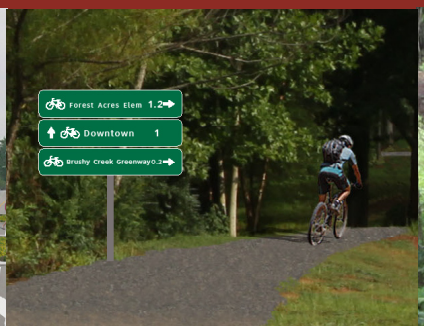
City of Easley

BICYCLE AND PEDESTRIAN MASTER PLAN

PREPARED BY:
Alta Planning + Design
108 S. Main St, Suite B
PO Box 2453
Davidson, NC 28036
www.altaplanning.com

PREPARED FOR:
City of Easley, South Carolina

Adopted by City Council
on February 08, 2010



Acknowledgements

The City of Easley appreciates the efforts of the numerous residents who participated in the development of this Plan. Their creativity, energy, and commitment to the future of Easley were the driving force behind this planning effort. In addition, the following citizens, City staff, and other agency and organization members significantly contributed to the development of the Pedestrian and Bicycle Master Plan. The City also wishes to thank the Greenville-Pickens Area Transportation Study (GPATS), which provided the primary funding for this effort.

Project Management Team

Fox Simons, City Administrator
Dan McGee, Transportation Manager, GPATS

Project Steering Committee and Technical Advisors

Chris Mann, City Council, Committee Chair
Brian Garrison, City Council
Dave Watson, City Council
Tresh Crosby, resident
Christine deVlaming, resident
Patrick Gramblin, resident
Dr. John Adams, Pastor, First Baptist Church, Easley
Eric Dillon, SCDOT District Engineer
Tom Dodds, SCDOT Bicycle and Pedestrian Coordinator

Consultant Team

Alta Planning + Design, Inc.
Jeff Olson, Principal-in-Charge
John Cock, Project Manager
Roy Harju, GIS Planner
Hannah Kapell, Planner
Susan Wilson, Planner
Harry Johnson, Jr., Intern

Kubilins Transportation Group
Margaret Kubilins, PE, Principal
Wade Walker, PE, Principal
Tegan Smith, AICP, Project Manager
Jennifer Trueblood, Engineer

Hill Studio
Don Harwood, Principal
Patrick Hughes, Planner

The preparation of this report has been financed in part through grant(s) from the Federal Highway Administration and Federal Transit administration, U.S. Department of Transportation, under the State Planning and Research program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report or the views and opinions of the authors (or agency) expressed herein do not necessarily reflect or state the official views or policy of the U.S. Department of Transportation.

Table of Contents

List of Tables

List of Maps

Executive Summary

Transportation and recreation are fundamental aspects of life in Easley. This plan will help the City improve safety, access and mobility through improvement to the community's system of on-street and off-street bikeways and walkways. These elements provide benefits to residents across the spectrum of age, economic status, physical ability, neighborhood location, and daily activity. Improved mobility for pedestrians and bicyclists will offer Easley's residents, employees, and visitors new opportunities to connect work, play, shopping, and exercise.

The goal of this Plan is to provide an assessment of Easley's existing walking and bicycling infrastructure, policies and environment, with a comprehensive list of projects and strategies for system-wide improvements.

Easley has many opportunities to encourage bicycling and walking for transportation and recreation

Existing Conditions

Sidewalks, crossings, bicycle lanes, shoulder bikeways, shared roadways and shared-use paths comprise Easley's existing pedestrian and bicycle network. Obstacles currently facing pedestrian and bicycle travel generally include:

- Maintenance issues; poor pavement conditions in some areas
- Lack of well-defined routes
- Inconsistent application of sidewalk standards (e.g., lack of required planter strips in some areas)
- Fragmented sidewalk network
- Conflicts between pedestrians/cyclists and other transportation users
- Difficult pedestrian/bicyclist crossings at intersections and other locations
- Natural and man-made barriers
- Lack of adequate bicycle parking facilities
- Difficult pedestrian/bicycle connections to schools and future transit

This Plan lays out a comprehensive system of recommended bikeways and walkways connecting key pedestrian and bicycle destinations and surrounding areas. The recommended system was developed based on input from City staff, stakeholder groups and Easley residents. The network also builds upon recommendations from previous planning efforts, including the SCDOT Complete Streets Policy, the Greenville Area Transportation Study (GPATS) *2030 Long Range Transportation Plan*, the *City of Easley Transit Feasibility Study*, the *City of Easley Parks and Recreation Master Plan*, and the *Easley Comprehensive Plan*. The system features a variety of facilities including sidewalks, bicycle lanes, shoulder bikeways, an expanded shared roadway/bike route network, and shared-use paths. The recommended system also includes a variety of intersection and streetscape improvements.

Equally important to the walkway and bikeway network are support programs. Additional strategies for improving walking and bicycling in Easley include:

- Developing a Safe Routes to School program to encourage children to walk and bicycle to school
- Developing bicycle parking facilities
- Creating a wayfinding/signing program
- Developing a "spot improvement" program for small-scale capital upgrades
- Developing a sidewalk infill program
- Developing encouragement programs (e.g., a transportation options website and bicycle/pedestrian events)
- Enforcing traffic laws relating to pedestrians and cyclists
- Implementing a city-wide 35 mph speed limit

A variety of potential sources will help fund Easley's future pedestrian and bicycle system. Funding can potentially come from Federal sources (including reauthorization of the SAFETEA-LU transportation bill), State sources (including grant programs); private funders; and local sources and partners.

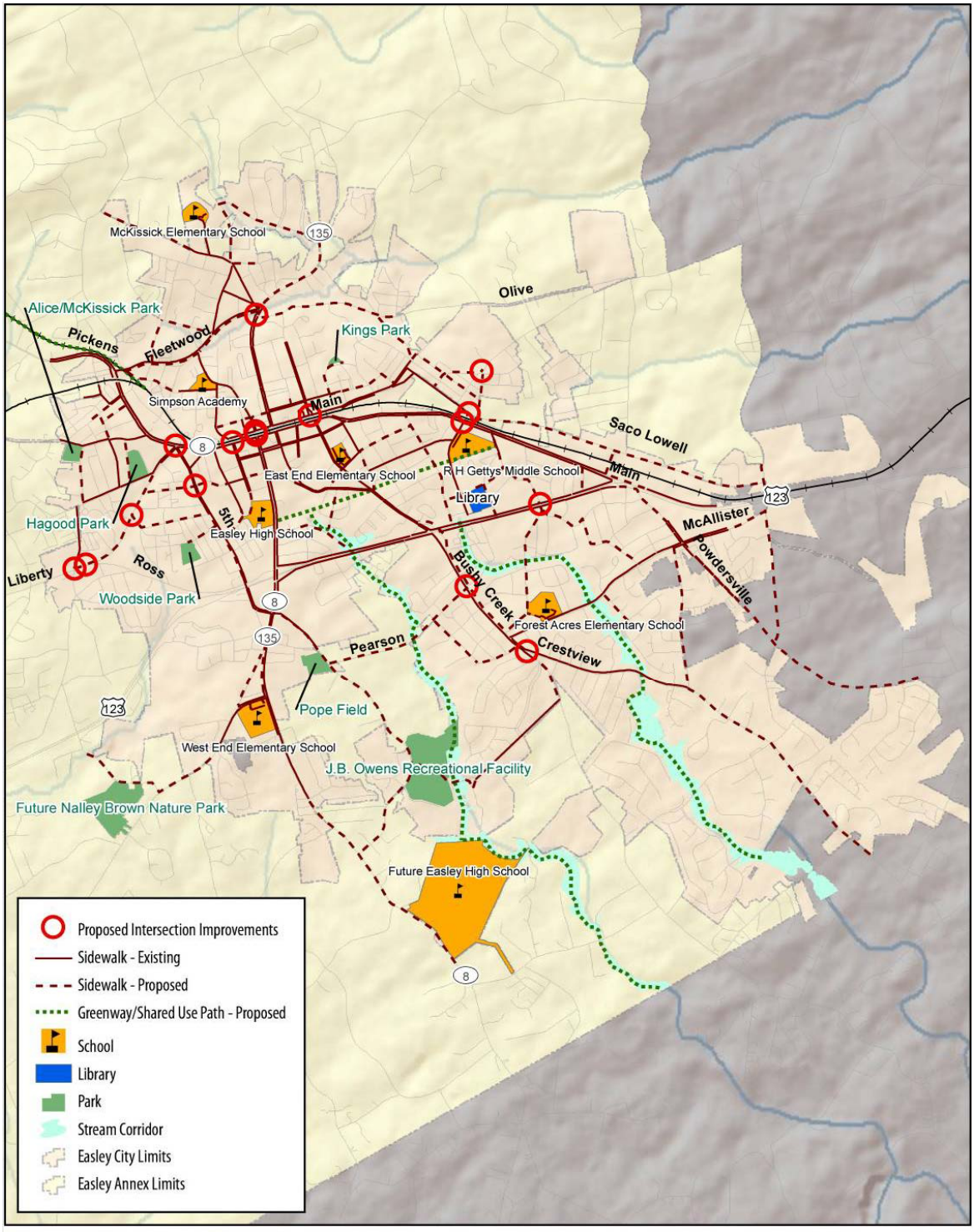
When implemented, the Pedestrian and Bicycle Master Plan will place Easley among South Carolina's best communities for walking and bicycling.

Recommendations

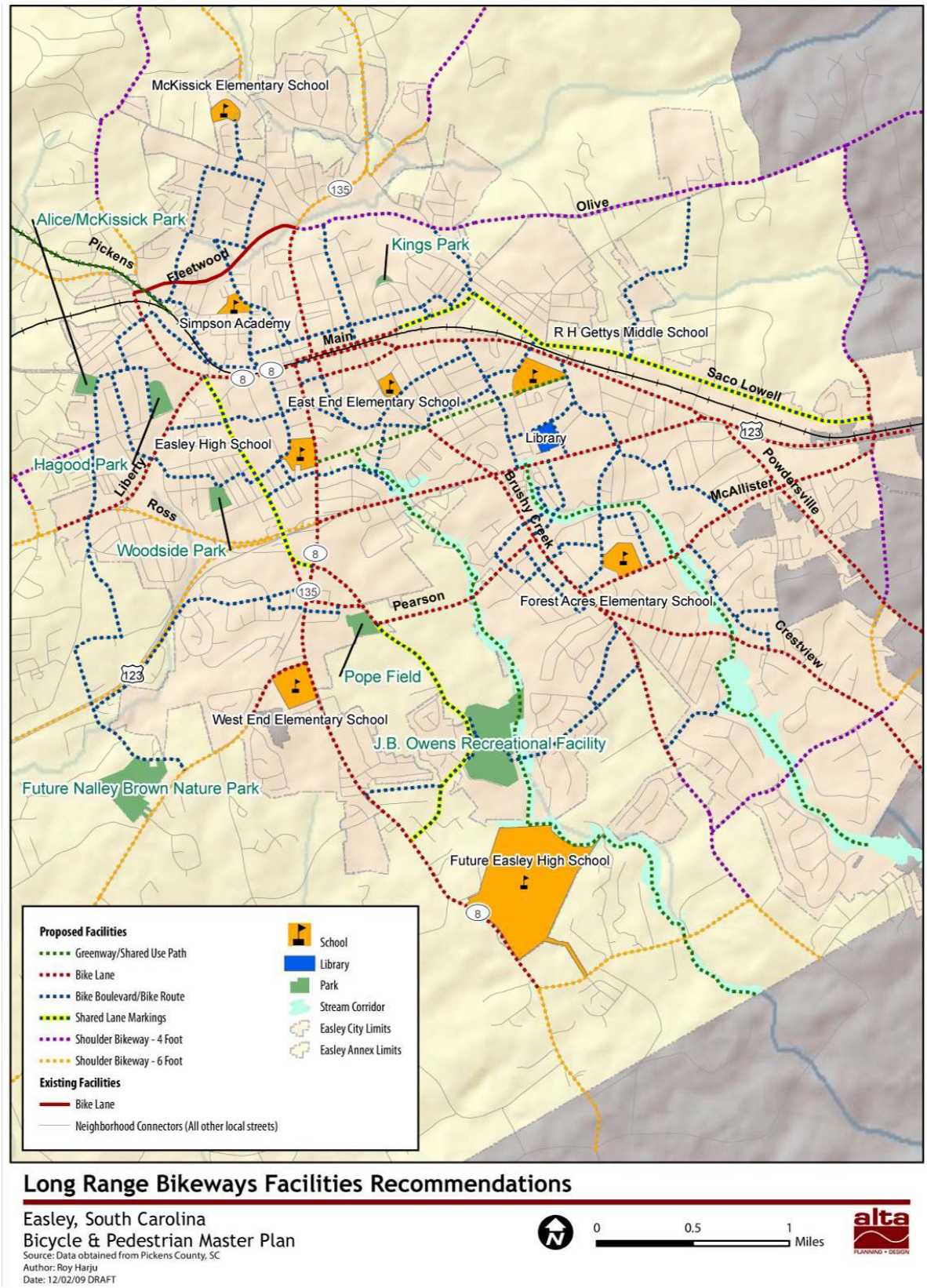
Maps ES-1 and ES-2 depict the recommended walkway and bikeway networks. This Plan lays out a comprehensive system connecting key walking and bicycling destinations and surrounding areas.

Table 1-1. Recommended Projects

Projects	Total Length (miles)
Sidewalks	28
Shoulder bikeway	46
Bike lanes	24.3
Shared use path	12.1
Shared – lane markings	6.0
Shared – pavement markings	5.5
Shared – signage	21.5
Shared – traffic calming	1.8



Map ES-1. Proposed Pedestrian System in Easley



Map ES-2. Proposed Bicycle System in Easley

This Plan lays out a prioritized list of projects and programs to make Easley a premier bicycling and walking community. To establish momentum, the City can begin by developing the following key projects:

- SC93/ Main Street - Safety & Complete Streets Improvements. East Main Street is a key east-west link in Easley's bicycle and pedestrian network, a key commercial corridor with civic, office, and retail uses, and a gateway into downtown Easley. Major destinations along the corridor include the YMCA and Getty Middle School. Main Street is also a key link in Easley's future transit network. This plan proposes implementing a project to increase motorist, pedestrian, and bicycle safety by reallocating the roadway space for bike lanes, a center turn lane, and strategic pedestrian crossings.
- Brushy Creek Greenway. The Brushy Creek is recommended as a new trail corridor to provide bicycle and pedestrian access from downtown to the site of the future Easley High School on the south side of the city. The three-mile path will connect neighborhoods, the future Easley Middle School, Highway 123 and neighborhoods along the way. To further identify opportunities and constraints and preliminary design for a Brushy Creek Greenway path, the City of Easley can find local partners to help fund a feasibility study for the trail. Potential partners can include GPATS, the Pickens County School District, SCDOT, SCDHEC, Baptist Hospital, Upstate Forever, and others.
- Safe Routes to Schools (SR2S) Since children represent the communitiy's future, a focused safety and physical activity program can be developed at local schools as part of the national Safe Routes to Schools Movement.
- Wayfinding/Signing Program. The ability to navigate through a town or city is informed by landmarks, natural features, and other visual cues. A signage system is a key component of a navigable environment and would inform pedestrians and cyclists of recommended walking and cycling routes while also enhancing the identity of Easley. Placing signs throughout the city indicating to bicyclists and pedestrians their direction of travel, location of destinations, and the time/distance to those destinations will increase users' comfort and accessibility to the bicycle and pedestrian system. Costing about $125 each, wayfinding signs are a relatively cost-effective means for improving the walking and bicycling environment.

Proposed improvements along East Main Street include crosswalks, refuge islands, and bicycle lanes.

Brushy Creek presents an opportunity to connect the future Easley High School and downtown.

Wayfinding sign concept

Chapter 1. INTRODUCTION

Easley is situated in Upstate South Carolina, at the base of the foothills of the Blue Ridge Mountains in Pickens County, between Greenville and Clemson. Easley is 10.6 square miles in area with a population of approximately 20,000 residents (2007 US Census estimate) - a 13 percent increase over the 2000 Census figure of 17,754. Local estimates are that the population of Pickens County could increase by 30 percent by 2025. The City is part of the Easley-Laurens-Pickens MSA and is in the Greenville-Pickens Area Transportation Study (GPATS) MPO, a primary funder of this plan.

Downtown Easley

Easley's history is tied to the Norfolk Southern Railroad line that runs through the center of the City. The City is located midway between the major metropolitan areas of Charlotte, North Carolina to the northeast and Atlanta, Georgia to the southwest, both of which are easily accessible via nearby Interstate 85. Surrounded by rolling mountains and several picturesque lakes, Easley's location provides residents with a number of outdoor recreation opportunities. Easley is home to Baptist Medical Center and has recently gained acclaim for hosting the Big League World Series youth baseball tournament.

The City of Easley recognizes that bicycling and walking are an important part of daily transportation for residents, commuters, and visitors to the city. This Plan is for all residents who desire to improve their level of daily physical activity by bicycling or walking to school, work, and other local destinations; or by going for a walk or bicycle ride to the City's parks, the library, or downtown.

Plan Overview

The goal of this Plan is to provide an assessment of Easley's existing walking and bicycling environment and a prioritized list of projects and strategies for system-wide improvements. The City expects that the plan will become a strong planning tool and that it will facilitate the orderly development of both pedestrian and bicycle modes of transportation. The plan is expected to:

Easley's annual Spring Fling festival featured a bicycle, run, and bike rodeo event this year

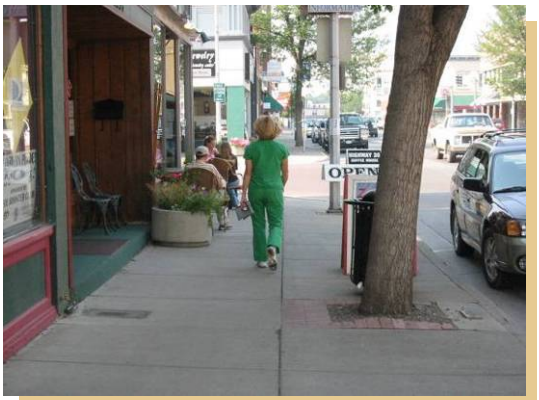
- Guide the City in creating a lasting pedestrian and bicycle transportation program;
- Identify convenient on-street and off-street routes for pedestrian walking/jogging and bicycling to important destinations;
- Identify connections to other modes of transportation;
- Address the needs of all ability, age and skill levels;
- Promote safe bicycling and walking and enhance community safety.

This plan considers and incorporates many of the projects proposed in other planning efforts, including the City's *Comprehensive Plan, Parks & Recreation Master Plan, Transit Feasibility Study,* and the *GPATS Long Range Transportation Plan (LRTP)*, in addition to other projects and programs that further enhance bicycling and walking in Easley.

Benefits of Walking and Bicycling

Easley residents recognize that walking and bicycling are healthy, efficient, low-cost modes of travel, available to nearly everyone. Walking is the most basic form of transportation. Almost everyone is a pedestrian at some point in the day, since walking is often the quickest way to accomplish short trips in urban areas. Pedestrians also include persons using skateboards, wheelchairs and other forms of mobility devices.

Bicycling also provides many community benefits. Bicycling can help reduce traffic congestion, improve air quality, and improve physical fitness. Walking and bicycling help develop and maintain "livable communities," make neighborhoods safer and friendlier, save on personal and public transportation costs, and reduce transportation-related environmental impacts, auto emissions, and noise. They create transportation system flexibility by providing transportation choices, particularly in combination with transit systems, to people of all ages, abilities, and income status.



Walking and bicycling help increase physical fitness and create attractive places.

The extent of bicycling and walking in a community has been described as a barometer of how well that community is advancing its citizens' quality of life. Streets that are busy with bicyclists and walkers are working at a human scale, fostering a sense of neighborhood and community. Bicycling and walking create opportunities to speak to neighbors and put more "eyes on the street" to discourage crime and violence. Communities with high levels of walking and bicycling often have lower crime rates, and are generally attractive and friendly places to live.

Active living that integrates walking and bicycling into daily activities is critical to improving public health and reducing South Carolina's obesity crisis. Walking and bicycling are important to the health of all those living and working in Easley, not just to those doing the walking or cycling. People choosing to ride or walk rather than drive may be replacing short automobile trips, which contribute disproportionately high amounts of pollutant emissions to the environment. Since bicycling and walking contribute little pollution, require no external energy source, and use land efficiently, they effectively move people from one place to another with few adverse environmental impacts.

Bicycling and walking require less space and infrastructure compared with automobile facilities. Improvements made for bicyclists often result in better conditions for other transportation facility users as well. For instance, paved shoulders, wide curb lanes, and bicycle lanes not only provide improved conditions for bicyclists, but also create a safe location for

disabled vehicles to stop, can reduce traffic speeds, and provide additional turning room for motor vehicles, among other benefits.

Facilities such as roadway shoulders accommodate bicycle travel and provide a safe location for disabled vehicles to stop

Walking and bicycling are also good choices for families. Bicycles enable young people to explore their neighborhoods, visit places without being driven by their parents, and experience the freedom of personal decision-making. More children bicycling and walking can mean fewer trips by car. In turn, this means less traffic congestion around schools and in the community, and less time parents spend driving their children.

In addition to walking, bicycling is also within reach for many people who cannot afford an automobile or cannot legally drive due to age or physical limitations. Typically, a third of a community's population is non-drivers for one or more of these reasons. In Easley, as of the 2000 Census, nearly 24 percent of the City's population was under 18 and more than 8 percent of the City's households did not own a car, as shown in Figure 1-1

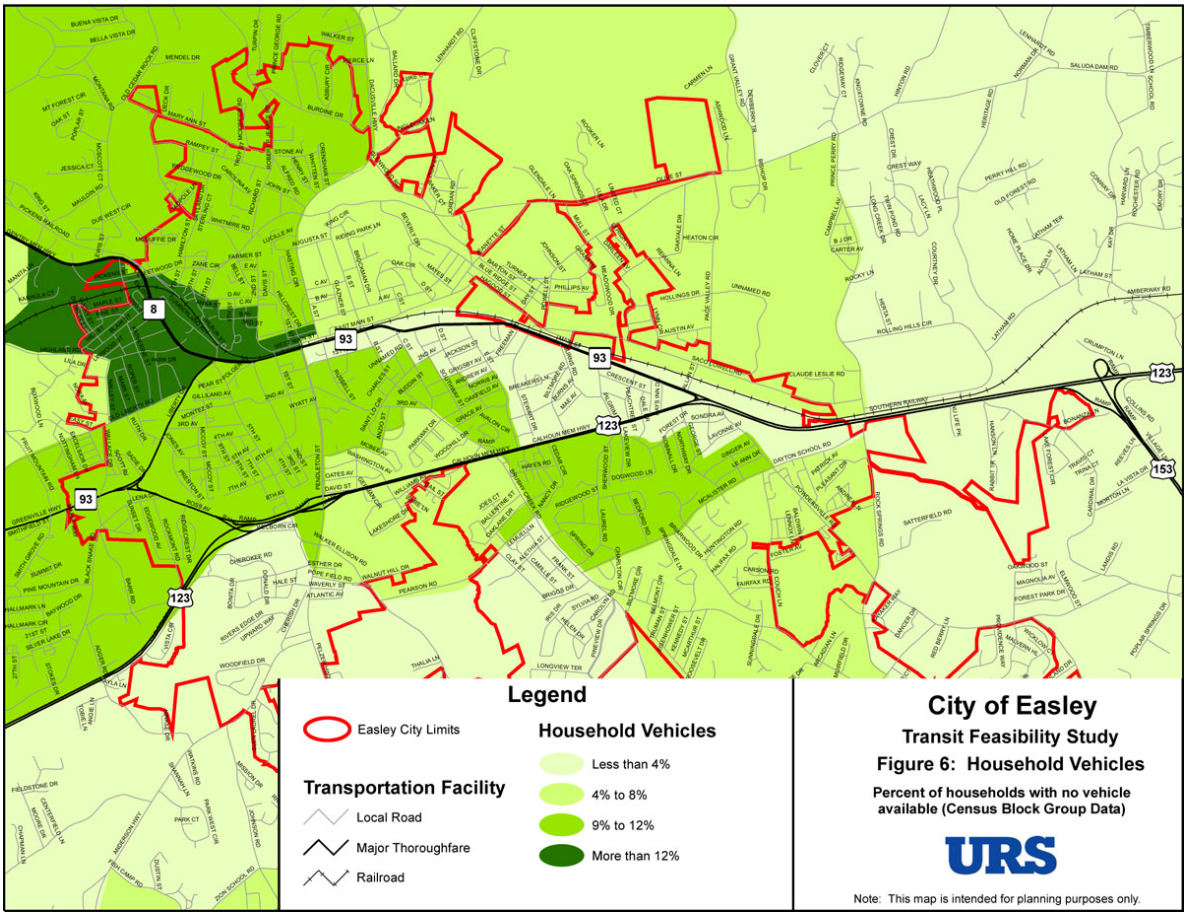


Figure 1-1. Percent of Easley Households with No Motor Vehicle Available

(Source: US Census as reported in City of Easley Transit Feasibility Study*)*

Vision Statements, Objectives, and Strategies

Vision Statements and Objectives

The following vision statements and sample objectives were drafted by members of the plan advisory committee and confirmed by members of the general public who participated in the plan. The vision statements represent the intent of this plan and the long-range vision for walking and bicycling in Easley. These statements reflect local commitment to improving walking and bicycling. They also provide policy guidance for implementation after the plan is complete.

The bulleted objectives below are *examples* of implementing strategies or actions suggested by the committee and represent a range of ideas in various categories, but not necessarily a complete or exhaustive list of recommendations. A fully explored list of recommendations is presented in the chapters that follow.

1. The City of Easley will be known as a fitness-friendly, bicycle-friendly, and walkable community – a community with strong neighborhood feeling and a place for families, as evidenced by:

    - Recognition as a "fitness-friendly community" by utilizing existing resources and partnerships;
    - Recognition as a "bicycle community" as the City's image is associated with cycling;
    - Recognition in Bicycling Magazine;
    - Visibility of kids on bikes and people walking, fostering a sense of community/ neighborhood;
    - Consideration of a City employee to act as a bicycle and pedestrian planner;
    - Increasing/improving ordinances for cyclist and pedestrian protection;
    - Instituting a bike share program;
    - Supporting a bike shop in town.

2. Easley will have a complete network of pedestrian- and bicycle-friendly infrastructure for all abilities and user types (runners, walkers, families, cyclists of all types) throughout the City and into the region, as evidenced by:
    - Places to ride in City and environs;
    - Regional connections;
    - Bike trail in railroad corridor between Pickens/Easley;
    - Connection to Greenville;
    - Network from downtown;
    - Paths on major roads;
    - More greenways (such as Cleveland Park); places for families;
    - Couch Lane that is better for running/biking.

3. Easley will support Education, Awareness, and positive attitudes for bicycling, wellness and physical activity,

including:

- Raising awareness for physical activity;
- Formalizing a Wellness coordinator for the City;
- Educating residents re: safety and other risks [of bicycling and walking].

4. Easley will ensure that current and future generation of pedestrians and cyclists feel safe. This will be evidenced by:

- Increased numbers of pre-drivers biking throughout the City;
- Reduction in motor vehicle speeds;
- Additional places for families to walk/bike;
- Neighborhood shared roadways and bike lanes and sidewalks near schools;
- Mountain bicycling opportunities.

Becoming a Bicycle and a Walk Friendly Community

One of the underlying objectives of this planning process is for Easley to achieve Bicycle Friendly Community status. The Bicycle Friendly Community (BFC) campaign is a national awards program that recognizes municipalities that actively support bicycling. A Bicycle-Friendly Community provides safe accommodations for cycling and encourages its residents to bike for transportation and recreation. The Bicycle Friendly Community Campaign is administered by the League of American Bicyclists, an education and advocacy organization working to bring better cycling to communities around the country. The BFC designation is awarded at one of four levels (from lowest to highest): bronze, silver, gold, and platinum. To date, only three communities have achieved platinum status: Portland, OR; Davis, CA; and Boulder, CO. In South Carolina, three communities have been designated Bicycle Friendly Communities: Spartanburg (Bronze, 2007), Columbia (Bronze, 2008) and Greenville (Bronze, 2009). More information on this program and its implementation are provided in Chapter 5.

Beginning in early 2010, a Walk Friendly Community (WFC) award program will be initiated by the Association of Bicycle and Pedestrian Professionals, the Pedestrian and Bicycle Information Center, and the National Center for Bicycling and Walking. The implementation of this plan will help Easley receive recognition through the WFC program as well.

Plan Organization

The Easley Bicycle and Pedestrian Master Plan is organized as follows:

- Chapter 1: Introduction, provides an overview of this Plan and its purpose.
- Chapter 2: Existing Conditions, describes Easley's existing walkway and bikeway network, summarizing destinations and opportunities for bicycle lanes, and uses an analytical model to estimate current bicycling and walking demand and to predict future demand.
- Chapter 3: Recommended Pedestrian and Bicycle Network, depicts the recommended system of on- and off-street walkways and bikeways, along with more in-depth Top-Tier project descriptions and Safe Routes to School recommendations.
- Chapter 4: Design Guidelines and Standards, presents design guidelines from local, state and national best practices for various bicycle and pedestrian facility types.
- Chapter 5: Bicycle and Pedestrian Safety, Marketing, and Education Guidelines, describes education, encouragement, enforcement and evaluation measures the City and/or other local agencies should implement to promote walking and bicycling, to increase bicyclist and pedestrian safety, and to increase the awareness of walking and bicycling as viable travel modes.
- Chapter 6: Financial Resources and Funding, identifies potential funding strategies and supporting policies for the recommended infrastructure improvements and program recommendations.
- Chapter 7: Implementation Plan, presents evaluation criteria for prioritizing facilities and programs, defines the methodology for developing a phased implementation approach, and provides cost opinions for the recommended pedestrian and bicycle projects and programs and maintenance.
- Appendices at the end of this Plan include a more detailed discussion of public outreach, an analysis of previous crash data, a review of plans, policies, guidelines and standards that impact the implementation of this Plan, and a discussion of the potential traffic impacts of recommended projects.

Public Involvement

Public and stakeholder input provided the basis for developing the Pedestrian and Bicycle Master Plan recommendations. The public involvement element included five primary mechanisms in order to achieve the broadest possible local input:

1. A City-appointed Advisory Committee: In September, 2008 Mayor Bagwell established a committee to make the City of Easley a Bicycle Friendly Community. From that declaration an advisory committee was developed including members of the City of Easley's Recreation Committee, as well as several members from the Easley community. The City-appointed Plan Advisory Committee provided oversight in the Plan's development and information on the existing pedestrian and bicycle network; contribute ideas for system improvements; and assisted in getting the word out about the plan effort to the broader community. The consultant team met with the Advisory Committee throughout the plan development process to get direction on plan recommendations and to determine local priorities.

2. Stakeholder Interviews: The consultant team interviewed various agency stakeholders in the course of developing the plan recommendations, including GPATS, Pickens County Schools, Pickens County and Easley school administrators, South Carolina Department of Transportation (SCDOT) staff, Pickens County, Easley Combined

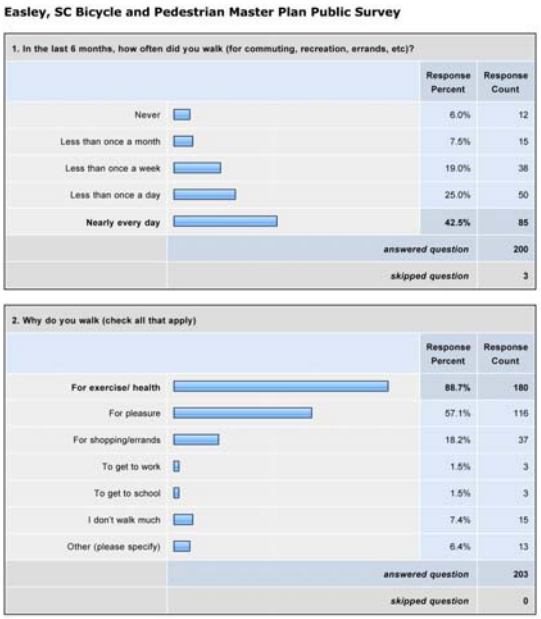
Utilities, Easley Park & Recreation staff, Easley Public Works staff, Pickens Railroad, Easley Chamber of Commerce, and the YMCA, as well as local walking and bicycling enthusiasts.

3. Public Workshops: Two public outreach events were held to solicit community input. The first public workshop was held in June 2009 to provide opportunities for residents to define issues and opportunities for Easley's existing walking and bicycling environment, and to also offer suggestions for making the system better. More than 20 people representing a broad spectrum of ages and interests – from high school students to retired residents – and community leaders from various local organizations including City Council, the YMCA, and the Chamber of Commerce attended the event. A second public meeting was held in October 2009 to present draft recommendations for public feedback. More than 45 people attend the second workshop. The project team catalogued all comments from these events and made recommendations and changes to the plan based on the public input. A summary of the public feedback is included in Chapter 2. A complete list of the public feedback is included in Appendix A. Additionally, the consultant team made a presentation on the plan effort to the Easley Rotary Club in July 2009.

4. A Community-wide survey: The consultant team developed an online and paper survey regarding local pedestrian and bicycle priorities, which was available from April 28 through June 20, 2009. The hard copy survey was available at the Spring Fling event, at City Hall, at the Hampton Memorial Library, and at the Easley Branch of the YMCA. The electronic survey was available on the project website and was also distributed by e-mail to residents and stakeholders by members of the Advisory Committee. Over 200 persons responded to the survey. A summary of survey results are included in the textboxes in Chapter 2, while a complete list of survey results can be found in Appendix A. The survey results were used to inform the recommendations in this plan and are referenced throughout the plan.

5. Project website: Prior to commencement of the plan, the Advisory Committee and local volunteers developed a slogan, a graphic, and a webpage on the City's website. The webpage (accessible at www.walkeasley.com or www.bikeeasley.com) provided a venue for information about the planning process, project updates, and a forum for public comments. After this plan is complete, the website will continue to be a resource for plan implementation and community information regarding walking and cycling in Easley.

Bikeeasely.com/walkeasley.com webpage



Easley, SC Bicycle and Pedestrian Master Plan Public Survey

1. In the last 6 months, how often did you walk (for commuting, recreation, errands, etc)?

	Response Percent	Response Count
Never	6.0%	12
Less than once a month	7.5%	15
Less than once a week	19.0%	38
Less than once a day	25.0%	50
Nearly every day	42.5%	85
answered question		200
skipped question		3

2. Why do you walk (check all that apply)

	Response Percent	Response Count
For exercise/ health	88.7%	180
For pleasure	57.1%	116
For shopping/errands	18.2%	37
To get to work	1.5%	3
To get to school	1.5%	3
I don't walk much	7.4%	15
Other (please specify)	6.4%	13
answered question		203
skipped question		0

Page from the online survey

Chapter 2. EXISTING CONDITIONS

This chapter describes the current walkway and bikeway network in Easley. The first section is an inventory and assessment of existing bicycle and pedestrian facilities, including sidewalks, intersections, shared use paths, accessways, and bike parking. The second section discusses important destinations for bicyclists and pedestrians, in particular connections to future transit and schools. An analysis of system strengths and weaknesses follows, which highlights key areas where improvements may be needed.

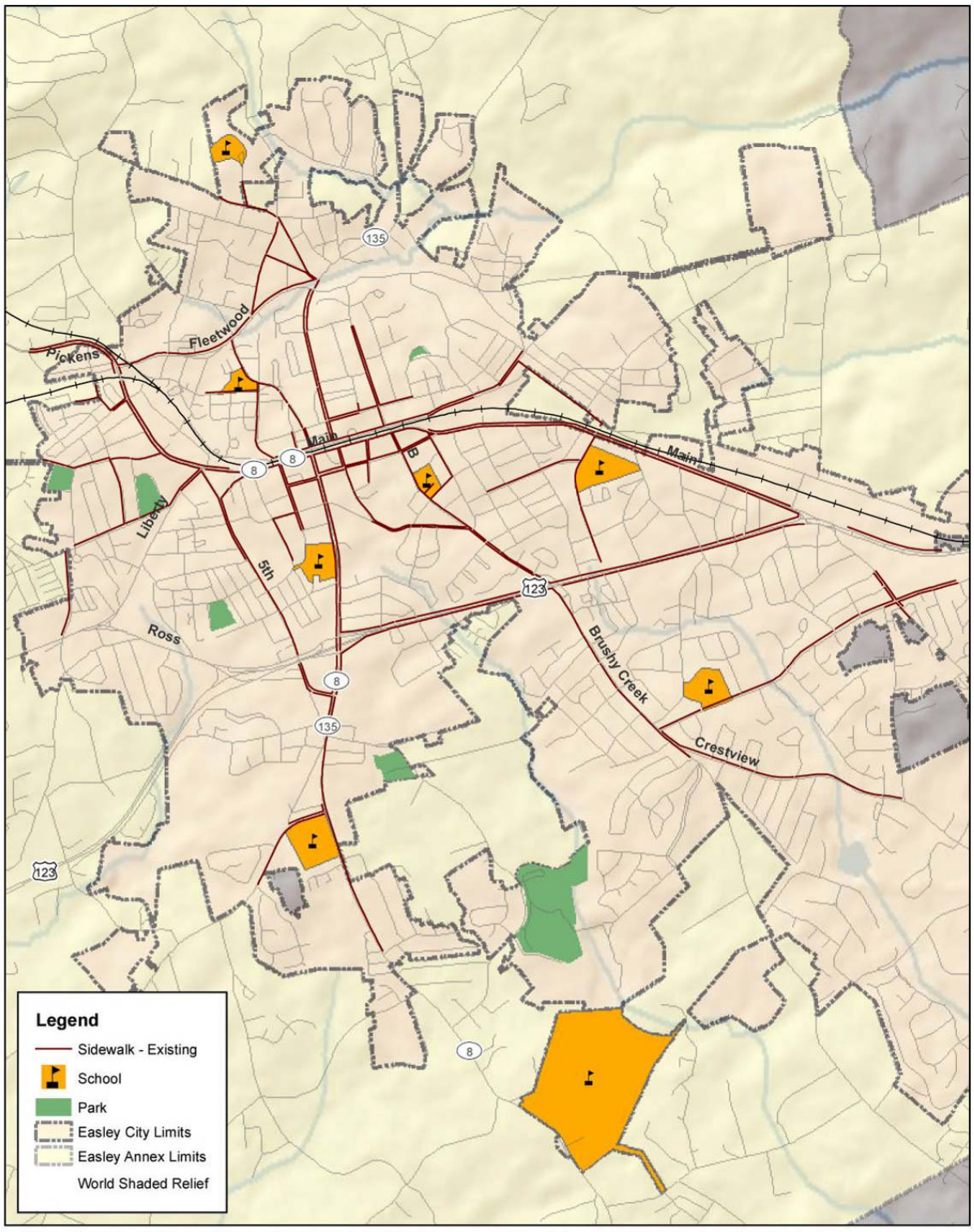
Pedestrian Facilities – An Overview

Pedestrian travel is accommodated and enhanced by walkways, traffic signals, crosswalks, curb ramps, and amenities such as lighting, landscaping, and places to rest (e.g. benches). "Walkways," which are transportation facilities built for use by pedestrians and persons in wheelchairs, include the following facilities:

- Sidewalks: The most common type of walkway, sidewalks generally parallel roadways. Sidewalks have a hard, smooth surface (e.g., concrete), with separation from the roadway typically consisting of a curb and/or planter strip.
- Shared-use Paths: Shared-use paths are used by various non-motorized users, including pedestrians, cyclists, in-skaters, and runners. Shared-use paths are typically paved (asphalt or concrete) but may also consist of an unpaved smooth surface that meets the Americans with Disabilities Act (ADA) standards.
- Roadway Shoulders: Roadway shoulders often serve as pedestrian routes in rural areas. On roadways with low traffic volumes (e.g., less than 3,000 Average Daily Traffic (ADT) volumes), roadway shoulders may be adequate for pedestrian travel. Also used as "shoulder bikeways" (described later), these facilities should be wide enough to accommodate both pedestrians and bicyclists. Because of typical cross slopes, however, these facilities do not typically meet ADA standards.

Existing Pedestrian Facilities

The Existing Pedestrian Facilities Map (Map 2-1) on the following page depicts Easley's current pedestrian network. Sidewalks comprise the vast majority of existing walkways within the city.



Map 2-1. Existing Sidewalks in Easley

Challenges: Pedestrian Network

Pedestrians face daily challenges in Easley, as described below.

Fragmented Sidewalk Network

Easley currently has an incomplete sidewalk network in many parts of the city. Sidewalks exist on most streets within downtown, in some adjacent neighborhoods, and along most major roadways. In downtown Easley, sidewalks are five to 15 feet wide. However, in outlying areas, many streets either have sidewalks on one side only, or lack sidewalks altogether. Sidewalks in these areas are frequently located at the back of curb, adjacent to the street, with no planting strips to provide room for trees or landscaping between sidewalk and the street to provide shade and a buffer for pedestrians. Recent street improvement projects have added sidewalks or improved pedestrian conditions on existing streets (e.g., Main Street and Wimberly Lane).

Much of downtown Easley is relatively pedestrian friendly. Main Street and most side streets have sidewalks in relatively good condition with a variety of complimentary pedestrian facilities including textured crosswalks, pedestrian signals, ADA-accessible curb ramps, pedestrian-scale lighting, and sidewalk amenities including benches and trash receptacles.

Improved pedestrian crossing and ramps on Main St.

New sidewalk along one side of Wimberly Lane

Most residential streets do not include sidewalks, including this stretch of 2nd Avenue near East End Elementary

Public Input on Pedestrian Network

Areas in Easley where walking conditions should be improved?

(from the survey:)

- Downtown (38 total votes)
- Brushy Creek Road
- Schools
- Other streets (such as Couch Lane and Powdersville Rd)

(additional locations from the public meeting:)

- At shopping centers
- SC 93
- Burns Rd
- Biltmore Road
- Tri-County Technical College

Types of improvements needed?

(from survey and public meeting)

- Installation and improvements of sidewalks
- Curb ramps
- Buffer between sidewalk and road
- Pedestrian crossings of major roads and intersections
- Pedestrian lighting
- Signage to alert drivers
- Reducing speed of traffic
- Fewer commercial driveways
- Enforcement of developer improvements

Shared -Use Paths

Easley currently lacks a shared-use path system.

The GPATS *Long Range Transportation Plan* recommends a proposed shared use path along the rail right-of-way between Pickens and Easley. *The Easley Parks and Recreation Master Plan* recommends a shared use path along Pope Field Road between Pope Field and the J. B. "Red" Owens Recreation Complex.

Barriers

Natural and man-made barriers impact pedestrian accessibility and mobility in Easley. Some of the major barriers include:

- Rail lines (Norfolk Southern and Pickens railroads);
- Major roads, especially Highway 123;
- Hills and valleys, especially in the northern parts of the City and around stream valleys; and
- Limited crossings of major creeks, especially in southern part of Easley's jurisdiction.

These barriers limit the ability for pedestrians to walk directly from one part of the City to the other.

Difficult Crossings

Pedestrians face a variety of difficult street crossing conditions in Easley. The quality of intersections from a pedestrian perspective varies by location. Marked crosswalks and curb ramps exist at some major intersections on arterial streets and within downtown Easley. However, many intersections are not well designed for pedestrian comfort and safety, with overly large turning radii that facilitate higher motorist turning speeds; lack of curb ramps; and lack of pedestrian signals. Conditions along collector and local streets also vary by location. Marked crosswalks exist at some intersections near schools. Some intersections have relatively new curb ramps with detectable warning strips, but most intersections either lack curb ramps or have existing ramps that are in poor condition. Some of the major issues regarding pedestrian crossings include:

- Crossing SC 123 is one of the most challenging pedestrian environments in Easley, both for pedestrians moving along the corridor and crossing the corridor. Members of the public through the survey and the public meetings mentioned pedestrian crossings of this road numerous times as needing improvements. The roadway is challenging due to relatively long distances between signalized intersections and the lack of formalized crossings, in addition to the speeds of motor vehicles and abundance of commercial driveways. This discourages pedestrians from walking to services along the roadway. Many pedestrians dart across the roadway for lack of safe crossing spots.
- Pedestrians encounter difficult crossings on higher-volume streets where minimal or no crossing treatments exist. For example, pedestrians (especially children) encounter relatively high vehicle traffic volumes when crossing Brushy Creek to get to Forest Acres Elementary School or when crossing the SC 8/135 intersection to get to West End Elementary. Additional treatments beyond enhanced crosswalks, including special pedestrian signals, may be necessary to facilitate safe and convenient crossings.
- Pedestrians with disabilities experience crossing difficulties in Easley. Curb ramps at many intersections are in poor condition or disrepair, while some intersections lack curb ramps altogether. This makes travel challenging for people in wheelchairs or motorized mobility device or with strollers. Visually and mobility impaired pedestrians experience difficulty navigating through intersections with curb ramps oriented diagonally toward the intersection's center rather than toward a crosswalk.

Maintenance Issues

Existing sidewalks along some major roads in Easley suffer from cracking or heaving. Additionally, overgrown vegetation obstructs the sidewalk in some places, forcing pedestrians to walk in the road. Examples are shown in images on the following page.

Inadequate Pedestrian Access to Parks

The *Easley Parks & Recreation Master Plan* states: "There is inadequate pedestrian access into the parks. The majority of the facilities lack accessible routing from parking areas to buildings, fields, or play equipment. Most concrete sidewalks are in poor condition. Uneven surfaces and paving in need of repair present safety hazards and are non-conforming with the Americans with Disabilities Act."

Major roads like SC 93 and SC 123 pose barriers to pedestrian access

No pedestrian crossing treatments are provided at SC135 & Fleetwood despite long crossing distances

High-quality pedestrian crossing with ADA ramps, visible cross-walk, and pedestrian refuge on Main St

Lack of Wayfinding Signage

Easley's pedestrian system lacks a comprehensive signage program and other wayfinding tools to orient pedestrians and direct them to and through major destinations like downtown along pedestrian-friendly routes (although the City has recently installed some signs with directions to parks). A representative from the Chamber of Commerce related that visitors for the Big League World Series often ask for suggested pedestrian routes to the J.B. "Red" Owens Complex.

Auto-oriented Land Development and Transportation System

One of the most fundamental issues facing Easley from a pedestrian point of view is that the City's land use pattern and transportation network is designed almost exclusively around motor vehicle access. Newer development continues to spread out from the core of the City, with uses strictly separated by type, so that almost every trip – whether to school, work, church, the park, or shopping – requires a car not only because of the lack of pedestrian and bicycle infrastructure, but also because of the distance. In the near term, continuing to improve pedestrian infrastructure and safety will be crucial. Ultimately, the City's promotion of compact, mixed land uses in combination with excellent pedestrian infrastructure will make Easley truly walkable. Easley's historic downtown and surrounding neighborhoods were built in an era before the automobile and exemplify a compact and walkable form of development with civic, commercial, and residential uses established literally side by side and built for pedestrian access. Easley has established Transitional Overlay Zoning districts along Main Street and Highway 8 that are intended to promote a more pedestrian-oriented, mixed use development. However, the City's newest and largest development off of Prince Perry Road and Hwy 123 and the new high school at the City's southern edge continue the trend towards land uses accessible primarily by motor vehicle.

Overgrown sidewalk next to asphalt ditch at Brushy Creek/Pearson

Sidewalk disrepair along Fleetwood Avenue near SC intersection

Low-density, auto-oriented land uses along Easley's major corridors discourage pedestrian access

Existing Bicycle Facilities – An Overview

AASHTO's *Guide for the Development of Bicycle Facilities* (1999), which is referenced by SCDOT as the basis for bicycle design guidelines on State roadways, defines several types of "bikeways." Bikeways are distinguished as preferential roadway treatments accommodating bicycle travel. Accommodations can take the form of bicycle route designation and signage, bicycle lane or shoulder striping, or shared-use paths, which are separated from a roadway for use by cyclists, pedestrians, in-line skaters, runners, and others.

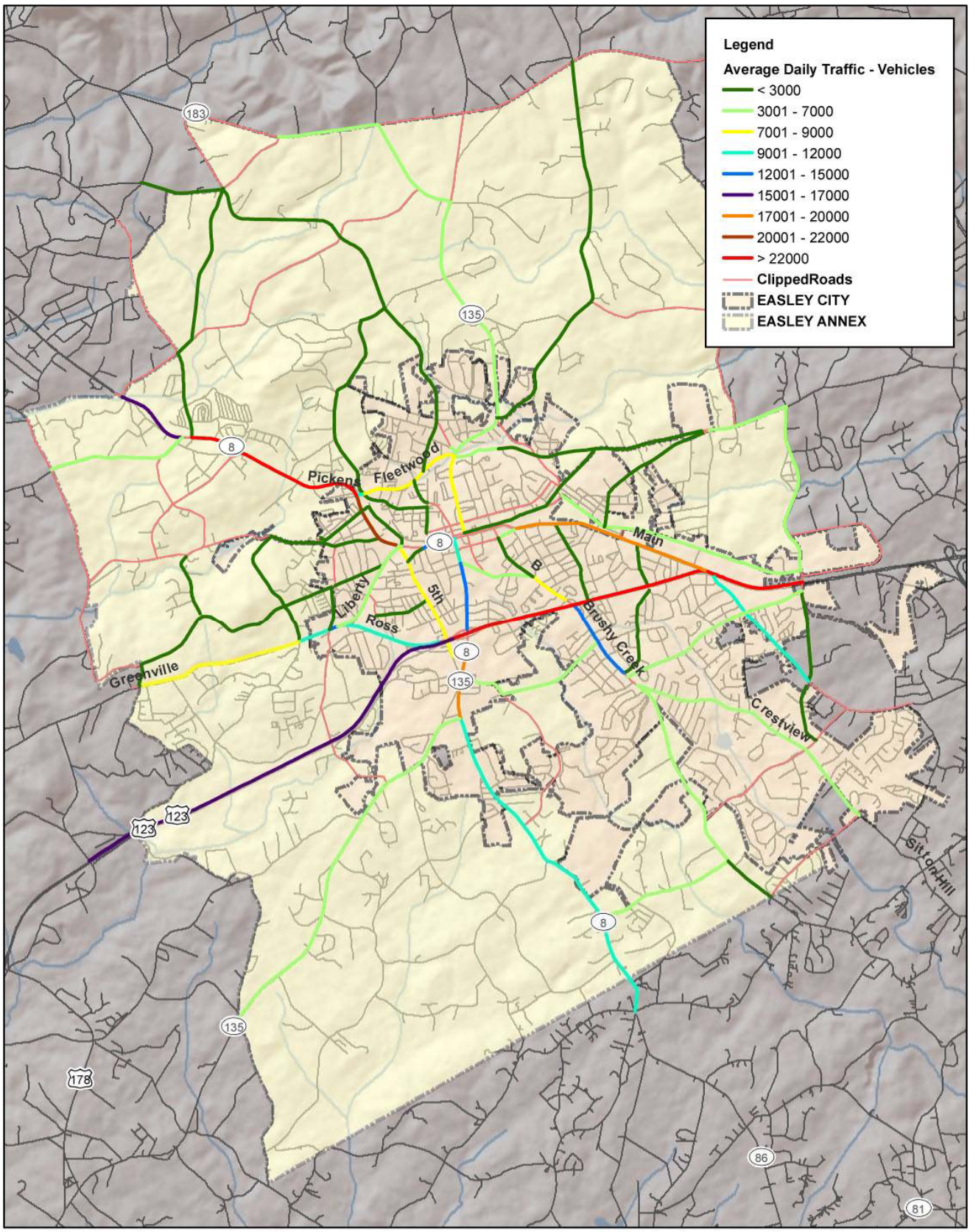
Current Roadway Network Bike Suitability

At the time of plan development there was only one formal bikeway in Easley, which was a newly striped shoulder bikeway along Fleetwood Avenue. Bike lanes along this roadway were a recommendation of the GPATS 2030 Long Range Transportation Plan.

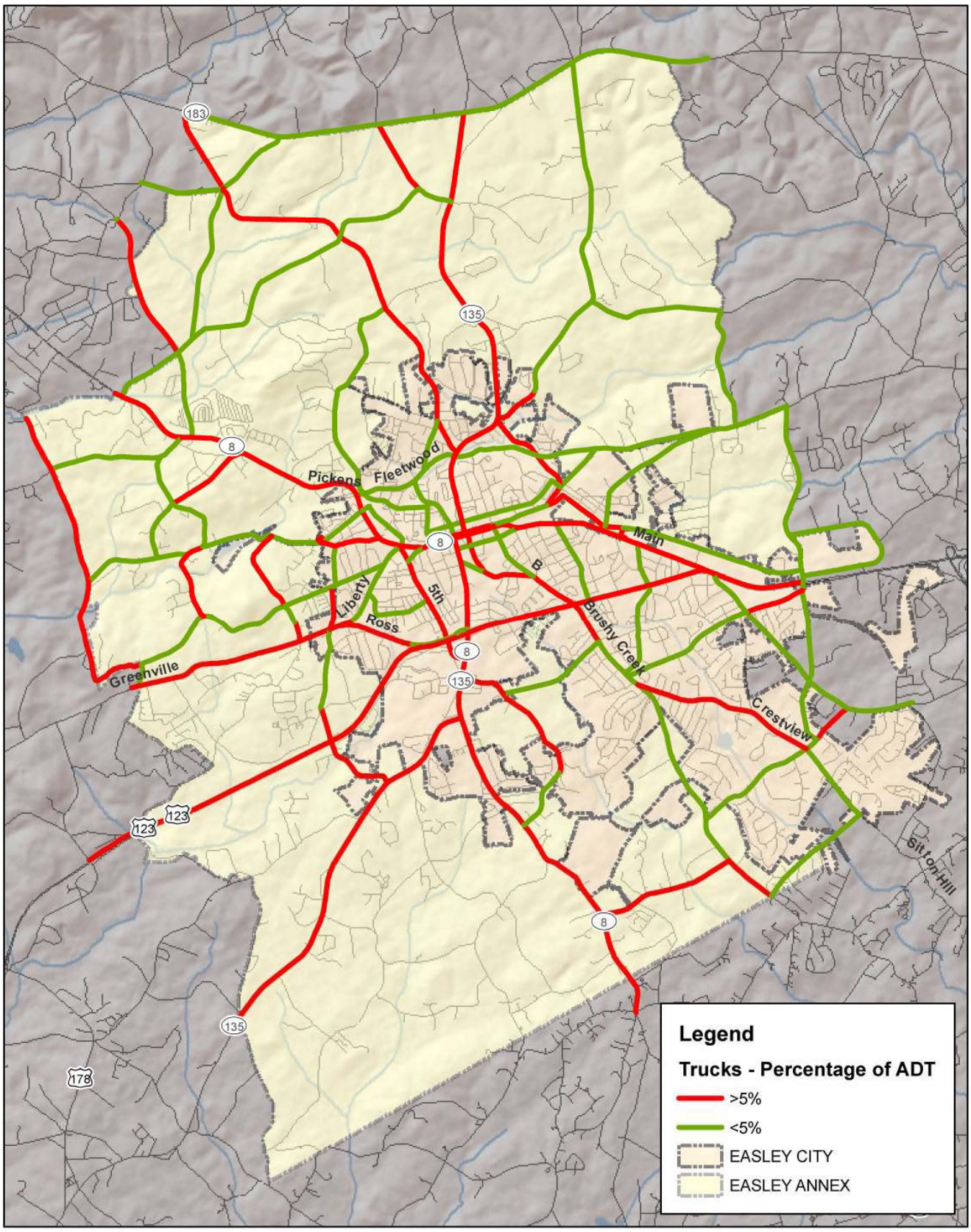
The maps that follow of give an indication of the conditions on Easley's roads in terms factors that directly impact cyclist comfort: volume of motor vehicles, volume of trucks, motor vehicle speeds, and the number of lanes.

Generally, as traffic volumes exceed 3,000 vehicles per day and traffic speeds exceed 25mph, facilities to separate bicycle and motor vehicle traffic are recommended. Multi-lane roads are typically more dangerous for all users because of the increased traffic volume, the potential for higher speeds, and the additional number of conflict locations due to turning vehicles. A composite map (Map 2-6) of these factors shows a generalized suitability rating of Easley's existing roads based on assumptions of an average adult's perceived cycling comfort.

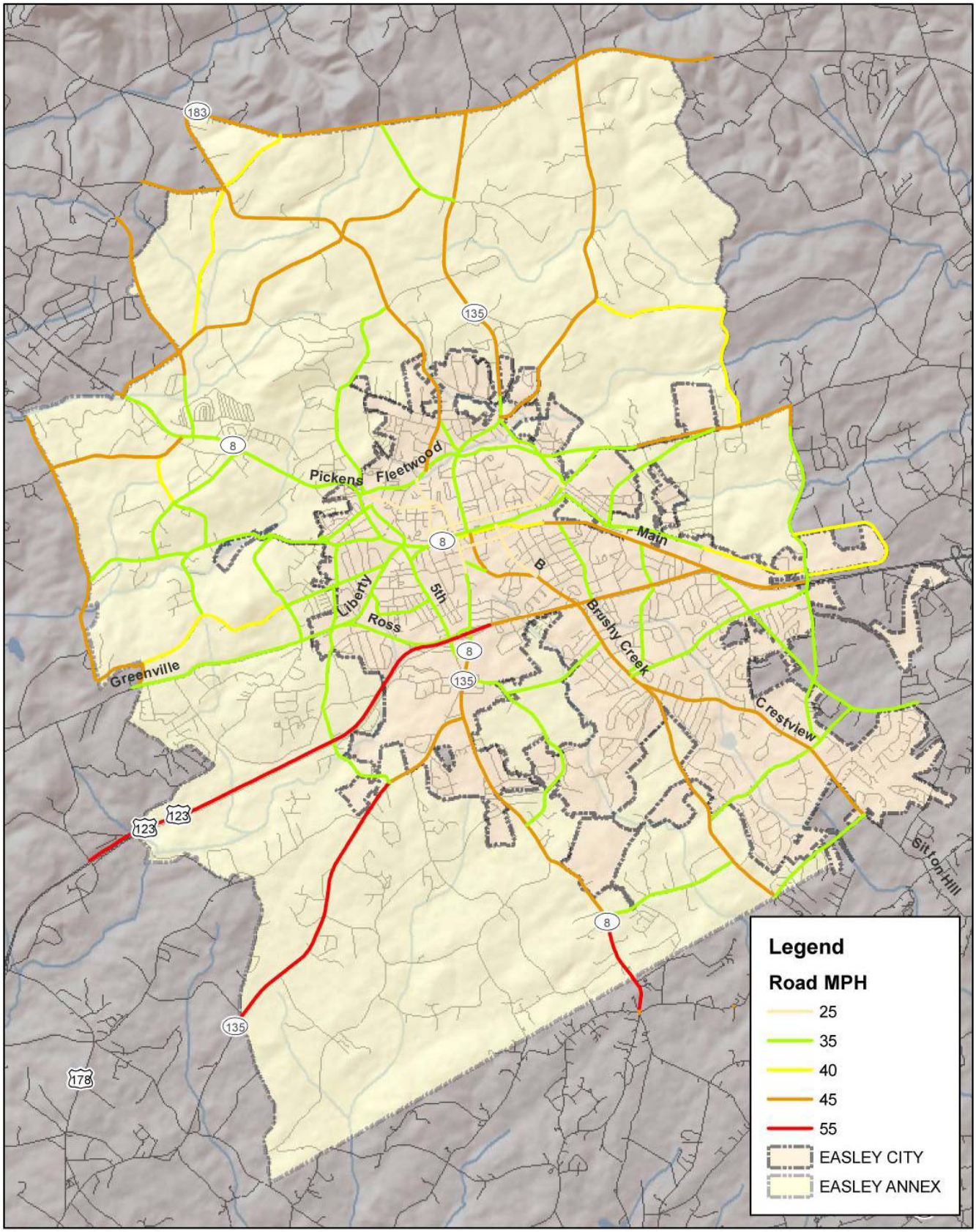
Fleetwood Avenue near the Hospital was recently repaved and restriped to include a shoulder bikeway



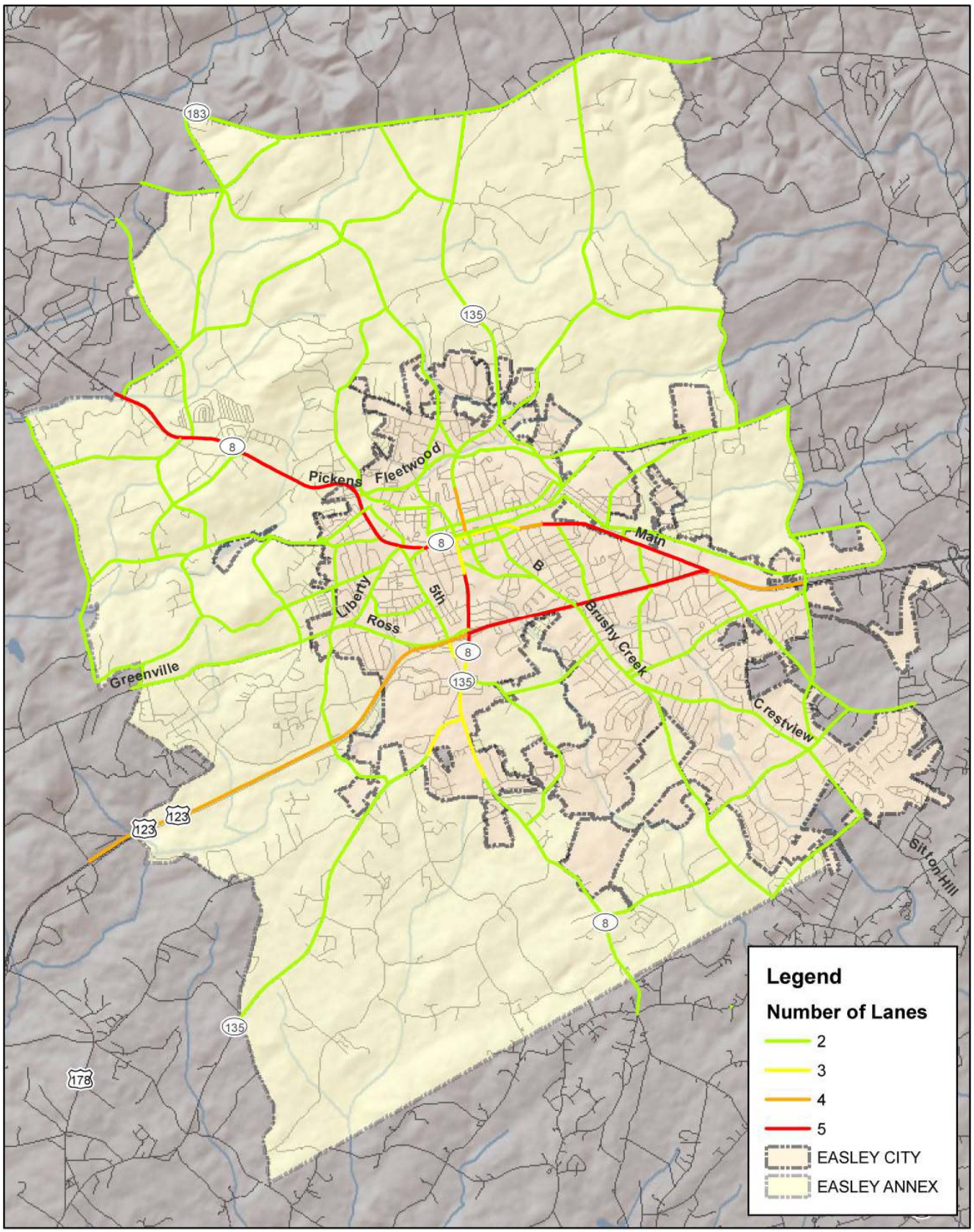
Map 2-2. Bike Route Suitability Analysis – Average Daily Traffic in 2005



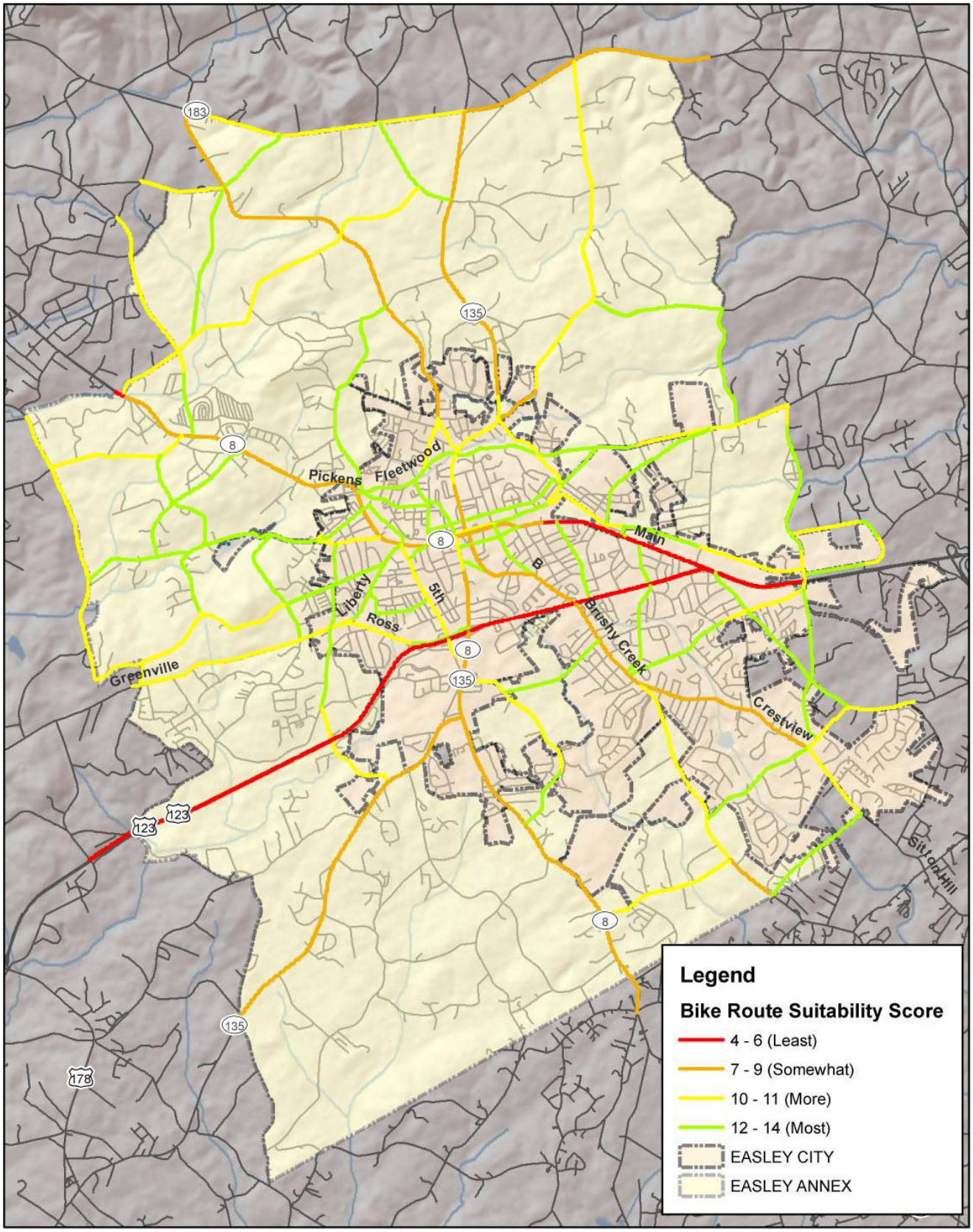
Map 2-3. Bike Route Suitability Analysis – Trucks – Percent of ADT



Map 2-4. Bike Route Suitability Analysis – Road Speeds



Map 2-5. Bike Route Suitability Analysis – Number of Lanes



Map 2-6. Bike Route Suitability Analysis

Shared Roadways

Shared roadways accommodate motor vehicles and bicycles in the same travel lane. These are the most common type of roadway in Easley. The most suitable roadways for shared motor vehicle/bicycle use are those with low posted speeds (25 MPH or less) or low traffic volumes (3,000 ADT or less). These facilities may include traffic-calming devices to reduce vehicle speeds while limiting conflicts between motorists and bicyclists. If a shared roadway is upgraded with these features, they may be called "bicycle boulevards" and can be a permanent feature in a bikeway network. A common practice includes signing shared roadways with bicycle route signs, directional arrows and other wayfinding information to major destinations.

Many of Easley's neighborhood streets and some collector streets can be classified as shared roadways, as they can accommodate bicyclists of all abilities and have little need for dedicated bicycle facilities (e.g., bicycle lanes). The typical cross-section for such streets includes two vehicle travel lanes with or without on-street parking.

Bicycle Lanes

Bicycle lanes are functional lanes for bicycles that also serve to slow traffic, provide room for motor vehicle breakdowns, emergency vehicle passing, and buffer pedestrians on the sidewalk from roadway traffic. They also offer a separated riding area for cyclists. According to SCDOT design guidelines, "A bike lane provides for more predictable movements by the motorist and bicyclist. Bike lanes should be one-way facilities and carry bike traffic in the same direction as adjacent motor vehicle traffic." SCDOT guidelines require designated bicycle lanes to be a minimum of four feet from the edge of the gutter pan to the stripe.

Low speed, low volume streets are currently the most common and comfortable location for biking in Easley

Bicycle lane

A shared-use path that also serves as private maintenance road for a park

Shoulder Bikeways

Typically found in rural areas, shoulder bikeways are paved roadways with striped shoulders wide enough for bicycle travel. Shoulder bikeways often include signage alerting motorists to expect bicycle travel along the roadway.

Shoulder bikeway

Shared-Use Paths

Shared-use paths are used by various non-motorized users, including pedestrians, cyclists, in-skaters, and runners. Shared-use paths are typically paved (asphalt or concrete) but may also consist of an unpaved smooth surface as long as it meets ADA standards.

A shared-use pathway

Bicycle Parking

Bicycle parking is critical for completing a bikeway network and encouraging widespread bike use. Bicycle racks comprise the vast majority of formalized bicycle parking facilities in Easley. In completing field work and in discussions with the public, however, there is a general perception that not enough bicycle parking is provided in most areas, particularly in desirable locations such as school campuses and downtown Easley.

The quality of existing bicycle parking is also poor, due to the style of rack chosen and/or placement of the rack. Racks situated immediately adjacent to walls or shrubbery limit user access to one side of the rack only. Some existing racks are considered substandard because they do not provide sufficient points of contact to support a bicycle at two locations. In other words, they do not allow a bicycle frame and at least one wheel to be locked to the rack without the use of a long bicycle cable or unless the bicycle is mounted over the rack. The shortage of quality bicycle racks in high-demand locations means cyclists must secure their bikes to hand rails, street signs, light poles and other objects.

Cyclists will lock their bikes to whatever objects they can find where formal parking is lacking.

Bicycle Network Deficiencies

Bicyclists face many of the same issues that pedestrians and motorists face, including:

- Maintenance issues and roadway debris;
- Difficult Intersections;
- Barriers, including railroad tracks; poor street connectivity; crossing major roads and stream corridors; and hills; and
- Lack of bicycle facilities, including bike routes, bike lanes/shoulders, wide outside lanes, or shared use paths, and bicycle parking.

Pedestrian and Bicyclist Destinations

Major pedestrian and bicyclist destinations include downtown, educational facilities, employment centers, shopping centers, neighborhood commercial areas, and parks. Within Easley, major existing or future pedestrian/bicycle destinations include:

- Downtown;
- Baptist Memorial Hospital;
- Schools;
- Churches;
- Parks;
- Shopping centers; and
- YMCA, Library, other civic uses.

Public Input on Bicycle Network

What prevents you from biking in Easley?

(from the survey:)

1. Lack of dedicated bike paths, lanes, and/or routes (81.1%)
2. Too many cars or cars going too (73.2%)
3. Lack of secure bike parking (26.8%)
4. poor road conditions (27.4%)

Types of improvements needed?

(from survey and public meeting)

1. Shared-use paths/trails
2. Bike lanes
3. Signed routes
4. Regional routes to Greenville, Clemson, Pickens, etc.
5. Bike parking (downtown, shopping areas, schools, parks)

Locations for Improvements?

(from survey and public meeting)

1. Downtown
2. All Over/Everywhere
3. Brushy Creek
4. Schools
5. Couch Lane
6. McAllister Road
7. Pendleton Street
8. Pope Field Road

Pedestrian and Bicyclist Crash Data

SCDOT provided the consultant team with summary data for bicyclist and pedestrian crashes occurring in Easley as reported by the Easley Police Department for the years 2004 to 2008. These data sources show 14 bicycle or pedestrian crashes reported in this five year time frame, resulting in two fatalities and 12 injured persons. Based on national trends, it is likely that there were other crashes involving motorists and pedestrians/cyclists that were not reported or recorded.

Other findings from the bicycle and pedestrian crash data include:

- There were two pedestrian fatalities during this period, in 2006.
- Four crashes occurred on Hwy 123, including the two fatalities. The other crashes occurred on other State roads.
- Eight of the crashes were attributed to driver fault, including the two fatalities.
- The majority of the crashes occurred in dry, clear conditions. Eight of 14 occurred between 6 am and 6 pm. (The two fatalities occurred between 9 pm and midnight.)

Under normal conditions, high crash rates may be the result of poor safety features in the infrastructure. On the other hand, more crashes may indicate that there were more cyclists or pedestrians on the road in a given year. Some research shows the opposite: that bike and pedestrian crashes actually decrease with more pedestrians and bicyclists on the roadways because motorists expect to see them. Without reliable data regarding the types, locations, and details of crashes, it is difficult to show objectively how the bicycling and walking environment directly affects walking and bicycling safety in Easley. However, feedback from the public indicates that many area stakeholders perceive Easley's roadways to be in need of safety improvements for cyclists and pedestrians.

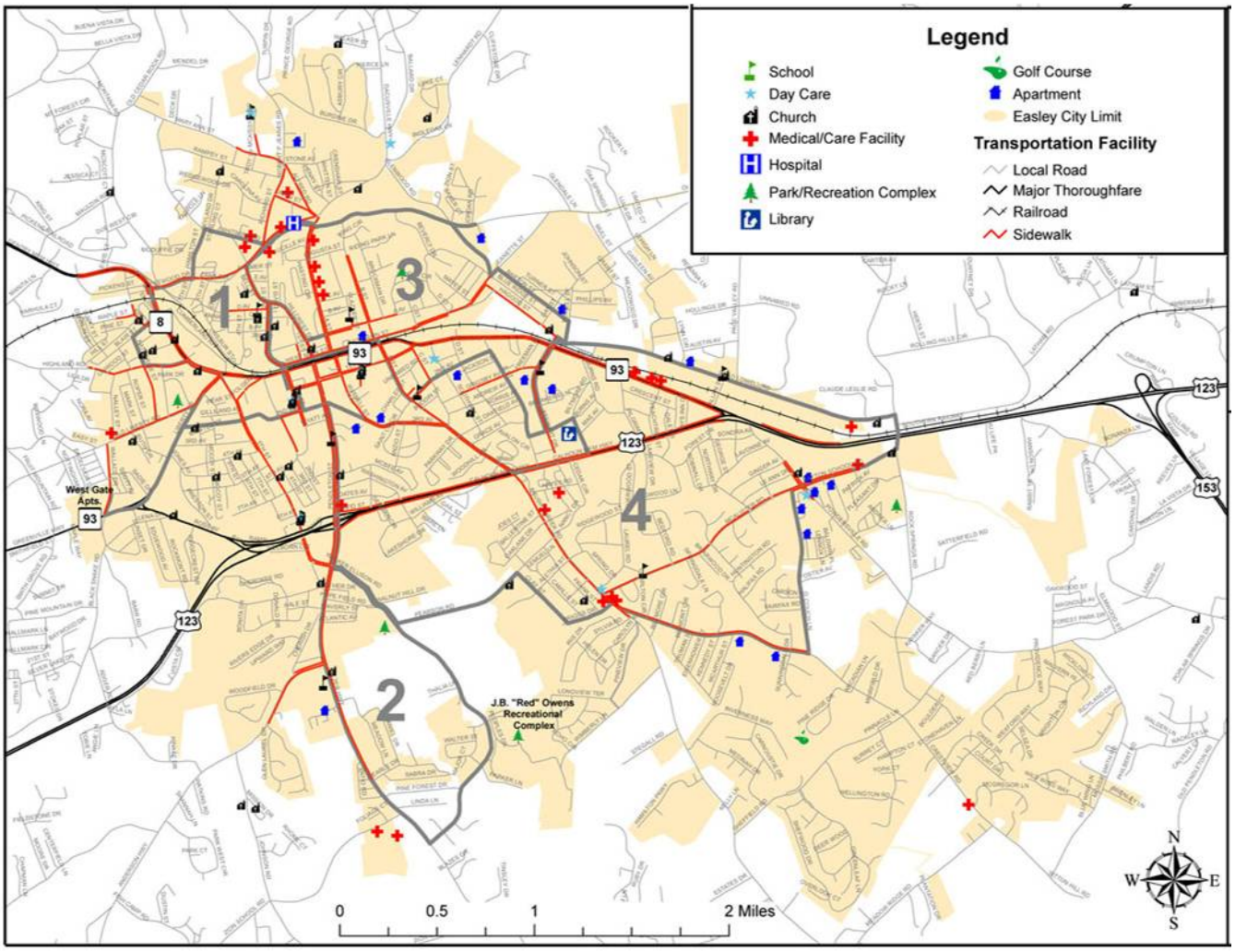
Summary crash data is included in Appendix B.

Connections with Transit

The recent *City of Easley Transit Feasibility Study* (October 2007) recommended a system of local bus transit routes for the City. Ensuring a strong pedestrian and bicycle link to transit is an important part of making non-motorized transportation a part of daily life in Easley. There are four main components of bicycle/pedestrian-transit integration:

- Improving connections between walkways, bikeways and transit;
- Allowing bicycles on transit;
- Providing benches, shelters, posted schedules, bicycle parking and other features at transit stops;
- Encouraging use of bicycle and transit programs.

Substandard sidewalks or the lack of sidewalks decreases accessibility for all roadway users. It also decreases the value of transit as a viable transportation option. Map 2-7 below shows the proposed future transit routes in dark grey overlayed with the existing sidewalk system in shown in red, indicating significant areas along proposed bus routes that need sidewalks.



Map 2-7. Proposed Future Bus Routes (grey) with Existing Sidewalks (red)

(Source: City of Easley Transit Feasibility Study)

Current and Future Pedestrian and Bicyclist Demand

An evaluation of current and future demand for pedestrian and bicycle facilities assisted the City in determining the range and type of facilities most needed in the community. Adequately identifying user needs enables system planners and policy-makers to develop logical solutions for improving the community's walkway and bikeway network. Specific projections on existing and future bicycle and pedestrian commuter volumes were developed for future use in air quality and Federal funding applications. The user needs assessment and demand analysis of bicyclists and pedestrians in Easley also ensures that the proposed system meets the needs of people of all ages and abilities.

The Bicycle and Pedestrian Demand Model methodology has been used throughout the country, and has been adopted by the Federal Highway Administration (FHWA). Estimates of benefits, including reductions in vehicle trips and vehicle miles traveled, plus related items such as air quality improvements, economic and health benefits, were quantified and documented using Alta's Bicycle & Pedestrian Demand Models.

Needs and Types of Bicyclists

It is important to understand that the needs and preferences of bicyclists vary depending on the cyclist's skill level and the type of trip a rider wishes to take. For example, bicyclists who ride for recreational purposes may prefer scenic, winding, off-street trails, while bicyclists who ride to work or for errands may prefer more direct on-street bicycle facilities. Child bicyclists, seniors, and adults new to bicycling may prefer shared use paths, while adult bicyclists with more experience may prefer bicycle lanes. Cyclists also include utilitarian cyclists who choose to live with one fewer car and people who ride because they have no other transportation option due to economic reasons. A bicycle plan should consider these differences when planning a system that serves all user types. The following sections describe the different types of bicyclists, the different reasons for bicycling, and the respective needs of these categories of bicyclists.

Needs of Casual and Experienced Riders

For the purposes of this Plan, bicyclists are separated into two skill levels: casual and experienced. Casual bicyclists typically include youth, adults and seniors who are intermittent riders. Some casual bicyclists, such as youths under driving age, may be unfamiliar with operating a vehicle on roads and related laws. Experienced bicyclists typically include commuters, long-distance road bicyclists, racers, and those who use their bicycle as a primary means of transportation. Bicycle planners estimate that only a small percentage of the total population falls into the experienced rider category – fewer than 10% and perhaps fewer than 5%, depending on the location. The remainder of people fall into the casual cyclist category. Table 2-1 summarizes the needs of casual and experienced bicyclists.

Table 2-1. Characteristics of Casual and Experienced Bicyclists

Casual Riders	Experienced Riders
Prefer off-street shared use paths or bike lanes along low-volume, low-speed streets	Prefer on-street or bicycle-only facilities as opposed to shared use paths
May have difficulty gauging traffic and may be unfamiliar with the rules of the road. May walk bicycle across intersections	Comfortable riding with vehicles on streets. Negotiate streets like a motor vehicle, including "taking the lane" and using left-turn pockets
May use a less direct route to avoid Arterials with heavy traffic volumes	May prefer a more direct route
May ride on sidewalks and ride the wrong way on streets and sidewalks	Avoid riding on sidewalks or on shared use paths. Rides with the flow of traffic on streets
May ride at speeds comparable to walking, or slightly faster than walking	Ride at speeds up to 20 MPH on flat ground, up to 40 mph on steep descents
Bicycle for shorter distances: up to 2 miles	May cycle longer distances, sometimes more than 100 miles

The casual bicyclist will benefit from route markers, shared use paths, bike lanes on lower-volume streets, traffic calming, and educational programs. Casual bicyclists may also benefit from a connected network of marked routes leading to parks, schools, shopping areas, and other destinations. To encourage youth to ride, routes must be safe enough for their parents to allow them to ride. The experienced bicyclist will benefit from a connected network of bike lanes on higher-volume arterials, wider curb lanes and loop detectors at signals. The experienced bicyclist who is primarily interested in exercise will benefit from loop routes leading back to their point of origin. Due primarily to the existing low- traffic speed and low- volume streets, the City of Easley offers many opportunities for casual bicyclists.

Characteristics of Recreational and Utilitarian Trips

For purposes of this Plan, bicycle trips are separated into two trip types: recreational and utilitarian. Recreational trips can range from a 50-mile weekend group ride along rural roads to a short family outing to a local park, and all levels in between. Many utilitarian trips are made by commuter bicyclists, who are a primary focus of State and Federal bicycle funding, as well as bicyclists going to school, shopping or running other errands. Utilitarian cyclists include those who choose to live with fewer or no cars as well as those who have no other alternative transportation due to economic reasons.

Table 2-2 summarizes general characteristics of recreational and utilitarian bicycle trips.

Table 2-2. Characteristics of Recreational and Utilitarian Bicycle Trips

Recreational Trips	Utilitarian Trips
Directness of route not as important as visual interest, shade, protection from wind	Directness of route and connected, continuous facilities more important than visual interest, etc.
Loop trips may be preferred to backtracking	Trips generally travel from residential to shopping or work areas and back
Trips may range from under a mile to over 50 miles	Trips generally are 1-5 miles in length
Short-term bicycle parking should be provided at recreational sites, parks, trailheads and other activity centers	Short-term and long-term bicycle parking should be provided at stores, transit stations, schools, workplaces
Varied topography may be desired, depending on the skill level of the cyclist	Flat topography is desired
Cyclists may be riding in a group	Cyclists often ride alone
Cyclists may drive with their bicycles to the starting point of a ride	Cyclists ride a bicycle as the primary transportation mode for the trip; may transfer to public transportation; may or may not have access to a car for the trip
Trips typically occur on the weekend or on weekdays before morning commute hours or after evening commute hours	Trips typically occur during morning and evening commute hours (commute to school and work); shopping trips also occur on weekends
Cyclists' preferred type of facility varies, depending on the skill level of the cyclist	Generally use on-street facilities, may use trails if they provide easier access to destinations than on-street facilities

Recreational bicyclists' needs vary depending on their skill level. Road bicyclists out for a 100-mile weekend ride may prefer well-maintained roads with wide shoulders and few intersections, with few stop signs or stop lights. Casual bicyclists out for a family trip may prefer a quiet shared use path with adjacent parks, benches, and water fountains.

Utilitarian bicyclists have needs that are more straightforward. Key commuter needs are summarized below:

- Commuter routes should be direct, continuous, and connected
- Protected intersection crossing locations are needed for safe and efficient bicycle commuting
- Bicycle commuters must have secure places to store their bicycles at their destinations
- Bicycle facilities should be provided on major streets

The City of Easley's bicycle system will provide access to most major destinations in Easley, including parks and recreation areas, schools, shopping areas, and downtown. For casual recreational riders, lack of easy bicycle access may not be a serious deterrent, since they may be willing and able to drive their bicycle to their desired riding location. However, this may not be acceptable for experienced recreational riders or utilitarian cyclists, as they generally would like to use their bicycle for the whole trip. Bicycle-friendly on-street connections between residential areas and trails and between residential areas and shopping and employment centers would likely increase the prevalence of bicycle commuting, as well as increase the prevalence of recreational riding.

Existing Bicycle and Pedestrian Demand

The population of Easley, South Carolina at the time of the 2000 Census was 17,754. The City is experiencing an average annual population growth of 1.5 percent and an average annual employment growth rate of 1.4 percent. By the Year 2020, based on this growth rate, the City is projected to have a population in the range of 24,000.

One of the primary reasons for providing quality bicycle and pedestrian facilities is to maximize the number of pedestrians and cyclists in order to help achieve transportation goals such as providing an alternative to driving, reducing traffic congestion and air pollution, as well as achieving public health and community livability goals.

Understanding how many people currently bike and walk in the City of Easley is important to developing a baseline against which to measure success. This section presents bicycle and pedestrian system usage estimates developed through application of Census data on commuter mode shares for Easley.

Local and national statistics are used as a basis for estimating the benefits of providing suitable bicycle and pedestrian facilities network in Easley. Journey to work data was obtained from the 2000 American Community Survey for Easley, South Carolina and the United States for comparison. Table 2-3 displays journey to work data. As shown, approximately 0.5 percent of Easley journey-to-work trips are by bicycle. This is on par with state and national statistics. However, Easley's rate of persons walking to work (1.2%) was almost half of the statewide average (2.3%) and nearly 60% less than the national average (2.9%). This may reflect the fact that many of Easley's residents work outside of Easley.

Table 2-3. Journey to Work Data Comparison

Mode	United States	South Carolina	Easley
Bicycle	0.5%	0.5%	0.5%
Car, Truck or Van – Drive Alone	75.7%	79.4%	83.1%
Car, Truck or Van – Carpool	12.2%	14.0%	13.1%
Public Transit	4.7%	0.8%	0.0%
Walked	2.9%	2.3%	1.2%
Other Means	4.0%	2.9%	2.1%

Source: 2000 US Census

This data regarding bicycling and walking to work is probably an underestimate of the true amount of biking and walking in the City. Census data does not account for the number of people who bicycle or walk for recreation or for utilitarian purposes other than the journey to work; or students traveling to school. Census data also only reflects a person's predominant commute mode to work and does not count non-motorized trips that are part of a multimodal trip, for example a person who walks or bicycles to a transit trip or a carpool location. Table 2-4 shows adjustment factors for pedestrian utilitarian trips in Easley, while Table 2-5 displays an adjusted understanding of bicycle trips based on these factors.

Table 2-4. Pedestrian Utilitarian Trips Adjustment Factors in Easley SC, Year 2000

Pedestrian Demand	Pedestrian Mode Share	Pedestrian Trips	Documentation
Pedestrian Commuters	1.2%	106	American Community Survey
Work-at-Home Pedestrian Commuters	1.8%	40	Alta Planning + Design assumption, adjusted
Grade School Commuters	11%	214	Estimated school children who commute on foot, as of 2000 (source: National Safe Routes to School surveys, 2003)
Daily Pedestrian Commuters		360	Sum of above
Daily Commute Trips		720	Daily commuters x 2 one way trips

Source: 2000 US Census, Alta Planning + Design Projections (2009)

Table 2-5. Bicycle Utilitarian Trips Adjustment Factors in Easley SC, Year 2000

Bicycle Demand	Bicycling Mode Share	Bicycling Trips	Documentation
Bicycle Commuters	0.5%	44	American Community Survey
Work-at-Home Bicycle Commuters	1%	2	Alta Planning + Design assumption, adjusted
Grade School Commuters	2%	39	Estimated school children who commute by bicycle, as of 2000 (source: National Safe Routes to School surveys, 2003)
College Student Commuters	0.5%	2	Alta Planning + Design assumption, adjusted
Daily Bicycle Commuters		87	Sum of above
Daily Commute Trips		173	Daily commuters x 2 one way trips

Source: 2000 US Census, Alta Planning + Design Projections (2009)

Potential Future Walking and Biking Trips and Air Quality Benefits

The Greenville-Mauldin-Easley metropolitan region does not currently meet the federal or State eight-hour average ozone standards. Motor vehicles are the Greenville areas' leading air pollution source and are the greatest supplier of greenhouse gases. Reducing vehicle-miles traveled (VMT) is vital to meeting higher air quality standards and building more and better bicycle and pedestrian facilities will help achieve this goal by providing residents safe and functional ways to get to work, school, or shopping without using a motor vehicles.

As previously discussed, most residents are pedestrians at some point. While the 2000 Census predicts a 1.2 percent mode split for walking to work, more than two percent of the population is predicted to make a walking trip each day. Table 2-6 and 2-7 show adjusted pedestrian commute and air quality projections based on this data.

Table 2-6. Pedestrian Commute and Air Quality Projections

Current Commuting Statistics		Source
City of Easley Population	17,754	*2000 US Census*
Number of Employed Persons	8,854	*2000 US Census*
Pedestrian -to-Work Mode Share	1.2%	*2000 US Census*
Number of Pedestrian Commuters	106	*Calculated from above*
Work-at-Home Mode Share	1.8%	*2000 US Census*
Estimated Work-at-Home Pedestrian Commuters	40	*Assumes 25% of population working at home makes at least one walking trip per day*
School Children Grades K-8	1,944	*2000 US Census*
Estimated School Children Pedestrian Mode Share	11.0%	*National Safe Routes to School surveys (2003)*
Estimated School Pedestrian Commuters	214	*Calculated from above*
Adjusted Commuting Statistics		**Source**
Adjusted Current Estimated Mode Share	2.0%	*Mode share including walk-to-work and school pedestrian commuters.*
Adjusted Current Estimated Total Number of Daily Pedestrian Commuters	360	*Total of walk-to-work and school pedestrian commuters. Does not include recreation or utilitarian walking trips.*
Adjusted Current Estimated Total Daily Pedestrian Trips	720	*Total pedestrian commuters x 2 (for round trips)*
Reduced Vehicle Trips per Weekday	220	*Assumes 73% of pedestrian trips replace vehicle trips for adults and 53% for school children- Based on survey results from 10 California cities conducted by Alta between 1990 and 1999, L.A. Countywide Policy Document survey (1995), and National Bicycling & Walking Study, FHWA, 1995.*
Reduced Vehicle Miles per Weekday	185	*Assumes average round trip travel length of 1.2 miles for adults and 0.5 mile for schoolchildren*

Table 2-7. Pedestrian Commute and Air Quality Projections

Estimated Future Commuting Statistics		Source
2020 City of Easley Population	23,914	*Assuming annual population growth rate of 1.5% (consistent with the annual population growth rate between 2000 and 2007; US Census)*
Future Employed Population Estimate	11,774	*Assuming annual employment growth rate of 1.4% (consistent with the annual employment growth rate between 2000 and 2007; US Census)*
Adjusted Future Estimated Pedestrian Mode Share	10.0%	*Estimate of the potential mode share based on other jurisdictions experiences with system development.*
Future Total Number of Pedestrian Commuters	1,847	*Total walk-to-work, school, and work-at-home walking trips. Does not include recreation.*
Future Total Daily Pedestrian Trips	3,694	*Future daily pedestrian commuters x 2*
Future Reduced Vehicle Trips per Weekday	1,274	*Assumes 73% of* pedestrian *trips replace vehicle trips for adults and 53% for school children*
Future Reduced Vehicle Miles per Weekday	1,555	*Assumes average round trip travel length of 1.2 miles for adults and 0.5 mile for schoolchildren*
Future Reduced Vehicle Miles per Year	850,187	*180 days for students, and 256 days for employed persons*
Future Air Quality Benefits		**Calculation**
Reduced PM10 (tons/weekday)	23	*(.0184 tons per reduced mile)*
Reduced NOX (tons/weekday)	635	*(.4988 tons per reduced mile)*
Reduced ROG (tons/weekday)	92	*(.0726 tons per reduced mile)*
Reduced PM10 (tons/year)	15,643	*(.0184 tons per reduced mile)*
Reduced NOX (tons/year)	424,073	*(.4988 tons per reduced mile)*
Reduced ROG (tons/year)	61,724	*(.0726 tons per reduced mile)*
Reduced CO2 (tons/year)	361	*(0.85 pounds per reduced mile)*

According to Census 2000 trip to work data, the City of Easley's bicycling mode share for the trip to work is currently 0.5 percent. As shown above, this census-based mode share is likely lower than the *actual* mode share for cycling in Easley. By supplementing Census data with estimates of bicycle mode share for students, this plan estimates that the actual bicycling mode share in Easley is closer to one percent, making 173 daily trips and saving an estimated 300 VMT per weekday. The calculations behind this estimate are described below and outlined in Table 2-8.

Table 2-8. Bicycle Commute and Air Quality Projections

Current Commuting Statistics		Source
City of Easley Population	17,754	*2000 US Census*
Number of Employed Persons	8,854	*2000 US Census*
Bicycle-to-Work Mode Share	0.5%	*2000 US Census*
Number of Bicycle Commuters	44	*Calculated from above*
Work-at-Home Mode Share	1.8%	*2000 US Census*
Estimated Work-at-Home Bicycle Commuters	2	*Assumes 1% of population working at home makes at least one bicycle trip per day*
School Children Grades K-8	1,944	*2000 US Census*
Estimated School Children Bicycling Mode Share	2.0%	*National Safe Routes to School surveys (2003)*
Estimated School Bicycle Commuters	39	*Calculated from above*
Estimated Number of College Students in City of Easley	382	*Calculated from population of college-age persons and proportion of City population with some level of college education, with the assumption that 75% of those people would attend one of the nearby schools*
Estimated College Student Bicycling Mode Share	0.5%	*National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995. Review of bicycle commute share in seven university communities (10%); Adjusted to 0.5% because nearest colleges are 18-20 miles away*
Estimated College Bicycle Commuters	2	*Calculated from above*
Adjusted Commuting Statistics		**Source**
Adjusted Current Estimated Mode Share	1.0%	*Mode share including bike-to-work, school, and college bicycle commuters.*
Adjusted Current Estimated Total Number of Daily Bicycle Commuters	87	*Total of bike-to-work, transit, school, and college bicycle commuters. Does not include recreation or utilitarian cyclists.*
Adjusted Current Estimated Total Daily Bicycle Trips	173	*Total bicycle commuters x 2 (for round trips)*
Reduced Vehicle Trips per Weekday	55	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children Based on survey results from 10 California cities conducted by Alta between 1990 and 1999, L.A. Countywide Policy Document survey (1995), and National Bicycling & Walking Study, FHWA, 1995.*
Reduced Vehicle Miles per Weekday	300	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*

Table 2-9. Bicycle Commute and Air Quality Projections

Estimated Future Commuting Statistics		Source
2020 City of Easley Population	23,914	*Assuming annual population growth rate of 1.5% (consistent with the annual population growth rate between 2000 and 2007; US Census)*
Future Employed Population Estimate	11,774	*Assuming annual employment growth rate of 1.4% (consistent with the annual employment growth rate between 2000 and 2007; US Census)*
Adjusted Future Estimated Bicycle Mode Share	2.0%	*Estimate of the potential mode share based on other jurisdictions experiences with system development.*
Future Total Number of Bicycle Commuters	235	*Total bike-to-work, school, college, and work-at-home biking trips. Does not include recreation.*
Future Total Daily Bicycle Trips	328	*Future daily bicycle commuters x 2*
Future Reduced Vehicle Trips per Weekday	223	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*
Future Reduced Vehicle Miles per Weekday	1,495	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*
Future Reduced Vehicle Miles per Year	390,207	*180 days for students, and 256 days for employed persons*
Future Air Quality Benefits		**Calculation**
Reduced PM10 (tons/weekday)	28	*(.0184 tons per reduced mile)*
Reduced NOX (tons/weekday)	746	*(.4988 tons per reduced mile)*
Reduced ROG (tons/weekday)	109	*(.0726 tons per reduced mile)*
Reduced PM10 (tons/year)	7,180	*(.0184 tons per reduced mile)*
Reduced NOX (tons/year)	194,635	*(.4988 tons per reduced mile)*
Reduced ROG (tons/year)	28,329	*(.0726 tons per reduced mile)*
Reduced CO2 (tons/year)	166	*(0.85 pounds per reduced mile)*

Table 2-9 quantifies the estimated increase in cyclists and resulting reduction in VMT in the City of Easley assuming the completion of the projects recommended in this Plan as part of a complete bicycle network and the adoption of attainable goals to measurably increase bicycling mode share by the year 2020. The estimate predicts that, upon completion of this project and the continued pursuance of similar projects in the years to come, the total number of work and school bicycle commuters could increase from the current estimate of 87 (1% mode share) to 328 (3% mode share). This would result in an estimated decrease of 28 tons/weekday of PM10, 109 tons/weekday of ROG, and 166 tons/year of CO2. Predicted increases in cycling are based on increases in cycling on newly built bikeways in Asheville, North Carolina; Taos, New Mexico; and Ithaca, New York.[1]

[1] Asheville saw 61% corridor increase at 20% bikeway system completion, translating to 305% adjusted increase. Taos saw 137% corridor increases at 50% system completion, translating to 274% adjusted increase. Ithaca saw 90% corridor increase at 35% system completion, translating to 257% adjusted increase. This translates into an average 279% increase upon system completion. Adjusted increase reflects the projected amount of bicycling that will occur when the system is completed, based on studies of communities with

Relationship with Existing Plans and Legislation

Current legislation and policies in the City of Easley, Pickens County, the State of South Carolina, and other relevant agencies and jurisdictions informed the recommendations presented in this Plan. The legislation and policy review also considered whether existing policies adequately provide for the development of bicycle and pedestrian facilities. Zoning and subdivision regulations were analyzed to determine how these ordinances impact the City's ability to implement improvements to its pedestrian and bicycle systems. Deficiencies in the existing ordinances were identified and recommendations for ordinance revisions to address these deficiencies were developed. Appendix A contains an analysis of plans, policies, guidelines and standards applicable to planning bicycle and pedestrian facilities in Easley.

In general, this plan recommends amending the local zoning ordinance to promote walkable land development and to provide a balanced approach to both on and off-street bicycling, recreation and support facilities, including more detailed guidelines for bicycle parking and amenities at commercial and civic destinations. One of the most cost effective strategies that the City can implement is to create land use regulations that promote compact, walkable, mixed-use land development. Individual sections of the Zoning Ordinance were reviewed and are discussed in Appendix A.

Safe Routes to Schools

Safe Routes to School (SR2S) refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, incentives, increased law enforcement, and engineering measures. Safe Routes to School programs typically involve partnerships among municipalities, school districts, community and parent volunteers, and law enforcement agencies. Easley's SR2S efforts are a vital component of the Pedestrian and Bicycle Master Plan, as they will facilitate the implementation and funding for specific improvements that will help increase bicyclist and pedestrian safety and encourage fewer auto trips.

The City has a vested interest in encouraging school children to lead active lifestyles. Safe Routes to School programs offer ancillary benefits to neighborhoods by helping to slow traffic and provide reasonable facilities for walking by all age groups. The City benefits from a generally well-connected street system near most schools, a critical element in encouraging children to bike and walk to school. The pages that follow describe existing conditions for walking and biking to schools in Easley.

completed or nearly completed bikeway systems. Corridor increases refers to the average increase in bicycling in the corridors in each city, before and after bikeways were installed. System completion refers to percent completion of the citywide bikeway network in each city.

Existing Bicycle and Pedestrian Conditions around Easley's Schools

Easley is served by five elementary schools, a middle school, and a high school. Local residents and school administrators have noted the difficulty of accessing Easley's schools by foot or bike. The high school is proposed to move to a new location on Hwy 8, south of the recreation complex in 2011. With the exception of the future high school location and West End Elementary, which sits at the intersection of Hwy 8 and SC 135, all of the existing school facilities are accessible by one or more local or collector streets with relatively low traffic volumes.

Approaching Forest Acres Elementary School on McAllister Road

The current school facilities are all served by sidewalks on at least one street bordering the school property. However, in areas beyond the schools, the sidewalk network is fragmented and limited. Curb ramps in varying conditions exist at some intersections where sidewalks are provided.

Principals from schools in Easley were interviewed regarding their perceptions of the quality and safety of existing walking and bicycling routes to school, as well as their awareness of the Safe Routes to School program. Dr. Henry Hunt, the Superintendent of schools in Pickens County, highlighted the need for safe crossings, and noted that very few students currently walk to school (fewer than five percent). While preliminary discussions about Safe Routes to Schools have begun, none of the schools in Easley has begun a specific program.

Lack of sidewalks on 2nd Avenue one block away from East End Elementary

A summary of conditions at each school follows.

East End Elementary

A school with a large attendance area, East End Elementary has no students bicycling to school. The crossings lack crossing guards, and it is challenging to cross the intersection at SC 8 and SC 135. The school has an initiative to encourage walking, called Zest Quest, which educates students about how to lead healthy lives.[2] Areas around the school considered challenging for pedestrians include E 2nd where it turns to Russell, S B Street, and Russell Street toward downtown. The E 2nd and S B Street intersection needs improvements. The school had previously had crossing guards at E 2nd and E 3rd as traffic is quite fast at that location. The school does not believe that conditions are safe for bicycling.

West End Elementary

Major issues at West End Elementary include the signalized crossing of Hwy 8 and 135, which lacks pedestrian actuation, and the crossing of Sheriff Mill Rd at Hwy 8. The school does not encourage students to bicycle or walk, but a small group of

[2] More information is available at: http://www.zestquest.org/about/tabid/110/Default.aspx

students often walks to nearby apartments at Pebble Brook Drive. The walking environment on Hwy 8 is challenging– characterized by high volumes of vehicle traffic and motorists driving in the median. The roadway's sidewalks are narrow and do not provide a buffer. The school currently uses the Zest Quest program, which includes a Wellness Coach educating students about healthy choices and the importance of physical activity.

Forest Acres Elementary

The Forest Acres Elementary school has sidewalks along McAllister Road, but lacks a marked crosswalk across McAllister at Page Drive. The school estimates that 10 to 15 students walk to school each day.

McKissick Elementary School

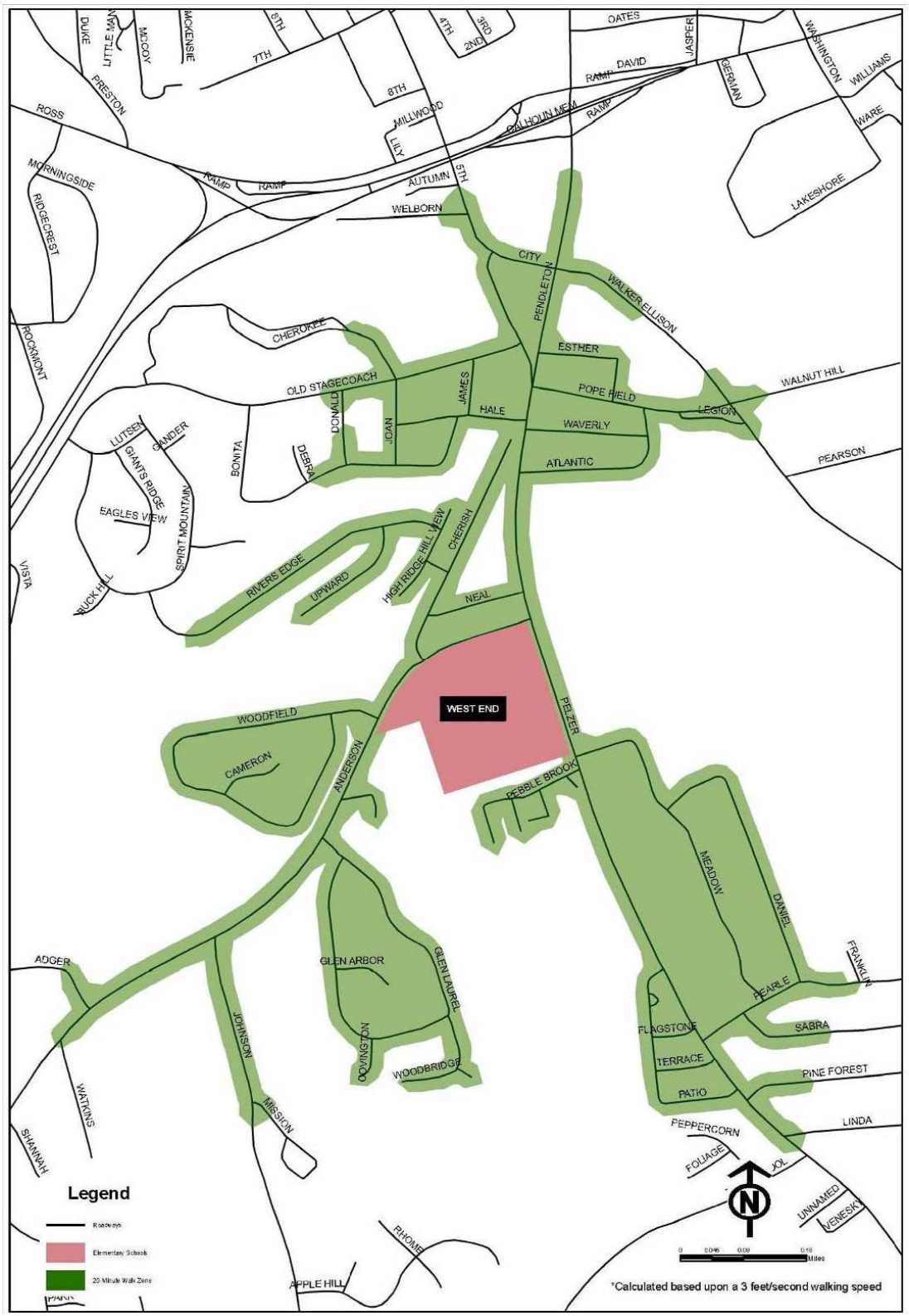
McKissick has a long entry drive without sidewalks to access the school. Students have to cross the driveway to get to sidewalks on the main street, but no crossing is provided at the school driveway. The surrounding roads have heavy traffic, due to the presence of the hospital, and a lack of safe crossings is considered the major traffic safety issue for this school.

Easley High School/Future Easley Middle School

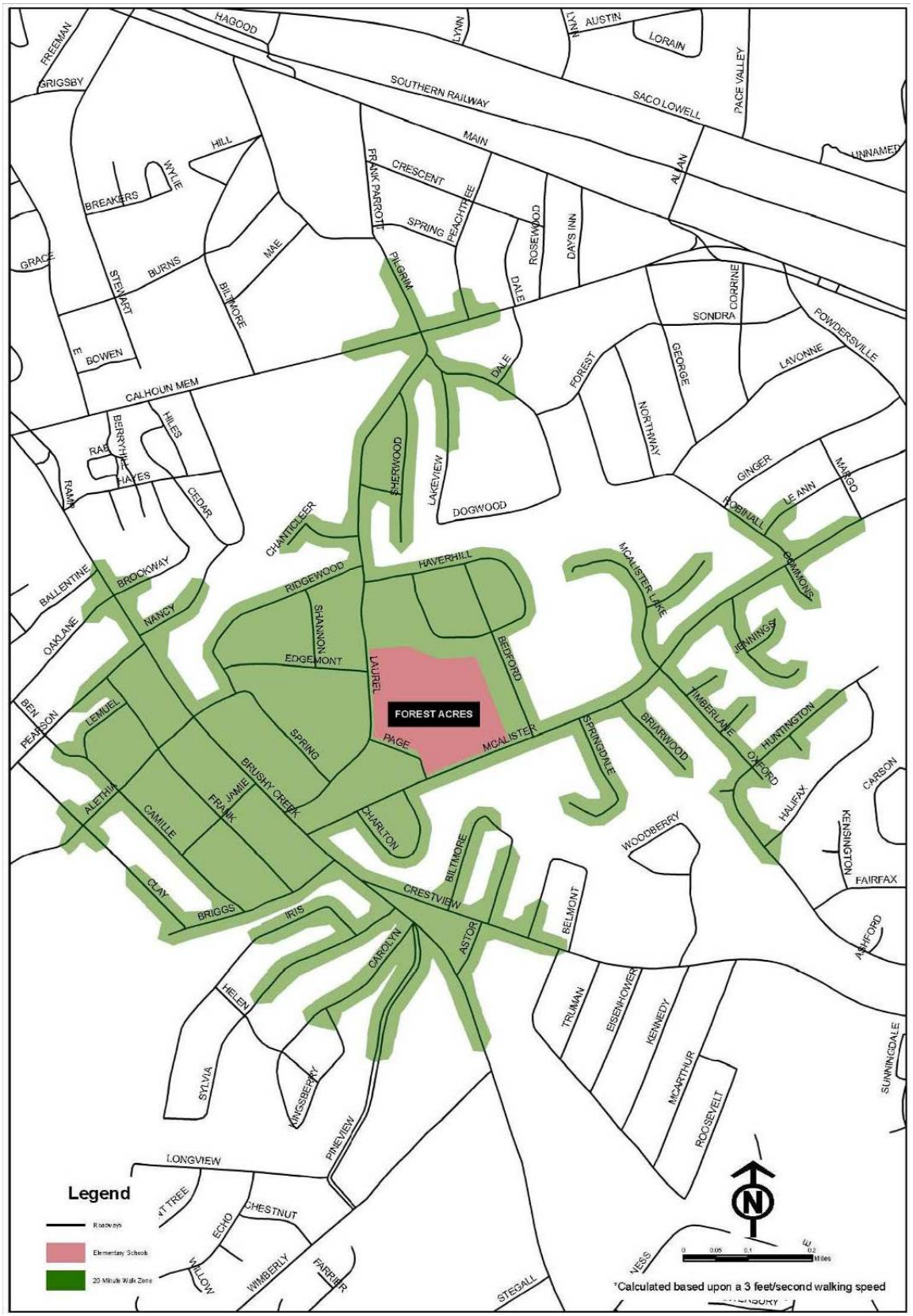
When the new high school is constructed south of the city, the building that is currently Easley High School will become a middle school. Students currently use the city ball fields less than a mile from the school and safe routes should be developed to the City's sports complex.

Map 2-8 shows three-quarter mile and one-and-a-half mile radii around the existing schools. One and one-half miles is the distance around a school that SCDOT's Safe Routes to School program will pay for improvements to pedestrian and bicycle infrastructure, although this funding is limited to elementary and middle schools. A 0.75 mile walk is approximately a 15-minute walking distance. The maps that follow show the locations of schools in Easley and define a twenty-minute walking area around each school based on the existing street network. Notice that the walk zone around East End Elementary is greater than for other schools because of the surrounding gridded network of streets.

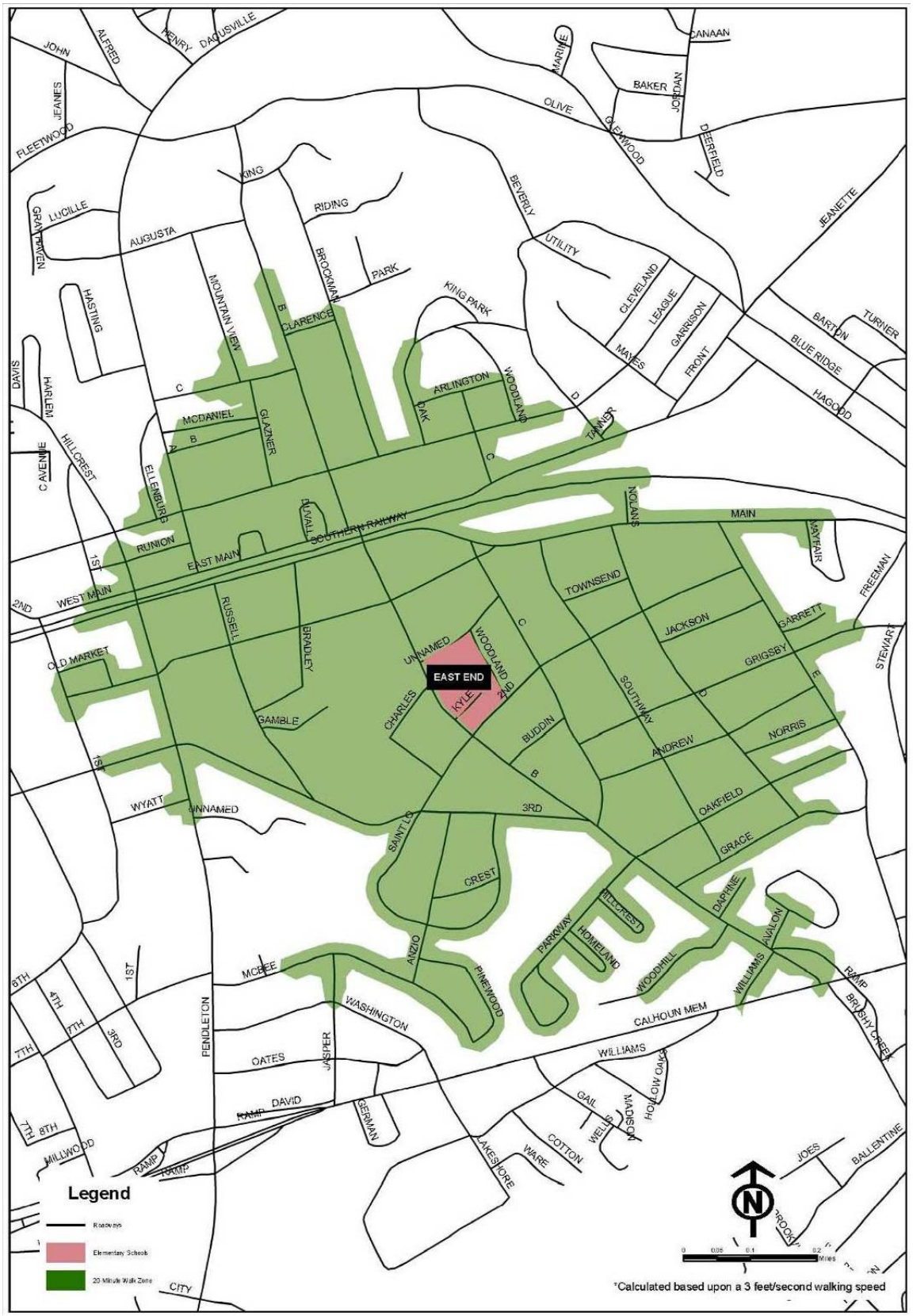
Map 2-8. Quarter-Mile and One-and-a-Half Mile Radii around Existing Schools



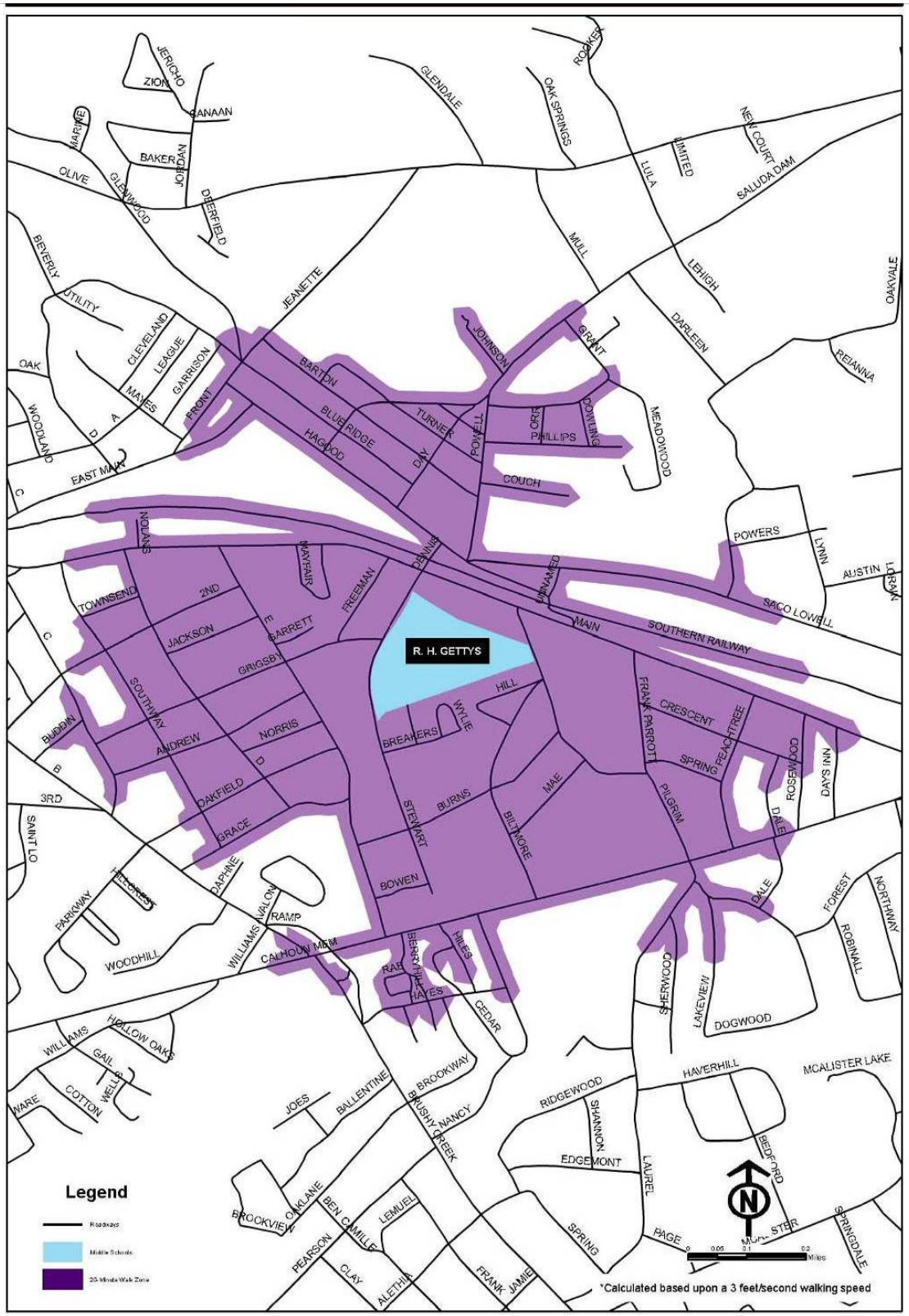
Map 2-9. West End Elementary School Twenty-Minute Walking Zone



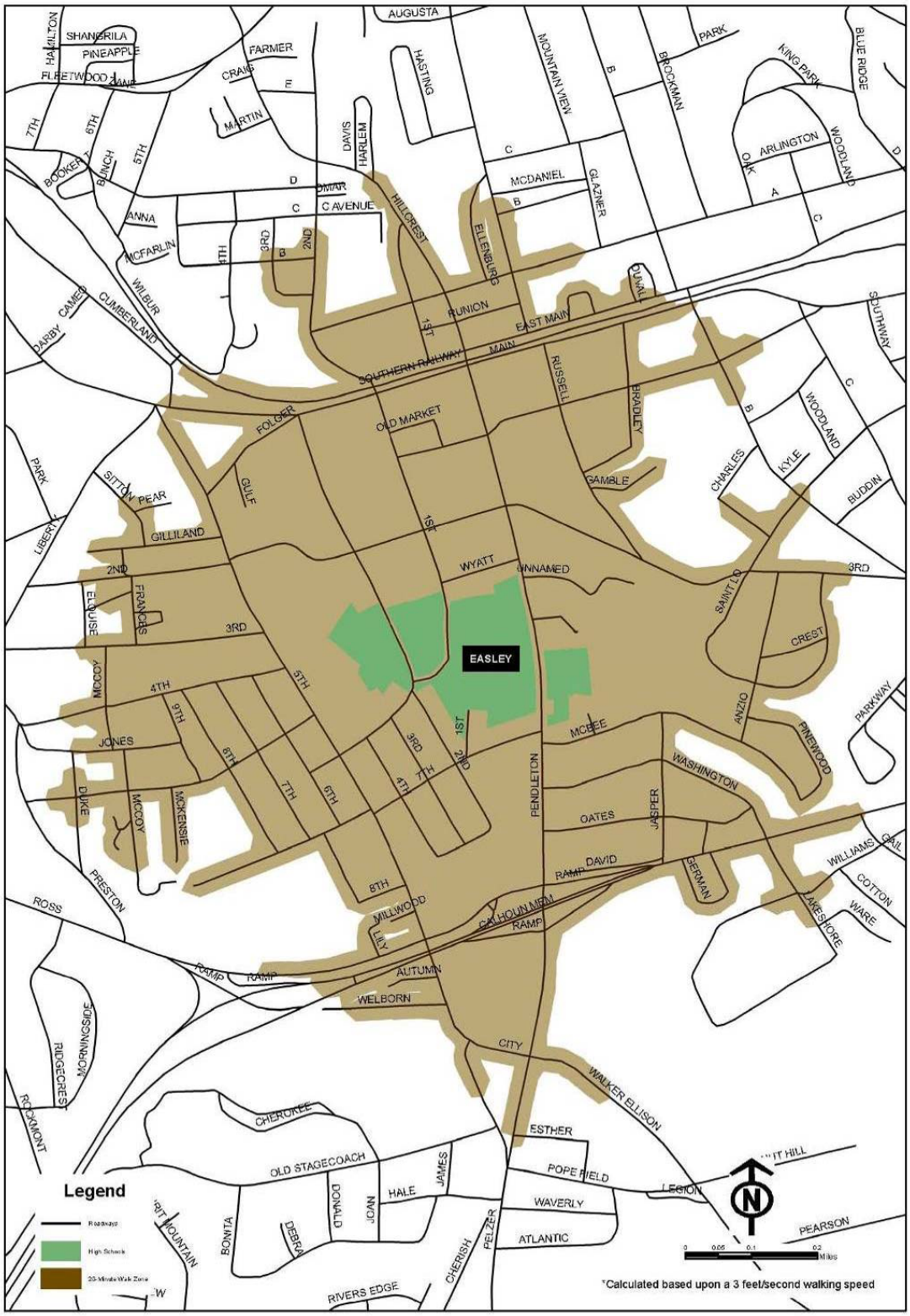
Map 2-10. Forest Acres Elementary School Twenty-Minute Walking Zone



Map 2-11. East End Elementary School Twenty-Minute Walking Zone



Map 2-12. R.H. Gettys Middle School Twenty-Minute Walking Zone



Map 2-13. Current Easley High School (future middle school) Twenty-Minute Walking Zone

Chapter 3. Recommended Pedestrian and Bicycle Network

Introduction

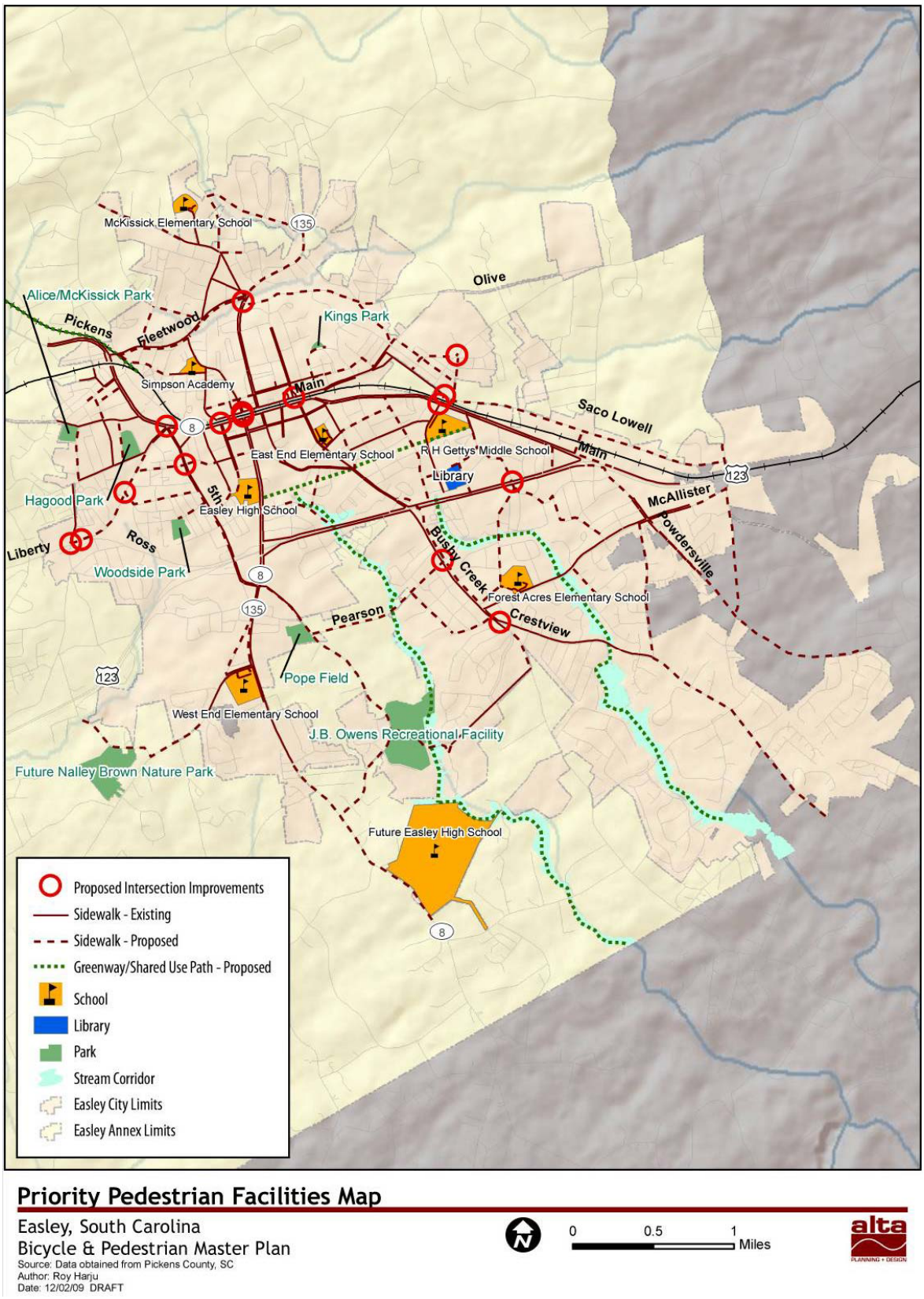
Easley has potential to transform itself into a community where walking and bicycling for transportation and recreation are popular activities. This chapter lays out the recommended pedestrian and bicycle network, a comprehensive system of bikeways and walkways connecting key destinations and surrounding areas. City staff, stakeholder groups, consultants, and Easley residents all worked together to develop this recommended system. The network recommendations build upon current and past planning efforts, including the *GPATS Long Range Transportation Plan (LRTP)*, the *City of Easley Transit Feasibility Study,* the *City of Easley Parks & Recreation Master Plan* and other local planning efforts.

The recommended pedestrian and bicycle network includes a comprehensive and diverse set of pedestrian and bicycle facilities connecting key destinations in and around Easley. System improvements include upgrading intersections for safer bicycle and pedestrian crossings, infilling deficient or nonexistent sidewalks, establishing a formalized bikeway system, and non-infrastructure projects to encourage bicycling and walking. Suggested improvements include low-cost measures yielding immediate results, such as spot-infill of sidewalks and re-striping of streets to accommodate bike lanes. Other suggested improvements, such as establishing a local trail system, represent longer-term strategies for transforming Easley into a truly bicycle- and pedestrian-friendly community.

The following maps and text depict and discuss the recommended walkway and bikeway network. A list provided at the end of this chapter outlines individual project proposals.

Recommended Pedestrian and Shared-Use Path Network

The Proposed Pedestrian System Map (Map 3-1) on the following page depicts existing and proposed pedestrian and shared use path facilities. Proposed improvements include filling major gaps in the existing sidewalk system and providing sidewalks on new streets. Although the map does not depict sidewalks on every street, this plan recommends that the City develop a policy to ultimately require or provide sidewalks on both sides of all collector and arterial streets and on at least one side of local streets where warranted by density and/or system connectivity. Other pedestrian system recommendations include shared-use paths and intersection improvements to accommodate safe and convenient pedestrian crossings.



Map 3-1. Proposed Priority Pedestrian System Map in Easley

The projects depicted on the Proposed Pedestrian System Map (Map 3-1) build upon recommendations of the LRTP, and reflect input received from City staff and Easley residents. 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 (e.g., schools, shopping areas including downtown and Highway 123, parks, etc.). Table 3-1 shows the recommended sidewalk projects by length. A total of over 150,000 feet of new sidewalks or more than 28 miles is the recommended priority sidewalk network for Easley.

Table 3-1. Recommended Sidewalk Projects

Project	From – to	Length (Feet)
1St Street	S 5th St – Wyatt Ave	1,804
Allan Street	E Main St - Saco Lowell Rd	763
Anzio Street	E 3rd Ave - S of Pinewood Dr	1,263
Anderson Hwy/Highway 135	Alfred Rd - Burdine Dr	3,782
Barton Street	Jeanette St - Powell St	2,388
Biltmore Rd	Burns Ave – Hwy 123	1,074
Blair St	Bannister St - King St	908
Briggs Drive	Brushy Cr Rd - Clay St	1,363
Brushy Creek Road	Avalon Cir - Laurel Rd	4,571
Burdine Drive	Robert P Jeanes Rd - Richard St	5,557
Burns Ave/Burns Rd	S E St – Hwy 93	3,292
Burns Road	Frank Parrot Rd - Burns Ave	899
C Street	S B st - E 2nd Ave	1,345
Calhoun Memorial Highway	Powdersville Rd - headed W	689
Calhoun Memorial Highway	E of Powdersville Rd - Allan St	1,350
Cherish Drive	Anderson Hwy - headed NE	1,848
Clay Street	Briggs Dr - Pearson Rd	1,899
Couch Ln	McAllister Ave – Crestview Rd	4,479
Crestview Rd	Couch Ln – Sheffield Rd	7,798
Days Inn Drive	E Main St - Calhoun Mem Hwy	743
Dayton School Rd	Elrod St – Hwy 123	1,571
Dogwood Lane	Laurel Rd - headed NW	162
E 2nd Ave	S C St – S E St	726
E 2nd Ave	E 3rd St – S B St	1,793
E A Ave/Mayes St	Oak Circle – NE Main St	2,252
Fleetwood Drive	Dacusville Hwy - Hillcrest Dr	2,292
Fleetwood Drive	Hillcrest Dr - Riggins Rd	2,659
Front Street	Glenwood Dr - headed NE	261

Project	From – to	Length (Feet)
Glenwood Road	Blue Ridge St - Olive St	1,831
Hagood Park Dr	Highland Rd – Old Liberty Rd	1,408
Hamilton Street	Fleetwood Dr - Old Turnpike Rd	1,360
Katherine St	Blair St – Highland Rd	866
Laurel Road	Brushy Cr Rd - Pilgrim Dr	4,268
Mary Ann Street	Old Cedar Rock Rd - City View Dr	3,072
Mcbee Avenue	S Pendelton St - Pinewood Dr	2,599
Nalley St	Highland Rd – Old Liberty Rd	1,801
Oak Circle	E A Ave - King Park Ln	1,390
Olive Street	N A St - Deerfield Run	4,559
Page Drive	Laurel Rd - headed SE	266
Park St	Katherine St – Hwy 8	939
Pearson Rd	Pope Field Rd – Bushy Creek Rd	5,095
Pelzer Highway 8	Zion School Rd - headed S	1,794
Peoples Dr/ Wimberly Ln	Pope Field Rd – Bushy Creek Rd	2,613
Pilgrim Drive	Calhoun Mem Hwy - Burns Rd	836
Pope Field Rd	Hwy 8 – Hwy 8	1,404
Powdersville Rd	Hwy 123 – Ginger Ln	1,755
Powdersville Rd	Dayton School Rd – City Line	8,619
Powell Street	Couch St - Grant St	1,381
Prince Perry Road	Saco Lowell Rd - S of Shaffner Rd	1,077
Robinall Drive	McAlister Rd - Dogwood Ln	4,003
Rock Springs Road	Dayton School Rd - headed S	4,130
S 5th Avenue	W 4th Ave - Millwood Ct	2,218
S E St	Hwy 93 – Hwy 123	3,748
Saco Lowell Road	Prince Perry Rd - Hagood St	9,503
Saluda Dam Road	Hagood St - Powell St	1,726
South 2nd Street	W 6th Ave - headed North	248
Timberlane Drive	McAllister Rd - Huntington Rd	1,099
W 2nd/E 2nd Ave	S 1st St – Russell St	1,743
W 4th St/Liberty Drive	Wallace Dr - Jones Ave	2,558
W 5th Ave	S 9th St – Hwy 8	1,057
West 2Nd Avenue	Liberty Dr - S 5th St	2,604
West A Avenue	N 2nd St - N A St	794
West End Elementary School	(school property)	394
Whitmire Road	Richard St - Hamilton St	1,580

Project	From – to	Length (Feet)
Wilbur Street	Fleetwood Dr - W of W B Ave	1,819
1St Street	S 5th St – Wyatt Ave	1,804
Allan Street	E Main St - Saco Lowell Rd	763
Anzio Street	E 3rd Ave - S of Pinewood Dr	1,263
TOTAL		150,952

Intersection Improvements

Pedestrian crossings at intersections represent a major challenge in Easley's existing walking environment. This Plan contains an overall strategy to improve intersections and other pedestrian crossings citywide through a variety of treatments (outlined in Chapter 4, Design Guidelines). Many intersections throughout Easley could be targeted for enhancements; the LRTP, City staff and residents identified the locations highlighted on the map as having a relatively high level of importance. Recommended intersection improvement projects are provided in Table 3-2.

Table 3-2. Intersection Improvement Recommendations

Location	Description
Hwy 123 at Prince Perry Rd/Rock Springs Rd	High-visibility Crosswalks, ADA-Compliant Curb Ramps
Hwy 123 at Rosewood Dr	High-visibility Crosswalks, ADA-Compliant Curb Ramps
Hwy 123 at Pilgrim Dr/ Lakewood Dr	High-visibility Crosswalks, ADA-Compliant Curb Ramps, Pedestrian Refuge Islands
Hwy 123 at Biltmore Rd	High-visibility Crosswalks, ADA-Compliant Curb Ramps
Hwy 123 at S B St/ Bushy Creek Rd	High-visibility Crosswalks, ADA-Compliant Curb Ramps
Hwy 123 at S Pendleton St/ Hwy 135	High-visibility Crosswalks, ADA-Compliant Curb Ramps
S Pendleton St/ Hwy 135 at Pope Field Rd	High-visibility Crosswalks, ADA-Compliant Curb Ramps
S B St at Crosstown Utility Easement Pathway/E 3rd Ave	High-visibility Crosswalks, ADA-Compliant Curb Ramps
Hwy 93/ W Main St at S 1st St	High-visibility Crosswalks, ADA-Compliant Curb Ramps, Pedestrian Refuge Islands
Hwy 93/ W Main St at S Pendleton St	High-visibility Crosswalks, ADA-Compliant Curb Ramps, Pedestrian Refuge Islands
Hwy 93/ W Main St at S B St	High-visibility Crosswalks, ADA-Compliant Curb Ramps, Pedestrian Refuge Islands
Hwy 93/ W Main St at S E St	High-visibility Crosswalks, ADA-Compliant Curb Ramps, Pedestrian Refuge Islands
Hwy 93/ W Main St at Stewart Dr	High-visibility Crosswalks, ADA-Compliant Curb Ramps, Pedestrian Refuge Islands

Streetscape Improvements

Recent and ongoing efforts by the City include streetscape improvements to enhance the walkability and attractiveness of the historic downtown business district. The City can also explore opportunities to improve the streetscape environment on other streets as funding becomes available and as redevelopment occurs, especially streets in Easley's historic core, including:

- South East and West Main Street
- SC 135 north of Main Street
- 1st Avenue
- Pendleton Avenue/SC 8

Improvements can include wider sidewalks, pedestrian-scaled lighting, street trees, improved pedestrian crossings, and planted medians, where appropriate.

Shared-use Paths/Greenways

Shared-use paths are proposed for Easley to provide transportation and recreational benefits to pedestrian and cyclists. This section briefly discusses these recommendations. Additional discussions of the Brushy Creek Greenway and Pickens Rail-Trail are provided in the Top-Tier project sheets at the end of this chapter.

The local utilities have easements on several rights-of-way in Easley including along the Brushy Creek, providing opportunities to develop a new shared use path.

Brushy Creek Greenway

A shared-use path can potentially follow the Brushy Creek through Easley and will provide bicycle and pedestrian access from downtown to the site of the future Easley High School on the south side of the city. Running over three miles, the path will connect neighborhoods, the current Easley High School (future Easley Middle School), Highway 123 and numerous neighborhoods.

Pickens Railroad Rail-Trail

The Pickens Rail-Trail will follow the Pickens line northwest out of downtown, connecting Easley with Pickens and locations in between. The railroad terminates at the Norfolk Southern exchange in Easley, and runs over 8 miles to Pickens. The trail opportunity was recommended in the GPATS Long Range Transportation Plan.

Crosstown Utility Easement Pathway

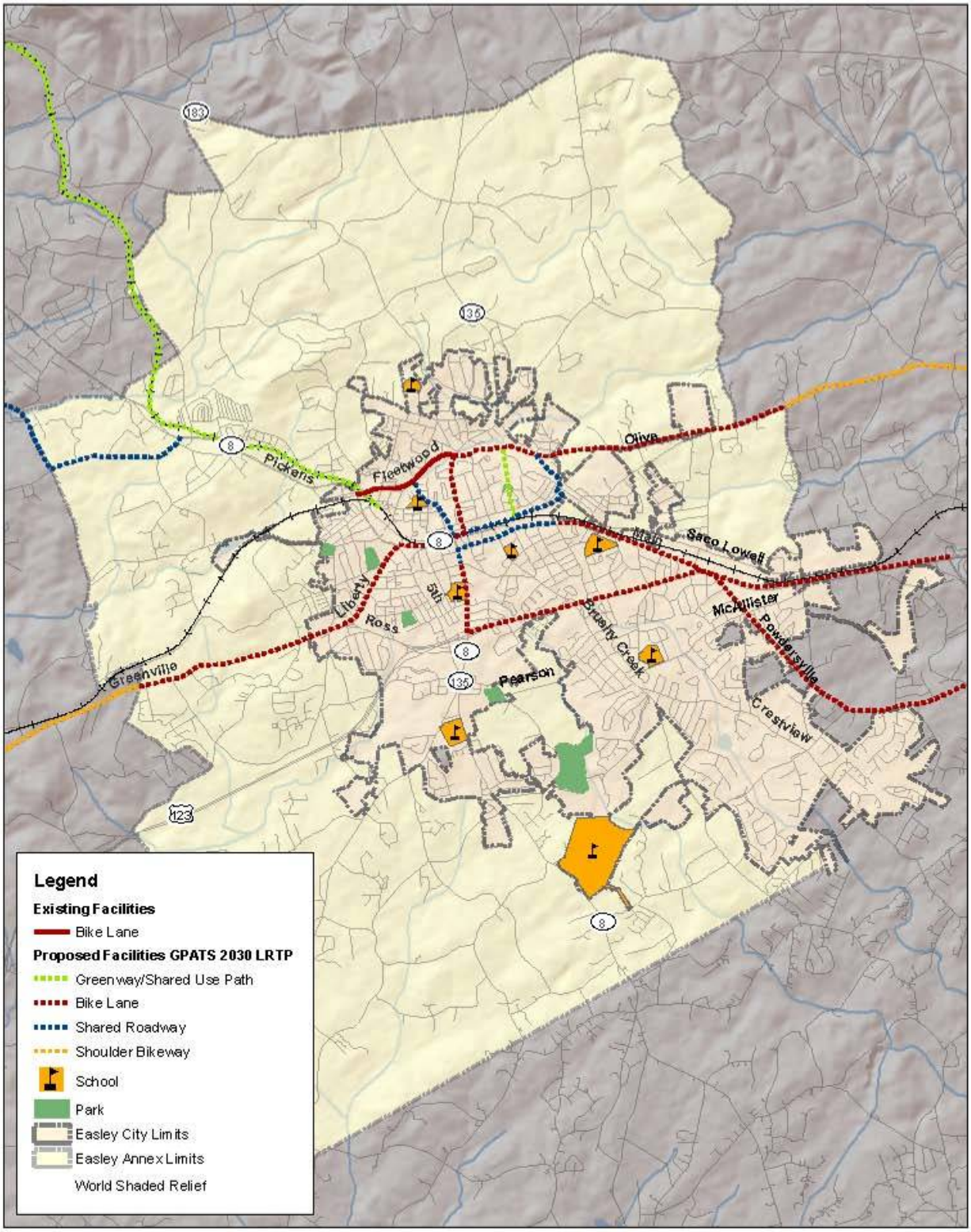
This utility easement runs east from East End Elementary school to Richard H. Gettys Middle School at E Main St/Hwy 93. This 1.4 mile long corridor offers an opportunity to connect destinations downtown and provide safe routes to school.

Big Brushy Creek Trail

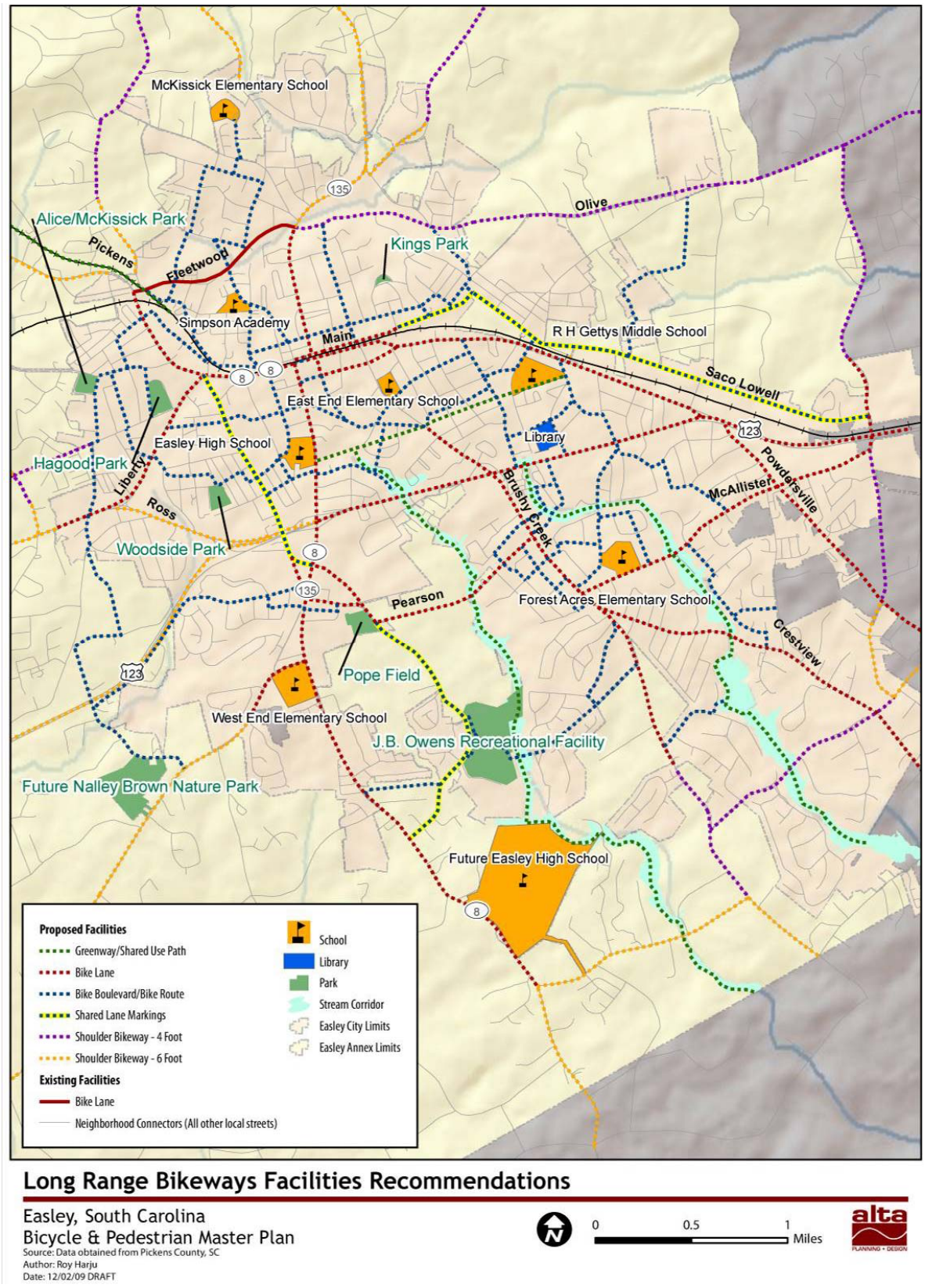
The Big Brushy Creek corridor is located east of Brushy Creek Drive, running from Hwy 123 south to the City limits. The potential Big Brushy Creek Trail is likely to be more challenging to construct than the Brushy Creek Trail, due to the established neighborhoods along its length, but represents an important opportunity for Easley to connect neighborhoods and destinations in southeast Easley.

Recommended Bicycle Network

The Proposed Bicycle System Map (Map 3-3) depicts existing and proposed bicycle facilities. Proposed facilities include bicycle lanes, shared roadways, and bicycle boulevards/bike routes. The proposed system also includes shared-use paths and intersection improvements, described earlier in this chapter. The proposed bicycle system builds upon previous planning efforts, including recommendations in GPATS *Long Range Transportation Plan* (Map 3-2) below, and also addresses input received from City staff, Easley residents, and other stakeholders.



Map 3-2. GPATS 2030 *Long Range Transportation Plan* Proposed Bikeways



Map 3-3. Proposed Bicycle System in Easley

Bicycle Lanes

To safely accommodate bicycle travel on corridors with current or anticipated high traffic volumes, bicycle lanes are proposed on several existing and future streets, based on several factors, including:

- Gaps in the existing bicycle lane system;
- Existing and forecasted traffic volumes;
- Previous planning efforts identifying the need for bicycle lanes on specific streets;
- Whether an existing street could be retrofitted to include bicycle lanes with minimal parking or private property impacts;
- Planned land development projects with the potential to generate higher bicycle volumes.

Example Bicycle Lane

A variety of physical and other constraints create challenges for retrofitting many existing streets with bicycle lanes in Easley. As a result, most bicycle lanes are proposed on streets with relatively wide rights-of-way or few physical constraints, such as SC 93. Table 3-2 summarizes recommended bike lane projects. A total of 128,280 feet, or almost 24 miles of bike lanes are recommended.

The City should continually monitor vehicle and bicycle travel patterns throughout the entire community, and identify opportunities to provide bicycle lanes on higher-volume streets wherever possible. A 2003 South Carolina Department of Transportation (SCDOT) Engineering Directive Memorandum regarding Considerations for Bicycle Facilities (discussed in greater detail in Appendix C) states that:

> *"bicycle lanes should be used where the Department desires to provide continuity to other bicycle facilities or designate preferred routes through high demand corridors, such as any of our designated South Carolina bicycle touring routes or a municipality's bikeway [system]."*

Table 3-3. Recommended Bike Lane Project Summary

Project	From – To	Length (feet)
Anderson Hwy/ Hwy 135	SR 39-57 – Pelzer Hwy/Hwy 8	2,437
Calhoun Memorial Hwy/Hwy 123	Brushy Creek Rd – E Main St/Hwy 93	6,002
Crestview Rd	Brushy Creek Rd - City Line	12,713
E 1st Ave/Greenville Rd/Hwy 93	Russell St – Prince Perry Rd	15,804
E 3rd Ave/S B St/Brushy Creek Rd	S Pendleton St/Hwy 135 - S of Sheffield Rd	17,876
East Main Street	E Main St – E 1st Ave/Hwy 93	806
Liberty Dr/Greenville Hwy	Maple Way – W Main St	6,656
McAllister Rd	Brushy Creek Rd – Rock Springs Rd	8,928
N. A St/Dacusville Hwy	N Main St – Pierce Ln	8,818
Pearson Rd	Pope Field Rd – Brushy Creek Rd	5,061
Pendleton St/Hwy 8/135/Pelzer Hwy	E Main St – Sheriff Mill Rd	19,534
Pope Field Rd	S Pendleton St/Hwy 135 – City Ct/Walnut Hill Dr	1,498
Powdersville Rd	Hwy 123 – Birchwood St/Wexford Wy	10,893
Prince Perry Rd	Rolling Hills Cir – Calhoun Memorial Hwy/Hwy 123	2,215
W Main St	Fleetwood – N A St	6,259
TOTAL		125,500

Shoulder Bikeways

Shoulder bikeways are common in rural areas, and typically consist of a paved shoulder for pedestrian and bicycle travel. Given the predominantly rural character of areas on Easley's outskirts (primarily in Easley's annexation area), shoulder bikeways will suitably accommodate non-motorized traffic on many of the roads in these areas. However, future development could change the character of these roads, potentially creating the need for greater separation between bicyclists/pedestrians and motor vehicles.

A total of 244,741 feet or 46 miles of shoulder bikeways are proposed in this plan, shown in Table 3-3.

Example of a four-foot shoulder bikeway

Table 3-4. Recommended Shoulder Bikeway Project Summary

Project	From – to	Length (feet)	Width
Adger Rd	Black Snake Rd – Anderson Hwy/Hwy 135	5,114	4
Amsterdam Rd/SH 61	Greenville Hwy/Hwy 93 – Nalley St	11,749	4
Anderson Hwy/ Hwy 135	Johnson Rd - Fish Camp Rd	5,265	6
Breazeale Rd	Griffin Mill Rd - Gentry Memorial Hwy/Pickens St/ Hwy 8	6,421	4
Brushy Creek Rd	S of Sheffield Rd - Sheriff Mill Rd	1,650	4
Brushy Creek Rd	Sheriff Mill Rd – Meadow Ridge Rd	2,522	4
Calhoun Memorial Hwy/ Hwy 123	W Annex Limit – Pendleton St/Hwy 135	11,780	6
Enon Church Rd	Highland Bridge Rd – SH 61	3,917	6
Farrs Bridge Rd	W Cedar Rock Rd - Holly Bush Rd	4,539	4
Gentry Memorial Hwy/Pickens St/ Hwy 8	Cedar Rock Church Rd- Norton St	11,507	6
Greenville Hwy/ Hwy 98	Amsterdam Rd - Maple Way	8,054	6
Griffin Mill Rd/Old Liberty Rd	W Roper Rd – SH 61/Amsterdam Rd	14,838	6
Holly Brush Rd	N Annex Limits/Farrs Bridge Rd - Cedar Rock Church Rd	3,424	4
Holly Brush Rd	Cedar Rock Church Rd – Dacusville Hwy/Hwy 135	1,580	4
Hwy 8/Pelzer Hwy	Sheriff Mill Rd – E Church Rd/St Paul Rd	4,736	5
Ireland Rd	Tabor Woods Rd - Robert P Jeanes Rd	3,772	4
Jameson Rd/Lenhardt Rd	Hwy 183/Farrs Bridge Rd – Ingleosk Ln	16,942	4
Lenhardt Rd/W Old Farrs Bridge Rd	Farrs Bridge Rd - SW of Cliffstone Dr	15,556	4
Mulberry Rd	Enon Church Rd – Gentry Memorial Hwy/Hwy8	3,963	
N Cedar Rock Rd	Farrs Bridge Rd – Turpin Dr	17,932	4
Old Cedar Rock Dr/Old Cedar Rock Rd	Robert P Jeanes Rd – Jessica Ct	6,593	4
Olive St/Saluda Dam Rd	N A St/Dacusville Hwy/ Hwy 135 - Prince Perry Rd	15,529	4
Pelzer Hwy/Hwy 8	Sheriff Mill Rd – E Church Rd/SH 485	4,775	6
Prince Perry Rd	Saluda Dam Rd - Rolling Hills Cir	6,130	4
Rice Rd	Tabor Woods Rd - Cedar Rock Church Rd	6,862	4/6
Rock Springs Rd	Hwy 123 – Powdersville Rd	4,530	4/6
Ross Ave	Liberty Dr – Hwy 123	3,150	6
Saluda Dam Rd	Hwy 105/N A St - Prince Perry Rd	15,505	4
Sheffield Rd	Powdersville Rd – Crestview Rd/Rock Springs Rd	2,634	4/6
Sheriff Mill Rd	Hwy 8/Pelzer Hwy – Brushy Creek Rd	6,345	6
Smith Grove Rd	Highland Rd – SH 61	3,975	4/6
Smith Grove Rd	SH 61 – N of Trey Ct	623	4/6
Smith Grove Rd	N of Trey Ct – Liberty Dr	1,042	4/6
W Cedar Rock Rd/ Cedar Rock Church Rd/Rice Rd	Robert P Jeanes Rd – Gentry Memorial Hwy/ Hwy 8	11,787	4/6
TOTAL		244,741	

Shared Roadways & Bike Routes/Bicycle Boulevards

A number of streets are proposed as shared roadways that can be enhanced for bicyclist safety and comfort. These corridors will include shared lane markings and improved bike route signage. These applications can be used on many streets in Easley, including streets where physical or other constraints preclude the use of dedicated bicycle lanes. Shared roadways can include traffic calming measures and other streetscape treatments, and are intended to prioritize safe and convenient bicycle travel. Appropriate treatments depend on several factors including traffic volumes, vehicle and bicycle circulation patterns, street connectivity, street width, physical constraints, and other parameters.

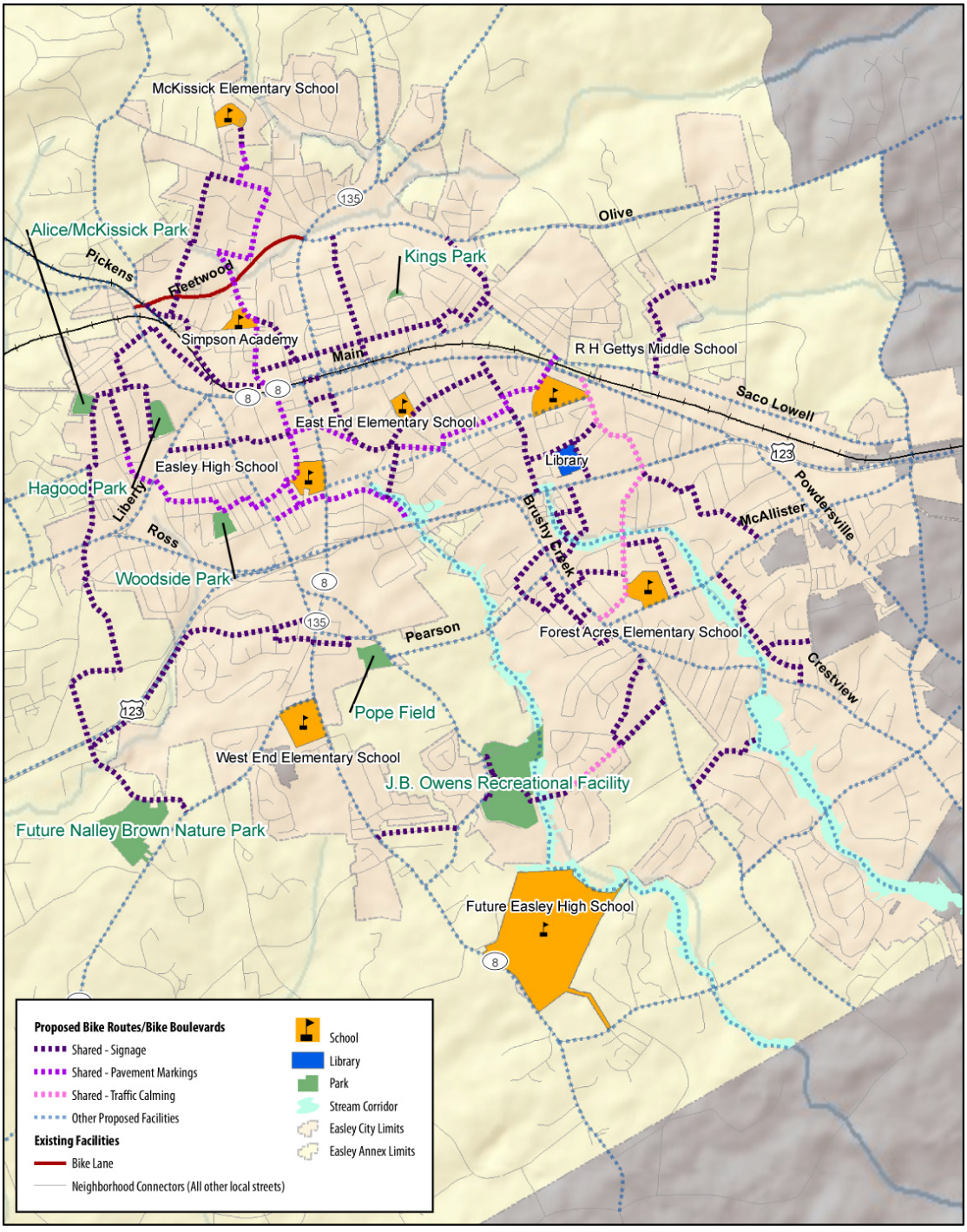
Table 3-4 shows the recommended shared roadway system for Easley. These are primarily collector or arterial streets which do not have enough width and/or traffic volumes for bicycle lanes or shoulders, but merit improved bicycle facilities. These streets are recommended for Shared Lane Marking treatments (aka "sharrows") in the near term. Shared lane markings are expected to be included in the next edition of the MUTCD. Longer term, as roadway volumes increase and as redevelopment occurs in these corridors, application of bike lanes or other enhancements may be appropriate.

Table 3-5. Recommended Shared Roadways (sharrows)

Project	From – To	Length (feet)
Hagood Street/Saco Lowell Rd	Olive St – Prince Perry Rd	11,646
North East Main Street	N A St – Hagood St	2,302
S 5th St/Pope Field Road	Liberty Dr/ Hwy 93 – Pelzer Hwy/Hwy 8	13,834
Total		27,782

Map 3-6 on the following page identifies a potential bike route/bike boulevard network for Easley. This network is based on linking existing low volume local streets to provide connectivity to destinations and provide alternative routes to major roadways. These routes can be identified through a signage and wayfinding program. Some streets may require additional treatments to reduce motor vehicle speeds along the route and to provide intersection treatments that will assist cyclists. These potential treatments are described more fully in Chapter 4, Design Guidelines.

To identify and develop specific treatments for each bicycle boulevard, the City will involve the bicycling community, neighborhood groups, and the Public Works Department. Further analysis and engineering work will also be necessary to determine the feasibility and specific location of some applications.



Map 3-6. Proposed Bike Routes/Bike Boulevards

Table 3-6. Recommended Bicycle Boulevards

Project	Length (feet)	Treatment Level
Andrew Avenue	4,401	Pavement Markings
Bell Street	1,219	Pavement Markings
East 2nd Avenue	1,875	Pavement Markings
East 3rd Avenue	1,109	Pavement Markings
Hillcrest Drive/Richard Street/Troy Street	5,669	Pavement Markings
Mcbee Avenue	2,364	Pavement Markings
South 2nd Street	688	Pavement Markings
Tiffany Drive/Lloyd Avenue	1,158	Pavement Markings
West 6th Avenue	9,239	Pavement Markings
West 7th Avenue	1,508	Pavement Markings
Alethia Street	1,262	Signage
Anzio Street	1,418	Signage
Ben Drive	1,168	Signage
Biltmore Road	1,076	Signage
Briggs Drive	431	Signage
Burns Avenue	2,124	Signage
Dogwood Lane/Robinall Drive	4,019	Signage
East 1St Avenue	616	Signage
East 2Nd Avenue	1,140	Signage
East 2Nd Avenue	3,285	Signage
East Main Street	393	Signage
Edgemont Street	1,418	Signage
Fairfax Road	1,275	Signage
Frank Street	2,346	Signage
Glenwood Road	2,389	Signage
Hamilton Street/Skyland Drive	3,948	Signage
Haverhill Circle/Bedford Road	2,376	Signage
Highland Road/Hagood Park Drive	2,732	Signage
Inverness Way	2,380	Signage
Jamie Street	404	Signage
Katherine Street/Blair Street/Cumberland Avenue	4,234	Signage
Lynn Circle/Springdale Avenue/Oakvale Drive	5,775	Signage

Project	Length (feet)	Treatment Level
Mayes Street	1,661	Signage
Mckissick Road	513	Signage
Nancy Drive	2,513	Signage
North B Street	3,362	Signage
North Pendleton Street	1,542	Signage
Oaklane Drive	3,159	Signage
Old Stagecoach Road	7,262	Signage
Peoples Drive	3,188	Signage
Peoples Drive	625	Signage
Pine Forest Drive	2,120	Signage
Pineview Drive	2,603	Signage
Rampey Street	795	Signage
Roper Street	1,600	Signage
Russell Street	1,375	Signage
South E Street	1,491	Signage
South E Street	1,201	Signage
South E Street	863	Signage
Timberlane Drive/Huntington Road	4,056	Signage
Wallace Drive/Barr Road/Adger Road	13,987	Signage
Waverly Street	2,551	Signage
West 2Nd Avenue	3,277	Signage
West A Avenue/East A Avenue	5,257	Signage
Wilbur Street	4,509	Signage
Wimberly Lane	1,585	Signage
Burns Road/Pilgrim Drive/Laurel Road	7,520	Traffic Calming
Wimberly Lane	1,778	Traffic Calming

Top-Tier Project Sheets

The following pages provide project description sheets with specific recommendations and maps for the Top-Priority projects, which represent the first stage of Master Plan implementation. Specific recommendations were based on field visits, aerial photos, discussions with local and regional planning staff, and public input. Each map depicts the recommended walkway/bikeway, as well as selected nearby connections. If these projects are selected for implementation, additional study and coordination with SCDOT and other affected property owners or agencies will be necessary to verify feasibility and project details. Please refer to the larger system maps for the project's context within the overall surrounding walkway/bikeway network.

SC93/ Main Street – Safety & Complete Streets Improvements

East Main Street is a key east-west link in Easley's bicycle and pedestrian network, a key commercial corridor with civic, office, and retail uses, and a gateway into downtown Easley.

Major destinations along the corridor include the YMCA, Getty Middle School, and downtown Easley. The street is also a key link in Easley's future transit network.

Project Boundaries: B Street (western termini) and Stewart Avenue (eastern termini)

Project Length: 0.8 miles

Based on similar treatments elsewhere in the state and across the country, improvements will result in:

- motor vehicle speeds appropriate to the corridor;
- fewer crashes on the corridor, consistent with SCDOT's safety and access management goals;
- a more predictable roadway environment for all users with no reduction in capacity or level of service;
- a more attractive roadway for residents, visitors, businesses owners and their patrons, consistent with the City's economic development goals; and
- greater usage by cyclists and walkers, consistent with the goals of the City of Easley for a healthier and more livable community.

Description

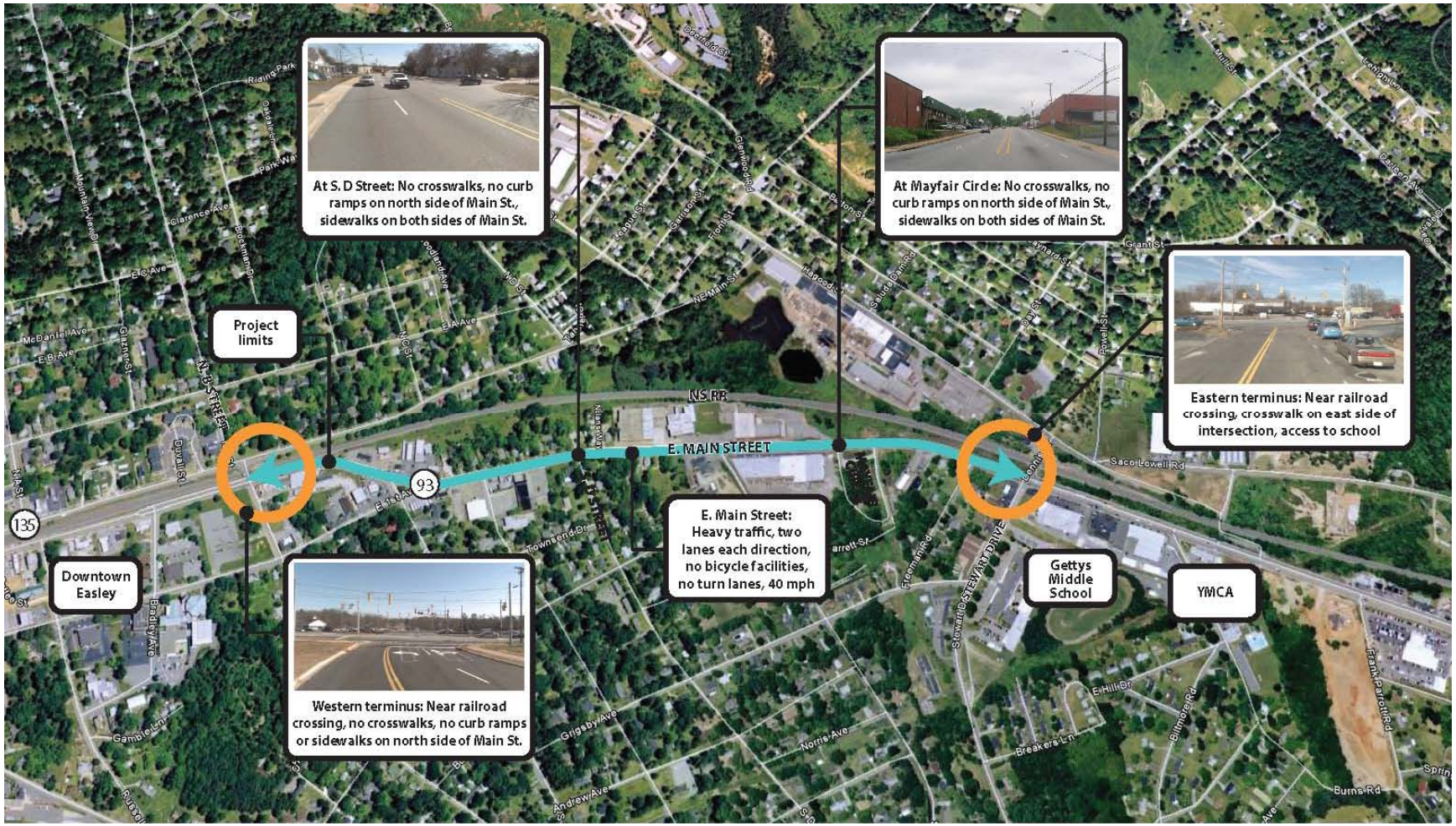
Currently, this section of roadway is a four-lane, undivided facility characterized by high speed motor vehicle traffic; frequent driveways; no left turn lanes; and limited pedestrian infrastructure (including back-of-curb sidewalks with no landscaping; few pedestrian crossing opportunities; few ADA compliant driveways or intersections); and no bicycle facilities. These conditions contribute to a roadway environment that creates safety risks for all roadway users, property and business owners along the corridor.

Proposed Improvements

Redesign and reallocation of the roadway space to accommodate all modes of transportation and user groups safely, efficiently and in a manner that is more attractive to visitors and residents of Easley. Proposed improvements include bike lanes and formalized crossings and pedestrian refuge medians at key locations.

E Main Street at B Street is quite wide, encouraging high traffic speeds, and lacks adequate bicycle and pedestrian facilities

SC93/ Main Street – Safety & Complete Streets Improvements: Existing Conditions



Vicinity and Context Map

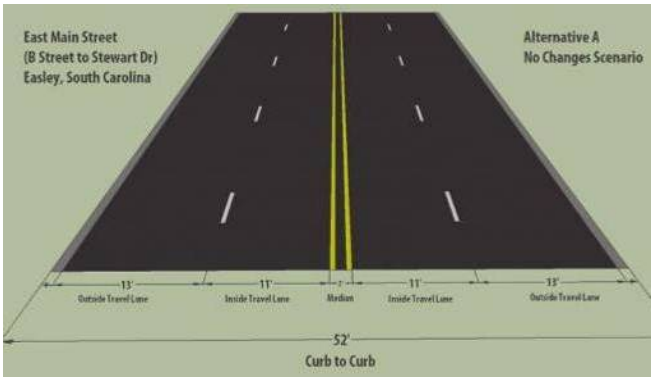
SC93/ Main Street – Safety & Complete Streets Improvements

Key Safety Issues

- **High speed motor vehicle traffic**: The roadway is signed for a 40mph speed limit. Actual speeds approach 50mph.
- **Frequent driveways and no left turn lanes** contribute to frequent turning vehicle movements into and out of driveways, which increases the unpredictable nature and safety risks of the roadway for all users. The lack of left turn lanes results in a decrease in effective capacity because of left turning vehicles, as well as an increase in unsafe weaving movements.
- **A history of crashes**: 74 crashes have occurred on this corridor in the past five years, including 37 crashes resulting in personal injuries. The majority have been angle, rear-end, and head-on collisions, all of which are typical crash types for four-lane, undivided roadways with frequent driveways.
- **Inhospitable pedestrian infrastructure** includes back-of-curb sidewalks with no landscaping; no formal pedestrian crossings; and few ADA compliant driveways or intersections.
- **Excessively wide travel lanes for an urban corridor**: current lanes are 12 feet wide. Based on ITE and AASHTO guidelines, lane widths in urban corridors can safely be as narrow as 10 feet with no decrease in safety or capacity.
- **High motor vehicle volumes**: Based on 2007 SCDOT traffic volume data, this roadway carries approximately 17,600 vehicles per day. The GPATS model projects a motor vehicle volume of roughly 22,000 for this roadway in the year 2030.
- **Greater than 5% truck traffic** increases the safety risks on the corridor for all users, especially non-motorists and contributes to non-motorized user discomfort.
- **Excess motor vehicle capacity**: Based on the standards of the HCM, this section of roadway has excess motor vehicle capacity relative to the current number of travel lanes (four).
- **No bicycle facilities / challenging bicycling environment** on the corridor, discouraging bicycling for transportation.

Existing Conditions at E Main St & Mayfair Circle

Four-lane street with no pedestrian crossing treatments or bicycle accommodations



Existing typical cross section

Improvements at E Main St & Mayfair Circle

Reduce to two-lane street, add bike lanes, high-visibility crossings with islands, and a median

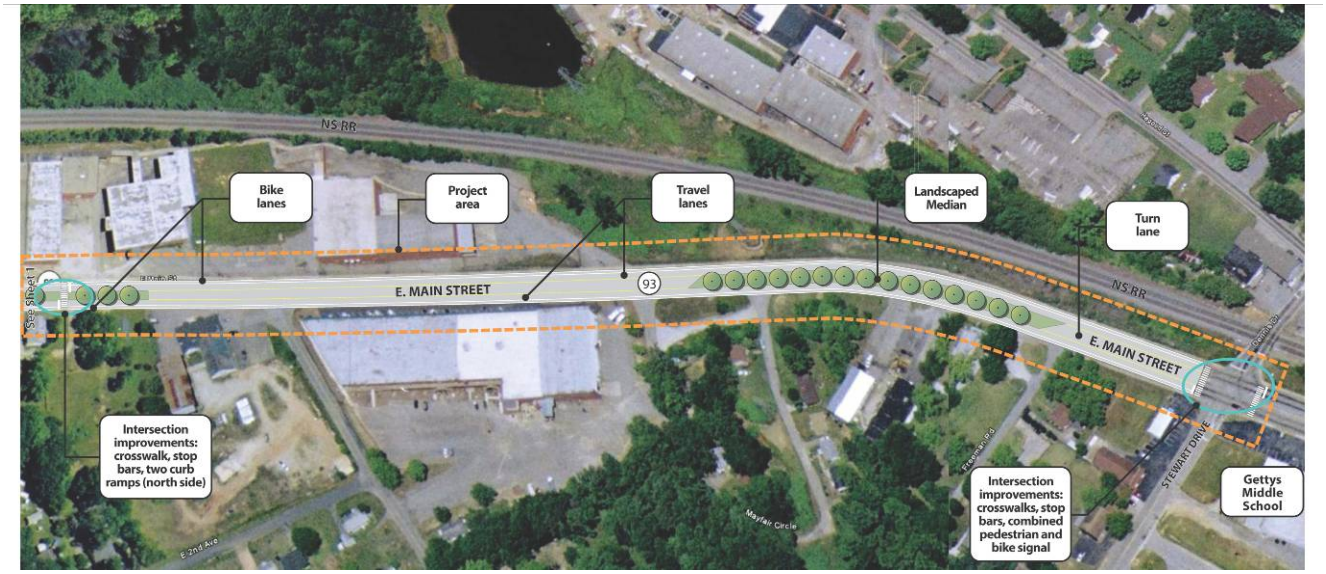
Proposed typical cross section

SC93/ Main Street – Safety & Complete Streets Improvements

Proposed improvements B St to D Street

Intersection improvements at S B St and S D St, bike lanes along corridor, landscaped median in places

Proposed improvements D St to Stewart Drive



Intersection improvements at Nolans Way and Stewart Drive, bike lanes along corridor, landscaped median in places

E 1st Ave – Bicycle Accommodations and Intersection Improvements

E 1st Ave provides an alternative route to avoid the higher vehicle traffic speeds and volumes on Main Street. Due to changing roadway characteristics and widths, part of the roadway is recommended for bicycle lanes, while between Russell and Pendleton shared lane markings would be required due to on-street vehicle parking and a slip lane at the intersection. These treatments can be accomplished through addition of striping to the recently repaved roadway.

Project Boundaries: South 1st St to Hwy 93

Project Length: 0.7 miles

Based on similar treatments elsewhere in the state and across the country, these improvements will result in:

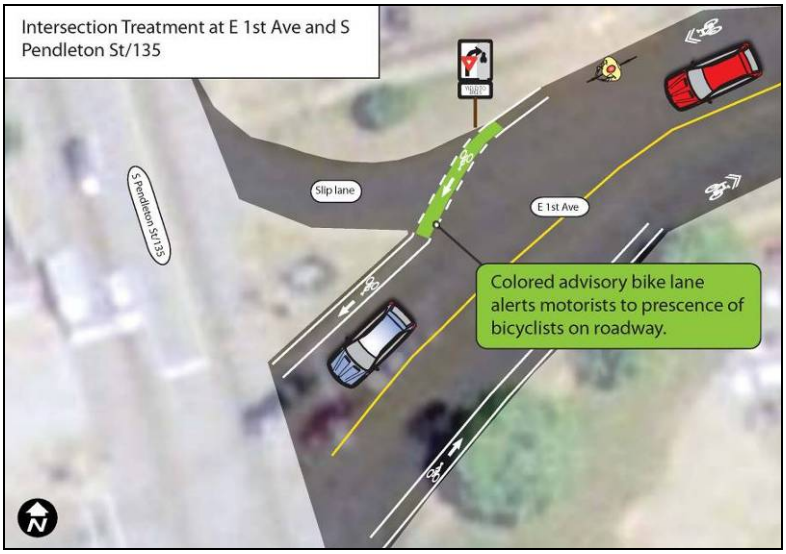
- Improved bicycle routes through downtown Easley, encouraging more short trips by walking and bicycling
- Improved safety for pedestrians, bicyclists, and drivers due to reduced vehicle speeds

Description

This project accommodates bicyclists through re-striping for bike lanes from SC 93 to Russell Street, continuing with shared lane markings to S Pendleton St/135. It includes a colored advisory bike lane at Pendleton St.

Existing conditions along 1st Ave approaching S. Pendleton

Proposed Intersection Treatment – E 1st Ave and S Pendleton St/135

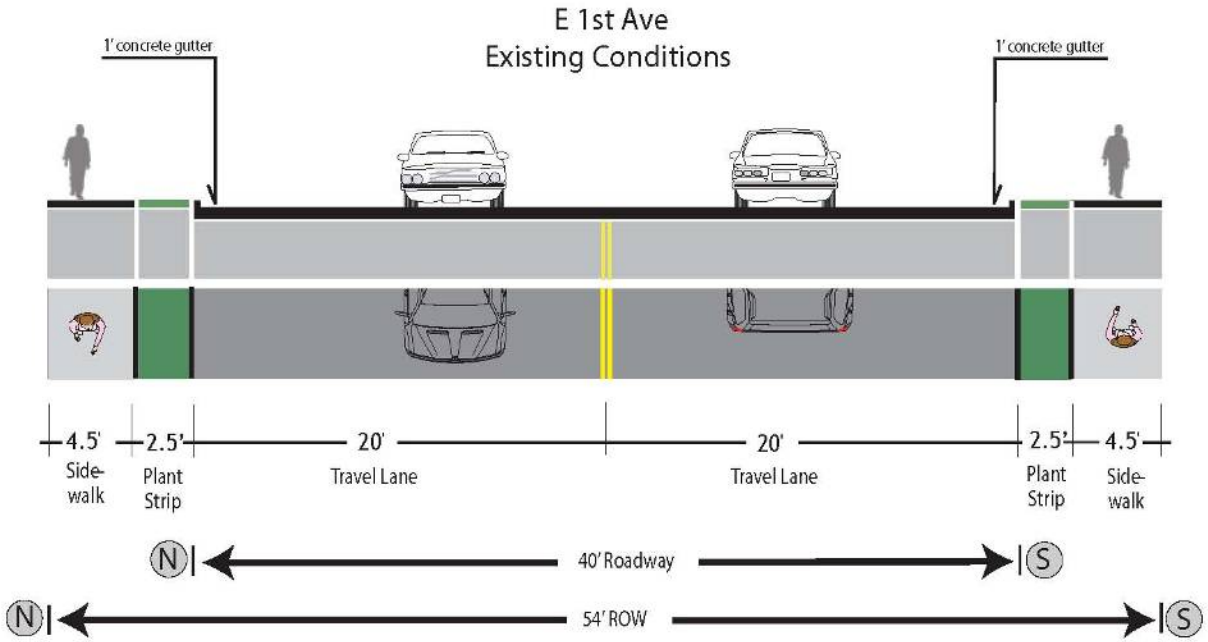


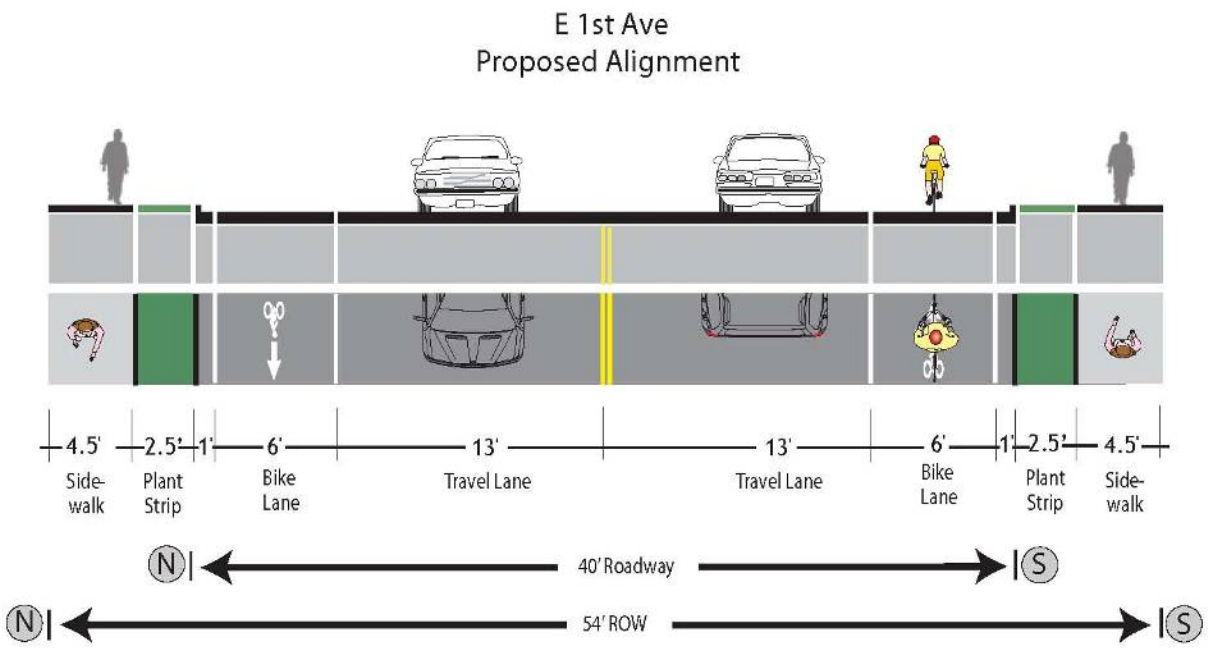
Proposed intersection Striping at 1st Ave and Pendleton/SC 135 intersection

The colored advisory bike lane would alert motorists to the presence of bicyclists crossing the slip lane

E 1st Ave – Bicycle Accommodations and Intersection Improvements

Proposed Improvements – SC 93 to Russell Street

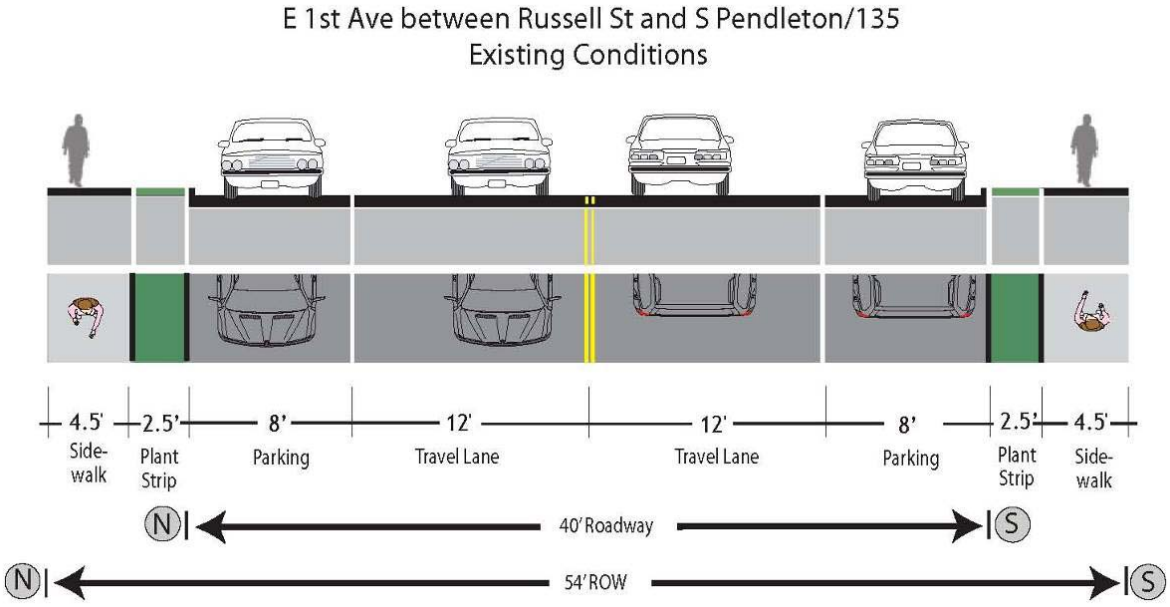


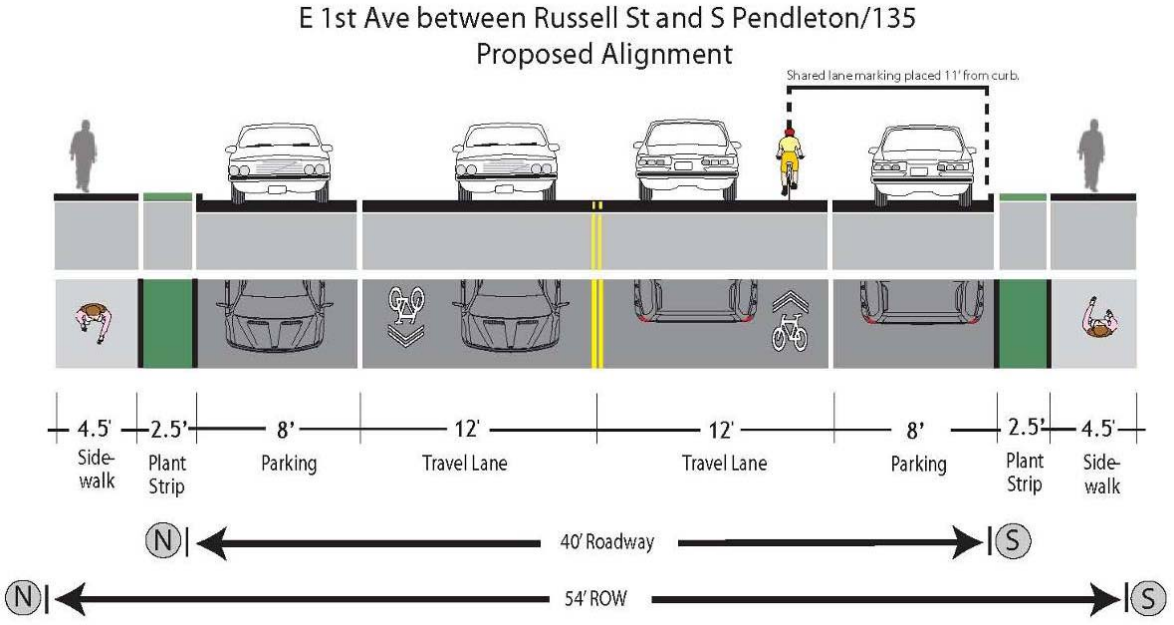


Proposed alignment E 1st Ave from SC 93 to Russell St – Narrow lanes and re-stripe for bike lanes

E 1st Ave – Bicycle Accommodations and Intersection Improvements

Proposed Improvements – Russell St to S Pendleton/135





Proposed alignment E 1st Ave from Russell St to S Pendleton/135 – Add shared lane markings to travel lanes

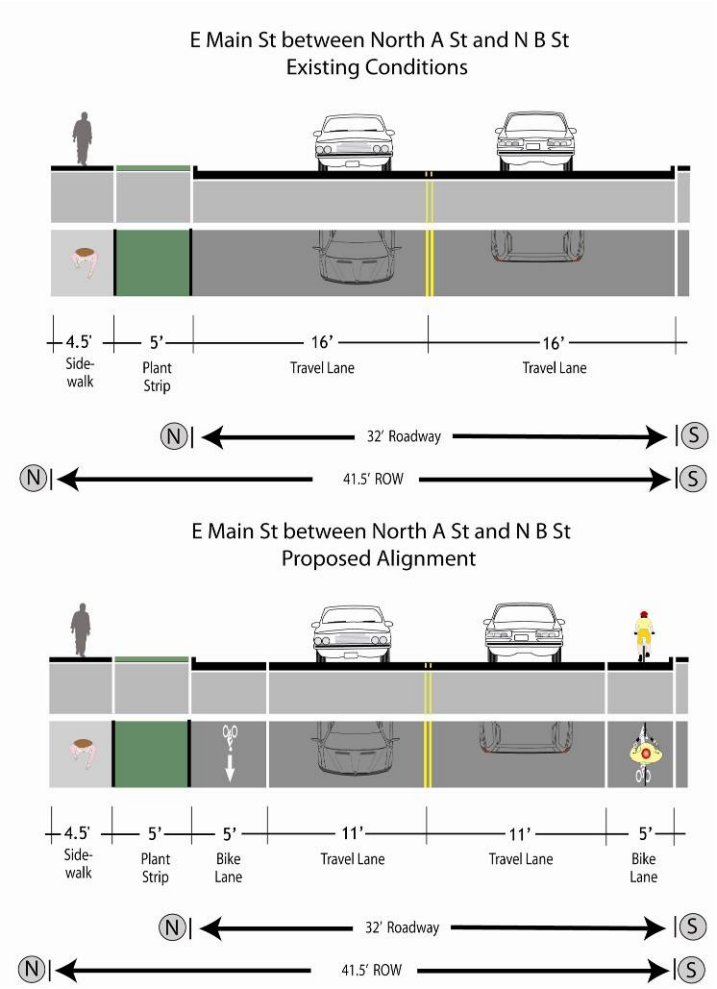
Bike Facilities for N. Main Street

N. Main Street is an important route for bicyclists, connecting to destinations in downtown and providing key connections through Easley. There is sufficient width in the existing cross-section of North Main Street to add bicycle facilities through re-striping. At the North A St intersection, the left turn lane precludes development of a bike lane within the current pavement width, and shared lane markings are recommended to ensure that cyclists and drivers are aware that they are sharing the roadway.

Project Length: approximately 1 mile

Project Boundaries: North Second Street to Hagood Street

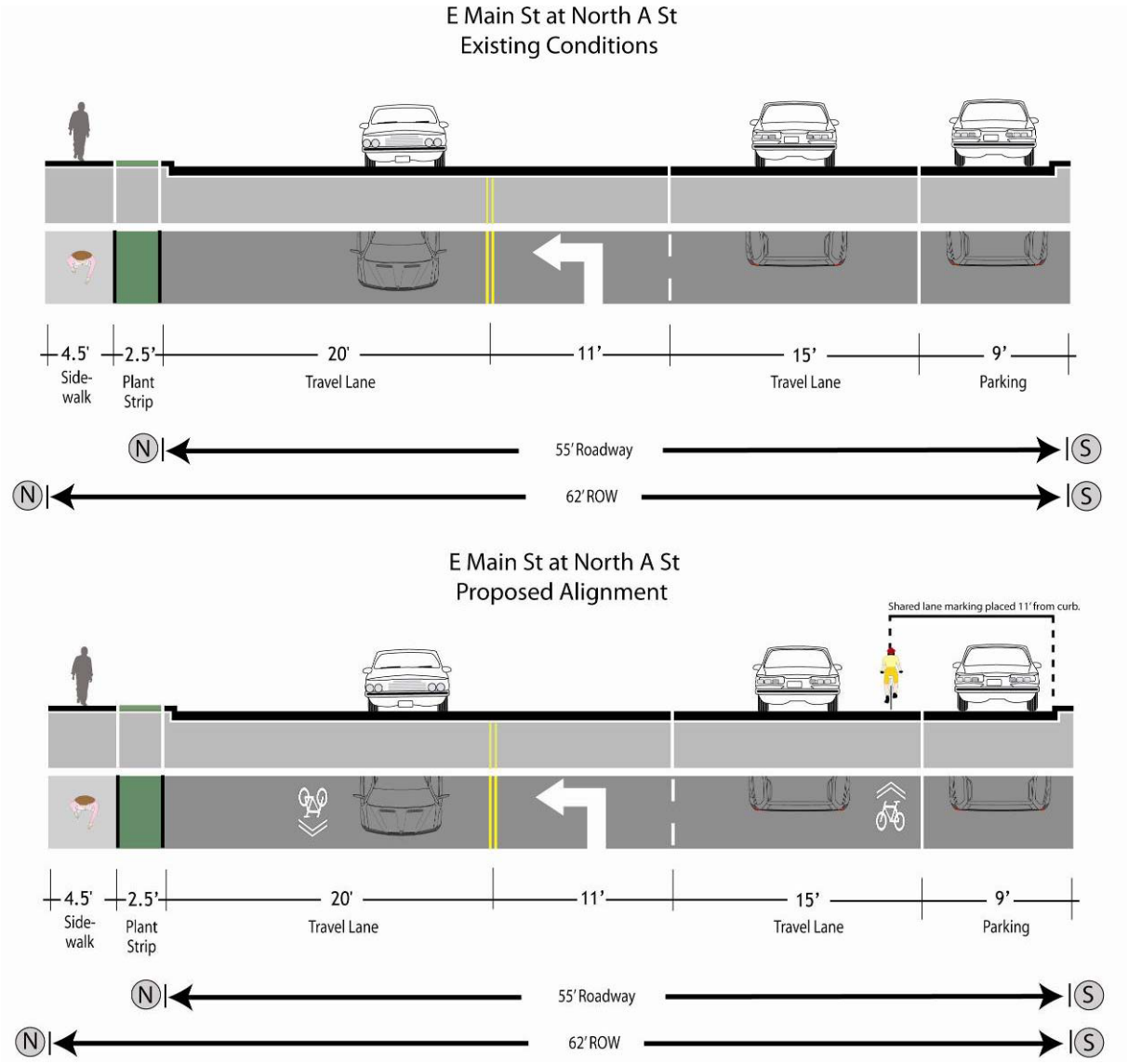
Proposed Improvements – North A St to North B St



Cross-Section for N. East Main Between North A Street and North B Street – Narrow travel lanes, re-stripe for bike lanes

Bike Facilities for N. Main Street

Proposed Improvements – E Main St at North A St



Proposed Cross-Section of N. East Main Street at A Street - Add shared lane markings to travel lanes

Brushy Creek Greenway

The Brushy Creek Greenway is recommended to provide bicycle and pedestrian access from downtown to the site of the future Easley High School on the south side of the city and potentially as far as the county line. The over three-mile path would connect neighborhoods, the current Easley High School (future Easley Middle School), Highway 123 and numerous neighborhoods along the way.

To further identify opportunities and constraints and preliminary design for a Brushy Creek Greenway path, the City of Easley can find local partners to help fund a feasibility study for the pathway. Potential partners might include Pickens County, the Pickens County School District, SCDOT, SCDHEC, Baptist Hospital, Upstate Forever, and others. The study will identify property, environmental and other issues, lay out a preferred path alignment, and identify potential connections to the local street system. The study can also identify opportunities to extend the path northward to connect with a proposed rail-trail along the Pickens Railroad line.

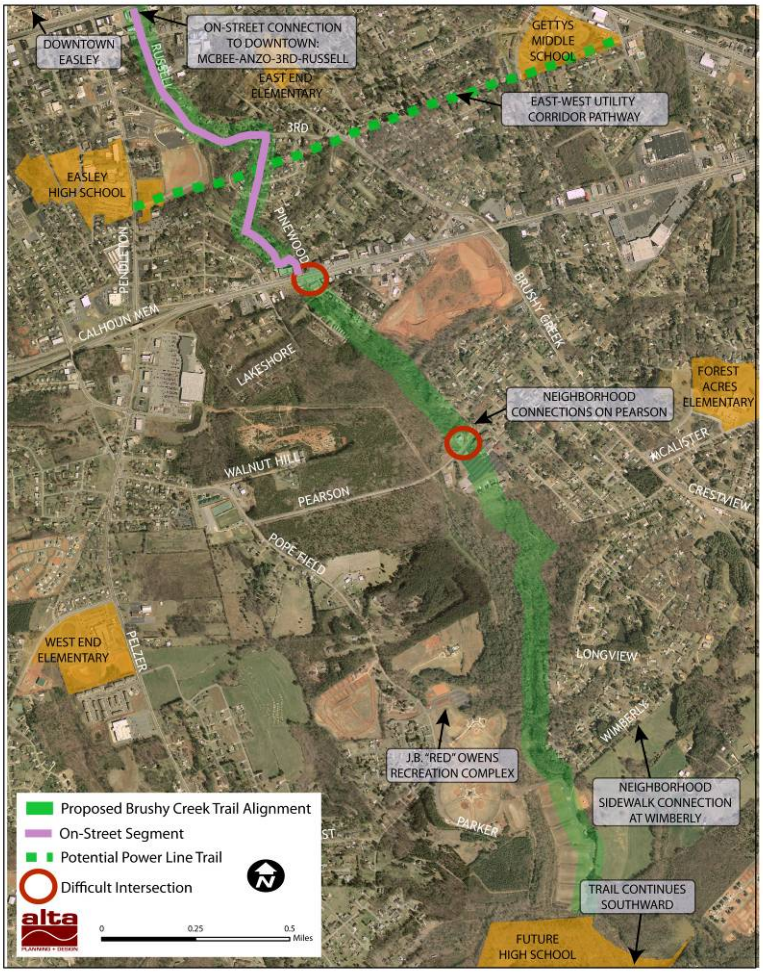
Project Boundaries: Highway 123 south to the future Easley High School

Project Length: Three miles +

Based on similar treatments elsewhere in the state and across the country, we predict that these improvements will result in:

- bicycle and pedestrian connections to neighborhoods, future Easley Middle School (current Easley HS), and Highway 123;
- an increase in walking and bicycling to school, due to improved safety and access;
- additional recreational walking and bicycling trips;
- improved health and well-being of Easley residents; and
- greater usage by cyclists and walkers, consistent with the goals of the City of Easley for a healthier and more livable community.

Brushy Creek south of Pearson



Vicinity and Context Map

Brushy Creek Greenway

Facility Description

The Brushy Creek Trail would be a 12-14' wide paved shared use path. It can utilize an on-street connection on the low-speed neighborhood streets of McBee, Anzio, 3rd and Russell to downtown.

Proposed Improvements

Development of a greenway corridor parallel to Brushy Creek, with crossing improvements and wayfinding signage to improve safety and awareness of pedestrians and bicyclists on the trail.

Although most land parcels near the river are privately owned, local utilities own and manage transmission corridors that can provide an opportunity for a shared use corridor with a greenway path.

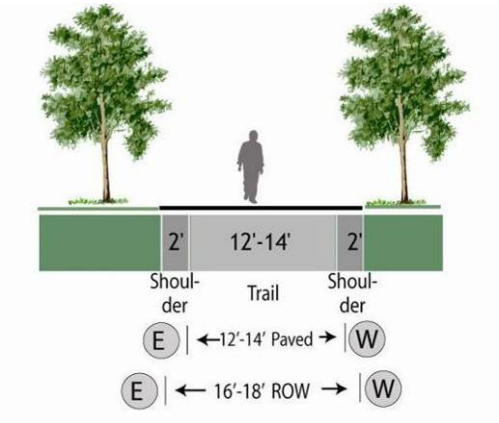
Photo simulation of greenway

Photo simulation of trail crossing at Wimberly

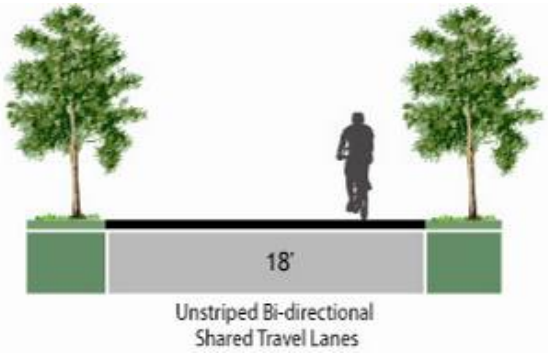
Key Safety Issues

- **Potentially difficult crossings** at Pearson and Hwy 123.
- **Environmental concerns** include consideration for birds, plants, erosion, and other issues.
- **Availability of right-of-way.** Some of the land surrounding Brushy Creek is owned by utility companies, and some is privately owned. Easements will be required for use of land for the path.

Proposed Cross-Section



Proposed Trail Cross-Section for Brushy Creek Greenway



Proposed Greenway Cross-Section along neighborhood streets – improvements include signage, pavement markings, and potentially traffic calming treatments

Pickens Rail-Trail

The Pickens Railroad Line runs from the junction with the Norfolk Southern Railroad near downtown Easley to Pickens.

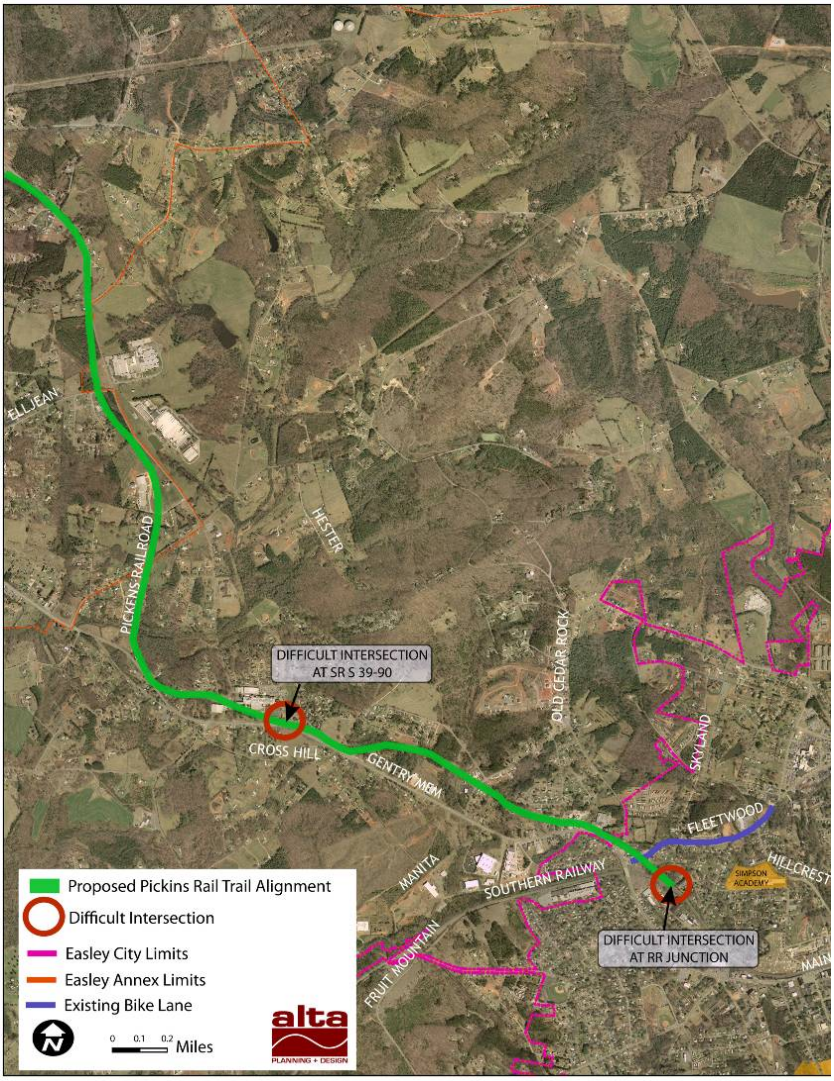
The Pickens Rail-Trail will follow the Pickens line northwest out of downtown, connecting Easley with Pickens and locations in between. The railroad terminates at the Norfolk Southern exchange in Easley, and runs more than 8 miles to Pickens. The trail opportunity was recommended in the GPATS long range transportation plan. The railway is privately owned and easements will be required in order to develop a trail in this corridor.

Project Boundaries: Junction with Norfolk Southern Railroad northwest to City boundary.

Project Length: Two and a half miles from City Annex at Cedar Rock Church Road to railroad junction south of Fleetwood Ave.

Based on similar treatments elsewhere in the state and across the country, the development of a trail along the Pickens Railroad line would result in a premier facility leading to:

- connections between Easley and surrounding communities;
- additional recreational walking and bicycling trips;
- connections to neighborhoods and outer northwest areas of Easley;
- improved health and well-being of Easley residents; and
- greater usage by cyclists and walkers, consistent with the goals of the City of Easley for a healthier and more livable community.



Vicinity and Context Map

Pickens Rail-Trail

Description

The Pickens Railroad Trail can be a 12-14' wide paved shared use path in the Pickens Railroad right-of-way, if the rail line is abandoned in the future. The trail will require a high-quality rail-to-trail design to ensure safety and a pleasurable trail experience.

Proposed Improvements

Development of a greenway corridor in the right-of-way of the Pickens Railroad, with crossing improvements at the trail's downtown terminus. This is a long range project as the railroad is currently used to serve a business in Pickens. The existing right-of-way (30-50 feet wide) is not sufficiently wide to accommodate a trail next to the active rail line. Should the railroad be abandoned, it is possible that the right-of-way could be converted to a trail.

To further identify opportunities and constraints and preliminary design for a Pickens Rail-Trail, the City of Easley can find local partners to help fund a feasibility study for the pathway. The study can identify property, environmental and other issues, lay out a preferred path alignment, and identify potential connections to the local street system.

The Pickens Line presents a potential opportunity to connect Easley with Pickens and locations between.

This photo simulation shows how a rail-trail conversion might look near the intersection with Fleetwood Avenue

Key Safety Issues

- **Potentially difficult crossings** located at the downtown terminus of the trail. Good connections to the trail will need to be provided, without the development of new at-grade railroad crossings.
- **Environmental concerns** include consideration for birds, plants, wetlands, erosion, and other issues.
- **Availability of right-of-way.** The railway is currently privately owned and easements will be required in order to develop a trail in this corridor.

Hwy 123 – Redevelopment and Pedestrian Infrastructure Improvements

Description

With a posted speed of 45 MPH and high traffic volumes, Hwy 123 represents both a significant existing barrier and an opportunity for pedestrian travel in Easley. The roadway currently separates neighborhoods and destinations north and south of the corridor to people who might choose to walk or bicycle. Land uses are automobile-oriented, with most buildings set back behind rows of auto parking. Pedestrian infrastructure is nominal, with limited crossings. Bicycle infrastructure is non-existent.

Easley residents identified the following intersections as particularly challenging for pedestrians: S Pendleton St/135, S B St/Brushy Creek Rd, Biltmore Rd (at the Town and Country Shopping Center), Pilgrim Dr/Lakeview Dr, and Rosewood drive. The intersection at Pilgrim Dr/Lakeview Dr was also identified as a needed intersection improvement in the GPATS 2030 *Long Range Transportation Plan.*

Project Boundaries: Highway 123 in Easley between SC 93 and 5th Street

Project Length: Approximately 2 miles

General Recommendations

A corridor study is recommended to detail:

- the City's future vision for the land use and transportation on the corridor
- future redevelopment options and more pedestrian-oriented land use configurations
- access management options to improve traffic safety, capacity, and pedestrian crossings
- streetscape recommendations to improve the visual appeal and pedestrian comfort on the corridor
- potential intersection improvements to improve safety and aesthetics
- potential bicycle facility improvements in the corridor
- development regulations for new investment along the corridor

The City can work with SCDOT, property, business owners along the corridor, and other interested stakeholders to develop goals and a timetable for completing a detailed study of the corridor and potential funding sources. The study can include a market feasibility analysis for new development.

In the short term, the City and SCDOT can work to improve the existing infrastructure through key projects such as the intersection improvement detailed on the following page.

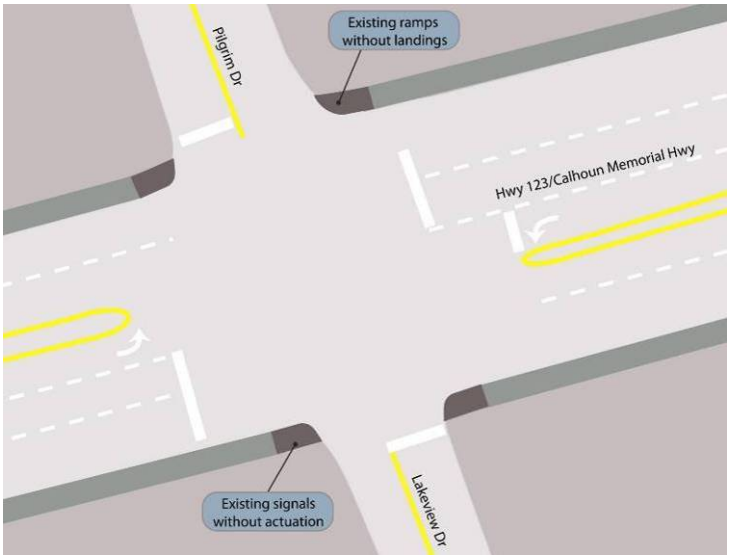
Existing conditions along SC123: Deteriorated and uncomfortable pedestrian infrastructure along with traffic, land use and streetscape patterns that create a hostile environment for pedestrians and cyclists.

Hwy 123 – Redevelopment and Pedestrian Infrastructure Improvements

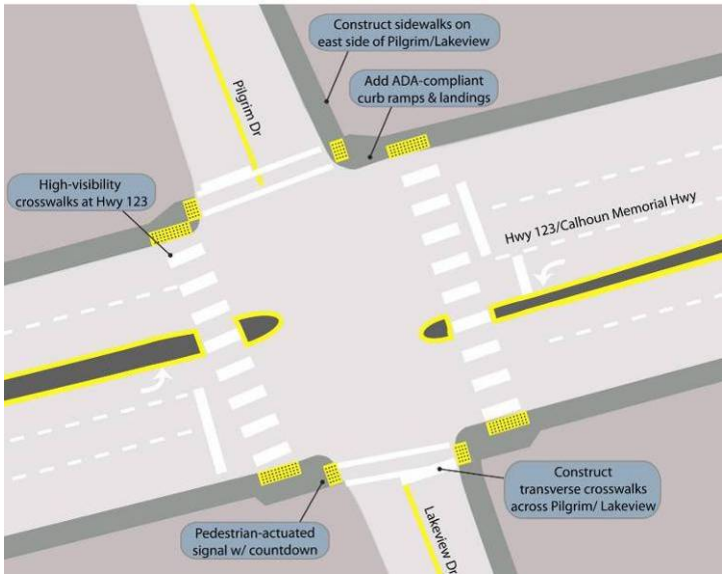
Proposed Interim Intersection Improvements: SC 123 and Pilgrim/Lakeview

City staff and community residents identified the need for pedestrian crossing improvements at the Hwy 123 and Pilgrim Dr/Lakeview Dr intersection. Pedestrians currently cross Hwy 123 to access nearby shopping and service destinations along 123, as well as neighborhoods and destinations north and south of the highway, such as the YMCA and schools.

A proposed refuge island, shown in the bottom image, enables pedestrians to focus on one direction of vehicle traffic at a time.



Existing Conditions at Hwy 123 and Pilgrim Dr/Lakeview Dr - narrow sidewalk ramps without landings, and no pedestrian crossing treatments



Potential Hwy 123 and Pilgrim Dr/Lakeview Dr Improvements - installing high-visibility crosswalks across Hwy 123, replacing the painted median with a divided raised median island, and providing pedestrian actuation for the signal

SC 135 Road Diet and Intersection Improvements

SC 135 is a 4-lane undivided roadway from north of downtown Easley to just past Fleetwood Drive. Traffic volumes are less than 10,000 vehicles per day on this segment of roadway, making it an ideal candidate for a "road diet" from 4 lanes to 2 lanes in each direction with intermittent center turn lanes and medians. As discussed in relation to the road diet concept for E. Main Street, a three lane roadway can serve just as many vehicles as a 4-lane undivided road, but can do so in a manner that provides safety benefits for all roadway users.

Project Boundaries: SC 135 North from Main Street to north of Fleetwood

Project Length: Approximately one mile

Existing Conditions along SC 135 northbound approaching Fleetwood: 4 lanes, undivided.

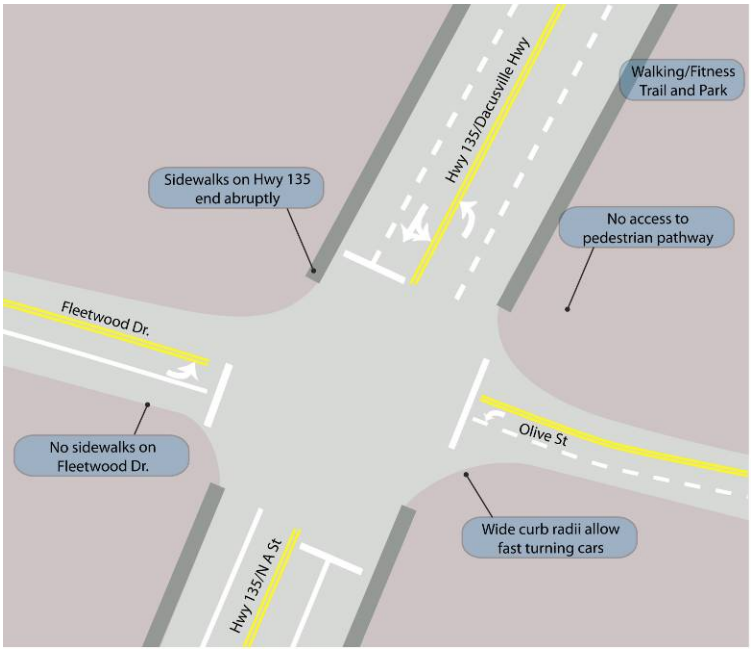
Proposed Improvements

- Reduce travel lanes from 4 to 2 with center turn lane
- Provide intermittent medians for pedestrian refuge and location for landscaping
- Add pedestrian crosswalks with striping and signage at key locations
- Add bike lanes

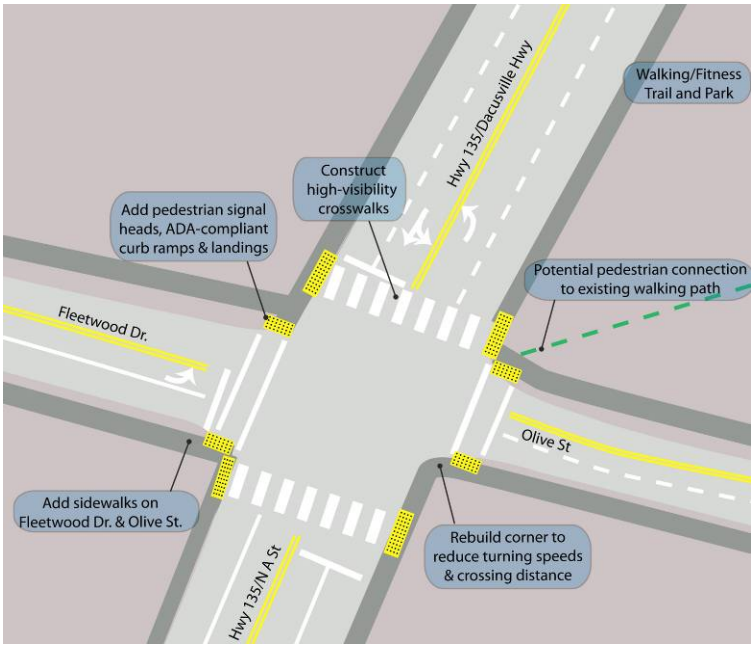
Proposed cross-section: One lane in each direction with bike lanes and intermittent medians to provide pedestrian refuge, traffic calming, and streetscape enhancements.

SC 135 Road Diet and Intersection Improvements

Located north of downtown Easley, the intersection of Fleetwood Drive/Olive Street and SC 135/Dacusville Highway is a signalized intersection where fast-moving automobile traffic presents difficulties for pedestrian crossings. The intersection is along a walking and bicycling route to Palmetto Health Baptist Hospital, a major destination and employment center for the City. There is also a fitness trail and passive park at the northeast quadrant of the intersection. The only existing sidewalks are along SC135. The curb radii on all corners are wide, which encourages drivers to not slow down to make a turn, which can endanger pedestrians waiting to cross the street at the curb.



Existing Conditions at SC135 and Fleetwood Dr/Olive St



Fleetwood Dr/Olive St and SC 135 Proposed Improvements:

- Install high-visibility crosswalks across Hwy 135
- Reduce curb-radii
- Add ADA ramps
- Provide pedestrian connection to fitness/walking path from sidewalk at northeast corner of the intersection
- Add pedestrian-activated signal heads

Safe Routes to School Improvements

Along school routes, increasing the visibility of pedestrians is crucial to safety for students. School routes should have a complete sidewalk network along primary routes and high visibility-crosswalks with pedestrian push buttons at signals. Crossing treatments can include in-pavement flashers, signage, speed zone warnings, and other crossing applications. Street corners should have ADA-accessible curb ramps.

Youths under age 16 may be unfamiliar with operating any type of vehicle on a road and may be nervous about cycling in a street with cars. Many younger children (ages seven to 11) use sidewalks for riding to schools or parks, which is acceptable in areas where pedestrian volumes are low and driveway visibility is high. Where on-street parking and/or landscaping obscures visibility, sidewalk riders may be exposed to a higher incidence of accidents. Older children (12 years or older) who consistently ride at speeds over ten miles per hour (mph) can be directed to riding on-street wherever possible. Children riding the wrong way on-streets are common, pointing to the need for safety education.

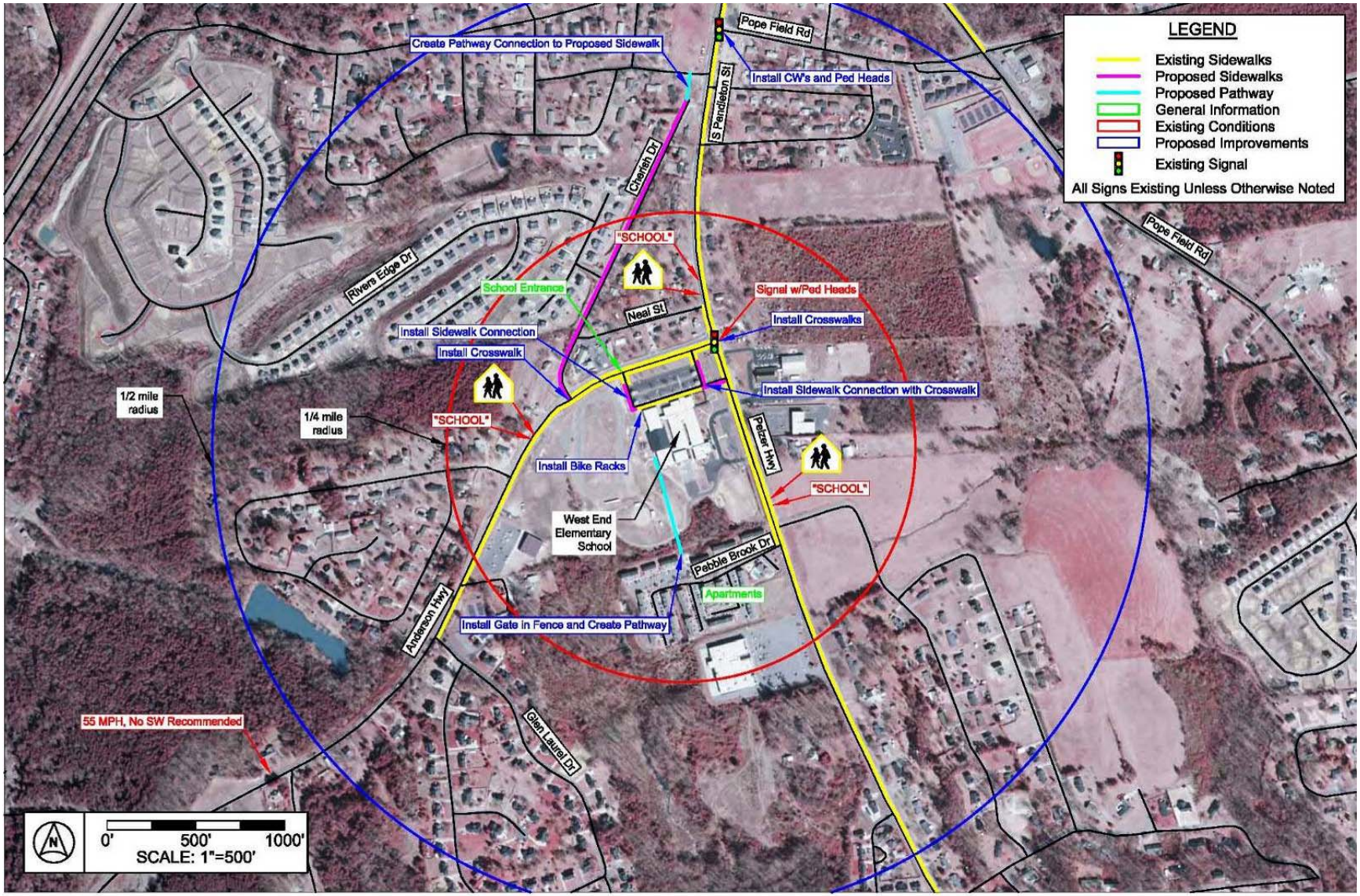
The student bicyclist will benefit from route markers, bike paths, bike lanes on low-speed streets, neighborhood routes, traffic calming, wider curb lanes, and educational programs. Casual bicyclists will also benefit from marked routes that lead to parks, schools, shopping areas, and other destinations. To encourage youths to ride, routes must have appropriate traffic volumes and speeds, and otherwise be safe enough for parents to allow youths to ride.

The City of Easley can work with the Pickens County school district to implement the first phase of a Safe Routes to School Program. This phase will use a walkabout (also known as a bicycle and pedestrian audit) to assess walking and bicycling conditions of streets adjacent to elementary schools and create a school travel plan. Parents, students, neighbors, and City planners and/or traffic engineers will be invited to join in the walkabout. Safety concerns, issues, and ideas will be recorded. These walkabouts can build upon the preliminary recommendations shown on the pages that follow.

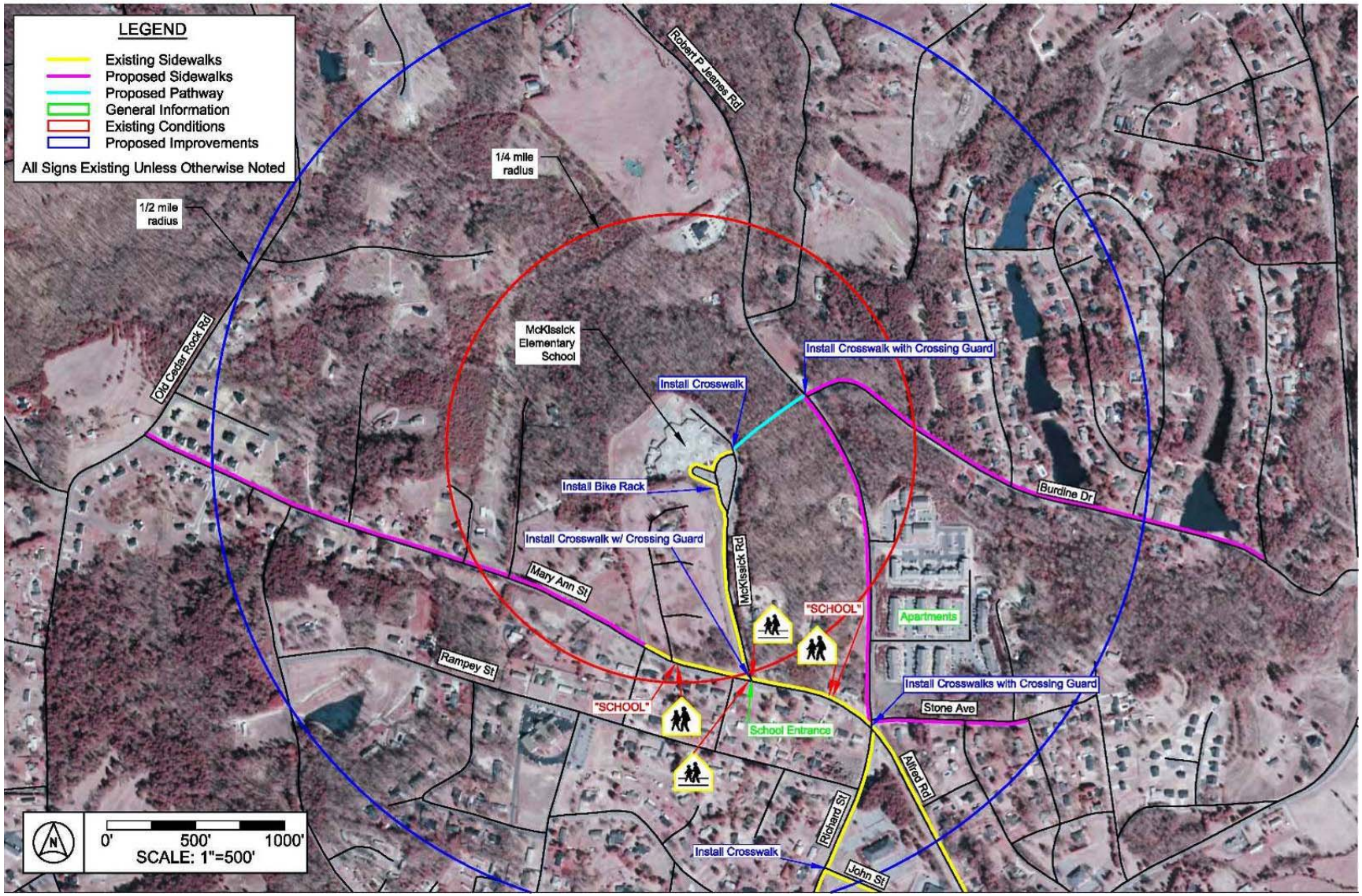
After the bicycle and pedestrian audit is conducted, maps for each elementary and middle school showing recommended routes to reach school, along with high-traffic intersections and routes to avoid, can be produced and distributed.

As a final step, a school travel plan should be produced for each school, including cost estimates and a prioritized project list. These infrastructure improvement plans will serve as a blueprint for future investments and can be used to apply for South Carolina Safe Routes to School funding

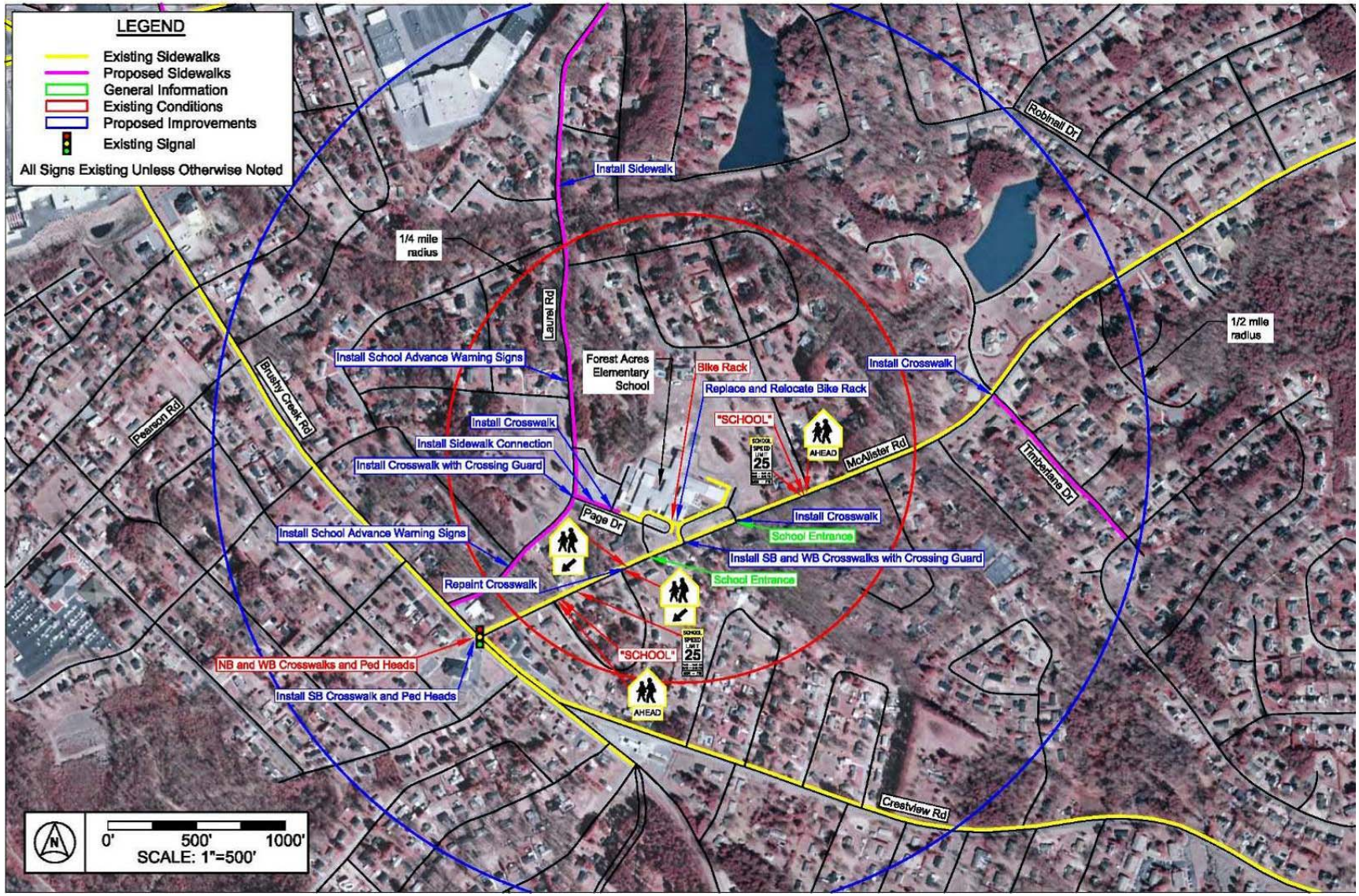
Map 3-4 through Map 3-9 depict recommended improvements for schools in Easley, based on Safe Routes to School standards. (Note: The future Easley High School location is not included because State SRTS funds do not typically fund improvements around High School. The current High School is included because of its location in the heart of Easley and because it is planned to become a middle school once the new high school is opened in 2011.)



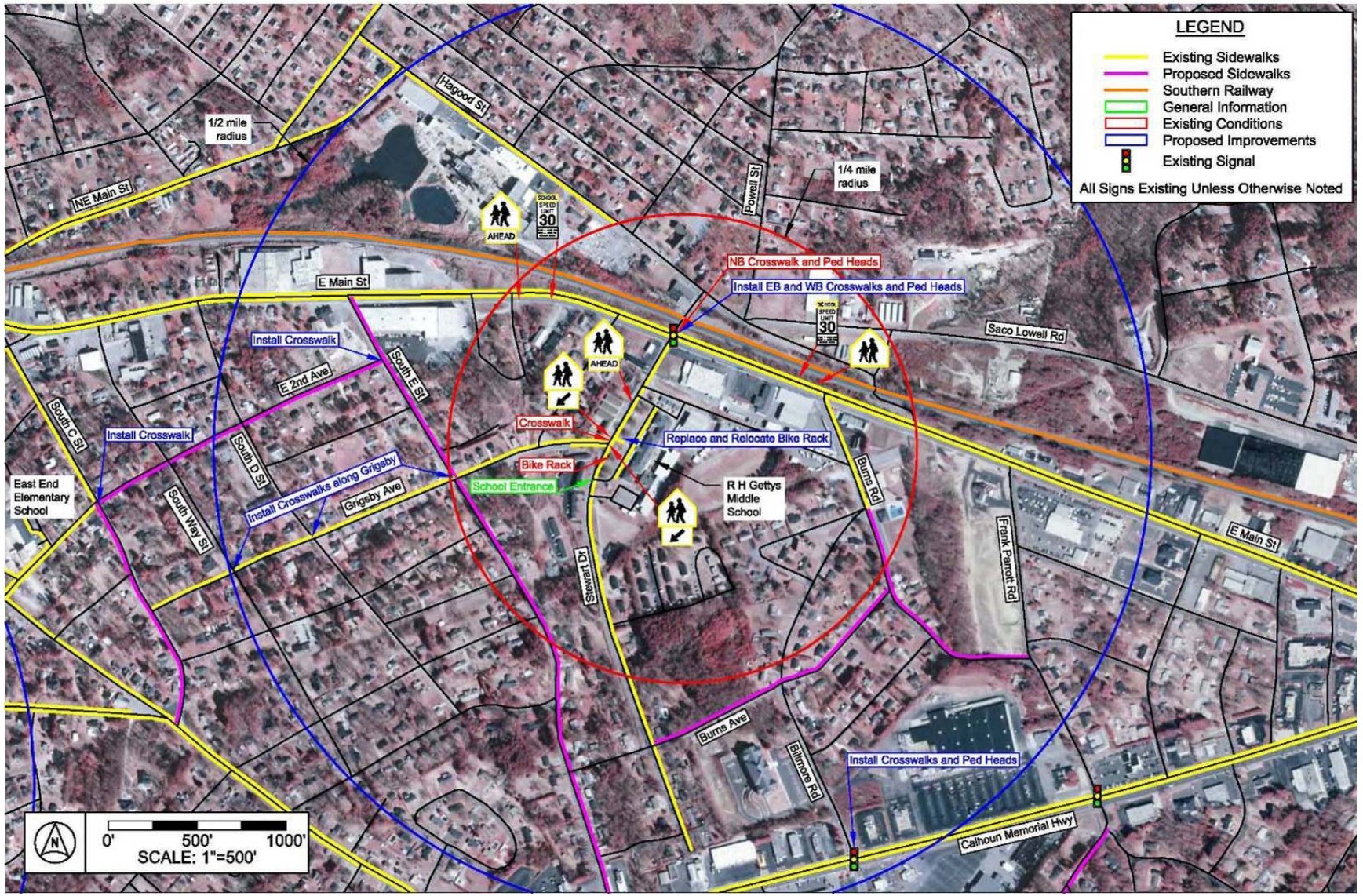
Map 3-4. West End Elementary Safe Routes to School Recommendations



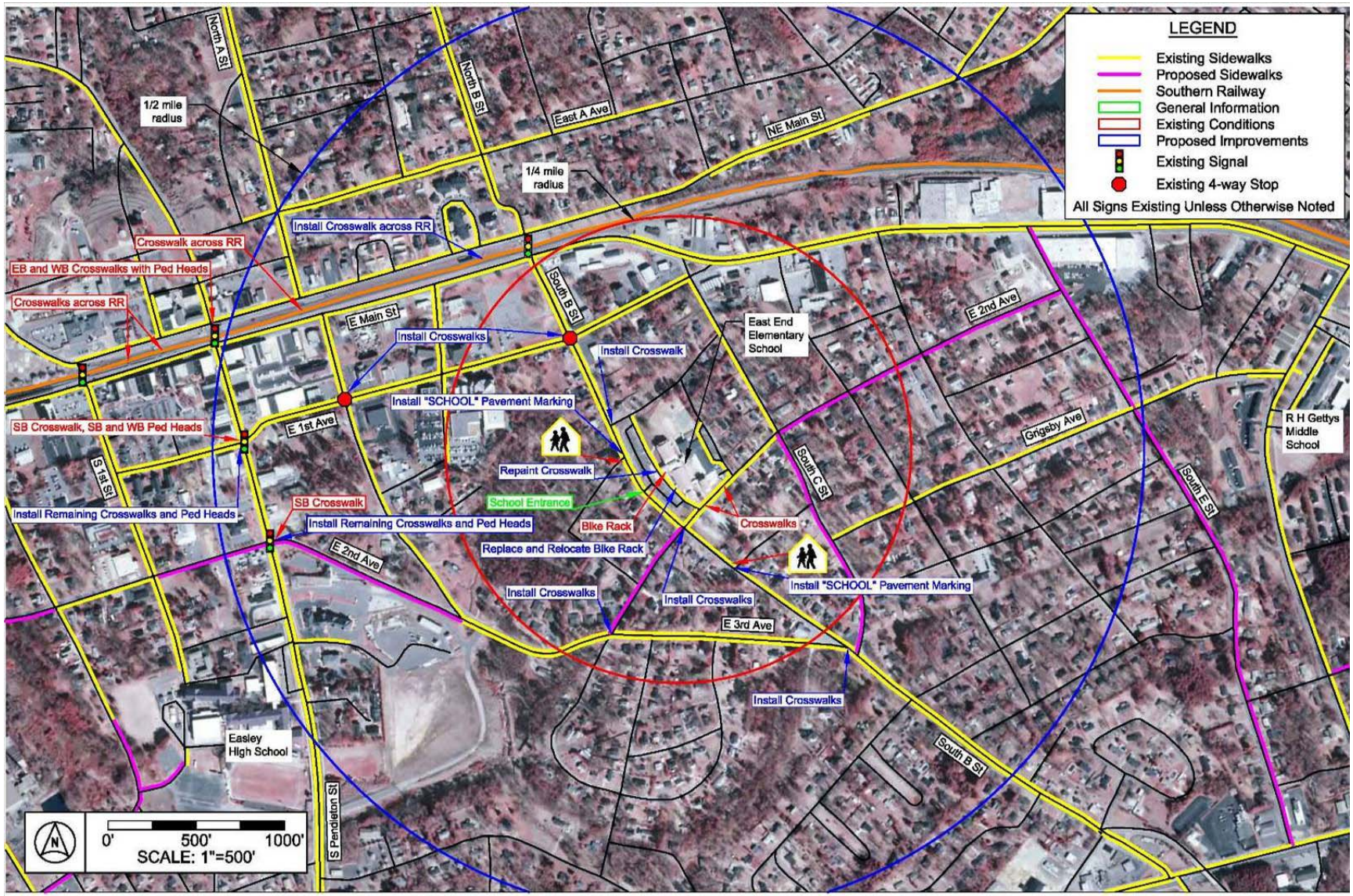
Map 3-5. McKissick Elementary Safe Routes to School Recommendations



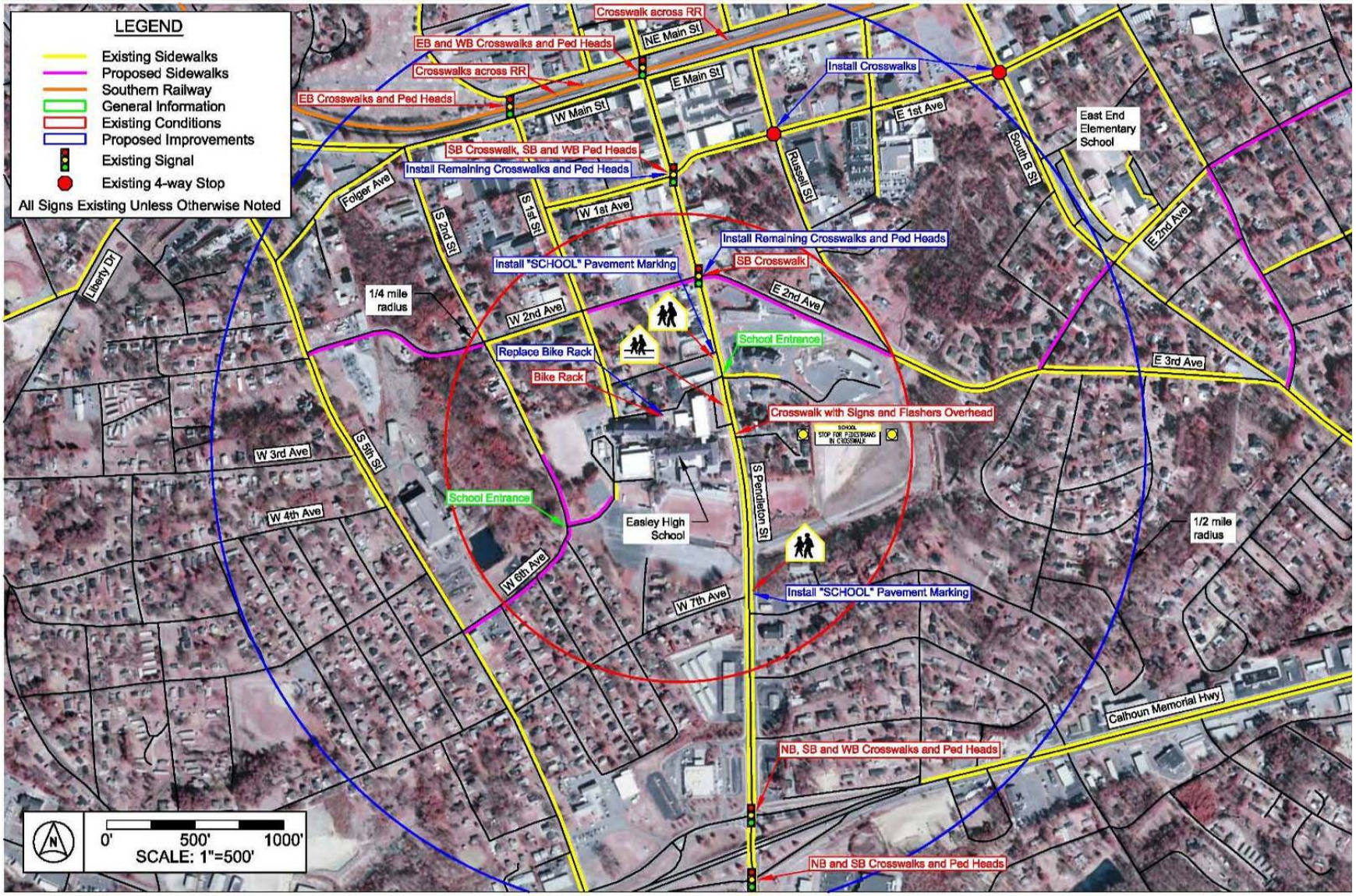
Map 3-6. Forest Acres Elementary School Safe Routes to School Recommendations



Map 3-7. R.H. Gettys Middle School Safe Routes to School Recommendations



Map 3-8. East End Elementary Safe Routes to School Recommendations



Map 3-9. Easley High School (future Middle School) Safe Routes to School Recommendations

Chapter 4. Design Guidelines and Standards

Introduction

This chapter discusses recommended design guidelines for Easley's pedestrian and bicycle system. Design recommendations are proposed for each of the non-motorized facility types proposed in this Plan including bikeways and walkways. This chapter also discusses other important issues that will be considered as the City improves existing facilities and expands the pedestrian and bicycle network. This detailed summary of design standards includes trail design standards and policy recommendations from a variety of sources, including:

- AASHTO Guide for the Development of Bicycle Facilities (the basis for SCDOT design standards)
- National Park Service Rivers and Trails Program
- U.S. Forest Service Trail Development Guide
- Manual on Uniform Traffic Control Devices
- FHWA/FRA "Best Practices" for Planning and Designing Rails-with-Trails
- American with Disabilities Act – Trail and Sidewalk Publications
- Complete Streets and Context Sensitive Solutions (CSS)

Design Guideline Contents

Sidewalks

Design Summary

Sidewalks are the most fundamental element of the walking network, providing an area for pedestrian travel separate from vehicle traffic. Sidewalks are typically constructed of concrete and are separated from the roadway by a curb, gutter or landscaped planting strip. Sidewalks are common in urban and suburban environments but are less common in rural areas and environments where objections to the "urban" character of sidewalks can arise. In rural areas, pedestrian travel commonly occurs along roadway shoulders, areas that are often unpaved.

Discussion

Installing new sidewalks can be costly, particularly if drainage improvements such as undergrounding of roadside culverts and installation of curb/gutter are part of the design. However, fixing short gaps in an existing sidewalk network is important to maximize system continuity, and can be a relatively low-cost fix. Alternatives to sidewalks in rural areas include pedestrian paths separated from a roadway by a bioswale (to serve drainage purposes), or traffic-calming measures on low-volume streets where pedestrians share the road with motorists.

The figures to the right show examples of poorly-designed and well-designed sidewalks, respectively. This section addresses design considerations contributing to a good pedestrian environment both along sidewalks and at intersections.

Narrow sidewalks can often be blocked by utilities

A well-designed sidewalk provides plenty of pedestrian space

Additional Guidance

The sidewalk corridor is between the roadway edge and right-of-way boundary, along the sides of streets. Providing adequate and accessible facilities should lead to increased numbers of people walking, improved safety, and the creation of social space. Attributes of well-designed sidewalks include the following:

- **Accessibility**: A network of sidewalks should be accessible to all users and meet ADA requirements.
- **Adequate width:** Two people should be able to walk side-by-side and pass a third person comfortably, and different walking speeds should be possible. In areas of intense pedestrian use, sidewalks should be wider to accommodate the higher 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 within the roadside area should contribute to the overall psychological and visual comfort of sidewalk users, without providing hiding places for attackers.
- **Social space:** Sidewalks should be more than areas to travel; they should provide places for people to interact. 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 and strengthen their identity.

Zones in the Sidewalk Corridor

Design Summary

The Sidewalk Corridor is typically located within the public right-of-way between the curb or roadway edge and the property line. The Sidewalk Corridor contains four distinct zones: the Curb Zone, the Furnishings Zone, the Through Pedestrian Zone, and the Frontage Zone, shown right.

Discussion

The Curb Zone

Curbs prevent water in the street gutters from entering the pedestrian space, discourage vehicles from driving over the pedestrian area, and make it easy to sweep the streets. In addition, the curb helps to define the pedestrian environment within the streetscape, although other designs can be effective for this purpose. At the corner, the curb is an important tactile element for pedestrians who are finding their way with the use of a cane

The Furnishings/Planting Zone

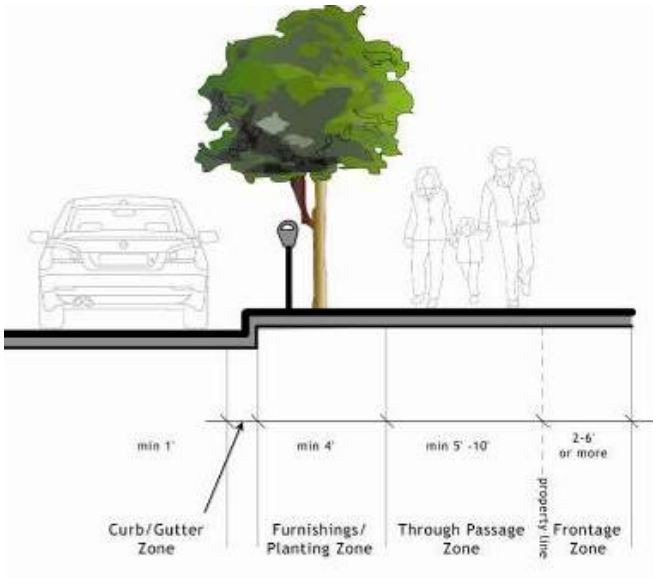
The Furnishings Zone buffers pedestrians from the adjacent roadway, and is also the area where elements such as street trees, signal poles, utility poles, street lights, controller boxes, hydrants, signs, parking meters, driveway aprons, grates, hatch covers, and street furniture are properly located. This is the area where people alight from parked cars.

The Through Pedestrian Zone

The Through Pedestrian Zone is the area intended for pedestrian travel. This zone should be entirely free of permanent and temporary objects.

The Frontage Zone

The Frontage Zone is the area between the Through Pedestrian Zone and the property line. This zone allows pedestrians a comfortable "shy" distance from the building fronts, in areas where buildings are at the lot line, or from elements such as fences and hedges on private property.



Sidewalk Zones

This sidewalk has plantings in the furnishing zone and in the frontage zone, and also provides sufficient through passage zone width

Sidewalk Widths

Design Summary

Sidewalks should be at least five feet wide, exclusive of the curb and other obstructions. This width:

- Enables two pedestrians (including wheelchair users) to walk side-by-side, or to pass each other comfortably
- Allows two pedestrians to pass a third pedestrian without leaving the sidewalk

Discussion

Proposed sidewalk guidelines apply to new development and depend on available street width, motor vehicle volumes, surrounding land uses, and pedestrian activity levels. Standardizing sidewalk guidelines for different areas of the City can ensure a minimum level of quality for all sidewalks.

Along higher volume arterial and collector streets sidewalks should be a minimum of 6 feet. In areas with street-fronting ground floor retail uses, such as downtown, sidewalks should be 12 to 18 feet wide to provide room for sidewalk activities such as outdoor dining and sidewalk sales.

The table to the right provides guidance for minimum sidewalk widths by street type. In some cases, it is possible to increase the dimensions of the sidewalk corridor, either through acquisition of right-of-way or public walkway easements, or by re-allocation of the overall right-of-way (such as by narrowing roadway travel lanes or reducing the number of lanes).

In the case of infill development, the dedication of public right-of-way or the granting of a public walkway easement to widen the sidewalk corridor may be included as a requirement for obtaining a building permit or land use approval.

Recommended Minimum Sidewalk Widths by Street Type:

	Curb	Planting Strip (and furnishing zone)	Sidewalk Width
Arterial and Collector Street	0.5 ft.	6-8 ft.*	6 ft.*
Local Neighborhood Street	0-1 ft.	0-8 ft.	5 ft.*
Commercial Walkways	0.5 ft.	2-8 ft.	6-12 ft.

*Note: short segments can have narrower widths in physically-constrained areas.

** As part of a roadway reconstruction project on a street with a narrow sidewalk corridor, project planners should first analyze the impact of reclaiming a portion of the existing right-of-way. If this proves impractical, the feasibility of acquiring additional right-of-way should be examined. Acquisition should be considered where its cost is reasonable in proportion to the overall project cost

Example of a sidewalk with trees and sufficient space for pedestrians to walk together

Addressing Sidewalk Obstructions

Design Summary

Obstructions to pedestrian travel in the sidewalk corridor typically include sign posts, utility and signal poles, mailboxes, fire hydrants and street furniture.

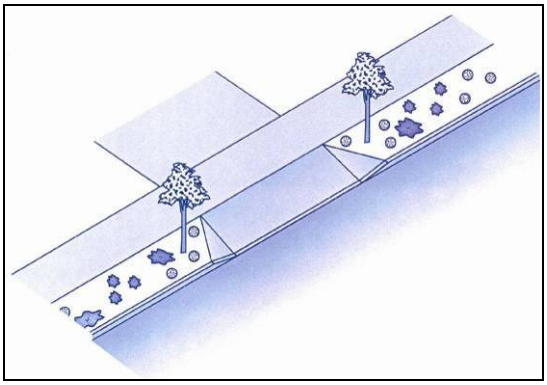
Discussion

Obstructions should be placed between the sidewalk and the roadway to create a buffer for increased pedestrian comfort. When sidewalks abut perpendicular or angle on-street parking, wheelstops should be placed in the parking area to prevent parked vehicles from overhanging in the sidewalk. When sidewalks abut hedges, fences, or buildings, an additional two feet of lateral clearance should be added to provide appropriate shy distance.

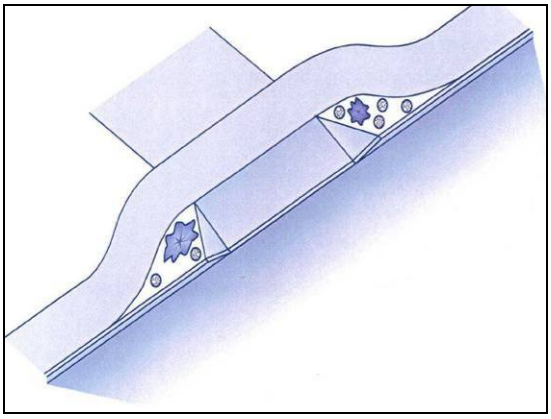
Driveways represent another sidewalk obstruction, especially for wheelchair users. The following techniques can be used to accommodate wheelchair users at driveway crossings:

- Reducing the number of accesses reduces the need for special provisions. This strategy should be pursued first.
- Constructing wide sidewalks avoids excessively steep driveway slopes. The overall width must be sufficient to avoid an abrupt driveway slope.
- Planter strips allow sidewalks to remain level, with the driveway grade change occurring within the planter strip (top graphic at right).
- Where constraints preclude a planter strip, wrapping the sidewalk around the driveway has a similar effect (middle graphic at right). However, this method may have disadvantages for visually-impaired pedestrians who follow the curb line for guidance.

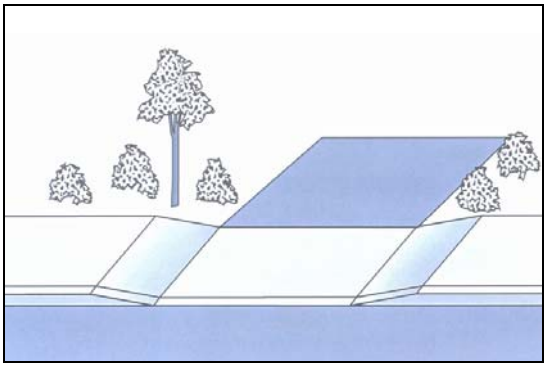
When constraints only allow curb-tight sidewalks, dipping the entire sidewalk at the driveway approaches keeps the cross-slope at a constant grade (bottom graphic at right). However, this may be uncomfortable for pedestrians and could create drainage problems behind the sidewalk.



Driveway apron utilizing the planting strip



Sidewalk wrapped around driveway



Entire sidewalk dips at driveway

Sidewalk Maintenance

Design Summary

Sidewalk surfaces that have settled or heaved over time can be a significant barrier for pedestrians. Surfaces that are smooth when newly installed may not stay that way, particularly where masonry units are installed without an adequate sub base. Knowledgeable design, wise material selection, good construction practices, and regular maintenance procedures can help ensure that differences in level between adjacent units do not exceed the limits of usability. Surface provisions for an accessible route limit allowable vertical differences in level between abutting surfaces.

Root Protection

Most sidewalk damage is caused as subsurface roots become thicker, lifting up the concrete slabs. To prevent extensive sidewalk damage, the appropriate rootstocks should be chosen for trees planted at each location. Trees and rootstocks that have extensive, shallow root systems should not be planted adjacent to sidewalks. Also, tree selection should be made based on the available soil, water and light conditions, and most importantly, the width of the planting strip.

Subsurface tree roots can lift concrete sidewalk slabs, causing the surface to become uneven

Plantings

Street trees are a highly desirable part of the pedestrian environment, especially large-canopied shade trees. Tree limbs should be trimmed to leave at least eight feet of clear space above the sidewalk. Where mature trees are in place, root barriers, root pruning techniques, and interlocking sidewalk pavers could be used to minimize damage.

Grates

All grates within the sidewalk should be flush with the level of the surrounding sidewalk surface, and should be located outside the Through Pedestrian Zone. Ventilation grates and tree well grates shall have openings no greater than ½" in width.

Designers should consider using tree well grates or treatments such as unit pavers in high pedestrian use areas.

Tree well grates can create uneven sidewalk conditions

Utility Covers

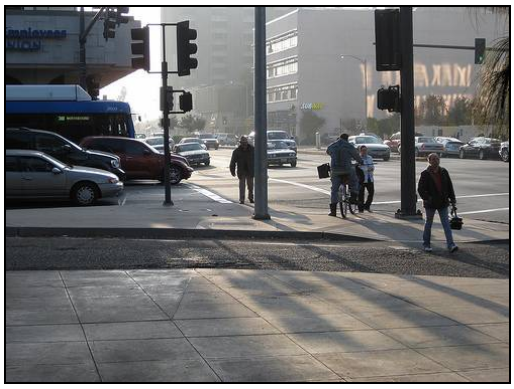
Utility covers should be located within the sidewalk Furnishings Zone. Utility covers must have a surface texture that is rough, with a slightly raised pattern. The surface should be slip-resistant even when wet. The cover should be flush with the surrounding sidewalk surface.

Intersections

Design summary

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 actions the pedestrian should take.
- **Accessibility** — All corner features, such as curb ramps, landings, call buttons, signs, symbols, markings, textures, must meet accessibility standards.
- **Separation from Traffic** — Corner design and construction must be effective in discouraging turning vehicles from driving over the pedestrian area.



Intersections with many user types should provide good crossing opportunities and clearly delineate crossing patterns

Discussion

In general, pedestrians are not inclined to travel very far out-of-direction to access a designated crosswalk, so providing sufficient crossings is critical for a safe pedestrian environment. Crosswalks can also be designed for increased visibility of pedestrians, and curb ramps and vehicle turning radii should also be considered for the pedestrian environment.

In areas of high pedestrian use, where priority is given to walking trips by City policies, it may appropriate to design for the convenience of pedestrians when considering signal placement and timing, even where it requires reducing the efficiency of vehicle progression.

Frequency of Crossing Treatments

Where	Not farther apart than	Not closer together than
Mixed-use streets and other High Pedestrian Use Areas	200 – 300 ft (60 – 90 m) where blocks are longer than 400 ft	150 ft (45 m)
Residential streets, Local Streets	Varies, based on adjacent uses. Do not prohibit for more than 400 ft	150 ft (45 m)

Additional Guidance

Frequency of Crossing Opportunities

In general, whatever their mode, people will not travel out of direction unless it is necessary. This behavior is observed in pedestrians, who will cross the street wherever they feel it is convenient. The distance between comfortable opportunities to cross a street should be related to the frequency of uses along the street that generate crossings (shops, High Pedestrian Use areas, etc.). In areas with many such generators, opportunities to cross should be very frequent. In areas where generators are less frequent, good crossing opportunities may also be provided with less frequency. The table above shows the recommended frequency of crossing treatments

Marked Crosswalks

Design Summary

At signalized intersections, all crosswalks should be marked.

At un-signalized intersections, crosswalks should be marked in order to:

- Help orient pedestrians in finding their way across a complex intersection, or
- Help show pedestrians the shortest route across traffic with the least exposure to vehicular traffic and traffic conflicts, or
- Help position pedestrians where they can best be seen by oncoming traffic.

At mid-block locations, crosswalks are marked where:

- There is a demand for crossing,
- There are no nearby marked crosswalks.

Although many exist, parallel markings are not the preferred way to mark crosswalks.

Discussion

Crosswalk markings indicate to pedestrians the appropriate route across traffic, to facilitate crossing by the visually impaired and remind turning drivers of potential conflicts with pedestrians.

Use ladder pavement markings for all crosswalks in Easley, including :

- School crossings
- Across arterial streets for pedestrian-only signals
- At mid-block crosswalks
- Where the crosswalk crosses a street not controlled by signals or stop signs.

A ladder pavement marking consists of 2 ft (610 mm) wide bars spaced 3 ft apart and located between one-foot-wide parallel stripes that are 10 ft apart.

Ladder pavement markings are the preferred crosswalk design for Easley

Additional Guidance

Additional considerations for marked crosswalks include:

- Where the Sidewalk Corridor is wider than 12 ft (3.7 m) crosswalks may be wider than the standard width to match the Sidewalk Corridor width.
- At mid-block locations, marked crosswalks are always accompanied by signing to warn drivers of the unexpected crosswalk.
- The crosswalk should be located to align as closely as possible with the Through Pedestrian Zone of the Sidewalk Corridor.
- Where traffic travel lanes are adjacent to the curb, crosswalks should be set back a minimum of 2 ft (610 mm) from the edge of the travel lane.
- Where there is poor motorist awareness of an existing crossing or at high-use locations, high-visibility crosswalks can increase safety for pedestrians and bicyclists. High-visibility crosswalks are particularly important along routes to school to improve visibility of school children.
- Pedestrian activated traffic signals can be used in high pedestrian usage areas.

In-pavement flashers may be appropriate on undivided roadways in densely developed areas that do not offer median refuges for crossing pedestrians. This measure should be used at higher risk crossing areas such as mid-block crossings or intersections with high traffic speeds or pedestrian volumes.

Reducing Crossing Distance

Design Summary

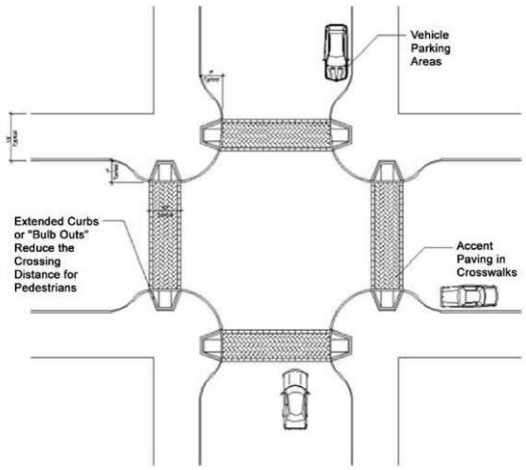
Crossing the street is both safer and more convenient when the crossing distance is short. Pedestrian exposure to travel lanes should be minimized to the greatest extent possible. What constitutes a short crossing distance will vary given the surroundings. In general, 50 ft (15 m) is the longest uninterrupted crossing a pedestrian should encounter at an unsignalized crosswalk.

Curb Extension

Curb extensions minimize pedestrian exposure during crossing by shortening crossing distance and give 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. (Note that if there is no parking lane, the extensions may be a problem for bicycle travel and truck or bus turning movements.)

Guidelines for use:

- 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 (3 m) and the two radii should be balanced to be nearly equal.



Curb extensions

Median Refuge Island

Median refuge islands minimize pedestrian exposure during crossing by shortening crossing distance and increasing the number of available gaps for crossing. They help improve safety by providing a crossing refuge, allowing pedestrians to gauge safe crossing of "one direction" of traffic at a time, and slowing motor vehicle traffic.

This treatment is appropriate where the roadway to be crossed is greater than 50 ft (15.2 m) wide or more than four travel lanes; can be used where distance is less to increase available safe gaps. Use 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.

Refuge islands at intersections should have a median "nose" that gives protection to the crossing pedestrian (see photo).

If a refuge island is landscaped, the landscaping should not compromise the visibility of pedestrians crossing in the crosswalk. Tree species should be selected for small diameter trunks and tree branches should be no lower than 14 ft (4.3 m). Shrubs and ground plantings should be no higher than 1 ft 6 in (457 mm).

Median refuge islands

A median refuge island should be at least 6 ft (1.8 m) wide between travel lanes and at least 20 ft (6.1 m) long. On streets with speeds higher than 25 mph there should also be double centerline marking, reflectors, and "KEEP RIGHT" signage.

Reducing Crossing Distance

Minimizing Curb Radius

In general, the smaller the curb radius, the better for pedestrians. In comparison to a large curb radius, a tight curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crosswalk, and requires vehicles to slow more as they turn the corner.

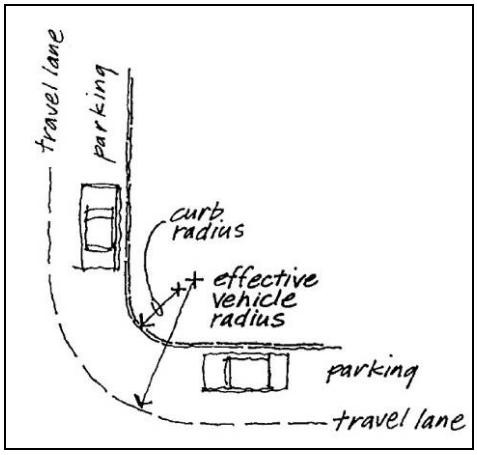
A small curb radius is also beneficial for street sweeping operations. The presence of a lane for parking or bicycles creates an "effective radius" that allows the designer to choose a radius for the curb that is smaller than the turning radius required by the design vehicle.

Choosing a Curb Radius

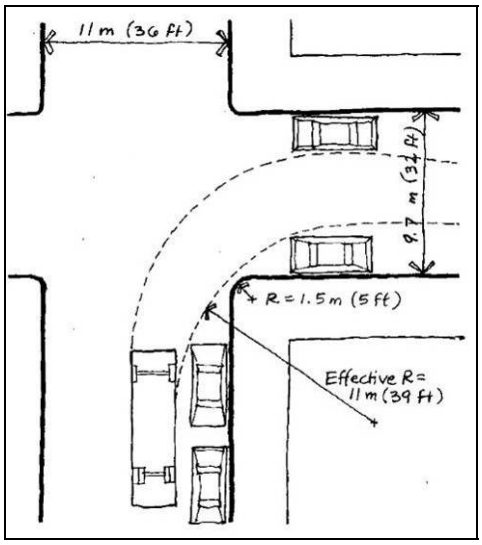
Several factors govern the choice of curb radius in any given location. These include the desired pedestrian area of the corner, traffic turning movements, the turning radius of the design vehicle, the geometry of the intersection, the street classifications, and whether there is parking or a bike lane (or both) between the travel lane and the curb.

The designer must balance all the factors, keeping in mind that the chosen radius should be the smallest possible for the circumstances. The radius may be as small as 3 ft (900 mm) where there are no turning movements, or 5 ft (1.5 m) where there are turning movements and there is adequate street width and a larger effective curb radius created by parking or bike lanes.

Designers sometimes consider that on-street parking will begin or end at the point of tangency or point of curvature of the corner radius. In practice, however, this point is not always evident in the field. Parking control should not be a factor in selecting curb radius.



An "effective radius" is created by the presence of a parking lane or bike lane.



Where there is an effective curb radius sufficient for turning vehicles, the actual curb radius may be as small as 5 ft (1.5 m).

ADA-Compliant Curb Ramps & Tactile Strips

Design Summary

- Every ramp must have a landing at the top and at the bottom
- Maximum ramp slope in the right-of-way is 1:12 (8.3%) with a cross slope of no more than 1:50 (2.0%)
- Minimum width of a ramp should be 3'-0".

Discussion

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.

The landing at the top of a ramp should be at least 4'-0" long and at least the same width as the ramp itself. It should 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. The landing, 4'-0" long, should be completely contained within the crosswalk and should not have a running slope of greater than 1:20 (5.0%).

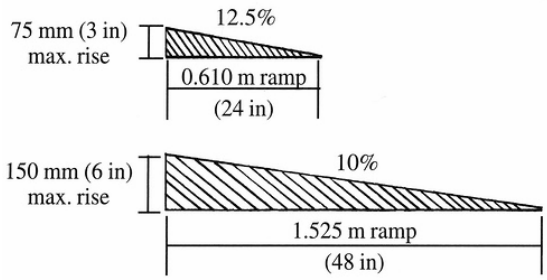
If the ramp lands on a dropped landing within the sidewalk or corner area where someone in a wheelchair may have to change direction, the landing must be a minimum of 5'-0" long and at least as wide as the ramp, although a width of 5'-0" is preferred. The landing should not slope more than 1:50 (2.0%) in any direction.

A single landing may serve as the top landing for one ramp and the bottom landing for another.

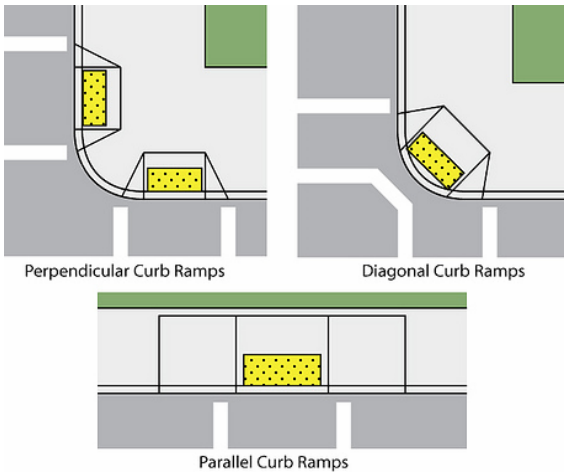
Raised Tactile Devices

Raised tactile devices (also known as truncated domes) alert people with visual impairments to changes in the pedestrian environment. They are used at all crossings with a grade change.

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.



Curb ramp maximum rise



Curb Ramp Options

Example of an ADA-compliant perpendicular curb ramp with a raised tactile strip

Accommodating Pedestrians at Signals

Pedestrian Push Buttons

Pedestrian push buttons are used to permit the signal controller to detect pedestrians desiring to cross. They can be used at an actuated or semi-actuated traffic signal at intersections with low pedestrian volumes, and at mid-block crossings

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.
- Marked (for example, with arrows) so that it is clear which signal is affected.

Where push buttons are installed in high pedestrian use areas, designers should consider operating the signal with a regular pedestrian phase during off-peak hours. U.S. Access Board recommends buttons be raised above or flush with their housing, and large enough for people with visual impairments to see, min. 2 in (51 mm). U.S. Access Board also recommends the force to activate the signals should be no more than 5 lbf.

Pedestrian push button examples

Pedestrian Signal Indication ("Ped Head") & Audible Pedestrian Signal

Pedestrian signal indicators indicate to pedestrians when to cross at a signalized crosswalk. All traffic signals should be equipped with pedestrian signal indications except where pedestrian crossing is prohibited by signage.

Audible pedestrian traffic signals provide crossing assistance to pedestrians with vision impairment at signalized intersections. To be considered for audible signals, the location must first meet the following basic criteria:

- The intersection must already be signalized.
- The location must be suitable to the installation of audible signals, in terms of safety, noise level, and neighborhood acceptance.
- There must be a demonstrated need for an audible signal device. The need is demonstrated through a user request.
- The location must have a unique intersection configuration and characteristics.

Audible signals should be activated by a pedestrian signal push button with at least a one second-delay to activate the sound.

Pedestrian signal indication

Traffic Calming

Design Summary

Traffic calming interventions slow traffic by modifying the physical environment of a street. The City of Easley can employ a variety of traffic calming measures, including speed humps, chokers, traffic circles and both full and partial street closures. Research into the efficacy of traffic calming devices to improve pedestrian safety has shown that traffic calming can reduce the number of automobile collisions. A Vancouver study published in 1997 showed an average collision reduction of 40 percent in four neighborhoods that used a combination of the traffic calming types described below. *(Study: Zein, S. R.; Geddes, E.; Hemsing, S.; Johnson, M., "Safety Benefits of Traffic Calming," Transportation Research Record Vol: #1578 pp. 3-10.)*

Street Trees

In addition to their aesthetic 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.

- If the sidewalk corridor is not wide enough to accommodate street trees, adding tree plantings in the parking lane is possible. These trees will have shortened life spans.
- The placement of plantings should consider potential for conflict with street sweeping and drainage.
- Street trees should be planted on both sides of all residential streets in order to provide visual interest and comfort for pedestrians and other street users (from RCCSDG)

Street trees buffer pedestrians from heavy vehicle traffic

Raised Crosswalks

Raised crosswalks are similar to speed humps, but are installed at intersections to elevate crosswalks. Raised sidewalks eliminate grade changes from the pedestrian path and give pedestrians greater prominence as they cross the street.

- Use detectable warnings at the curb edges to alert vision-impaired pedestrians that they are entering the roadway.
- May be designed so they do not have a slowing effect (for example, on emergency response routes).

Raised crosswalks require that drivers slow down to cross a crosswalk

Chicanes

Chicanes are a series of bulb-outs or narrowings that create an S-shaped route, causing traffic to slow down.

With no major pedestrian issues, chicanes can provide additional landscaping and street buffer area. Care should be taken to ensure that chicanes do not affect bicycle mobility.

Chicanes can be used on shared streets to reduce traffic speeds

Traffic Calming

Traffic Calming Circles

Traffic calming circles are circular islands in the middle of an intersection. Traffic circles slow traffic by altering the route of vehicles and by reducing the distance a driver can see down the street, which also causes traffic to slow.

- Unlike full roundabouts, traffic circles maintain the crosswalks at the intersection corners.
- However, in some cases it is necessary to move the crosswalks back to accommodate the turning radius of larger vehicles around the circle. In these cases the crosswalks are no longer aligned directly perpendicular with the corner, which could cause difficulty for persons with visual impairments
- Care should be taken to ensure that any landscaping in the circles uses low-growing shrubs that maintain visibility for pedestrians, particularly those in wheelchairs.

Traffic calming circles are attractive treatments for shared roadways

Street Closures/Diverters

There are three types of street closures:

- Diverters force traffic to turn right or left.
- Half roadway closures are constructed at intersections to allow only one-way traffic to continue through an intersection on one side of the street.
- Full roadway closures completely close a street segment to motor vehicle traffic from an intersection.

All three types of street closures benefit pedestrians and residents by diverting traffic away from residential streets. However, diverted traffic flows may cause problems on other streets. On streets with closures, emergency vehicle access may be limited.

Traffic diverters allow bicycle and pedestrian traffic to go through, while blocking automobiles

Shared Use Paths

Design Summary

Shared use paths can provide a desirable facility particularly for novice riders, recreational trips, and cyclists of all skill levels preferring separation from traffic. Shared use paths should generally provide directional travel opportunities not provided by existing roadways.

Discussion

Shared use paths serve both bicyclists and pedestrians and provide additional width over a standard sidewalk. These facilities may be constructed adjacent to roads, through parks or open space areas, along creeks, or along linear corridors such as abandoned railroad lines. In rural areas, shared use paths can serve as an alternative to formal curb, gutter and sidewalks. If an asphalt or concrete surface is not desired, paths can be constructed with decomposed granite or another aggregate material to better fit in with the rural environment. Regardless of the type, paths constructed next to the road must have some type of vertical (e.g., curb or barrier) or horizontal (e.g., landscaped strip) buffer separating the path area from adjacent vehicle travel lanes.

Shared use paths (also referred to as "greenway trails" and "multi-use paths") are often viewed as recreational facilities, but they are also important corridors for utilitarian trips

Additional Guidance

Elements that enhance shared use path design include:

- Providing frequent access points from the local road network; if spaced too far apart, users will have to travel out of direction to enter or exit the path, which will discourage use
- Placing directional signs to direct users to and from the path
- Building to a standard high enough to allow heavy maintenance equipment to use the path
- Limiting the number of at-grade crossings with streets or driveways
- Terminating the path where it is easily accessible to/from a street, preferably at a controlled intersection or at a dead-end street. If poorly designed, motor vehicle drivers will not expect them pedestrians and cyclists on or crossing the roadway
- Identifying and addressing potential safety and security issues up front
- Whenever possible, and especially where heavy use can be expected, separate bicycle and pedestrian ways should be provided to reduce conflicts

<u>Sidewalks as Shared Use Paths</u>

Utilizing or providing a sidewalk as a shared-use path is unsatisfactory for several reasons. Sidewalks are typically designed for pedestrian speeds and maneuverability and are not safe for higher bicycle speeds. Conflicts are common between pedestrians traveling at low speeds (e.g., exiting stores, parked cars, etc.) and bicyclists, as are conflicts with fixed objects (e.g., utility poles, mailboxes, parked cars extending into the sidewalk from a driveway). Walkers, joggers, skateboarders and in-line skaters can (and often do) change their speed and direction almost instantaneously, leaving bicyclists insufficient reaction time to avoid collisions.

Similarly, pedestrians often have difficulty predicting the direction an oncoming cyclist will take. At intersections, motorists are often not looking for bicyclists who are traveling at higher speeds than pedestrians) entering a crosswalk area, particularly when motorists are making a turn. Sight distance is often impaired by buildings, walls, fences and shrubs along sidewalks, especially at driveways. In addition, bicyclists and pedestrians often prefer to ride or walk side-by-side when traveling in pairs. Sidewalks are typically too narrow to enable this to occur without serious conflict between users.

It should also be noted that developing extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel. Wide sidewalks might encourage higher speed bicycle use and can increase the potential for conflicts with motorists at intersections, as well as pedestrians with fixed objects.

Shared Use Paths Along Roadways

Design Summary

The AASHTO *Guide for the Development of Bicycle Facilities* generally recommends against the development of shared use paths directly adjacent to roadways, but under certain conditions they may be considered an appropriate solution.

Discussion

Also known as "sidepaths", 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 cyclists enter or leave the path. This can also result in an unsafe situation where motorists entering or crossing the roadway at intersections and driveways do not notice bicyclists coming from their right, as they are not expecting traffic coming from that direction. Stopped cross-street motor vehicle traffic or vehicles exiting side streets or driveways may frequently block path crossings. Even bicyclists coming from the left may also go unnoticed, especially when sight distances are poor.

Example of a substandard sidepath in Molalla, OR

Additional Guidance

Additional concerns about shared use paths directly adjacent to roadways (e.g., with minimal or no separation) are:

- Half of bicycle traffic would ride against the normal flow of vehicle traffic, contrary to the rules of the road.
- When the path ends, cyclists riding against traffic tend to continue to travel on the wrong side of the street, as do cyclists making their way to the path. Wrong-way bicycle travel is a major cause of vehicle/bicycle crashes.
- At intersections, motorists crossing the path often do not notice bicyclists approaching from certain directions, especially where sight distances are poor.
- Bicyclists on the path are required to stop or yield at cross-streets and driveways, unless otherwise posted.
- Stopped vehicles on a cross-street or driveway may block the path.
- Because of the closeness of vehicle traffic to opposing bicycle traffic, barriers are often necessary to separate motorists from cyclists. These barriers serve as obstructions, complicate facility maintenance and waste available right-of-way.
- Paths directly adjacent to high-volume roadways diminish users' experience by placing them in an uncomfortable environment. This could lead to a path's underutilization.

As bicyclists gain experience and realize some of the advantages of riding on the roadway, some riders stop using paths adjacent to roadways. Bicyclists may also tend to prefer the roadway as pedestrian traffic on the shared use path increases due to its location next to an urban roadway. 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 bike lane width on the roadway, as the on-street bicycle facility will generally be superior to the "sidepath" for experienced cyclists and those who are cycling for transportation purposes. Bike lanes should be provided as an alternate (more transportation-oriented) facility whenever possible.

Shared use paths may be considered along roadways under the following conditions:

- The path will generally be separated from all motor vehicle traffic
- Bicycle and pedestrian use is anticipated to be high
- To provide continuity with an existing path through a roadway corridor
- The path can be terminated at each end onto streets with good bicycle and pedestrian facilities, or onto another well-designed path
- There is adequate access to local cross-streets and other facilities along the route
- Any needed grade separation structures do not add substantial out-of-direction travel
- The total cost of providing the proposed path is proportionate to the need

Shared Use Path Design

Design Summary

Width:

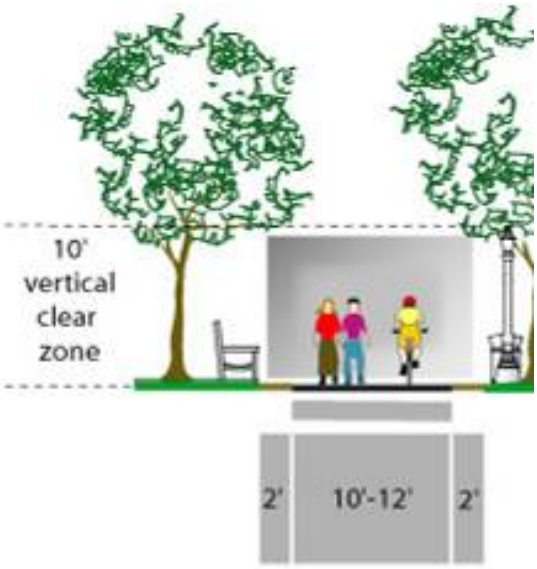
- 10' is the minimum allowed for a two-way shared use path and is only recommended for low traffic situations.
- 12' is recommended in most situations
- 12' or greater is recommended for heavy use situations with high concentrations of multiple users such as joggers, bicyclists, rollerbladers and pedestrians.

Lateral Clearance:

- A 2' or greater shoulder on both sides Overhead Clearance:
- Clearance to overhead obstructions should be 8' minimum, with 10' recommended.

Separation From Roadway:

- Where a shared use path must be adjacent to a roadway, a five foot minimum buffer should separate the path from the edge of the roadway, or a physical barrier of sufficient height should be installed.



Recommended shared use path design

Discussion

Asphalt is the most common surface for shared use paths. However, the material composition and construction methods used can substantially affect the longevity of the pathway. Thicker asphalt sections and a well-prepared subgrade will reduce deformation over time and reduce long-term maintenance costs.

The use of concrete surfacing for paths has proven to be the most suitable for long-term use. Using modern construction practices, concrete provides a smooth ride with low maintenance costs. Concrete paths can be placed with a slip-form paver. The surface must be cross-broomed. Crack-control joints should be saw-cut, not troweled. Concrete paths cost more to build than asphalt paths but do not become brittle, cracked and rough with age, or deformed by roots

Shared use paths should be designed with sufficient surfacing structural depth for the subgrade soil type to support maintenance and emergency vehicles. Where the path must be constructed over a very poor subgrade (wet and/or poor material), treatment of the subgrade with lime, cement or geotextile fabric should be considered.

The Cedar Lake Regional Trail in Minneapolis, MN has sufficient width to accommodate a variety of users

Trail Opportunities

Rails-to-Trails

In areas throughout the U.S., communities utilize abandoned railroad corridors to complete bikeway system gaps. The Swamp Rabbit Trail in Greenville is an excellent local example. Commonly referred to as Rails-to-Trails, these projects convert vacated rail corridors into off-street paths. Rail corridors offer several advantages, including relatively direct routes between major destinations, and following generally flat terrain. The Pickens Railroad Line is a potential opportunity for future rail-to-trail development in Easley.

Route-of-the-Hiawatha rail-to-trail in Wallace, ID

Rails-with-Trails

Rails-with-Trails projects typically consist of paths adjacent to active railroads. Offering the same benefits as rail-to-trail projects, these facilities have been proposed and developed within active rail corridors throughout the country. 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 trespassing, and numerous mid-block crossings may affect a project's feasibility.

The San Fernando Bike Path along the Metro Orange Line, Los Angeles

Utility Corridor Trails

Several utility and waterway corridors in Easley offer excellent trail development and bikeway gap closure opportunities. Utility corridors typically include powerline and sewer corridors. These corridors offer excellent transportation and recreation opportunities for cyclists of all ages and skills.

Utility corridor in Easley that could provide space for future trail

Path/Roadway Crossings

Design Summary

At-grade path/roadway crossings generally will fit into one of four basic categories:

- Type 1: Marked/Un-signalized; Type 1+: Marked/Enhanced
- Type 2: Route Users to Existing Signalized Intersection
- Type 3: Signalized/Controlled
- Type 4: Grade-separated crossings

Discussion

While at-grade crossings create a potentially high level of conflict between path users and motorists, well-designed crossings have not historically posed a safety problem, as evidenced by the thousands of successful paths around the United States with at-grade crossings. In most cases, path crossings can be properly designed at-grade to a reasonable degree of safety and meet existing traffic and safety standards.

At-grade crossings can be made safer and easier with pavement markings, pedestrian refuge islands, and other treatments

Evaluation of path crossings involves analysis of vehicular and anticipated path user traffic patterns, including vehicle speeds, traffic volumes (average daily traffic and peak hour traffic), street width, sight distance and path user profile (age distribution, destinations served). Crossing features for all roadways include warning signs both for vehicles and path users. The type, location, and other criteria are identified in the AASHTO's Guide for the Development of Bicycle Facilities and the MUTCD.

Consideration must be given for adequate warning distance based on vehicle speeds and line of sight, with visibility of any signing absolutely critical. Catching the attention of motorists jaded to roadway signs may require additional alerting devices such as a flashing light, roadway striping or changes in pavement texture. Signing for path users must include a standard "STOP" sign and pavement marking, sometimes combined with other features such as bollards or a kink in the pathway to slow bicyclists. Care must be taken not to place too many signs at crossings lest they begin to lose their 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. The actual crosswalk striping is a matter of local and State preference, and may be accompanied by pavement treatments to help warn and slow motorists. The effectiveness of crosswalk striping is highly related to local customs and regulations. In areas where motorists do not typically defer to pedestrians in crosswalks, additional measures may be required.

The following section identifies several path/roadway crossing treatments that should be considered for Easley's shared-use path system.

The proposed intersection approach that follows is based on established standards, published technical reports,[3] and experiences from cities around the country.[4]

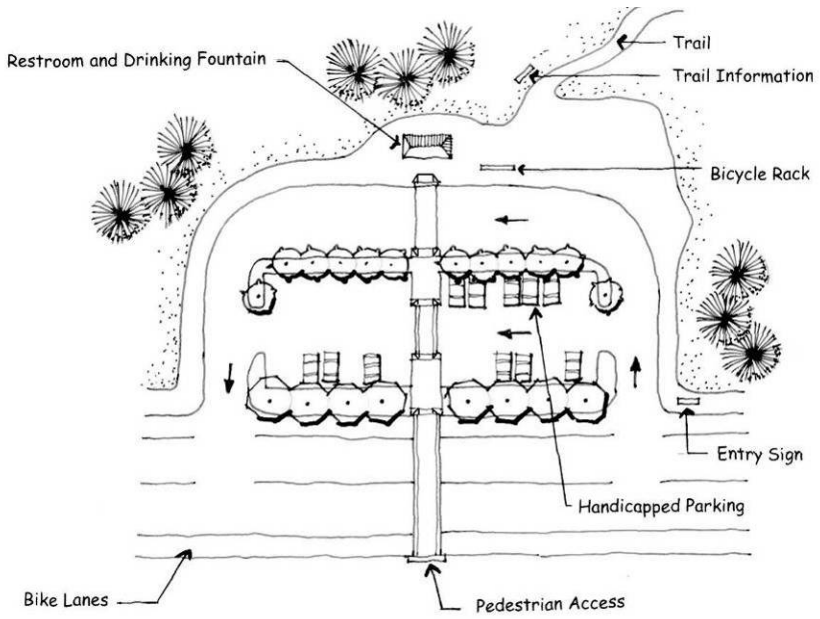
[3] Federal Highway Administration (FHWA) Report, "Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations."

[4] In particular, the recommendations in this report are based in part on experiences in cities like Portland (OR), Seattle (WA), Tucson (AZ), and Sacramento (CA), among others

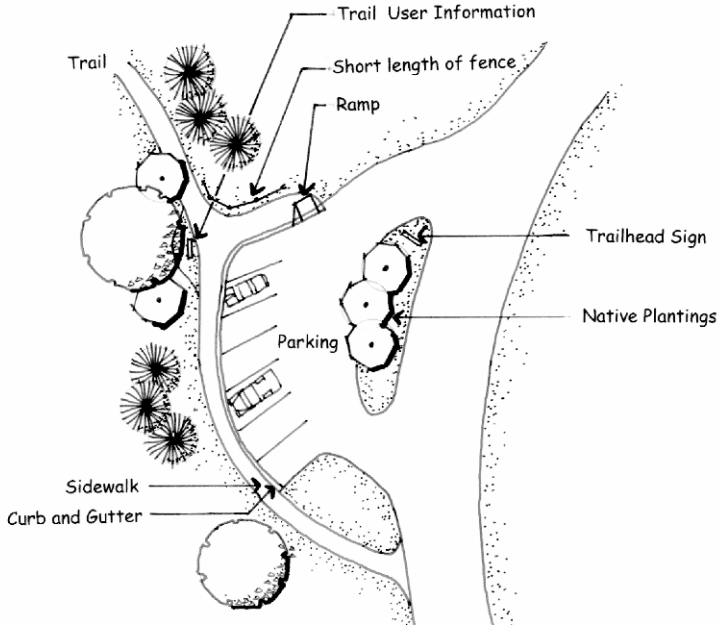
Trailheads

Good access to a path system is a key element for its success. Trailheads (formalized parking areas) serve the local and regional population arriving to the path system by car, transit, bicycle or other modes. Trailheads provide essential access to the trail system and include amenities like parking for vehicles and bicycles, restrooms (at major trailheads), and posted maps. A central information installation also helps users find their way and acknowledge the rules of the path. They are also useful for interpretive education about plant and animal life, ecosystems and local history.

Major Trailhead



Trailhead with Small Parking Area



Path Amenities

A variety of amenities can make a path inviting to the user. The following table highlights some common items that make path systems stand out. Costs vary depending on the design and materials selected for each amenity.

Interpretive Installations and Art

Interpretive installations and signs can enhance the users experience by providing information about the history of Easley and the surrounding area. Installations can also discuss local ecology, environmental concerns, and other educational information.

Local artists can be commissioned to provide art for the pathway system, making it uniquely distinct. Many pathway art installations are functional as well as aesthetic, as they may provide places to sit and play on.

Water Fountains and Bicycle Parking

Water fountains provide water for people (and pets, in some cases) and bicycle racks allow recreational users to safely park their bikes if they wish to stop along the way, particularly at parks and other desirable destinations.

Pedestrian-Scale Lighting, Furniture, and Restrooms

Pedestrian-scale lighting improves safety and enables the facility to be used year-round. It also enhances the aesthetic of the pathway. Lighting fixtures should be consistent with other light fixtures in the city, possibly emulating a historic theme.

Providing benches at key rest areas and viewpoints encourages people of all ages to use the pathway by ensuring that they have a place to rest along the way. Benches can be simple (e.g., wood slates) or more ornate (e.g., stone, wrought iron, concrete).

Restrooms benefit path users, especially in more remote areas where other facilities do not exist. Restrooms can be sited at major trailheads or at other strategic locations along the path system.

Maps and Signage

A comprehensive signing system makes a bicycle and pedestrian system stand out. Informational kiosks with maps at trailheads and other pedestrian generators can provide enough information for someone to use the network with little introduction – perfect for areas with high out-of-area visitation rates as well as the local citizens.

Path Safety and Security

Design Summary

Various design and programmatic measures can be taken to address safety issues on a shared-use path. This table summarizes key safety issues and strategies for minimizing impacts.

Discussion

Privacy of adjacent property owners

- Encourage the use of neighborhood friendly fencing and also planting of landscape buffers.
- Clearly mark path access points.
- Post path rules that encourage respect for private property.
- Strategically placed lighting.

Unwanted vehicle access on the path

- Utilize landscaping to define the corridor edge and path, including earth berms and large boulders.
- Use bollards at intersections
- Pass a motorized vehicle prohibited ordinance and sign the path.
- Create a Path Watch Program and encourage citizens to photograph report illegal vehicle use of the corridor.
- Lay the trail out with curves that allow bike/ped passage, but are uncomfortably tight for automobile passage

Litter and dumping

- Post rules encouraging pack-it-in/pack-it-out.
- Place garbage receptacles at trailheads.
- Strategically-place lighting, utilize light shields to minimize light in adjacent homes.
- Manage vegetation within the right-of-way to allow visual surveillance of the path from adjacent properties and from intersections.
- Encourage local residents to report incidents as soon as they occur.
- Remove dumpsites as soon as possible.

Trespassing

- Clearly distinguish public path right-of-way from private property through the use of vegetative buffers and good neighbor fencing.
- Post path rules encouraging respect for property.

Local on-street parking

- Post local residential streets as parking for local residents only to discourage path user parking.
- Place "no outlet" and "no parking" signs prior to path access points.

Surveillance from nearby buildings and pedestrian-scale lighting can increase trail safety

Crime

- Manage vegetation to ensure corridor visibility from adjacent streets/residences.
- Select shrubs that grow below 3 ft in height and trees that branch out greater than 6 ft in height.
- Place lights strategically and as necessary.
- Place benches and other amenities at locations with good visual surveillance and high activity.
- Provide mileage markers at quarter-mile increments and clear directional signage for orientation.
- Create a “Path Watch Program” involving local residents.
- Proactive law enforcement. Utilize the corridor for mounted patrol training.

Private use of corridor

- Attempt to negotiate win/win solutions with property owners.
- Eliminate where detrimental impact to path cannot be reasonably ameliorated.

Vandalism

- Select benches, bollards, signage and other site amenities that are durable, low maintenance and vandal resistant.
- Respond through removal or replacement in rapid manner.
- Keep a photo record of all vandalism and turn over to local law enforcement.
- Encourage residents to report vandalism.
- Create a Trail Watch Program; maintain good surveillance of the corridor.
- Involve neighbors in path projects to build a sense of ownership.
- Place amenities in well used/visible areas.

Path Safety and Security

Community Involvement with Safety on the Path

Summary

Creating a safe path environment goes beyond design and law enforcement and should involve the entire community. The most effective and most visible deterrent to illegal activity on Easley's path system will be the presence of legitimate path users. Getting as many "eyes on the corridor" as possible is a key deterrent to undesirable activity.

Discussion

Provide good access to the path

Access ranges from providing conveniently located trailheads along the path, to encouraging the construction of sidewalks to accommodate access from private developments adjacent to the path. Access points should be inviting and signed so as to welcome the public onto the path.

Good visibility from adjacent neighbors

Neighbors adjacent to the path can potentially provide 24-hour surveillance of the path and can become Easley biggest ally. Though some screening and setback of the path is needed for privacy of adjacent neighbors, complete blocking out of the path from neighborhood view should be discouraged. This eliminates the potential of neighbors' "eyes on the path," and could result in a "tunnel effect" on the path.

High level of maintenance

A well-maintained path sends a message that the community cares about the public space. This message alone will discourage undesirable activity along the path.

Programmed events

Community events along the path will help increase public awareness and thereby attract more people to use the path. Neighbors and residents can help organize numerous public events along the path which will increase support for the path. Events might include a day-long path clean up or a series of short interpretive walks led by long time residents or a park naturalist.

Community projects

Nearby businesses, community institutions, and residential neighbors often see the benefit of their involvement in the path development and maintenance. Businesses and developers may view the path as an integral piece of their site planning and be willing to take on some level of responsibility for the path. Creation of an adopt-a-path program should be explored to capitalize on this opportunity and build civic pride.

'Share the Path' and other community programs raise awareness of safety and other trail issues

Adopt-a-Path Program

Nearby businesses, community institutions, and residential neighbors often see the benefit of their involvement in the path development and maintenance. Businesses and developers may view the path as an integral piece of their site planning and be willing to take on some level of responsibility for the path. Creation of an adopt-a-path program should be explored to capitalize on this opportunity and build civic pride.

Path Watch Program

Partnering with local law enforcement, a path watch program would provide an opportunity for local residents to become actively involved in crime prevention along Easley's path system. Similar to Neighborhood Watch programs, residents are brought together to get to know their neighbors, and are educated on how to recognize and report suspicious activity.

Shoulder Bikeways

Design Summary

Typically found in rural areas, shoulder bikeways are paved roadways with striped shoulders (4'+) wide enough for bicycle travel. Shoulder bikeways often, but not always, include signage alerting motorists to expect bicycle travel along the roadway.

Discussion

In many cases, the opportunity to develop a full standard bike lane on a street where it is desirable may be many years. It is possible to stripe the shoulder in lieu of bike lanes if the area is 50 percent of the desirable bike lane width and the outside lane width can be reduced to the AASHTO minimum. If the available bike lane width is 2/3 of the desirable bike lane width, the full bike lane treatment of signs, legends, and an 8" bike lane line would be provided. Where feasible, extra width should be provided with pavement resurfacing jobs, but not exceeding desirable bike lane widths.

Wide Outside Lanes

A wide outside lane (13'-15') may be sufficient accommodation for bicyclists on streets with insufficient width for bike lanes.

Shoulder bikeways are appropriate along wide rural roads where vehicles can avoid passing close to bicyclists

Bike Lanes

Design Summary

Designated exclusively for bicycle travel, bike lanes are separated from vehicle travel lanes with striping and also include pavement stencils. Bike lanes are most appropriate on arterial and collector streets where higher traffic volumes and speeds warrant greater separation.

Discussion

Most commuter bicyclists would argue that on-street facilities are the safest and most functional facilities for bicycle transportation. Bicyclists have stated their preference for marked on-street bike lanes in numerous national surveys. The fact is that many bicyclists – particularly less experienced riders – are far more comfortable riding on a busy street if it has a striped and signed bike lane. Part of the goal of this Plan is to encourage new riders, and providing marked facilities such as bike lanes is one way of helping to persuade residents to give bicycling a try.

If properly designed, bike lanes can increase safety and promote proper riding. For this reason, bike lanes are desirable for bicycle commute routes along major roadways. Bike lanes help to define the road space for bicyclists and motorists, reduce the chance that motorists will stray into the cyclists' path, discourage bicyclists from riding on the sidewalk, and remind motorists that cyclists have a right to the road. One key consideration in designing bike lanes in an urban setting is to ensure that bike lanes and adjacent parking lanes have sufficient width so that cyclists have enough room to avoid a suddenly opened vehicle door.

Bike lanes with signage

Bike lane pavement markings in Portland, OR provide character to the roadway

Additional Guidance

The AASHTO Guide for the Development of Bicycle Facilities guidance notes that "longitudinal pavement markings should be used to define bicycle lanes." The guideline states that "if used, the bicycle lane symbol marking shall be placed immediately after an intersection and other locations as needed. The bicycle lane symbol marking shall be white. If the word or symbol pavement markings are used, Bicycle Lane signs shall also be used, but the signs need not be adjacent to every symbol to avoid overuse of the signs."

The following pages describe guidelines for implementing bike lanes on streets with on-street parking (both parallel and diagonal) and without parking. Additional sheets highlight particular considerations for bike lanes, including conflicts with right-turning motorists, left-turning bicycle movements, bike lanes at intersections, and innovative techniques for improving bike lane visibility (including colored bike lanes and bike boxes). The following sections discuss a variety of methodologies for retrofitting bike lanes to existing roadways.

Bike Lane Configurations

Bike Lane Adjacent to On-Street Parallel Parking

Design Summary

Bike Lane Width:

- 5' recommended
- 7' maximum (may encourage vehicle loading in bike lane)

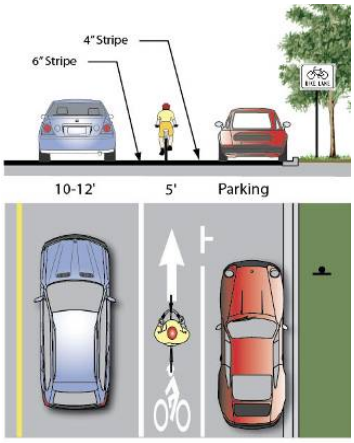
Discussion

Bike lanes adjacent to on-street parallel parking are common in the United States and can be dangerous for bicyclists if not designed properly. Crashes caused by a suddenly opened vehicle door are a common hazard for bicyclists using this type of facility. Wide bike lanes may encourage the cyclist to ride farther to the right (door zone) to maximize distance from passing traffic. Wide bike lanes may also cause confusion with unloading vehicles in busy areas where parking is typically full. Some alternatives include:

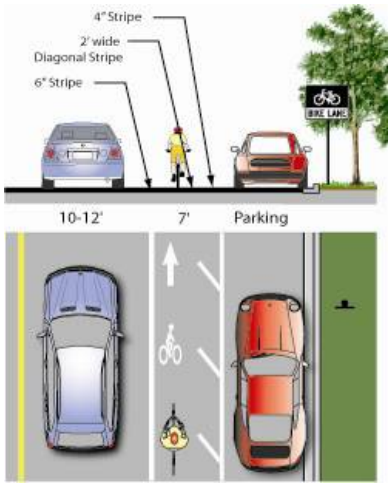
- Installing parking "T's" and smaller bike lane stencils placed to the left (see graphic at top left).
- Using diagonal stripes to encourage cyclists to ride on the left side of the bike lane (shown top right; this treatment is not standard and should be studied before use)
- Provide a buffer zone (preferred design; shown lower right) Bicyclists traveling in the center of the bike lane will be less likely to encounter open car doors. Motorists have space to stand outside the bike lane when loading and unloading
-

AASHTO *Guide for the Development of Bicycle Facilities* provides additional guidance for bike lanes adjacent to on-street parking:

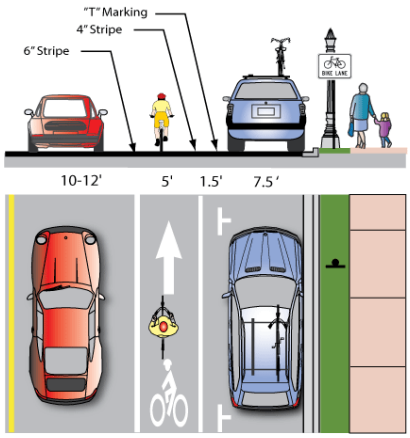
- "If parking is permitted, the bike lane should be placed between the parking area and the travel lane and have a minimum width of 5'. Where parking is permitted but a parking stripe or stalls are not utilized, the shared area should be a minimum of 11' without a curb face and adjacent to a curb face. If the parking volume is substantial or turnover is high, an additional 1'- 2' of width is desirable."



Minimum Design



Maximum Width



Preferred Design (if space is available)

Bike Lane Configurations

Bike Lane Without On-Street Parking

Design Summary

Bike Lane Width:

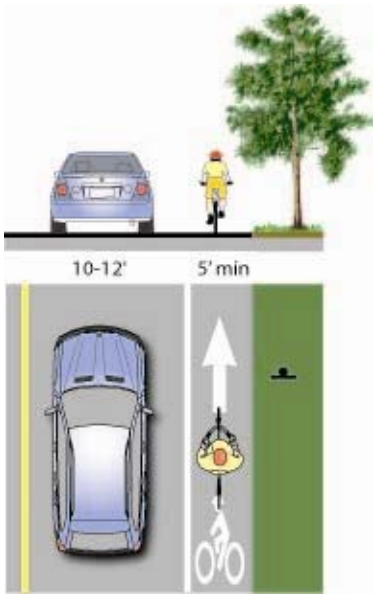
- 4' minimum when no gutter is present (rural road sections)
- 5' minimum when adjacent to curb and gutter

Recommended Width:

- 6' where right-of-way allows

Maximum Width:

- 8' Adjacent to arterials with high travel speeds (45 mph+)

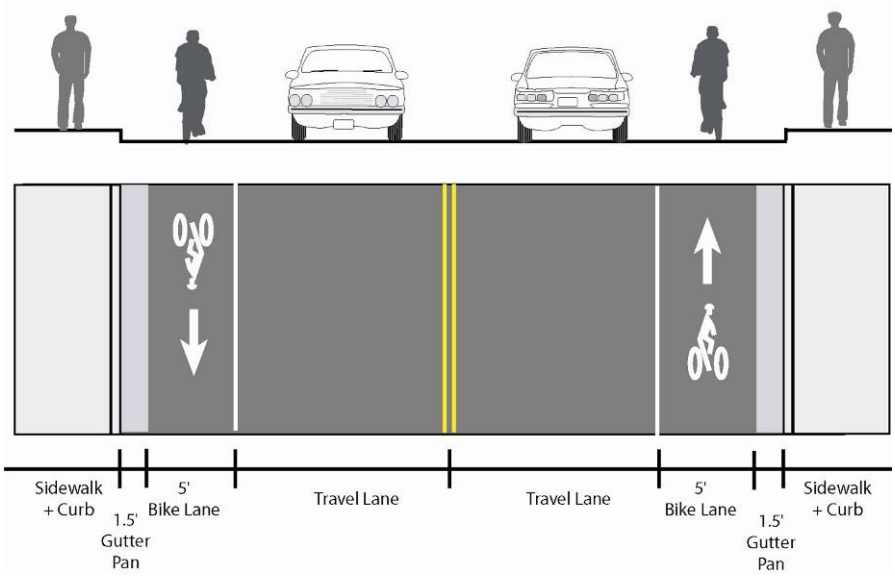


Recommended Design

Discussion

Wider bike lanes are desirable in certain circumstances such as on higher speed arterials (45 mph+) where a wider bike lane can increase separation between passing vehicles and cyclists. Wide bike lanes are also appropriate in areas with high bicycle use. A bike lane width of 6 to 8 feet makes it possible for bicyclists to ride side-by-side or pass each other without leaving the bike lane, increasing the capacity of the lane. Appropriate signing and stenciling is important with wide bike lanes to ensure motorists do not mistake the lane for a vehicle lane or parking lane.

Recommended Design



Two Lane Cross-Section with No Parking *(Bike lanes may be 4' in width under constrained circumstances)*

Colored Bike Lanes in Conflict Areas

Discussion

Cyclists are especially vulnerable at locations where the volume of conflicting vehicle traffic is high, and where the vehicle/bicycle conflict area is long. Some cities are using colored bike lanes to guide cyclists through major vehicle/bicycle conflict points. These conflict areas are locations where motorists and cyclists must cross each other's path (e.g., at intersections or merge areas). Colored bike lanes typically extend through the entire bicycle/vehicle conflict zone (e.g., through the entire intersection, or through the transition zone where motorists cross a bike lane to enter a dedicated right turn lane.

Guidance

Although colored bike lanes are not an official standard at this time, they continue to be successfully used in cities, including Portland, OR, Philadelphia, PA, Cambridge, MA, Toronto, Ontario, Vancouver, BC and Tempe, AZ. This treatment typically includes signage alerting motorists of vehicle/ bicycle conflict points. Portland's *Blue Bike Lane* report found that significantly more motorists yielded to bicyclists and slowed or stopped before entering the conflict area after the application of the colored pavement.

Color Considerations:

There are three colors commonly used in bike lanes: blue, green, and red. All help the bike lane stand out in conflict areas. Green is the color recommended for use in Easley.

Advantages of colored bike lanes at conflict points

- Draws attention to conflict areas
- Increases motorist yielding behavior
- Emphasizes expectation of bicyclists on the road

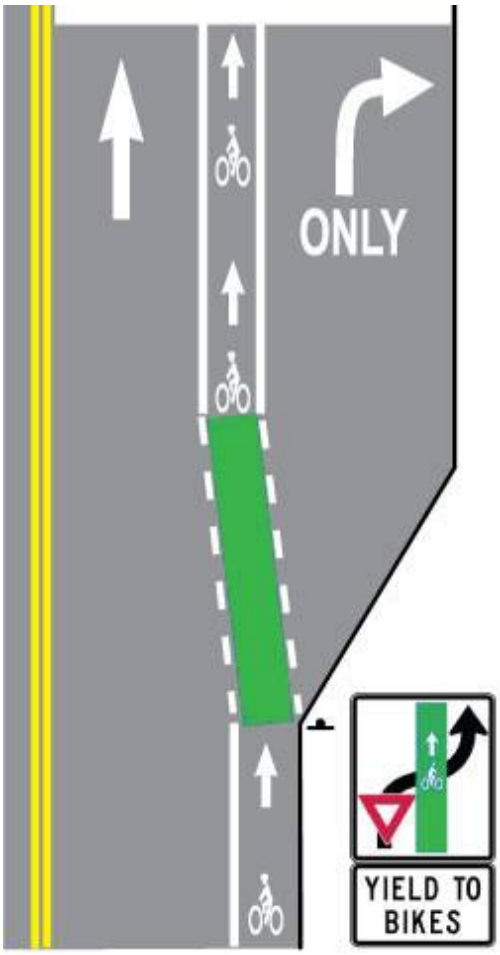
Disadvantages / potential hazards

- Not currently an adopted standard marking in the U.S.

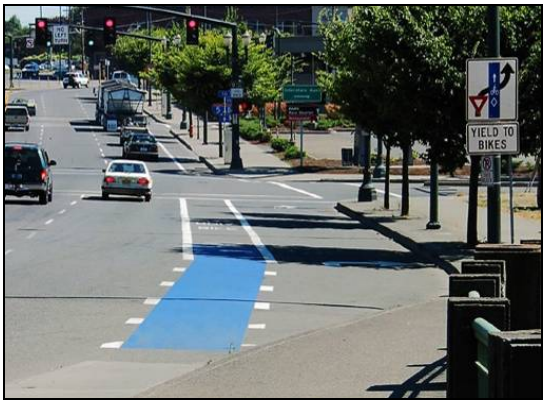
This treatment is not currently present in any state or federal design standards.

- The City of Colombia, MO is currently testing this application for possible inclusion In the 2009 MUTCD update.

Portland Office of Transportation (1999). *Portland's Blue Bike Lanes: Improved Safety through Enhanced Visibility*. Available: www.portlandonline.com/shared/cfm/image.cfm?id=58842



Recommended Design



Portland, OR implemented blue bike lanes and has since changed to green

Retrofitting Existing Streets with Bike Lanes

Design Summary	Discussion
This section describes several strategies for retrofitting bike lanes to existing streets. Treatments include: ▪ Roadway widening ▪ Lane narrowing ▪ Lane reconfiguration ▪ Parking reduction Although largely intended for major streets, these measures may be appropriate on some lower-order streets where bike lanes would best accommodate cyclists.	Most major streets in Easley are characterized by conditions (e.g., high vehicle speeds and/or volumes) for which dedicated bike lanes are appropriate to accommodate safe and comfortable riding. Although opportunities to add bike lanes through roadway widening may exist in some locations, most major streets in Easley pose physical and other constraints requiring street retrofit measures within existing curb-to-curb widths. As a result, many of the recommended measures effectively reallocate existing street width through striping modifications to accommodate dedicated bike lanes.

Retrofitting Existing Streets with Bike Lanes - Roadway Widening

Design Summary

Bike Lane Width:

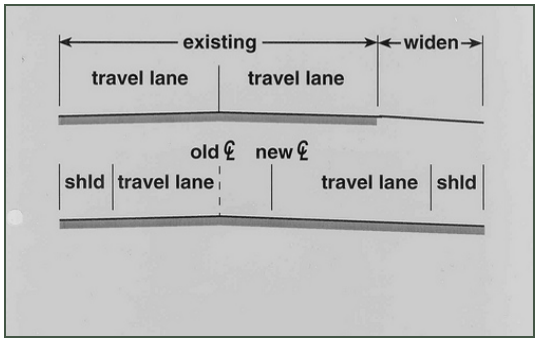
- 6' preferred
- 4' minimum (see bike lane guidance)

Discussion

Bike lanes could be accommodated on several streets with excess right-of-way through shoulder widening. Although street widening incurs higher expenses compared with re-striping projects, bike lanes could be added to streets currently lacking curbs, gutters and sidewalks without the high costs of major infrastructure reconstruction.

As a long-term measure, the City of Easley should find opportunities to add bike lanes to other major streets where they are needed. Opportunities include adding bike lanes as streets and bridges are widened for additional auto capacity or as property development necessitates street reconstruction.

Guidance for this treatment comes from the AASHTO *Guide for the Development of Bicycle Facilities.*



Design guidance for widening roadway shoulders to accommodate bicycles

Roadway widening is preferred on roads lacking curbs, gutters and sidewalks

Retrofitting Existing Streets with Bike Lanes

Retrofitting Existing Streets with Bike Lanes - Lane Narrowing (Road Diet 1)

Design Summary

Vehicle Lane Widths:

- Before: 12 to 15 feet; after: 10 to 11 feet

Bike Lane Width:

- See bike lane design guidance

Discussion

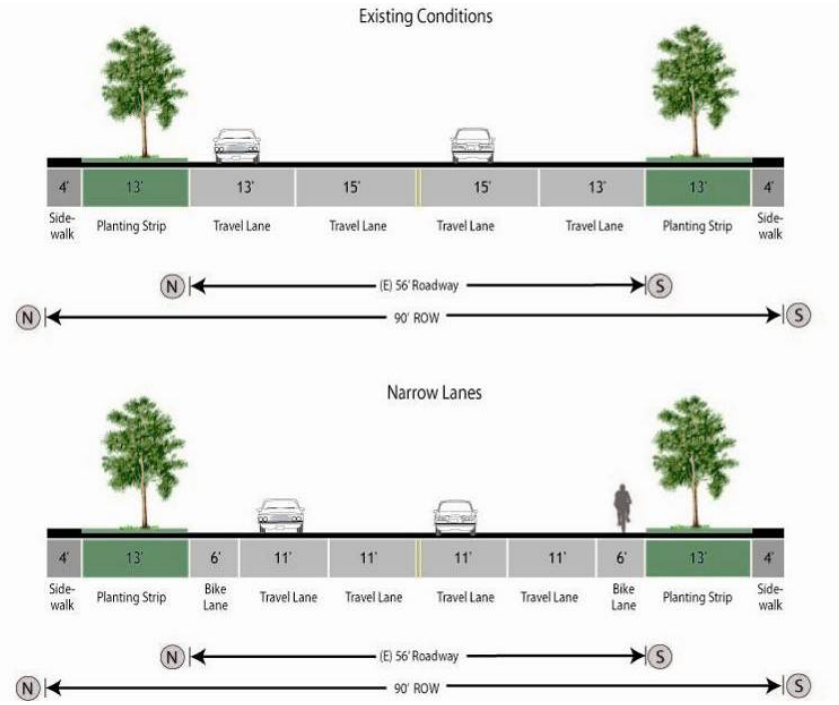
Also called a 'Road Diet', lane narrowing utilizes roadway space that exceeds minimum standards to create the needed space to provide bike lanes. Many Easley roadways have existing lanes that are wider than those prescribed in local and national roadway design standards. Most standards allow for the use of 11-foot and sometimes 10-foot wide travel lanes to create space for bike lanes.

Special consideration should be given to the amount of heavy vehicle traffic and horizontal curvature before the decision is made to narrow travel lanes. Center turn lanes can also be narrowed in some situations to free up pavement space for bike lanes.

Design Example

This street previously had 13' lanes, which were narrowed to accommodate bike lanes without removing a lane

Recommended Design



Example of vehicle travel lane narrowing to accommodate bike lanes

Retrofitting Existing Streets with Bike Lanes

Retrofitting Existing Streets with Bike Lanes - Lane Reconfiguration (Road Diet 2)

Design Summary

Vehicle Lane Widths:

- Width depends on project. No narrowing may be needed if a lane is removed.

Bike Lane Width:

- See bike lane design guidance

Discussion

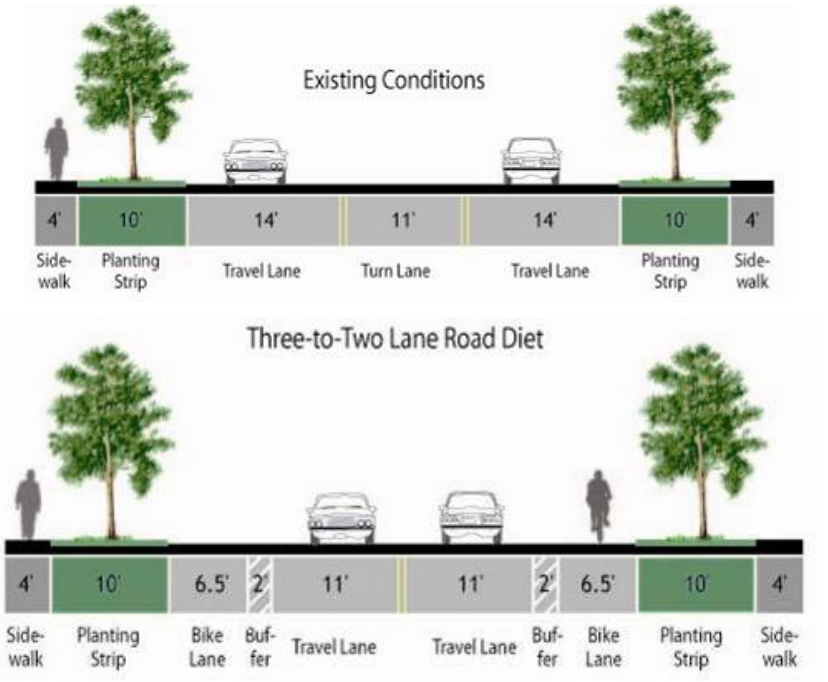
The removal of a single travel lane will generally provide sufficient space for bike lanes on both sides of a street. Streets with excess vehicle capacity provide opportunities for bike lane retrofit projects. Depending on a street's existing configuration, traffic operations, user needs, and safety concerns, various lane reduction configurations exist. For instance, a four-lane street (with two travel lanes in each direction) could be modified to include one travel lane in each direction, a center turn lane, and bike lanes. Prior to implementing this measure, a traffic analysis should identify impacts.

This treatment is currently slated for inclusion in the 2009 AASHTO *Guide for the Development of Bicycle Facilities.*

Design Example

This road was re-striped to convert four vehicle travel lanes into three travel lanes with bike lanes

Recommended Design



Example of vehicle travel lane reconfiguration to accommodate bike lanes

Shared Lane Markings

Design Summary

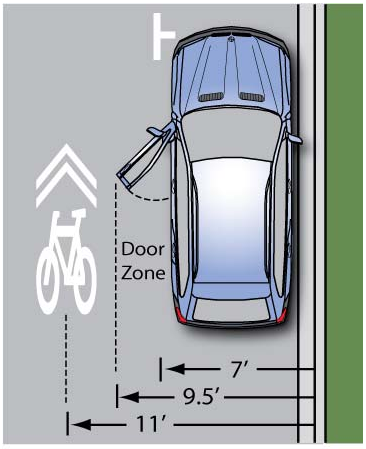
Shared lane markings (also known as "sharrows") are high-visibility pavement markings that help position bicyclists within the travel lane. These markings are often used on streets where dedicated bike lanes are desirable but are not possible due to physical or other constraints. Sharrows are placed strategically in the travel lane to alert motorists of bicycle traffic, while also encouraging cyclists to ride at an appropriate distance from the "door zone" of adjacent parked cars. Placed in a linear pattern along a corridor (typically every 100-200 feet), sharrows also encourage cyclists to ride in a straight line so their movements are predictable to motorists. These pavement markings have been successfully used in many small and large communities throughout the U.S. Shared lane markings made of thermoplastic tend to last longer than traditional paint.

Door Zone Width:

The width of the door zone is generally assumed to be 2.5 feet from the edge of the parking lane.

Recommended Placement:

- At least 11' from face of curb (or shoulder edge) on streets with on-street parking
- At least 4' from face of curb (or shoulder edge) on streets without on-street parking



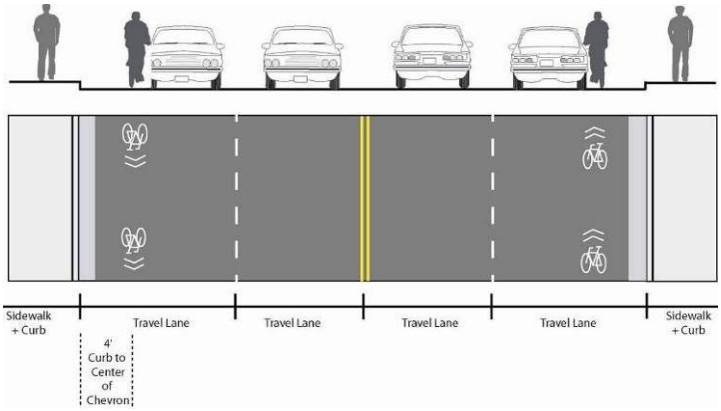
Shared lane marking placement guidance with on-street parking

Shared lane markings can be used minor and major roadways

Discussion

The Draft 2009 MUTCD notes that sharrows should not be placed on roadways with a speed limit over 35 MPH, and that when used, the marking should be placed after an intersection and spaced at intervals no greater than 250 ft thereafter. Placing shared lane markings between vehicle tire tracks will increase the life of the markings.

Recommended Design



Recommended Shared Lane Markings

Shared Roadways/Bicycle Boulevards

Design Summary

Shared roadways are low-volume streets where motorists and bicyclists share the same space. Treatments for shared roadways fall within five "application levels" based on their level of physical intensity, with Level 1 representing the least physically-intensive treatments that could be implemented at relatively low cost. Identifying appropriate application levels for individual shared roadways provides a starting point for selecting appropriate site-specific improvements.

Discussion

Traffic calming and other treatments along the corridor reduce vehicle speeds so that motorists and bicyclists generally travel at the same speed, creating a safer and more-comfortable environment for all users. Shared roadways incorporate treatments to facilitate safe and convenient crossings where bicyclists must traverse major streets. They work best in well-connected street grids where riders can follow reasonably direct and logical routes and when higher-order parallel streets exist to serve thru vehicle traffic.

Shared roadways are low-speed streets that provide a comfortable and pleasant experience for cyclists

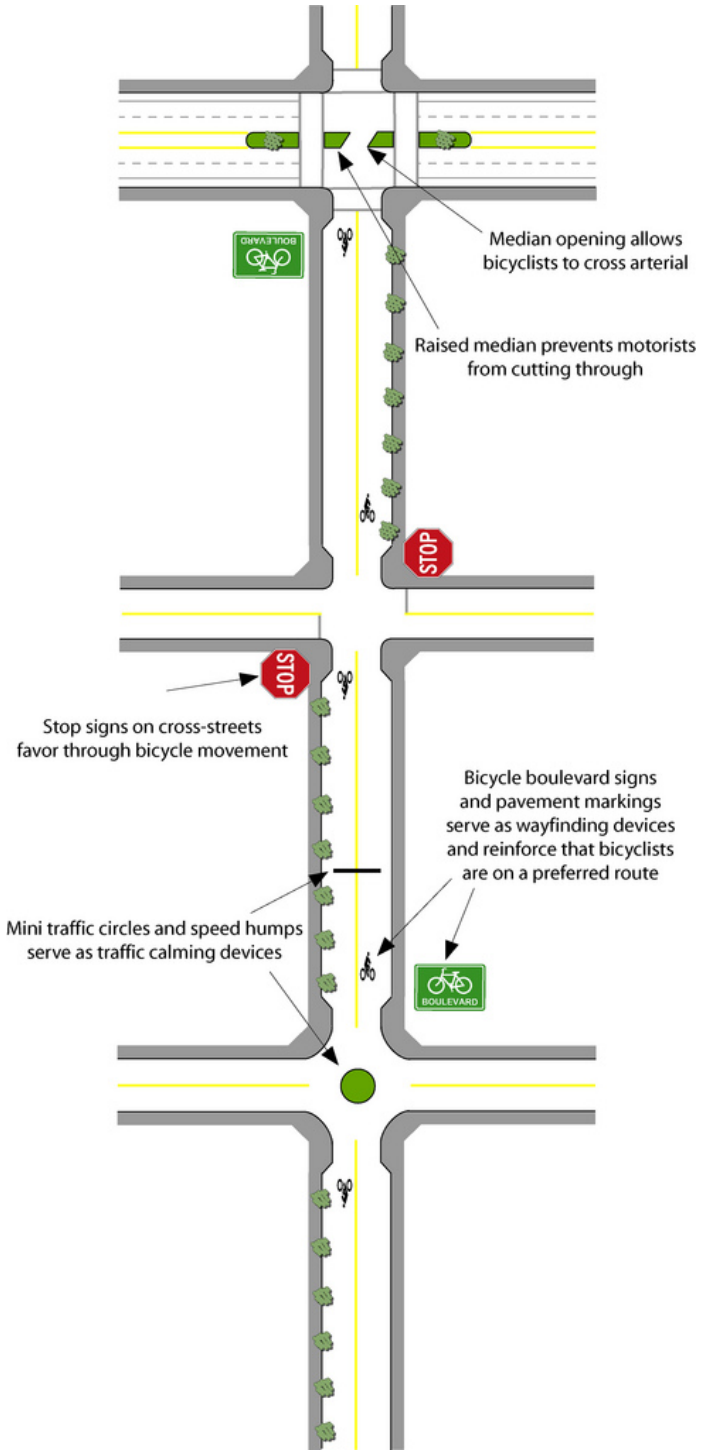
Additional Guidance

Shared roadways serve a variety of purposes:

- Parallel major streets lacking dedicated bicycle facilities: Higher-order streets such as arterials and major collectors typically include major bicyclist destinations (e.g., commercial and employment areas, and other activity centers). However, these corridors often lack bike lanes or other dedicated facilities thereby creating an uncomfortable, unattractive and potentially unsafe riding environment. Shared roadways serve as alternate parallel facilities allowing cyclists to avoid major streets for longer trip segments.
- Parallel major streets with bicycle facilities that are uncomfortable for some users: Some users may not feel comfortable using bike lanes on major streets for various reasons, including high traffic volumes and vehicle speeds, conflicts with motorists entering and leaving driveways, and/or conflicts with buses occupying the bike lane while loading and unloading passengers. Children and less-experienced riders might find these environments especially challenging. Utilizing lower-order streets, shared roadways provide alternate route choices for bicyclists uncomfortable using the major street network. It should be noted however that bike lanes on major streets provide important access to key land uses, and the major street network often provides the most direct routes between major destinations. For these reasons, shared roadways should complement a bike lane network and not serve as a substitute.
- Ease of implementation on most local streets: Shared roadways incorporate cost-effective and less physically-intrusive treatments than bike lanes and cycle tracks. Most streets could be provided relatively inexpensive treatments like new signage, pavement markings, striping and signal improvements to facilitate bicyclists' mobility and safety. Other potential treatments include curb extensions, medians, and other features that can be implemented at reasonable cost and are compatible with emergency vehicle accessibility.
- Benefits beyond an improved bicycling environment: Residents living on shared roadways benefit from reduced vehicle speeds and thru traffic, creating a safer and more-attractive environment. Pedestrians and other users can also benefit from boulevard treatments (e.g., by improving the crossing environment where boulevards meet major streets).
- Shared roadways can employ a variety of treatments from simple signage to traffic calming and/or pavement stenciling. The level of treatment to be provided for a specific location or corridor depends on several factors, discussed on the following pages.

Shared Roadways/Bicycle Boulevards

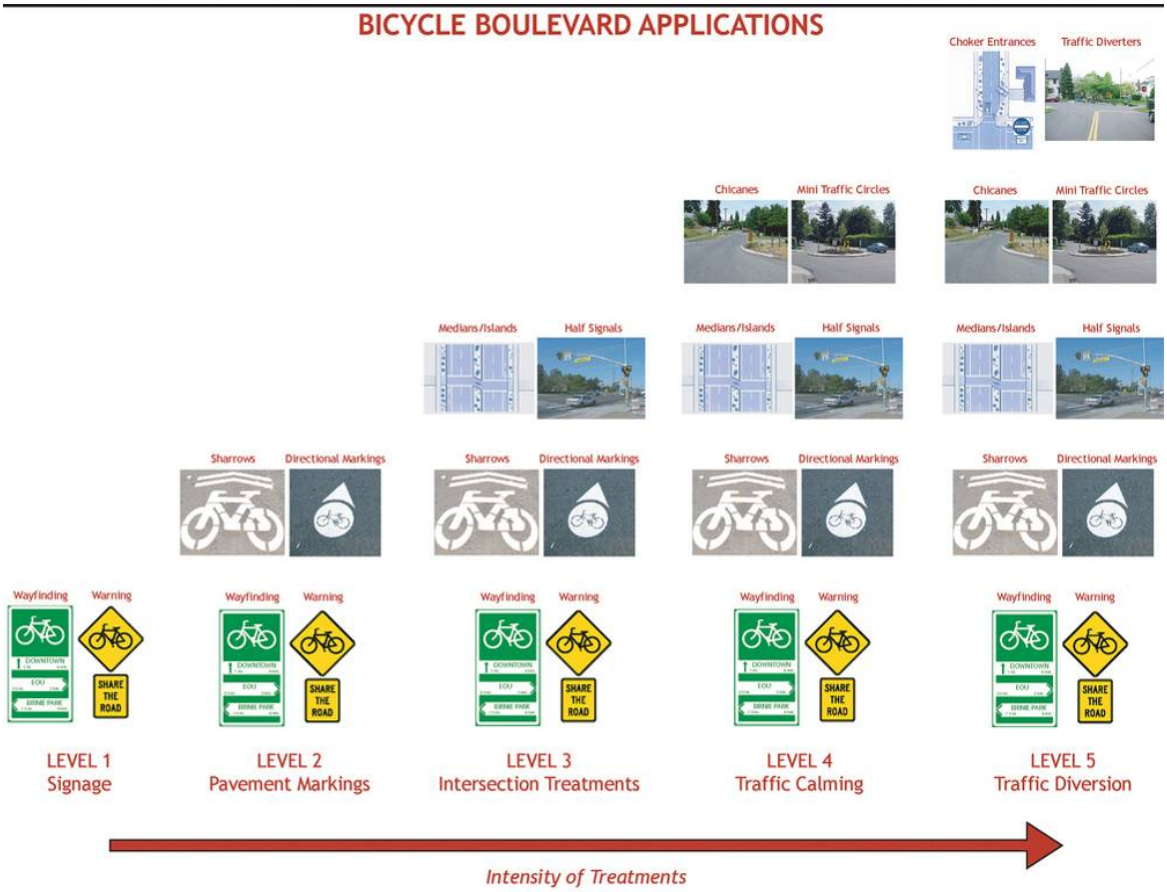
Additional Guidance (continued)



Sample Shared Roadway/Bicycle Boulevard Treatments

Shared Roadways/Bicycle Boulevards

Additional Guidance (continued)



It should be noted that corridors targeted for higher-level applications would also receive relevant lower-level treatments. For instance, a street targeted for Level 3 applications should also include Level 1 and 2 applications as necessary. It should also be noted that some applications may be appropriate on some streets while inappropriate on others. In other words, it may not be appropriate or necessary to implement all "Level 2" applications on a Level 2 street. Furthermore, several treatments could fall within multiple categories as they achieve multiple goals. To identify and develop specific treatments for each Bicycle Boulevard, the City of Easley should involve SCDOT, the bicycling community and neighborhood groups. Further analysis and engineering work may also be necessary to determine the feasibility of some applications.

Level 1: Shared Roadway/Bicycle Boulevard Signing

Design Summary

Signage is a cost-effective yet highly-visible treatment that can improve the riding environment on a Bicycle Boulevard network.

Wayfinding Signs

Wayfinding signs are typically placed at key locations leading to and along Bicycle Boulevards, including where multiple routes intersect and at key bicyclist "decision points." Wayfinding signs displaying destinations, distances and "riding time" can dispel common misperceptions about time and distance while increasing users' comfort and accessibility to the Boulevard network.

Wayfinding signs also visually cue motorists that they are driving along a bicycle route and should correspondingly use caution. Note that too many signs tend to clutter the right-of-way, and it is recommended that these signs be posted at a level most visible to bicyclists and pedestrians, rather than per vehicle signage standards.

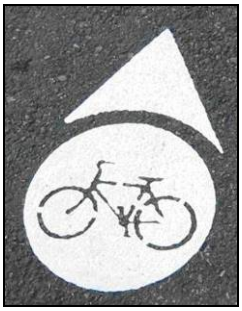
Wayfinding signs help bicyclists stay on designated bicycle routes

Level 2: Shared Roadway/Bicycle Boulevard Pavement Markings

Bicycle Boulevard/Directional Pavement Markings

Directional pavement markings (also known as "Bicycle Boulevard markings") lead cyclists along a Boulevard and reinforce that they are on a designated route. Markings can take a variety of forms, such as small bicycle symbols placed every 600-800 feet along a linear corridor, as currently used on Portland, Oregon's Boulevard network.

When a Bicycle Boulevard follows several streets (with multiple turns at intersections), additional markings accompanied by directional arrows are provided to guide cyclists through turns and other complex routing areas. Directional pavement markings also visually cue motorists that they are traveling along a bicycle route and should exercise caution.



Bicycle Boulevard directional marker

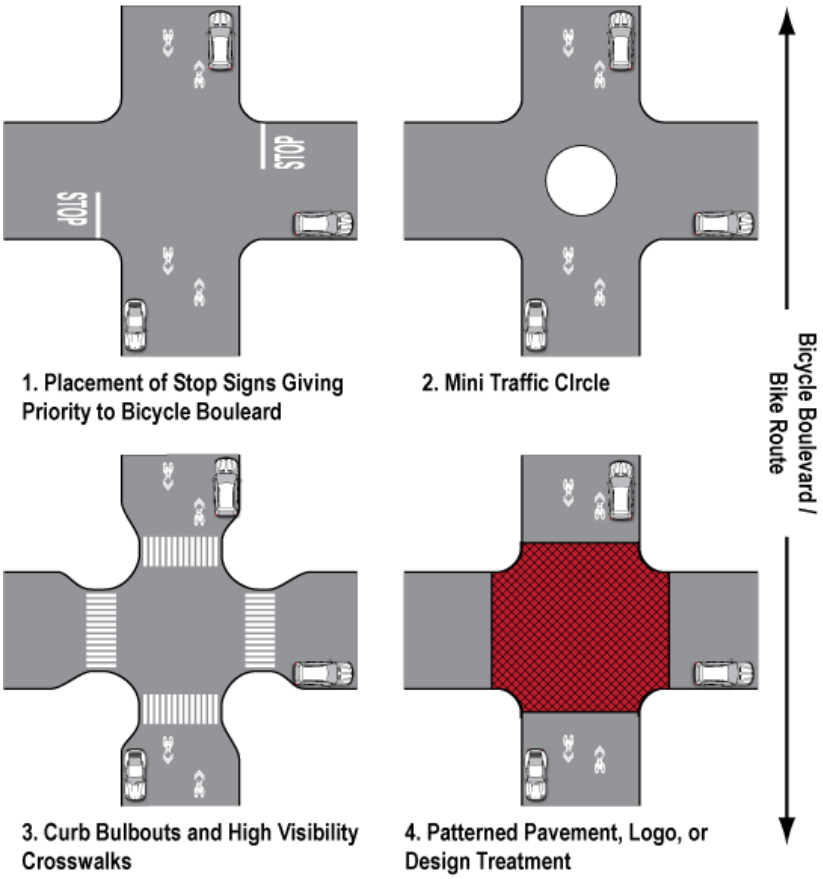
Level 3: Shared Roadway/Bicycle Boulevard Intersection Treatments

Design Summary

Intersection treatments represent a critical component of Bicycle Boulevards. Intersection traffic controls favoring thru bicycle movement on the boulevard facilitate continuous and convenient bicycle travel. Intersection treatments also provide convenient and safe crossings where boulevards intersect major roads. The following sections discuss various intersection improvement tools.

Guidance from: Berkley Bicycle Boulevard Design Tools and Guidelines, available at:
webserver.ci.berkeley.ca.us/uploadedFiles/Public_Works/Level_3_-_General/ch4_.pdf

Intersection treatments are critical to bicyclists' safety on Bicycle Boulevards



Levels of Bicycle Boulevard intersection treatments

Level 3: Shared Roadway/Bicycle Boulevard Intersection Treatments

Stop Sign on Cross-Street

The installation of a stop sign on cross streets along the Bicycle Boulevard maximizes thru bicycle connectivity and momentum and forces motorists crossing the facility to stop and proceed when safe.

This treatment should be used judiciously. It can be combined with traffic-calming efforts to prevent excessive vehicle speeds on the Bicycle Boulevard,

Stop signs are a relatively inexpensive treatment that is quite effective at minimizing bicycle and cross-vehicle conflicts. However, placing stop signs at all intersections along Bicycle Boulevards may be unwarranted as a traffic control device.

Stop signs effectively minimize conflicts

Mini Traffic Circle

Typically mini traffic circles are implemented where the Bicycle Boulevard intersects a local street or even a Collector if ADT is less than 2,000. Stop signs may be added on the cross streets if necessary, otherwise all traffic yields. Signage and striping treatments should be implemented based on expected traffic volumes.

For example, the circle itself may be appropriate for local intersections with very low ADT, while increased signage and splitter striping may be appropriate experiencing higher traffic volumes. Mini traffic circles can be landscaped for added visual impact and traffic calming effect. This treatment should be designed with adequate curb radii for emergency vehicle access.

Mini traffic circles are very effective at reducing though bicycle and cross vehicle conflicts and add overall traffic calming in all directions. Mini traffic circles have a moderate cost (approx $20,000 per intersection).

Mini traffic circles require that both bicyclists and motorists slow down and watch for conflicts

Curb Bulb-Outs and High-Visibility Crosswalks

This treatment is appropriate for Bicycle Boulevards near activity centers that may generate large amounts of pedestrian activity such as schools or commercial areas. The bulb-outs should only extend across the parking lane and should not obstruct bicyclists' path of travel or the travel lane. This treatment may be combined with a stop sign on the cross street if necessary.

Curb bulb-outs and high-visibility crosswalks both calm traffic and also increase the visibility of pedestrians waiting to cross the street. However, they may impact on-street parking.

Curb bulb-outs can include street trees

Level 4: Shared Roadway/Bicycle Boulevard Traffic Calming

Traffic calming treatments on Bicycle Boulevards improve the bicycling environment by reducing vehicle speeds to the point where they generally match cyclists' operating speeds, enabling motorists and cyclists to safely co-exist on the same facility. Examples of traffic calming treatments are described below on pages 4-14 and 4-15 and on page 4-39, but could include chicanes, diverters, mini traffic circles and other devices.

Chicanes

Chicanes are a series of raised or delineated curb extensions on alternating sides of a street forming an S-shaped curb, which reduce vehicle speeds through narrowed travel lanes (see right). Chicanes can also be achieved by establishing on-street parking on alternate sides of the street. These treatments are most effective on streets with narrower cross-sections.

Bicycle Parking

Design Summary

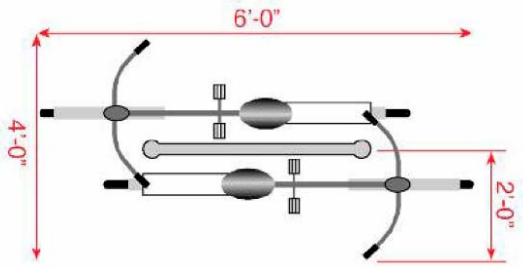
Bicycle parking can be broadly defined as either short-term or long-term parking:

- Short-term parking: parking meant to accommodate visitors, customers, messengers and others expected to depart within two hours; requires approved standard rack, appropriate location and placement, and weather protection.
- Long-term parking: parking meant to accommodate employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location.

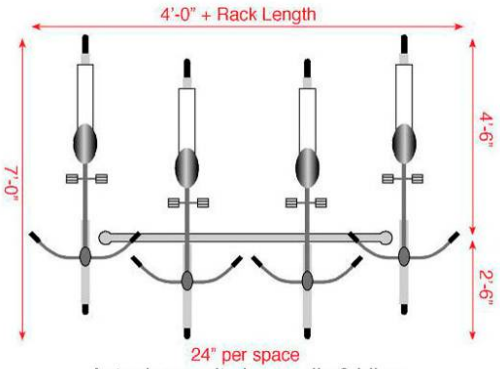
Short-Term Parking

Short-term bicycle parking facilities include racks which permit the locking of the bicycle frame and at least one wheel to the rack and support the bicycle in a stable position without damage to wheels, frame or components. Short-term bicycle parking is currently provided at no charge at various locations in Easley. Such facilities should continue to be free, as they provide minimal security, but encourage cycling and promote proper bicycle parking.

Standard bicycle rack



Ribbon, Spiral, or Freestanding Racks
(with access from only one side)



Actual capacity is usually 3 bikes

Bicycle Parking

Bicycle Rack Placement Guidelines

Design Issue	Recommended Guidance
Minimum Rack Height	To increase visibility to pedestrians, racks should have a minimum height of 33 inches or be indicated or cordoned off by visible markers.
Signing	Where bicycle parking areas are not clearly visible to approaching cyclists, signs at least 12 inches square should direct them to the facility. The sign should include the name, phone number, and location of the person in charge of the facility, where applicable.
Lighting	Lighting of not less than one foot-candle illumination at ground level should be provided in all bicycle parking areas.
Frequency of Racks on Streets	In popular retail areas, two or more racks should be installed on each side of each block. This does not eliminate the inclusion of requests from the public which do not fall in these areas. Areas officially designated or used as bicycle routes may warrant the consideration of more racks.
Location and Access	Access to facilities should be convenient; where access is by sidewalk or walkway, ADA-compliant curb ramps should be provided where appropriate. Parking facilities intended for employees should be located near the employee entrance, and those for customers or visitors near main public entrances. (Convenience should be balanced against the need for security if the employee entrance is not in a well traveled area). Bicycle parking should be clustered in lots not to exceed 16 spaces each. Large expanses of bicycle parking make it easier for thieves to be undetected.
Locations within Buildings	Provide bike racks within 50 feet of the entrance. Where a security guard is present, provide racks behind or within view of a security guard. The location should be outside the normal flow of pedestrian traffic.
Locations near Transit Stops	To prevent bicyclists from locking bikes to bus stop poles - which can create access problems for transit users, particularly those who are disabled - racks should be placed in close proximity to transit stops where there is a demand for short-term bike parking.
Locations within a Campus-Type Setting	Racks are useful in a campus-type setting at locations where the user is likely to spend less than two hours, such as classroom buildings. Racks should be located near the entrance to each building. Where racks are clustered in a single location, they should be surrounded by a fence and watched by an attendant. The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to bike parking duties; a cheaper alternative to an attendant may be to site the fenced bicycle compound in a highly visible location on the campus. For long-term parking needs of employees and students, attendant parking and/or bike lockers are recommended.
Retrofit Program	In established locations, such as schools, employment centers, and shopping centers, the City should conduct bicycle audits to assess bicycle parking availability and access, and add additional bicycle racks where necessary.

On-Street Parking

Where the placement of racks on sidewalks is not possible (e.g., due to narrow sidewalk width, sidewalk obstructions, or other issues), bicycle parking can be provided in the street where on-street vehicle parking is allowed. Two possible options for creating parking in the street include clustered racks in a vehicle parking space protected by bollards or curbs, and racks installed on sidewalk curb extensions where adequate sight distance exists. Installing bicycle parking directly in a car parking space incurs only the cost of the racks and bollards or other protective devices.

While on-street bicycle parking may take space away from the automobile parking, additional auto parking spaces can be created by consolidating driveways, moving fire hydrants, or otherwise finding places where it may be possible to permit auto parking where it is currently prohibited. Options for combining bicycle and motorcycle parking also exist.

On-street bicycle parking may be installed at intersection corners or at mid-block locations

Bikeway Maintenance

This section presents guidelines for incorporating bicycle facilities into construction, maintenance and repair activities. The guidelines are presented as a menu of options for maintenance activities, and not strict guidelines.

Street Construction and Repair

Safety of all roadway users should be considered during road construction and repair. Wherever bicycles are allowed, measures should be taken to provide for the continuity of a bicyclist's trip through a work zone area. Only in rare cases should pedestrians and bicyclists be detoured to another street when travel vehicle lanes remain open. The following actions are recommended:

- Bicyclists should not be led into conflicts with work site vehicles, equipment, moving vehicles, open trenches or temporary construction signage.
- Efforts should be made to re-create the bike lane (if one exists) to the left of the construction zone if space exists to do so safely.
- Where there is insufficient space to provide a bike lane adjacent to the construction zone, then a standard wide travel lane should be considered. If steel plating is used, special care should be taken to ensure that bicyclists can traverse the plates safely.
- Contractors performing work for Easley should be made aware of the needs of bicyclists and be properly trained in how to safely route bicyclists through or around work zones.

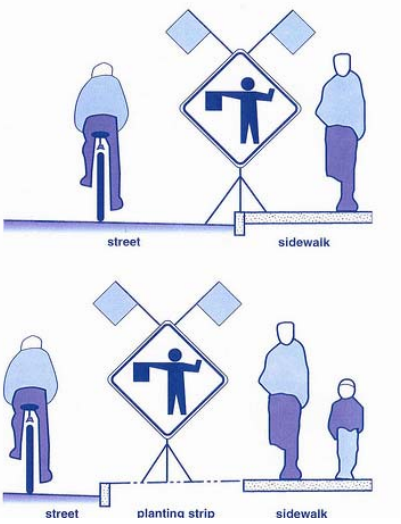
Signage Actions:

Signage related to construction activities should be placed in a location that does not obstruct the path of bicyclists or pedestrians, including bike lanes, wide curb lanes, or sidewalks. In areas where there are grades, signs may be placed at the street-side edge of sidewalks so as not to encroach onto a bike lane.

Detour and closure signage related to bicycle travel may be included on all bikeways where construction activities occur. Signage should also be provided on all other roadways.

The following MUTCD signs should be used:

- W21-4A: Road Work Ahead
- W20-5: Right Lane Closed
- W4-2: Lane Shift, Left Sign
- W11-1: Bicycle Warning Sign
- W16-1: Share The Road



Open Trenches

Plates used to cover trenches are typically not flush with the pavement and have a 1"-2" vertical transition on the edges. This can puncture a hole in a narrow bicycle tire and cause a cyclist to lose control due to the vertical transition. Bicyclists often are left to their own devices to merge with vehicles in the adjacent travel lane.

Although a common practice is to use steel plates during non-construction hours, these plates can be dangerously slippery, particularly when wet.

The City of Easley should consider:

- Ensuring that steel plates do not have a vertical edge greater than ¼" without an asphalt lip
- Using non-skid steel plates with no raised steel bar
- Requiring temporary asphalt (cold mix) around plates to create a smooth transition and hold the plates in place
- Using steel plates only as a temporary measure during construction, not for extended periods

Bikeway Maintenance

Bikeway Maintenance – Regular Maintenance

Like all roadways, bicycle facilities require regular maintenance. This includes sweeping, maintaining a smooth roadway, ensuring that the gutter-to-pavement transition remains relatively flat, and installing bicycle-friendly drainage grates. Pavement overlays should be used as a good opportunity to improve bicycle facilities. The following recommendations are provided as a menu of options for Easley to consider as it augments and enhances its maintenance capabilities. Many of the recommendations listed below are already part of Easley's regular maintenance activities.

Recommended Walkway and Bikeway Maintenance Activities

Maintenance Activity	Frequency
Inspections	Seasonal – at beginning and end of Summer
Pavement sweeping/blowing	As needed, weekly in Fall
Pavement sealing, potholes	5 - 15 years
Culvert and drainage grate inspection	Before Winter and after major storms
Pavement markings replacement	1 – 3 years
Signage replacement	1 – 3 years
Shoulder plant trimming (weeds, trees, brambles)	Twice a year; middle of growing season and early Fall
Tree and shrub plantings, trimming	1 – 3 years
Major damage response (washouts, fallen trees, flooding)	As soon as possible

Sweeping

Bicyclists often avoid shoulders and bike lanes filled with sanding materials, gravel, broken glass and other debris; they will ride in the roadway to avoid these hazards, causing conflicts with motorists. Debris from the roadway should not be swept onto sidewalks (pedestrians need a clean walking surface), nor should debris be swept from the sidewalk onto the roadway. A regularly scheduled inspection and maintenance program helps ensure that roadway debris is regularly picked up or swept.

Action items involving sweeping activities include:

- Establish a seasonal sweeping schedule that prioritizes roadways with major bicycle routes
- Sweep walkways and bikeways whenever there is an accumulation of debris on the facility
- In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders
- Pave gravel driveway approaches to minimize loose gravel on paved roadway shoulders
- Provide extra sweeping in the Fall in areas where leaves accumulate

Bikeway Maintenance

Roadway Surface

Roadway surface is a critical issue for bicyclists' quality. Bicycles are much more sensitive to subtle changes in roadway surface than are motor vehicles. Various materials are used to pave roadways, and some are smoother than others. Compaction is also an important issue after trenches and other construction holes are filled. Uneven settlement after trenching can affect the roadway surface nearest the curb where bicycles travel. Sometimes compaction is not achieved to a satisfactory level, and an uneven pavement surface can result due to settling over the course of days or weeks.

Recommended action items involving maintaining the roadway surface include:

- On all bikeways, use the smallest possible chip for chip sealing bike lanes and shoulders
- Ensure that on new roadway construction, the finished surface on bikeways does not vary more than ¼"
- Maintain a smooth surface of all bikeways that is free of potholes
- Maintain pavement so ridge buildup does not occur at the gutter-to-pavement transition or adjacent to railway crossings
- Inspect the pavement 2 to 4 months after trenching construction activities are completed to ensure that excessive settlement has not occurred

Gutter-to-Pavement Transition

On streets with concrete curbs and gutters, 1'-2' of the curbside area is typically devoted to the gutter pan, where water collects and drains into catch basins. On many streets, the bikeway is situated near the transition between the gutter pan and the pavement edge. It is at this location that water can erode the transition, creating potholes and a rough surface for travel.

The pavement on many streets is not flush with the gutter, creating a vertical transition between these segments. This area can buckle over time, creating a hazardous environment for bicyclists. Since it is the most likely place for bicyclists to ride, this issue is significant for bike travel.

Action items related to maintaining a smooth gutter-to-pavement transition include:

- Ensure that gutter-to-pavement transitions have no more than a ¼" vertical transition
- Examine pavement transitions during every roadway project for new construction, maintenance activities, and construction project activities that occur in streets

Drainage Grates

Drainage grates are typically located in the gutter area near the curb of a roadway. Drainage grates typically have slots through which water drains into the municipal wastewater system. Many grates are designed with linear parallel bars spread wide enough for a tire to become caught so that if a bicycle were to ride on them, the front tire would become caught and fall through the slot. This would cause the cyclist to tumble over the handlebars and sustain potentially serious injuries.

The City of Easley should consider the following:

- Continue to require all new drainage grates be bicycle-friendly, including grates that have horizontal slats on them so that bicycle tires do not fall through the vertical slats
- Creating a program to inventory all existing drainage grates, and replace hazardous grates as necessary

Bikeway Wayfinding Signage

Design Summary

Costing about $125 each, wayfinding signs are a relatively cost-effective means for improving the walking and bicycling environment.

Discussion

The ability to navigate through a city is informed by landmarks, natural features, and other visual cues. Placing signs throughout the city indicating to bicyclists their direction of travel, location of destinations, and the riding time/distance to those destinations will increase users' comfort and accessibility to the bicycle system. Wayfinding signs also visually cue motorists that they are driving along a bicycle route and should use caution. Signs are typically placed at key locations leading to and along bicycle routes, including the intersection of multiple routes. Too many road signs tend to clutter the right-of-way, and it is recommended that these signs be posted at a level most visible to bicyclists and pedestrians, rather than per vehicle signage standards.

Wayfinding Signage Concept

Chapter 5. Bicycle and Pedestrian Safety, Marketing, and Education Guidelines

Introduction

Bicycle and pedestrian programs enhance the biking and walking experience Easley's recommended bicycle and pedestrian infrastructure can be complemented by programs and activities designed to promote walking and bicycling. Pedestrian and bicycle planning commonly talks about the five "Es": engineering, education, encouragement, enforcement and evaluation. Strategies for community involvement in bicycle and pedestrian improvements will be important to ensure broad-based support – which translates into political support – to help secure financial resources. Involvement by the private sector in raising awareness of the benefits of bicycling can range from small incremental activities by non-profit groups, to efforts by the largest employers in the City. While Chapter 3 describes engineering strategies for improving the pedestrian and bikeway network, this chapter addresses education, encouragement, enforcement and evaluation measures.

Bicycle Parking Requirements

Lack of secure, convenient bicycle parking is a deterrent to bicycle travel. Bicyclists need parking options that can provide security against theft, vandalism, and weather. Like automobile parking, bicycle parking is most effective when it is located close to trip destinations, is easy to access, and is easy to find. Where quality bicycle parking facilities are not provided, determined bicyclists lock their bicycles to street signs, utility poles or trees. These alternatives are undesirable as they are usually not secure, may interfere with pedestrian movement, and can create liability or damage street furniture or trees. Bicycle parking facilities that are conveniently located and adequate in both quantity and quality can help reduce bicycle theft and eliminate inappropriate parking, benefiting everyone. Bicycle parking is highly cost-effective compared with automobile parking.

As discussed in the existing conditions discussion, convenient bicycle parking facilities are limited or non-existent in most parts of Easley. School campuses and downtown Easley could particularly benefit from a comprehensive network of facilities. The quality of existing bicycle parking is also poor in some locations, due to the style of rack chosen and/or placement of the rack. Racks situated immediately adjacent to walls or shrubbery limit user access to one side of the rack only. Some existing racks are also considered substandard because they do not provide sufficient points of contact to support a bicycle at two locations. The shortage of quality bicycle racks in high-demand locations means cyclists must secure their bikes to hand rails, street signs, light poles and other objects.

No ordinance language currently governs the provision of bicycle parking in Easley. Design and location standards for bicycle parking should be clearly stated to provide for safe and convenient access to all commercial areas. Furthermore, different standards of bicycle parking are needed for short-term visitors and customers and for longer term users like employees, residents, and students. Sample text is provided below:

Multi-family residential uses shall provide bicycle parking at the rate of 1 bicycle parking space for each 20 motorized vehicle spaces but no more than 50 total bicycle parking spaces are required for any single development. Non-residential uses with an off-street parking requirement for motorized vehicles of at least 15 spaces and not more than 40 spaces shall provide a minimum of two (2) bicycle parking spaces. Non-residential uses with an off-street parking requirement greater than 40 spaces shall provide bicycle parking spaces equal to five (5) percent of the total number of spaces required up to 100 spaces.

Bicycle parking should be located in secure, visible areas, sheltered from rain if possible. Short term bicycle parking in the form of bike racks should be included as a routine element in streetscape design for all commercial, institutional and mixed-use streetscapes. Longer-term parking locations should provide bike lockers or other secured areas. All schools should provide secure bicycle parking for a minimum of ten (10) percent of the student / faculty population.

Additional standards for bicycle parking can be found in Bicycle Parking Guidelines available through the Association of Bicycle and Pedestrian Planners.[5] Recommendations for the type and placement of bicycle parking facilities are presented in the Design Guidelines Chapter.

Wayfinding/Signing Program

The ability to navigate through a town or city is informed by landmarks, natural features, and other visual cues. A signage system is a key component of a navigable environment and would inform pedestrians, bicyclists, and motorists, while also enhancing the identity of Easley. Placing signs throughout the city indicating to bicyclists and pedestrians their direction of travel, location of destinations, and the time/distance to those destinations will increase users' comfort and accessibility to the bicycle and pedestrian system. Costing about $125 each, wayfinding signs are a relatively cost-effective means for improving the walking and bicycling environment.

Wayfinding sign concept

Signage can serve both wayfinding and safety purposes including:

- Helping to familiarize users with the bikeway system
- Helping users identify the best routes to destinations
- Helping to address misperceptions about time and distance
- Helping overcome a "barrier to entry" for people who do not bicycle often (e.g., "interested but concerned" cyclists)

[5] www.apbp.org

A community-wide Bicycle Wayfinding Signage Plan would identify:

- Sign locations along existing and planned bicycle routes
- Sign type – what information should be included and design features
- Destinations to be highlighted on each sign – key destinations for bicyclists
- Approximate distance and riding time to each destination

Spot Improvement Program

Having the ability to respond quickly to the requests of bicyclists and pedestrians will enhance Easley's standing as a bicycle- and pedestrian-friendly community. A Spot Improvement Program could be funded once a year, with all funds dedicated to smaller spot improvements identified by City staff and residents. Such improvements might include:

- Striping and signing of a particular path to increase safety and path user compliance along a heavily-used path;
- Adding bicycle parking to locations that currently lack appropriate or insufficient parking, such as areas in downtown;
- Sidewalk infill to safely connect vital pedestrian routes, especially in school areas;
- Adding appropriate directional and informational signage along paths, sidewalks, and bicycle routes;
- Re-striping of bicycle lanes or crosswalks where the striping has worn away;
- ADA improvements in parks.

Sidewalk Infill Program

It is a major objective of this Plan to expand sidewalks in order to increase walking for transportation and recreation, and to overcome gaps in sidewalks that inhibit walking. The very qualities that make Easley unique and livable are inextricably linked to its pedestrian-friendliness. The City also recognizes the intrinsic health, safety, economic, and environmental benefits of improving pedestrian facilities and the level of walking.

Completing some sidewalk links can be challenging, especially in older residential areas where residents have developed fencing and landscaping within the public right-of-way and may consider those areas to be part of their personal space. In addition, some residents may not want traditional sidewalks due to the rural look of their neighborhoods, and potential impacts to mature landscaping and trees. Regardless, the public right-of way that is generally located on either side of the paved driving and parking area is intended for walking, whether or not a sidewalk currently exists.

Easley should develop a Sidewalk Infill Program where City staff periodically inventory the street network to identify sidewalk gaps, and develop strategies, project prioritization criteria and funding for completing these gaps. Potential project prioritization criteria include filling gaps along key pedestrian routes, near major pedestrian trip generators like schools, and along streets with high vehicle volumes.

Potential Implementation Process

In order to inform adjacent property owners of plans to construct a sidewalk in the public right-of-way, the Public Works Department could conduct extensive public outreach. The outreach could include of the following steps:

1. At the beginning of design, City staff would send a notification letter to all residents on the block face (owner and resident) on blocks that would have sidewalk infill construction on either side of the street. The letter would notify them that their location has been chosen for the Sidewalk Infill Program, that design has started, and to contact Public Works with any questions about the program.

2. City staff would send a notification postcard to the resident list at 50 percent design completion. This would allow the design to be far enough along to answer specific questions on a location-by-location basis, but still allow changes to the design as appropriate before finalizing the design. City staff would meet with any residents who contact the City regarding design/construction details, and they would refer any questions about the general Sidewalk Infill Program to the Public Works Department.

3. When design is complete and the project goes out to bid, City staff would send a third notification postcard to the resident list informing them that the project is out to bid. Council would award the construction contract and receive a map of all locations where sidewalks are to be constructed. When construction contracts are approved by Council, City staff would send a 4th notification postcard to the resident list informing them that Council has approved the construction contract and the anticipated construction schedule, and that the residents would receive a door hanger notice at least 72 hours before construction begins at their particular location.

Safe Routes to School

Helping children walk and bicycle to school is good for children's health and can reduce congestion, traffic dangers and air pollution caused by parents driving children to school. Robust Safe Routes to School programs address all of the "Five E's" (Engineering, Education, Encouragement, Enforcement, and Evaluation).

Student escorting fellow students across the street

Safe Routes to School (SR2S) refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, incentives, increased law enforcement, and engineering measures. Safe Routes to School programs typically involve partnerships among municipalities, school districts, community and parent volunteers, and law enforcement agencies. Easley's SR2S efforts are a vital component of the Pedestrian and Bicycle Master Plan, as they will facilitate the implementation and funding for specific improvements that will help increase bicyclist and pedestrian safety and encourage fewer auto trips.

The City has a vested interest in encouraging school children to lead active lifestyles. Safe Routes to School programs offer ancillary benefits to neighborhoods by helping to slow traffic and provide reasonable facilities for walking by all age groups. The City benefits from a generally well-connected street system near most schools, a critical element in encouraging children to bike and walk to school.

Why Do We Need SR2S?

The purpose of a SR2S program is to identify and improve school commute routes, to increase the number of students who walk and/or bicycle to school in Easley, to lessen traffic congestion, and to improve health. Although most children walked or biked to school before and during the 1980s, the number of children walking or bicycling to school has sharply declined since, due to urban growth patterns and design which have made it less safe to do so, in addition to other factors such as higher obesity rates and changes in lifestyle emphasizing more driving. Walking and bicycling to school are healthy alternatives to being driven, and can provide a sense of independence for children who may otherwise be restricted by school bus or parents' schedules.

In-class training

What are the Benefits of a SR2S Program?

The primary benefit of implementing a SR2S program is the resulting increase in safety for children walking and riding bicycles to school. A comprehensive strategy based on a cooperative effort between school officials, parents, residents and city planning staff will ensure that specific school-related traffic calming projects and pedestrian and bicycle improvements will become priority projects eligible for State, Federal or other grant funding. The involvement of various stakeholders throughout the Safe Routes process increases the likelihood for implementation of needed safety improvements. While the primary focus of a SR2S program is improving safety for children walking and biking to school, these safety benefits often extend to all age and activity groups. In addition to safety enhancements, a SR2S program helps integrate physical activity into the everyday routine of schoolchildren. Health concerns related to sedentary lifestyles have become the focus of efforts both statewide and nationally to reduce health risks associated with being overweight. Identifying and improving routes for children to safely walk and bicycle to school is one of the most cost-effective means of reducing weekday morning traffic congestion (especially at school drop-off and pick-up sites) and can help reduce auto-related pollution.

On-bike training

Children walking to school

Local Coordination and Involvement

In order to be successful, a SR2S program in Easley will need buy-in from individuals and organizations throughout the community. While each individual school will have unique concerns and goals for developing a SR2S program, an organizational strategy that promotes the sharing of ideas between schools can be more effective than several isolated school groups. The key components of an

effective SR2S program include champions (individuals at each school who spearhead their school's organizing effort), stakeholders (a team of people from an individual school), and a task force made up of all the stakeholder teams in the community.

The basic components of the proposed SR2S program include: bicycle/pedestrian safety education, encouragement, engineering improvements, and enforcement of traffic laws.

Education

Curriculum programs implemented in schools can teach children the basics regarding pedestrian and bicycle safety. Classroom educational materials should be presented in a variety of formats (safety videos, printed materials, and classroom activities), and should continually be updated to make use of the most recent educational tools available. Classroom education programs should also be expanded to promote the health and environmental benefits of bicycling and walking. Outside schools, educational materials should be developed for different audiences, including elected officials (describing the benefits of and need for a SR2S program), and parents (proper school drop-off procedures and safety for their children).

Educational programs should be linked with events and incentive programs when appropriate, and students should be included in task force activities, such as mapping locations for improvements. Involving students can serve as an educational tool and can also provide the task force with meaningful data that is useful for prioritizing improvement locations. Educational programs, and especially on-bike training, should be expanded to more schools and for more hours per year.

Encouragement

School commute events and frequent commuter contests are used to encourage participation. Programs that may be implemented include a "Walking School Bus Program," which involves parents taking turns walking (or bicycling) with groups of children to school. A good opportunity to kick-off a SR2S program is during International Walk to School Day, held annually in early October. Good resources and start-up material can be found at the SCDOT SR2S website: http://www.scdot.org/community/saferoutes.shtml. Organized Bike and Walk to School Days should be held monthly or weekly to keep the momentum going and encourage more children and their parents to walk or bike to school. Prizes or drawings for prizes offered to participants have been used in some schools as an incentive. Events related to bicycling and walking should be incorporated into existing curricula when practical. Involving local celebrities or publishing the names of student participants in events can be effective means of encouraging student involvement. Another key to successful events is promotion. Ensuring that parents are aware of events (whether classroom-specific or district-wide) is crucial to gaining maximum student participation.

Other contests and event ideas to encourage bicycling and walking to school include: competitions in which classrooms compete for the highest proportion of students walking or biking to school, themed or seasonal events, and keeping classroom logs of the number of miles biked and walked by children and plotting these distances on a map of South Carolina or the U.S. A wealth of information and ideas for promoting SR2S programs can be found at: www.nhtsa.dot.gov/people/injury/pedbimot/ped/saferouteshtml/index.html.

Enforcement

Various techniques are employed to ensure traffic laws are obeyed. The SR2S task force and stakeholder teams should develop priority areas in need of enforcement by the Easley Police Department. One option to avoid the cost of providing physical police presence is to use innovative signage, such as in-roadway crosswalk signs to alert motorists that children may be crossing, or speed feedback signs that indicate to motorists their current speed. Neighborhood speed watch

programs, in which community members borrow a radar device and use it to record the license plate numbers of speeding vehicles, can also be effective. These measures could be effective for schools near higher speed, higher volume roadways.

Engineering

To provide safe access for children, school sites should have designated pedestrian access points that do not require students to cross in front of drop-off and pickup traffic. Locations identified through the SR2S process (and identified in Chapter 3) should be considered for SR2S grant funding.

Streetscape improvements should ensure adequate sight distance on all access routes, crossings, and intersections. School zone designations for speed limits should be an element of a comprehensive circulation plan that also includes school-based student as well as Police Department crossing guard programs and identification of safe routes for bicycling and walking to school.

Funding

While much of the initial work involved in starting a SR2S program can be conducted by stakeholder team volunteers, eventually funding will be needed to plan and implement physical improvements, hold events, and develop and implement educational programs and materials.

Capital Funding

Capital funding for infrastructure improvements is available from a variety of sources. The SR2S task force should work with City staff to identify all potential funding sources and to provide support on funding requests. Easley may be able to pursue federal funds recently made available with the Safe Routes to School Program established in the Safe, Accountable, Flexible, and Efficient Transportation Equity Act - A Legacy for Users (SAFTEA-LU). This section of the bill provides $612 million in funding over five years with no state receiving less than $1 million per fiscal year. Other portions of SAFETEA-LU, such as the Transportation Enhancements (TE) and the Congestion Mitigation and Air Quality (CMAQ) funds may also provide funding opportunities for bicycle and pedestrian projects.

Program Funding

As Easley's SR2S program develops, funding will be needed to support the overall program, including coordination assistance, purchasing incentives, printing newsletters, staffing events, and developing educational materials. Both school-based and program-based funding will be essential for success. When program funding is pursued, it should be emphasized that a SR2S program improves the entire community by relieving traffic congestion, contributing to cleaner air, creating alternative transportation routes, and improving the health and safety of children and the entire community. In order to maintain and expand the program, new sources of funding need to be obtained. Other possible funding sources include:

- Corporations and Businesses: Local corporations (such as the Flour Corporation) and businesses may be able to provide cash, prizes, and/or donations, such as printing services, through community giving or other programs. Parents or other members of stakeholder teams may be a good source for contacting companies.
- Foundations: There are institutions throughout the country that provide funding to non-profit organizations. The Foundation Center is a national organization dedicated to collecting and communicating information about philanthropy in the U.S., and is an excellent source for researching potential foundation funding sources. Potential foundation funding sources can be searched by geographic region and by category. Some categories that may be applicable include transportation, health, environment, and community building.

- Individuals: Statistically, individuals give more money than corporations and foundations combined. A local fund drive can quickly reach a large number of people if outreach is conducted by stakeholder team members.
- Events: Many SR2S programs have raised funds by holding special events, often using a related themed event such as a walkathon or a bicycling event. More traditional fundraising efforts, such as bake sales, concerts, talent shows, etc., can also help raise funds. Events such as Easley's Spring Fling provide opportunities to promote and raise funds for SR2S programs.
- Parent Teacher Associations (PTAs) and School Districts: Many PTAs have funds to distribute to school programs, and often schools have their own safety funding sources. Stakeholder teams should work with local PTAs and school districts to see if there is a method for applying for a grant.
- City and County Funds: Some cities and counties allocate funds to support SR2S programs. Some also allocate a portion of their local Transportation Enhancement funds to SR2S educational programs.
- State Funds: Each state receives Federal Highway Safety Funds, also called 402 Funds. Although each state handles this program differently, most funding is available on a competitive basis for projects that increase road safety. Information on South Carolina's funding programs can be found on their SRTS website: http://www.scdot.org/community/saferoutes.shtml.

Educate Motorists, City Staff, Maintenance, and Construction Crews

Motorist education on the rights of bicyclists and pedestrians is limited. Many motorists mistakenly believe, for example, that bicyclists do not have a right to ride on the roads and that they should be riding on sidewalks. Education about the rights and responsibilities of pedestrians and cyclists can include:

- Producing a brochure on bicycle and pedestrian safety and laws for public distribution;
- Enforcing traffic laws for cyclists, pedestrians, and motorists equitably;
- Providing bicycle and pedestrian planning and design training for City planners and public work staff; and
- Working with contractors, subcontractors and city maintenance and utility crews to ensure they understand the needs of bicyclists and pedestrians and follow standard procedures when working on or adjacent to roadways and walkways.

Signage should warn bicyclists and pedestrians about street closures

Easley Bike/Walk Website

Many cyclists or potential cyclists do not know where to turn to find out about laws, events, maps, tips, and biking groups. The City of Easley has already developed a website aimed at pedestrians and bicyclists called Bikeeasley.com or Walkeasley.com. As a future tool, the website could contain:

Walkeasley.com and Bikeeasley.com can provide information about walking and bicycling in the City

- A list of walking and bicycling groups in the area, including clubs, hiking groups, racing teams, and advocacy groups in the area
- Information about specific Easley Boards and Commissions that discuss bicycle and pedestrian issues (how to get involved, meeting times and dates, agendas and minutes)
- Information about current projects and how to get involved (e.g., public meetings, comment periods)
- Maps and popular routes (e.g., links to online maps and brochures, where to find in person, and how to request mailed materials)
- Links to laws and statutes relating to walking and bicycling
- Information about walking and cycling events (e.g., rides, classes, volunteer opportunities)
- A list of bike shops in the region, including phone numbers and addresses
- Relevant phone numbers (e.g., contact numbers to request pothole repair, parking enforcement, bike rack installation request, trail maintenance, etc.)

Such a website will only be successful if the site is both easy to use and updated regularly. The website content should be reviewed annually for accuracy.

Mountain Bike Park

The City of Easley has the opportunity to encourage bicycling by developing a mountain bike park. Ingredients for an innovative facility for all types of off-road bicycling include an interwoven network of trails, technical terrain areas, and spectator zones where visitors of all ages and abilities can practice bike skills, participate in programs and races, and enjoy the exercise and camaraderie of bicycling.

The Bike Park would not replace traditional dirt trails or mimic terrain found in nature. Instead, it could offer unique obstacles and flowing trails that stretch the imagination. It would accommodate a wide range of abilities, with opportunities for

A bicycle skills park can appeal to cyclists of all ages

skill building and progressively difficult challenges. Riders will return to the park again and again to session the obstacles, improve their riding, compete, and hang out with friends.

Potential locations for such a facility include Kings Park and/or land that the City owns near the J.B. "Red" Owens Complex.

Media Safety Campaign

A marketing campaign that highlights cyclists' and pedestrian safety is an important part of creating awareness of bicycling. Such campaigns are an effective way to reach the general public and reinforce other education and outreach messages. A well-produced safety campaign will be memorable and effective.

It is recommended that the Easley create a safety campaign that places safety messages near high-traffic corridors (e.g., on billboards and in print publications). It is also suggested that this campaign be kicked off in conjunction with Bike to Work Month (May) or back to school in the fall.

Study 35 MPH Speed Limit for Key Urban Corridors

Research indicates that even small increases in speeds can result in rapid increases in the risk for serious crashes causing death or injury – a five percent increase in average speed leads to a 10 percent increase in crashes that cause injuries, and a 20 percent increase in fatal crashes.[6] Recognizing the strong relationship between vehicle speeds and the frequency and severity of crashes, cities such as Sydney[7] and Singapore have instituted a 50 kph (31 mph) speed limit within the city limits. Pedestrians have a 90 percent chance of surviving a crash with a car at 30 mph or less, but less than 50 percent chance if the car is traveling at 45 mph or above.[8]

To reduce the frequency and severity of pedestrian and bicycle crashes, Easley should consider adopting lower speed limits city-wide. In addition to increased safety for roadway users, lower speed limits may also increase the range of bicycle and pedestrian treatments that SCDOT will be willing to consider along major roadways, such as SC 123. Because reduced speed limits require enforcement to be effective, this measure should be used in conjunction with increased deployment of visible police enforcement or speed cameras.

Speed management policies and programs will play a key role in any effort to improve safety for pedestrians, bicyclists, and drivers in Easley. Reducing motor vehicle speeds in areas where the road user mix includes a high volume of vulnerable road users such as pedestrians and cyclists is especially important. In Easley, many local and arterials road speed limits appear to be set at levels that are too high for the roadside conditions and the mix and volume of road users, particularly where there are many pedestrians and cyclists. Safe travel conditions, especially for pedestrian and cyclists cannot be achieved without appropriate speed management. If such efforts were undertaken, it is estimated that significant reductions in fatal and injury crashes could occur.

[6] Transport Research Centre. (2006). Speed Management Report. Paris, OECD Publishing. *From* World Health Organization. (2009). Global Status Report on Road Safely: Time for Action. Available: http://whqlibdoc.who.int/publications/2009/9789241563840_eng.pdf

[7] The 50 km/h urban speed limit is actually an initiative of the Roads and Traffic Authority of New South Wales and applies to all cities in the state.

[8] Pasanen, E. (1991). Driving Speeds and Pedestrian Safety. Espoo, Teknillinen korkeakoulu, Luikennetekniikka. *From* World Health Organization. (2009). Global Status Report on Road Safely: Time for Action. Available: http://whqlibdoc.who.int/publications/2009/9789241563840_eng.pdf

Complete Streets Policy

There is a growing movement in the U.S. to integrate non-motorized transportation in the planning, design and operation of roads, bridges and transit projects, called 'Complete Streets.' At the national level, the US Department of Transportation (USDOT) developed a model bicycle and policy framework in 2001. The policy is based on the principle that bicyclists and pedestrians have the right to move along or across all roadways unless specifically prohibited from doing so. The national policy has served as guidance for State DOT's and public works agencies throughout the U.S. It has recently evolved into the idea that streets are only complete when they address the needs of all modes of transportation, including walking and bicycling. This approach includes providing for transit, ADA compliance and facilities for people of all ages and abilities.

Complete Streets principles are "federal, state, local, or regional level transportation laws, policies, or principles which ensure that the safety and convenience of all users of a transportation system, including pedestrians, bicyclists, public transit users, children, older individuals, motorists, and individuals with disabilities, are accommodated in all phases of project planning and development."

The State of South Carolina adopted a complete streets policy in 2005. Since the majority of the major roadways in Easley are owned and maintained by SCDOT, the City's role in building and maintaining complete streets will primarily be to continue to advocate strongly with SCDOT that all local transportation construction projects improve conditions for all users, including pedestrians, cyclists, motorists, and future transit users.

Planning for Persons with Disabilities/Limited Mobility

With the advent of the Americans with Disabilities Act (ADA) in 1990, the nation recognized the need to provide equal access to all residents. Since its inception, ADA has significantly changed the design requirements for the construction of public space. However, much of the pedestrian environment built prior to the ADA's inception does not adequately accommodate people with disabilities. The City of Easley's approach is to gradually change this situation through land development project requirements, unrelated capital street improvement projects, and capital projects that specifically retrofit antiquated public pedestrian facilities.

It is important to note that a pedestrian environment that is strategically built to be accessible for people with disabilities is also more accessible for all. Curb ramps, for instance, can accommodate strollers, shopping carts and dollies for the movement of goods. Accessible intersection crossings can increase the safety for people regardless of ability. In recognition of this, the City's philosophical approach is to create pedestrian environments that are attractive, functional, and accessible to all people.

Developing an ADA Transition Plan

As a part of the implementation of ADA, the Justice Department requires that all municipal jurisdictions have an ADA Transition Plan, which is intended to spell out the City's intentional retrofitting of its built environment to an accessible state. Much of this work is already accomplished under the City's Sidewalk Maintenance Program. Under this program, City inspectors evaluate all neighborhood sidewalks once every ten years and all sidewalks in the downtown core once every five years. Using inspection guidelines outlined in the Sidewalk Maintenance Program Handbook, inspectors evaluate the sidewalk network to identify potential tripping hazards such as cracks, uneven joints, holes, and protruding tree roots. Affected property owners are subsequently notified and given six months to complete necessary repairs.

While the elements of the Pedestrian and Bicycle Master Plan are purposely written to accommodate people with disabilities, a separate document with greater specificity is required. The ADA Transition Plan should use all the relevant strategies of this document and the Sidewalk Maintenance Program Handbook, as well as other current practices that have merit. Monies set aside to implement the ADA Transition Plan should be focused to accomplish the priorities of the Plan, rather than diverting them to ADA compliance in an unrelated project.

In order to adequately plan the pedestrian environment for people with disabilities, the ADA Transition Plan must take into account each of the disabilities and the limitations they present. It is also important to be aware of how planning for people with one disability affects people with another. For example, gradual ramps and smooth transitions to the street help people in wheelchairs, but present challenges for the sight-impaired if they cannot easily find the end of the sidewalk and beginning of the street. Additionally, the Plan should also consider the needs of children and older adults.

The section below identifies populations whose needs must be taken into account in creating an accessible pedestrian environment.

People with Mobility Impairments

People with mobility impairments range from those who use wheelchairs, crutches, canes, orthotics, and prosthetic devices, to those who do not use such devices but face constraints for many reasons when walking long distances, on non-level surfaces, or on steep grades. Curb ramps are particularly important to people with mobility impairments. Prosthesis users often move slowly and often have difficulty with steep grades or cross slopes.

People with mobility impairments are affected by:

- Uneven surfaces that hinder movement or cause loss of balance;
- Rough surfaces that make rolling difficult, cause a loss of balance, or cause pain especially for people with back injuries;
- Steep uphill slopes that can make movement slow or impossible;
- Steep downhill slopes that can cause a loss of control or are difficult to negotiate;
- Cross slopes that cause instability or loss of balance;
- Narrow sidewalks that impede the ability of users to turn or to cross paths with others;
- Devices that are hard to reach, such as push buttons for walk signals and doors;
- Long distances;
- Situations that require fast reaction time; and
- Signalized walk phases that are shorter than the time it takes for them to cross the street.

People with Sensory Impairments

People with sensory impairments include those who are partially or fully blind or deaf. They also include people whose perception of touch or balance is not good, as well as those who are colorblind.

Visually-impaired people have the following characteristics:

- Limited or no perception of the path ahead;

- Limited or no information about their surroundings, especially in a new place;
- Changing environments in which they rely on memory;
- Lack of non-visual information;
- Inability to react quickly;
- Unpredictable situations, such as complex intersections that are not at 90 degrees;
- Inability to distinguish the edge of the sidewalk from the street;
- Compromised ability to detect the proper time to cross a street;
- Compromised ability to cross a street along the correct path (especially when a curb ramp is oriented diagonally toward an intersection's center point); and
- Need for more time to cross the street.

Hearing impaired people rely on visual information, which is often inadequate. They face most of their mobility difficulties in not being able to hear approaching vehicles and not being able to detect the time of their arrival. This is especially an issue in locations with limited sight distances, such as where streets curve or landscaping blocks the view.

People with Cognitive Impairments

People with cognitive impairments encounter difficulties in thinking, learning, responding, and performing coordinated motor skills. Cognitive disabilities can cause some to become lost, or to have difficulty finding their way. They may also not understand standard street signage. People who are not able to read benefit from signs with symbols and colors.

Children and Other Adults

Children and many older adults do not fall under specific categories for disabilities, but must be taken into account in pedestrian planning. Children are less mentally and physically developed than adults. They have the following characteristics:

- Less peripheral vision;
- Less ability to judge speed and distance;
- Difficulty locating sounds;
- Read less than adults or not at all, so do not understand text signs;
- Sometimes act impulsively or unpredictably;
- Lack familiarity with traffic; and
- Face difficulty carrying packages.

Other adults often exhibit degrading sensory or physical capabilities. This can cause them to:

- Gradually lose vision, especially at night;
- Have decreased ability to hear sounds and detect where they come from;
- Have less endurance; have less strength to walk up hills;
- Have less balance, especially on uneven or sloped sidewalks;
- React slowly to dangerous situations; and
- Walk slowly.

Bicycle Patrol Unit

Bicycles are an excellent community policing tool, as officers on bikes are often viewed as more approachable, thus improving trust and relations between the citizens and police. The City of Easley's Police Department has three bicycles at its disposal, which will be used for neighborhood patrols. Bicycle patrol units can work closely with citizens to address concerns before they become problems. Bicycle patrol units can have a direct impact on bicycle safety by enforcing bicycle traffic laws (e.g., wrong-way riding, sidewalk riding, obeying traffic controls, children wearing helmets), and providing bicycle safety education.

Community Bikeway/Walkway Adoption

Community Bikeway/Walkway Adoption programs are similar to the widely-instituted Adopt-a-Highway programs throughout the country. These programs identify local individuals, organizations, or businesses that would be interested in "adopting" a bikeway, walkway, or shared-use path. Adopting a facility would mean that person or group would be responsible for the facility's maintenance either through direct action or as the source of funding for the City's maintenance of that facility. For example, members of a local recreation group may volunteer every other weekend to sweep a bikeway and identify and address larger maintenance needs. Or, a local shop may adopt a bikeway by providing funding for the maintenance costs. The managers of an adopted bikeway may be allowed to post their name on bikeway signs throughout the bikeway in order to display their commitment to bicycling in Easley.

Create a Bicycling and Walking Access Guide

A multi-modal access guide provides concise customized information on how to access specific destinations with emphasis on bicycling, walking. Access guides can be as simple as a map printed on the back as a business card or as complex as a multi-page packet distributed to residents and businesses. Some items commonly included in access guides are:

- A map of the area depicting recommended walking and bicycling routes, landmarks, facilities such as restrooms and drinking fountains, locations of bicycle and vehicle parking, and major roads;
- Information on how long it takes to walk or bike from/to major destinations from certain points; and
- Accessibility information for people with disabilities.

Best practices include using graphics, providing specific step-by-step travel directions, providing parking location, and providing information about walking and bicycling, including benefits and safety information. High quality access guides should be concise and accurate and should incorporate input from key stakeholders, the Chamber of Commerce, public officials, employees, staff who will be distributing the access guide, and those with disabilities.

Bike Fairs, Organized Rides, and Races

Hosting bike fairs, organized rides, and races in Easley (such as Easley's Spring Fling bike events), can raise the profile of bicycling in the area and provide entertainment for all ages at the same time. Bike fairs and races provide an opportunity to educate and encourage current and potential bicyclists. These events can also bring visitors to Easley that may also contribute to the local economy. These events could be sponsored and implemented through collaboration between the City and local employers.

Easley's annual Spring Fling festival featured a bicycle, run, and bike rodeo event in 2009

Targeted Enforcement Actions

The best protection for pedestrians and bicyclists traveling along and across streets are motorists who are aware of and follow laws regarding bicycle/pedestrian right-of-way. Many people however are unaware of these laws.

Targeted enforcement action should be focused in those areas with high bicycle and pedestrian volumes or where non-motorized travelers are especially vulnerable. Law enforcement efforts should be targeted during periods and at locations where motorists and the general public will become aware of bicycle/pedestrian laws and their penalties. It is recommended that such targeted enforcement occur at least four times per year and last one week. Focused enforcement should also take place at the start of the school year at selected schools near their primary access points by children walking and cycling. An effective form of targeted enforcement is the use of a Police Officer posing as a pedestrian crossing the street. Motorists who do not yield to the officer are ticketed by other Police Officers further down the street. Another example of effective enforcement of the bicycle and pedestrian right-of-way is ticketing cars parked across the sidewalk or within striped bicycle lanes.

All targeted enforcement actions should be coordinated with the Public Works Department. The Easley Police Department should also be surveyed for input on appropriate educational material, advisory and warning signs, and other tools to help them accomplish their mission. Finally, it is recommended that the Police Department vigorously pursue legal action against motorists who cause a bicycle/pedestrian injury or fatality.

Crosswalk Enforcement Actions

Crosswalk enforcement actions (sometimes known as "pedestrian stings") raise public awareness about the legal obligation of motorists to stop for pedestrians at crosswalks. While crosswalk enforcement actions do result in tickets being distributed, the greater impact comes through media publicity of the event to reinforce the importance of motorists' obeying pedestrian crossing laws.

Most crosswalk enforcement sites are selected because they have been identified as locations where pedestrians have trouble crossing, and/or where a large volume of pedestrians (especially vulnerable pedestrians such as children and seniors) is expected. High-crash locations may also be candidates for enforcement actions. If locations near schools are selected, the best timing for an enforcement action is the back-to-school window just after school has begun for the year.

Plainclothes police officers or selected volunteer decoys attempt to cross at corners and marked mid-block crossings. If motorists fail to yield to the pedestrian in a crosswalk, a second police officer issues a ticket. Decoys may also be notable community members (such as the mayor or a well-known business leader) to increase media interest in the event.

Becoming a Bicycle- [and Walk-] Friendly Community

The Bicycle Friendly Community (BFC) Campaign is a national awards program that recognizes municipalities that actively support bicycling. A similar program called Walk Friendly Communities (WFC) is currently in development. A Bicycle-Friendly Community provides safe accommodations for cycling and encourages its residents to bike for transportation and recreation. The Bicycle Friendly Community Campaign is administered by the League of American Bicyclists, an education and advocacy organization working to bring better cycling to communities around the country. The BFC designation is awarded at one of four levels (from lowest to highest): bronze, silver, gold, and platinum. To date, only three communities have achieved platinum status: Portland, OR; Davis, CA; and Boulder, CO. In South Carolina, three communities have been designated Bicycle Friendly Communities: Spartanburg (Bronze, 2007), Columbia (Bronze, 2008) and Greenville (Bronze, 2009).

What Does it Take?

Determining whether a community is bicycle-friendly involves considering many factors and conditions. The application is an audit of a community's efforts to provide a more bicycle-friendly environment. The audit reviews engineering, education, encouragement, enforcement, and evaluation and planning efforts for bicycling. The entire application and feedback from cyclists in the community is sought to determine whether the League will award the BFC designation. The application is available online at http:// www.bicyclefriendlycommunity.org/apply.cfm.24. The BFC campaign effort can be initiated by anyone; however, the application process requires information that only the City and City staff would possess, and requires the enthusiastic support of Easley.

Strategies

There are a number of short- and long-term steps Easley can take to become a "Bicycle Friendly Community." The League of American Bicyclists provides an "Action Plan for Bicycle Friendly Communities," which identifies ten specific steps that the community should take to improve bicycling conditions.

Strategies: Action Plan for Walk- and Bicycle-Friendly Communities

There are a number of short- and long-term steps Easley can take to become a Bicycle and Walk Friendly Community. The League of American Bicyclists provides an "Action Plan for Bicycle Friendly Communities," which identifies ten specific steps that the community should take to improve bicycling conditions. The recommended strategies below have been adapted to including walking. In general, this plan is designed to help Easley achieve Walk and Bicycle Friendly status.

1. Adopt a target level of bicycle and pedestrian trips (e.g., percent of trips) and safety to be achieved within a specific timeframe, and improve data collection necessary to monitor progress.

2. Provide safe and convenient pedestrian and bicycle access to all parts of the community through a network of on- and off-street facilities, low-speed streets, and secure bicycle parking. Local pedestrians and cyclists should be involved in identifying maintenance needs and on-going improvements.

3. Establish information programs to promote walking and bicycling for all purposes, and to communicate the many benefits of walking and bicycling to residents and businesses (e.g., with walking and bicycle maps, public relations campaigns, neighborhood walks and rides, a walk or ride with the Mayor).

4. Make the City a model employer by encouraging walking and bicycle use among its employees (e.g., by providing bicycle parking, showers and lockers, and establishing a city bicycle fleet).

5. Ensure all city policies, plans, codes, and programs are updated and implemented to take advantage of every opportunity to create a more pedestrian- and bicycle-friendly community. Staff in all departments should be offered training to better enable them to complete this task.

6. Educate all road users to share the road and interact safely. Road design and education programs should combine to increase the confidence of pedestrians and bicyclists.

7. Enforce traffic laws to improve the safety and comfort of all road users, with a particular focus on behaviors and attitudes that cause motor vehicle-pedestrian/bicycle crashes.

8. Develop special programs to encourage walking and bicycle use in communities where significant segments of the population do not drive and where short trips are most common, such as the Safe Routes to School program.

9. Promote intermodal travel between local transit and bicycles (e.g., when transit service is initiated, install bicycle racks on buses, providing bicycle parking and improving bicycle access to future transit stops.)

10. Establish citywide, multi-disciplinary committee(s) for walking and bicycling to submit to the Mayor/Council a regular evaluation and action plan for completing the items in this action plan.

The City should educate community members and City staff on how to become more bicycle- and pedestrian-friendly. This could entail holding a workshop or other public forum to introduce community leaders to the basic elements of a BFC. The City should also work with groups such as South Carolina's Palmetto Cycling Coalition and SCDOT's Bicycle and Pedestrian and Safe Routes to School programs to further the education effort.

Finally, the City should implement the Action Plan. Once the Action Plan has been adopted, the City needs to ensure that the Plan is implemented, and prepare and submit its BFC application.

Chapter 6. Financial Resources and Funding Overview

Acquiring funding for projects and programs is considerably more likely if it can be leveraged with a variety of local, state, federal and private sources. This section identifies potential matching and major funding sources available for bicycle and pedestrian projects and programs as well as their associated need and criteria.

Federal Funding Sources

Federal funding is primarily distributed through a number of different programs established by the Federal Transportation Act. The latest act, The Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU) was enacted in August 2005 as Public Law 109-59. SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the five-year period 2005-2009. This legislation is currently being re-authorized.

In South Carolina, Federal funding is administered through State (SCDOT) and regional planning agencies such as GPATS. Most, but not all, of these funding 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.

SAFETEA-LU

There are a number of programs identified within SAFETEA-LU that provide for the funding of bicycle and pedestrian projects.

Surface Transportation Program

Every six years, Congress sets the country's transportation and infrastructure priorities — allocating hundreds of billions of dollars for projects that shape our communities for generations. The Surface Transportation Authorization Act of 2009 is expected to provide high-level transportation funding policy changes.[9] The Surface Transportation Program (STP) provides states with flexible funds which may be used for a wide variety of projects on any Federal-aid Highway including the National Highway System, bridges on any public road, and transit facilities.

The new transportation bill is expected to create an Office of Livability within the Federal Highway Administration. The office will administer bicycle and pedestrian programs, including Safe Routes to School and Transportation Enhancements. The office is charged with increasing modal choice, advancing livable communities, and promoting integrated land use and planning. Also under the Office's jurisdiction will be compilation and dissemination of best practices on active transportation, developing better data collection and analysis on active transportation, and requiring that all federal aid projects consider comprehensive street design principles, policies, and standards. The Office will also oversee the creation of the U.S. Bicycle Route System.

[9] Source: http://transportation.house.gov/Media/file/Highways/HPP/Surface%20Transportation%20Blueprint.pdf

Bicycle and pedestrian improvements are eligible activities under the current STP. This covers a wide variety of projects such as on-street facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. SAFETEA-LU also specifically clarifies that the modification of sidewalks to comply with the requirements of the Americans with Disabilities Act is an eligible activity.

As an exception to the general rule described above, STP-funded bicycle and pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. In addition, bicycle-related non-construction projects, such as maps, coordinator positions, and encouragement programs, are eligible for STP funds. SCDOT estimates that they will receive an average of $118 million annually for this program through the lifetime of SAFETEA-LU.

Transportation Enhancements

Administered by SCDOT, this program is funded by a set-aside of STP funds. Projects must serve a transportation need. These funds can be used to build a variety of pedestrian, bicycle, streetscape and other improvements that enhance the cultural, aesthetic, or environmental value of transportation systems. The statewide grant process is competitive.

SCDOT's Transportation Enhancement Program can be used for a feasibility study for a greenway; however, the greenway must serve as primarily a transportation facility, rather than a recreational one. The requirement is an 80/20 match and must be pursued by a government entity, in this case, the City of Easley. The required match can be in-kind. Applications are submitted through the MPO. Project selection cycle is on-going.[10]

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.

These federal funds can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Recreational facilities generally are not funded. SCDOT estimates that they will receive an average of $8.7 million annually for this program through the lifetime of SAFETEA-LU.[11]

Recreational Trails Program

The Recreational Trails Program of the Federal Transportation Bill provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized and motorized uses. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails
- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails, including unpaved trails

[10] Application instructions available at: http://www.scdot.org/community/pdfs/app_instruct.pdf

[11] More information available at: http://www.fhwa.dot.gov/environment/cmaqpgs/apport03.htm

- Acquisition or easements of property for trails
- State administrative costs related to this program (limited to seven percent of a State's funds)
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds)

South Carolina Recreational Trails Program is a Federal-aid assistance program with an annual grant cycle requiring an 80/20 match (match can be in-kind). The program is for motorized and non-motorized recreational use. Applicants must submit a Letter of Intent in order to be eligible to apply for a grant. Applications are due in March and awarded in July of each year. Minimum grant amount is $10,000 with a maximum amount of $100,000. Applicants can be municipal, state, or federal government, or for- or non-profit organizations. SC's Parks, Recreation, and Tourism grants must be used for construction (no more than 5% for planning or engineering).[12]

Safe Routes to School (SR2S)

The Safe Routes to School Program is an effective means of promoting physically active transportation such as walking and bicycling in the Easley community.

Getting children walking and bicycling to school is proven to:

- Enhance the health of kids - Increased physical activity can combat a host of health problems facing kids today.
- Improve air quality and the environment - Replacing car trips to school with walking or bicycling can help reduce air pollution.
- Create safer routes for walking and bicycling for the entire community - Sidewalks, education programs and traffic calming measures are some of the ways to improve conditions for children and improve overall community livability.

In 2005, Congress provided funding for each state to have a Safe Routes to School (SRTS) Program. SRTS enables and encourages children, including those with disabilities, to safely walk and bicycle to and from school. SCDOT's Safe Routes to School Program assists schools and communities in 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 while promoting a healthy lifestyle for children and their parents.

Selected schools will be required to design a comprehensive Safe Routes to School Plan specific to that school. This plan must incorporate the Five E's of Safe Routes to School: Engineering, Education, Encouragement, Enforcement, and Evaluation. SRTS Workshops will aid in the designing of a comprehensive SRTS Plan.

South Carolina's SRTS funding program, which is due to be updated in 2010, has provided up to $200,000 per school for infrastructure and non-infrastructure improvement programs. 90% of the funding must be used for infrastructure. Because the grants are competitive and statewide funding limited, only one school in a given municipality is likely to receive funding.

Development Block Grants

The Community Development Block Grants program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal Community Development Block Grant grantees may "use Community

[12] More information available at: http://www.scprt.com/files/Grants/2009%20Rec%20Trails%20Application.pdf

Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grants funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs."

Rivers, Trails and Conservation Assistance Program

The Rivers, Trails and Conservation Assistance Program (RTCA) is a National Parks 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 monies 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.

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) is a Federally-funded program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. These funds are administered by the South Carolina Department of Parks, Recreation and Tourism.

Transportation, Community and System Preservation Program

The Transportation, Community and System Preservation Program provides federal funding for transit-oriented development, traffic calming and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The Transportation, Community and System Preservation Program funds require a 20 percent match.

State Funding Sources

South Carolina Department of Transportation – Capitol Projects

South Carolina Department of Transportation would like to work closely with the City of Easley in including bicycle and pedestrian improvements as part of major projects. It is recommended that the two organizations continue to liaise with one another on an ongoing basis to identify opportunities for implementation of the Easley Bicycle and Pedestrian Plan.

South Carolina Department of Transportation – Maintenance Program

South Carolina Department of Transportation carries out a number of road resurfacing projects annually that are geared at maintenance. There may be opportunities for road re-stripping to be completed as part of regular roadway maintenance. This will require coordination between the City, the SCDOT District Traffic Engineer and the local Maintenance office to ensure that the pavement marking design is safe for cyclists or drivers.

Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is SCDOT's short-term capital improvement program, providing project funding and scheduling information for the department and South Carolina's metropolitan planning organizations. The program provides guidance for the next six years and is updated every three years. The South Carolina Department of Transportation Commission, as well as the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) approve the STIP.

In developing this funding program, SCDOT must verify that the identified projects comply with existing transportation and comprehensive plans and SAFETEA-LU planning requirements. The STIP must fulfill Federal planning requirements for a staged, multi-year, statewide, intermodal program of transportation projects. Specific transportation projects are prioritized based on Federal planning requirements and the different State plans. [13]

South Carolina Transportation Infrastructure Bank

The South Carolina Transportation Infrastructure Bank (SCTIB) is a statewide revolving loan fund designed in 1997 to assist major transportation projects in excess of $100 million in value. The SCTIB has since approved more than $4.5 billion in financial assistance and is arguably the largest and most active State Infrastructure Bank in the country.[14]

Regional Funding Sources

GPATS is the Greenville-Pickens Area Transportation Study. The GPATS Study Area extends into five Upstate counties, including the cities of Easley, Fountain Inn, Greenville, Greer, Liberty, Mauldin, Pickens, Simpsonville, and Travelers Rest.

GPATS is the Metropolitan Planning Organization (MPO) for the Greenville Urbanized Area. An MPO is a federally required regional transportation planning organization. MPOs are responsible for planning and prioritizing all federally funded transportation improvements within an urbanized area. Every Urbanized Area with a population of 50,000 or more must create an MPO in order to be eligible for federal transportation funds from the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA).

Each MPO is required by federal regulations to define a planning area that includes all of the current Urbanized Area, and the additional area that is likely to become urbanized during the next 20 to 25 years. The U.S. Census Bureau defines the boundaries of Urbanized Areas as a part of the Decennial Census. An Urbanized Area is made up of densely populated, contiguous (connected) Census Blocks that have a combined population of 50,000 persons or more.

The technical staff for GPATS includes: Planners, engineers, and public works officials from the cities and counties served by GPATS are represented on the Study Team, as well as officials from the South Carolina Department of Transportation (SCDOT) and the Federal Highway Administration (FHWA). The study team develops plans, evaluates potential transportation improvements, and makes recommendations to the Policy Committee.

The two key products that GPATS develops are the Transportation Improvement Program (TIP) and the Long Range Transportation Plan (LRTP). The TIP is a list of all of the transportation improvement projects to be funded with FHWA or

[13] Additional information is available at: http://www.scdot.org/inside/stip.shtml

[14] Additional information is available at: http://www.chiplimehouse.net/whisper/graphics/60565Connector%20Fall%202007%2012.pdf

FTA funds in the upcoming three years. A project must be listed in an approved TIP before federal funds can be spent on the project. The TIP is the funded, short-range element of the regional transportation plan. The LRTP is a 25-year plan that establishes transportation priorities for the region. The LRTP lists all projects that can be funded, based on estimates of available state and federal funds. A project must be listed in the LRTP before it can be added to the TIP.

Local Funding Sources

Local Bond Measures

Local bond measures, or levies, are usually general obligation bonds for specific projects. Bond measures are typically limited by time based on the debt load of the local government or the project under focus. Funding from bond measures can be used for right-of-way acquisition, engineering, design and construction of pedestrian and bicycle facilities.

Tax Increment Financing/Urban Renewal Funds

Tax Increment Financing (TIF) is a tool 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.

System Development Charges/Developer Impact Fees

System Development Charges (SDCs), also known as Developer Impact Fees, represent another potential local funding source. SDCs are typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- or off-site pedestrian improvements that will encourage residents to walk or use transit rather than drive. In-lieu parking fees may be used to help construct new or improved pedestrian facilities. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

Street User Fees

Many cities administer street user fees though residents' monthly water bills. The revenue generated by the fee can be used for operations and maintenance of the street system, and priorities would be established by the Public Works Department. Revenue from this fund can be used to maintain on-street bicycle and pedestrian facilities, including routine sweeping of bicycle lanes and other designated bicycle routes.

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.

Business Improvement Districts

Pedestrian improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Business Improvement Districts collect levies on businesses in order to fund area-wide improvements that benefit businesses and improve access for customers. These districts may include provisions for pedestrian and bicycle improvements, such as wider sidewalks, landscaping, and ADA compliance.

Other Local Sources

Residents and other community members are excellent resources for garnering support and enthusiasm for a bicycle and pedestrian facility, and the City should work with volunteers to substantially reduce implementation and maintenance costs. Local schools, community groups, or a group of dedicated neighbors may use the project as a project for the year, possibly working with a local designer or engineer. Work parties can be formed to help clear the right-of-way for a new path or maintain existing facilities where needed. A local construction company could donate or discount services. Other opportunities for implementation will appear over time, such as grants and private funds. The City should look to its residents for additional funding ideas to expedite completion of the bicycle and pedestrian system.

Other Funding Sources and Potential Partners

National Trails Fund

This fund provides funding to grassroots organizations for establishing and maintaining trails. Awards are usually between $500 and $5,000. Applications are due December 15, 2009 and are awarded April 2010.[15]

Bikes Belong Grant Program

The Bikes Belong Coalition of bicycle suppliers and retailers has awarded $1.2 million and leveraged an additional $470 million since its inception in 1999. The program funds corridor improvements, mountain bike trails, BMX parks, trails, and park access. It is funded by the Bikes Belong Employee Pro Purchase Program.

American Greenways Program

Administered by The Conservation Fund, the American Greenways Program provides funding for the planning and design of greenways. The Program is a partnership between the Conservation Fund, Eastman Kodak Company and the National Geographic Society. Applications for funds can be made by local, regional or statewide non-profit organizations and public agencies. The maximum award is $2,500, but most awards range from $500 to $1,500. American Greenways Program monies may be used to fund unpaved trail development.

River Wood Johnson Foundation Grants

River Wood Johnson Foundation Grants are awarded to promote healthy communities and lifestyles. Most grants are awarded through Calls for Proposals for the seven program areas of the RWJ Foundation. The Berkeley-Charleston-Dorchester Council Governments was awarded a RWJ Foundation grant to complete a regional bicycle and pedestrian action plan.

[15] http://www.americanhiking.org/Our-Work/National-Trails-Fund/

Palmetto Health Baptist Easley

As a part of the Easley community for 50 years, Palmetto Health Baptist hospital has provided care to multiple generations of Pickens County families. Palmetto Health is a recognized leader in providing a wide range of comprehensive health care services. [16] Similar health care institutions, including the Greenville Hospital System, have been actively involved in promoting and funding active living-related programs and campaigns. The Greenville Hospital System, for example, provided $1 million over 10 years to promote the Swamp Rabbit Trail. Palmetto Health has indicated their commitment to public health and active living by sponsoring a walking/fitness trail on a parcel of land opposite the Hospital along SC135.

National Walk@Lunch Day in April

National Walk@LunchDay helps individuals to incorporate physical activity into the work day and encourages individuals to increase daily physical activity by walking at lunch every day.[17] While any increase in walking will help promote good health, the President's Council on Physical Fitness and Sports recommends 30 minutes a day, on five or more days a week, or 10,000 steps daily, to produce the best, long-term health benefits for most individuals. That is why Blue Cross and Blue Shield Plans have launched WalkingWorks, the Blue Program for a Healthier America.

Zest Quest – Clemson University's Youth Learning Institute

Zest Quest®, a not-for-profit children's health initiative, effectively addresses the three areas of need cited by Surgeon General Carmona.[18] The mission of Zest Quest is to educate and provide incentive for children and their families to live healthier lives, and the program seeks to create an enjoyable environment that inspires children to lead physically, emotionally, and intellectually healthier lives. Through interactive, curriculum-based educational and mentorship programs, children will learn valuable tools and healthy habits to prevent future health problems.

In addition to securing data for scientific purposes, the Zest Quest program encourages students by rewarding prizes for those who adopt healthy habits taught through the Zest Quest curriculum. The grand prize is a day camp experience.

Upstate Forever

Upstate Forever promotes sensible growth and the protection of special places in the Upstate region of South Carolina.[19] The membership-based, nonprofit organization covers ten counties (Abbeville, Anderson, Cherokee, Greenville, Greenwood, Laurens, Oconee, Pickens, Spartanburg, and Union), and we have three main programs: Land Trust, Sustainable Communities, and Clean Air and Water.

- The Land Trust program works with landowners to protect significant properties and resources in the region, primarily through land protection agreements. To date the group has completed 57 such agreements, protecting nearly 10,391 acres of important land in the Upstate.

[16] Additional information is available at: www.palmettohealth.org

[17] More information about National Walk@Lunch Day is available from Blue Cross and Blue Shield. National Walk@Lunch Day is an extension of the Blue Cross and Blue Shield Association's WalkingWorks® program. (www.southcarolinablues.com)

[18] Additional information is available at: www.zestquest.org

[19] Additional information is available at: www.upstateforever.org

- The Sustainable Communities program promotes economically, socially, and environmentally sound growth in the Upstate by supporting green development, parks and natural areas, active living initiatives, land use and infrastructure planning, and adaptive reuse and revitalization of existing communities.
- The Clean Air and Water program works to promote low impact development; improve stormwater and erosion control measures; buffer floodplains, greenways, and lakeshores; protect pristine streams and wild rivers; improve air quality in the region; and raise awareness about climate change. Its water quality efforts are organized geographically, focused on mountain streams, urban rivers, rural waters, and statewide water resources.

Across all three programs, Upstate Forever works to educate the public, developers, and policy makers about land use, conservation, and growth management issues in the Upstate. Upstate Forever publishes a semi-annual newsletter, the Upstate Advocate; a monthly bulletin, the Upstate Update, and a weekly Legislative Update during the South Carolina legislative session. Upstate Forever also maintains this website; sponsor conferences, lectures, and workshops; take numerous field trips; and speak to many different groups and organizations throughout the region.

Chapter 7. Implementation Plan

The Bicycle and Pedestrian Master Plan is a tool that allows Easley to focus and prioritize implementation efforts where they will provide the greatest community benefit. To further that aim, the infrastructure and programmatic recommendations are broken into a primary and secondary system based on the need for a particular facility and Easley's ability to implement the planned improvement.

This chapter describes the methodology used for prioritizing Easley's recommended walkway and bikeway projects and programs. The Project Team evaluated many project ideas originating from previous local and regional planning efforts, the Steering Committee, resident input at community workshops, and other sources. The Project Team also considered walkway and bikeway improvements identified in the existing conditions analysis discussed in Chapter 2 of this Plan.

Project Prioritization and Ranking

The Project Team developed several evaluation criteria to identify and prioritize the proposed pedestrian and bicycle improvement projects. This approach was used to gauge the relative importance of each proposed walkway and bikeway project and helped inform potential funding allocation for pedestrian and bicycle system improvements. The criteria were applied to lay out the best possible future pedestrian and bicycle network by identifying the features of a network most important to Easley residents, and to rank projects against each other as an indication of their relative importance

The evaluation criteria used to prioritize potential projects included the following:

- Critical Gap/ Crossing Closure
- Serves Safety Need
- High Potential Use
- Relative ease/ cost
- Connects to parks, library, YMCA
- Improves school access
- Traffic calming/ bike route
- Access to downtown
- Access to commercial areas
- Local Political/ Community Support

A Decision Matrix was used to weigh each criterion and determine which recommendations meet the highest number of criteria listed. These ratings were considered together to prioritize projects. Projects fulfilling the greatest number of evaluation criteria received higher scores, correspondingly leading to higher rankings within the overall list.

Priority Projects

Based on the criteria above, the recommended high-priority sidewalk and bike lane projects are listed in Table 7-1. A complete list of the evaluation of individual projects is provided in Appendix D.

Table 7-1. High-Priority Primary System Recommendations

Projects	From–To
Sidewalk Projects	
1. Burns Road	Frank Parrot Rd - Burns Ave
2. E 2nd Ave	S C St – S E St
3. E 2nd Ave	E 3rd St – S B St
4. Burns Ave/Burns Rd	S E St – Hwy 93
5. West End Elementary School	(school property)
6. Brushy Creek Road	Avalon Cir - Laurel Rd
7. W 6th Ave	S 5th St – S 1st St
8. Hwy 93/Liberty Ave	Sitton Dr – Jones Ave
9. Biltmore Rd	Burns Ave – Hwy 123
10. Laurel Road	Brushy Cr Rd - Pilgrim Dr
11. S E St	Hwy 93 – Hwy 123
12. Pope Field Rd	Hwy 8 – Hwy 8
13. Pilgrim Drive	Calhoun Mem Hwy - Burns Rd
14. Couch Ln	McAllister Ave – Crestview Rd
15. 1St Street	S 5th St – Wyatt Ave
Bike Lane Projects	
1. Pendleton St/Hwy 8/135/Pelzer Hwy	E Main St – Sheriff Mill Rd
2. E 3rd Ave/S B St/Brushy Creek Rd	S Pendleton St/Hwy 135 - S of Sheffield Rd
3. Pope Field Rd	S Pendleton St/Hwy 135 – City Ct/Walnut Hill Dr
4. E 1st Ave/Greenville Rd/Hwy 93	Russell St – Prince Perry Rd
5. Liberty Dr/Greenville Hwy	Maple Way – W Main St
6. W Main St	Fleetwood – N A St
7. McAllister Rd	Brushy Creek Rd – Rock Springs Rd
8. Pearson Rd	Pope Field Rd – Brushy Creek Rd
9. Calhoun Memorial Hwy/Hwy 123	Brushy Creek Rd – E Main St/Hwy 93
10. N. A St/Dacusville Hwy	N Main St – Pierce Ln
11. Powdersville Rd	Hwy 123 – Birchwood St/Wexford Wy
12. Anderson Hwy/ Hwy 135	SR 39-57 – Pelzer Hwy/Hwy 8
13. Prince Perry Rd	Rolling Hills Cir – Calhoun Memorial Hwy/Hwy 123
14. East Main Street	E Main St – E 1st Ave/Hwy 93
15. Crestview Rd	Brushy Creek Rd - City Line

In addition to the proposed sidewalk and bike lane projects, other high-priority projects include intersection treatments at the following locations:

- Hwy 123 at Pilgrim Dr/ Lakewood Dr
- Hwy 93/ W Main St at Stewart Dr
- Hwy 123 at Biltmore Rd
- Hwy 93/ W Main St at S B St
- Hwy 123 at S Pendleton St/ Hwy 135

Development of the Brushy Creek Greenway is another high-priority primary system project. Hagood/Saco Lowell is recommended as the top priority project for shared lane markings.

Shoulder bikeways were not ranked for this plan since most of them fall outside of the City limits. However, there are some recommended shoulder bikeways that are obvious priorities because of their location in the city, the destinations they serve, and/or their current usage by cyclists or motorists. The 6-foot bikeways on the Bikeways Facilities Recommendations Map should be top priority because of the volumes and speeds of traffic and numbers of trucks. Other priority shoulder bikeways should include:

- Olive Road
- Brushy Creek south of the City limits
- Prince Perry Road
- Sheffield Road

The short-, medium-, and long-term priorities may change according to available funds, changing priorities, new roadway projects that coincide, new development and redevelopment opportunities, or other factors. It should be noted that the purpose of this exercise was to understand the relative priority of projects so that the City may apportion available funding to the highest priority projects. The ranked lists should be considered a “living document” and should be frequently reviewed to ensure they reflect current Easley priorities.

Working with City of Easley staff and the Steering Committee, the Project Team identified specific projects for more-detailed consideration. Some of these projects are detailed in Chapter 3. These Top-Priority projects were repeatedly suggested throughout the planning process and are consistent with the goals developed for this Plan. In developing this list, the Project Team also considered the need for geographic distribution of walkway and bikeway improvements. It is important to remember that the bicycle/pedestrian system and the recommended Top-Priority projects serve as guidelines to those responsible for implementation. The system and segments themselves may change over time as a result of changing bicycling and walking patterns, funding availability, and implementation constraints and opportunities.

Project Costs

This section summarizes planning level cost estimates associated with the recommended pedestrian and bicycle improvement projects. The estimates were based on similar Pedestrian and Bicycle Master Plans and experience in other communities.

The tables following show estimated planning-level costs for improvements that are recommended in this plan, as well as a summary table of the costs of each project type.

Table 7-2. Planning Level Unit Cost Estimates for Projects in Easley

Item	Unit	Unit Cost	Comments
Costs for Pedestrian Improvements			
6' Sidewalk	LF	$50	
Crosswalks	LF	$0.60	
Curb Ramps	EA	$1,000	
Pedestrian refuge island	LF	$8,000	
Reconstruct Corner	LF	$36	
Ped Push button	EA	$600	
Trail	LF	$25	Includes clear & grub, 4" aggregate base, 3" asphalt, centerline stripe
Costs for Bicycle Improvements			
Bike Lane	LF	$5.20	Includes striping removal, restriping
Shoulder Bikeway	LF	$8.00	Sawcut curb, 4" aggregate base, restriping
SLM	LF	$4.33	Includes 2 signs per block (300') and sharrows pavement markings every 100'
Shared lane (markings only)	LF	$0.50	Includes small pavement markings every 100'
Shared lane (signage only)	LF	$0.06	Includes 2 signs per block (300')
Shared lane (traffic calming)	LF	$5.70	Includes 2 signs per block (300'), pavement markings every 100' , budget for turning stop signs, signal actuation, traffic circles.

Table 7-3. Recommended Project Costs Summary

Facility Type	Length (miles)	Planning Level Cost Estimate
Sidewalks	28	$4,359,000
Intersections	N/A	$128,274
Streetscape Improvements	5	$719,400
Shared Use Paths	10	$1,292,550
Bike Lanes	24	$653,018
Shoulder Bikeways	46	$1,957,928
Shared Lane Markings (sharrows)	5	$120,389
Shared Lane (pavement markings)	6	$14,615
Shared Lane (signage)	33	$36,112
Shared Lane (traffic calming)	2	$53,006
Total	158	$9,334,292

Maintenance Costs

On- and off-street walkways and bikeways require regular maintenance and repair as previously discussed in Chapter 5. Walkway maintenance includes: fixing potholes, sidewalk decay, damaged benches and re-striping crosswalks. Sidewalk repair is usually the responsibility of individual property owners, although the City of Easley also funds sidewalk improvements through the capitol improvement fund.

On-street bikeways are typically maintained as part of standard roadway maintenance programs, and extra emphasis should be put on keeping bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility or creeping into the roadway. Typical maintenance costs for on-street bikeway facilities are shown in Table 7-5.

Table 7-4. On-Street Bikeway Maintenance Frequency and Cost Opinions

Activity	Materials Type	Frequency	Cost Opinion
Pavement resurfacing	Asphalt	Every 20 years	$50,000/mile
	Concrete	Every 20 years	$50,000/mile
	Aggregate	Every 3 years	$3,000/mile
Pavement sweeping	All	Weekly/monthly as needed	Part of regular street sweeping activities
Tree/shrub trimming	All	5 months – 1 year	Part of regular street maintenance activities
Sign repair/ replacement	Worn	Every 10 years	$600/sign
	Stolen	As needed	$600/sign
Re-striping	Paint	Annually	$2,600/mile
	Thermoplastic striping	Every 10-15 years	$10,600/mile
	Move signs, patch and sweep	2 times/year	$200/mile

Implementation Strategies

The Easley Bicycle and Pedestrian Master Plan provides the long-term vision for the development of a community-wide bikeway network usable by all residents for all trip types. Implementation of the Plan will take place in small steps over many years. The following strategies and action items are provided to guide Easley toward the vision identified in the Plan.

Strategy 1: Strategically Pursue Infrastructure Projects

Easley should strategically pursue infrastructure projects. Ideally, the City should pursue capital improvements funding or grant funding for short-term bicycle and pedestrian improvements first. However, if grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible, then the community should pursue funding sources for that project regardless of priority.

Action Items:

At the end of each fiscal year, Easley should publish a public report documenting the status and on-going actions for all bicycle and pedestrian projects. This report may be combined with the prioritization review discussed below.

Policy 1.1 Pursue capital improvements funding or grant funding for higher-priority bicycle and pedestrian improvements first.

Policy 1.2 In the case where grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible or required by law, pursue funding sources for that project regardless of priority.

Policy 1.3 Install approved bicycle and pedestrian projects simultaneous with road improvement projects scheduled in the same area, regardless of the priority placed upon the bicycle or pedestrian project.

Policy 1.4 Review current posted speeds on major streets; identify opportunities for posted speed reductions, especially on roadways where bicyclists and motorists will share the same lanes.

Strategy 2: Regularly Revisit Project Prioritization

Projects have been prioritized based on system connectivity, overcoming barriers, community support, and other criteria. This list should be reviewed every fiscal year, with new projects added, completed projects removed, and the priorities revised as conditions change. This strategy also represents an opportunity to correspond with nearby jurisdictions to collaborate on regionally-important walkways and bikeways.

Action Items:

Annually review and update the bikeway and walkway project list with input from appointed persons within the City of Easley, Pickens County, and other relevant agencies. The updated list should be shared with the public.

Policy 2.1 Annually review and update the Bicycle and Pedestrian Master Plan project and program list.

Policy 2.2 Share updated Bicycle and Pedestrian Master Plan project list with the public and other jurisdictions, including Pickens County.

Policy 2.3 Review and update the Plan as needed, at a minimum of every five years.

Strategy 3: Integrate Bicycle Planning into Easley's Planning Processes

This Plan presents a vision for the future of bicycling in Easley. To ensure that that vision is implemented, the Plan must become a living document that is incorporated into the day-to-day activities of planning, design, funding, construction and maintenance in Easley. This plan recommends several ways for bicycle planning to be integrated into the planning process.

Action Items:

Policy 3.1 Incorporate a bicycle facilities checklist into the Plan review process.

Policy 3.2 Adopt a bicycle parking ordinance and other local policies that promote bicycling.

Policy 3.3 Consider adopting a "Complete Streets" policy to ensure that bicycle and pedestrian facilities are included in all major construction and reconstruction projects. Bicycle and pedestrian facilities should be addressed at the project scoping stage.

Policy 3.4 Require sufficient right-of-way to be set aside for bicycle and pedestrian facilities as redevelopment projects occur.

Policy 3.5 Ensure that appropriate bicycle and pedestrian facilities are built in new developments in accordance with this Plan and other relevant plans.

Strategy 4: Encourage Private Donors to Support the Walkway/Bikeway System

Many trails have a "Friends of" group that can provide volunteer construction and maintenance services as well as funding small projects, such as signage and wayfinding programs. Through such a program, or an "Adopt a Bikeway" program, corporations, institutions and individual private donors can support the existing and proposed walkway/bikeway system. This program can be leveraged to enhance maintenance through volunteer work and can connect philanthropy with fundraising to sustain the system.

Action Items:

Policy 4.1 Encourage corporations, institutions and individual private donors to support the existing and proposed walkway/bikeway system.

Policy 4.2 Leverage this program to enhance maintenance through volunteer work, and connect philanthropy with fundraising to sustain the system.

Policy 4.3 Evaluate opportunities for establishing a philanthropic giving program that can be used to support the construction and maintenance of Easley's walkways and bikeways.

Strategy 5: Implement Education, Encouragement and Enforcement Activities

Augment the expanded bicycle and pedestrian network with education, encouragement and enforcement activities to encourage more walking and cycling among Easley residents. These supporting programs are critical to the success of the Plan and have been prioritized based on ease of implementation and cost.

Action Items:

Policy 5.1 Pursue grant funding for higher-priority programs first.

Policy 5.2 Seek funding for other supporting programs as appropriate.

Policy 5.3 Work with schools, youth groups, and other parties to provide education and encouragement programs to Easley residents.

Policy 5.4 Work with the Police Department, media, advocacy and safety groups to create an educational program to educate pedestrians, bicyclists, and drivers of rights, responsibilities and safe practices to share the road comfortably and safely.

Appendix A. PUBLIC OUTREACH

Public Workshop Results

The City of Easley held a Bicycle and Pedestrian Master Plan Public Workshop on June 15, 2009, at Kimberly Hampton Memorial Library. The comments gathered in the workshop are listed below.

Question 1: Pedestrian Facilities

Locations:

General:

- Around schools
- At shopping centers
- Safe Routes to Schools- $200,000/school

Specific:

- SC 93 Brushy Creek Road
- Puille Road
- Couch Lane
- Burns
- Biltmore Road (more sidewalks)
- Safety crossing: US 123, SC 135, SC 93, Brushy Creek Road
- Pedestrian crossings: Biltmore Road & US 123, Powdersville Road & US 123, Pedestrian bridge over US 123 & Brushy Creek Road
- Crosswalk to connect new mall on US 123
- Crossings at RR tracks & SC 93
- Connectivity across US 123 at bridge/over pass
- Signs to alert drivers along US 123, SC 8, SC 135, SC 93
- Better lighting along Couch Lane, Powdersville Road, SC 8
- Tri County Tech needs to include walking access
- Roundabout at SC 135 & Pendleton Street

Infrastructure Recommendations:

Sidewalks and Pedestrian Facilities

- More sidewalks
- Improved sidewalks downtown
- Improved sidewalks
- Holes and gaps in sidewalks- continuity
- Sidewalks to nowhere
- No ramps off sidewalks
- Sidewalk maintenance, level, ramps
- Lack of shoulder space
- Walking along highways
- Buffer between sidewalk and road
- Destinations for enjoyment

Crossings and Signals

- More pedestrian crossing signals everywhere

Roadway Design

- Reducing speed of traffic

- Many curb cut-ins for businesses- reduce number
- Cars not looking for pedestrians- too fast
- Edge lines on streets for traffic calming and pedestrian access

Ordinances

- Enforcement of developer improvements
- Future development keep walking access in plans

Question 2: Bicycle Facilities

Locations:

General:

- Lanes on roads
- More lanes
- Bike lanes along all major roads
- Bike lanes in parks
- Connectivity
- Maintenance (debris)
- Paint lines on roads more than "sharrows"

Specific

- Bike lanes on Couch Lane, McAllister Road, Powdersville Road
- Crossing lanes (?) on US 123
- Pope Field Road area
- Bike lanes at Complex(?)
- Pendleton Street
- Safety - Pendleton Street to hospital
- Routes to Caesars Head - Jameson Road
- Routes to Greenville - US 123 or Saco Lowell Road
- Routes to Pickens - Dootle Rail
- Routes to Liberty to Clemson

Infrastructure Recommendations:

Roadway Design & Infrastructure

- Signage
- Bike parking: Downtown, YMCA, Main Street, Commercial areas

Trails, etc. (Bicycling and walking facilities)

- Trails while land is still available
- Separate paths
- Bike trails/ paths for walking/biking
- Trails in parks, creeks, new recreational area, etc.
- Floodplains for trails: new high school to downtown, combine with utility corridors
- Railroad Trail
- Share easements with rails
- Family recreational in park/greenspace/playground
- Competitive/avid cyclists- 10 mile+
- Facilities need to cater to all user types
- Utility corridors across Powdersville Road
- Infrastructure: trail connecting all city parks (Pope Field, Kings Park, Red Owens, 5 Points Park, Hagood), build walking/cycling into all new developments, walking trails to add 1/2 mile Baptist Hospital, 1 mile YMCA(?)
- Trails, paths, greenspace made into walk trail loop
- Access to parks, complexes via walking including new shopping center
- Existing utility easements
- Separate trails

Question 3: Education, Enforcement, and Encouragement Opportunities

Education:

- Changing mindset (education)
- Education programs in schools
- Safety
- More awareness
- Signage
- Drivers Education - bike safety
- Child bike safety
- Vacation Bible School
- Upstate Safe Kids
- High School Drivers Education programs
- Schools focal point for info/education, therefore use aggressive program to inform via schools
- Education handbooks Kick-off events for use Northwest quadrant has the fewest drivers

Enforcement:

- Police crackdown
- Law enforcement awareness
- City ordinances enforcing speed and also development

Encouragement:

- Identity (branding, marketing) with trains/trails
- Off-road connection of/to schools
- Family rides
- Group walks and rides
- Trains campaign
- Quarterly Easley magazine
- Discounts from retailers
- Miles ridden rewards
- Bike races
- City-purchased bike racks for businesses
- Bike/Ped person appointed
- Advertising
- Festivals/carnivals on safety and fitness
- Civic organizations (Rotary, YMCA, etc.

Group Discussion:

Areas of Overlap

- Safety
- Crossings

Programs/events with potential Big Impact

- Group wellness at YMCA, rides
- List of rides on website
- Forum on website

Low Hanging opportunities

- Signage
- Education
- Crosswalks
- Crossing signals
- Enhancing existing conditions
- Narrowing lanes Powdersville
- Road widening for Tri-County Tech
- Ordinances
- 2002 development guidelines enhancements
- Bike parking
- Recognize businesses
- Bike friendly business recognition
- Local celebrities biking
- Spring Fling
- Rodeos in subdivisions
- Has to be visual

Attendees (from sign-in sheets):

- Chris Mann, City Council
- Dave Watson, City Council
- Christine deVlaming (Committee member)
- Tresh Crosby (Committee member)
- Patrick Gramblin (Committee member)
- Brian Garrison (Committee member)
- Kent Dykes (Easley Chamber of Commerce)
- Davis Turner
- J.B. Turner
- Keith Brockington (GPATS)
- Raymond Sanders
- Frank Burrell
- Marga Burrell
- Chris Youngblood
- Tiffany Martin (Pickens County YMCA)
- Martha Clark
- Helen Mercer
- Andrew Meeker (City of Greenville)
- Ford Batson

Community-Wide Survey Results

Question 1: How often and for what purposes do you walk?

- A plurality (42.5%) of Respondents indicated that they walked nearly every day for commuting, recreation, errands, or some other purpose in the last 6 months.
- 1/4 of respondents (25.0%) walked less than once a day but more than once a week.
- 1/5 of respondents (19.0%) walked less than once a week but more than once a month.
- 7.5% of respondents walked less than once a month, while 6.0% of respondents said they never walked.

Question 2: Why do you walk? (Check all that apply)

- The majority of respondents reported that they walked either for exercise/health (88.7%) or pleasure (57.1%).
- About 1/5th of respondents (18.2%) walked for shopping or errands
- 1.5% of respondents walked to work
- 1.5% of respondents walked to school.
- 7.4% of respondents said that they did not walk much.

Question 3: Depending on the purpose of your trip, how long is your walk?

- Almost 70 percent of respondents indicated that the distance to their work/school was "not applicable." Of the 32 respondents that indicated a quantifiable distance, 34.4% lived within 1-2 miles of their work or school. 25.0% lived within "a few blocks."
- A little more than 2/5ths of respondents who gave quantifiable answers (42.3%) stated that the length of trip for recreation/fitness was 2 to 5 miles. Another 2/5ths (37.1%) stated that their trips were within 1-2 miles.
- 47% of respondents did not give a quantifiable distance ("N/A") when asked about trip times for errands. 38.2% of respondents who gave a quantifiable answer indicated that the length of trip for errands was "within a few blocks", while 30.9% stated that the trips were 1-2 miles in length.

Question 4: What are your three favorite places to walk in Easley?

- Individual neighborhoods were listed as the favorite place to walk (61 total selections).
- Downtown was a close second, with 60 selections.
- There was considerable distance between the second and third choices, as the Hospital track received 22 "votes."
- Other frequently listed places included Brushy Creek, JB Owens complex, and Rock Springs Park.

Question 5: Identify five areas in Easley where walking conditions should be improved

- Downtown again received the most votes (38 total votes). Brushy Creek was voted 20 times, including 13 1st place votes. Schools received a consistent amount of votes in each field, and streets such as Couch Lane and Powdersville Rd rounded out the "top 5."

Question 6: Identify the improvements needed at each location you listed.

- The overwhelming majority of responses involved installation or improvements of sidewalks.

Question 7: In the last 6 months, how often did you ride a bicycle?

- 87% of respondents answered the question.
- 1/3rd of respondents said that they never rode a bicycle (33.3%).
- ¼ of respondents (24.9%) indicated that they rode less than once a month,
- 7.9% stated that they rode nearly every day.

Question 8: Why do you bike?

- A majority of respondents stated that they rode a bike for either exercise/health (68.9%) or pleasure (62.9%)
- About 1/5th of respondents said that they did not bike (19.2%).
- Only 14.6% of respondents rode bikes for transportation purposes (shopping/errands, work, school).
- Several participants chose "other" and wrote that safer biking conditions would allow them to ride more

Question 9: Please rate your bicycling comfort/skill level

- 70.0% of respondents answered the question.
- Of those, a slight majority (53.7%) indicated a moderate level of comfort/skill, using neighborhood roads, paths, or lightly traveled routes.
- ¼ indicated a low level of comfort/skill, using only bike paths or sidewalks (25.7%).
- 1/5 indicated a high level of comfort/skill, using any road necessary to reach their destination (20.6%).

Question 10: Depending on the purpose of your trip, how long is your average ride?

- 146 people answered the question, with a response rate of 71.9%. However, many people chose "n/a" for parts of the question. This data will only take into account those who gave a quantifiable answer.
- A plurality of those who biked to work or school (38.8%) said their destinations were less than two miles away. The same applied for those who rode for recreation or fitness (31.7%), although a higher percentage of respondents rode longer distances for recreation than for transportation.

Question 11: What prevents you from biking more often in Easley? (Check all that apply).

- The top 3 categories of response involved bikers feeling unsafe due to the presence of automobiles.
- About 4/5ths of respondents (81.1%) stated that a lack of dedicated bike paths, lanes, and/or routes prevented them from biking more often.
- Almost 3/4ths of respondents (73.2%), similarly concerned about safety, said that the presence of too many cars or cars going too fast prevented them from riding more often.
- Only 18.9% of respondents indicated that the distance of destinations prevented them from riding their bike.
- ¼ of respondents stated that a lack of secure bike parking prevented them from biking more (26.8%).
- 27.4% of respondents stated that poor road conditions prevented them from riding more.

Question 12: What are your three favorite places to bike in Easley?

- As with walking, Neighborhoods were the favorite place to bike, with 34 votes. Downtown was second with 18 votes.
- The third favorite place to bike was not a place at all, as 12 people wrote "NONE" due to an attractive or safe place to bicycle.

Question 13: List five places in Easley where biking conditions should be improved:

- Downtown
- All Over/Everywhere
- Brushy Creek
- Schools
- Couch Ln

Question 14: List five places in Easley where bike parking should be improved:

- Downtown
- Retail/Shopping
- Schools
- Parks
- Library

Question 15: Which of the following improvements would make you bike more often?

- Designated bicycle infrastructure such as bike paths or bike lanes were preferred, with bike paths receiving 91 votes and bike lanes receiving 83 votes.
- Marked bike routes in low-traffic areas was ranked 3rd, receiving 58 votes.

Question 16: Please prioritize bike promotion events in Easley:

- Respondents preferred city-wide events (similar to Bike Charlotte or Strive Not to Drive week in Asheville) to smaller-scale events.
- Additionally, several people noted that promotions did not matter to them nearly as much as improved bicycle infrastructure.

Question 17: What is your age?

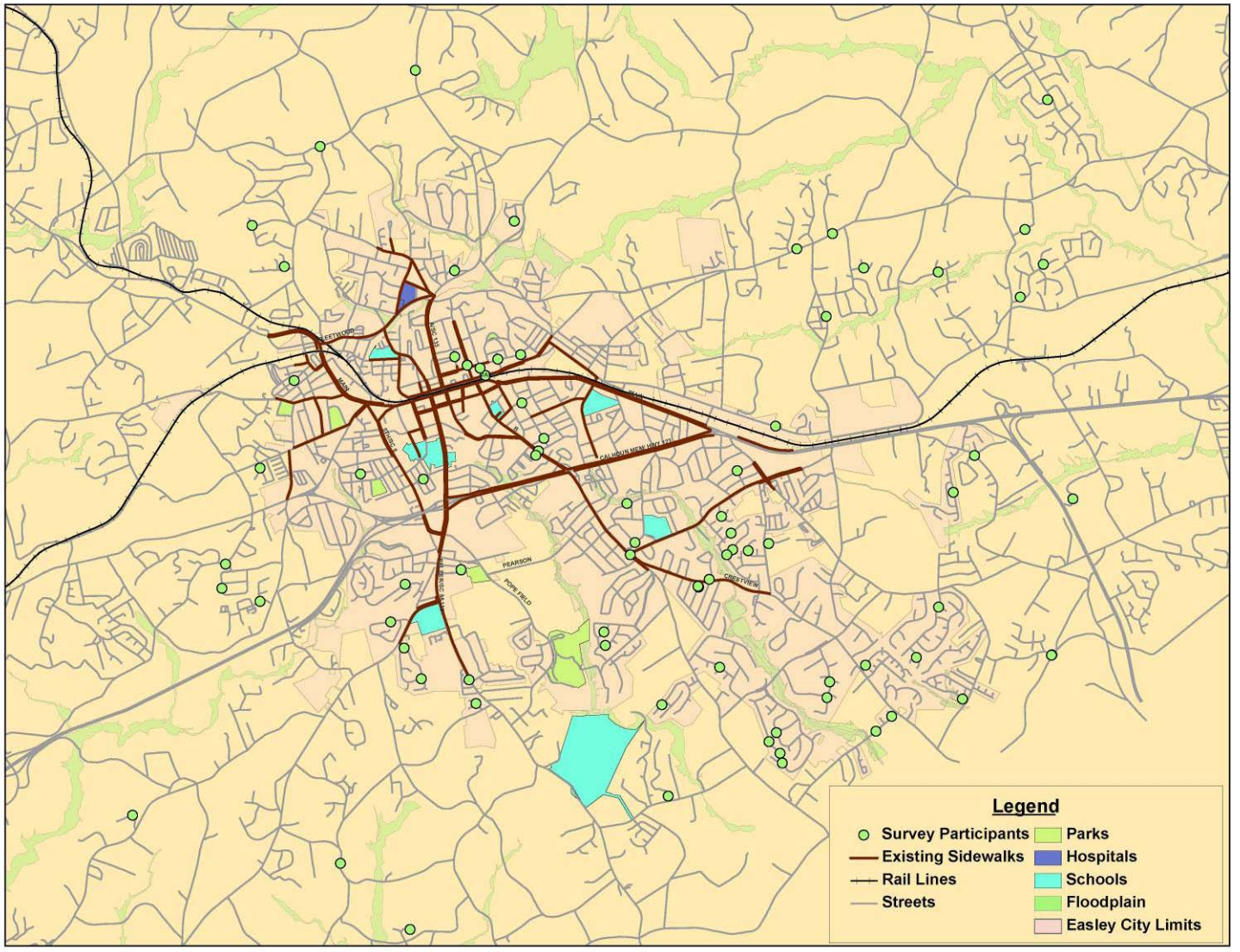
- 85.2% of respondents answered the question.
- The average age of respondents was 42.5 years, with the youngest being 6 and the oldest being 75. The median age was 42 years.

Question 18: What is your gender?

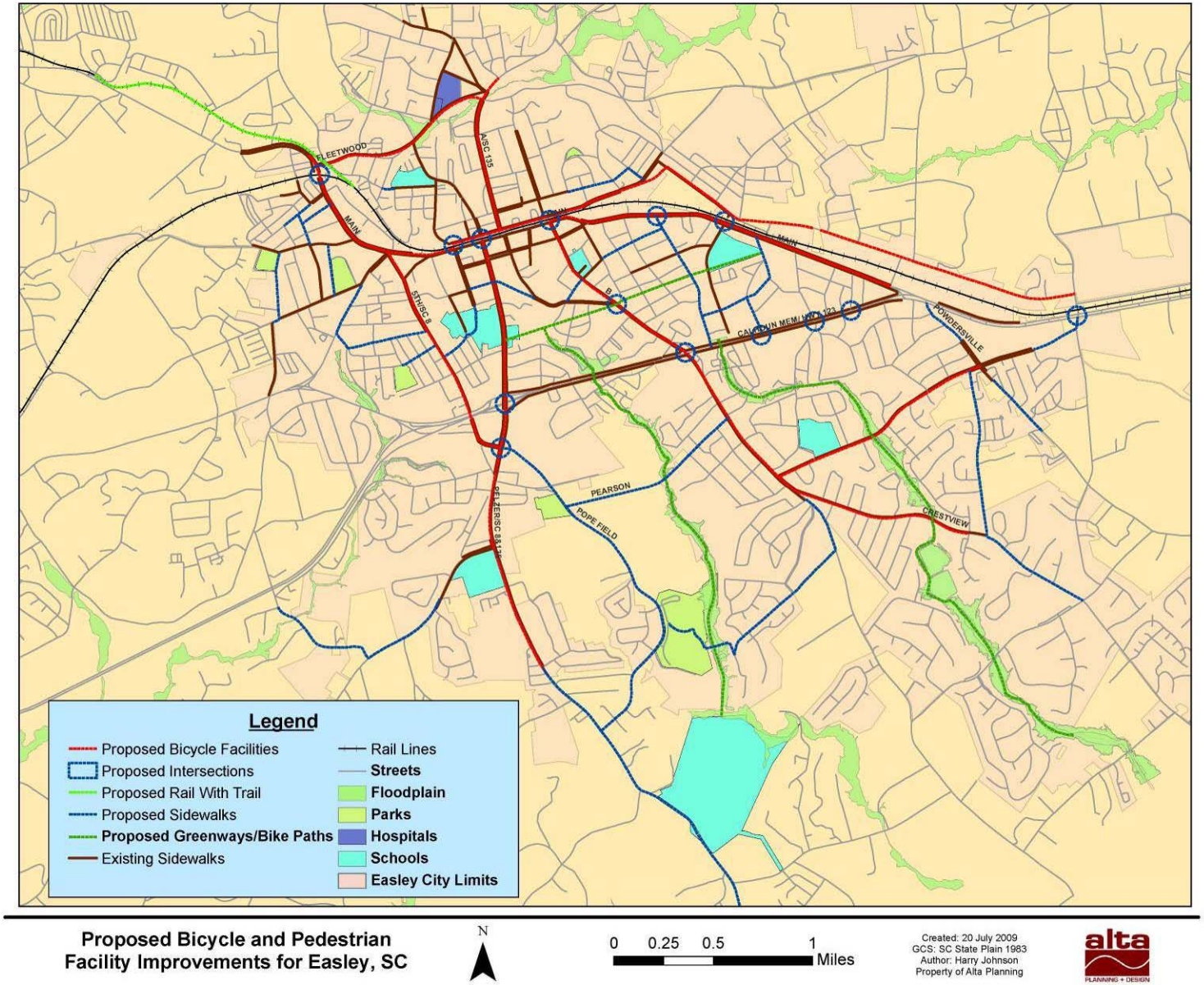
- 86.2% of participants responded to the question.
- There was no significant disparity between genders, with 52.6% of respondents identifying themselves as female and 47.4% of respondents as male.

Question 19: Are you a resident of Easley?

- 82.8% of respondents identified themselves as residents of Easley, while 17.2% said they were not.



Map A-1. Public Survey Participant Addresses



Map A-2. Public Workshop Bicycle and Pedestrian Recommended Improvements

Appendix B. CRASH DATA

Total Pedestrian/Bicycle Crashes in Pickens County 2004 - 2008

Year	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
2004	0	2	2	0	2
2005	0	3	3	0	3
2006	2	2	4	2	4
2007	0	2	2	0	2
2008	0	3	3	0	3
Total	2	12	14	2	14

Route Locations of Pedestrian/Bicycle Crashes, 2004 - 2008

Route	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
123	2	2	4	2	4
8	0	1	1	0	1
93	0	1	1	0	1
135	0	1	1	0	1
73	0	1	1	0	1
134	0	2	2	0	2
210	0	1	1	0	1
398	0	2	2	0	2
0000	0	1	1	0	1

Probable Cause of Pedestrian/Bicycle Crashes, 2004 - 2008

Probable Cause	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
Driver disregard of sign/signal	0	2	2	0	2
Driver failed to yield right-of-way	0	2	2	0	2
Improper turn	0	1	1	0	1
Other driver factor	0	1	1	0	1
Driver – unknown	2	0	2	2	2
Non motorist - inattentive	0	4	4	0	4
Non motorist – improper crossing	0	1	1	0	1
Non motorist - unknown	0	1	1	0	1
Total	2	12	14	2	14

Mode Split of First Harmful Event, 2004 - 2008

First Harmful Event	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
Motor vehicle in transport	0	6	6	0	6
Pedalcyclist	0	3	3	0	3
Pedestrian	2	3	5	2	5
Total	2	12	14	2	14

Road Surface Conditions during Pedestrian/Bicycle Crashes,2004 - 2008

Road Surface Conditions	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
Dry	2	10	12	2	12
Wet	0	2	2	0	2
Total	2	12	14	2	14

Weather Conditions during Pedestrian/Bicycle Crashes, 2004 - 2008

Weather	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
Clear	2	10	12	2	12
Rain	0	1	1	0	1
Cloudy	0	1	1	0	1
Total	2	12	14	2	14

Time of Day during Pedestrian/Bicycle Crashes, 2004 - 2008

Time of Day	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
6:01-9:00 AM	0	1	1	0	1
9:01 AM-12:00 PM	0	3	3	0	3
12:01-3:00 PM	0	1	1	0	1
3:01-6:00 PM	0	3	3	0	3
6:01-9:00 PM	0	3	3	0	3
9:01 PM-12:00 AM	2	1	3	2	3
Total	2	12	14	2	14

Day of Week during Pedestrian/Bicycle Crashes, 2004 - 2008

Day of Week	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
Saturday	2	0	2	2	2
Sunday	0	2	2	0	2
Monday	0	3	3	0	3
Tuesday	0	1	1	0	1
Wednesday	0	4	4	0	4
Thursday	0	2	2	0	2
Total	2	12	14	2	14

Month during Pedestrian/Bicycle Crashes, 2004 - 2008

Month	Type		Total Crashes	Persons Killed	Persons Injured
	Fatal	Injury			
February	0	1	1	0	1
March	0	2	2	0	2
April	0	2	2	0	2
May	0	3	3	0	3
June	0	1	1	0	1
August	2	1	3	2	3
September	0	1	1	0	1
October	0	1	1	0	1
Total	2	12	14	2	14

Appendix C. Review of Plans, Policies, Guidelines, and Standards

Several related plans, policies, guidelines and standards helped guide the vision, development and recommendations of the Easley Pedestrian and Bicycle Master Plan. Relevant goals, policies, recommendations, design standards and guidelines from these documents have been evaluated, and in most cases, incorporated into this Plan to maintain consistency between past and future planning efforts.

Federal

Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (2005)

The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) was enacted in 2005. With guaranteed funding for highways, highway safety, and public transportation totaling $244.1 billion, SAFETEA-LU represents the largest surface transportation investment in U.S. history. The two landmark bills that brought surface transportation into the 21st century – the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) – shaped the highway program to meet the Nation's changing transportation needs. SAFETEA-LU builds on this firm foundation, supplying the funds and refining the programmatic framework for investments needed to maintain and grow vital transportation infrastructure.

SAFETEA-LU addresses the many challenges facing our transportation system today – challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment – as well as laying the groundwork for addressing future challenges. SAFETEA-LU promotes more efficient and effective Federal surface transportation programs by focusing on transportation issues of national significance, while giving State and local transportation decision makers more flexibility for solving transportation problems in their communities.

Manual on Uniform Traffic Control Devices (2003)

The Federal Highway Administration, with the active assistance from the National Committee on Uniform Traffic Control Devices, adopted the most recent Manual on Uniform Traffic Control Devices (MUTCD) in 2003. Pedestrian and bicycle provisions are located in several sections of the Manual. In general, the MUTCD provides directives for traffic control devices that are to be used as standards, including warrants and design of pedestrian and bicycle pavement markings, signs, and signals. Relevant sections include:

- Section 3B.17 Crosswalk Markings
- Section 4C.05 Warrant 4, Pedestrian Volume
- Section 4D.03 Provisions for Pedestrians

- Section 4E.03 Application of Pedestrian Signal Heads
- Section 4E.06 Accessible Pedestrian Signals
- Section 4E.09 Accessible Pedestrian Signal Detectors
- Section 9C.04 Markings for Bicycle Lanes

Americans with Disabilities Act (1990)

The Americans with Disabilities Act (ADA) prohibits State and local governments from discriminating against people with disabilities in all programs, services, and activities. Under the ADA, the U.S. Access Board has developed and continues to maintain design guidelines for accessible buildings and facilities known as the ADA Accessibility Guidelines (ADAAG). These guidelines were adopted by the U.S. Department of Transportation and published as the ADA Standards for Accessible Design and are enforceable under the ADA.

"The implementing regulations for Titles II and III of the ADA require curb ramps to be provided in all existing facilities and for new construction and alterations"[20] However, with the exception of curb ramps, accessibility standards have not yet been developed for sidewalks and trails.

Despite the current lack of enforceable standards, "public and private entities that design and construct sidewalks and trails are still obligated under ADA to make them accessible to and usable by people with disabilities. Until specific standards are adopted as part of ADAAG, some of the existing scoping and technical provisions for new construction and alterations can be applied to the design of pedestrian facilities, such as"[21]:

- Accessible Routes (ADAAG 4.3)
- Curb Ramps (ADAAG 4.7)
- Ramps (ADAAG 4.8)

In addition to maintaining the ADAAG, the U.S. Access Board has published draft public rights-of-way accessibility guidelines. While these guidelines have not been adopted into the ADAAG yet, the Access Board recommends that where ADA standards do not include applicable provisions, the November 23, 2005 draft *Public Rights-of-Way Accessibility Guidelines* be referenced as a best practices manual.[22] The draft guidelines address the following:

- Pedestrian Access Route
- Alternate Circulation Path
- Curb Ramps and Blended Transitions
- Detectable Warning Surfaces
- Pedestrian Crossings
- Accessible Pedestrian Signals
- Street Furniture
- On-Street Parking
- Call Boxes

[20] Federal Highway Administration, U.S. Department of Transportation. "Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines and Practices" Barbara McMillen, Program Manager; Beneficial Designs, Inc. Author. Clay Butler, Illustrations. September 2001. http://www.fhwa.dot.gov/environment/sidewalk2/

[21] *ibid*

[22] Available at http://www.access-board.gov/prowac/draft.htm

In an effort to highlight when ADAAG provisions apply to sidewalks and trails, and how to bridge the remaining gaps, the Federal Highway Administration released Designing Sidewalks and Trails for Access as a two-part guidebook – Part I: Review of Existing Guidelines and Practices and Part II: Best Practices Design Guide. Part I is a compilation of data, designs, and guidelines collected from literature reviews and site visits. Part II focuses on the design process and identifying best practices for designing sidewalks and trails for access by all users.

AASHTO Publications

The American Association of State Highway and Transportation Officials (AASHTO) has published two books: the 2004 *Guide for the Planning, Design, and Operation of Pedestrian Facilities* and the 1999 *Guide for the Development of Bicycle Facilities.* These publications are intended to provide guidance on the planning, design, and development of bicycle and pedestrian facilities to ensure safe accommodation for all modes of travel on public rights-of-way.

State of South Carolina

SCDOT Complete Streets Policy

In February 2003, the South Carolina Department of Transportation Commission approved a resolution affirming that bicycling and walking accommodations should be a routine part of the Department's planning, design, construction and operating activities, and will be included in the everyday operations of its transportation system.

City of Easley

Easley Comprehensive Plan

Easley's Comprehensive Plan includes several goals or implementation strategies that include – either directly or tangentially – have implications for bicycles and pedestrians.

- Central to the goals of the plan is the redevelopment of the downtown area. Such redevelopment could include making the downtown area bikeable and walkable. (Pg 26)
- The plan advocates a plan to mitigate the effects of stormwater runoff. Although it is mentioned later in a separate section, such mitigation efforts could include greenways within the city's floodplains. (Pg 34)
- Goal #2 of the 'community facilities' section (behind improving traffic flow and driving safety) is to "Improve pedestrian and bicycle access." This is the most straightforward reference to bikes/ped needs in the plan. (Pg 57)
- Similarly, Implementation Strategy M for Community Facilities states that "Sidewalks shall be required on all new construction on all road frontages." The plan further states that sidewalks must be a minimum of four feet wide and four inches thick, and will be required on only one side of the street in new subdivisions, and recommends "greenspace" between the curb and sidewalk.
- In the "Housing Section", Issue #2 makes recommendations for setting subdivision standards that "encourage good neighborhood design including standards to improve amenities like recreation space, pedestrian and bike lanes." In addition Goal 2 states "Make housing areas more conducive to bike and pedestrian traffic." (pg 65).

- In the record of citizen participation forums for the city's master plan, Sidewalks were second only to parks in needed improvements requested by citizens (pg 106).
- Greenways are included in study circle recommendations, and it is requested that the city "investigate the desirability of utilizing flood hazard areas for parkland and greenways, and include a greenway plan as part of the [parks] master plan.

Aside from greenways within flood plains and the recommendation to obtain right of way access along Pope Field Rd from the County for the new recreation complex (JB Owens Park), no specific infrastructure recommendations include bicycle or pedestrian facilities.

Zoning Ordinance Review

In compliance with the South Carolina Comprehensive Planning Enabling Act of 1994, the City of Easley Zoning Ordinance was most recently adopted in 2004. The ordinance is available online at: http://cityofeasley.net/PaD_links.htm.

General Recommendation: Modify the local ordinances to promote walkable land development and to provide a balanced approach to both on and off-street bicycling, recreation and support facilities, including more detailed guidelines for bicycle parking and amenities at commercial and civic destinations. One of the most cost effective strategies that the City can implement is to create land use regulations that promote compact, walkable, mixed-use land development.

Individual sections of the Zoning Ordinance are reviewed as follows:

Article I: General and Supplementary Provisions

§1.5.12 STREET PLANTING STRIPS

In all front yards in the GR-1, GR-2, NC, GC, and PUD districts, "a planting strip not less than six (6) feet wide shall be provided along the right of way line on the property, which shall be planted and maintained in grass or other suitable ground cover with street trees or in shrub planting or as may be required in approval of the site plans."

Recommendation: The preferred location of planting strip would be between the sidewalk and the curb in the right-of-way. This will provide a buffer for pedestrians and keeps driveway ramps out of the sidewalk area. A planting strip of eight (8) feet wide is preferred for planting shade trees, which can also increase pedestrian comfort.

Article II: Zoning Districts

The City of Easley has established ten (10) zoning districts that are governed by guidelines outlined within this section of the Zoning Ordinance. These districts and their locations make up the city's official Zoning Map, which is available online at: http://cityofeasley.net/PaD_links.htm.

General Zoning Districts

One-Family Residential Districts (R-10 and R-7.5):

These districts are intended to foster, preserve and protect areas of the community where the principal use of land is for detached, single-family dwellings and related support facilities.

The City of Easley has defined four (4) residential zoning districts , two for detached, single-family dwellings (R-10 and R-7.5), one for primarily mobile homes (GR-1), and one for multifamily dwellings (GR-2). The required minimum front setbacks for these districts create environments that do not provide pedestrians with the proximity to human activity and sense of security that provides or encourages a pleasant walking experience. Minimum front setbacks of up to forty (40) feet are too large to foster an environment that feels safe and is pedestrian in scale. Setbacks of 30-40 feet may be appropriate on higher speed collector and arterial roads, but is not necessary on most local streets.

Recommendation: Front setback requirements should be reduced to 10 or 15 feet, which will increase the usable space of the private backyard while increasing the pedestrian-friendliness of the street with front yards and porches closer to the sidewalk.

Office-Institutional District (OI):

As the Office-Institutional District serves as the transition between residential and other uses, often along major streets, providing an environment that is safe and inviting to pedestrians is important. Providing maximum front setbacks less than the current minimums of 30-40 feet will create a building envelope along the street that is pedestrian-friendly. Requiring parking to be set back from the roadway, preferably behind buildings and encouraging architectural elements that are of pedestrian-scale will also promote walking activities.

Recommendations: Reduce front yard setbacks by requiring by establishing maximum setbacks in place of minimum ones. Allowing and encouraging multifamily dwellings within the Office-Institutional (OI) District should be encouraged. As this district is located along major streets within Easley and often near residential areas, encouraging multifamily could provide seniors and others the option of living near established neighborhoods.

Neighborhood Commercial District (NC):

Neighborhood commercial districts should be located at intersections of primary roadways (collectors and arterials) and should include parcels along all four corners to indeed be considered a “district.” Doing so will create a neighborhood destination and will provide a broader range of commercial uses to cater to neighborhoods, reducing the number of trips necessary by automobile. The minimum front setback for buildings within this district is not conducive to a walking and bicycling friendly environment. The current requirement is a thirty (30) foot setback along local roads and a forty (40) foot setback along collector roads.

Recommendations: Parcels located along major intersections within neighborhoods adjacent to or across from existing parcels zoned “Neighborhood Commercial District” should also carry that zoning designation, so as redevelopment occurs, true neighborhood commercial districts can be established that encourage more trips by bicycle or walking. Establishing maximum setbacks of 10-15 feet and allowing 0-foot front setbacks for commercial buildings with ground floor retail would create an environment accommodating to walking and bicycling activities.

General Commercial District (GC):

This district of general, commercial development is located along the City's major roadways, namely SC 93 and US 123. The minimum front setback is thirty (30) feet for local roads and forty (40) feet for collector roads and currently allows parking to be sited within the setback.

Recommendation: The development standards for this district are designed to facilitate automobile access. The City should limit the application of this district to locations where pedestrian access is expected to be minimal, such as away from concentrations of residential and pedestrian-oriented mixed-use development.

Core Commercial District (CC):

The Core Commercial District is confined to downtown Easley and allows for a concentration of commercial and business uses in a higher-density environment. This district best exemplifies pedestrian-friendly development, and as redevelopment of parcels occur, new development should be sited on lots that best encourage these activities.

Recommendation: Establish maximum setbacks of 0-10 feet for commercial and mixed use buildings to encourage redevelopment that maintains the rhythm of established building locations.

Medical District (MED):

The Medical District is located north of the core commercial district and is surrounded by residential uses, mostly single-family units. Because most hospitals and medical facilities have a need for a large number of parking spaces, locating parking in front of buildings can create an unpleasant and unsafe environment for pedestrian access. Reducing the minimum setback while encouraging parking lots to be located on the sides and rear of buildings would be an improvement for the pedestrian experience.

Recommendation: Reduce the front setback from 30-40 feet to twenty-five (25) feet and encourage parking to be located along the sides or rear of buildings.

Planned Unit Development District (PUD):

PUD districts are included on the Zoning Map after approval by the Planning Commission and City Council. Approval requires the submission of a site plan that includes the location of existing and proposed streets, utilities, stormwater, entrances and exits, lighting, and curb cuts. Also required in the site plan are the location and setbacks of proposed lots, height and character of buildings, number of dwelling units, and proposed landscaping.

Private streets are allowed within a PUD, so long as they meet the standards of the city's subdivision ordinance.

The minimum area requirement to establish a PUD is two (2) acres. This requirement restricts the potential for small scale infill and redevelopment. Any PUD abutting a residential or commercial district not separated by a street right-of-way is required to provide a buffer. Doing so makes sense in some instances but is likely not needed when the PUD is adjacent to a commercial district. Eliminating the buffer requirement can make uses easier to navigate between for pedestrians.

Recommendations: Consider allowing redevelopment of parcels less than one acre using this zoning district. Consider eliminating the buffer requirement between PUDs and commercial districts to encourage more compact, walkable development.

Overlay Districts

Easley has defined two different Overlay Districts for areas within the city limits: the Historic Design Overlay District and the Transitional Corridor Overlay District. Rules and requirements of the overlay district take precedence over the underlying general zoning category regulations. Both districts have good requirements for encouraging compact, pedestrian-friendly development.

Historic Downtown/TIF District Design Overlay

Historic Downtown/TIF District Design Overlay encourages redevelopment within the traditional city center. Encouraging redevelopment as a mix of activities within the downtown district is important as this area serves as the focal point of the entire Easley community. A general description of encouraged uses and design contains the following text:

"The downtown should provide higher-density, balanced growth of workplaces, commerce, and new homes at all income levels. The area should balance the needs of pedestrians and automobiles, while also facilitating the provision of regional public transit.

"Higher densities of residential development are encouraged. This area is supported by the continued development of a coherent street network constructed to support the traffic demands of both the auto and the pedestrian.

"Minimum parking requirements may be satisfied using on-street parking, shared rear-lot parking areas, or small scale parking lots adjacent to buildings."

Recommendations: An inventory of existing vehicle parking should be completed, followed by a review of parking requirements within the historic downtown district. It is possible the downtown district has ample parking already available, which could serve as an incentive to luring new businesses. Additional parking regulation recommendations are detailed below.

Transitional Corridor Overlay Districts

Three areas have been identified as Transitional Corridor Overlay Districts: Highway 8 South, Highway 93 South, and Highway 135 North. The description of the extent of each district is included in Section 2.6.13: Overlay Districts of the Zoning Ordinance. These areas have been identified as transitional areas between established neighborhoods and expanding commercial areas with designs to complement both types of uses. These district requirements provide a model for promoting walkable development in Easley. The following text addresses (potential) pedestrian and bicycle activities and is included in the description of these districts within the ordinance:

"Pedestrian-scaled mixed-use development are encouraged that compliment surrounding neighborhoods and are supported by existing and planned transportation networks constructed to support the traffic demands of both the auto and the pedestrian. The intent of this section is to facilitate mixed-use development that will provide convenient access, minimize traffic congestion, and reduce visual clutter along the transitional corridors in Easley.

"Generally, parking is permitted on the side or rear of the buildings only. Parking may be permitted in a courtyard area created by the articulation of the building (or buildings) around the lot. No parking space shall be closer to the street than the building. Parking may be satisfied using on-street parking or shared rear-lot parking areas."

Article III: Off-Street Parking and Loading

The zoning ordinances regulate additional aspects of land development, including off-street parking, landscaping, signage, and other development standards. Off-street parking is the most applicable regulation directly affecting bicycling.

Section 3.1: Off-Street Parking Requirements

The current off-street parking regulations only provide for automobile parking and do not take bicycle parking into consideration. Bicycle parking should be considered in all off-street parking situations and included in all commercial or overlay zoning districts. In addition, reducing motor vehicle parking requirements can provide space for bicycle parking, reduce the amount of impervious surfaces and encouraging residents to use biking or walking as modes of travel to reach destinations.

Recommendations: Bicycles should receive equal consideration when calculating parking needs with specific calculations provided for determining the amount of bicycle parking provided by district type. Design and location standards for bicycle parking should be clearly stated to provide for safe and convenient access to all commercial areas. Furthermore, different standards of bicycle parking are needed for short-term visitors and customers and for longer term users like employees, residents, and students. Sample text is provided below:

> *Multi-family residential uses shall provide bicycle parking at the rate of 1 bicycle parking space for each 20 motorized vehicle spaces but no more than 50 total bicycle parking spaces are required for any single development. Non-residential uses with an off-street parking requirement for motorized vehicles of at least 15 spaces and not more than 40 spaces shall provide a minimum of two (2) bicycle parking spaces. Non-residential uses with an off-street parking requirement greater than 40 spaces shall provide bicycle parking spaces equal to five (5) percent of the total number of spaces required up to 100 spaces.*
>
> *Bicycle parking should be located in secure, visible areas, sheltered from rain if possible. Short term bicycle parking in the form of bike racks should be included as a routine element in streetscape design for all commercial, institutional and mixed-use streetscapes. Longer-term parking locations should provide bike lockers or other secured areas. All schools should provide secure bicycle parking for a minimum of ten (10) percent of the student / faculty population.*

Additional standards for bicycle parking can be found in Bicycle Parking Guidelines available through the Association of Bicycle and Pedestrian Planners (www.apbp.org).

On a related note, the City's current motor vehicle parking requirements directly and negatively affect local walkability and bikeability. The current parking standards are based on limited data, provide little flexibility in terms of specific needs of a given use or development context, and are, in many cases, above national averages for parking needs. The result is overbuilt parking lots, which are a deterrent to pedestrian and bicycle access and more compact, walkable development. The City should consider a rewrite of its parking standards to include parking maximums instead of minimums, shared parking incentives, additional context-based parking requirements (uses in walkable areas such as downtown, would require less parking), and other measures to reduce the amount of land devoted to automobile storage.

Land Development Regulations

The City of Easley's Land Development Regulations Ordinance was adopted in 2002 and addresses the development of residential areas within the city limits. It outlines specifics for new development, including the installation of utilities. It also addresses such specifics important to the development of bicycle and pedestrian facilities as street lighting and sidewalk installation.

Section 4.3: Streets

Section 4.3 of the Development Regulations addresses circulation system design required for new streets within Easley. As currently written, the text lacks definitive connectivity standards that would promote alternate routes for emergency access, public service providers, and alternative routes for all users, included bicyclists and pedestrians. In addition, the wording that residential subdivisions "be designed to serve the needs of the neighborhood and to discourage use by through traffic" greatly limits the potential connectivity these roadways could provide to area destinations and limits route alternatives for

bicyclists and pedestrians. Cul-de-sacs in residential neighborhoods limit connectivity for all types of users, and ones of excessive length discourage pedestrian access.

Recommendations: Reword this section to ensure that alternative routes are provided to all modes to promote safety and connectivity, while reducing congestion and conflict points at key intersections. Also, reduce the maximum length of cul-de-sacs from 1800 feet to 250-300 feet.

The minimum right-of-way, lane, and pavement widths for different types of roadways are also addressed in this section. Lanes along local streets can be as narrow as nine (9) feet, although the Ordinance sets a ten (10) foot minimum, with a minimum pavement width of twenty-four (24) feet. The Ordinance requires collectors and arterials to have a minimum of eleven (11) foot lanes along a minimum twenty-eight (28) foot roadway without a turn lane. Lanes along these types of roadways can safely be reduced to ten (10) feet. Narrower lanes help facilitate slower motor vehicle speeds, which provides a safer roadway environment for motorists, cyclists, and walkers. Narrower local roadways are also less expensive for developers to build and for the City to maintain.

The National Association of Home Builders' (NAHB) Green Land Development states that collector streets can be as narrow as 20-22 feet without on-street parking with appropriate, design, speed, and expected volumes. In all instances, the inclusion of bicycle facilities (shared lanes, bicycle lanes, etc.), the context of development, and transportation intent of the roadway should play a role in the consideration of appropriate street width.

Recommendation: Amend minimum street width requirements based on development context and roadway intent to better serve roadway users of all types.

Section 4.14: Street Lighting

In Section 4.14 of the Development Regulations, street lighting is addressed, but does not include standards for pedestrian-scale lighting. In new development, the installation of pedestrian-scale lighting is important to providing a sense of safety and security. Although the requirement of lighting not to exceed twenty-five (25) feet is lower than many other jurisdictions, lighting illuminating the sidewalk and of a pedestrian scale should be required. Pedestrian-scale lighting should not exceed eighteen (18) feet in height over the sidewalk and should be located at key intersections or crossings and along preferred pedestrian routes. Pedestrian-scale lighting also enhances the illumination of bicycle facilities since the lighting is located closer to the sidewalk and roadway.

Recommendation: Amend this section of the Ordinance to address pedestrian-scale lighting including illumination, type, design, and location.

Section 4.16: Blocks

The maximum length of residential blocks is noted to be 1800 feet and no more than 1000 feet in multifamily areas.

Recommendation: Development density should determine the length of a block, with shorter blocks being more appropriate in areas of higher density. Maximum block length in any situation should not exceed 800-1000 feet. In areas with blocks as long as 800 feet or greater, a pedestrian and bicycle path of 6-8 feet in width should be required, with an easement of 15-20 feet wide.

Section 4.18: Sidewalks

Section 4.18 of the Development Regulations addresses the location and characteristics of sidewalks. The current requirement is for four foot wide sidewalks to be installed on one side of the street of new development, except in locations noted in the ordinance. Five foot wide sidewalks along local streets and six foot wide sidewalks along collectors and arterials are preferred widths and should be required along both sides of the roadway. Five feet is the minimum width required for two adults to walk side-by-side. In areas of higher density and mixed-use development, the minimum required width for sidewalks should be six feet or more. The land use context and density of development necessitates a greater level of requirement for sidewalk specifications. In areas such as downtown with buildings at the back of the sidewalk and ground level retail, sidewalks should be as wide as 10-18 feet wide.

The exceptions to required sidewalk installation noted in the ordinance include (1) residential development with densities less than two dwelling units per acre with a minimum of 100 frontage feet per lot, and (2) areas where alternative pedestrian systems have been provided. The potential for the development of trails and greenways for pedestrian and bicycle use within Easley should be encouraged, but the installation of such facilities should not preclude the need for bicycling and pedestrian facilities along roadways. The design and alignment of pathways and sidewalks in a new development should be considered in a global context to ensure that all destinations and residences are served adequately.

The design specification for sidewalks calls for a minimum three (3) foot buffer or planting strip between the back of the curb to the edge of the sidewalk. A six (6) foot planting strip and buffer is a more appropriate width between the sidewalk and roadway, with an eight (8) foot planting strip preferred for planting shade trees. Shade trees serve multiple purposes in addition to providing protection and comfort for pedestrians:

- Provide widths so that driveway ramps don't intersect sidewalks.
- Provide shade for sidewalks and parked cars.
- They serve as a form of traffic calming for motor vehicles.
- They improve aesthetics of the roadway.
- They help mitigate the impact of ground-level ozone.
- They provide additional retention for stormwater.

A minimum planting strip and buffer of eight (8) feet ensures that, as the shade trees mature, the sidewalk, roadway, and the trees themselves will not be damaged because enough ground is provided to accommodate expanding root systems.

Recommendation: Amend this section of the Ordinance to require a minimum five foot sidewalk along both sides of local streets where development density is above 4 dwelling units per acre and a minimum six foot sidewalk along both sides of collectors and arterials. Also, omit the exception to eliminate sidewalks in areas where an alternative pedestrian system is provided. Change the minimum width of planting strips and buffers from three feet to a minimum of six feet, except in areas where shade trees are installed, when the minimum widths shall be eight feet.

City Ordinance

The Easley City Ordinance was most recently updated in 2006 and contains statutes and regulations that govern matters such as public works (garbage, stormwater management, etc.) and traffic codes. This ordinance is referenced here because it contains statues regarding the operation of bicycles within the city limits. The following are the City's bicycle rules and regulations in their entirety. Recommended changes follow some of the laws that were amended as part of the updated South Carolina bike laws as of 2008.

Chapter 73: Bicycles, Skateboards, and Toy Vehicles

§ 73.01 APPLICABILITY OF TRAFFIC LAWS.

Every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by the laws of this state declaring rules of the road applicable to vehicles or by the traffic ordinances of this city applicable to the driver of a vehicle, except as to special regulations in this chapter and except as to those provisions of laws and ordinances which by their nature can have no application. (S.C. Code § 56-5-3420) ('90 Code, § 6-1)

§ 73.02 OBEDIENCE TO TRAFFIC-CONTROL DEVICES.

(A) Every person riding a bicycle shall obey the instructions of official traffic-control signals, signs and other control devices applicable to vehicles, unless otherwise directed by a police officer.

(B) Whenever authorized signs are erected indicating that no right, left or U turn is permitted, no person operating a bicycle shall disobey the direction of any such sign; except, that when such person dismounts from the bicycle to make such turn, he shall then obey the regulations applicable to pedestrians. ('90 Code, § 6-2)

§ 73.03 RIDING ON ROADWAYS AND BICYCLE PATHS.

(A) Every person operating a bicycle upon a roadway shall ride as near to the right side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

Recommendation: This statute should be amended to include the revision to Section 56-5-3430 of the State statute, which states: “A bicyclist may ride in a lane other than the right-hand lane if only one lane is available that permits the bicyclist to continue on his intended route.”

(B) Persons riding bicycles upon a roadway shall not ride more than two abreast, except on paths or parts of roadways set aside for the exclusive use of bicycles. \

(C) Wherever a usable path for bicycles has been provided adjacent to a roadway, bicycle riders shall use such path and shall not use the roadway. (S.C. Code § 56-5-3430) ('90 Code, § 6-3)

Recommendation: This State statute requiring the use of pathways over roadways was eliminated. SC Section 56-5-3425 now states:

> *“Whenever a bicycle lane has been provided adjacent to a roadway, operators of:*

(1) motor vehicles may not block the bicycle lane to oncoming bicycle traffic and shall yield to a bicyclist in the bicycle lane before entering or crossing the lane; and

(2) bicycles are required to ride in the bicycle lane except when necessary to pass another person riding a bicycle or to avoid an obstruction in the bicycle lane. However, bicyclists may ride on the roadway when there is only an adjacent recreational bicycle path available instead of a bicycle lane.

§ 73.04 MANNER OF RIDING.

(A) A person propelling a bicycle shall not ride other than astride a permanent and regular seat attached thereto.

(B) No bicycle shall be used to carry more persons at one time than the number for which it is designed and equipped. (S.C. Code § 56-5-3440) ('90 Code, § 6-4)

§ 73.05 SPEED.

No person shall operate a bicycle at a speed greater than is reasonable and prudent under the conditions then existing. ('90 Code, § 6-5)

§ 73.06 EMERGING FROM ALLEY OR DRIVEWAY.

The operator of a bicycle emerging from an alley, driveway or building shall, upon the approaching of a sidewalk or the sidewalk area extending across any alleyway, yield the right-of-way to all pedestrians approaching on such sidewalk or sidewalk area, and upon entering the roadway shall yield the right-of-way to all vehicles approaching on such roadway. ('90 Code, § 6-6)

§ 73.07 CARRYING ARTICLES WHILE RIDING.

No person operating a bicycle shall carry any package, bundle or article which prevents the rider from keeping at least one hand upon the handlebars.

§ 73.08 PARKING.

No person shall park a bicycle upon a street other than upon the roadway against the curb, upon the sidewalk in a rack to support the bicycle or against a building or at the curb in such manner as to afford the least obstruction to pedestrian traffic. ('90 Code, § 6-8)

§ 73.09 RIDING ON SIDEWALKS.

(A) No person 15 or more years of age shall ride a bicycle upon any sidewalk in any district.

(B) Whenever any person is riding a bicycle upon a sidewalk, such person shall yield the right-of-way to any pedestrians and shall give audible signals before overtaking and passing any such pedestrian.

(C) No person, regardless of age, shall at any time ride a bicycle upon any sidewalk in the business district. ('90 Code, § 6-9)

§ 73.10 EQUIPMENT.

(A) Every bicycle when in use at nighttime shall have a lamp on the front which shall emit a white light visible from a distance of at least 500 feet to the front and with a red reflector on the rear of a type which shall be visible from all distances from 50 feet to 300 feet to the rear when directly in front of lawful upper beams of headlamps on a motor vehicle. A lamp emitting a red light visible from a distance of 500 feet to the rear may be used in addition to the red reflector.

(B) No person shall operate a bicycle unless it is equipped with a bell or other device capable of giving a signal audible for a distance of at least 100 feet, except that a bicycle shall not be equipped with nor shall any person use upon a bicycle any siren or whistle.

Recommendation: This State statute was eliminated in 2008 as part of H-3006 - The Bicycle Safety Act, and therefore, should not be a requirement within the City of Easley.

(C) Every bicycle shall be equipped with a brake which will enable the operator to make the braked wheel skid on dry, level, clean pavement. (S.C. Code § 56-5-3470 et seq.) ('90 Code, § 6-10)

This page intentionally left blank

APPENDIX D. EVALUATION MATRIX

Project	From – to	Evaluation Criteria (10 points each)										TOTAL
		Critical Gap/ Crossing Closure	Serves Safety Need	High Potential Use	Relative ease/ cost	Connects to parks, library, YMCA	Improves school access	Traffic calming/ bike route	Access to downtown	Access to commercial areas	Local Political/ Community Support	
Sidewalks												
Burns Road	Frank Parrot Rd - Burns Ave	10	8	7	6	10	10	0	0	10	8	69
E 2nd Ave	S C St – S E St	7	3	10	8	0	10	0	10	10	10	68
E 2nd Ave	E 3rd St – S B St	10	10	10	10	0	10	0	5	0	10	65
Burns Ave/Burns Rd	S E St – Hwy 93	10	10	7	3	10	5	0	0	10	10	65
West End Elementary School	(school property)	10	10	10	10	0	10	0	0	10	5	65
Brushy Creek Road	Avalon Cir - Laurel Rd	10	10	8	3	0	8	8	0	10	8	65
W 6th Ave	S 5th St – S 1st St	10	5	7	7	10	10	0	8	0	7	64
Hwy 93/Liberty Ave	Sitton Dr – Jones Ave	10	10	10	7	10	0	0	5	5	7	64
Biltmore Rd	Burns Ave – Hwy 123	10	10	8	6	10	0	0	0	10	10	64
Laurel Road	Brushy Cr Rd - Pilgrim Dr	8	9	7	3	0	10	7	0	10	7	61
S E St	Hwy 93 – Hwy 123	10	8	10	3	2	3	0	4	10	10	60
Pope Field Rd	Hwy 8 – Hwy 8	10	10	8	2	10	0	3	0	6	10	59
Pilgrim Drive	Calhoun Mem Hwy - Burns Rd	10	10	6	6	6	5	0	0	10	6	59
Couch Ln	McAllister Ave – Crestview Rd	10	10	10	3	0	0	2	2	10	10	57
1St Street	S 5th St – Wyatt Ave	10	5	6	6	5	10	0	5	3	7	57
Page Drive	Laurel Rd - headed SE	10	10	8	8	0	10	5	0	0	6	57

Project	From – to	Evaluation Criteria (10 points each)										TOTAL
		Critical Gap/ Crossing Closure	Serves Safety Need	High Poten-tial Use	Rela-tive ease/ cost	Connects to parks, library, YMCA	Improves school access	Traffic calming/ bike route	Access to down-town	Access to comm-ercial areas	Local Political/ Comm-unity Support	
Peoples Dr/ Wimberly Ln	Pope Field Rd – Bushy Creek Rd	10	7	10	8	10	0	0	0	0	10	55
Calhoun Memorial Highway	Powdersville Rd - headed W	10	10	5	3	0	0	8	0	10	8	54
Calhoun Memorial Highway	E of Powdersville Rd - Allan St	10	10	5	3	0	0	8	0	10	8	54
Powdersville Rd	Hwy 123 – Ginger Ln	10	10	6	4	0	0	3	0	10	10	53
West 2nd Avenue	S 5th St - S 2nd St	8	5	6	6	3	3	0	8	8	6	53
Wilbur Street	Fleetwood Dr - W of W B Ave	10	5	6	5	0	10	0	5	7	5	53
Allan Street	E Main St - Saco Lowell Rd	10	10	5	7	0	0	5	0	10	6	53
Dayton School Rd	Elrod St – Hwy 123	10	7	6	5	0	2	2	0	10	10	52
Mcbee Avenue	S Pendelton St - Pinewood Dr	8	6	5	4	0	8	5	3	6	7	52
S 5Th Avenue	W 4th Ave - Millwood Ct	10	8	6	5	4	4	4	0	5	5	51
Pearson Rd	Pope Field Rd – Bushy Creek Rd	10	10	5	1	5	3	3	0	3	10	50
South 2nd Street	W 6th Ave - headed North	8	5	5	5	0	10	0	5	3	7	48
Prince Perry Road	Saco Lowell Rd - S of Shaffner Rd	10	10	3	10	0	0	0	0	10	5	48
W 5th Ave	S 9th St – Hwy 8	10	3	5	7	10	5	0	2	0	5	47
C Street	S B st - E 2nd Ave	9	5	4	6	0	5	0	8	5	5	47
Saco Lowell Road	Prince Perry Rd - Hagood St	10	8	3	2	0	0	6	6	6	5	46
Oak Circle	E A Ave - King Park Ln	10	5	5	5	10	0	0	3	0	8	46
Highway 135	Alfred Rd - Burdine Dr	10	8	4	4	0	0	5	3	6	4	44
Anderson Hwy/ Hwy 135	Glen Laurel Dr – City Line	5	5	5	5	10	8	0	0	0	5	43
Powdersville Rd	Dayton School Rd – City Line	5	10	4	3	0	0	2	0	10	8	42
Pelzer Highway 8	Zion School Rd - headed S	5	5	3	3	3	10	5	0	0	7	41
Hwy 8	Pearle Dr – Sheriff Mill Rd	7	7	5	5	3	10	0	0	0	3	40
Hagood Park Dr	Highland Rd – Old Liberty Rd	3	3	7	7	10	0	0	2	2	5	39
E A Ave/Mayes St	Oak Circle – NE Main St	3	3	10	3	0	0	0	10	0	10	39
West 2Nd Avenue	Liberty Dr - S 5th St	8	4	4	5	3	0	0	5	5	5	39
Days Inn Drive	E Main St - Calhoun Mem Hwy	8	5	5	5	0	0	0	0	10	5	38

Project	From – to	Evaluation Criteria (10 points each)										TOTAL
		Critical Gap/ Crossing Closure	Serves Safety Need	High Poten-tial Use	Rela-tive ease/ cost	Connects to parks, library, YMCA	Improves school access	Traffic calming/ bike route	Access to down-town	Access to comm-ercial areas	Local Political/ Comm-unity Support	
Nalley St	Highland Rd – Old Liberty Rd	7	3	5	3	10	0	0	3	3	3	37
West A Avenue	N 2nd St - N A St	5	3	5	5	0	4	0	10	0	5	37
Anzio Street	E 3rd Ave - S of Pinewood Dr	5	3	3	4	0	5	6	3	3	5	37
W 2nd/E 2nd Ave	S 1st St – Russell St	10	3	5	3	0	5	0	5	0	5	36
Katherine St	Blair St – Highland Rd	3	3	5	5	5	0	0	5	5	5	36
Cherish Drive	Anderson Hwy - headed NE	3	3	3	6	0	10	0	0	5	5	35
Katherine St	Blair St – Highland Rd	7	3	3	3	5	0	0	5	5	3	34
Crestview Rd	Couch Ln – Sheffield Rd	7	10	4	3	0	0	2	0	0	8	34
Dogwood Lane	Laurel Rd - headed NW	6	5	5	3	0	0	0	0	10	5	34
Fleetwood Drive	Dacusville Hwy - Hillcrest Dr	5	5	5	5	0	0	0	0	10	4	34
Fleetwood Drive	Hillcrest Dr - Riggins Rd	5	5	5	5	0	0	0	0	10	4	34
W 4th St/Liberty Drive	Wallace Dr - Jones Ave	5	7	4	4	0	0	3	3	2	5	33
Robinall Drive	McAlister Rd - Dogwood Ln	6	5	5	5	0	3	0	0	5	4	33
Rock Springs Road	Dayton School Rd - headed S	3	5	3	3	0	0	5	0	8	5	32
Powell Street	Couch St - Grant St	5	5	5	4	0	0	0	3	5	5	32
Saluda Dam Road	Hagood St - Powell St	5	7	5	5	0	0	0	5	0	5	32
Whitmire Road	Richard St - Hamilton St	3	5	5	4	0	0	0	2	8	5	32
Blair St	Bannister St - King St	3	3	3	3	0	0	0	5	10	3	30
Park St	Katherine St – Hwy 8	3	3	3	3	0	0	0	5	10	3	30
Jones Ave/W 4th Ave	Liberty Dr – Hwy 8	7	3	5	7	0	3	0	2	0	3	30
Burdine Drive	Robert P Jeanes Rd - Richard St	5	5	3	4	0	4	4	0	0	5	30
Mary Ann Street	Old Cedar Rock Rd - City View Dr	3	5	3	3	0	8	0	0	3	3	28
Timberlane Drive	McAllister Rd - Huntington Rd	3	3	3	7	0	7	0	0	0	5	28
Olive Street	N A St - Deerfield Run	5	6	2	3	0	0	3	3	3	3	28
Hamilton Street	Fleetwood Dr - Old Turnpike Rd	4	4	4	5	0	0	0	0	4	4	25

Project	From – to	Evaluation Criteria (10 points each)										TOTAL
		Critical Gap/ Crossing Closure	Serves Safety Need	High Poten-tial Use	Rela-tive ease/ cost	Connects to parks, library, YMCA	Improves school access	Traffic calming/ bike route	Access to down-town	Access to comm-ercial areas	Local Political/ Comm-unity Support	
Briggs Drive	Brushy Cr Rd - Clay St	5	3	3	6	0	4	0	0	0	3	24
Front Street	Glenwood Dr - headed NE	3	3	2	7	0	0	0	3	0	3	21
Barton Street	Jeanette St - Powell St	3	3	3	4	0	0	0	2	2	3	20
Clay Street	Briggs Dr - Pearson Rd	5	3	3	3	0	0	0	0	0	3	17
Glenwood Road	Blue Ridge St - Olive St	4	4	2	3	0	0	0	0	0	3	16
1St Street	S 5th St – Wyatt Ave	10	5	6	6	5	10	0	5	3	7	57
Page Drive	Laurel Rd - headed SE	10	10	8	8	0	10	5	0	0	6	57
Intersections												
Hwy 123 at Pilgrim Dr/ Lakewood Dr		10	10	10	3	3	3	10	0	10	10	69
Hwy 93/ W Main St at Stewart Dr		10	10	6	3	3	10	2	0	10	10	64
Hwy 123 at Biltmore Rd		8	10	8	4	10	0	0	0	10	10	60
Hwy 93/ W Main St at S B St		7	8	7	4	0	10	0	10	0	10	56
Hwy 123 at S Pendleton St/ Hwy 135		10	10	6	1	0	3	2	2	10	10	54
Hwy 93/ W Main St at S Pendleton St		10	10	10	2	0	0	2	10	0	10	54
Hwy 93/ W Main St at S 1st St		8	6	8	7	0	2	0	10	0	10	51
Hwy 123 at S B St/ Bushy Creek Rd		10	10	6	2	0	0	2	0	10	10	50
S B St at E 3rd Ave		6	6	5	3	3	10	0	7	0	10	50
Hwy 93/ W Main St at S E St		10	7	5	4	0	0	0	0	10	10	46
Hwy 123 at Rosewood Dr		6	10	5	3	0	0	0	0	10	10	44
Streetscape improvements												
Pendleton Avenue/SC 8		0	0	8	1	0	5	10	10	10	8	52
East and West Main Street		0	0	10	1	0	0	10	10	10	10	51
SC 135 north of Main Street		0	0	6	2	0	0	10	10	10	7	45
1st Avenue		0	0	4	2	0	0	10	10	10	6	42

Project	From – to	Evaluation Criteria (10 points each)										TOTAL
		Critical Gap/ Crossing Closure	Serves Safety Need	High Poten-tial Use	Rela-tive ease/ cost	Connects to parks, library, YMCA	Improves school access	Traffic calming/ bike route	Access to down-town	Access to comm-ercial areas	Local Political/ Comm-unity Support	
Shared Use Paths												
Brushy Creek Greenway		5	5	10	2	10	10	10	10	10	10	82
Pickens Railroad Rail-Trail		5	5	10	3	0	2	10	10	10	10	65
Crosstown Utility Easement Pathway		10	5	6	3	0	10	10	5	10	6	65
Big Brushy Creek Greenway		5	5	8	1	2	5	10	0	10	5	51
Bike Lanes												
Pendleton St/Hwy 8/135/Pelzer Hwy	E Main St – Sheriff Mill Rd	10	10	7	5	5	10	10	10	10	10	87
E 3rd Ave/S B St/Brushy Creek Rd	S Pendleton St/Hwy 135 - S of Sheffield Rd	10	10	10	5	0	5	10	10	10	10	80
Pope Field Rd	S Pendleton St/Hwy 135 – City Ct/Walnut Hill Dr	10	10	9	3	10	3	10	0	10	10	75
E 1st Ave/Greenville Rd/Hwy 93	Russell St – Prince Perry Rd	10	10	5	4	0	5	10	10	10	10	74
Liberty Dr/Greenville Hwy	Maple Way – W Main St	10	10	5	3	10	0	10	10	10	6	74
W Main St	Fleetwood – N A St	10	10	6	4	5	0	10	10	10	7	72
McAllister Rd	Brushy Creek Rd – Rock Springs Rd	10	10	7	8	0	10	10	0	5	10	70
Pearson Rd	Pope Field Rd – Brushy Creek Rd	10	10	8	2	10	5	10	0	5	10	70
Calhoun Memorial Hwy/Hwy 123	Brushy Creek Rd – E Main St/Hwy 93	10	10	5	4	10	0	10	0	10	10	69
N. A St/Dacusville Hwy	N Main St – Pierce Ln	10	10	6	7	5	0	10	10	0	10	68
Powdersville Rd	Hwy 123 – Birchwood St/Wexford Wy	10	10	5	5	0	0	10	5	10	10	65
Anderson Hwy/ Hwy 135	SR 39-57 – Pelzer Hwy/Hwy 8	10	10	3	4	5	5	10	0	5	7	59
Prince Perry Rd	Rolling Hills Cir – Calhoun Memorial Hwy/Hwy 123	10	10	5	4	0	0	10	0	10	10	59
East Main Street	E Main St – E 1st Ave/Hwy 93	5	5	8	6	0	0	10	10	0	8	52

Project	From – to	Evaluation Criteria (10 points each)										TOTAL
		Critical Gap/ Crossing Closure	Serves Safety Need	High Poten-tial Use	Rela-tive ease/ cost	Connects to parks, library, YMCA	Improves school access	Traffic calming/ bike route	Access to down-town	Access to comm-ercial areas	Local Political/ Comm-unity Support	
Crestview Rd	Brushy Creek Rd - City Line	10	10	5	3	0	0	10	0	5	8	51
Shared Roadways												
Glenwood Rd/ Hagood St/ S Hagood St/ Saco Lowell Rd	Olive St – Prince Perry Rd	10	10	5	10	0	0	10	8	10	10	73
S 5th St/Pope Field Rd	Liberty Dr/ Hwy 93 – Pelzer Hwy/Hwy 8	5	6	5	10	10	0	10	5	5	10	66
E 1st Ave	S Pendleton St/ Hwy 135 – Russell St	5	5	5	10	0	0	10	10	10	10	65
NE Main St	N A St – Hagood St	8	5	8	10	0	0	10	10	0	8	59
Hill Crest Dr	Fleetwood Dr – NE Main St	5	5	4	10	0	5	10	10	0	5	54
Hwy 135/Dacusville Hwy	N Annex Limits/Farrs Bridge Rd – N City Limits	0	5	5	10	0	0	10	10	0	5	45

APPENDIX E. INDIVIDUAL PROJECT COST ESTIMATES

Project	From – to	Length (ft)	Cost Opinion
Sidewalks			
1St Street	S 5th St – Wyatt Ave	1,804	$90,200
Allan Street	E Main St - Saco Lowell Rd	763	$38,150
Anzio Street	E 3rd Ave - S of Pinewood Dr	1,263	$63,150
Anderson Hwy/Highway 135	Alfred Rd - Burdine Dr	3,782	$189,100
Barton Street	Jeanette St - Powell St	2,388	$119,400
Biltmore Rd	Burns Ave – Hwy 123	1,074	$53,700
Blair St	Bannister St - King St	908	$45,400
Briggs Drive	Brushy Cr Rd - Clay St	1,363	$68,150
Brushy Creek Road	Avalon Cir - Laurel Rd	4,571	$228,550
Burdine Drive	Robert P Jeanes Rd - Richard St	5,557	$277,850
Burns Ave/Burns Rd	S E St – Hwy 93	3,292	$164,600
Burns Road	Frank Parrot Rd - Burns Ave	899	$44,950
C Street	S B st - E 2nd Ave	1,345	$67,250
Calhoun Memorial Highway	Powdersville Rd - headed W	689	$34,450
Calhoun Memorial Highway	E of Powdersville Rd - Allan St	1,350	$67,500
Cherish Drive	Anderson Hwy - headed NE	1,848	$92,400
Clay Street	Briggs Dr - Pearson Rd	1,899	$94,950
Couch Ln	McAllister Ave – Crestview Rd	4,479	$223,950
Crestview Rd	Couch Ln – Sheffield Rd	7,798	$389,900
Days Inn Drive	E Main St - Calhoun Mem Hwy	743	$37,150
Dayton School Rd	Elrod St – Hwy 123	1,571	$78,550
Dogwood Lane	Laurel Rd - headed NW	162	$8,100
E 2nd Ave	S C St – S E St	726	$36,300
E 2nd Ave	E 3rd St – S B St	1,793	$89,650
E A Ave/Mayes St	Oak Circle – NE Main St	2,252	$112,600
Fleetwood Drive	Dacusville Hwy - Hillcrest Dr	2,292	$114,600
Fleetwood Drive	Hillcrest Dr - Riggins Rd	2,659	$132,950
Front Street	Glenwood Dr - headed NE	261	$13,050
Glenwood Road	Blue Ridge St - Olive St	1,831	$91,550
Hagood Park Dr	Highland Rd – Old Liberty Rd	1,408	$70,400
Hamilton Street	Fleetwood Dr - Old Turnpike Rd	1,360	$68,000
Katherine St	Blair St – Highland Rd	866	$43,300
Laurel Road	Brushy Cr Rd - Pilgrim Dr	4,268	$213,400
Mary Ann Street	Old Cedar Rock Rd - City View Dr	3,072	$153,600
Mcbee Avenue	S Pendelton St - Pinewood Dr	2,599	$129,950

Project	From – to	Length (ft)	Cost Opinion
Nalley St	Highland Rd – Old Liberty Rd	1,801	$90,050
Oak Circle	E A Ave - King Park Ln	1,390	$69,500
Olive Street	N A St - Deerfield Run	4,559	$227,950
Page Drive	Laurel Rd - headed SE	266	$13,300
Park St	Katherine St – Hwy 8	939	$46,950
Pearson Rd	Pope Field Rd – Bushy Creek Rd	5,095	$254,750
Pelzer Highway 8	Zion School Rd - headed S	1,794	$89,700
Peoples Dr/ Wimberly Ln	Pope Field Rd – Bushy Creek Rd	2,613	$130,650
Pilgrim Drive	Calhoun Mem Hwy - Burns Rd	836	$41,800
Pope Field Rd	Hwy 8 – Hwy 8	1,404	$70,200
Powdersville Rd	Hwy 123 – Ginger Ln	1,755	$87,750
Powdersville Rd	Dayton School Rd – City Line	8,619	$430,950
Powell Street	Couch St - Grant St	1,381	$69,050
Prince Perry Road	Saco Lowell Rd - S of Shaffner Rd	1,077	$53,850
Robinall Drive	McAlister Rd - Dogwood Ln	4,003	$200,150
Rock Springs Road	Dayton School Rd - headed S	4,130	$206,500
S 5Th Avenue	W 4th Ave - Millwood Ct	2,218	$110,900
S E St	Hwy 93 – Hwy 123	3,748	$187,400
Saco Lowell Road	Prince Perry Rd - Hagood St	9,503	$475,150
Saluda Dam Road	Hagood St - Powell St	1,726	$86,300
South 2nd Street	W 6th Ave - headed North	248	$12,400
Timberlane Drive	McAllister Rd - Huntington Rd	1,099	$54,950
W 2nd/E 2nd Ave	S 1st St – Russell St	1,743	$87,150
W 4th St/Liberty Drive	Wallace Dr - Jones Ave	2,558	$127,900
W 5th Ave	S 9th St – Hwy 8	1,057	$52,850
West 2Nd Avenue	Liberty Dr - S 5th St	2,604	$130,200
West A Avenue	N 2nd St - N A St	794	$39,700
West End Elementary School	(school property)	394	$19,700
Whitmire Road	Richard St - Hamilton St	1,580	$79,000
Wilbur Street	Fleetwood Dr - W of W B Ave	1,819	$90,950
Sidewalks Total		**147,688**	**$4,430,640**
Intersections			
Hwy 123 at Biltmore Rd		N/A	$4,137
Hwy 123 at Pilgrim Dr/ Lakewood Dr		N/A	$22,537
Hwy 123 at Rosewood Dr		N/A	$4,137
Hwy 123 at S B St/ Bushy Creek Rd		N/A	$4,137
Hwy 123 at S Pendleton St/ Hwy 135		N/A	$4,137
Hwy 93/ W Main St at S 1st St		N/A	$4,205
Hwy 93/ W Main St at S B St		N/A	$20,236
Hwy 93/ W Main St at S E St		N/A	$20,236
Hwy 93/ W Main St at S Pendleton St		N/A	$20,236
Hwy 93/ W Main St at Stewart Dr		N/A	$20,236
S B St at E 3rd Ave		N/A	$4,040
Intersections Total			**$128,274**

Project	From – to	Length (ft)	Cost Opinion
Streetscape improvements			
1st Avenue	S 1st St - Greenville Rd	3,603	$108,090
East and West Main Street	Fleetwood Dr - B St	7,584	$227,520
Pendleton Street/SC 8	W Main St - Pelzer Hwy	6,711	$201,330
SC 13/Dacusville Hwy	Glenwood Rd - W Main St	6,082	$182,460
Streetscape Improvements Total		**23,980**	**$719,400**
Shared Use Paths			
Brushy Creek Greenway		15,840	$396,000
Pickens Railroad Rail-Trail		13,200	$330,000
Crosstown Utility Easement Pathway		7,392	$184,800
Big Brushy Creek Greenway		15,270	$381,750
Shared Use Paths Total		**51,702**	**$1,292,550**
Bike Lanes			
Anderson Hwy/ Hwy 135	SR 39-57 – Pelzer Hwy/Hwy 8	2,437	$12,681
Calhoun Memorial Hwy/Hwy 123	Brushy Creek Rd – E Main St/Hwy 93	6,002	$31,230
Crestview Rd	Brushy Creek Rd - City Line	12,713	$66,150
E 1st Ave/Greenville Rd/Hwy 93	Russell St – Prince Perry Rd	15,804	$82,233
E 3rd Ave/S B St/Brushy Creek Rd	S Pendleton St/Hwy 135 - S of Sheffield Rd	17,876	$93,015
East Main Street	E Main St – E 1st Ave/Hwy 93	806	$4,194
Liberty Dr/Greenville Hwy	Maple Way – W Main St	6,656	$34,633
McAllister Rd	Brushy Creek Rd – Rock Springs Rd	8,928	$46,455
N. A St/Dacusville Hwy	N Main St – Pierce Ln	8,818	$45,883
Pearson Rd	Pope Field Rd – Brushy Creek Rd	5,061	$26,334
Pendleton St/Hwy 8/135/Pelzer Hwy	E Main St – Sheriff Mill Rd	19,534	$101,642
Pope Field Rd	S Pendleton St/Hwy 135 – City Ct/Walnut Hill Dr	1,498	$7,795
Powdersville Rd	Hwy 123 – Birchwood St/Wexford Wy	10,893	$56,680
Prince Perry Rd	Rolling Hills Cir – Calhoun Memorial Hwy/Hwy 123	2,215	$11,525
W Main St	Fleetwood – N A St	6,259	$32,568
Bike Lanes Total		**125,500**	**653,018**
Shoulder Bikeways			
Adger Rd	Black Snake Rd – Anderson Hwy/Hwy 135	5,114	$40,912
Amsterdam Rd/SH 61	Greenville Hwy/Hwy 93 – Nalley St	11,749	$93,992
Anderson Hwy/ Hwy 135	Johnson Rd - Fish Camp Rd	5,265	$42,120
Breazeale Rd	Griffin Mill Rd - Gentry Memorial Hwy/Pickens St/ Hwy 8	6,421	$51,368
Brushy Creek Rd	S of Sheffield Rd - Sheriff Mill Rd	1,650	$13,200
Brushy Creek Rd	Sheriff Mill Rd – Meadow Ridge Rd	2,522	$20,176
Calhoun Memorial Hwy/ Hwy 123	W Annex Limit – Pendleton St/Hwy 135	11,780	$94,240
Enon Church Rd	Highland Bridge Rd – SH 61	3,917	$31,336
Farrs Bridge Rd	W Cedar Rock Rd - Holly Bush Rd	4,539	$36,312
Gentry Memorial Hwy/Pickens St/ Hwy 8	Cedar Rock Church Rd- Norton St	11,507	$92,056
Greenville Hwy/ Hwy 98	Amsterdam Rd - Maple Way	8,054	$64,432
Griffin Mill Rd/Old Liberty Rd	W Roper Rd – SH 61/Amsterdam Rd	14,838	$118,704
Holly Brush Rd	N Annex Limits/Farrs Bridge Rd - Cedar Rock Church Rd	3,424	$27,392

Project	From – to	Length (ft)	Cost Opinion
Holly Brush Rd	Cedar Rock Church Rd – Dacusville Hwy/Hwy 135	1,580	$12,640
Hwy 8/Pelzer Hwy	Sheriff Mill Rd – E Church Rd/St Paul Rd	4,736	$37,888
Ireland Rd	Tabor Woods Rd - Robert P Jeanes Rd	3,772	$30,176
Jameson Rd/Lenhardt Rd	Hwy 183/Farrs Bridge Rd – Ingleosk Ln	16,942	$135,536
Lenhardt Rd/W Old Farrs Bridge Rd	Farrs Bridge Rd - SW of Cliffstone Dr	15,556	$124,448
Mulberry Rd	Enon Church Rd – Gentry Memorial Hwy/Hwy8	3,963	$31,704
N Cedar Rock Rd	Farrs Bridge Rd – Turpin Dr	17,932	$143,456
Old Cedar Rock Dr/Old Cedar Rock Rd	Robert P Jeanes Rd – Jessica Ct	6,593	$52,744
Olive St/Saluda Dam Rd	N A St/Dacusville Hwy/ Hwy 135 - Prince Perry Rd	15,529	$124,232
Pelzer Hwy/Hwy 8	Sheriff Mill Rd – E Church Rd/SH 485	4,775	$38,200
Prince Perry Rd	Saluda Dam Rd - Rolling Hills Cir	6,130	$49,040
Rice Rd	Tabor Woods Rd - Cedar Rock Church Rd	6,862	$54,896
Rock Springs Rd	Hwy 123 – Powdersville Rd	4,530	$36,240
Ross Ave	Liberty Dr – Hwy 123	3,150	$25,200
Saluda Dam Rd	Hwy 105/N A St - Prince Perry Rd	15,505	$124,040
Sheffield Rd	Powdersville Rd – Crestview Rd/Rock Springs Rd	2,634	$21,072
Sheriff Mill Rd	Hwy 8/Pelzer Hwy – Brushy Creek Rd	6,345	$50,760
Smith Grove Rd	Highland Rd – SH 61	3,975	$31,800
Smith Grove Rd	SH 61 – N of Trey Ct	623	$4,984
Smith Grove Rd	N of Trey Ct – Liberty Dr	1,042	$8,336
W Cedar Rock Rd/ Cedar Rock Church Rd/Rice Rd	Robert P Jeanes Rd – Gentry Memorial Hwy/ Hwy 8	11,787	$94,296
Shoulder Bikeways Total		**244,741**	**$1,957,928**
Shared Lane Markings (sharrows)			
Hagood Street/Saco Lowell Rd	Olive St – Prince Perry Rd	11,646	$50,466
North East Main Street	N A St – Hagood St	2,302	$9,975
S 5th St/Pope Field Road	Liberty Dr/ Hwy 93 – Pelzer Hwy/Hwy 8	13,834	$59,947
Shared Lane Markings Total		**27,782**	**$120,389**
Shared Roadways (pavement markings)			
Andrew Avenue		4,401	$2,201
Bell Street		1,219	$610
East 2nd Avenue		1,875	$938
East 3rd Avenue		1,109	$555
Hillcrest Drive/Richard Street/Troy Street		5,669	$2,835
Mcbee Avenue		2,364	$1,182
South 2nd Street		688	$344
Tiffany Drive/Lloyd Avenue		1,158	$579
West 6th Avenue		9,239	$4,620
West 7th Avenue		1,508	$754
Shared Roadways (pavement Markings) Total		**29,230**	**$14,615**
Shared Roadways (signage)			

Project	From – to	Length (ft)	Cost Opinion
Alethia Street		1,262	$74
Anzio Street		1,418	$83
Ben Drive		1,168	$69
Biltmore Road		1,076	$63
Briggs Drive		431	$25
Burns Avenue		2,124	$125
Dogwood Lane/Robinall Drive		4,019	$236
East 1St Avenue		616	$36
East 2Nd Avenue		1,140	$67
East 2Nd Avenue		3,285	$193
East Main Street		393	$23
Edgemont Street		1,418	$83
Fairfax Road		1,275	$75
Frank Street		2,346	$138
Glenwood Road		2,389	$140
Hamilton Street/Skyland Drive		3,948	$232
Haverhill Circle/Bedford Road		2,376	$139
Highland Road/Hagood Park Drive		2,732	$160
Inverness Way		2,380	$140
Jamie Street		404	$24
Katherine Street/Blair Street/Cumberland Avenue		4,234	$248
Lynn Circle/Springdale Avenue/Oakvale Drive		5,775	$339
Mayes Street		1,661	$97
Mckissick Road		513	$30
Nancy Drive		2,513	$147
North B Street		3,362	$197
North Pendleton Street		1,542	$90
Oaklane Drive		3,159	$185
Old Stagecoach Road		7,262	$426
Peoples Drive		3,188	$187
Peoples Drive		625	$37
Pine Forest Drive		2,120	$124
Pineview Drive		2,603	$153
Rampey Street		795	$47
Roper Street		1,600	$94
Russell Street		1,375	$81
South E Street		1,491	$87
South E Street		1,201	$70
South E Street		863	$51
Timberlane Drive/Huntington Road		4,056	$238
Wallace Drive/Barr Road/Adger Road		13,987	$821
Waverly Street		2,551	$150

Project	From – to	Length (ft)	Cost Opinion
West 2Nd Avenue		3,277	$192
West A Avenue/East A Avenue		5,257	$308
Wilbur Street		4,509	$265
Wimberly Lane		1,585	$93
Shared Roadways (signage) Total:		**$175,764**	**$36,112**
Shared Roadway (traffic calming)			
Burns Road/Pilgrim Drive/Laurel Road		7,520	$42,870
Wimberly Lane		1,778	$10,136
Shared Roadways (traffic calming) Total:		**9,298**	**$53,006**

Alta Planning + Design
108 S. Main St, Suite B
PO Box 2453
Davidson, NC 28036

www.altaplanning.com