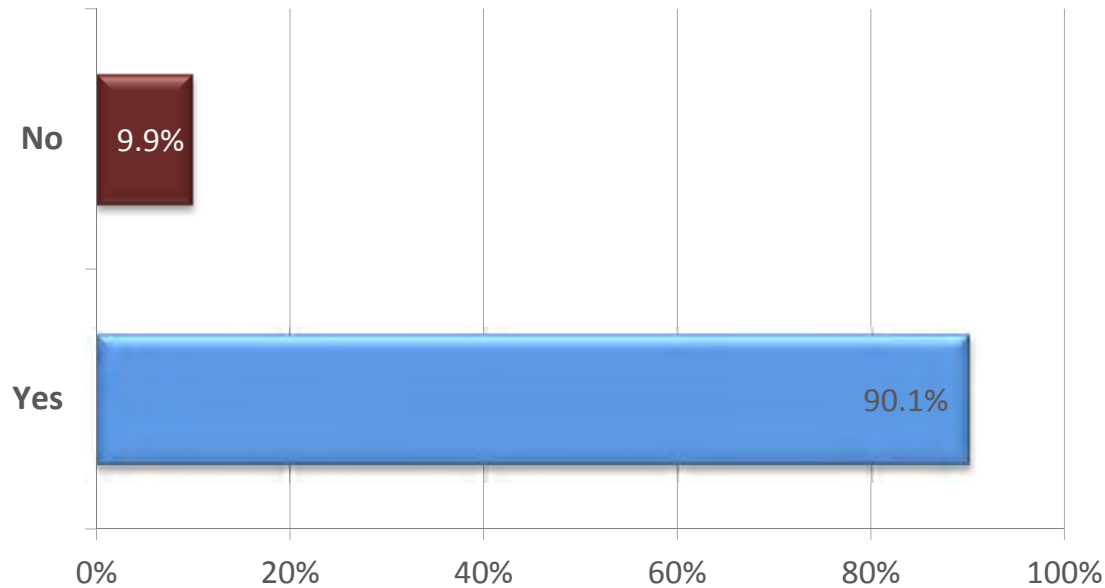




## 2. Siler City should be a community where: (Check all that apply)



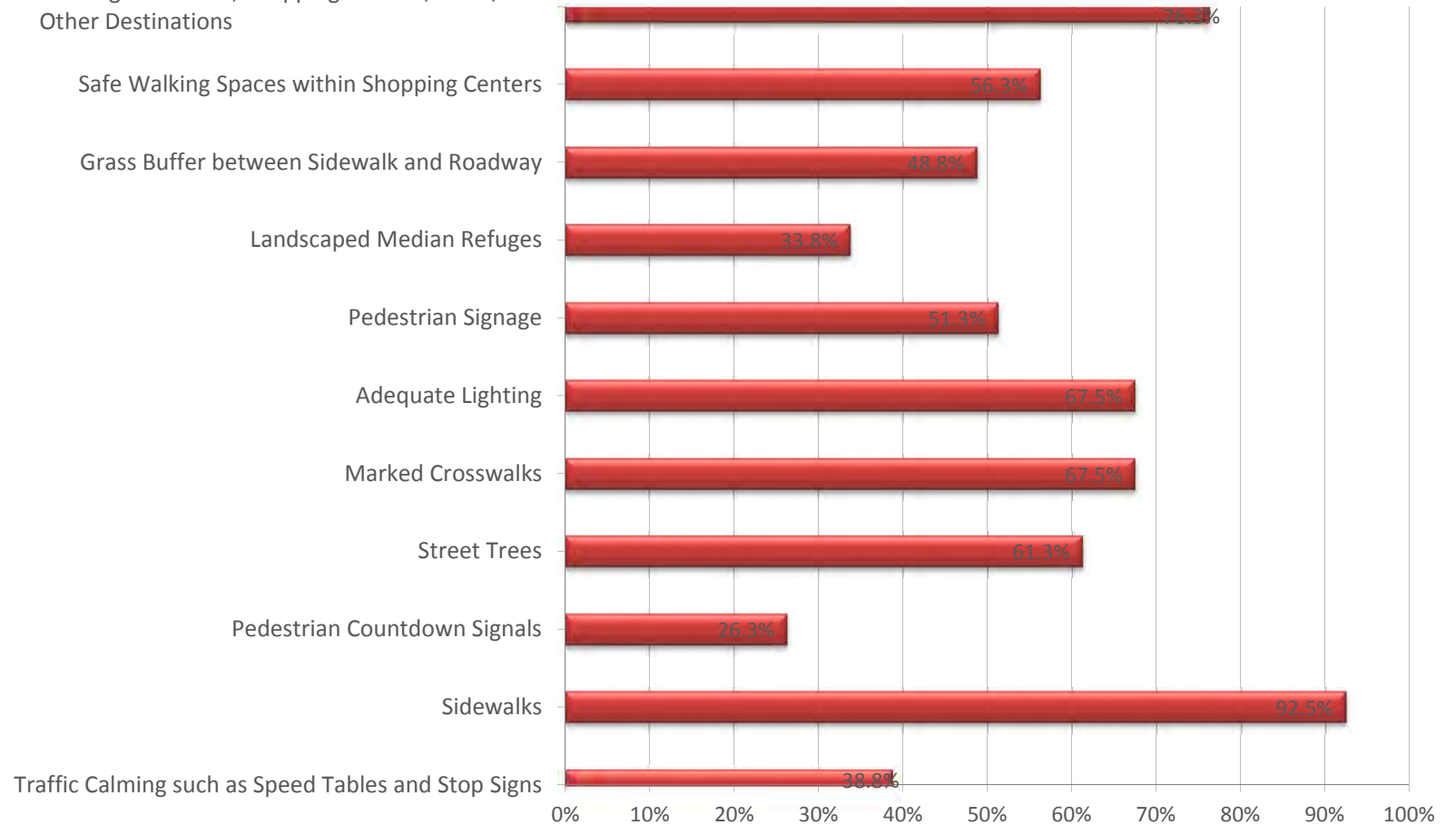
### 3. Siler City should require commercial and residential developers to construct sidewalks, trails, and ancillary facilities such as bus stops during development.



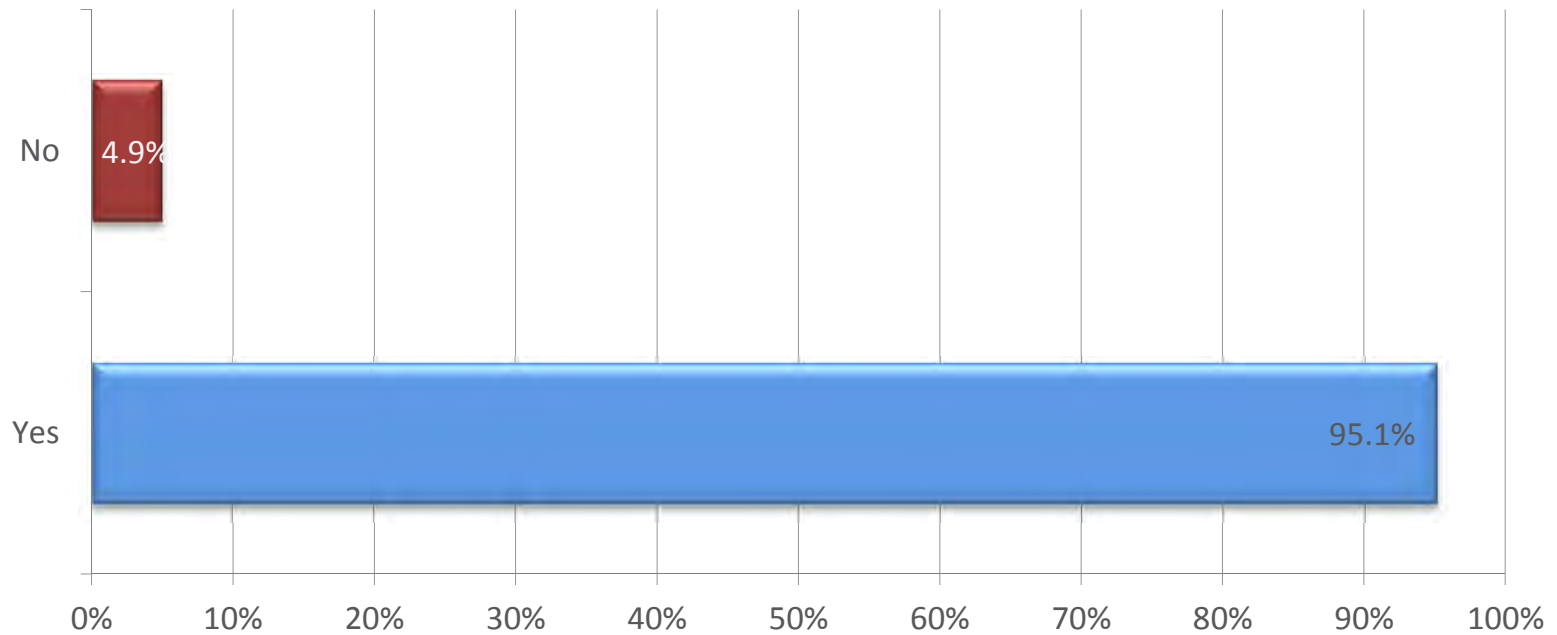


#### 4. Which pedestrian design requirements should be required with future construction, reconstruction, and/or development? (Check all that apply)

Pedestrian Connectivity between Neighborhoods, Shopping Centers, Parks, and Other Destinations



## 5. Should public funds (grants, taxes, capital improvement funds, etc.) be used to improve pedestrian options and facilities?

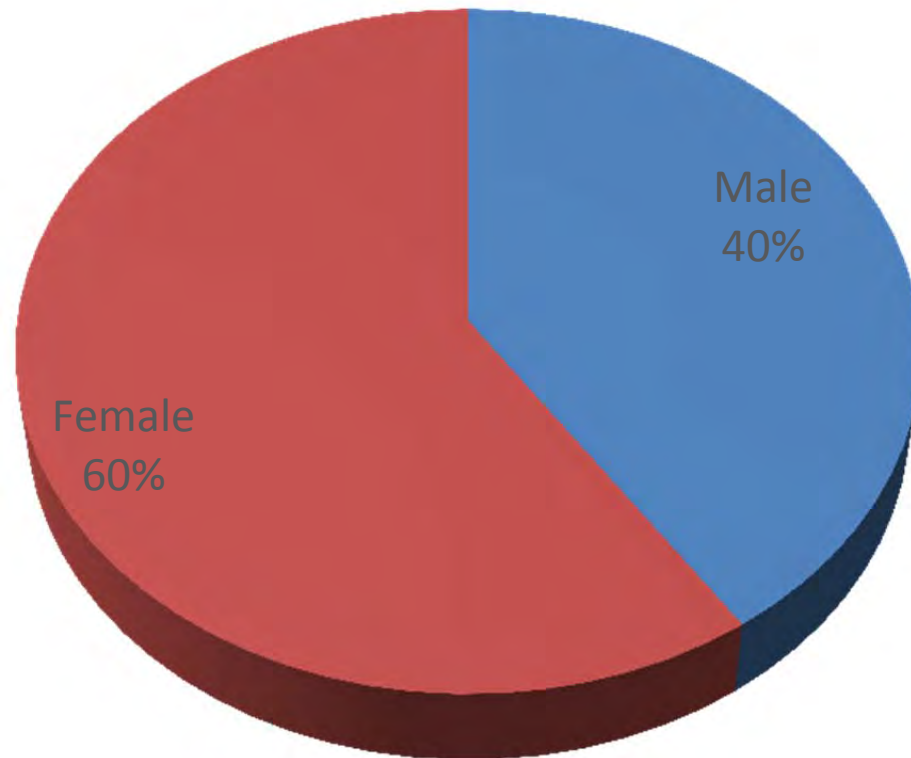




6. In your opinion, which road, location, or neighborhood in Siler City is the least safe for pedestrians?

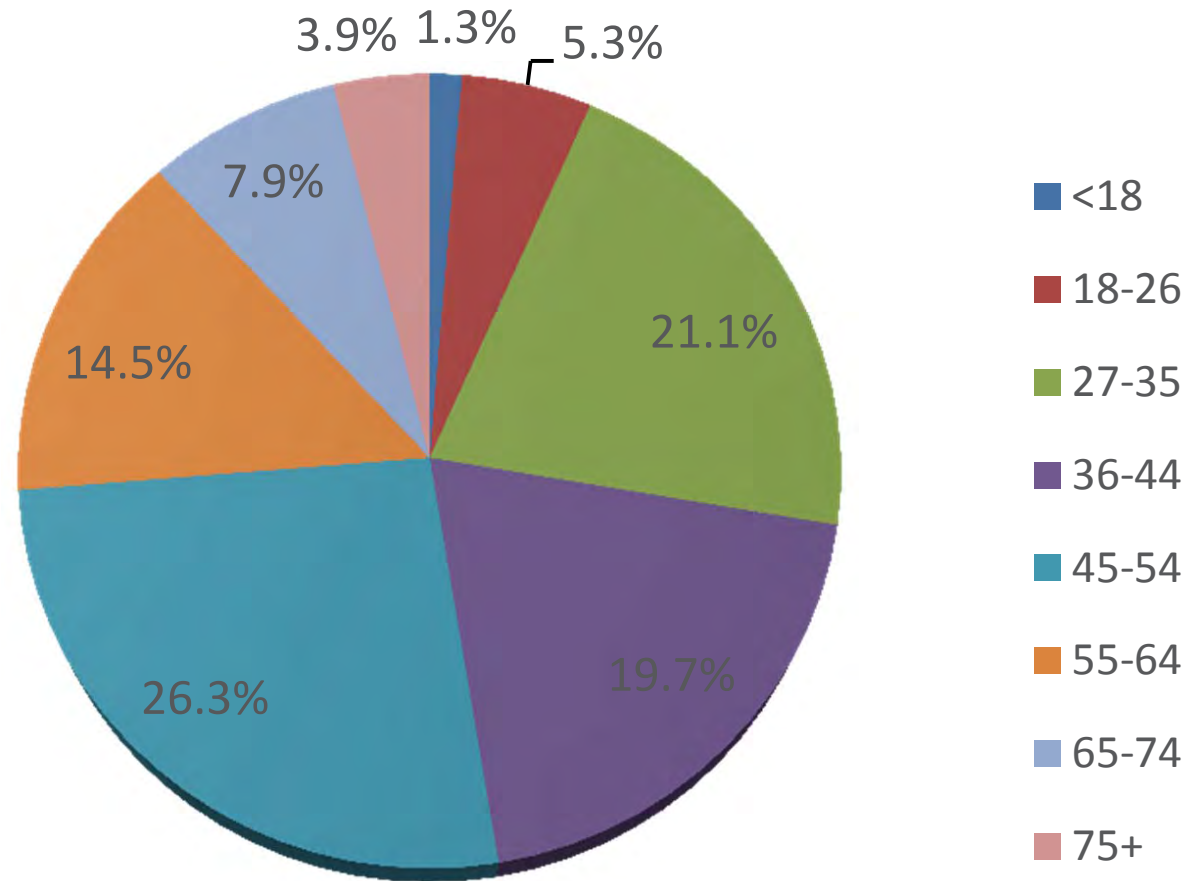


## 7. What is your gender?





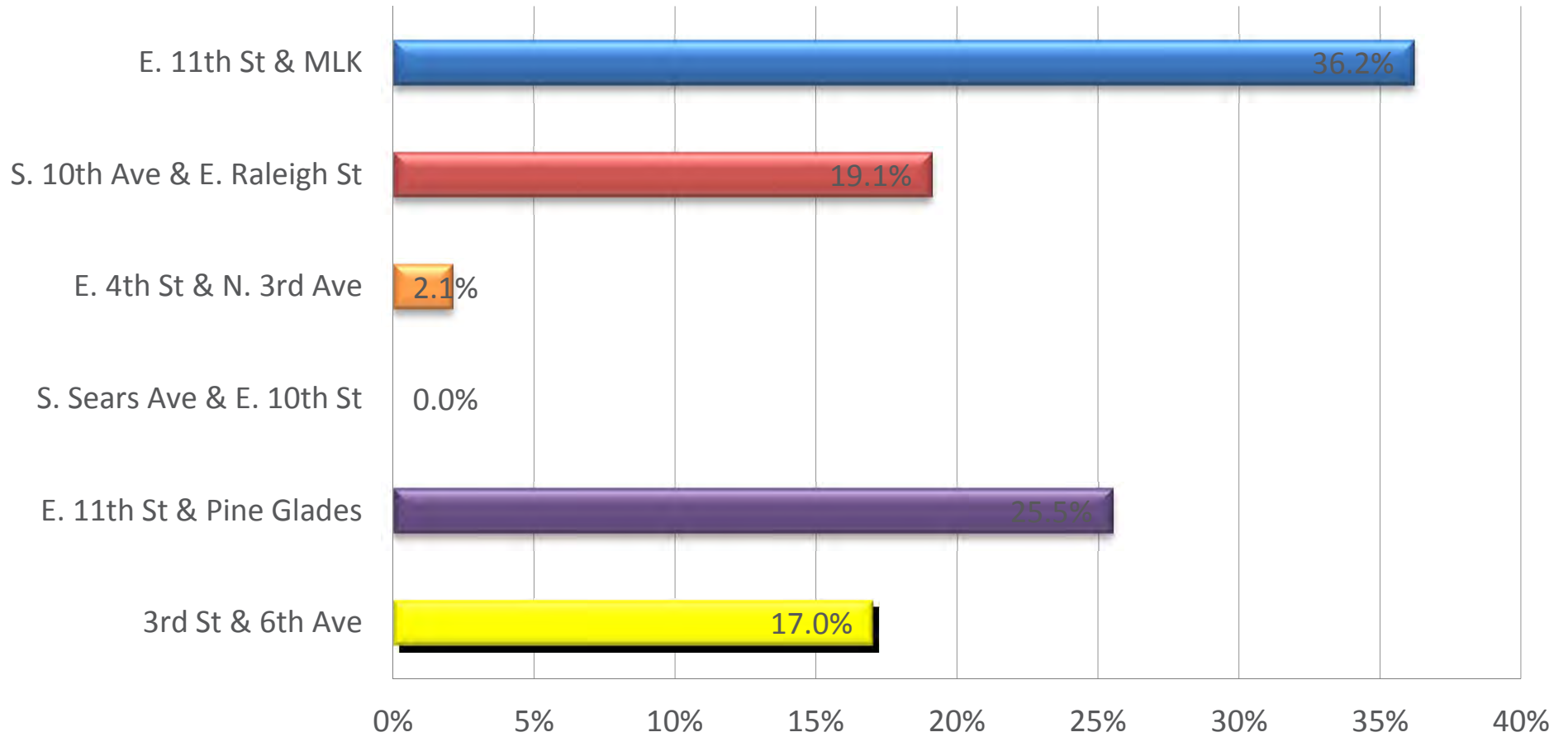
## 8. What is your age?



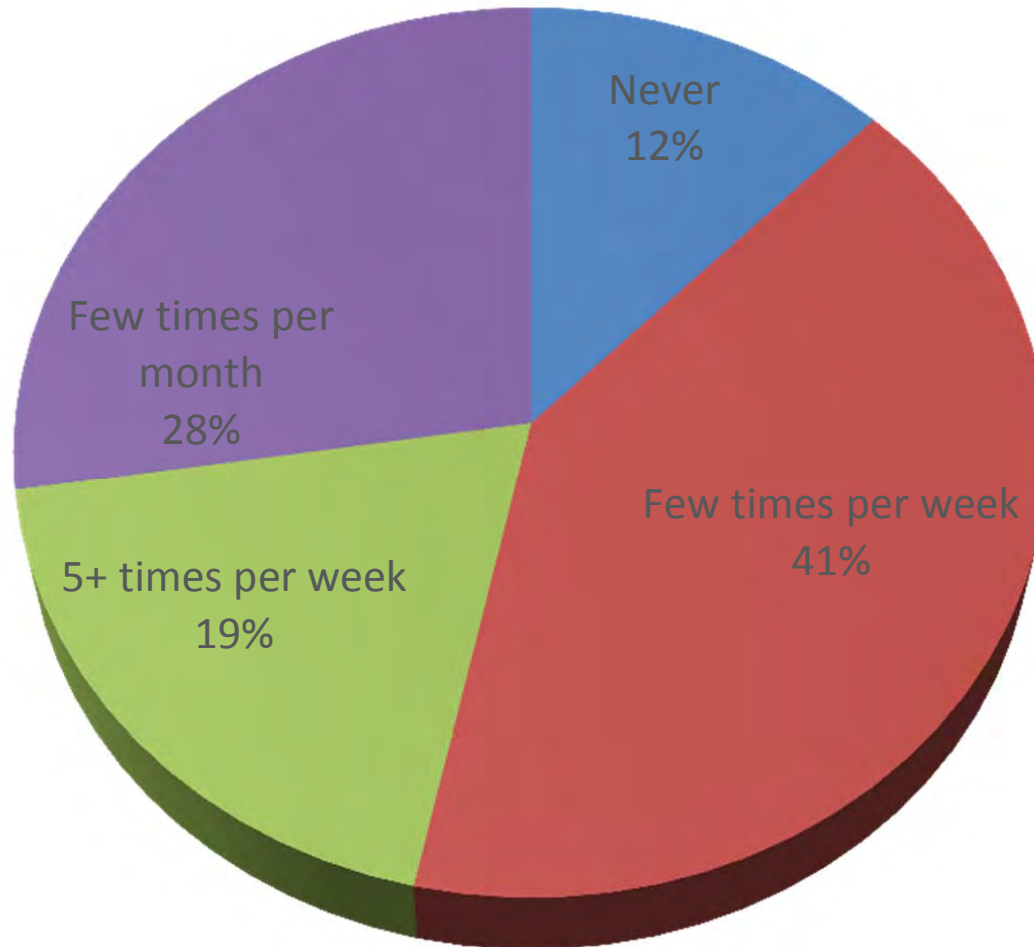




## 10. In your opinion, which intersection in Siler City is the least safe for pedestrians to cross?

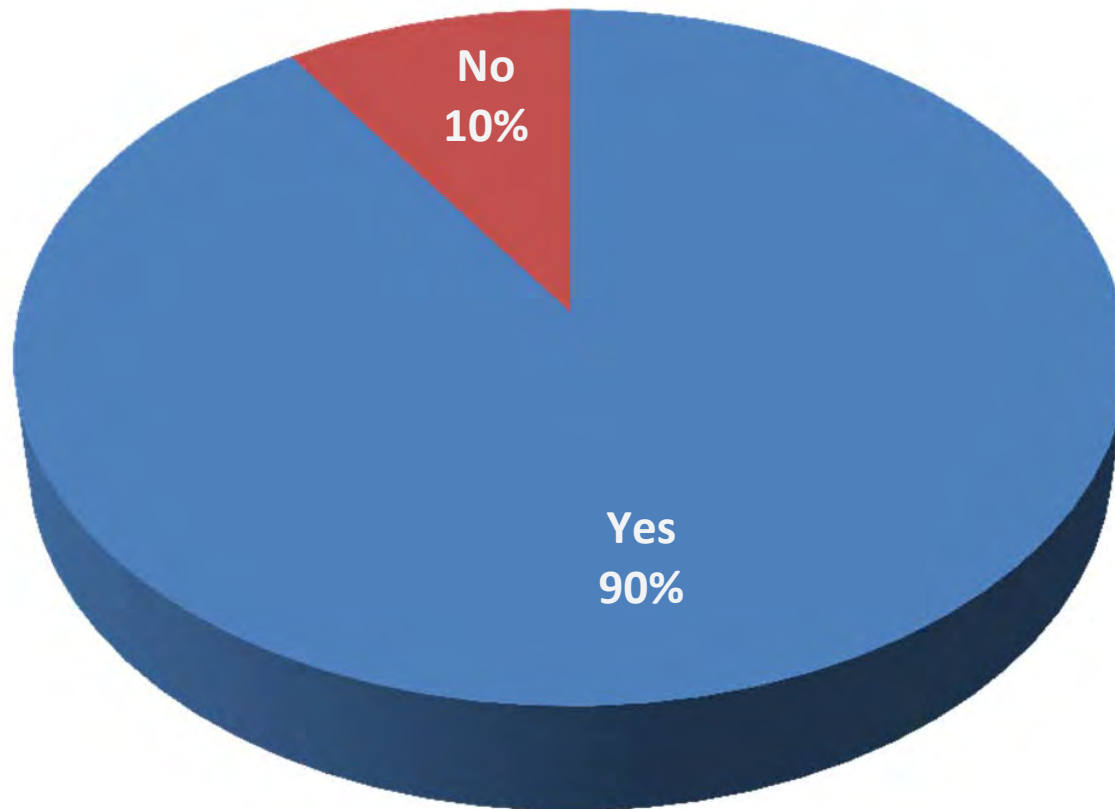


## 11. How often to you walk now? (Check one)

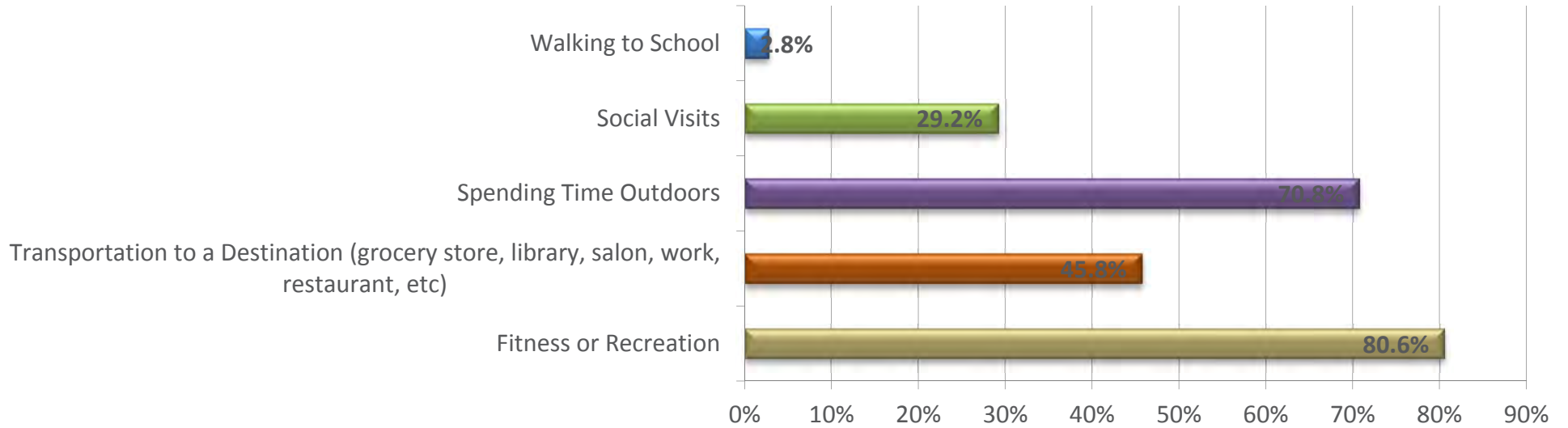




**12. Would you walk more often if more sidewalks, greenway trails, and safe roadway crossings were provided for pedestrians?**

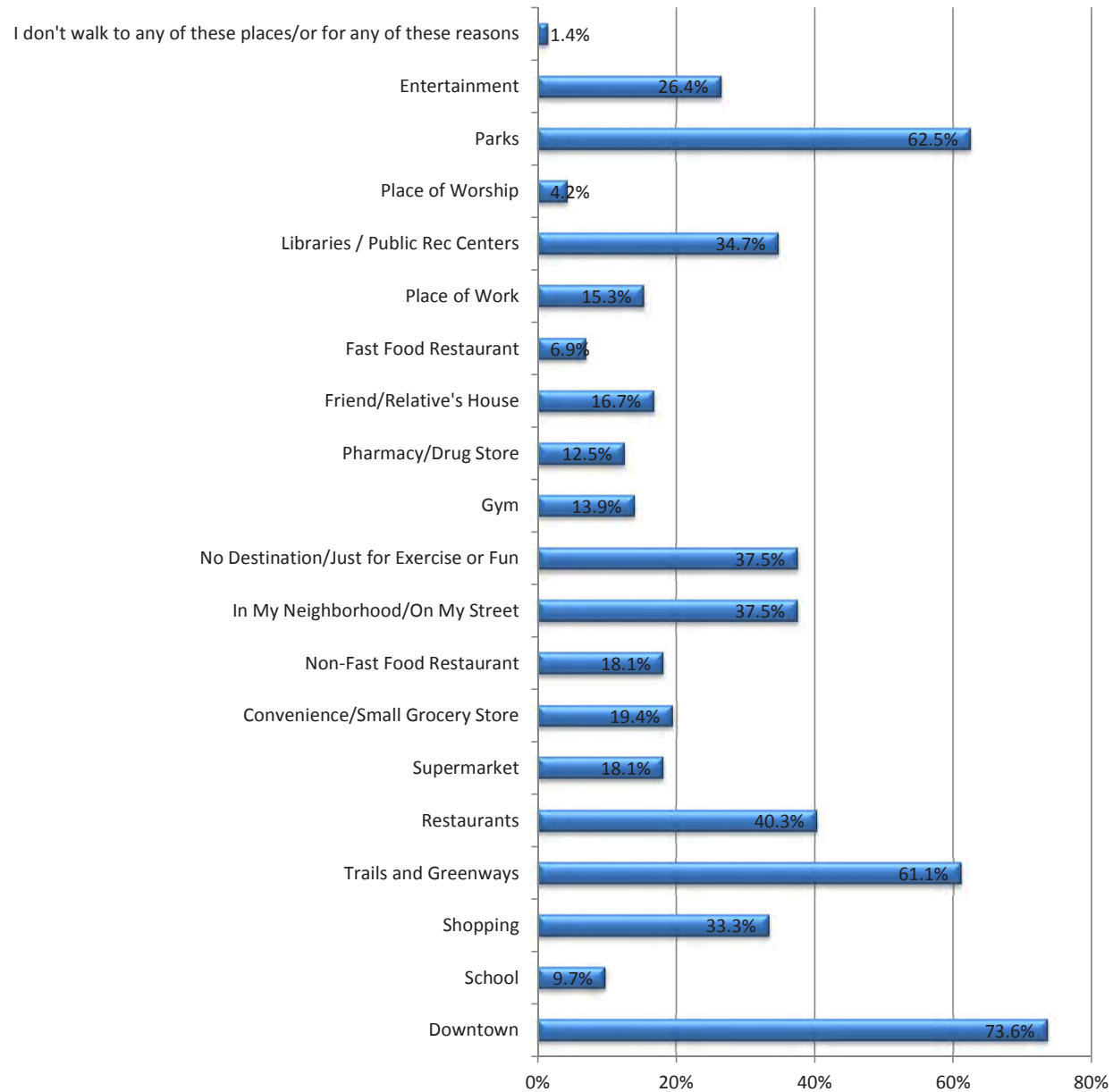


### 13. For what purposes do you walk now, and/or would you want to walk for in the future? (Check all that apply)

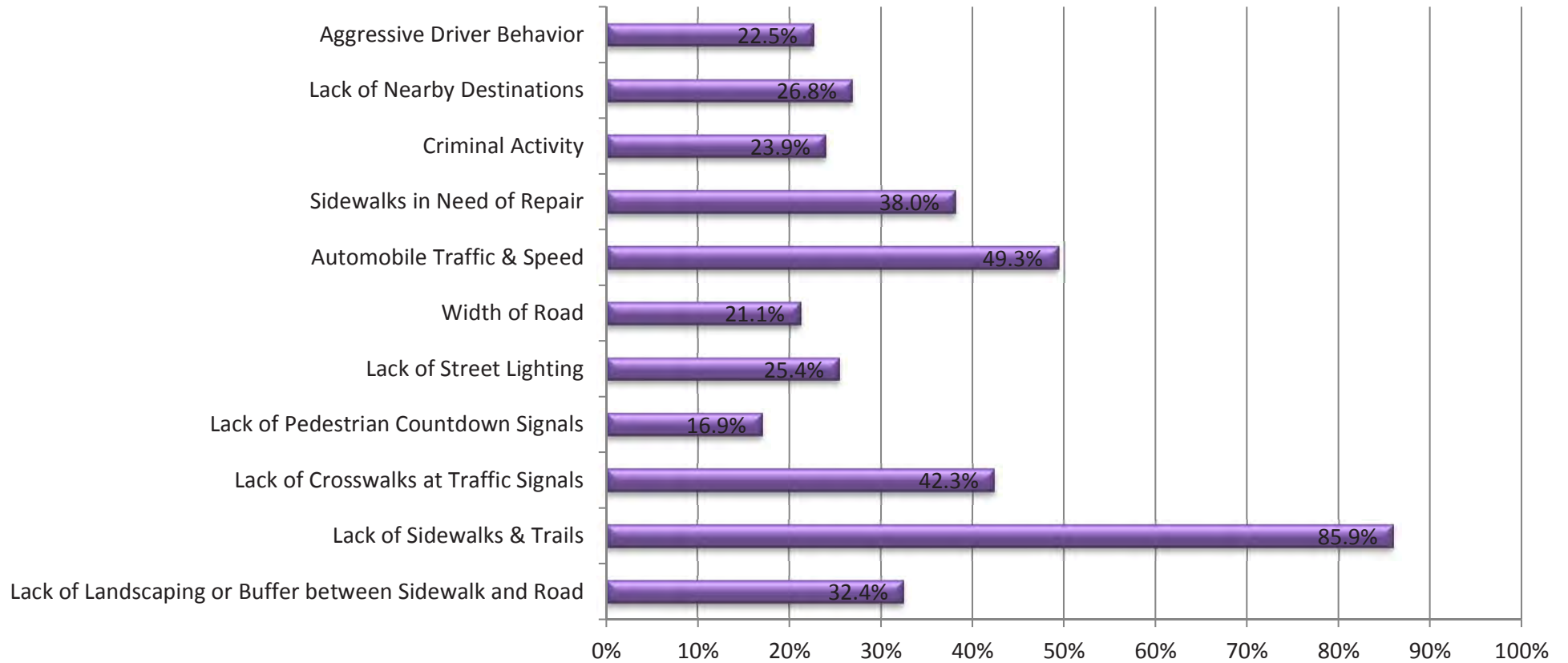




**14. Where do you walk, or where would you like to walk in Siler City?  
(Check all that apply)**

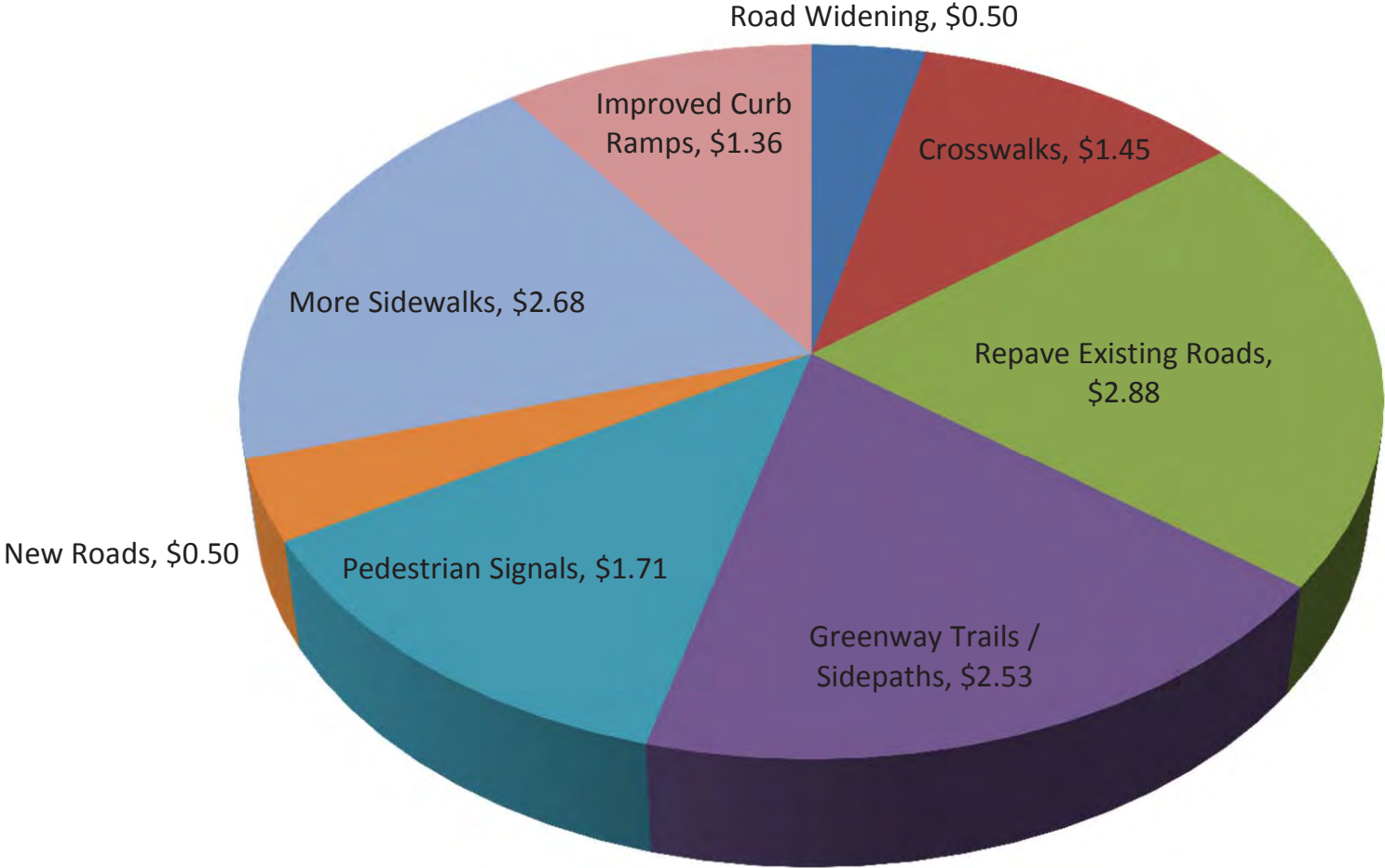


### 15. What factors discourage walking in Siler City? (Check all that apply)

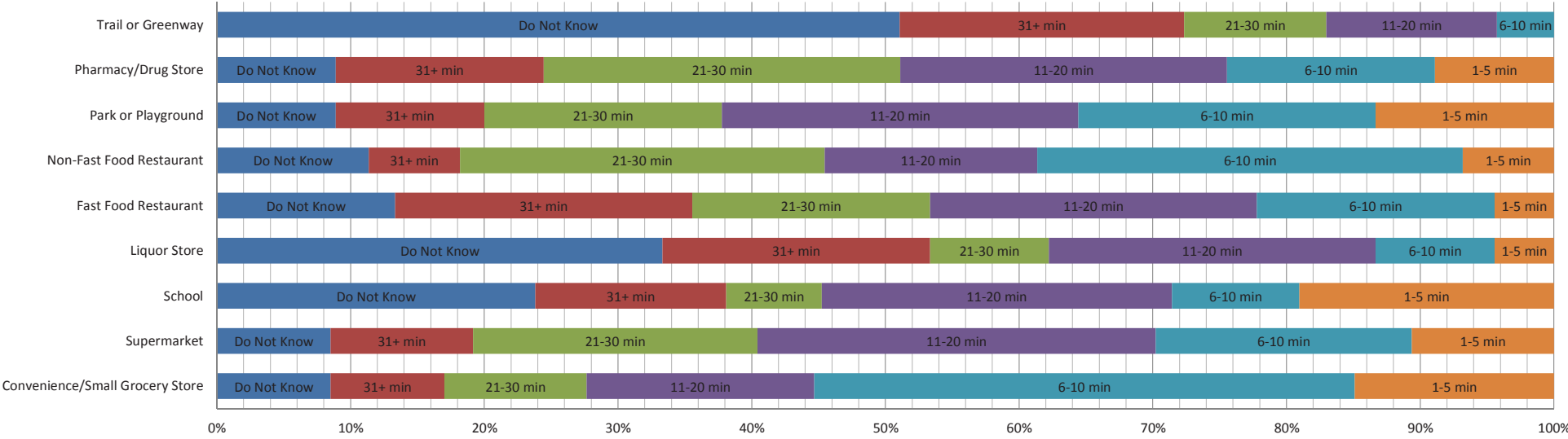




**16. If you had five dollars (\$5) to spend on transportation projects in Siler City, how would you spend it?**

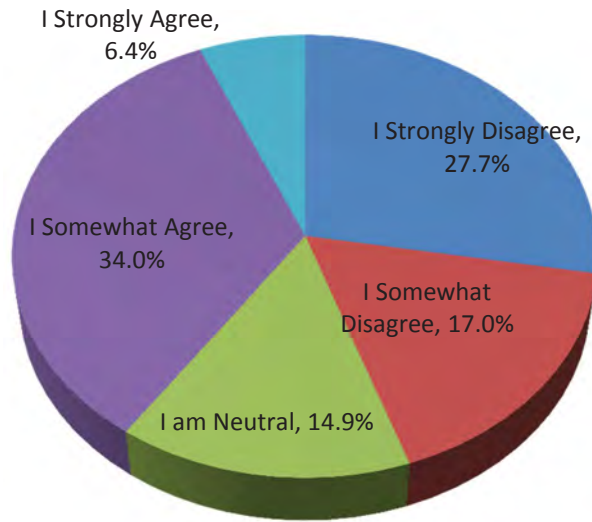


17. About how long does it take you to walk from your home to the nearest of each of the places listed below?

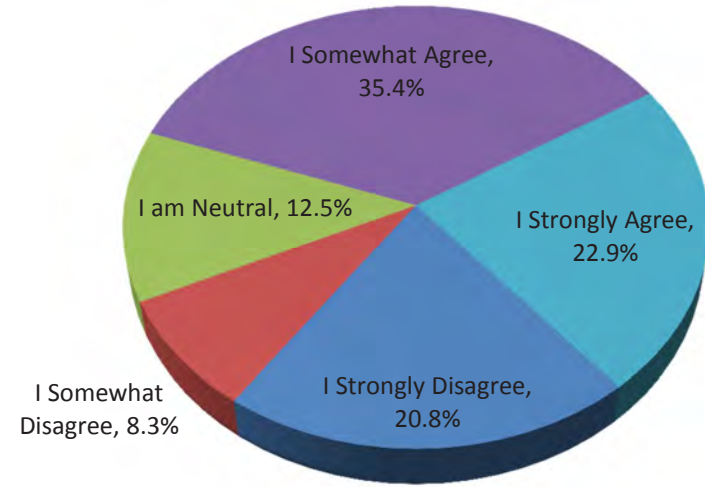




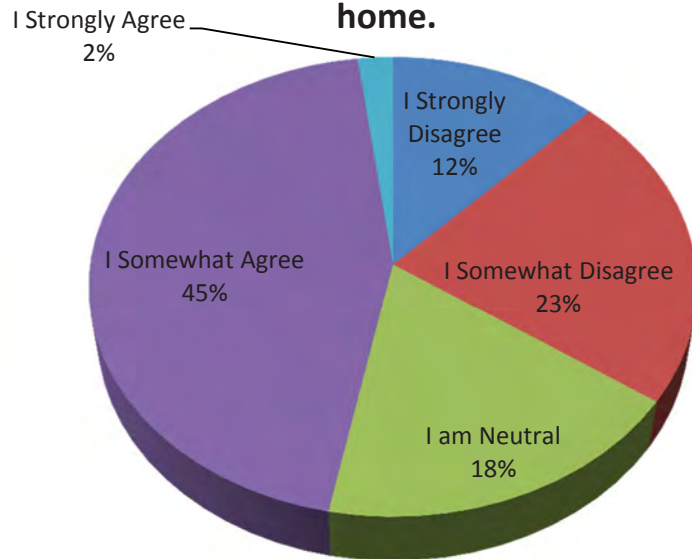
**18. Stores that sell fresh fruits and vegetables are within easy walking distance of my home.**



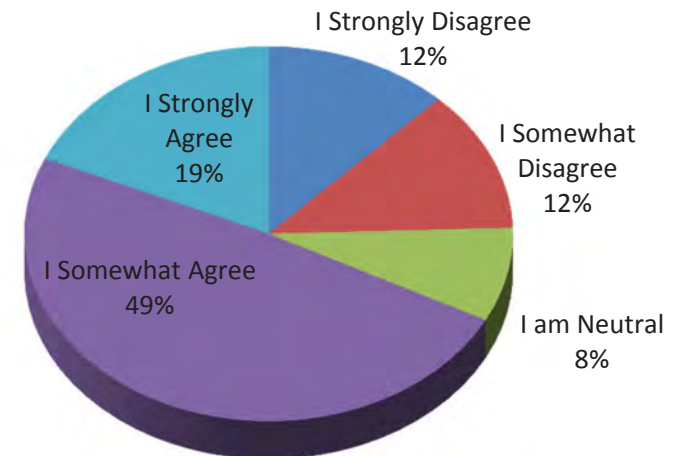
**19. Places where I or my family can play or exercise for free are within walking distance of my home.**



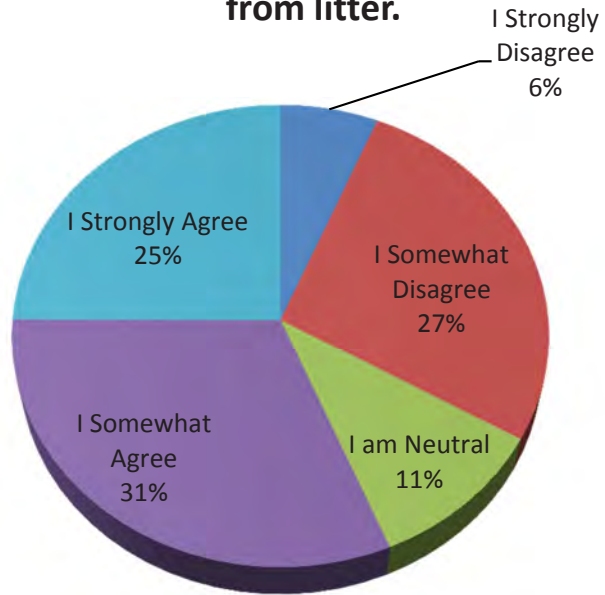
**20. There are many places to go within walking distance of my home.**



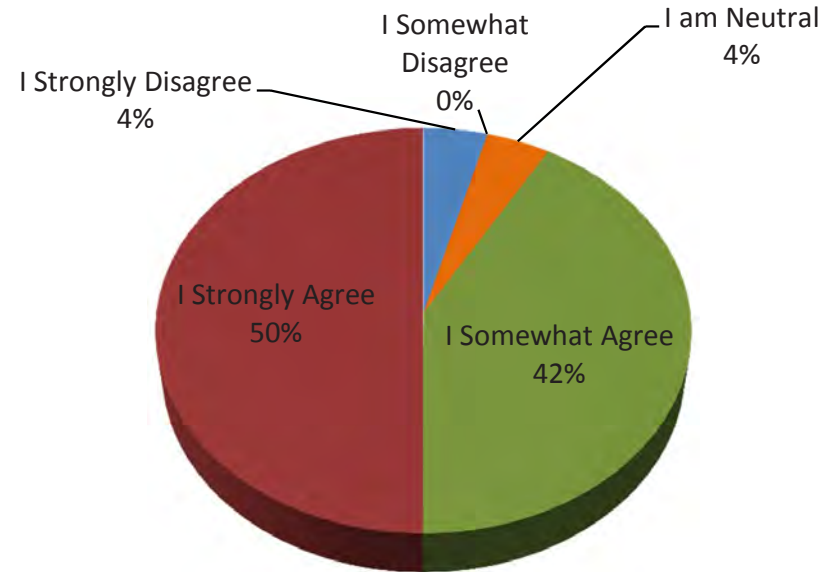
**21. There are places to walk for fun or exercise in or near my home.**



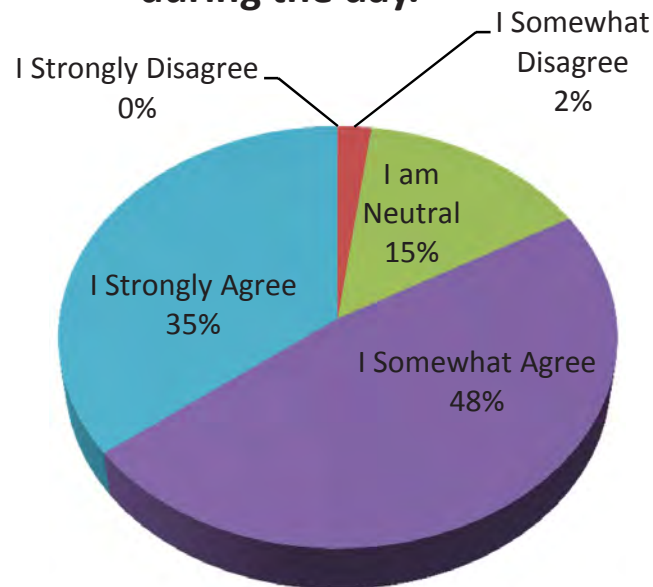
**22. My neighborhood or street is generally free from litter.**



**23. I feel safe walking in my neighborhood or on my street during the day.**

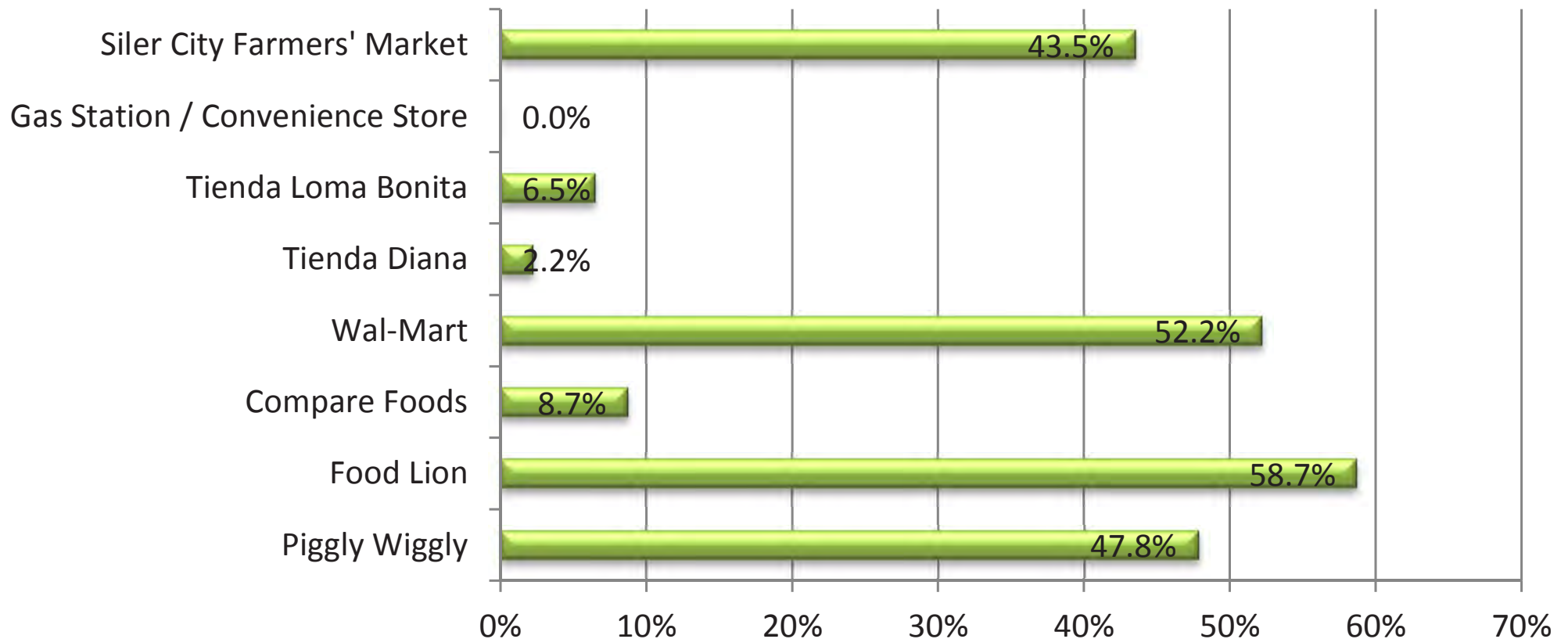


**24. I feel safe at the parks or playgrounds near my house during the day.**



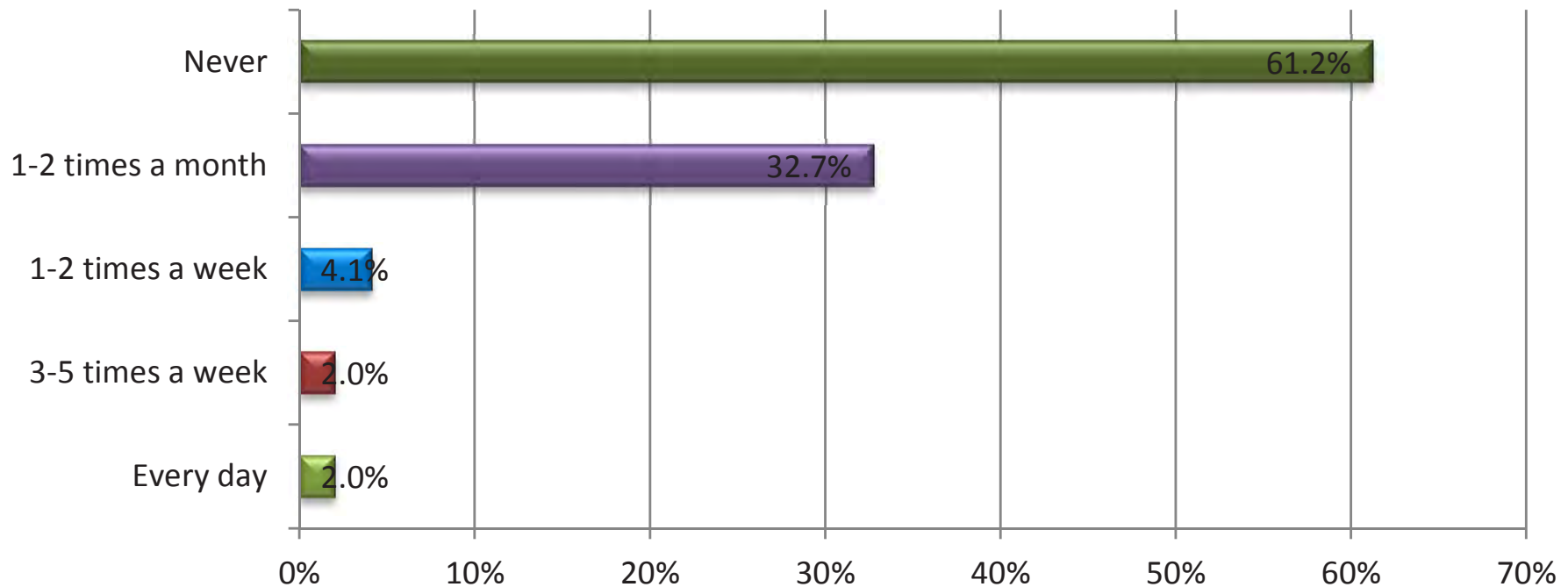


## 25. Where do you usually buy your fruits and vegetables? (Please select up to 3 options)



## 26. How often do you buy groceries from a convenience store, corner store, or gas station?

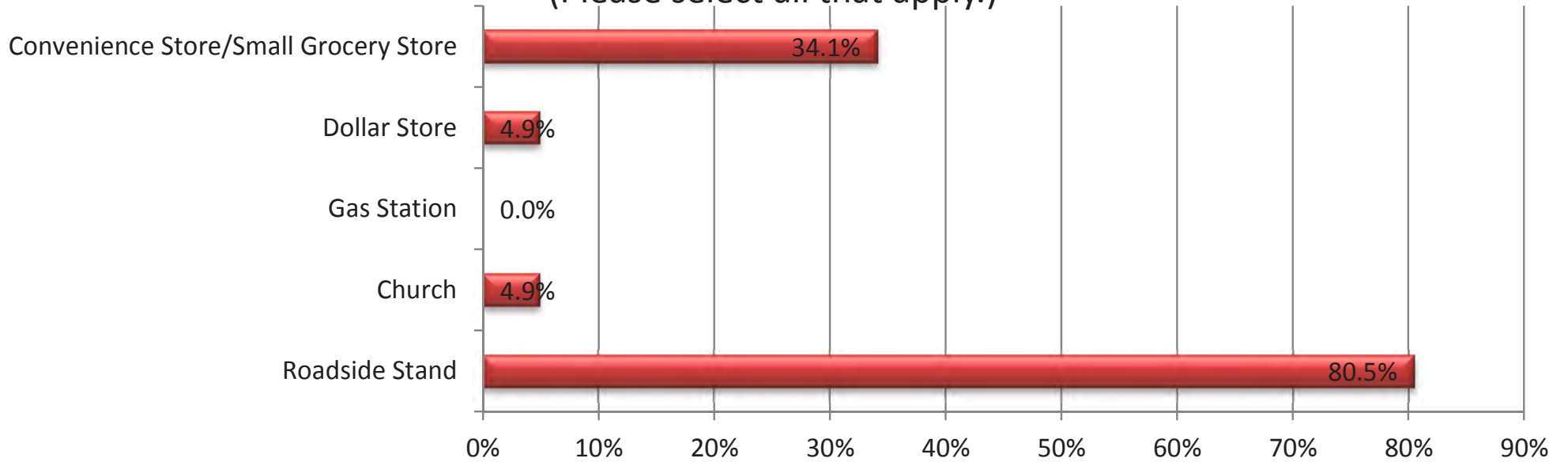
(Please select the box that describes how often you buy your groceries from a convenience store, corner store, or gas station.)





## 27. Where would you like to see healthy foods, like fresh fruits and vegetables, sold within walking distance of your home where they are not sold now?

(Please select all that apply.)





*Courtyard at the Coffee Cafe, Downtown, Siler City*





# C Healthy Living Supplement

## Overview

In 2013, the Chatham County Public Health Department, in partnership with Person County, was awarded Community Transformation Grant (CTG) program funding and a portion of the funding was provided to Siler City to supplement the NCDOT Bicycle and Pedestrian Grant funding. The scope of work for the Pedestrian Master Plan project was expanded to incorporate health-related data and analysis for the Siler City community. This document presents the compilation of the health-related data and results of analyses that are incorporated throughout the Pedestrian Master Plan document.

### *Centers for Disease Control and Prevention (CDC) Community Transformation Grant Program*

The Centers for Disease Control and Prevention's Community Transformation Grant (CTG) Program's purpose is to improve the health and wellness of all Americans. The CDC supports and enables awardees to design and implement community-level programs that prevent chronic diseases such as cancer, diabetes, and heart disease. In 2012, CTG was expanded to support areas with fewer than 500,000 people in neighborhoods, school districts, villages, towns, cities, and counties to increase opportunities to prevent chronic diseases and promote health. In an effort to reach more people, approximately \$70 million was awarded to 40 communities to

implement broad, sustainable strategies that will reduce health disparities and expand clinical and community preventive services that will directly impact about 9.2 million Americans.<sup>1</sup>

### **Availability of Healthy Foods in Siler City**

One critical function of a connected pedestrian network is to provide access from neighborhoods to grocery stores. Many residents of Siler City walk to the grocery store by necessity, but do not currently have complete infrastructure on which to walk. Further, not every grocery store offers healthy food choices, so those that can access stores along sidewalks still may not have access to healthy food options. The review of access to healthy food options began with identifying the locations of 21 neighborhoods in Siler City. The names and locations of the 21 neighborhoods are presented in Table C.1 on page C-2, and are mapped in Figure C.1 on page C-3.

### **Healthy Food Evaluation Process**

Two University of North Carolina at Chapel Hill Masters Candidates in the Department of Health Behavior evaluated 45 food vendors in Siler City. The evaluation of food vendors included corner stores, grocery stores, supermarkets, gas stations, tiendas, dollar stores, the farmers' market, pharmacies, and

## APPENDIX CONTENTS

*Overview (C-1)*

*Availability of Healthy Foods in Siler City (C-1)*

*Recreation Areas in Siler City (C-5)*

*Analysis of Existing Access to Healthy Foods and Recreation Areas (C-7)*

*Analysis of Proposed Access to Healthy Foods and Recreation Areas (C-10)*

roadside stands. The locations of the food vendors are mapped in Figure C.2 on page C-4 and each food vendor label corresponds with a store number in Table C.2 on page C-4.

### **Fresh Fruits and Vegetables Evaluation**

The primary focus of the evaluation was to inventory the healthy food options available from each food vendor. The inventory was based on two dimensions, the first dimension was the availability of fresh fruits and vegetables. Fresh fruits and vegetables could not be not frozen, canned, or processed. The fresh fruits and vegetable dimension consisted of three categories (*none, 1-4 types, 5 or more types*) which were based on the number of types of fresh fruits and vegetables sold.

The threshold of five or more fresh fruits and vegetables was established because the United States Department of Agriculture (USDA) recommends that adults consume that many servings of fresh fruits and vegetables daily. Five or more fresh fruits and vegetables, is considered the **highest category, or “top tier” for healthy food vendors**. “Top tier” food vendors are denoted with an asterisk in Table C.2 on page C-5.

The second category (1-4 types of fruits and vegetables) was used to differentiate those stores that had **some** fresh produce availability, and is referred to as **“mid-tier” for healthy food vendors**.

Food vendors that offered no fresh fruits and vegetables were assigned to the third category, **“none.”**

### “My Plate” Evaluation

The second dimension of the evaluation of healthy food options in Siler City was determined based on the availability of the ingredients necessary to create a “My Plate” meal. To determine each store’s “My Plate” dimension, the USDA recommendations for food intake were used. **A store had to sell at least one food item from all five food groups (fruits, vegetables, grains, protein, and dairy) to achieve “My Plate” status.** Fruits and vegetables may be fresh, canned, or frozen for My Plate criteria. For the grain category, a store had to sell at least one high fiber option, such as whole grain bread or brown rice. Stores that sold fresh eggs, dried beans, canned beans in water, unsalted nuts, canned tuna in water, or low-fat meat (e.g. raw skinless chicken or extra lean ground beef) satisfied

the protein criteria. Finally, a store had to sell milk to meet the dairy criteria.<sup>2</sup> Stores that did not offer at least one food item from all five food groups are considered **“No My Plate”** vendors.

### Food Vendor Classification Process

Using the two dimension evaluation approach, each food vendor was first assigned a fresh fruits and vegetable (FFV) category (top tier: *greater than or equal to 5 FFV*, mid tier: *less than 5 FFV*, or *no FFV*), and was then classified as a “My Plate” or “No My Plate” vendor. The six possible scoring categories resulted from the classification process are in the box below. Food vendors that meet “My Plate” criteria and sell five or more types of FFV are called healthy food vendors and labeled with a fork and knife surrounded by a black circle on maps provided in this plan.

- 0: No My Plate, no FFV
- 1: No My Plate, <5 FFV
- 2: No My Plate, ≥5 FFV
- 3: My Plate, no FFV
- 4: My Plate, <5 FFV
- 5: My Plate, ≥5 FFV

**Table C.1: Neighborhoods in Siler City**

Neighborhood Name
Loves Creek Neighborhood
Justice Neighborhood
Country Living Neighborhood
Hampton Village Neighborhood
Homewood Acres Neighborhood
Autumn Estates Neighborhood
Wheels Estates Neighborhood
Cardinal Chase Apartments
North Glenn Apartments
Harmony Hills Neighborhood
Stonecrest Apartments
Cateland Place Apartments
Lincoln Heights Neighborhood
Westmont Neighborhood
Country Club Neighborhood
Tripp Cottages Neighborhood
Sheffield Apartments
Windsor Arms Apartments
Brookwood Apartments
Village Neighborhood
Johnson Neighborhood









# Figure C.2 Siler City Healthy Food Vendors





**Table C.2: Food Vendors in Siler City**

Store #	Store Name	Store #	Store Name
1	Food Lion*	29	CVS
2	Piggly Wiggly*	30	Walgreens
3	Walmart*	31	ABC Store
4	Compare Foods*	32	Bojangles Restaurant
5	Tienda Diana	33	Burger King
6	Tienda El Centro	34	Crossroads Grill
7	La Jalisco #1	35	Domino's Pizza
8	Tienda La Posadita	36	KFC/ Taco Bell
9	Tienda Loma Bonita	37	McDonald's
10	Desperado's Western Mart	38	Pizza Hut/Wing Street
11	Fast Lane	39	Rite Stop Fried Chicken
12	Fast Pass Drive-thru Mart	40	Smithfield's BBQ and Chicken
13	Kangaroo Express	41	Sonic
14	Marathon	42	Subway
15	Marathon Country Mart	43	Subway (in Walmart)
16	Murphy Express	44	Waffle House
17	Mystik	45	Wendy's
18	Park 'n Shop #13		
19	Park 'n Shop #15		
20	Quick Way Mart		
21	Silk Hope Services		
22	Sunrise Food & Gas		
23	Wilco to Go		
24	Dollar General		
25	Dollar Tree		
26	Family Dollar		
27	Sloan Farm		
28	Sloan Farm 2		

## Recreation Areas in Siler City

Parks, recreation facilities, and open spaces provide benefits to residents, and the natural environment. Parks typically include small neighborhood and pocket parks, trails, greenways, large planned spaces and regional parks, and forested areas within and surrounding cities. Recreation facilities take in playgrounds, ball fields, tennis courts, and gymnasiums. Open spaces can be as diverse as agricultural land, forests, gardens, arboretums, and institutional grounds. They provide people with formal and informal gathering places to be physically active, socialize, relax, build community, and connect with the natural world. They make urban areas more inviting for living, working and relaxing. And, they provide environmental benefits, such as stormwater management, erosion control, buffering between built and natural environments, and wildlife habitat.<sup>3</sup>

Siler City has plans to construct the future Loves Creek Greenway and anticipates the new greenway will be constructed by June 2015. Additionally, there are six recreation areas within the Town limits. The six locations are illustrated in Figure C.3 on page C-6, and listed in Table C.3 below. The six recreation areas, Boling Lane Park, Washington Avenue Park, Bray Park, Paul Braxton Community Center, Landrus Siler Park, and Ernest Ramsey Gym offer diverse opportunities for active living.

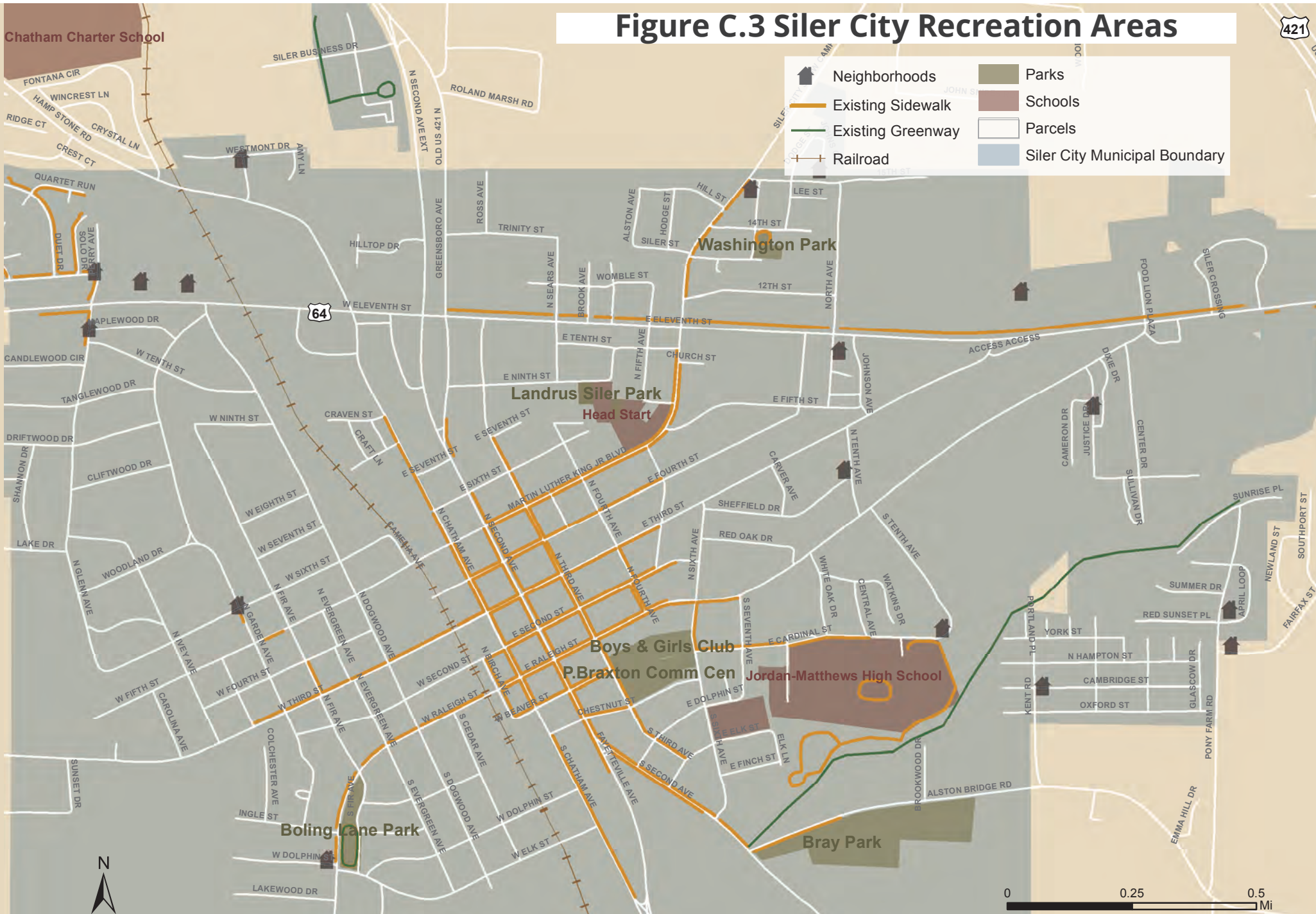
**Table C.3: Recreation Areas in Siler City**

### Recreation Area Name

- Boling Lane Park
- Washington Avenue Park
- Bray Park
- Paul Braxton Community Center
- Landrus Siler Park
- Ernest Ramsey Gym

# Figure C.3 Siler City Recreation Areas

421





# Analysis of Existing Access to Healthy Foods and Recreation Areas

In this context, an analysis of neighborhood access to healthy food vendors and recreation areas was performed to show available connections based on the existing pedestrian network. The “top tier” healthy food vendors consisting of eight total vendors, and the six recreation areas were included in the analysis. The 21 neighborhoods were entered into the GIS model as starting points for evaluating access. This analysis serves as the benchmark for the comparison of future connections that will be potentially available when the proposed pedestrian network is developed.

Figure C.4 on page C-8 exhibits current connections between neighborhoods and “top tier” or “healthy food vendors.”

Figure C.5 on page C-9 exhibits existing connections between neighborhoods and recreation areas.

Tables C.4 and C.5 to the right, correspond to the figures on the following pages, and describe which neighborhood areas currently have access to healthy food options and recreation areas. The connection distance between the neighborhood and food vendor or recreation area is included for each existing connection.

**Table C.4: Existing Connections to Healthy Food Vendors**

Neighborhood	Top Tier for Healthy Foods		
	Compare Foods	Food Lion	Piggly Wiggly
Brookwood Apartments	0.3		0.2
Windsor Arms Apartments		0.4	



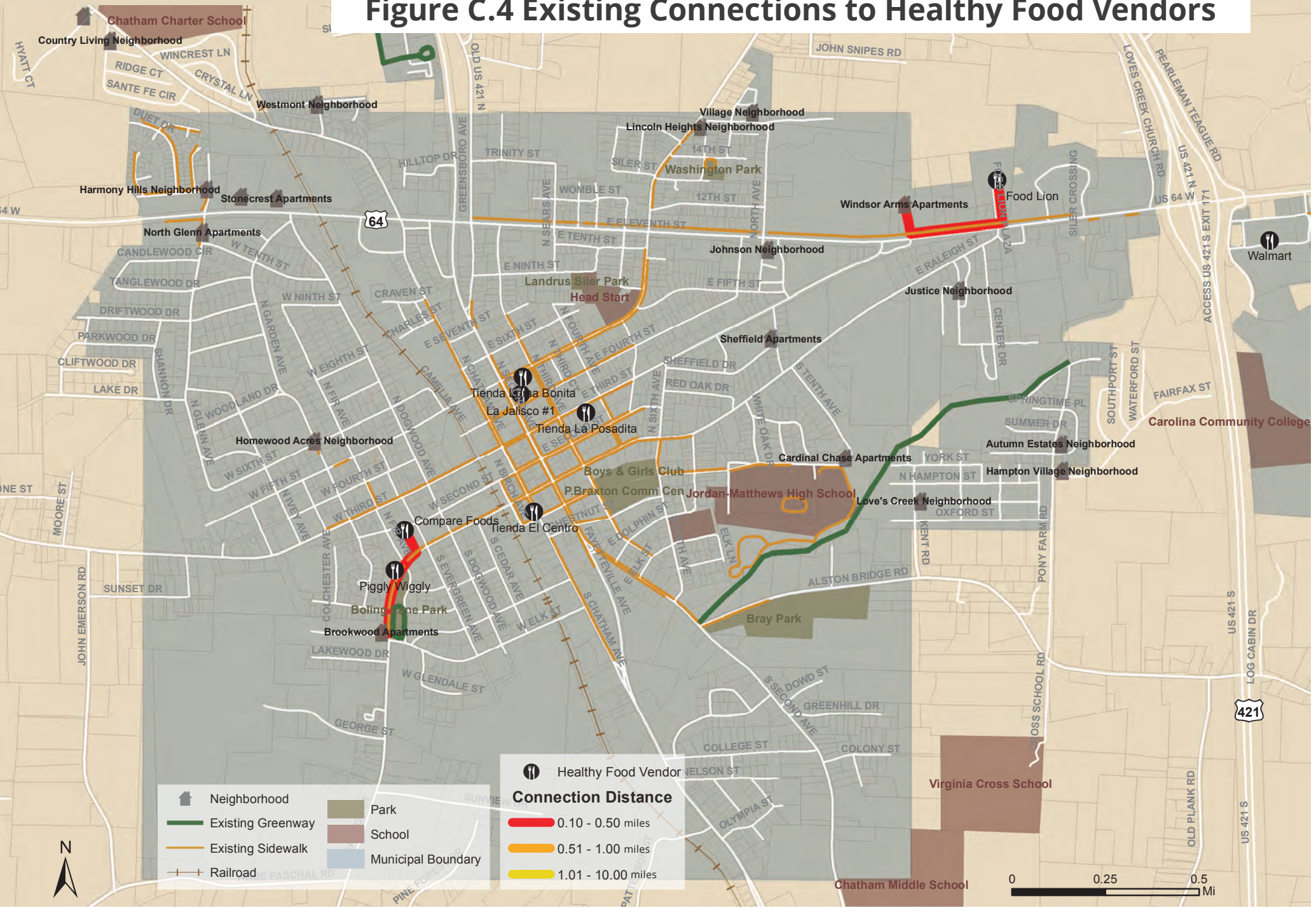
*Boling Lane Park, Siler City*

**Table C.5: Existing Connections to Recreation Areas**

Neighborhood	Recreation Areas					
	Washington Park	Boling Lane Park	Bray Park	Ernest Ramsey Gym	Landrus Siler Park	Paul Braxton Community Center
Brookwood Apartments		0.1				

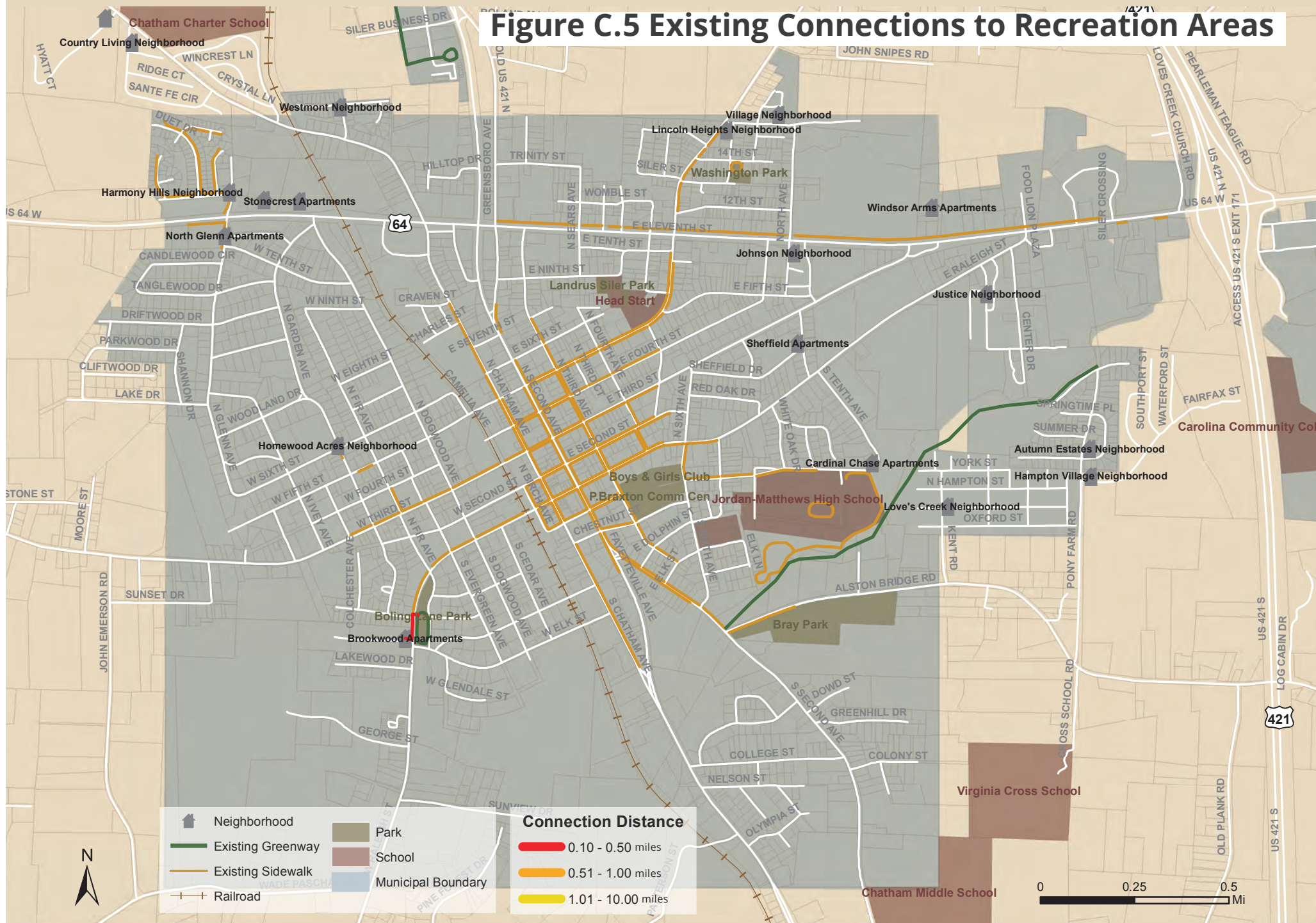


# Figure C.4 Existing Connections to Healthy Food Vendors





# Figure C.5 Existing Connections to Recreation Areas



# Analysis of Proposed Access to Healthy Food Vendors and Recreation Areas

The analysis of connections between neighborhood areas, recreation areas and healthy food options revealed that the existing pedestrian network is inadequate for the needs of pedestrian travel in Siler City. Table C.4 and Table C.5 on page C-7, and Figures C.4 and C.5 on pages C-8 and C-9 present the connections currently possible between neighborhoods and healthy food vendors with existing sidewalks and crossings. The lack of safe routes, linkages, and crossings inhibits residents from accessing opportunities for recreation and healthy food selections.

The pedestrian improvements recommended in this plan would greatly increase safe access to healthy foods and opportunities for recreation for residents of Siler City. In many locations, small gaps prevent a connection that is nearly complete. This is especially notable around the downtown area. Several grocery stores offer healthy foods in the downtown core and several neighborhoods border it, but short gaps in the sidewalk network prevent a complete connection. Another notable location is the east side of Eleventh Street. The lack of crossing at the cluster of stores located here prevents access by neighborhoods south of Eleventh Street.

Table C.6 and Figure C.6 present the viable connections between neighborhoods and healthy food stores with the proposed network in place. The proposed network links all twenty-one neighborhoods with each of the nine grocery stores classified in the top tier.

Table C.7 and Figure C.7 present the viable connections between neighborhoods and recreation areas with the proposed network in place.

The proposed network increases the number of complete connections between healthy food vendors and neighborhoods from six (6) to 189. Of the 189 connections, 5 are less than half a mile in length. An additional 24 are less than a mile in length.

The proposed network increases the number of complete connections between recreation areas and neighborhoods from one (1) to 147. Of the 147 connections, 3 are less than half a mile in length. An additional 16 are less than a mile in length. The number of connections by mileage are summarized in Table C.8.

Table C.8 demonstrates the substantial impact the proposed pedestrian network will have on Siler City residents' access to healthy food options and recreational areas. Connections to healthy food options and opportunities for active living should be available to all residents in Siler City. Implementing the improvements recommended in this Pedestrian Master Plan will significantly increase walkability and access to basic needs for all populations in Siler City.





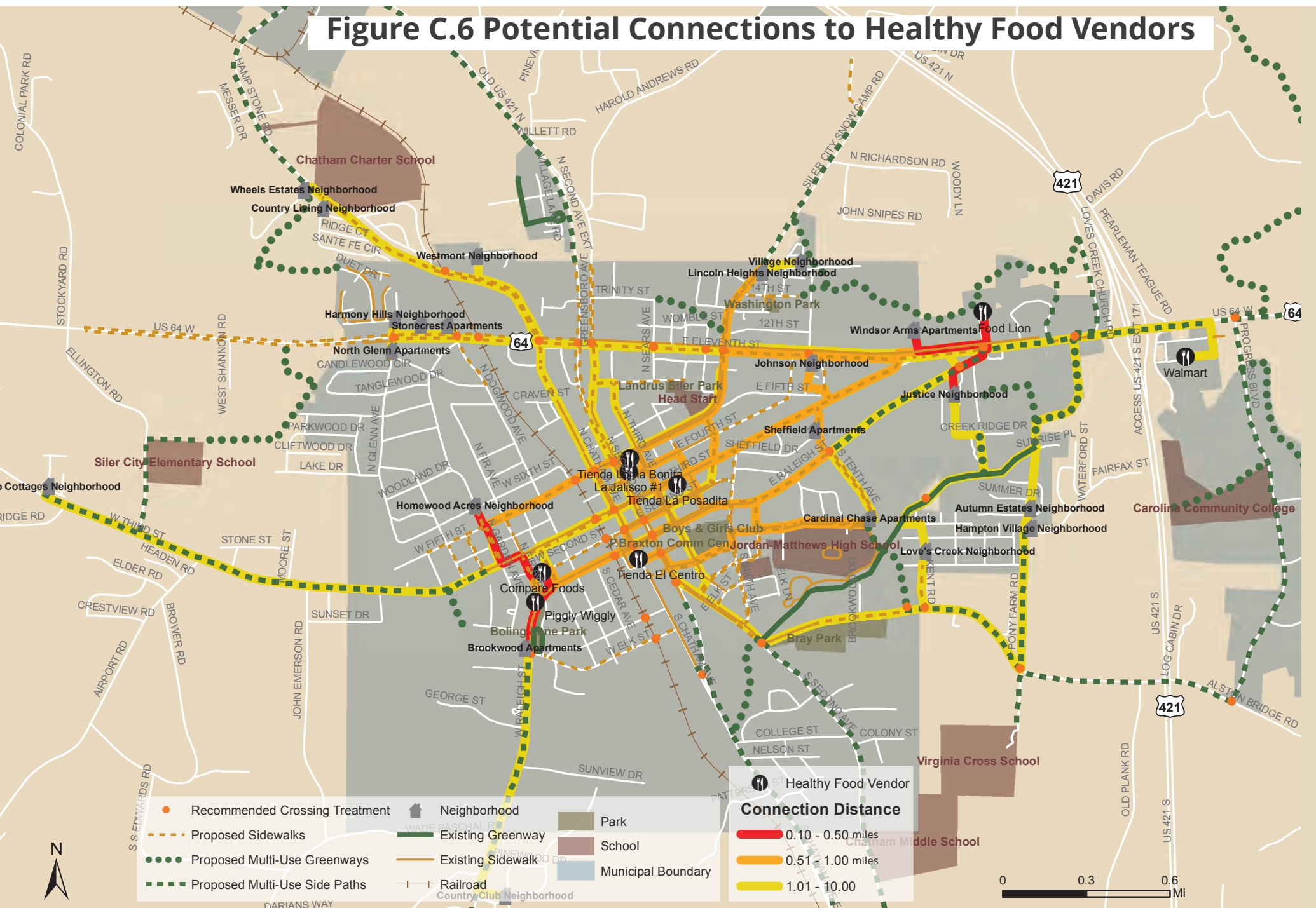
**Table C.6: Neighborhood-to-Healthy Foods with the Proposed Pedestrian Network**

Top Tier for Healthy Foods								
Neighborhood	Compare Foods	Food Lion	La Jalisco #1	Piggly Wiggly	El Tienda Centro	La Tienda Posadita	Tienda Loma Bonita	Walmart
Autumn Estates Neighborhood	2.6	1.2	2.3	2.6	2.2	2.1	2.4	1.4
Brookwood Apartments	0.3	2.2	1.0	0.2	0.6	1.0	1.0	3.1
Cardinal Chase Apartments	1.4	1.1	1.1	1.4	1.0	0.9	1.2	2.0
Cateland Place Apartments	1.8	2.2	1.2	1.9	1.5	1.4	1.2	3.1
Country Club Neighborhood	1.3	3.2	2.0	1.2	1.6	2.0	2.0	4.1
Country Living Neighborhood	2.1	3.3	1.6	2.2	1.9	1.9	1.6	4.2
Hampton Village Neighborhood	2.6	1.3	2.4	2.6	2.2	2.2	2.5	1.5
Harmony Hills Neighborhood	1.9	2.3	1.3	2.0	1.7	1.5	1.3	3.2
Homewood Acres Neighborhood	0.4	2.3	0.7	0.5	0.9	0.9	0.7	3.2
Johnson Neighborhood	1.5	0.8	1.0	1.6	1.2	0.9	0.9	1.7
Justice Neighborhood	1.8	0.4	1.5	1.8	1.5	1.3	1.5	1.3
Lincoln Heights Neighborhood	1.6	1.4	1.0	1.7	1.3	0.9	0.9	2.3
Love's Creek Neighborhood	1.9	1.3	1.7	1.9	1.4	1.6	1.8	2.0
North Glenn Apartments	1.9	2.3	1.3	2.0	1.6	1.5	1.3	3.2
Sheffield Apartments	1.3	0.9	0.9	1.3	1.0	0.7	0.9	1.8
Stonecrest Apartments	1.6	2.1	1.1	1.8	1.4	1.3	1.1	3.0
Tripp Cottages Neighborhood	2.0	3.8	2.5	2.1	2.4	2.5	2.5	4.7
Village Neighborhood	1.7	1.5	1.1	1.8	1.5	1.1	1.1	2.4
Westmont Neighborhood	1.5	2.7	1.1	1.7	1.3	1.4	1.1	3.6
Wheels Estates Neighborhood	2.2	3.4	1.7	2.3	2.0	2.0	1.7	4.2
Windsor Arms Apartments	1.8	0.4	1.3	1.9	1.5	1.1	1.4	1.4

*Note: Unit of measurement for connection length is miles. Connections shorter than a half mile are highlighted in green; connections between half a mile and one mile are highlighted in orange.*



# Figure C.6 Potential Connections to Healthy Food Vendors





**Table C.7: Neighborhood-to-Recreation Areas Connections with the Proposed Pedestrian Network**

Neighborhood	Recreation Areas						
	Boling Lane Park	Boys & Girls Club	Bray Park	Ernest Ramsey Gym	Landrus Siler Park	P. Braxton Comm Center	Washington Park
Autumn Estates Neighborhood	2.7	1.9	1.4	2.1	2.7	2.1	2.2
Brookwood Apartments	0.1	1.1	1.4	1.3	1.5	0.8	1.9
Cardinal Chase Apartments	1.5	0.5	1.1	1.1	1.6	0.8	1.4
Cateland Place Apartments	2.0	1.8	2.2	1.4	1.1	1.5	1.5
Country Club Neighborhood	1.1	2.1	2.4	2.3	2.5	1.8	2.9
Country Living Neighborhood	2.3	2.3	2.6	1.9	2.1	2.0	2.6
Hampton Village Neighborhood	2.7	2.0	1.4	2.2	2.8	2.1	2.3
Harmony Hills Neighborhood	2.1	1.9	2.3	1.5	1.2	1.7	1.6
Homewood Acres Neighborhood	0.6	1.3	1.7	1.0	1.1	1.1	1.6
Johnson Neighborhood	1.7	0.9	1.5	0.6	1.2	1.1	0.7
Justice Neighborhood	1.9	1.1	1.6	1.2	1.9	1.3	1.4
Lincoln Heights Neighborhood	1.8	1.2	1.8	0.6	1.2	1.2	0.3
Love's Creek Neighborhood	2.0	1.3	0.6	1.9	2.2	1.3	2.3
North Glenn Apartments	2.1	1.9	2.3	1.5	1.2	1.6	1.6
Sheffield Apartments	1.4	0.6	1.2	0.7	1.3	0.8	1.0
Stonecrest Apartments	1.9	1.6	2.1	1.3	0.9	1.4	1.4
Tripp Cottages Neighborhood	2.2	2.8	3.2	2.8	3.0	2.6	3.4
Village Neighborhood	1.9	1.3	2.0	0.7	1.3	1.3	0.4
Westmont Neighborhood	1.8	1.7	2.1	1.4	1.6	1.5	2.0
Wheels Estates Neighborhood	2.4	2.4	2.7	2.0	2.2	2.1	2.7
Windsor Arms Apartments	2.0	1.2	1.8	1.1	1.7	1.3	1.1

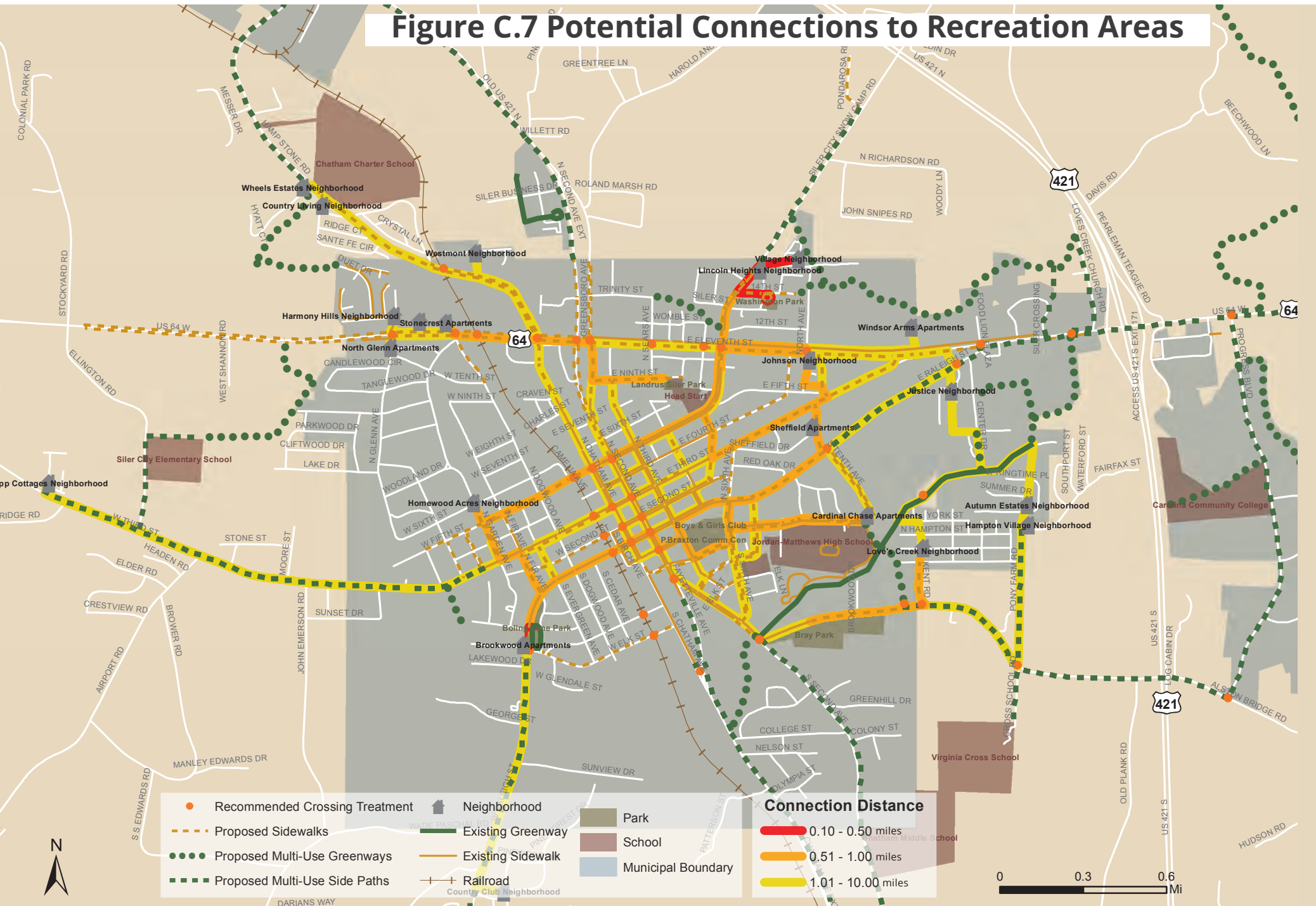
**Table C.8: Summary of Walkable Connections based on Proposed Pedestrian Network**

Connections to Healthy Foods			
Network	<0.5 miles	0.5 - 1 mile	Total
Existing Network	3	0	3
Proposed Network	5	21	168
Connections to Recreation Areas			
Network	<0.5 miles	0.5 - 1 mile	Total
Existing Network	1	0	1
Proposed Network	3	16	147

*Note: Unit of measurement for connection length is miles.*



# Figure C.7 Potential Connections to Recreation Areas







*National Night Out, August 6, 2013, Siler City*