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CITY OF WHITEVILLE

2014 Pedestrian Master Plan

alta GREENWAYS

Division of Bicycle & Pedestrian Transportation
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Citizen Involvement

A special thanks to the 100+ local residents who participated in this planning process through comment forms, public workshops, and meetings.

Key Partners

The City of Whiteville

The North Carolina Department of Transportation (NCDOT)

Cape Fear Area Regional Planning Organization (RPO)

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PURPOSE

The Pedestrian Master Plan for the City of Whiteville guides the future development and enhancement of pedestrian facilities within the city, and intends to make walking an integral mode of transportation in Whiteville. This plan—developed with extensive input from the community—seeks to meet Whiteville's needs and desires for pleasant, enjoyable, and safe places to walk while reflecting the regional collaboration between the City of Whiteville, the North Carolina Department of Transportation (NCDOT), Columbus County, the Cape Fear Council of Governments (CFCOG), and other local and regional partners.

NCDOT'S BICYCLE AND PEDESTRIAN PLANNING GRANT INITIATIVE

In 2013, the City of Whiteville was awarded a matching grant from the NCDOT Bicycle and Pedestrian Planning Grant Initiative. The purpose of the grant is to encourage municipalities to develop comprehensive bicycle plans and pedestrian plans. This program has assisted more than 135 North Carolina communities and is administered through NCDOT's Division of Bicycle and Pedestrian Transportation (DBPT).

VISION STATEMENT AND GOALS

What will Whiteville be like for pedestrians in the future? This plan is guided by a vision statement and set of measureable goals for the future of Whiteville that were developed during the steering committee kick-off meeting and were supported by residents of Whiteville during public outreach and engagement activities. The statement below describes Whiteville's vision for a pedestrian-friendly future and the action steps listed on the following page describe how Whiteville will achieve that vision.

PEDESTRIAN MASTER PLAN VISION STATEMENT

The City of Whiteville will be a vibrant, connected community where walking is safe and convenient, with a network of sidewalks and trails that provide opportunities for physical activity and a healthy lifestyle, community interaction, and access to local businesses, services and schools.

Measurable Action Items of the Pedestrian Plan:

- Create **recurring annual community events** that use city sidewalks and trails to promote walking, such as a walk/run event, a community fun day at a local park, or an "Open Streets" festival
- Start a pedestrian **safety education program** in all elementary and middle schools for children in grades K-8
- **Fill in gaps** in the sidewalk network to better connect neighborhoods to the downtown, public spaces, and other important destinations
- **Increase pedestrian safety** by reducing the number of pedestrian-related accidents each year
- Reduce existing foot trails/dirt paths in the pedestrian network **by providing new sidewalks and greenway trails**
- Raise awareness and educate decision-makers, stakeholders, interest groups, and the public on the **benefits of sidewalks, greenway trails, and active lifestyles**
- Complete top priority pedestrian projects by 2024 (10-year program)

THE PLANNING PROCESS

THE PROJECT STEERING COMMITTEE

The project steering committee for the pedestrian plan consisted of local stakeholders, City staff, NCDOT staff, and interested residents. The project steering committee met with project consultants four times throughout the process. During the first meeting in November of 2013, the committee focused on project vision, goals, and existing conditions. During the second meeting in February of 2014, the committee discussed proposed improvements and pedestrian related programs needed in Whiteville. In April of 2014, the third committee meeting was held and committee members were given an opportunity to review of the reviewed the draft pedestrian plan document. The fourth steering committee meeting occurred in June of 2014 with a review of the final pedestrian master plan document for presentation to City Council for adoption.

Members of the steering committee marked up maps to identify areas in need of pedestrian improvements.

PUBLIC INVOLVEMENT

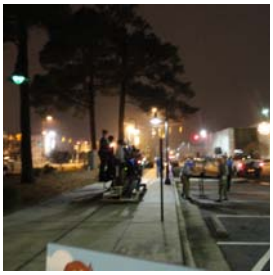
In order to gain local knowledge and input, an extensive public outreach and engagement component was included as an integral part of the planning efforts. Public input was gathered through several different means,including the following: steering committee meetings, a project website, a project comment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

In November 2013, a project website was developed with input and guidance from the Steering committee. The website was publicly launched following the kick-off meeting. It was updated regularly throughout the planning process with project information, a link to the online comment form, upcoming public events, a summary of project progress. A link to the draft plan when it was made publicly available in March 2014.

The first public engagement event was held on December 9, 2013, during the 24th Annual Candlelight Walk event in downtown Whiteville. People were invited to learn about the plan and provide comments regarding where they would like to see improvements for walking around the community. A public input map, comment forms, and posters were provided for review and members of the project team answered questions and took comments. Project information cards were also distributed that provided the online link to the web-based comment form. The general feedback was highly positive, with many people interested in learning more about Whiteville's plans to create a walkable community.

The second public outreach event was held in mid-June at City Hall. A public open house was set up by the project consultants and members of the public were invited to review highlights of the draft plan document, ask questions, and provide guidance on further refining the recommendations. Excitement about corridor enhancement recommendations and Complete Streets concepts was expressed by many members of the public.

Candlelight Walk Event at Vineland Station in downtown Whiteville.



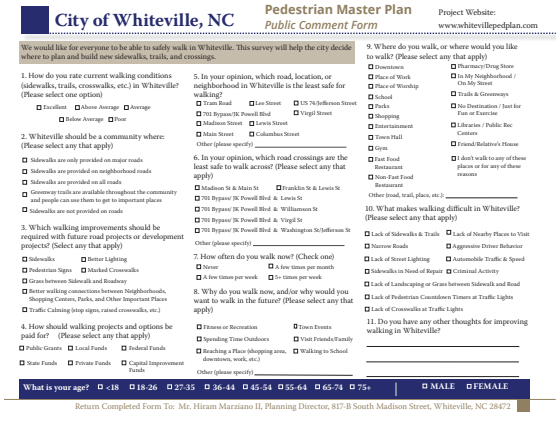
After the choir performed, residents stopped by the pedestrian plan booth to learn about the project.

The client and consultant team were at the booth to answer questions and give out information.

Public Comment Form

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

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



City of Whiteville, NC — Pedestrian Master Plan — Public Comment Form — Project Website: www.whitevillepedplan.com

We would like for everyone to be able to safely walk in Whiteville. This survey will help the city decide where to plan and build new sidewalks, trails, and crossings.

1. How do you rate current walking conditions (sidewalks, trails, crosswalks, etc.) in Whiteville? (Please select one option)
☐ Excellent ☐ Above Average ☐ Average ☐ Below Average ☐ Poor

2. Whiteville should be a community where: (Please select any that apply)
☐ Sidewalks are only provided on major roads
☐ Sidewalks are provided on neighborhood roads
☐ Sidewalks are provided on all roads
☐ Greenway trails are available throughout the community and people can use them to get to important places
☐ Sidewalks are not provided on roads

3. Which walking improvements should be required with future road projects or development projects? (Select any that apply)
☐ Sidewalks ☐ Better Lighting
☐ Pedestrian Signs ☐ Marked Crosswalks
☐ Grass between Sidewalk and Roadway
☐ Better walking connections between Neighborhoods, Shopping Centers, Parks, and Other Important Places
☐ Traffic Calming (stop signs, raised crosswalks, etc.)

4. How should walking projects and options be paid for? (Please select any that apply)
☐ Public Grants ☐ Local Funds ☐ Federal Funds
☐ State Funds ☐ Private Funds ☐ Capital Improvement Funds

5. In your opinion, which road, location, or neighborhood in Whiteville is the least safe for walking?
☐ Train Road ☐ Lee Street ☐ US 76/Jefferson Street
☐ 701 Bypass/JK Powell Blvd ☐ Virgil Street
☐ Madison Street ☐ Lewis Street
☐ Main Street ☐ Columbus Street
Other (please specify) _____

6. In your opinion, which road crossings are the least safe to walk across? (Please select any that apply)
☐ Madison St & Main St ☐ Franklin St & Lewis St
☐ 701 Bypass/ JK Powell Blvd & Lewis St
☐ 701 Bypass/ JK Powell Blvd & Williamson St
☐ 701 Bypass/ JK Powell Blvd & Virgil St
☐ 701 Bypass/ JK Powell Blvd & Washington St/Jefferson St
Other (please specify) _____

7. How often do you walk now? (Check one)
☐ Never ☐ A few times per month
☐ A few times per week ☐ 5+ times per week

8. Why do you walk now, and/or why would you want to walk in the future? (Please select any that apply)
☐ Fitness or Recreation ☐ Town Events
☐ Spending Time Outdoors ☐ Visit Friends/Family
☐ Reaching a Place (shopping area, downtown, work, etc.) ☐ Walking to School
Other (please specify) _____

9. Where do you walk, or where would you like to walk? (Please select any that apply)
☐ Downtown ☐ Pharmacy/Drug Store
☐ Place of Work ☐ In My Neighborhood / On My Street
☐ Place of Worship ☐ Trails & Greenways
☐ School ☐ No Destination / Just for Fun or Exercise
☐ Parks ☐ Libraries / Public Rec Centers
☐ Shopping ☐ Friend/Relative's House
☐ Entertainment ☐ I don't walk to any of these places or for any of these reasons
☐ Town Hall
☐ Gym
☐ Fast Food Restaurant
☐ Non-Fast Food Restaurant
Other (road, trail, place, etc.): _____

10. What makes walking difficult in Whiteville? (Please select any that apply)
☐ Lack of Sidewalks & Trails ☐ Lack of Nearby Places to Visit
☐ Narrow Roads ☐ Aggressive Driver Behavior
☐ Lack of Street Lighting ☐ Automobile Traffic & Speed
☐ Sidewalks in Need of Repair ☐ Criminal Activity
☐ Lack of Landscaping or Grass between Sidewalk and Road
☐ Lack of Pedestrian Countdown Timers at Traffic Lights
☐ Lack of Crosswalks at Traffic Lights

11. Do you have any other thoughts for improving walking in Whiteville?
_____
_____
_____

What is your age? ☐ <18 ☐ 18-26 ☐ 27-35 ☐ 36-44 ☐ 45-54 ☐ 55-64 ☐ 65-74 ☐ 75+ | ☐ MALE ☐ FEMALE

Return Completed Form To: Mr. Hiram Marziano II, Planning Director, 817-B South Madison Street, Whiteville, NC 28472

DATA COLLECTION AND ANALYSIS

Collection of existing geographic information systems (GIS) data, such as the city's sidewalk inventory, aerial photography, and planned greenway trail network, occurred during project kick-off.

The consultant team conducted thorough on-the-ground field research in Fall 2013. Field research included the exploration of neighborhoods, schools, parks, existing trails, and the Whiteville downtown core to identify opportunities for connections between neighborhoods and key destinations such as recreation areas, schools, and downtown.

A pedestrian walks along Franklin Street toward downtown.

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

After collecting baseline information about the study area in Fall 2013, the consultants began assessing existing conditions, which are the focus of Chapter 2 of this plan. Consultants used aerial photography and geographic information systems (GIS) data, to identify opportunities and constraints for pedestrian facility development. These preliminary findings were then tested for applicability and appropriateness through on-the-ground field research. Field research also included an intersection inventory and a photographic inventory. The existing conditions and the preliminary findings were then presented to the steering committee and the public in February 2014.

Pedestrian activity was observed in neighborhood areas adjacent to downtown Whiteville.

BENEFITS OF A WALKABLE COMMUNITY

When considering the level of dedication in time and valuable resources that it takes to create a walk-friendly community, it is also important to assess the immense value of active transportation. Better walking and bicycling facilities improve safety and encourage more people to walk and bike, which in turn improves health, provides a boost to the local economy, creates a cleaner environment, reduces congestion and fuel costs, and contributes to a better quality of life and sense of community.

Communities across the country are experiencing the benefits of providing a supportive environment for walking and bicycling. With a better active transportation network, Whiteville can create a stronger, more vibrant community and take advantage of the benefits described below.

INCREASED HEALTH AND PHYSICAL ACTIVITY

A growing number of studies show that the design of our communities—including neighborhoods, towns, transportation systems, parks, trails, and other public recreational facilities—affects our level of physical activity. Regular physical activity is recognized as an important contributor to good health; the Centers for Disease Control and Prevention (CDC) recommend 30 minutes of moderate physical activity each day for adults and 60 minutes each day for children.[1] Unfortunately, many people do not meet these recommendations because they lack environments where they can be physically active. The CDC reports that "physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year, and contributes to the obesity epidemic."[2] These conditions also increase families' medical expenses; each year North Carolinians spend over $24 billion on health care costs associated with a lack of physical activity, excess weight, type 2 diabetes, and poor nutrition.[3]

Having accessible pedestrian facilities available, such as sidewalks and greenways, can help people more easily incorporate physical activity into their daily lives. Sixty percent of North Carolinians say they would increase their level of physical activity if they had better access to walking facilities, such as sidewalks and trails.[4] Regular physical activity, such as walking, is shown to have numerous health benefits:[5]

- Reduces the risk and severity of heart disease and diabetes
- Reduces the risk of some types of cancer
- Improves mood
- Controls weight
- Reduces the risk of premature death

The American Public Health Association also recognizes the health benefits of walk-friendly communities. According to its 2010 report, "Investments in transit, walking and bicycling facilities support transit use, walking and bicycling directly; they also support the formation of compact, walkable, transit-oriented neighborhoods that in turn support more walking, bicycling and transit and less driving. These built environments have repeatedly been associated with more walking, bicycling and transit use, more overall physical activity, and lower body weights; lower rates of traffic injuries and fatalities, particularly for pedestrians; lower rates of air pollution and greenhouse gas emissions; and better mobility for non-driving populations."[6]

The CDC determined that creating and improving places to be active could result in a 25 percent increase in the number of people who exercise at least three times a week.[7] This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits. The establishment of a safe and reliable network of sidewalks and multi-use trails can have a positive impact on the health of nearby residents. The Rails-to-Trails Conservancy puts it simply: "Individuals must choose to exercise, but communities can make that choice easier."[8]

THE COST OF TRANSPORTATION-RELATED HEALTH OUTCOMES

The National Health Costs of…	$$ (Billions)	Estimate Includes	Source
Obesity and overweight	$142	• Healthcare costs • Lost wages due to illness & disability • Future earnings lost by premature death	National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases. Statistics Related to Overweight and Obesity: The Economic Costs. Available at: http://win.niddk.nih.gov/statistics/index.htm
Air pollution from traffic	$50-80	• Health care costs • Premature death	Federal Highway Administration. 2000. Addendum to the 1997 Federal Highway Cost Allocation Study Final Report, May 2000. Available at: www.fhwa.dot.gov/policy/hcas/addendum.htm
Traffic crashes	$180	• Healthcare costs • Lost wages • Property damage • Travel delay • Legal/administrative costs • Pain & suffering • Lost quality of life	AAA. Crashes vs. Congestion? What's the Cost to Society? Cambridge, MD: Cambridge Systematics, Inc.; 2008. Available at: www.aaanewsroom.net/assets/files/20083591910.crashesVscongestionfullreport2.28.08.pdf

All cost estimates adjusted to 2008 dollars.

Informational graphic above from the American Public Health Association's report "The Hidden Health Costs of Transportation."

The Molly's Branch Greenway Corridor runs along the western boundary of Whiteville's city limits.

ECONOMIC BENEFITS

Transportation Savings

When it comes to transportation costs, walking is the most affordable form of transportation available. According to the American Automobile Association, the cost of owning and operating a medium-sized sedan for one year, assuming one drives 10,000 miles per year, is approximately $7,804.[9] In contrast, owning and operating a bicycle costs just $120 per year, according to the League of American Bicyclists,[10] and walking is virtually free. The Pedestrian and Bicycle Information Center explains how these lower costs help individuals and communities as a whole: "When safe facilities are provided for pedestrians and bicyclists, more people are able to be productive, active members of society. Car ownership is expensive, and consumes a major portion of many Americans' income."

Walking becomes even more attractive from an economic standpoint when the unstable price of gasoline is factored into the equation. Oil prices more than quadrupled between 2000 and 2008, when gasoline prices topped $4 per gallon.[11] The unreliable cost of fuel reinforces the idea that local communities should be built to accommodate people-powered transportation, such as walking and biking. Many older North Carolina communities already have traditional mixed-use and generally compact land development patterns; when combined with new strategies for improving alternative transportation, many such communities could foster local reductions in auto- and oil-dependency.

Annual Cost Per Mile

costs		yearly totals
operating costs		
gas per mile		_____
total miles driven	×	═══
total gas	=	_____
maintenance	+	_____
tires	+	═══
total operating costs	+ =	_____
ownership costs		
depreciation		_____
insurance	+	_____
taxes	+	_____
license and registration	+	_____
finance charges	+	═══
total ownership costs	+ =	_____
other costs (washing, accessories, etc.)	+	═══
total driving costs	=	_____
total miles driven	÷	═══
cost per mile	=	_____

Car ownership is expensive and consumes a major portion of many Americans' income. Informational graphic above from AAA "Your Driving Costs" 2013 Edition.

Increased Property Values

Bicycle and pedestrian facilities such as bike lanes, paths, sidewalks, and greenway trails are popular community amenities that add value to properties nearby. According to a 2002 survey by the National Association of Realtors and the National Association of Homebuilders, homebuyers rank trails as the second-most important community amenity out of 18 choices, above golf courses, ball fields, parks, security, and others.[12] This preference for trails is reflected in property values around the country. In the Shepard's Vineyard residential development in Apex, North Carolina, homes along the regional greenway were priced $5,000 higher than other residences in the development—and these homes were still the first to sell. A study of home values along the Little Miami Scenic Trail in Ohio found that single-family home values increased by $7.05 for every foot closer a home is to the trail.[13] These higher prices reflect how trails and greenways add to the desirability of a community, attracting homebuyers and visitors alike.

ENVIRONMENTAL IMPROVEMENTS

Air Quality

Providing the option of walking as an alternative to driving can reduce the volume of gasoline consumed and the resulting car-related emissions, which in turn improves air quality. Cleaner air reduces the risk and complications of asthma, particularly for children, the elderly, and people with heart conditions or respiratory illnesses.[14] Lower automobile traffic volumes also help to reduce neighborhood noise levels and improve local water quality by reducing automobile-related discharges that are washed into local rivers, streams, and lakes. Furthermore, every car trip replaced with a walking trip reduces U.S. dependency on fossil fuels, which is a national goal. According to a survey by the National Association of Realtors and Transportation for America, 89 percent of Americans agree that transportation investments should support the goal of reducing energy use.[15]

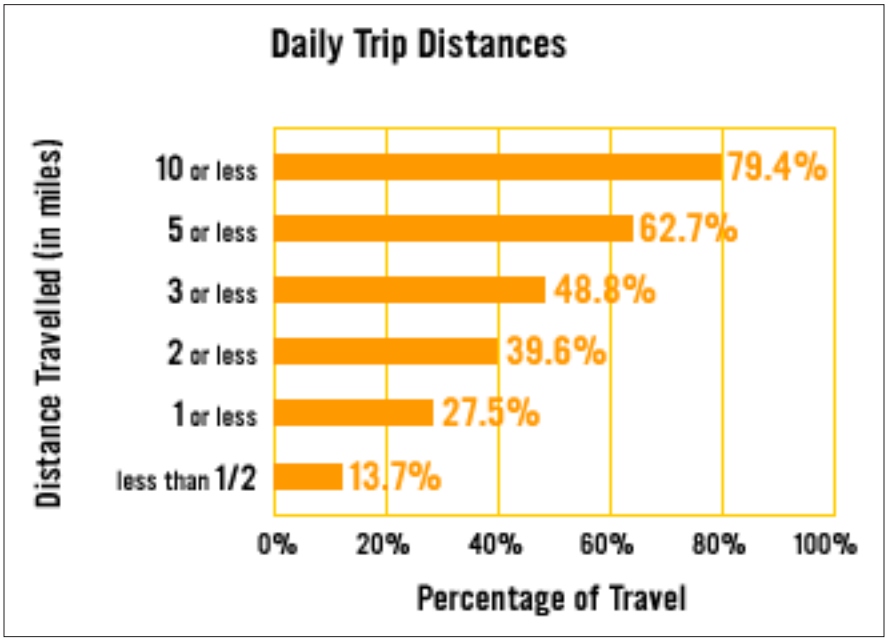
Environmental Services of Greenways

Greenways and trails are a key component of any pedestrian network and carry environmental benefits as well. Greenways protect and link fragmented habitat and provide opportunities for protecting plant and animal species. By conserving plant cover, greenways also preserve the natural air filtration processes provided by plants, which remove harmful pollutants, such as ozone, sulfur dioxide, carbon monoxide, and airborne heavy metal particles. Finally, greenways improve water quality by creating a natural buffer zone that protects streams, rivers, and lakes; preventing soil erosion; and filtering pollution caused by agricultural and road runoff. Greenways also act as a line of defense against natural hazards, such as flooding.

TRANSPORTATION BENEFITS

Many North Carolinians do not have access to a vehicle or are unable to drive. According to the 2001 National Household Travel Survey, 12 percent of persons age 15 or older do not drive, and 8 percent of U.S. households do not own an automobile. Providing a well-connected pedestrian network provides those who are unable or unwilling to drive with a safe transportation option. Pedestrian improvements can increase access to important destinations for the young, the elderly, low-income families, and others who may be unable to drive or do not have a motor vehicle.

Investing in pedestrian facilities can also help to reduce congestion and the pollution, gas costs, wasted time, and stress that comes with it. Each person who makes a trip by foot is one less car on the road or in the parking lot. A network of sidewalks, trails, and paths gives people the option of making a trip by foot, which helps to alleviate congestion for everyone. Pedestrian facilities can also help to substantially reduce transportation costs by providing a way of getting around without a car for some trips. More than one-quarter of all daily trips are one mile or less, equivalent to a 15 to 20 minute walk.[16] With a safe, convenient alternative transportation network, some of these shorter trips could be comfortably made by foot, saving money on gas, parking costs, and vehicle wear and tear over time.



More than one-quarter of all daily trips in the US are one mile or less, equivalent to a 15 to 20 minute walk. Informational graphic above from USDOT FHWA 2009 National Household Travel Survey (NHTS).

QUALITY OF LIFE

Many factors go into determining the quality of life for the citizens of a community—the local education system, the prevalence of quality employment opportunities, and the affordability of housing are all commonly cited. Increasingly though, citizens are demanding a cleaner, safer, more enjoyable community that provides amenities for adults and children alike. Communities with quality greenways, trails, and sidewalks attract new residents as well as new businesses and industries. Getting outdoors and being physically active also helps to relieve stress, improve mood, and foster social connections between residents.

Communities with pedestrian, bicycle, and trail amenities can attract new businesses, industries, and in turn, new residents. Furthermore, quality of life is positively impacted by walking and bicycling through the increased social connections that take place by residents being active, talking to one another, and spending more time outdoors and in their communities. According to the Brookings Institution, the number of older Americans is expected to double between 2000 and 2025.[17] All but the most fortunate seniors will confront an array of medical and other constraints on their mobility even as they continue to seek both an active community life, and the ability to age in place. Off-road trails built as part of the pedestrian and bicycle transportation network generally do not allow for motor vehicles; however, they do accommodate motorized wheelchairs, which is an important asset for the growing number of senior citizens who deserve access to independent mobility. For those seniors who remain ambulatory, off-road trails provide an excellent and safe opportunity for exercise and fitness.

Children under 16 are another important subset of our society who deserve access to safe mobility and a higher quality of life. In recent years, increased traffic and a lack of pedestrian and bicycle facilities have made it less safe for children to travel to school or to a friend's house. In 1969, 48 percent of students walked or biked to school, but by 2001, that number dwindled to less than 16 percent.

In a 2004 CDC survey, 1,588 adults answered questions about barriers to walking to school for their youngest child aged 5 to 18 years.[18] The main reasons cited by parents included distance to school, at 62%, and traffic-related danger, at 30%. Strategic additions to the bicycle and pedestrian network could shorten the distance from homes to schools, and overall pedestrian and bicycle improvements can improve the safety of the roadways so that children within Gibonsville could once again safely walk in their communities. According to the National Center for Safe Routes to School, "Walking or biking to school gives children time for physical activity and a sense of responsibility and independence; allows them to enjoy being outside; and provides them with time to socialize with their parents and friends and to get to know their neighborhoods."[19] Ensuring that children have safe connections to their schools and throughout their neighborhoods can encourage them to spend time outdoors, get the physical activity they need for good health, and enjoy a higher quality of life.

The creation of a safe pedestrian and bicycle facility network will serve as a link to the outdoors, providing residents of Whiteville with easily accessible opportunities for community-building, recreation, education, exercise, and transportation. Sidewalks, bikeways, and greenway trails are facilities that are available to all income groups, all neighborhoods, and all community groups, regardless of background and experiences. Many residents will take pride in these facilities, as they will become part of their daily, weekly, or monthly lives. These facilities will allow residents to access basic needs and interact with neighbors without automobile dependence.

A greenway trail can also serve as a hands-on environmental classroom for people of all ages to learn historical information and experience natural landscapes, furthering environmental awareness. Local schools and community groups will be able incorporate outdoor learning activities into their curriculums and provide children with the experience of outdoor education. Outdoor classrooms also offer alternatives for all to gain a better knowledge of what natural resources are and to understand the interconnectedness of these resources. Opportunities are available in an outdoor classroom to educate youth on the importance of taking care of the environment.[20]

CONCLUSION

The benefits of fully accommodating pedestrians, and increased rates of walking, are diverse and substantial. While increased safety for pedestrians and bicyclists is the most apparent benefit to many, a comprehensive network that allows for safe walking and bicycling reduces the collision risk for all users and contributes valuable health, economic, environmental, transportation, and quality of life benefits to Whiteville residents and visitors.

The Columbus County Health Department developed a one-mile natural surface walking trail that is accessed from S. Madison Street.

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2 Existing Conditions

Chapter Contents

INTRODUCTION

Walking is the most basic form of transportation. In North Carolina, it is also the most popular means of recreation and exercise. Yet choosing to make a trip on foot in Whiteville and most North Carolina communities requires careful planning and consideration due to land use patterns and a lack of infrastructure connectivity. Generally, people will not choose to walk to work, school, or a park if they don't have sidewalks or other dedicated pedestrian pathways and are not within a reasonable walking distance (1/2 mile or 10 minutes) of their destination.

HISTORY & LAND USE DEVELOPMENT

HISTORY

"Whiteville's beginning dates back to 1733 land grants. James B. White, from whom Whiteville is named, owned over 2,000 acres of land, which included a plantation, Marsh Castle. It was originally part of a 640-acre tract of land inherited by John Burgin and his wife, Margaret. John Burgin, an attorney, served as secretary to Governor Arthur Dobbs in 1754 and was treasurer of the colony in 1766.

In the years following the Revolutionary War, the area became more populous, and for the convenience of these settlers, a new county, Columbus, was established from Bladen and Brunswick Counties. The site of Columbus County Courthouse was chosen and given to Columbus County by James B. White, who became the county's first state senator. Today's Courthouse Square can be seen on the original plan of Whiteville.

Later, a railroad depot was built south of Whiteville at Vineland, which existed as a separate town until 1926 when it became part of Whiteville. The Vineland section is still referred to as "downtown" and old Whiteville as "uptown."" [1]

LOCATION

"Whiteville is well connected to many major centers in the state and South Carolina due to several major highways traversing the area. US701, US74, US76, and NC130 all pass through or very near the City. Also, the City is within 45 minutes of I-95 and I-40. This accessibility allows Whiteville to utilize many larger population centers and what they have to offer. Within one hour of the city limits lies North Carolina's largest port in Wilmington and commercial centers in Fayetteville and Myrtle Beach. Raleigh, the state capital, and Charlotte, the state's largest city, are both less than three hours away."[1]

Whiteville's geographic characteristics, existing roadway and land use configurations, and limited existing sidewalk facilities significantly affect the viability of pedestrian transportation and recreation, and the everyday decisions of citizens. A complete and effective pedestrian network consists of facilities such as sidewalks, traffic calming measures, crosswalks, curb ramps, pedestrian countdown signals, walking trails, mutli-use pathways, and railroad crossings that are highly visible, attractive, and safe. Today, the town features an extensive network of existing sidewalks, and the roadway corridors throughout much of the city are a grid network.

EXISTING CONDITIONS ANALYSIS

Geographic Information Systems (GIS) data was obtained from the City of Whiteville and the State of North Carolina. Map 2.1, titled "Existing Conditions," on page 2-3, presents existing conditions in Whiteville and serves as the foundation for analyzing the current pedestrian environment. The analysis included evaluating the existing pedestrian network, locations of pedestrian-related crashes, and the identification of popular destinations; natural and historic areas; sidewalk gaps; and demographic patterns that may be useful in assessing need for future pedestrian facilities. The compact, historic downtown core offers visitors and residents walkable, tree-lined streets. Many important destinations are located within a half-mile radius and within a one-mile radius of the downtown core area. Maps 2.2 and 2.3 on pages 2-4 and 2-5, respectively, present the 1/2-mile and one-mile radius buffers the downtown core area. These maps highlight the existing pedestrian network and the locations of destinations within walking distance of the downtown business district.

TRIP ATTRACTORS

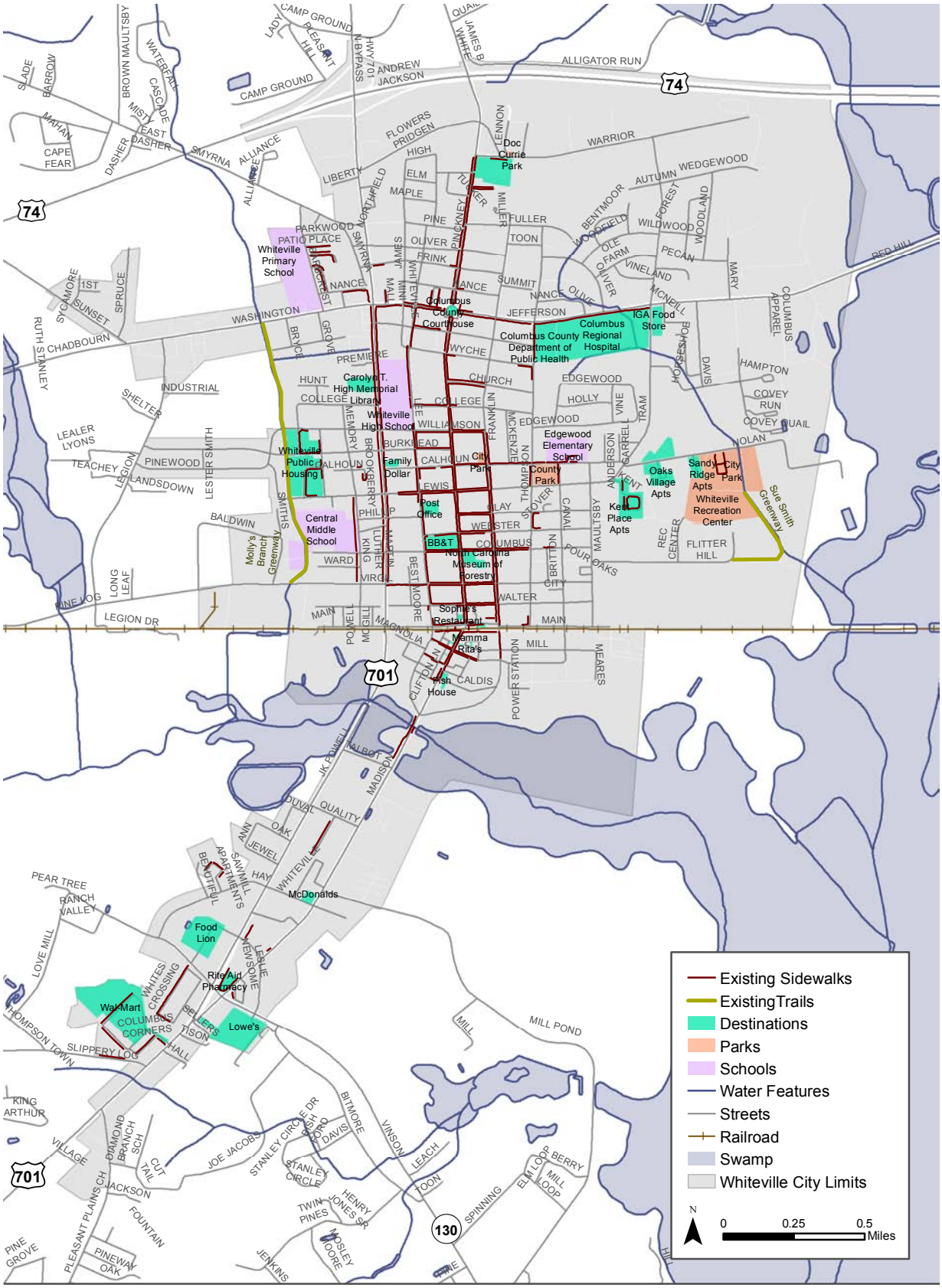
People currently drive, walk, or bike to a variety of destinations across Whiteville for various purposes. These potential destinations and points of origin for residents and visitors are referred to in this document as 'trip attractors'. Many, but not all of the trip attractors in Whiteville are labeled on Map 2.1.

Trip attractors in Whiteville include the following:

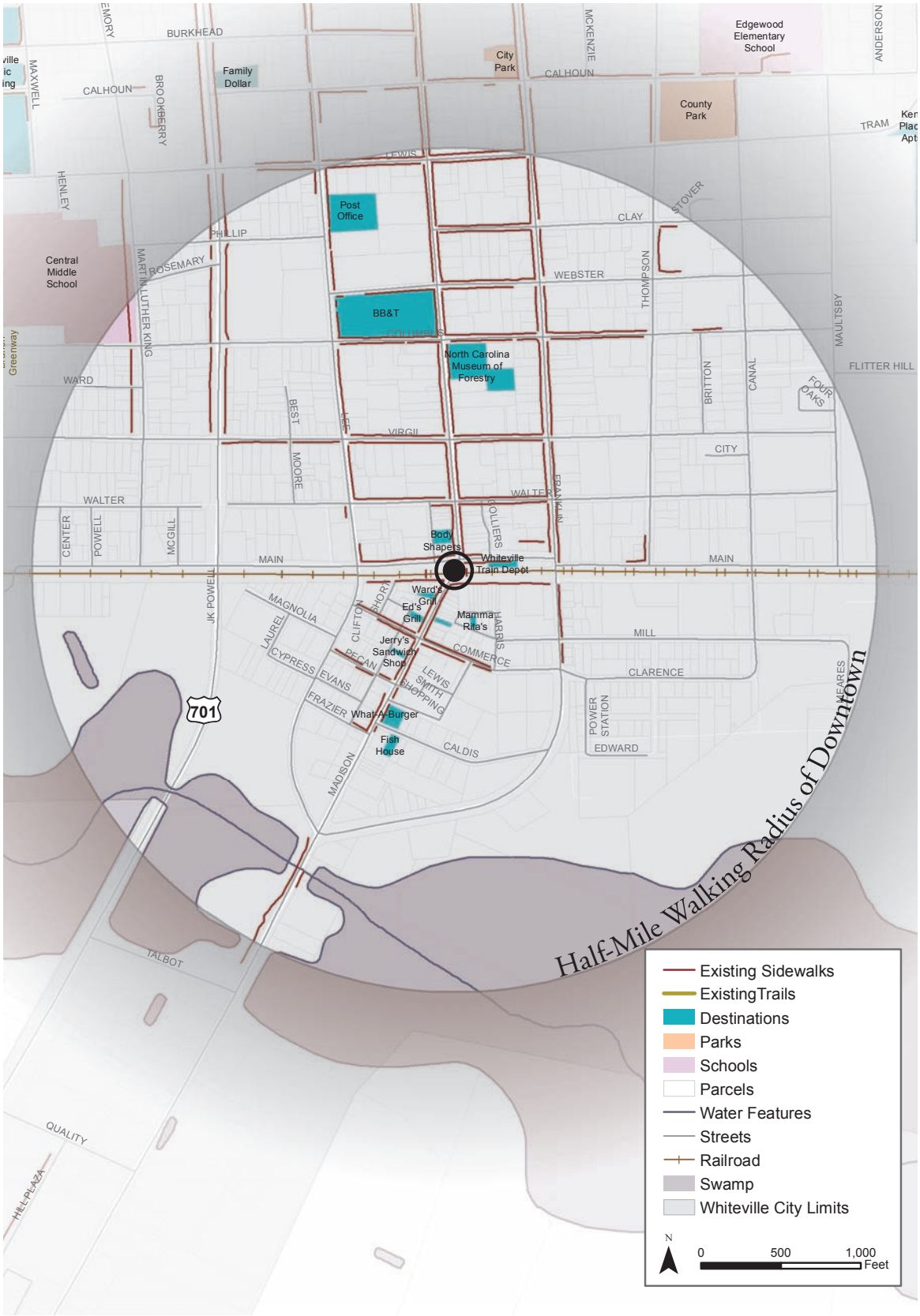
- Downtown Whiteville
- City of Whiteville parks, greenway trails, and other trails
- County Parks
- Restaurants
- Commercial and retail shopping areas along 701 Bypass.
- Public destinations (North Carolina Museum of Forestry, Columbus County Courthouse, schools, libraries, post offices, etc.)

The trip attractors listed above were considered when determining locations for recommended pedestrian network improvements. They represent important starting and ending points for travel and provide a good basis for planning ideal routes.

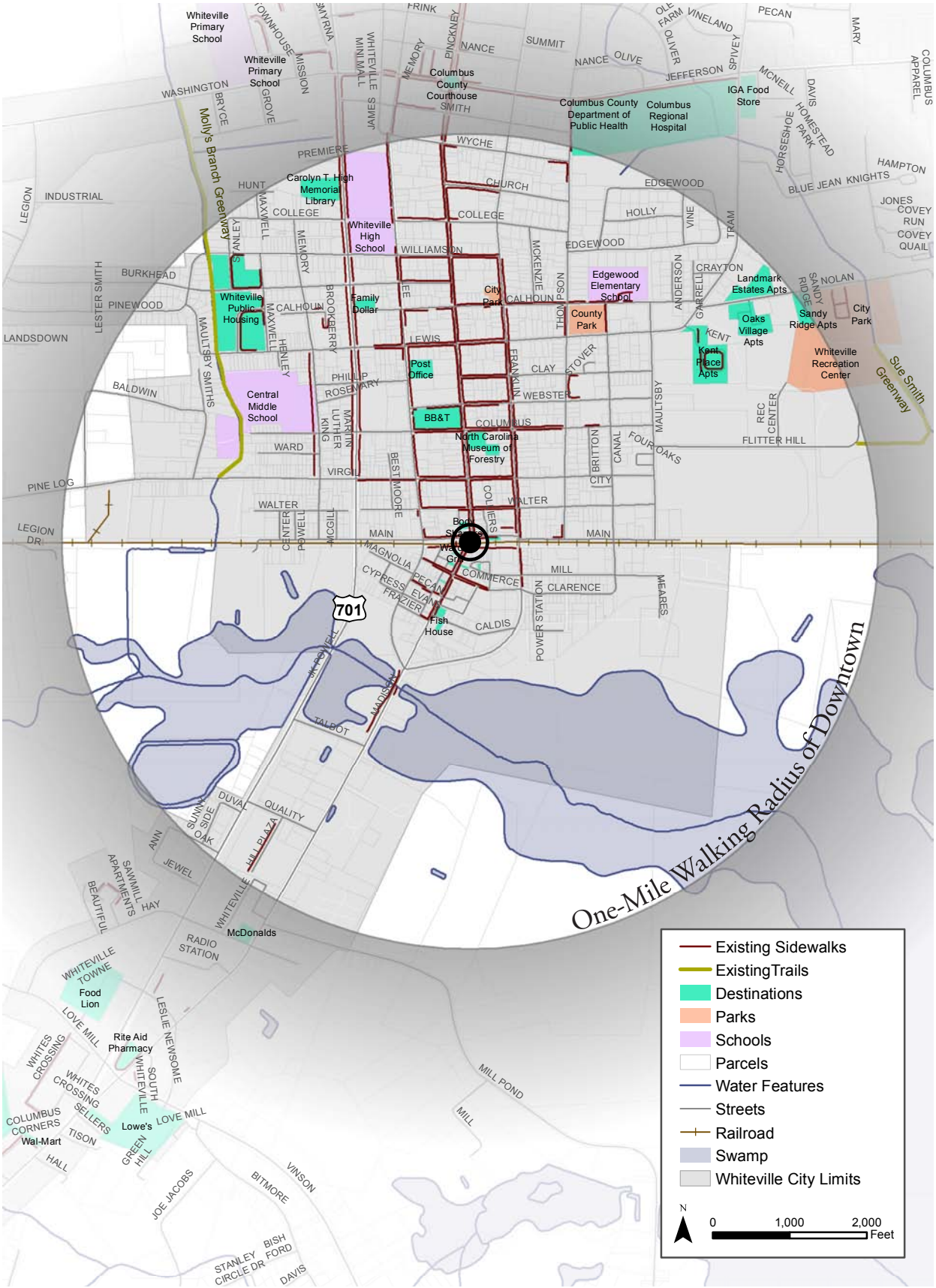
MAP 2.1 EXISTING CONDITIONS



MAP 2.2 HALF MILE WALKING DISTANCE



MAP 2.3 ONE MILE WALKING DISTANCE



DEMOGRAPHIC ANALYSIS

The walking needs and demands of different populations in Whiteville can be better understood through an analysis of demographic information. 2010 U.S. Census Bureau data and 2007-2011 U.S. Census Bureau, American Community Survey (ACS) data were obtained and analyzed during the current conditions evaluation of this plan. Data sets such as population density, minority populations, households without access to a vehicle, people who walk to work, and median household income were mapped by Census Block or Block Group. A summary of U.S. Census information is included in the table below. It is important to know that an average of 18 percent of households in Whiteville do not have access to a vehicle and 37 percent of the households in Whiteville are living below the poverty line. The areas of Whiteville that have many residents who do not have access to a vehicle or are living below the poverty line were carefully examined during this pedestrian master planning process.

POPULATION CHARACTERISTICS

As of the 2010 U.S. Census estimate, Whiteville has a total population of 5,394. Females represent 55.3 percent of the population and males 44.7 percent. Over half of the population (58 percent) falls between the ages of 18 and 65 years old. Youth under the age of 18 make up 22 percent of the population and adults over the age of 65 account for about 20 percent. Table 2.1 provides a summary of Whiteville population characteristics and how they compare to Columbus County and North Carolina as a whole.

POPULATION DENSITY

Map 2.4 on page 2-8, titled "Population Density," shows population density by U.S. Census Block in Whiteville. The most densely populated areas are located at Kent Place Apartments on Tram Road and Covey Run Apartments on Covey Run Lane, each with a density of 35 persons per acre. Other places with greater than 10 persons per acre are located along Powell Boulevard between West Williamson Street and West Columbus Street on the west side of the city. Providing safe access between highly populated areas and destinations such as commercial centers, employment areas, and the downtown should be considered high priorities for Whiteville.

TABLE 2.1 DEMOGRAPHIC ANALYSIS SUMMARY

WHITEVILLE DEMOGRAPHICS (US CENSUS BUREAU)	SOURCE	ESTIMATE	% OF TOTAL
Total Population	2010 Decennial Census	5,394	100
Hispanic/Latino Population		179	3.3
Minority Population		2,522	46.8
Population Living Below the Poverty Line	ACS 5-Year (2007-2011)	5,112	37.2
Columbus County		N/A	23.0
North Carolina		N/A	16.1
Median Household Income per Year		$26,586	N/A
Columbus County		$34,938	N/A
North Carolina		$46,291	N/A
Walk to Work		37	2.0
Households Without a Vehicle		427	18.0

RACIAL MINORITY POPULATIONS

According to the 2010 U.S. Census, 46.8 percent of the total population in Whiteville is considered to be minority. Map 2.5 on page 2-9, titled "Minority Populations," is a map of the minority populations within Whiteville. Higher density clusters of minority populations exist in the south and west portions of the city, particularly in neighborhoods west of Powell Boulevard, south of Washington Street, and along Main Street. Residential areas surrounding the Whiteville Recreation Center on the east side of the city also have greater than 50 percent minority populations. It is important to consider these areas when planning for pedestrian infrastructure projects to ensure that the town provides equitable access to the pedestrian network.

HISPANIC OR LATINO ETHNICITY/ORIGIN POPULATIONS

According to the 2010 U.S. Census, approximately 3.3 percent of Whiteville's total population are considered to be of Hispanic or Latino ethnicity/origin. Map 2.6 on page 2-10, titled "Hispanic/Latino Origin Populations," illustrates the concentrations of the Latino population in Whiteville. Higher density clusters of Latino populations exist in the far south portions of Whiteville along South Madison Street, near Whiteville Primary School on Washington Street, along Main Street, and throughout the center of the city. Considering these areas is also important when planning for pedestrian infrastructure projects to ensure equitable access to the pedestrian network.

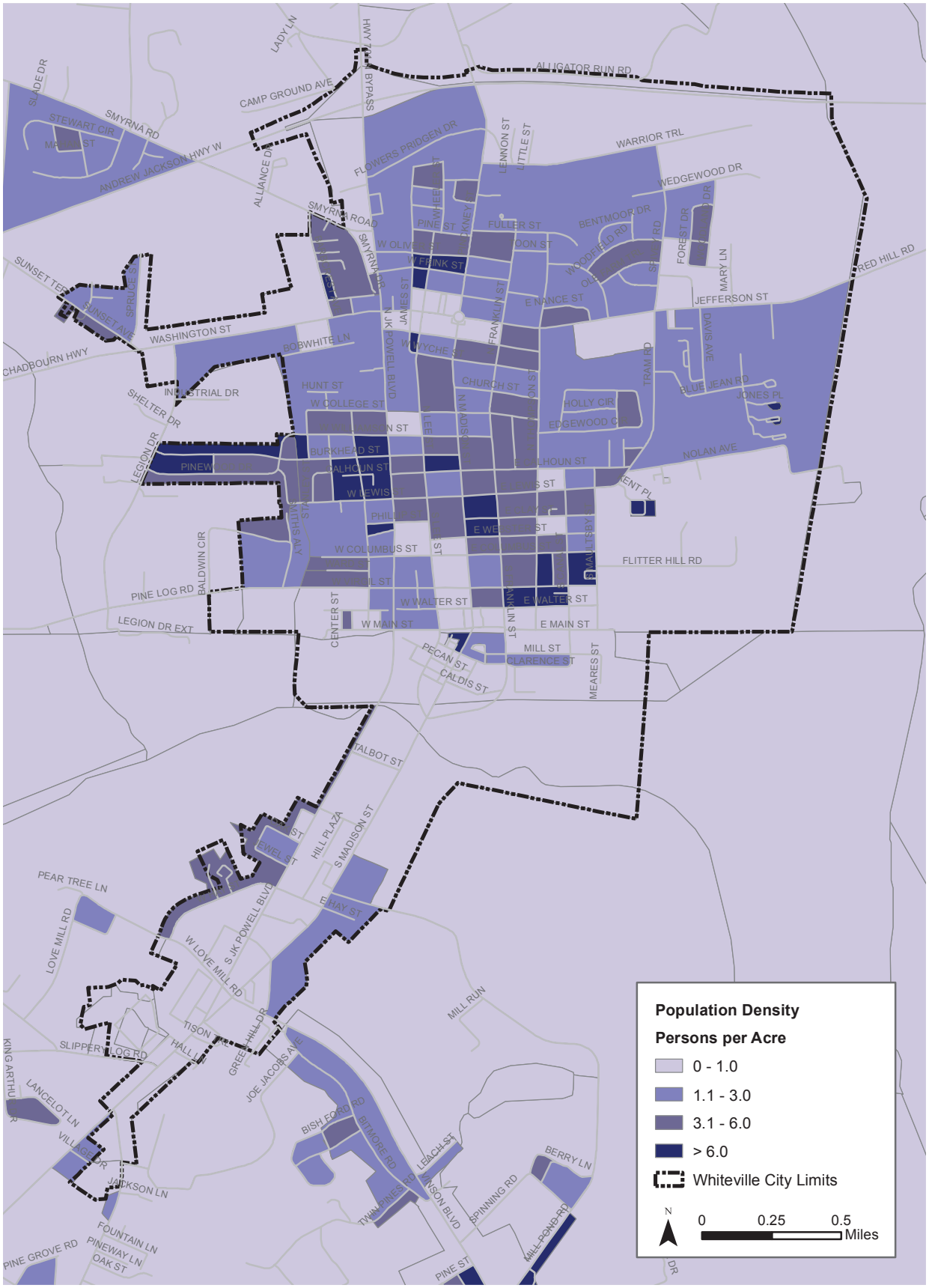
MEDIAN HOUSEHOLD INCOME LEVELS

Median household income is mapped by U.S. Census Block Group, as data are not available at the Census Block level. According to 2007-2011 U.S. Census ACS data, the median household income for Whiteville is $26,586. Median household income levels for Whiteville Census Block Groups are illustrated in Map 2.7 on page 2-11. The block group with the lowest median income, $9,681, is in the west central portion of the city, bounded by Washington Street to the north, North Madison Street to the east, and Burkehead Street to the south. The eastern portion of the city also has a median income lower than the city average, at $16,643. The block group with the highest median income is located in the northeast portion of Whiteville, with a median of $52,614. To ensure convenient walking opportunities for transportation and recreation, a strong pedestrian network should be in place to safely connect residents of all income levels to important destinations in Whiteville to access basic needs.

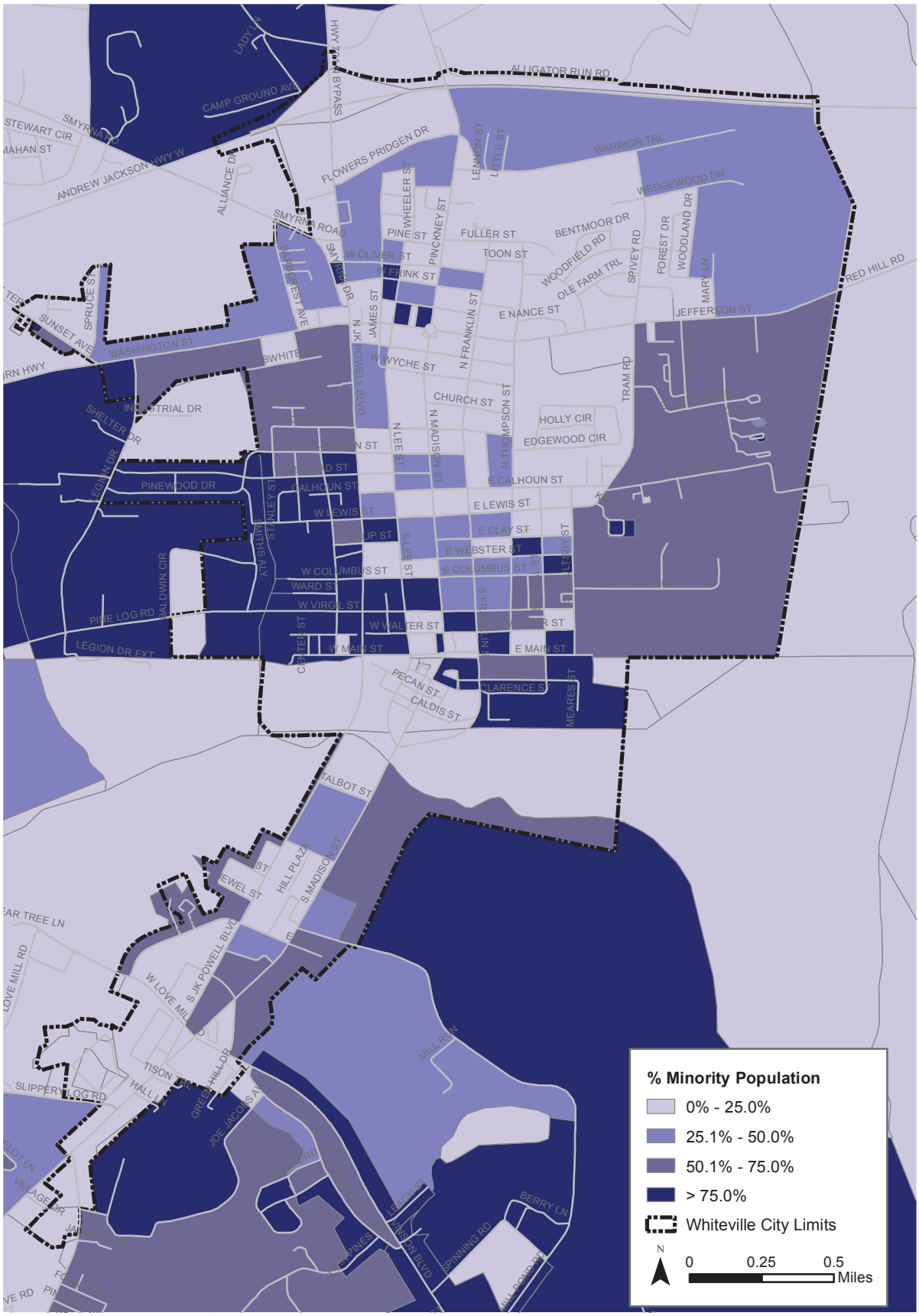
WALK TO WORK POPULATIONS

The overall commute by bicycling average for the City of Whiteville as reported by the 2010 U.S. Census is 2.0 percent, which is greater than the State of North Carolina average of 0.2 percent. Map 2.8 on page 2-13, titled "Pedestrian Commuters," illustrates ACS Census Block Group data for the populations in Whiteville that walk to work. The ACS Census Block Group with the highest percentage (7.6 percent) of pedestrian commuters exists in the eastern portion of the city, south of Jefferson Street and east of Powell Boulevard. Areas with a high proportion of people walking to work have an immediate need for safe, connected pedestrian facilities. Areas with a low proportion of pedestrian commuters may have many potential pedestrian commuters who would choose to walk to work with better infrastructure, combined with education, and encouragement programs. Improved facilities and access would enable residents to consider walking to their place of employment or other high priority destinations.

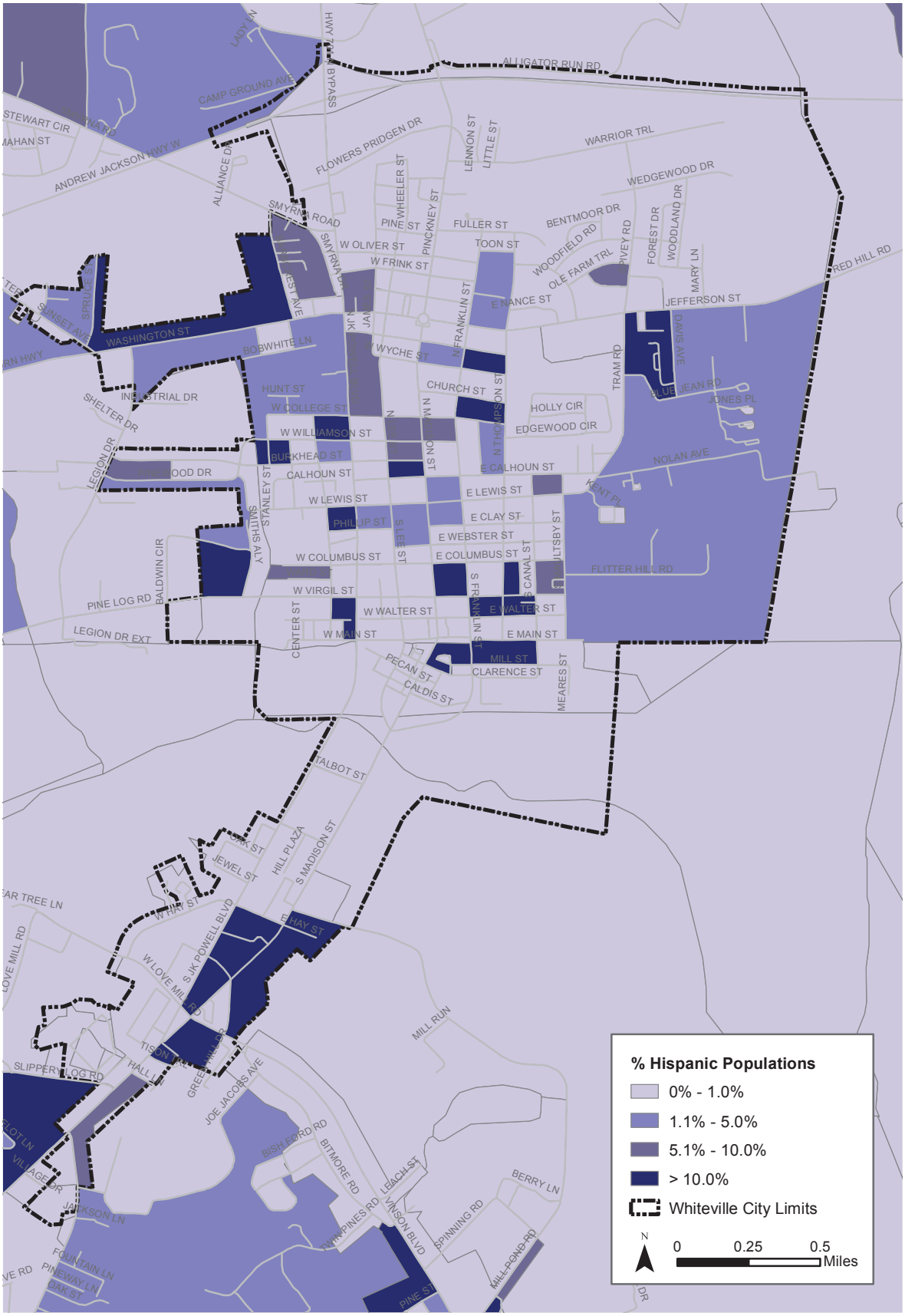
MAP 2.4 POPULATION DENSITY



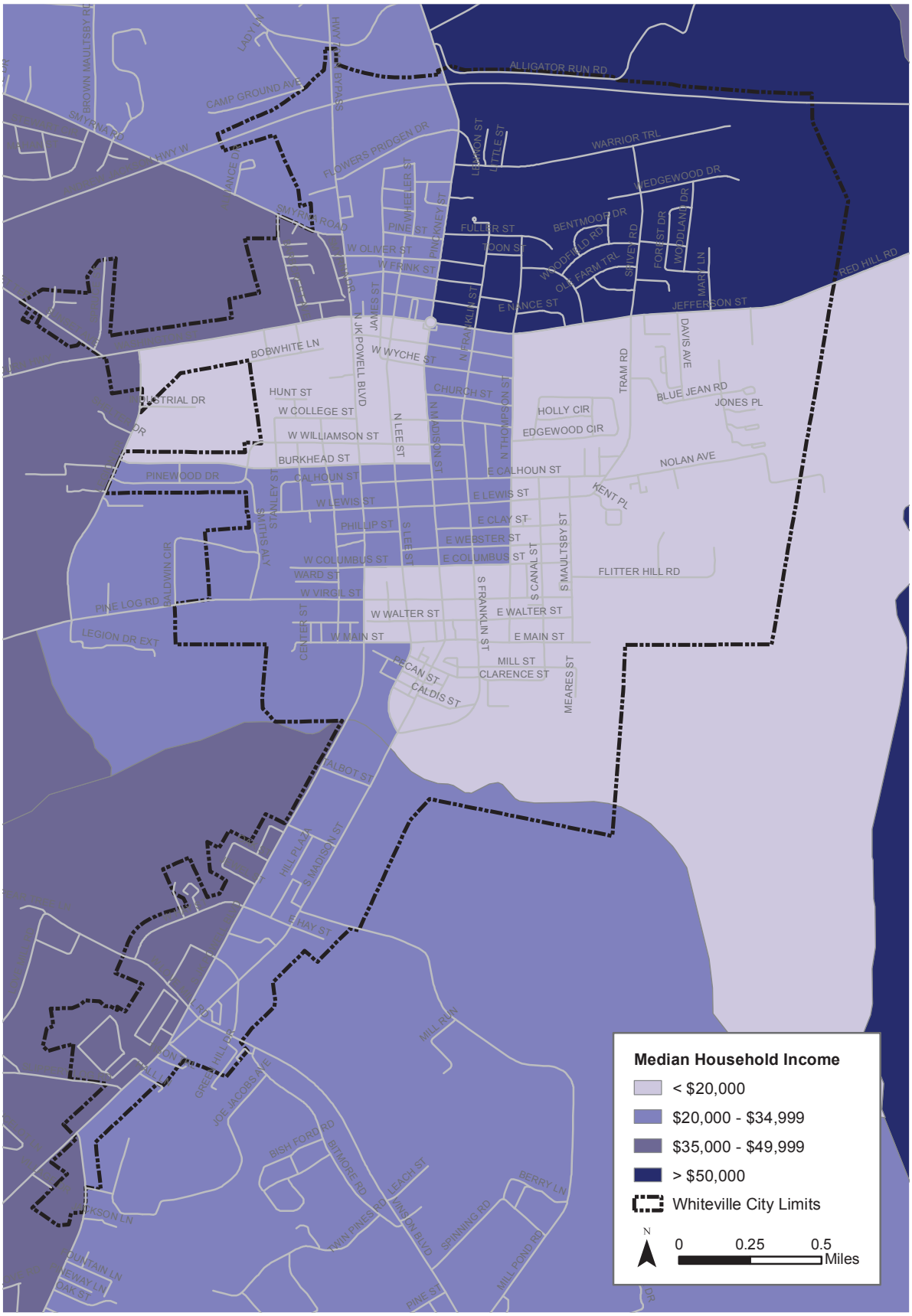
MAP 2.5 MINORITY POPULATIONS



Map 2.6 Hispanic/Latino Origin Populations



MAP 2.7 MEDIAN HOUSEHOLD INCOME



POPULATION WITH NO ACCESS TO A VEHICLE (ZERO CAR HOUSEHOLDS)

Map 2.9 on page 2-14, titled "Zero Car Households," illustrates the concentrations of Zero Car Households in and around the City of Whiteville. Based on 2007-2011 U.S. Census ACS estimates, 18.0 percent of households in Whiteville do not have access to a vehicle. Areas with high proportions of households with no access to a vehicle are shown in the darkest purple color in Map 2.7. The eastern portion of the city, south of Jefferson Street and east of Powell Boulevard, has the highest percentage of households with no access to a vehicle, at 31.7 percent. Roughly one-third of people in this area must get around by other means, whether by foot, bicycle, carpool, or other transportation mode. Safe walking routes and facilities are especially important in these areas to connect households without a car to high-priority destinations throughout the city.

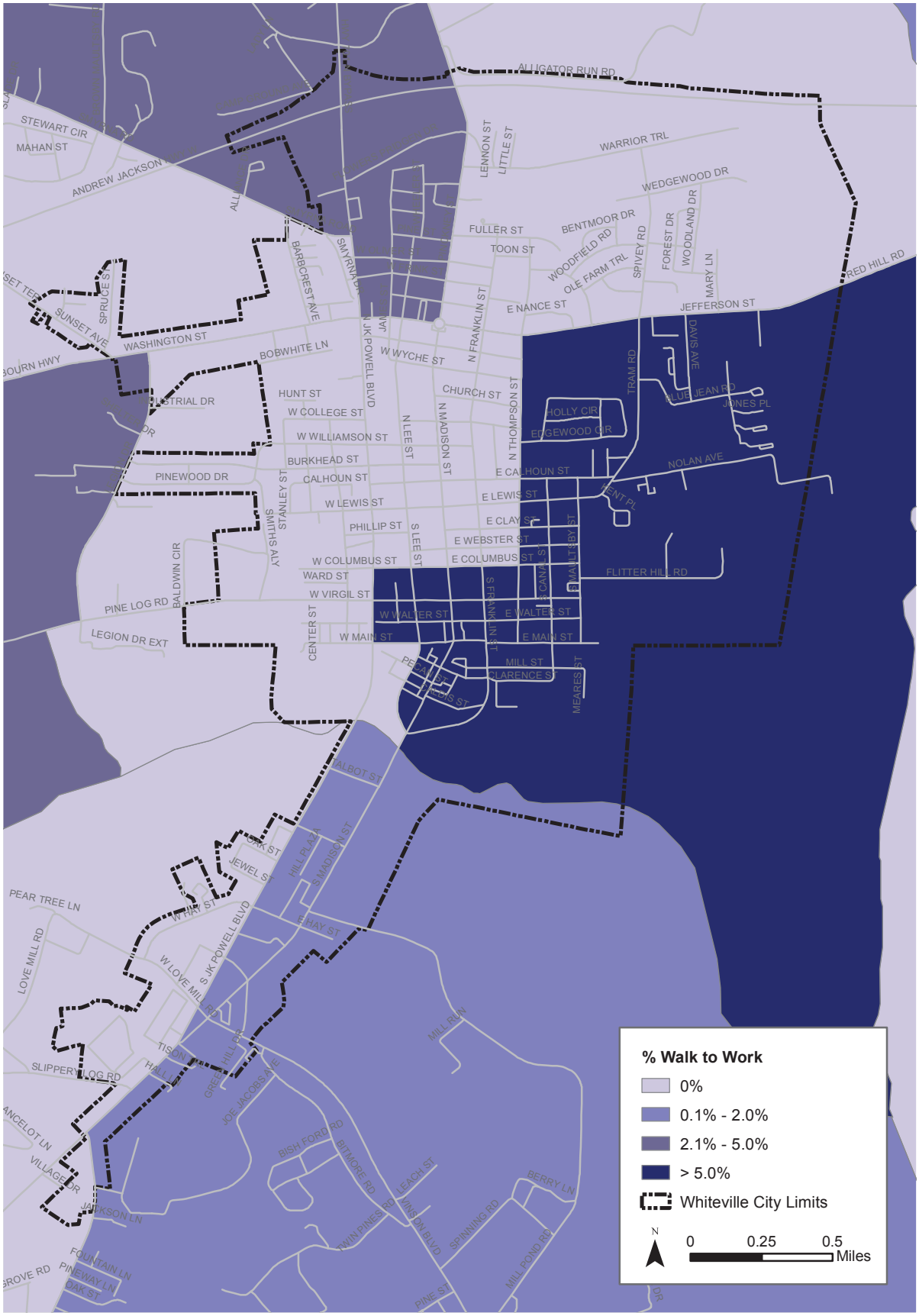
PERSONS IN POVERTY

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

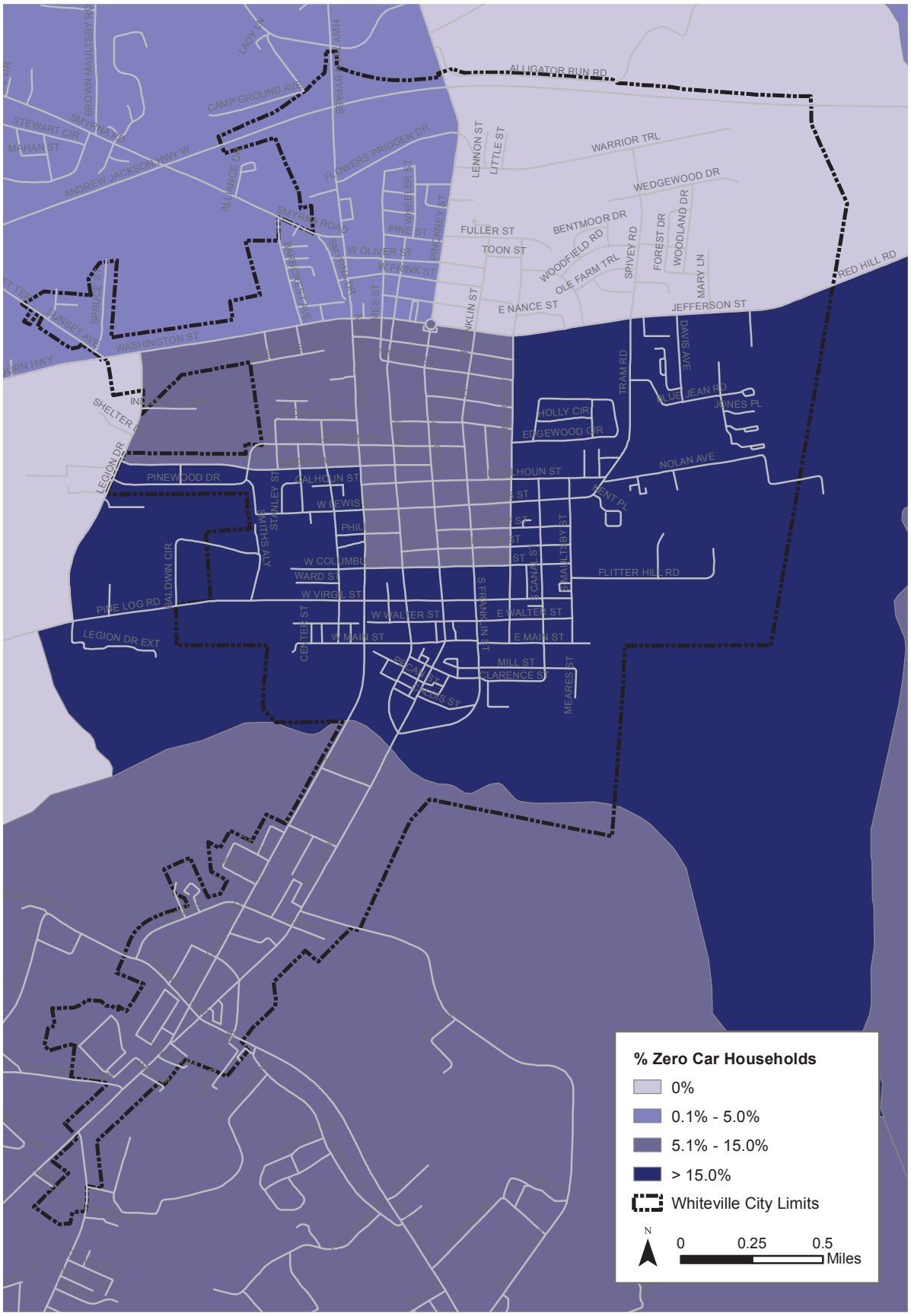
For people not living in families, poverty status is determined by comparing the individual's income to his or her poverty threshold. The percentage of people living below the poverty level in Whiteville is 37.2 percent. This percentage correlates with the percentage of zero car households. Poverty levels were not mapped as part of this Pedestrian Master Plan, however, these data were included in the review of current conditions and taken into account during the development of the pedestrian network recommendations presented in Chapter 3.

Pinewood Drive in Whiteville is located in an area where many residents do not have access to a vehicle.

MAP 2.8 PEDESTRIAN COMMUTERS



MAP 2.9 ZERO CAR HOUSEHOLDS



W. Burkhead Street in the western portion of Whiteville has a very high percentage of zero car households.

Nolan Avenue is located in an area of Whiteville where many residents do not have access to a vehicle.

Calhoun Street, is located in an area of Whiteville where many residents do not have access to a vehicle.

This playground is on Mill Street and is located in an area of Whiteville where many residents do not have access to a vehicle.

NCDOT-REPORTED PEDESTRIAN CRASHES

Data for pedestrian crashes involving motor vehicles from 2007-2013 was provided by NCDOT early in the planning process. It is important to note that not all pedestrian-related crashes are reported to the police, and only reported crashes are included in this evaluation. The 29 crashes are mapped on page 2-17. Four of the crashes resulted in evident injuries, 22 resulted in possible injuries, one resulted in no injury, and two of the crashes resulted in fatalities. These two fatal crashes are represented by a star on Map 2.10.

The locations of all 29 crashes were assessed during field work investigations. Existing intersection crossing conditions and the pedestrian environment were noted, as well as any barriers to pedestrian or motorist safety. Examples of existing barriers to pedestrian travel are presented in the key challenges section that begins on page 2-10. The recommendations presented in Chapter 3 take into account the locations of the 29 crashes and the results of the field work assessment of each crash location.

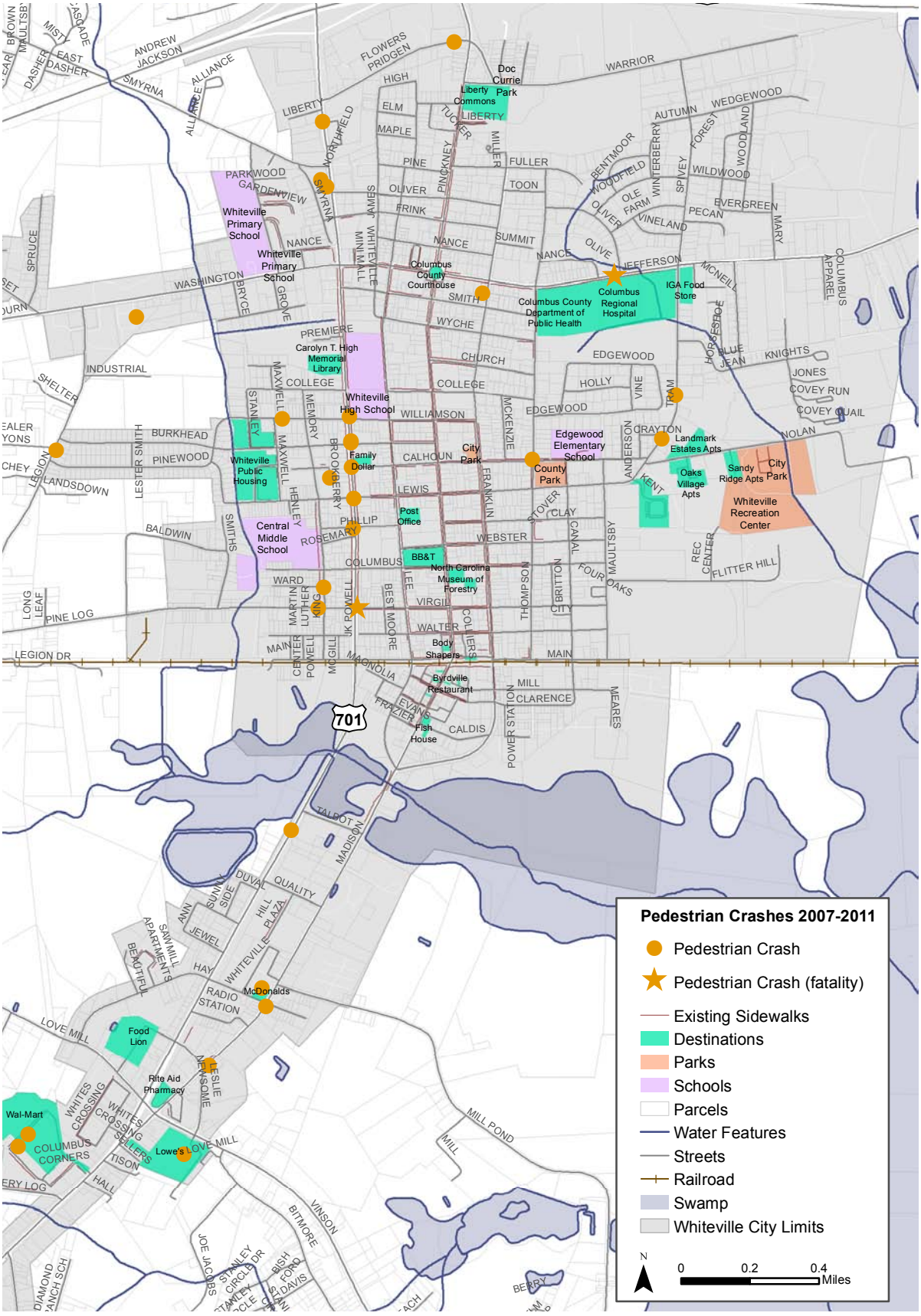
Table 2.2 contains a listing of pedestrian-auto crash locations and crash frequencies. The majority of crashes took place along 701 Bypass (JK Powell) and S. Madisonn Street, with additional crashes occurring along Calhoun Street, Tram Road, in shopping center parking lots, and other locations.

TABLE 2.2 PEDESTRIAN-AUTO CRASHES IN WHITEVILLE, 2007-2013 (NCDOT)

Pedestrian Crash Location	Number of Crashes
701 Bypass / JK Powell	10
S. Madison Street	3
Tram Road	2
Calhoun Street	2
Columbus Corner Shopping Center	2
All other locations	10

There were 10 pedestrian-automobile related crashes reported along 701 Bypass between 2007-2013.

MAP 2.10 PEDESTRIAN CRASHES



OPPORTUNITIES & CHALLENGES

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

KEY OPPORTUNITIES

1. Pedestrian Activity/Existing Sidewalk Mileage

The City of Whiteville currently features more than 17 miles of sidewalk along its roads, including numerous new segments of sidewalk. Madison Street, 701 Bypass, Calhoun Street, Lewis Street, Main Street, and Lee Street have sidewalks along portions of the roadways that provide comfortable pedestrian access to important destinations.

Numerous pedestrians were observed around Whiteville, particularly near many of the locally-owned shops in the downtown core, along 701 Bypass/JK Powell, Main Street, and along South Madison Street. Many pedestrians were seen navigating across the various at-grade railroad crossings in downtown, even though safe crossing facilities currently do not exist at these locations.

2. Proximity of Destinations

Five schools exist in Whiteville and can be seen on Map 2.1. Public schools include Edgewood Elementary School, Whiteville Primary School, Whiteville Middle School, Central Middle School, and Whiteville High School. Three of the schools are within one mile of each other, are within one mile of downtown, and are located adjacent to residential neighborhood areas.

Several parks are within the one-mile walking distance of downtown, however many areas lack crossing treatments at intersections, and gaps in the sidewalk network limit pedestrian travel between the residential neighborhoods and the parks.

The City of Whiteville is relatively compact and a grid street network exists throughout the majority of the city limits, offering numerous north-south and east-west travel corridors. As shown in Maps 2.2 and 2.3, many destinations are within a half-mile to one-mile walking distance of each other. Neighborhoods, schools, and parks are situated close to the downtown and to each other, making walking a feasible option for many trips if a connected network of sidewalks and safe crossings is available.

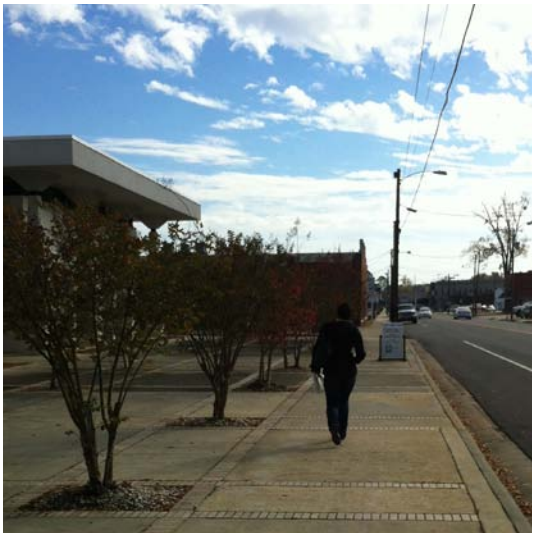
3. Downtown Core

The downtown commercial center provides well-lit, well-maintained sidewalks, and pedestrian crossing treatments at many intersections. Main Street, Lee Street, South Madison Street, and Franklin Street all feature sidewalks leading to the downtown core. The downtown core also features pedestrian amenities such as signage, waste receptacles, benches, as well as American flags that are posted during special events.

Photographic Inventory of Key Opportunities

The Whiteville Parks and Recreation Department has created and maintains two greenway trails, the Sue Smith Greenway and Molly's Branch Greenway.

Residents in Whiteville enjoy many small City parks, such as the Felix Smith Memorial Park located on Franklin Street.



Downtown Whiteville has a well established sidewalk network, street trees, and other pedestrian amenities such as waste receptacles, and benches.

Many pedestrians were observed walking in the street on lower-volume roadways such as Fuller Street.

KEY CHALLENGES

1. High Speed, High Traffic Volume Roadways

One of the key challenges to pedestrian travel in Whiteville is the presence of two major roadways through the City. Commercial, retail, and health care centers are located along the both major roadway corridors. The volumes of automobile traffic and the speed of traffic along some segments of the roadways create uncomfortable routes for pedestrians to safely navigate.

US HIGHWAY 701 BYPASS/JK POWELL BLVD

The 701 Bypass enters the northern area of Whiteville near at the junction of US Highway 74 and travels south through town, passing the western edge of the downtown core, and merging with 701 Business just south of the intersection with Love Mill Road. Numerous pedestrian-automobile crashes have occurred along 701 Bypass, as the sidewalk network is sporadic and disconnected, and few intersections offer safe crossing facilities for pedestrians.

US HIGHWAY 74 BUSINESS ROUTE/JEFFERSON ROAD

The US Highway 74 Business Route/Jefferson Road travels in an east-west direction, parallel to US Highway 74. One fatal pedestrian-automobile crash has occurred along this roadway, and several important destinations such as the IGA Food Store, Columbus Regional Hospital, and Columbus County Department of Public Health are located along the roadway. This roadway lacks adequate sidewalk facilities and very few safe crossing treatments.

2. Lack of Sidewalk Connectivity

A well-maintained sidewalk network exists in the downtown core, however, many roadways that connect the downtown core with residential neighborhoods and other key destinations-such as schools, grocery stores, and commercial and retail centers, places of employment, and recreation-areas are without sidewalks. Safe connections between the downtown core and neighborhood areas located adjacent to the downtown do not exist. Example roadways with inadequate or disconnected sidewalks include, but are not limited to, the following: Calhoun Street, Lewis Street, Columbus Street, Virgil Street, Williamson Street, Walter Street, Franklin Street, Thompson Street, Tram Road, Canal Street, Martin Luther King Jr. Boulevard, and Lee Street.

3. Lack of Multi-Use Trails

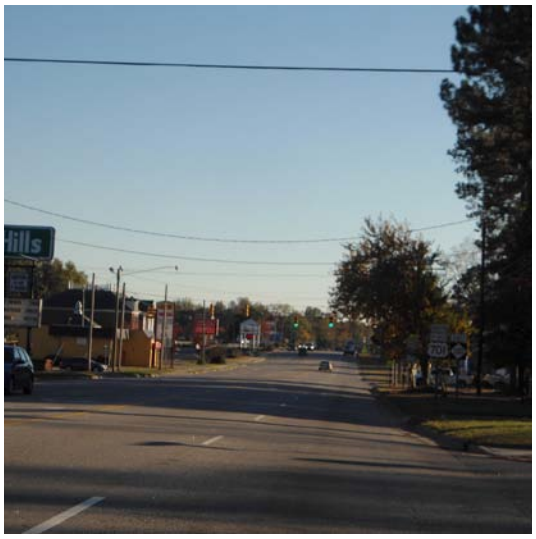
The term “multi-use trails” refers to both greenway trails and side paths built in open spaces or stream corridors, or along a roadway, that accommodate pedestrians, cyclists, and a variety of other non-motorized trail users (such as roller bladers). Currently, only 1.5 miles of multi-use trails exist in Whiteville.

4. Lack of Crossing Treatments at Roadway Intersections and Railroad Crossings

During fieldwork investigations, the consultant team evaluated pedestrian safety and accessibility at several intersections and railroad in Whiteville. While many intersections within Town are signalized, the majority of signalized intersections lack crossing treatments such as pedestrian countdown signals, pedestrian refuge medians, or high-visibility crosswalks.

Railroad crossings are another considerable challenge for pedestrians in Whiteville. The consultant team noted that many pedestrians navigate across the at-grade railroad crossings in downtown, even though these crossings do not contain curb ramps, signage, or other pedestrian amenities. The lack of safe crossing facilities for the at-grade railroad corridors is a major barrier to pedestrian travel. Railroad crossings are particularly hazardous to those who rely on wheeled devices for mobility (railroad crossings have flangeway gaps that allow passage of the wheels of the train, but also have the potential to catch wheelchair casters and bicycle tires). In addition, rails or ties that are not embedded in the travel surface create a tripping hazard.

Photographic Inventory of Key Challenges to Pedestrian Mobility



Multi-lane, high vehicle-speed highways such as 701 Bypass and US 74 Business are challenging for pedestrians.

The majority of residential neighborhood areas located within walking distance of downtown lack sidewalks and many pedestrians were observed walking in the street.

There are no pedestrian crossing facilities for the inactive rail line that traverses downtown, creating a significant separation between northern and southern portions of downtown.

The majority of intersections in Whiteville lack any crossing treatments, and where crossing treatments do exist, crosswalks are faded.

Madison at Main is a wide intersection with two signals and an at-grade railroad crossing. All of these conditions can create challenges for pedestrians.

Endnotes

1. 2012 City of Whiteville Parks and Recreation Plan Update

3 Network Recommendations

Chapter Contents

OVERVIEW

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

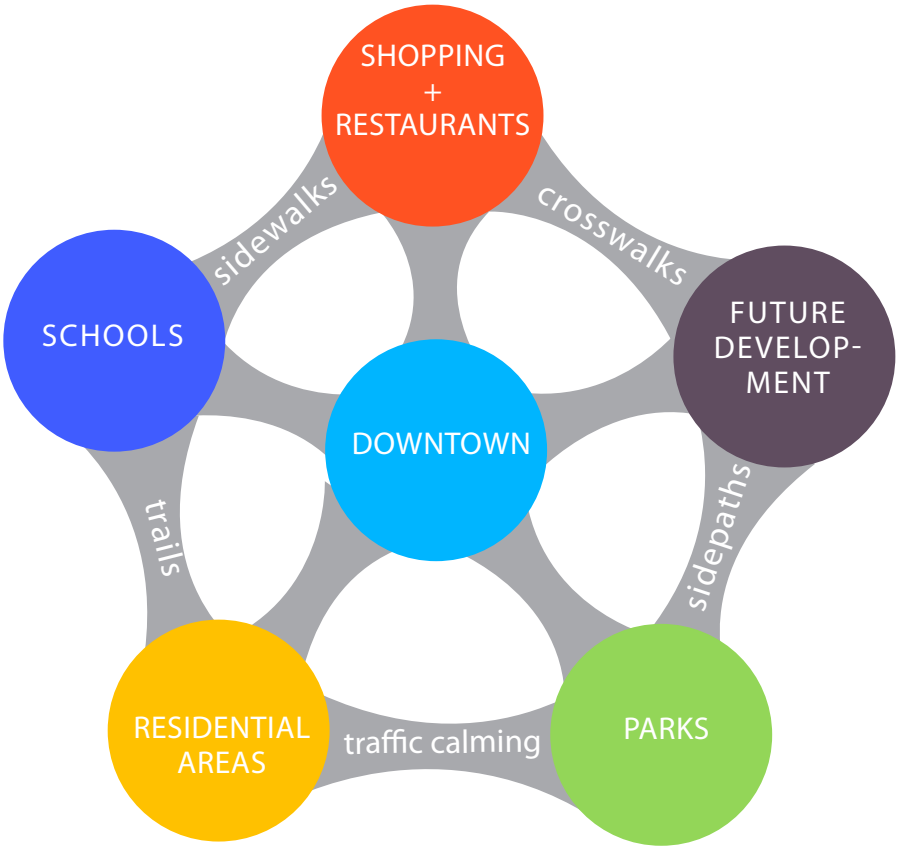
METHODOLOGY

The guiding philosophy for devising the comprehensive pedestrian network is the "hubs and spokes" model. Pedestrian corridors (spokes) should connect to trip attractors (hubs), such as parks, schools, downtown, shopping areas, commercial centers, and other destinations. The network then becomes a practical solution for pedestrian connectivity. The hubs and spokes model (shown with the graphic on page 3-2) conceptually illustrates how destinations in Whiteville will be linked through various types of pedestrian facilities.

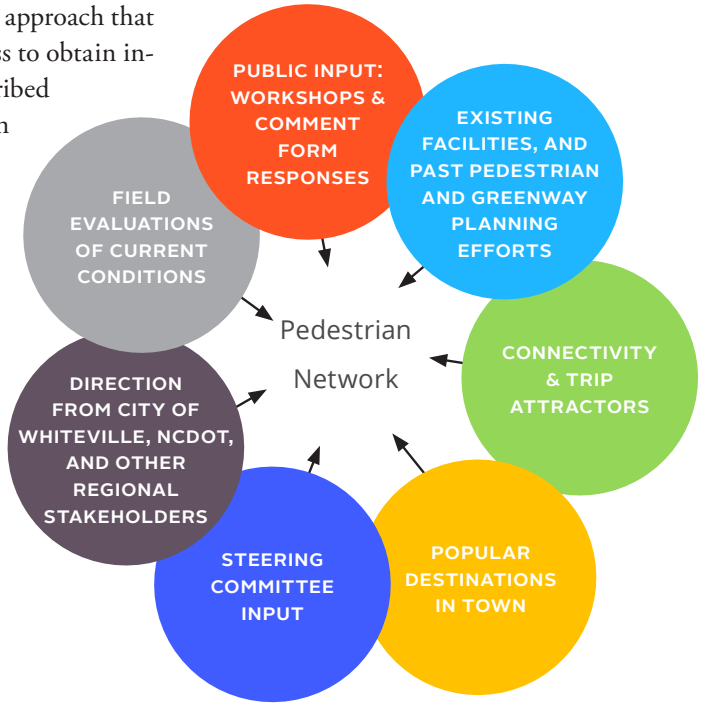
A variety of resources were consulted during the development of the recommended pedestrian network, including the following:

- Previously adopted plans
- Maps developed from GIS data (demographic data, sidewalk gap analysis)
- Input from the steering committee
- Input obtained during public involvement events
- Fieldwork inventory and evaluation
- Identification of pedestrian trip attractors
- Guidance from City staff and officials

HUBS & SPOKES METHODOLOGY DIAGRAM



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



THE PEDESTRIAN NETWORK

The recommended pedestrian infrastructure projects for Whiteville aim to expand the existing pedestrian network to provide a more connected system that provides safe linkages between origins and destinations. Four project **types**, or groups of projects, were identified during the planning process to complete gaps in the existing system and provide new facilities that meet the goals of this plan.

The following four project **types** are presented in detail in this chapter:

- Sidewalk network expansion areas
- Corridor enhancements
- Intersections and crossings
- New multi-use trail corridors

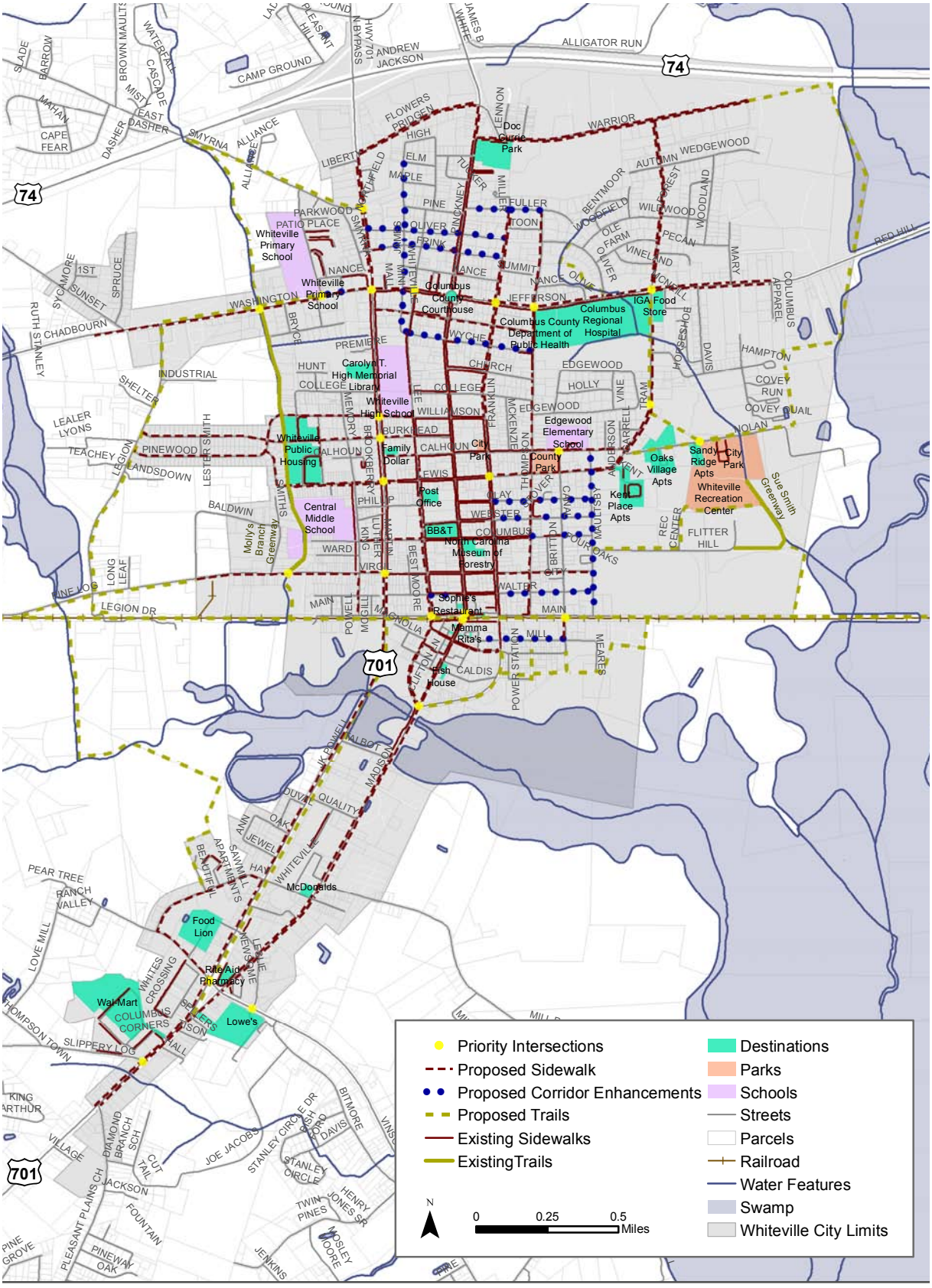
All pedestrian infrastructure projects undertaken should aim to meet the highest standards possible when topography and right-of-way allows. The design guidelines in Appendix A provide detailed information regarding facility types and treatments.

Although the recommendations illustrated by the maps in this chapter do not depict sidewalks or multi-use paths on every street, sidewalks should be provided on both sides of all major roads and on at least one side of local roads where warranted by density and/or system connectivity (See **Chapter 5 for policy recommendations**). Traffic calming measures and speed limit enforcement should be considered for local roads where sidewalks are not recommended because of right-of-way constraints, topography and other environmental constraints, or density does not warrant the construction of sidewalks. Map 3.1 on page 3-4 presents overall pedestrian network recommendations and Map 3.2 on page 3-5 is a view of recommendations in and adjacent to downtown Whiteville. Table 3.6 on page 3-47 presents the full list of pedestrian project recommendations.

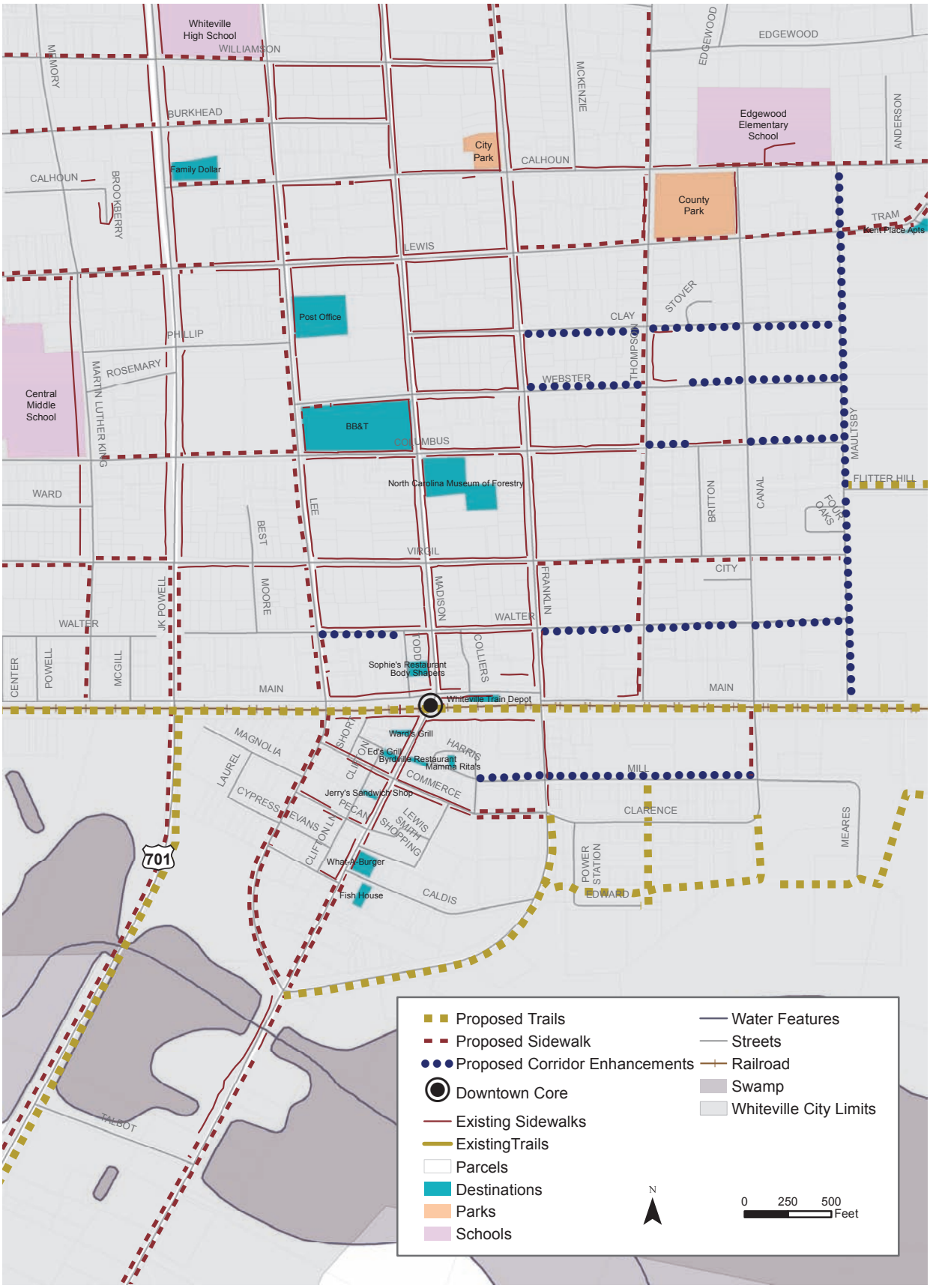
TABLE 3.1: PEDESTRIAN NETWORK SUMMARY TABLE

PEDESTRIAN NETWORK	LENGTH (MILES)
Existing Sidewalk Mileage	17.4
Existing Multi-Use Trail Mileage	1.5
Proposed Sidewalk Mileage	27.5
Proposed Multi-Use Trail Mileage	18.6
# of Intersection Improvement Recommendations	25

MAP 3.1 NETWORK RECOMMENDATIONS



MAP 3.2 DOWNTOWN NETWORK RECOMMENDATIONS



SIDEWALK NETWORK EXPANSION AREAS

The existing pedestrian network lacks connectivity, and, collectively, the disconnected areas pose barriers to pedestrian travel. Gaps in the network remain as a result of historic land use development, sidewalk requirement policies, and funding over the previous decades. Performing spot improvements to fill gap areas and extend the existing network into neighborhood areas will have a significant impact on the pedestrian environment and improve the overall accessibility of the existing sidewalk network.

Improvements to fill and expand on network gaps include:

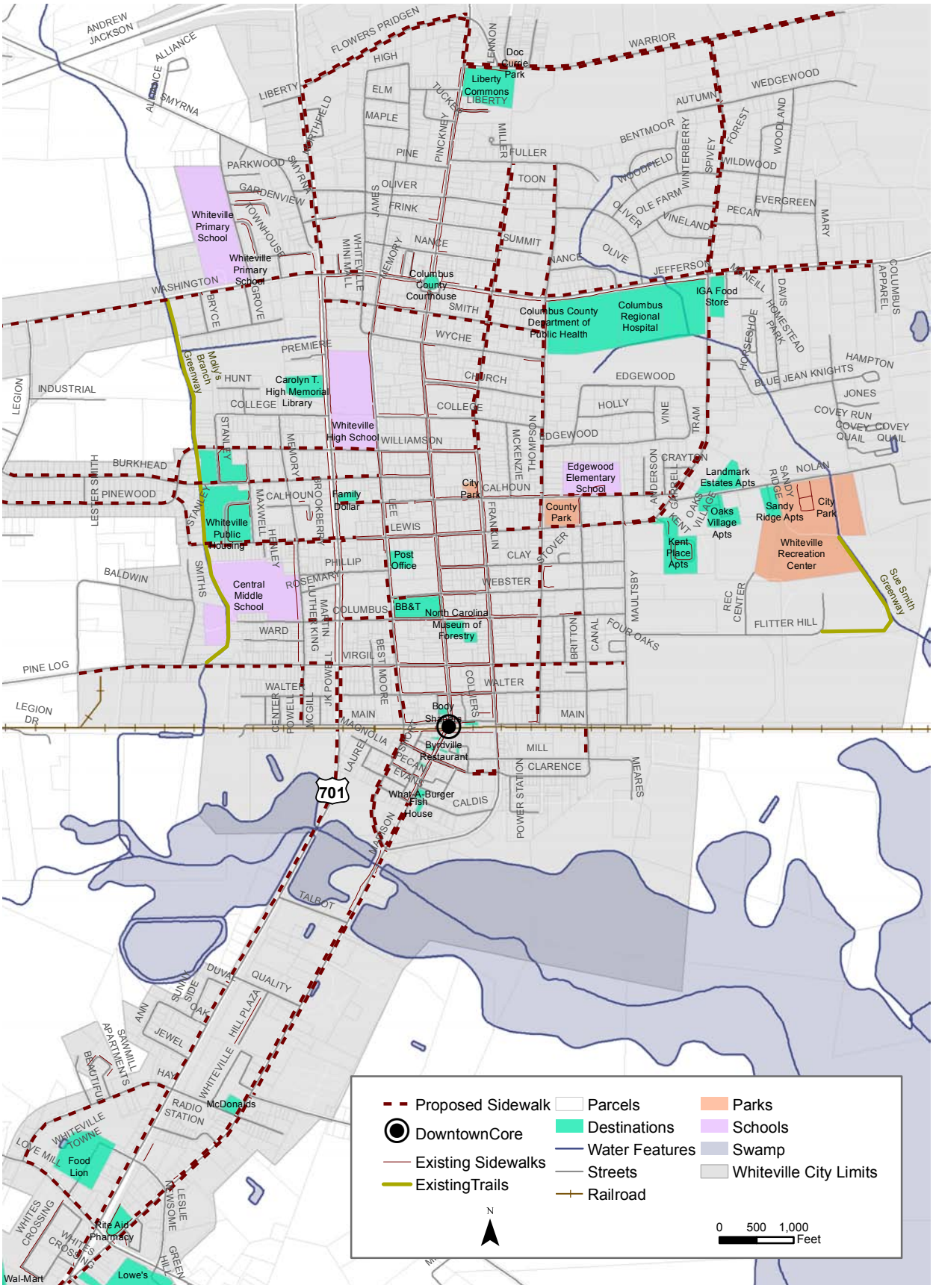
Filling sidewalk gaps – The infill of key sidewalk segments will decrease gaps and improve overall connectivity. Areas for sidewalk infill were selected if the length of the infill area was less than 500 feet, and if the infill area connected to existing sidewalks on either end.

Expanding existing sidewalk – The development of sidewalks along arterial and collector streets will expand the reaches of the existing network and increase opportunities for pedestrian travel. Map 3.3 on page 3-7 presents key roadway corridor areas to provide better connectivity and expand on the existing pedestrian network.

A gap in the sidewalk network along Thompson Street forces pedestrians to walk through a front yard to reach their destination on Calhoun Street.

Expanding the existing pedestrian network to connect existing sidewalks to important destinations such as the park pictured to the right, located along Tram Road, furthers the reach of the network and provides safe opportunities for pedestrian travel.

MAP 3.3 SIDEWALK NETWORK RECOMMENDATIONS



CORRIDOR ENHANCEMENTS

Corridor enhancement projects provide for a safer and more attractive environment along priority corridors in Whiteville. There are many types of corridor enhancements that would help to improve the physical health and welfare of citizens and visitors by encouraging exercise and by promoting pedestrian and bicycle usage. Corridor enhancements also improve the economic health of Whiteville by enhancing the connections to primary economic development corridors, which are often downtown areas, by making them more attractive for redevelopment. Enhancements can occur through regulation and guidance of site development including, but not limited to: sidewalks, off-street parking, signage, landscaping, mechanical unit placement, lighting, as well as building materials and architectural features such as roof pitch, broken wall planes, façade enhancements, and porches, thereby enhancing the overall appearance of the corridor, while improving access along the corridor through increased walkability and interconnectivity.

Corridor enhancements can also occur through the implementation of traffic calming projects. Traffic calming projects are roadway design strategies or measures that can be implemented to reduce vehicular traffic speed and volumes, create a more pedestrian-friendly environment, and allow residential and commercial streets to better balance their multiple uses. The types of projects can range from a few minor changes to major rebuilding of a street network.

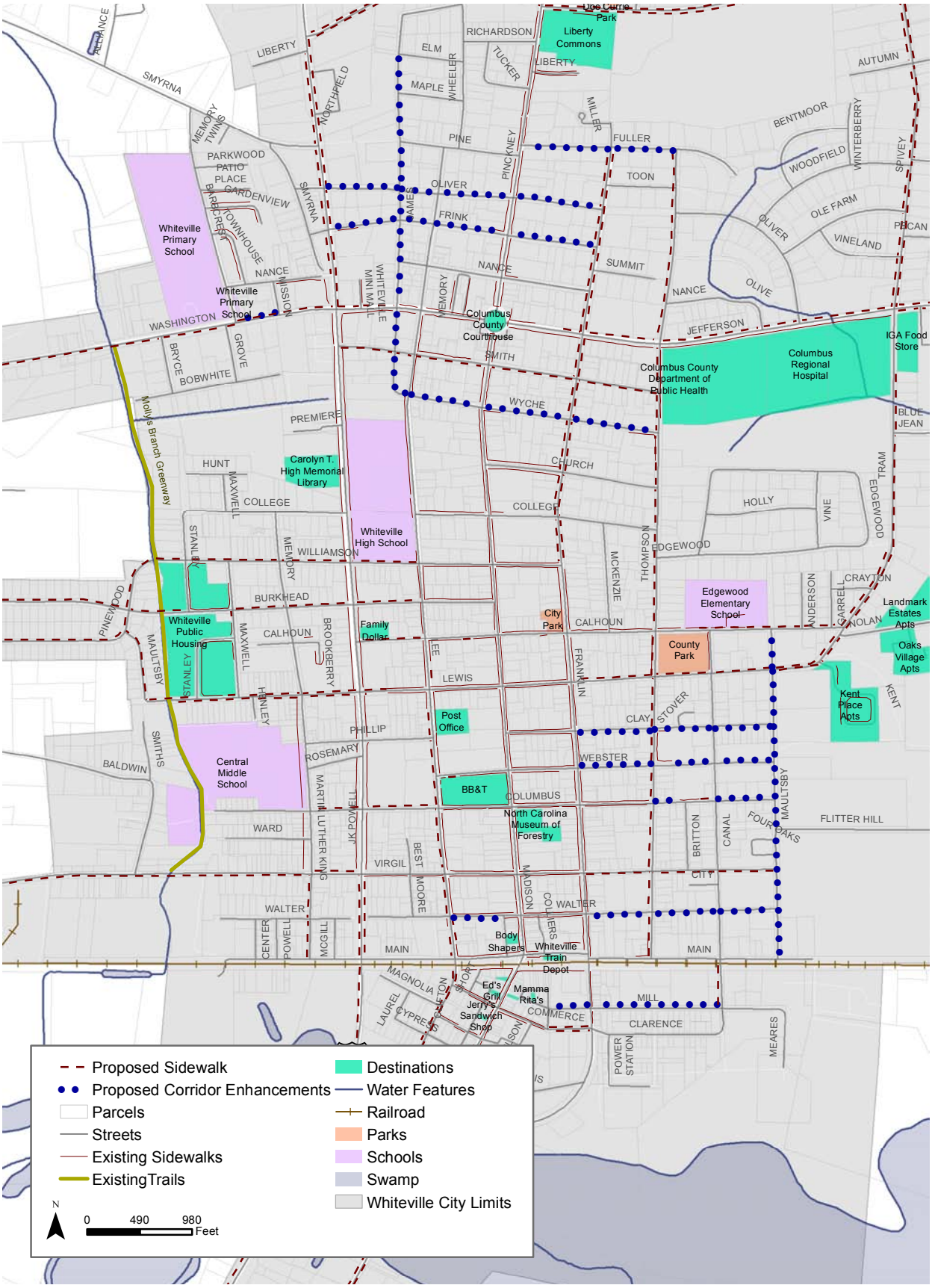
Besides their primary function of reducing speeds or volumes, the large majority of measures also have the ability to reduce conflicts between vehicles and pedestrians, bicyclists, and other vehicles. In addition, well-designed and landscaped traffic calming measures can enhance a neighborhood's appearance and the quality of life of its residents.

Traffic calming measures should be considered on low-volume, local roadways where sidewalks may be warranted but cannot be constructed due to physical constraints that exist along the roadway corridor. The selection of traffic calming measures for these environments should be based on:

- The measures potential to address volume or speed reduction on affected roadways
- The type of roadway
- Actual site conditions

Specific measures are often grouped into four categories (horizontal deflection, vertical deflection, physical obstruction, signs and pavement markings) based upon the means by which they reduce volumes or speeds. In Whiteville, a variety of measures would be appropriate for different roadways. For the purposes of this Pedestrian Master Plan, aerial photo illustrative concepts were developed for E. Walter Street and S. Canal Street to demonstrate potential traffic measures that would be appropriate for these roadways. The illustrative concepts for E. Walter Street can be found on pages 3-11 through 3-15 and for S. Canal Street on pages 3-38 and 3-39. The concepts a have been prepared for demonstration purposes, advanced design and engineering documents would be needed during project implementation. More information on specific design standards for traffic calming measures can be found in Appendix A, Design Guidelines.

MAP 3.4 CORRIDOR ENHANCEMENT RECOMMENDATIONS

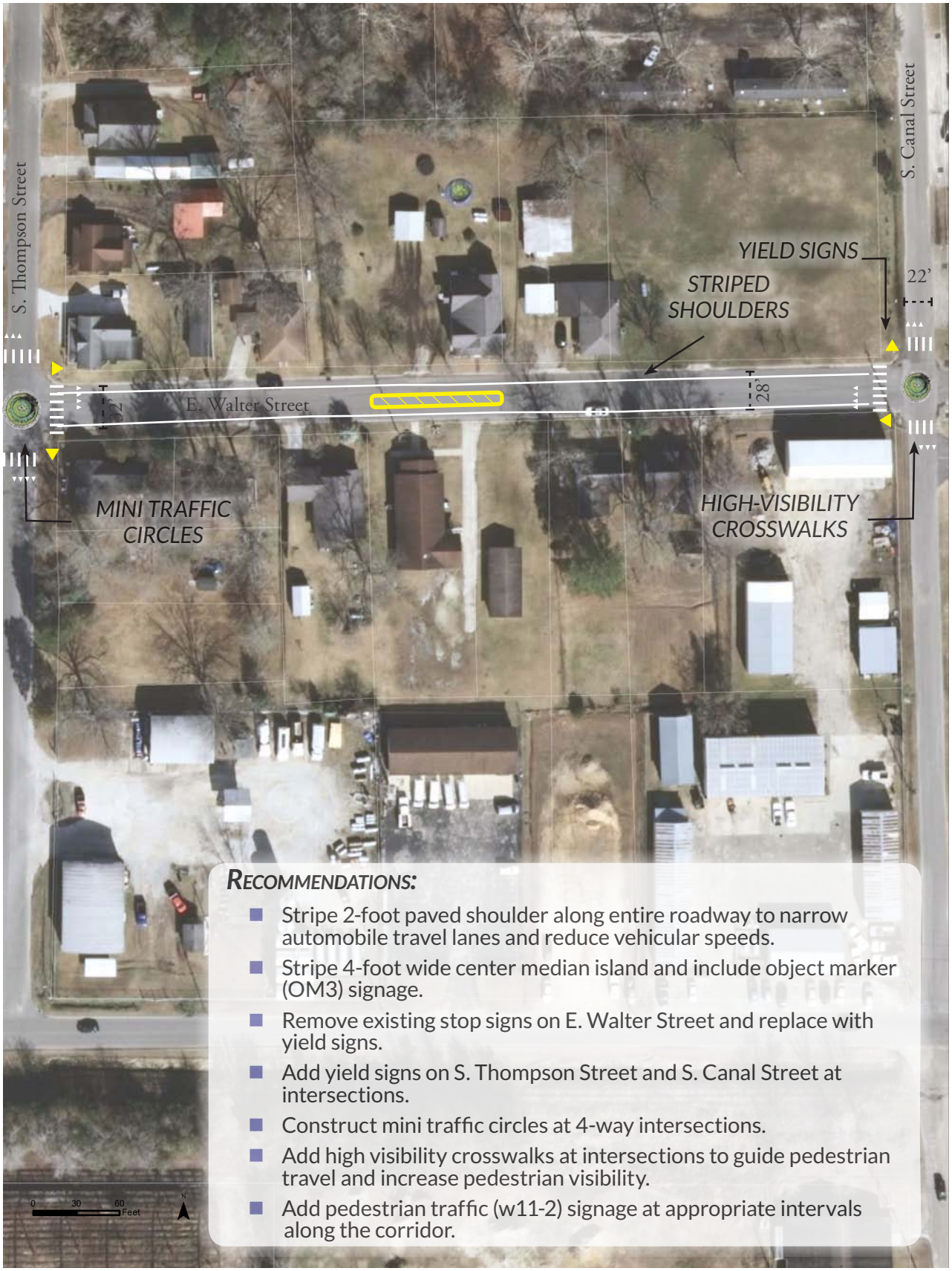


MAP 3.5 EAST WALTER STREET OVERVIEW

General notes on East Walter Street corridor:

E. Walter Street is an east-west route with commercial, industrial and residential uses. It is located one block from the downtown core. Significant pedestrian activity was observed during field work investigations and the roadway has been identified as a higher priority roadway by the steering committee.

MAP 3.6 EAST WALTER STREET SOLUTION A



RECOMMENDATIONS:

- Stripe 2-foot paved shoulder along entire roadway to narrow automobile travel lanes and reduce vehicular speeds.
- Stripe 4-foot wide center median island and include object marker (OM3) signage.
- Remove existing stop signs on E. Walter Street and replace with yield signs.
- Add yield signs on S. Thompson Street and S. Canal Street at intersections.
- Construct mini traffic circles at 4-way intersections.
- Add high visibility crosswalks at intersections to guide pedestrian travel and increase pedestrian visibility.
- Add pedestrian traffic (w11-2) signage at appropriate intervals along the corridor.

MAP 3.7 EAST WALTER STREET SOLUTION B

RECOMMENDATIONS:

- Stripe 2-foot paved shoulder along entire roadway to narrow automobile travel lanes and reduce vehicular speeds.
- Construct 4-foot wide center median island with landscaping and object marker (OM3) signage.
- Remove existing stop signs on E. Walter Street and replace with yield signs.
- Add yield signs on S. Thompson Street and S. Canal Street at intersections.
- Construct mini traffic circles at 4-way intersections.
- Add high visibility crosswalks at intersections to guide pedestrian travel and increase pedestrian visibility.
- Add pedestrian traffic (w11-2) signage at appropriate intervals along the corridor.

MAP 3.8 EAST WALTER STREET SOLUTION C

RECOMMENDATIONS:

- Add landscaped chicanes along roadway corridor to narrow automobile travel lanes and reduce vehicular speeds, and maintain 2' shoulder behind each chicane.
- Remove existing stop signs on E. Walter Street and replace with yield signs.
- Add yield signs on S. Thompson Street and S. Canal Street at intersections.
- Construct mini traffic circles at 4-way intersections.
- Add high visibility crosswalks at intersections to guide pedestrian travel and increase pedestrian visibility.
- Add pedestrian traffic (w11-2) signage at appropriate intervals along the corridor.

EAST WALTER STREET, NEAR THOMPSON STREET: Existing Conditions

EAST WALTER STREET, NEAR THOMPSON STREET: Photo Simulation

INTERSECTIONS & CROSSINGS

Intersections and crossings that lack safe and visible treatments are considered barriers to pedestrian travel. These barriers should be reduced by implementing context-appropriate pedestrian amenities such as marked crosswalks, pedestrian countdown signals, ADA-compliant curb ramps, and advanced warning signage. The consultant team evaluated pedestrian safety and accessibility at 25 key intersections in Whiteville and determined that only a few intersections offered some of the necessary pedestrian safety treatments. Opportunities exist at each intersection for new or retrofitted pedestrian crossing facilities. The at-grade railroad crossings for the inactive rail line should be the focus of future detailed engineering studies and recommendations made in concert with NCDOT and Carolina Southern Railroad.

Three primary intersection treatment concepts were developed during this planning process to serve as a guide during implementation for Whiteville. Each of the 25 intersections have a corresponding intersection treatment concept recommendation. The concepts are as follows:

- signalized
- non-signalized
- mid-block or trail crossings

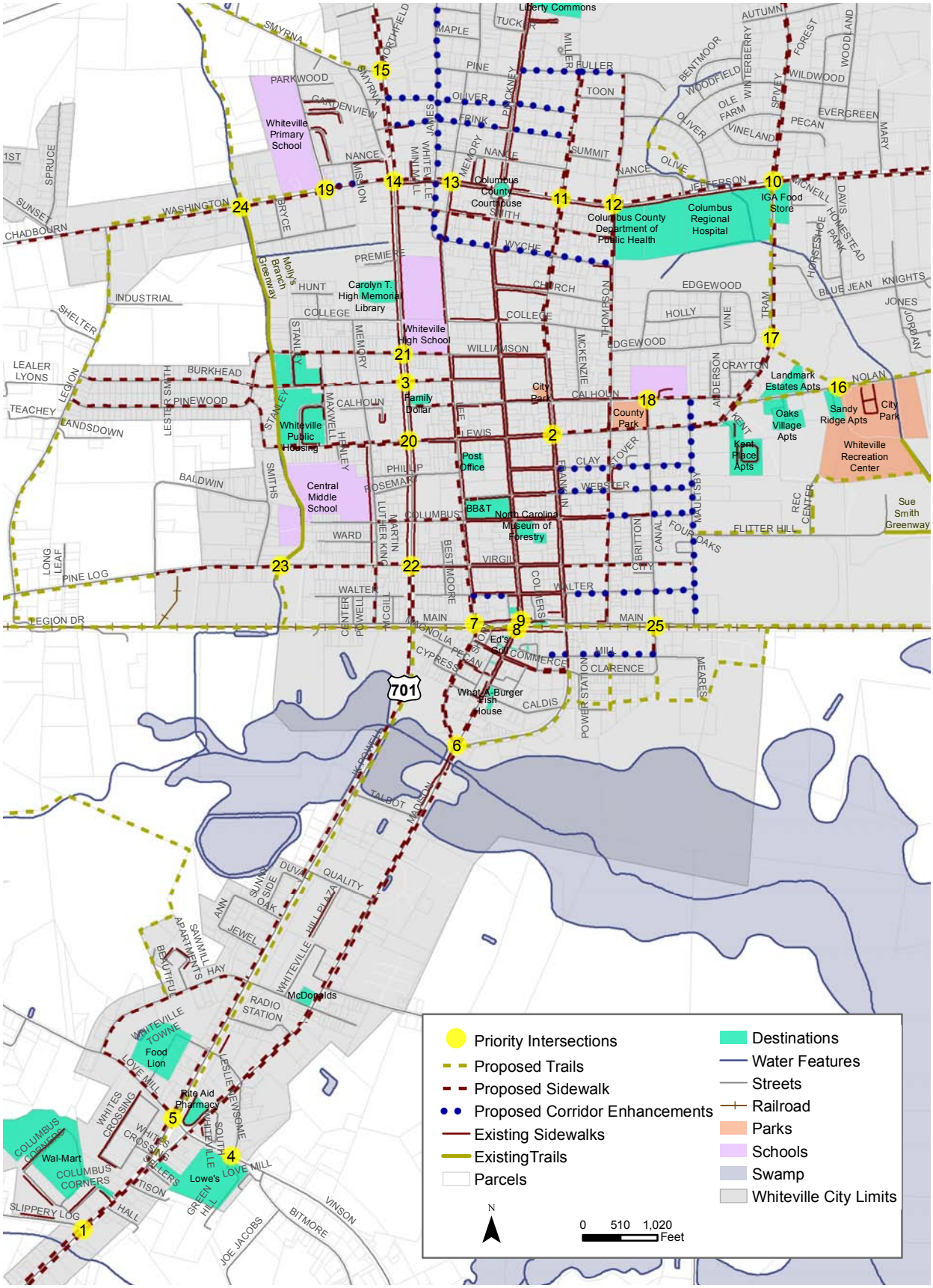
Whiteville should not limit intersection improvements to only these 25 intersections, and should apply recommendations presented by the intersection treatment concepts to other intersections in Whiteville, as appropriate.

The 25 intersections that were evaluated are listed in Table 3.2. Each intersection is identified on Map 3.9 on page 3-17. Appendix A provides design guidance based on American Association of State Highway and Transportation Officials (AASHTO), Manual on Uniform Traffic Control Devices (MUTCD), and National Association of City Transportation Officials (NACTO) standards and guidelines for intersection and crossing types.

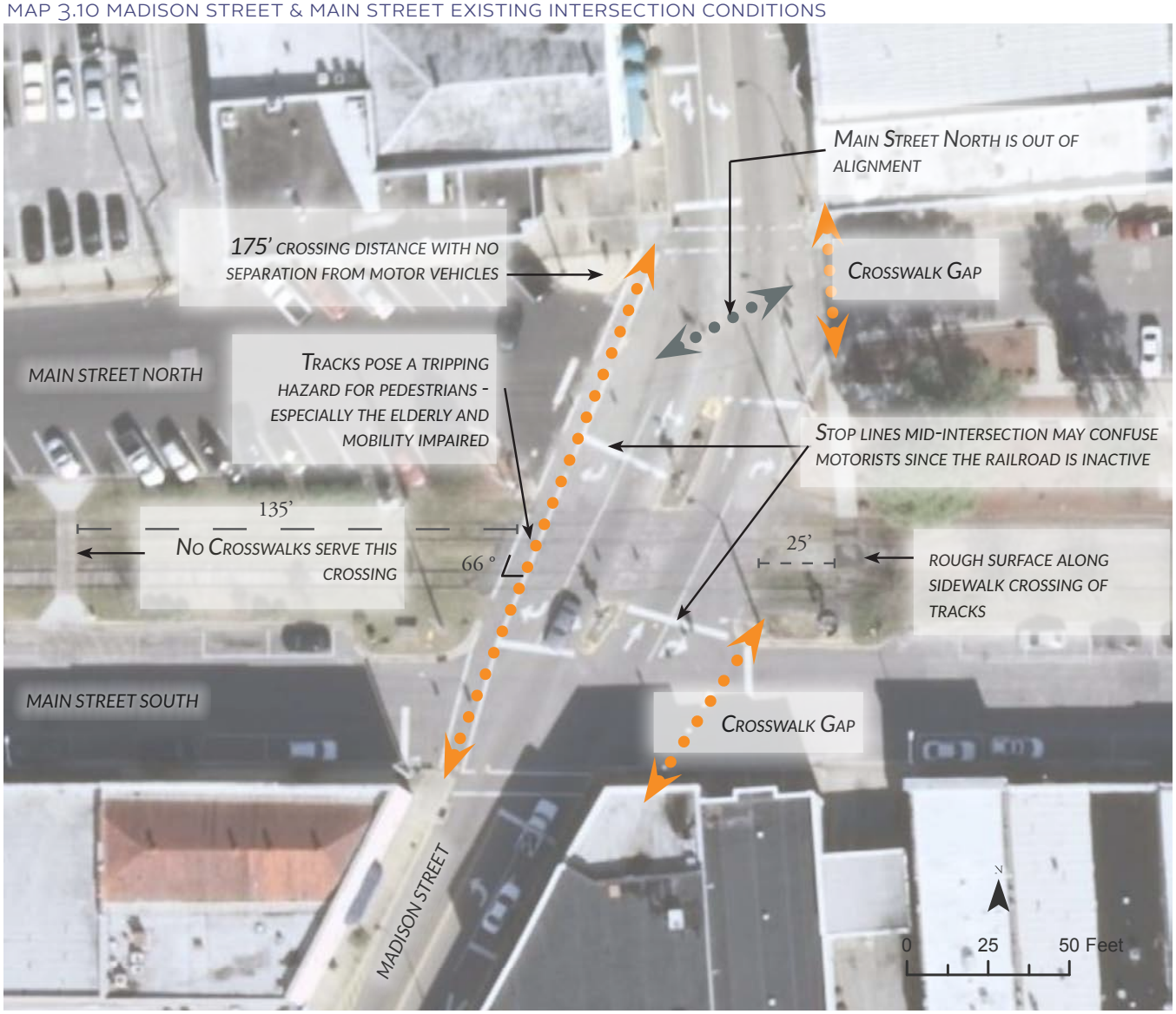
TABLE 3.2: INTERSECTIONS & CROSSINGS

ID #	Primary Roadway	Intersecting Roadway	Treatment Concept
1	701 Business	Slippery Log	Signalized
2	Franklin	Lewis	Unsignalized
3	701 Bypass	Burkehead	Signalized
4	Love Mill	Green Hill	Signalized
5	701 Bypass	Love Mill	Signalized
6	Madison	Lee	Signalized
7	Main	Lee	Unsignalized
8	Main	Madison South	Signalized
9	Main	Madison North	Signalized
10	Tram	Jefferson	Signalized
11	Jefferson	Franklin	Signalized
12	Jefferson	Thompson	Unsignalized
13	Washington	Lee	Unsignalized
14	701 Bypass	Washington	Unsignalized
15	701 Bypass	Smyrna	Unsignalized
16	Nolan	N/A	Mid-block
17	Tram	N/A	Mid-block
18	Calhoun	Canal	Unsignalized
19	Washington	Barbcrest	Unsignalized
20	701 Bypass	Lewis	Unsignalized
21	701 Bypass	Williamson	Unsignalized
22	701 Bypass	Virgil	Signalized
23	W Virgil	Trail	Mid-block
24	Washington	Trail	Mid-block
25	Canal	Trail	Mid-block

MAP 3.9 INTERSECTION RECOMMENDATIONS



MAP 3.10 MADISON STREET & MAIN STREET EXISTING INTERSECTION CONDITIONS



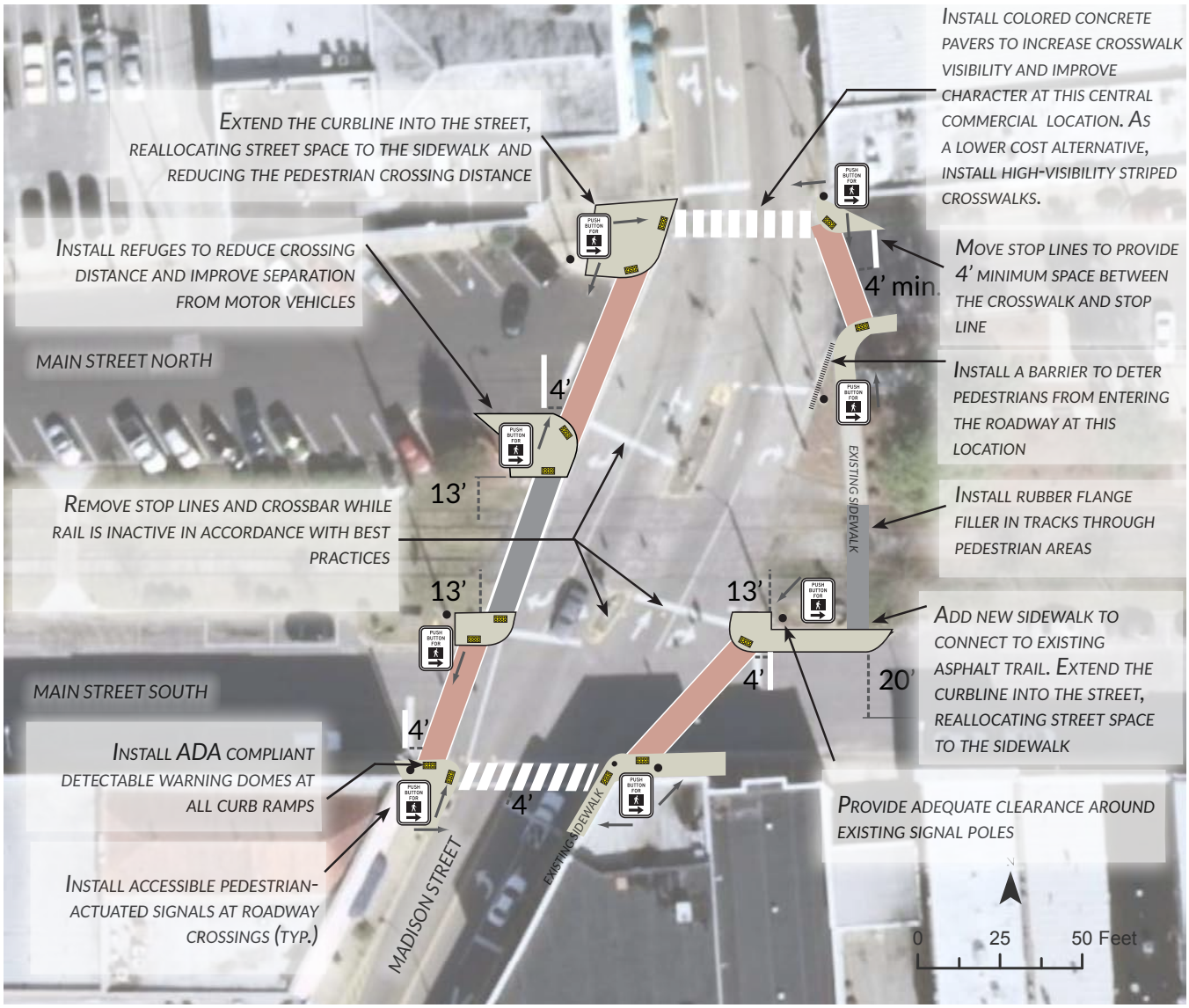
The heart of Whiteville's historic commercial district is located along South Madison Street both north and south of its two intersections with Main Street. For clarity in this analysis, the northern Main Street will be termed 'Main Street North' and the southern Main Street will be termed 'Main Street South'. The two signalized intersections of Madison Street with Main Street North and Main Street South are separated by an inactive rail line owned by Carolina Southern Railroad. The Vineland Station Historic Train Station, home to Whiteville's civic center, is located just east of the crossing. Planted median islands are located along Madison Street north and south of the rail road crossing.

Sidewalks exist at the following locations:

- Along both sides of Madison Street north and south of these intersections
- Along the southern edge of Main Street South
- Along the northern edge of Main Street North

Pedestrian crosswalks are marked at several legs of these two intersections (see figure) but are experiencing wear. Several crossings are angled, increasing pedestrian exposure. Two additional short sidewalk crossings of the railroad are located 135 feet west of Madison Street's western edge of pavement and 25 feet east of Madison Streets' eastern edge of pavement.

MAP 3.11 MADISON STREET & MAIN STREET INTERSECTION IMPROVEMENTS



A full study is recommended to reconfigure these intersections if the rail line through this area is fully abandoned. The following recommendations, however, provide a set of short-term strategies that will improve pedestrian safety and comfort, meet requirements of the Americans with Disabilities Act (ADA), and improve the area around the rail line including aesthetics within the current configuration.

Safety improvements for pedestrians include (a) providing defined and protected areas for waiting to cross streets, (b) reducing intersection crossing distances to reduce exposure to risk, (c) better defining areas to maintain separation from motor vehicles, (d) adding pedestrian signals for safer crossing at intersections, (e) improved visibility so that pedestrians can see and be seen better, and (f) reducing the rail line tripping hazard.

The proposed redesign also enhances pedestrian comfort by creating a more predictable and smoother walking facility. Addition of the ADA-compliant features including the detectable warning domes at all curb ramps make the facility safer and more comfortable for the mobility-impaired.

While the rail line is currently inactive, these recommendations allow for future reactivation. The rail line tripping hazard can be reduced in the meantime by installing rubber flange filler in the track to create a surface less likely to cause user problems.

NEW MULTI-USE TRAIL CORRIDORS

The term "multi-use trail" refers to both multi-use greenway trails and multi-use side paths built in open space or stream corridors, or along a roadway. Multi-use trail corridors often become off-road transportation facilities with simultaneous benefits. They help protect the environment, create an alternate mode of transportation, encourage healthy living, provide opportunities for recreation, and generate economic activity. Multi-use trails that are built within greenway corridors give bicyclists, pedestrians, and other non-motorized trail users access to natural areas. Greenway corridors also provide opportunities to restore wildlife habitat in areas that have been previously disturbed. Multi-use trails are closed to motorized traffic and designed for two-way travel by bicyclists and pedestrians. As described in Appendix A: Design Guidelines, a multi-use trail should be an all-weather surface and accessible within urban, suburban, and rural areas.

Trails can be constructed of many different materials, however, for trails that serve the purpose of bicycle transportation, hard surfaces such as asphalt or concrete are recommended. Each trail project will also require close coordination with nearby property owners. Design features such as landscaped screening, fencing, lighting, and other treatments should be considered to create safe spaces and help ensure privacy where desired.

RECOMMENDED MULTI-USE GREENWAY TRAILS IN WHITEVILLE

Whiteville should work closely with Columbus County and NCDOT to develop multi-use trails that connect to neighborhoods, commercial areas, downtown, and other key destinations. Potential multi-use trail opportunities exist in Whiteville, including the proposed Waccamaw Cyprus Trail located along the inactive rail line, and in other undevelopable areas near the Soules Swap or along roadways where the existing right-of-way widths allow. The multi-use greenway trail recommendations presented in the maps contained throughout this chapter are planning-level analyses, and each corridor, waterway crossing, roadway crossing, and railroad will require additional evaluation during the feasibility and design phases of a project. A list of the multi-use trail recommendations for Whiteville is included at the end of this chapter.

Multi-Use Greenway Trails

One type of multi-use trail is a greenway trail, as shown in the pictures on page 3-13. A multi-use greenway trail is defined as a linear corridor of land that is typically more recreational in character and consists of trails along stream corridors and other open spaces (e.g., utility corridors such as power line easements and sewer easements, railroad right-of-way). Greenway trails can be designed to accommodate a variety of trail users, including bicyclists, walkers, hikers, joggers, skaters, horseback riders, and wheelchair users. Greenway trails in Whiteville should be integrated with and serve as an off-road extension of the proposed pedestrian network.

Multi-Use Side Paths

A multi-use side path is a trail that follows a road corridor but is separated from on-road traffic. Side paths are more transportation-oriented in character and used by bicyclists and pedestrians. They are typically only appropriate for bicyclists if there are a limited number of driveways and intersections. Where side paths are proposed in Whiteville, factors such as the distance between destinations, adjacent land use, and population density were considered. A side path along Franklin Street is illustrated on page 3-17 of this chapter.

Families and novice bicyclists are most comfortable on off-road facilities. Therefore, a comprehensive network of multi-use trails that includes greenway trails and side paths is an integral part of the overall pedestrian facility network, and its development should be a priority of the City of Whiteville. The photos below demonstrate multi-use greenway trails in more natural environments, multi-use side paths along rural, higher-speed roads in North Carolina, and boardwalks in low-lying areas near water features. More information on the design for each of these trail types can be found in Appendix A, Design Guidelines.

Multi-Use Greenway Trails

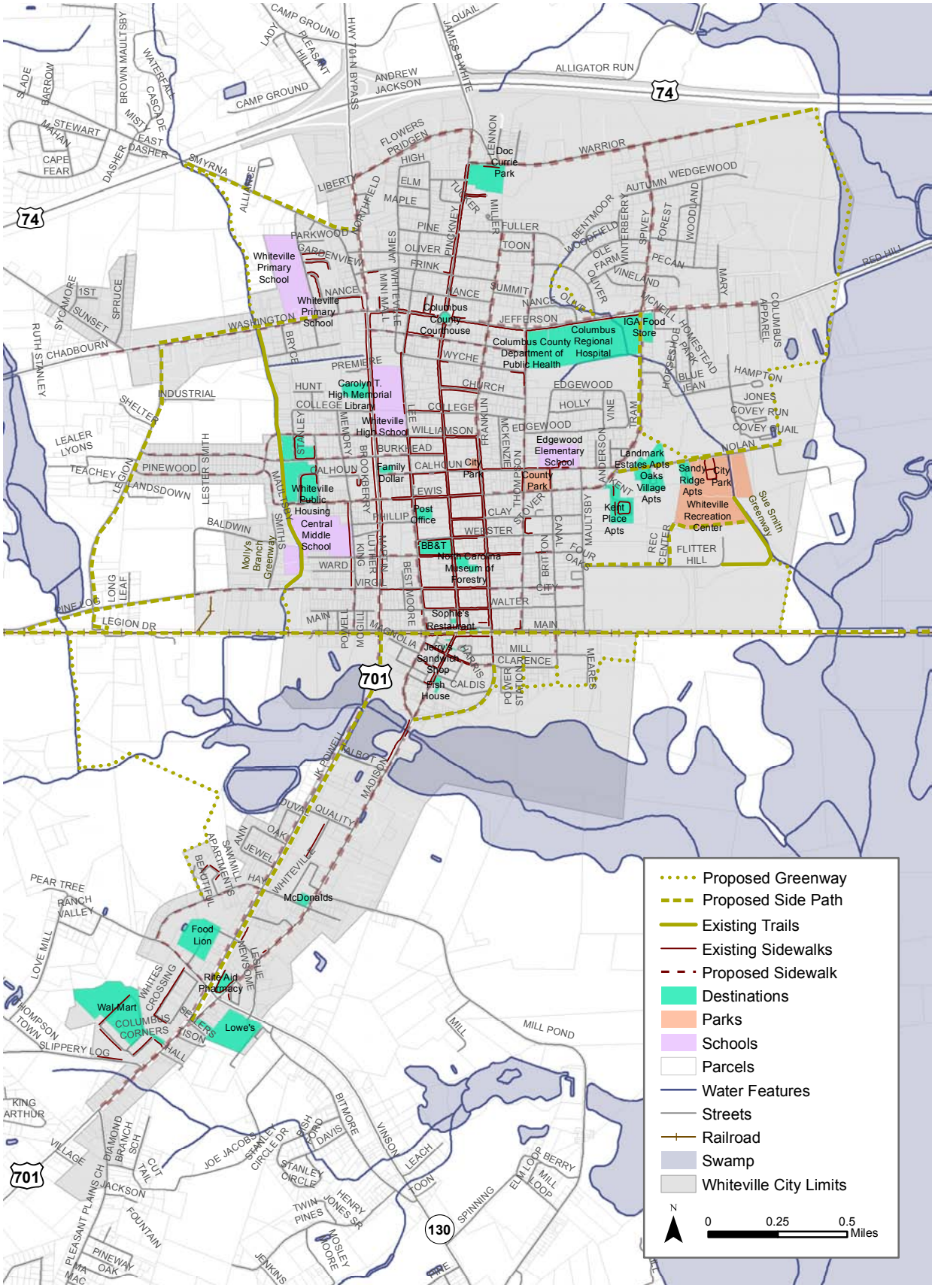
Multi-Use Side Paths

Boardwalk Trails

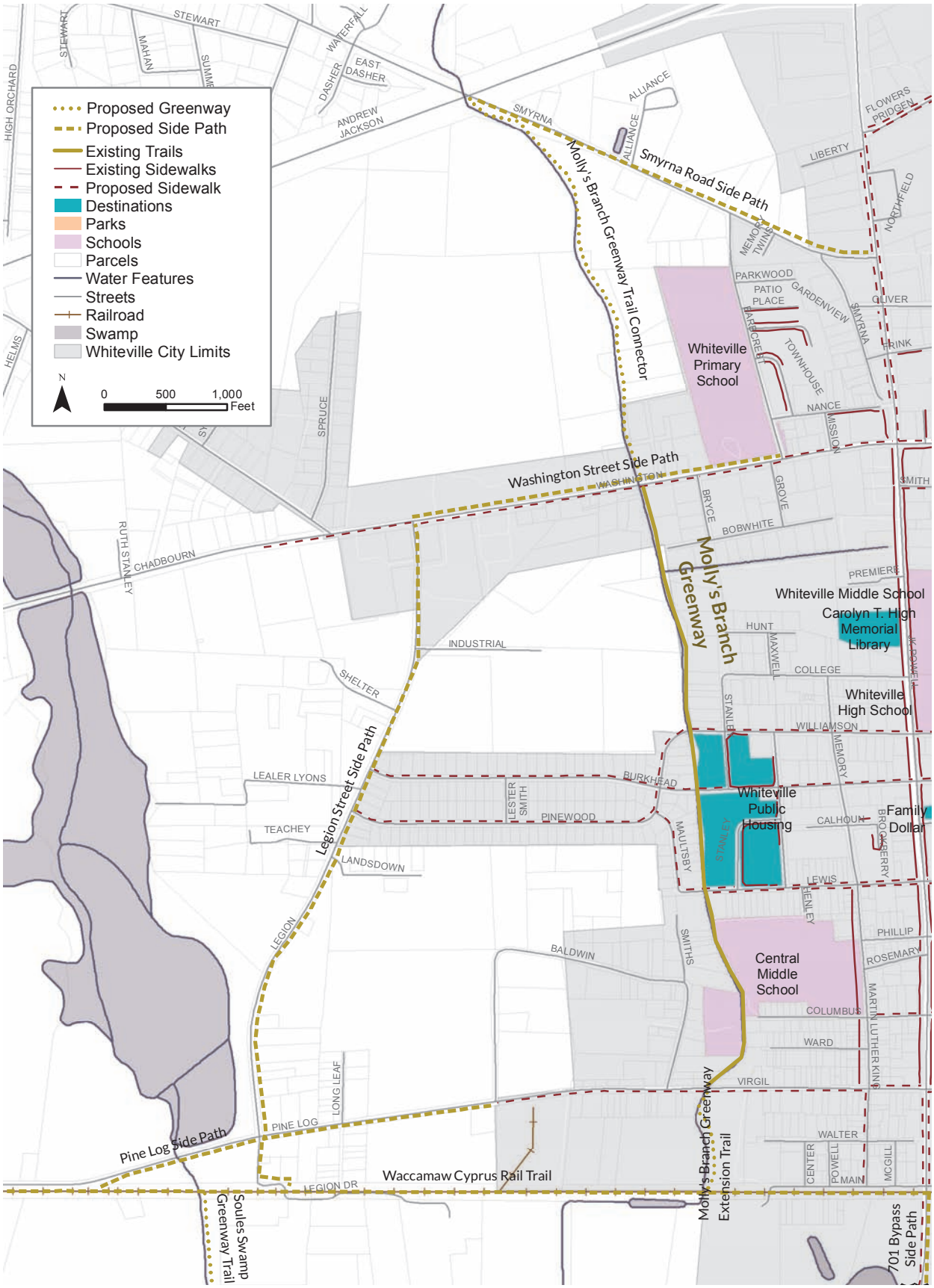
FRANKLIN STREET, NEAR S. MADISON STREET: EXISTING CONDITIONS

FRANKLIN STREET, NEAR S. MADISON STREET: PHOTO SIMULATION OF MULTI-USE SIDE PATH

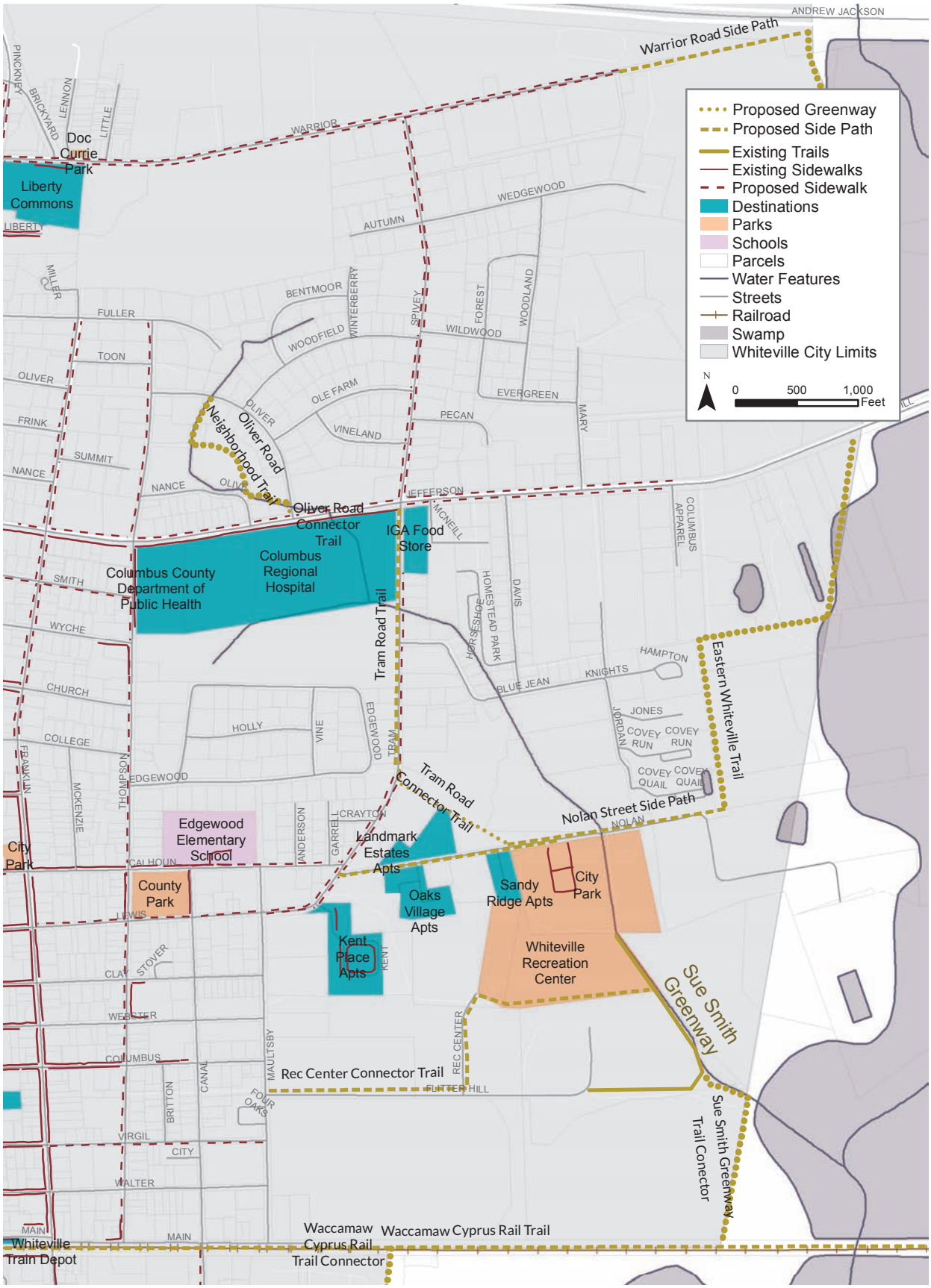
MAP 3.12 MULTI-USE TRAIL (GREENWAY TRAILS AND SIDE PATHS) RECOMMENDATIONS



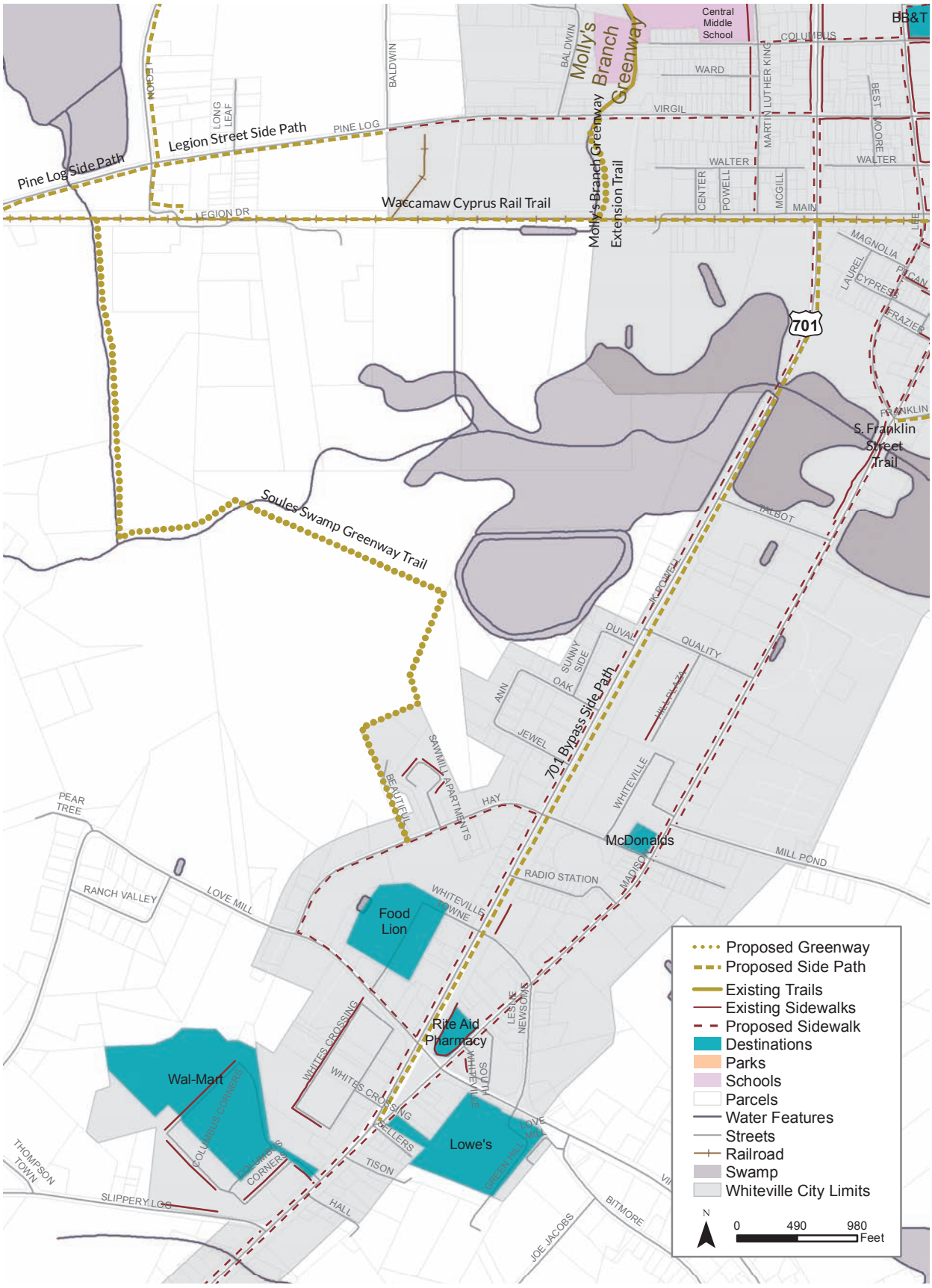
MAP 3.13 NORTHWESTERN AREA MULTI-USE TRAIL RECOMMENDATIONS



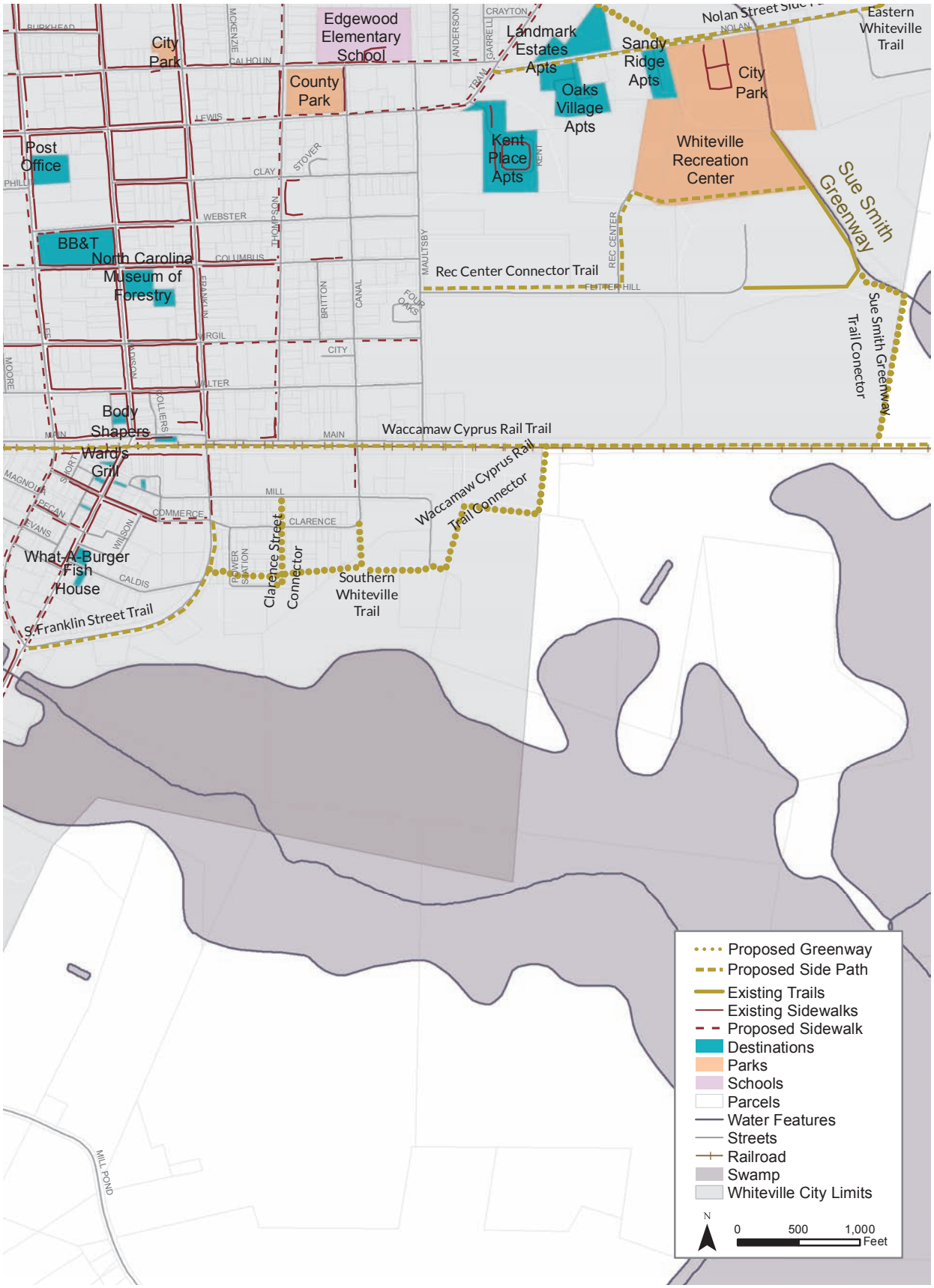
MAP 3.14 NORTHEASTERN AREA MULTI-USE TRAIL RECOMMENDATIONS



MAP 3.15 SOUTHWESTERN AREA MULTI-USE TRAIL RECOMMENDATIONS



MAP 3.16 SOUTHEASTERN AREA MULTI-USE TRAIL RECOMMENDATIONS



PROJECT PRIORITIZATION PROCESS

The prioritization process began with input from city staff and steering committee members on high priority areas and corridors during the project kick-off meeting. The consultant team then reviewed previous planning documents for Whiteville and extracted information on project priorities. During fieldwork investigations the consultant team evaluated and ground-truthed the high priority areas and corridors to identify the most appropriate facility type (sidewalk or multi-use trail) for each area. Please note, intersections were evaluated and prioritized separately and the results of the evaluation and prioritization are presented on pages 3-16 and 3-17 of this chapter.

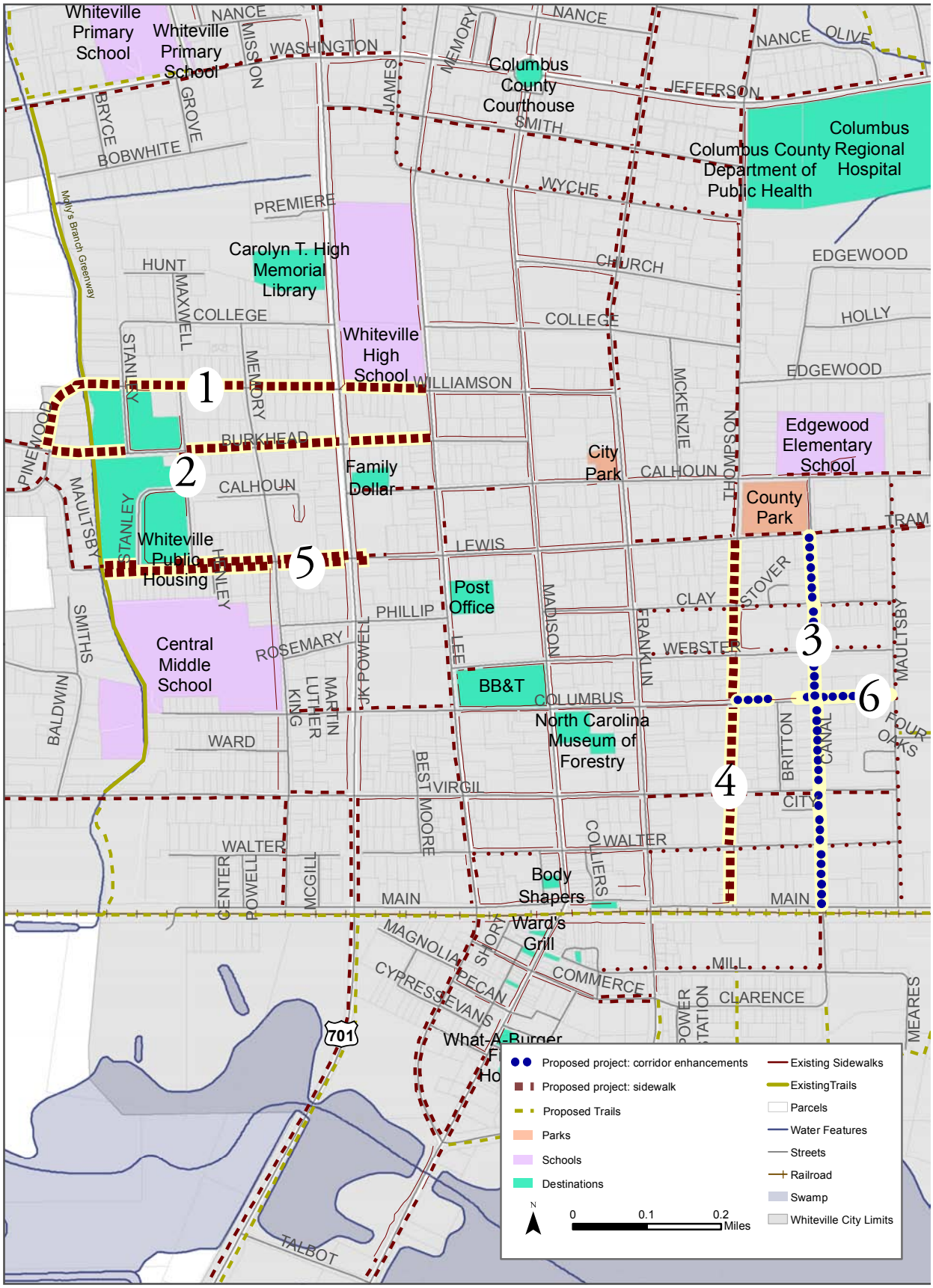
During a committee meeting, project prioritization criteria were discussed and selected by the steering committee members. Committee members were then asked to assign a score to each prioritization criterion. All of the scores were averaged and a final weighted score for each criterion was determined. Table 3.3 below presents the results of the project prioritization criteria scoring process.

All of the project areas or corridors were all evaluated against the criteria presented in Table 3.3 and the top six priority areas or corridors were identified. The six priority areas or corridors were reviewed and discussed with the steering committee, city staff, and NCDOT DBPT staff and appropriate facilities for each area or corridor were selected. The six priority projects were inventoried and divided into logical segments based on input from the public, the steering committee, city staff, and connections between destinations. The six priority project segments are presented beginning on page 3-32.

TABLE 3.3 WEIGHTED SCORES FOR PROJECT PRIORITIZATION CRITERIA

Prioritization Criteria	Weighted Score
Low-income Areas (US Census)	4.29
Low-vehicle Access Areas (US Census)	3.29
High Density Areas (US Census)	3.57
Minority Population Areas (US Census)	3.86
Reported Pedestrian Crash Location	4.29
Direct Access to/from an Existing Trail or Sidewalk	4.29
Connectivity/access to Proposed Facilities	2.57
Top 1-3 Recommendations from 2013 Public Comments	3.00
Park or Recreation Center Proximity (1/2 mile radius)	3.43
Elem., Middle, and High School Proximity (1/2 mile radius)	4.29
Direct Access to Major Shopping Centers/Business Areas/Downtown	3.71

MAP 3.17 PRIORITY PROJECT LOCATIONS



PROJECT CUT SHEETS

The following pages offer details for the six priority project recommendations listed in Table 3.4 below. The purpose of these project cut sheets is to provide a detailed assessment of each priority project area and to assist the City during the implementation of this plan's recommendations. In each map, the priority project segment is highlighted by a yellow line.

Each project cut sheet offers an explanation of the recommendations and a *planning-level* cost estimate for the priority project. The cost estimates are based on the most recently available per unit cost information and include a potential contingency or mobilization fee. Project costs vary over time and by geography. Further evaluation during project design and engineering will be needed to determine exact project costs. A summary table (Table 3.5) of cost estimates for the six priority projects and a project inventory table (Table 3.6) of all project recommendations are included at the end of this chapter for future reference by City and NCDOT staff.

TABLE 3.4: PROJECT PRIORITIZATION RESULTS

ID #	ROADWAY	PROJECT TYPE	LOWER INCOME AREAS	LOW-VEHICLE ACCESS AREAS	HIGH POPULATION DENSITY AREAS	HIGH MINORITY POPULATION AREAS	NEAR A RECENT PEDESTRIAN CRASH LOCATION	CONNECTIVITY TO EXISTING SIDE-WALKS OR TRAILS	CONNECTIVITY PROPOSED/FUTURE SIDEWALKS OR TRAILS	TOP 1 - 3 PUBLIC INPUT	WITHIN 1/2 MILE OF A PARK OR RECREATION CENTER	WITHIN 1/2 MILE OF AN ELEMENTARY, MIDDLE, OR HIGH SCHOOL	ACCESS TO DOWNTOWN CORES / BUSINESS AREAS	TOTAL SCORE
1	W. Williamson Street	Sidewalks	4.29	3.29	3.57	3.86	4.29	4.29	2.57	0	3.43	4.29	3.71	37.57
2	Burkhead Street / Maxwell Street	Sidewalks	4.29	3.29	3.57	3.86	4.29	4.29	2.57	0	3.43	4.29	0	33.86
3	S. Canal Street	Traffic calming measures	4.29	3.29	3.57	3.86	0	4.29	2.57	0	3.43	4.29	3.71	33.29
4	S. Thompson Street	Sidewalks	4.29	3.29	3.57	3.86	0	4.29	2.57	0	3.43	4.29	3.71	33.29
5	W. Lewis Street	Sidewalks	0	3.29	3.57	3.86	4.29	4.29	2.57	0	3.43	4.29	3.71	33.29
6	E. Columbus Street	Traffic calming measures	4.29	3.29	3.57	3.86	0	4.29	2.57	0	3.43	4.29	3.71	33.29

1. W. WILLIAMSON STREET

Between Pinewood Avenue and S. Lee Street

Priority Project Score: 37.57

Project Distance: 2,878 feet

Roadway Corridor Ownership: Whiteville

Nearby Destinations and Key Connections:

- Public Housing
- Whiteville High School
- Whiteville Middle School
- Central Middle School
- Carolyn T. High Memorial Library
- Existing Sidewalk on US 701/ JK Powell Blvd
- Existing Sidewalk on S. Lee Street

Planning Level Cost Estimate: $81,155

Project Recommendations

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

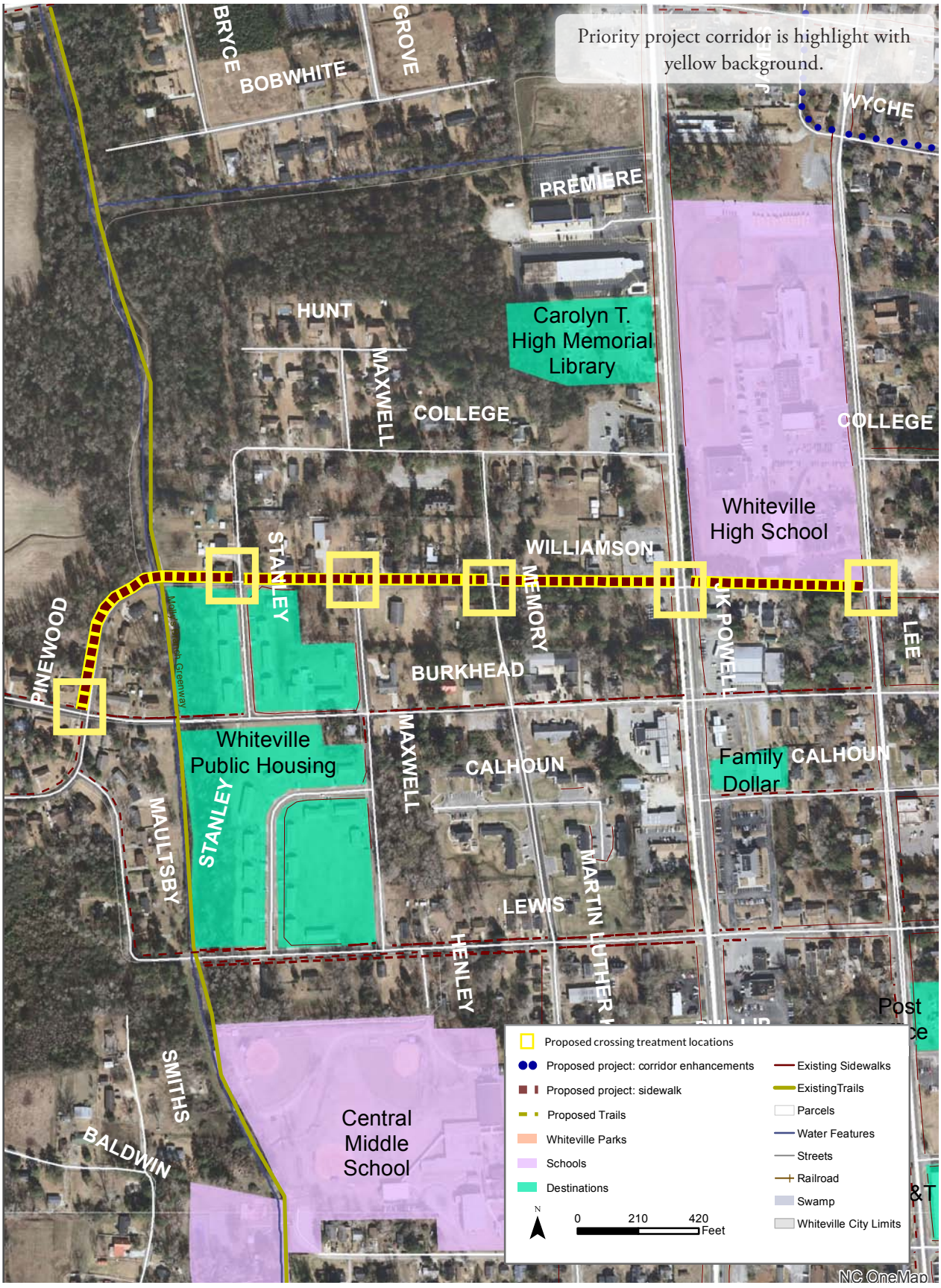
Intersection Treatment Information

- There are six roadway crossings or intersections along the W. Williamson Street priority project corridor. Each crossing is identified by a yellow square on Map 3.18.
- All six crossings along this corridor are un-signalized intersections or roadway crossings and will require crosswalks and ADA-compliant curb ramps. The sidewalks, curb ramps, and crosswalks for each intersection or roadway crossing have been included in the planning-level cost estimate presented on this page.

W. Williamson Street at Maxwell Street.

W. Williamson Street at S. Lee Street.

MAP 3.18 PRIORITY PROJECT#1: W. WILLIAMSON STREET



2. BURKHEAD STREET & MAXWELL STREET

Burkhead Street Between Pinewood Avenue And S. Lee Street, and Maxwell Street between Burkhead Street and Stanley Street

Priority Project Score: 33.86

Project Distance: 2,244 feet

Roadway Corridor Ownership: Whiteville

Nearby Destinations and Key Connections:

- Public Housing
- Whiteville High School
- Whiteville Middle School
- Central Middle School
- Carolyn T. High Memorial Library
- Existing Sidewalk on US 701/JK Powell Blvd
- Existing Sidewalk on S. Lee Street
- Existing Sidewalk on Maxwell Street
- Existing Sidewalk on Maxwell Street

Planning Level Cost Estimate: $126,591

Project Recommendations

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

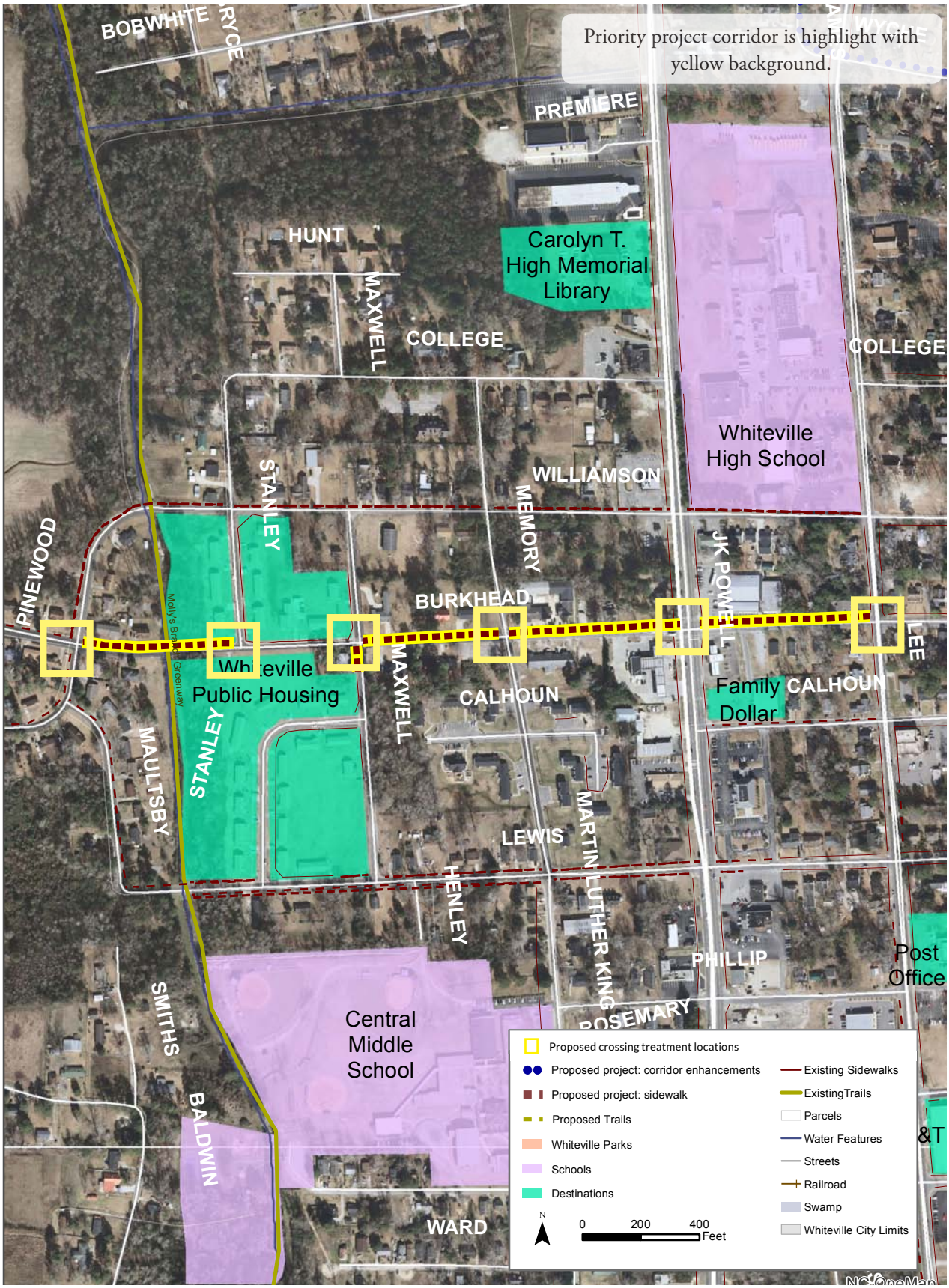
Intersection Treatment Information

- There are six roadway crossings or intersections along the W. Williamson Street priority project corridor. Each crossing is identified by a yellow square on Map 3.19.
- Five of the six crossings along this corridor are un-signalized intersections or roadway crossings and will require crosswalks and ADA-compliant curb ramps. The intersection at Burkhead and JK Powell/US 701 is signalized. The sidewalks, curb ramps, and crosswalks for each unsignalized intersection or roadway crossing and the pedestrian countdown timers for the signalized intersection have been included in the planning-level cost estimate presented on this page.

Burkhead Street at Maxwell Street.

Existing grass greenway trail that crosses Burkhead Street.

MAP 3.19 PRIORITY PROJECT #2: BURKHEAD STREET



3. S. CANAL STREET

Between E. Lewis Street and E. Main Street

Priority Project Score: 33.29

Project Distance: 2,399 feet

Roadway Corridor Ownership: Whiteville

Nearby Destinations and Key Connections:

- Parks
- Edgewood Elementary School
- Downtown Whiteville
- Proposed Sidewalks on Tram Road
- Proposed Trail along Inactive Rail Corridor

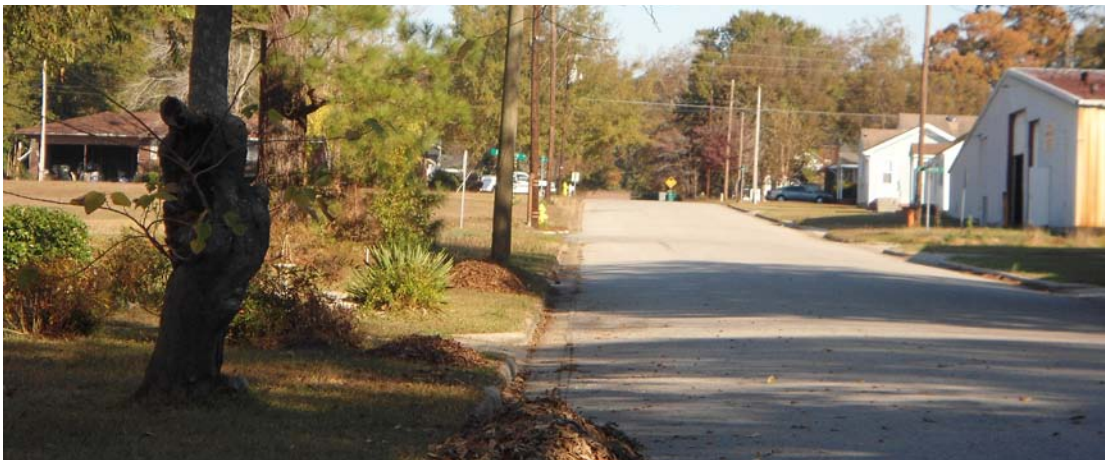
Planning Level Cost Estimate: $42,688 for the longer term solution

Project Recommendations

- Proposed corridor enhancements along the corridor

See pages 3-38 and 3-39 for illustrative concepts for corridor enhancements including striped/painted median islands and signage as a short term solution and planted median islands with mini traffic circles and signage as a longer term solution. .

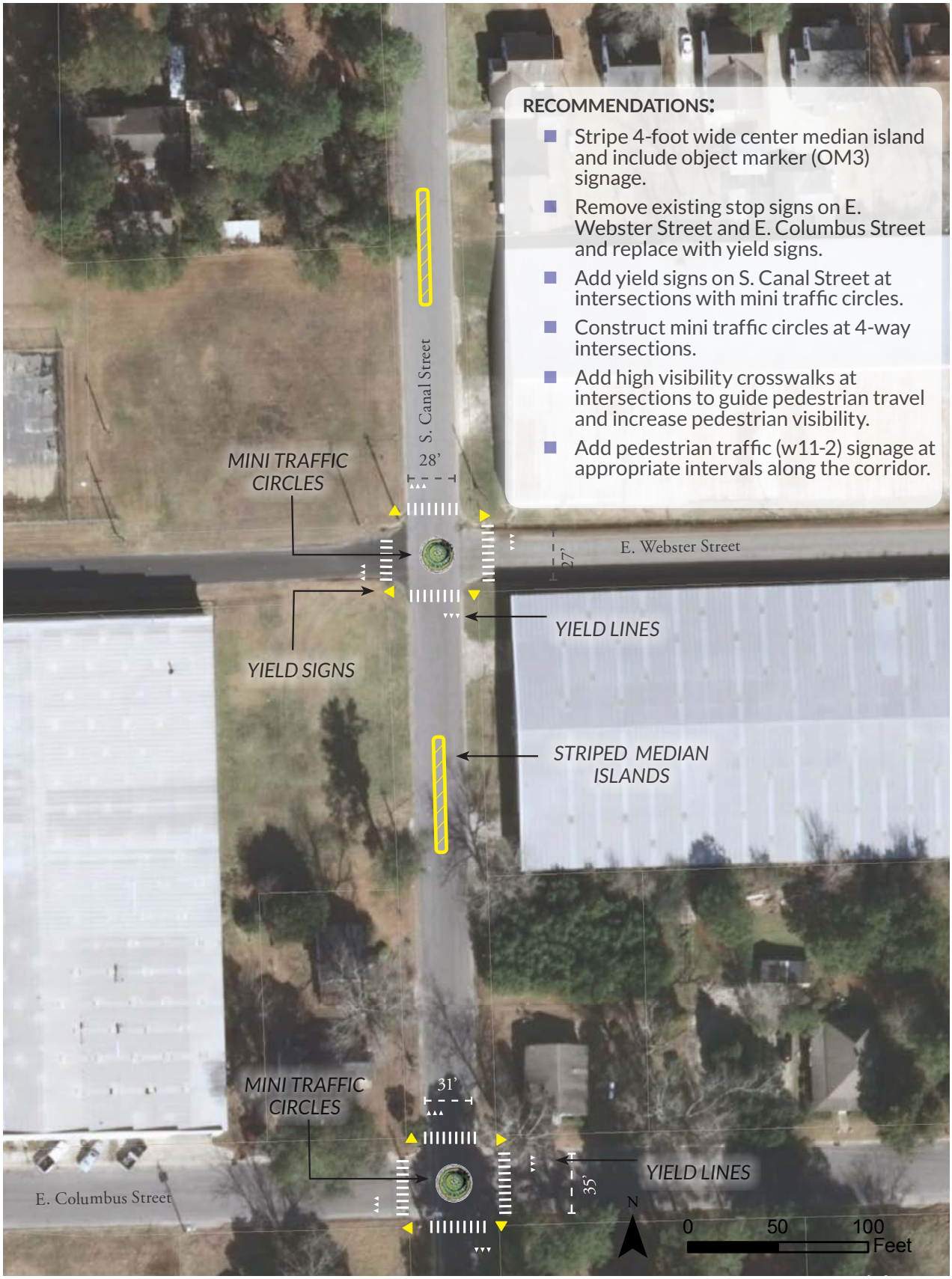
S. Canal Street near Mill Street.



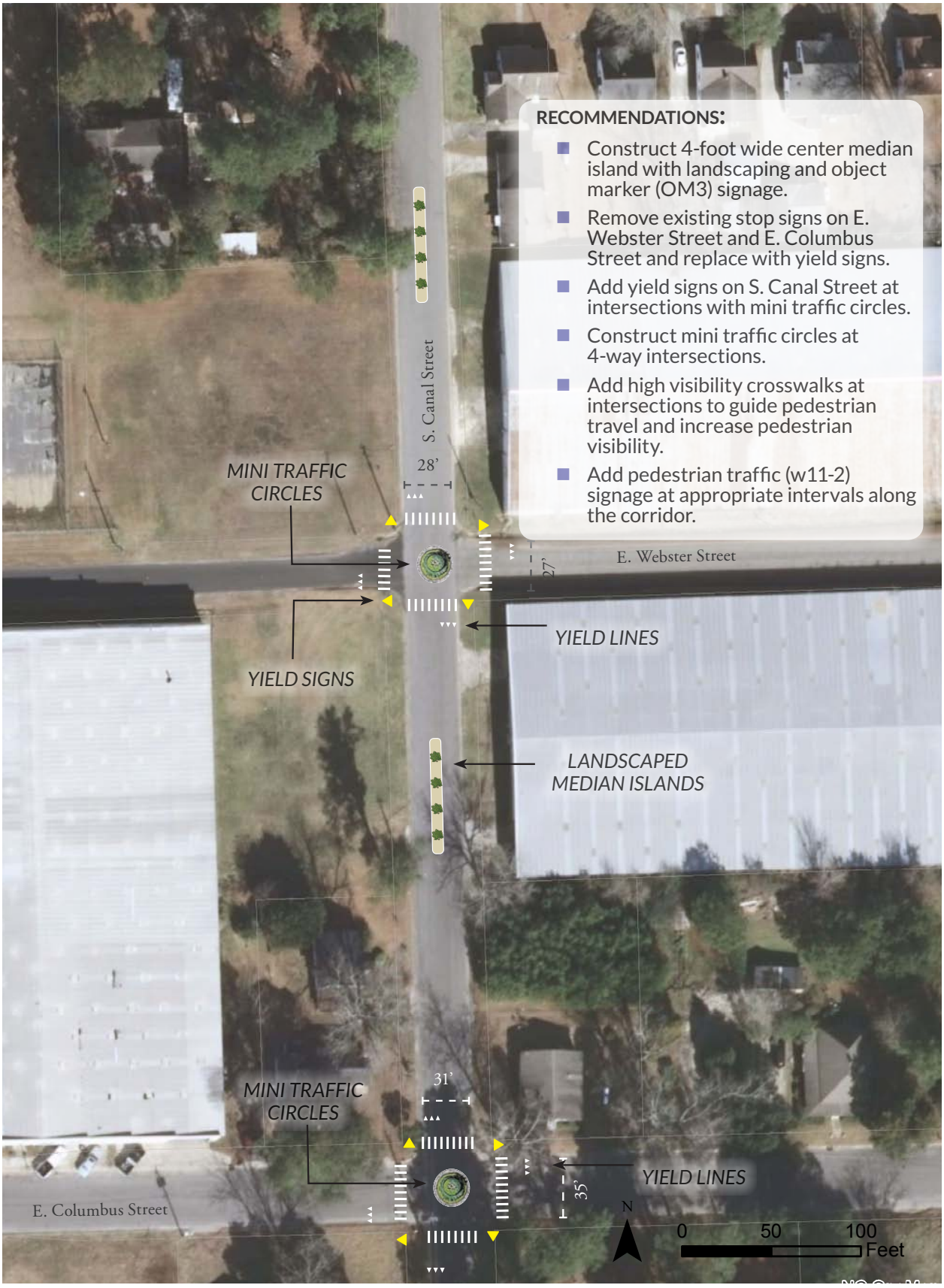
Canal Street Corridor.

MAP 3.20 PRIORITY PROJECT #3: S. CANAL STREET

MAP 3.21 SOUTH CANAL STREET SOLUTION A



MAP 3.22 SOUTH CANAL STREET SOLUTION B



4. S. THOMPSON STREET

Between E. Lewis Street and E. Main Street

Priority Project Score: 33.29

Project Distance: 2,370 feet

Roadway Corridor Ownership: Whiteville

Nearby Destinations and Key Connections:

- Downtown Whiteville
- Parks
- Edgewood Elementary School
- North Carolina Museum of Forestry
- Train Depot (Civic Space)
- Existing Sidewalk on E. Main Street
- Existing Sidewalk on E. Columbus Street

Planning Level Cost Estimate: $75,543

Project Recommendations

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

Intersection Treatment Information

- There are seven roadway crossings or intersections along the S. Thompson Street priority project corridor. Each crossing is identified by a yellow square on Map 3.23.
- All seven crossings along this corridor are un-signalized intersections or roadway crossings and will require crosswalks and ADA-compliant curb ramps. The sidewalks, curb ramps, and crosswalks for each intersection or roadway crossing have been included in the planning-level cost estimate presented on this page.

S. Thompson Street at Calhoun Street.

S. Thompson Street at E. Columbus Street

MAP 3.23 PRIORITY PROJECT #4: S. THOMPSON STREET

5. W. LEWIS STREET

From west of Maxwell to east of US 709/JK Powell Blvd

Priority Project Score: 33.29

Project Distance: 2,178 feet

Roadway Corridor Ownership: Whiteville

Nearby Destinations and Key Connections:

- Public Housing
- Whiteville High School
- Whiteville Middle School
- Central Middle School
- Family Dollar Store
- Existing Sidewalk on US 701/JK Powell Blvd
- Existing Sidewalk on S. Lee Street
- Existing Sidewalk on Maxwell Street

Planning Level Cost Estimate: $62,778

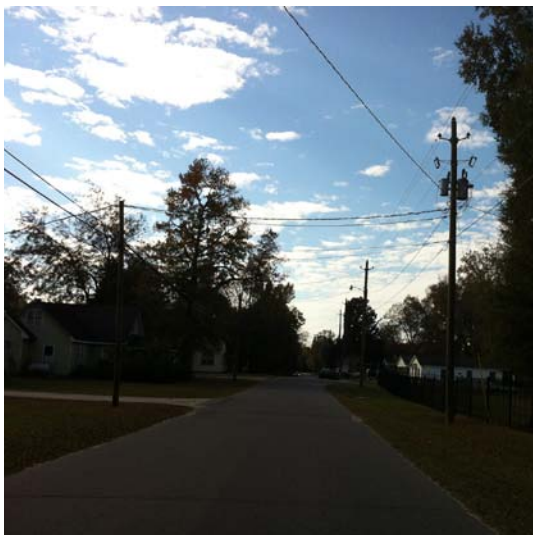
Project Recommendations

- Sidewalk both sides
- High-visibility crosswalks at intersections
- ADA compliant curb ramps at intersections

Intersection Treatment Information

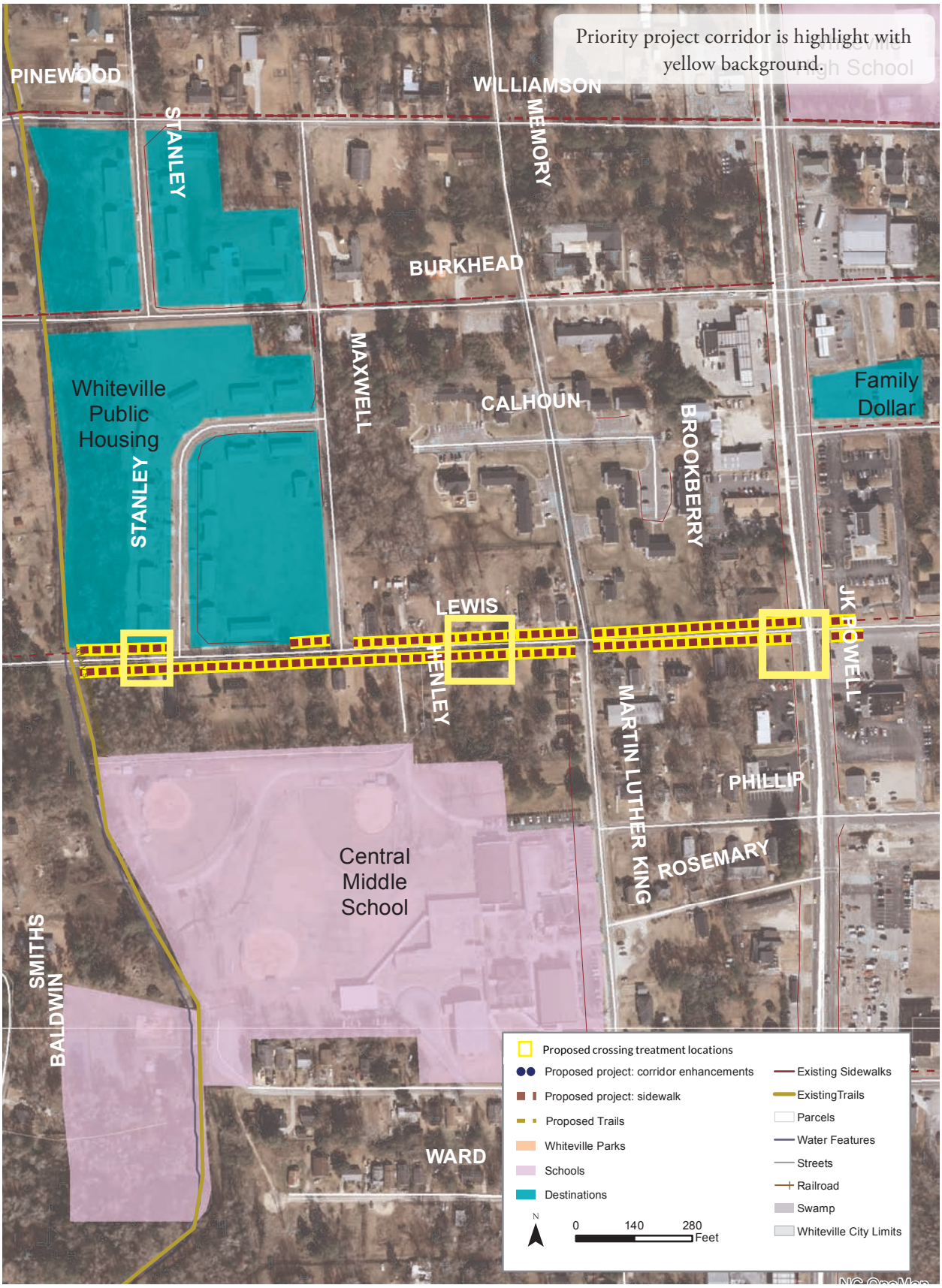
- There are three roadway crossings or intersections along the W. Lewis Street priority project corridor. Each crossing is identified by a yellow square on Map 3.24.
- The three crossings or intersections along this corridor are unsignalized intersections and will require crosswalks and ADA-compliant curb ramps. The sidewalks, curb ramps, and crosswalks for each unsignalized intersection or roadway crossing have been included in the planning-level cost estimate presented on this page.

W. Lewis Street near the Henry Street cut-through to Central Middle School.



W. Lewis Street near MLK Jr. Blvd.

MAP 3.24 PRIORITY PROJECT#5: WEST LEWIS STREET



6. E. COLUMBUS STREET

Between S. Thompson Street and Maultsby Street

Priority Project Score: 33.29

Project Distance: 836 feet

Roadway Corridor Ownership: Whiteville

Nearby Destinations and Key Connections:

- East-west connector roadway
- Residential neighborhoods
- Downtown Whiteville
- Edgewood Elementary
- Parks
- Existing sidewalk on E. Columbus Street
- Proposed sidewalk on S. Thompson Street
- Proposed trail recommendation on Flitter Hill Road.

Planning Level Cost Estimate: $24,150 for longer term solution.

Project Recommendations

- Corridor enhancements along the corridor. Shorter term solution includes striped/painted median islands, mini traffic circles, and signage. Longer term solutions include mini traffic circles, planted median islands, and signage.
- See detailed recommendations for S. Canal Street corridor on pages 3-38 and 3-39, and E. Walter Street corridor on pages 3-11 through 3-15.

E. Columbus Street near S. Thompson Street (facing east)

E. Columbus Street near S. Thompson Street (facing west)

MAP 3.25 PRIORITY PROJECT #6: E. COLUMBUS STREET

TABLE 3.5: PRIORITY PROJECT COST ESTIMATES

ID #	ROADWAY NAME	LENGTH (LINEAR FEET)	CONCRETE SIDEWALK COST $27 / PER SQ YARD	# OF CROSS-WALKS	HIGH-VISIBILITY THERMO PLASTIC CROSSWALK MARKING $68 / PER MARKING*	# OF CURB RAMPS	ADA CURB RAMPS $1200 / PER CURB RAMP	# OF PED COUNT-DOWN TIMERS	PED COUNT-DOWN TIMERS $6000 / PER TIMER	MINI TRAFFIC CIRCLE $12,000/PER INTERSECTION	PLANTED MEDIAN ISLAND $5,000/PER ISLAND	SIGNAGE $200/PER SIGN	COST ESTIMATE ($)	COST ESTIMATE & 15% MOBILIZATION OR CONTINGENCY FEE
1	W. Williamson Street	2878	$43,169	10	$3,400	20	$24,000	0	$0.00	$0.00	$0.00	$0.00	$70,569	$81,155
2	Burkhead Street/Maxwell Street	2,244	$33,659	13	$4,420	20	$24,000	8	$48,000	$0.00	$0.00	$0.00	$110,079	$126,591
3	S. Canal Street	1289.77	$0	8	$2,720	0	$0	0	$0.00	$24,000	$10,000	$400	$37,120	$42,688
4	S. Thompson Street	2,370	$35,549	11	$3,740	22	$26,400	0	$0.00	$0.00	$0.00	$0.00	$65,689	$75,543
5	W. Lewis Street	2,178	$32,699	8	$2,720	16	$19,200	0	$0.00	$0.00	$0.00	$0.00	$54,589	$62,778
6	E. Columbus Street	6594.31	$0	10	$3,400	0	$0	0	$0	$24,000	$10,000	$600	$38,000	$24,150

TABLE 3.6: OVERALL PEDESTRIAN NETWORK PROJECTS

ROADWAY NAME	LENGTH (LINEAR FEET)	PHASE	PROJECT TYPE
W Oliver	2394	shorter term	sidewalk or design & traffic calming
W Frink	1586	shorter term	Design & traffic calming
E Frink	781	shorter term	Design & traffic calming
N Franklin	3201	shorter term	sidewalk
N Franklin	3852	shorter term	sidewalk
Wyche	2174	shorter term	sidewalk or design & traffic calming
Smith	2719	shorter term	sidewalk
S Thompson	2370	shorter term	sidewalk
N Thompson	4573	shorter term	sidewalk
E Lewis	2125	shorter term	sidewalk
Tram	1599	shorter term	sidewalk
Tram	2795	shorter term	sidewalk
E Calhoun	1301	shorter term	sidewalk
Jefferson	2244	shorter term	sidewalk
Jefferson	831	shorter term	sidewalk
Washington	1350	shorter term	sidewalk

TABLE 3.6: OVERALL PEDESTRIAN NETWORK PROJECTS - CONT'D

ROADWAY NAME	LENGTH (LINEAR FEET)	PHASE	PROJECT TYPE
W Williamson	2878	shorter term	sidewalk
Burkhead and Maxwell	2244	shorter term	sidewalk
W Calhoun	672	shorter term	sidewalk
Pinewood	2659	shorter term	sidewalk
Burkehead	2303	shorter term	sidewalk
Maultsby Dr	1121	shorter term	sidewalk
W Lewis	2178	shorter term	sidewalk
Lee and W Webster	2456	shorter term	sidewalk
Commerce	762	shorter term	sidewalk
S Madison and Lee	3792	shorter term	sidewalk
Martin Luther King Jr and W Virgil	1149	shorter term	sidewalk
W Columbus	1088	shorter term	sidewalk
E Columbus	836	shorter term	Design & traffic calming
E Virgil	1678	shorter term	sidewalk
Mill and S Canal	1888	shorter term	Design & traffic calming
S Canal	2399	shorter term	Design & traffic calming

TABLE 3.6: OVERALL PEDESTRIAN NETWORK PROJECTS - CONT'D

ROADWAY NAME	LENGTH (LINEAR FEET)	PHASE	PROJECT TYPE
Clay	1702	shorter term	Design & traffic calming
E Webster	1441	shorter term	Design & traffic calming
W Walter	467	shorter term	sidewalk or design & traffic calming
Fuller	1369	shorter term	Design & traffic calming
Maultsby	3082	shorter term	sidewalk or design & traffic calming
James	318	longer term	sidewalk or design & traffic calming
James	422	longer term	Design & traffic calming
James	403	longer term	Design & traffic calming
James	220	longer term	sidewalk or design & traffic calming
James	361	longer term	sidewalk or design & traffic calming
James	352	longer term	sidewalk or design & traffic calming
James	347	longer term	sidewalk or design & traffic calming
James	441	longer term	sidewalk or design & traffic calming
Warrior	5096	longer term - policy	sidewalk
Warrior	5120	longer term - policy	sidewalk
Flowers Pridgen	2401	longer term - policy	sidewalk

TABLE 3.6: OVERALL PEDESTRIAN NETWORK PROJECTS - CONT'D

ROADWAY NAME	LENGTH (LINEAR FEET)	PHASE	PROJECT TYPE
Flowers Pridgen	2413	longer term - policy	sidewalk
Maultsby	1456	longer term - policy	sidewalk or design & traffic calming
Maultsby	1166	longer term - policy	sidewalk or design & traffic calming
Maultsby	348	longer term - policy	sidewalk or design & traffic calming
Jefferson	727	longer term - policy	sidewalk
Jefferson	1405	longer term - policy	sidewalk
Jefferson	1308	longer term - policy	sidewalk
Jefferson	572	longer term - policy	sidewalk
Pinckney	606	longer term - policy	sidewalk
Pinckney	511	longer term - policy	sidewalk
W Virgil	2986	longer term - policy	sidewalk
Washington	1217	longer term - policy	sidewalk
E Walter	504	longer term - policy	Design & traffic calming
E Walter	560	longer term - policy	Design & traffic calming
E Walter	547	longer term - policy	Design & traffic calming
701 Bypass	1388	longer term - policy and NCDOT roadway project	sidewalk

TABLE 3.6: OVERALL PEDESTRIAN NETWORK PROJECTS - CONT'D

ROADWAY NAME	LENGTH (LINEAR FEET)	PHASE	PROJECT TYPE
701 Bypass	351	longer term - policy and NCDOT roadway project	sidewalk
701 Bypass	705	longer term - policy and NCDOT roadway project	sidewalk
701 Bypass	842	longer term - policy and NCDOT roadway project	sidewalk
701 Bypass	341	longer term - policy and NCDOT roadway project	sidewalk
701 Bypass	326	longer term - policy and NCDOT roadway project	sidewalk
701 Bypass	385	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	670	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	205	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	3360	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	144	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	1237	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	1668	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	404	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	644	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	134	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	515	longer term - policy and NCDOT roadway project	sidewalk

TABLE 3.6: OVERALL PEDESTRIAN NETWORK PROJECTS - CONT'D

ROADWAY NAME	LENGTH (LINEAR FEET)	PHASE	PROJECT TYPE
S JK Powell - 701 Bypass	3769	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	718	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	565	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	981	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	1031	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	917	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	548	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	920	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	1417	longer term - policy and NCDOT roadway project	sidewalk
S Madison - 701 Business	262	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	530	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	651	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	2346	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	1185	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	760	longer term - policy and NCDOT roadway project	sidewalk
S JK Powell - 701 Bypass	760	longer term - policy and NCDOT roadway project	sidewalk

TABLE 3.6: OVERALL PEDESTRIAN NETWORK PROJECTS - CONT'D

ROADWAY NAME	LENGTH (LINEAR FEET)	PHASE	PROJECT TYPE
Hay	2349	longer term - policy and NCDOT roadway project	sidewalk
Love Mill	1305	longer term - policy and NCDOT roadway project	sidewalk
Spivey	812	longer term with increased density	sidewalk
Spivey	823	longer term with increased density	sidewalk
Spivey	921	longer term with increased density	sidewalk
Spivey	390	longer term with increased density	sidewalk
Spivey	395	longer term with increased density	sidewalk
Spivey	453	longer term with increased density	sidewalk
Spivey	680	longer term with increased density	sidewalk
Spivey	648	longer term with increased density	sidewalk
Spivey	865	longer term with increased density	sidewalk
Washington	81	longer term with increased density	sidewalk
Washington	569	longer term with increased density	sidewalk
Washington	2303	longer term with increased density	sidewalk

TABLE 3.7: MULTI-USE TRAIL PROJECTS

NAME	TRAIL TYPE/LOCATION	LENGTH (LINEAR FEET)	LENGTH (MILEAGE)
S. Franklin Street Trail	Side Path ROW	2132	0.4
Clarence Street Connector	Greenway/Sewer Easement	523	0.1
Southern Whiteville Trail	Greenway/Sewer Easement	1641	0.31
Mill Street Connector Trail	Greenway	234	0.04
Nolan Street Side Path	Side Path ROW	1810	0.34
Tram Road Connector Trail	Greenway	1173	0.22
Tram Road Trail	Side Path ROW	2129	0.4
Oliver Road Connector Trail	Greenway	77	0.01
Warrior Road Side Path	Side Path ROW	1565	0.3
Oliver Road Neighborhood Trail	Greenway & ROW	1543	0.29
Eastern Whiteville Trail	Greenway/Utility Easement/ROW	3316	0.63
Eastern Whiteville Trail	Greenway/Utility Easement/ROW	3966	0.75
Nolan Street Side Path	Side Path ROW	1801	0.34
Washington Street Side Path	Side Path ROW	3044	0.22
Waccamaw Cyprus Rail Trail	Railroad ROW	38002	7.2
701 Bypass Side Path	Side Path ROW	8269	1.57
Legion Street Side Path	Side Path ROW	7229	1.37
Pine Log Side Path	Side Path ROW	1332	0.25
Legion Street Side Path	Side Path ROW	637	0.12
Waccamaw Cyprus Rail Trail Connector	Greenway/Utility Easement/ROW	2344	0.44
Sue Smith Greenway Trail Conector	Greenway/Utility Easement/ROW	1640	0.31
Molly's Branch Greenway Trail Connector	Greenway/Utility Easement/ROW	3663	0.69
Smyrna Road Side Path	Side Path ROW	3433	0.65
Soules Swamp Greenway Trail	Greenway/Sewer Easement	7953	1.51
Molly's Branch Greenway Extension Trail	Greenway/Sewer Easement	887	0.17

4 Programs & Policies

Chapter Contents

OVERVIEW

Meeting the goals of this pedestrian master plan will not only require new facilities, but also implementation of pedestrian-related programs and policies. This plan recommends a comprehensive approach that incorporates the "5 E's" (Engineering, Education, Encouragement, Enforcement, and Evaluation) in order to increase the safety and comfort of walking and become designated as a Walk-Friendly Community by the Pedestrian and Bicycle Information Center. The approach must focus on overall livability and walkability in all planning decisions involving land use, growth, and transportation. Recommendations addressing the first "E", engineering, are covered in Chapter 3: Network Recommendations and in Appendix A: Design Guidelines, while the other four "E's" are addressed in this chapter under "New Program Recommendations and Resources" starting on page 4-2.

EXISTING PROGRAMS

The City of Whiteville hosts or is a supportive partner for the following events throughout the calendar year. Even though these events are not linked to specific pedestrian programs, they encourage pedestrian activity and therefore can be excellent opportunities for further advancing pedestrian safety and active living. Booths that encourage walking as a mode of transportation, educate people on the benefits of walking, and promote pedestrian safety could be set up during any of the existing public events in Whiteville.

Picture of recent Fun Run event from event website: http://www.fmrun.com/

COLUMBUS COUNTY FARMERS MARKET FUN RUN & WALK

The Columbus County Farmers Market Fun Run & Walk is an annual event that is scheduled each year in May. A portion of funds raised during the event are used to help grow Girls on the Run, Girls on Track, and STRIDE running programs in Columbus County. In 2011, only one school in Columbus County participated in this program, but additional schools have participated in the past several years. The funds raised by this event will provide more children with the opportunity to train in the 10-week fitness and self-improvement program.

Annual NC Pecan Harvest Festival in Whiteville: 1-mile walk/run, 5K run, 8K run

Picture of recent Pecan Harvest Festival event from event website: http://www.ncpecanfestival.com/

The Annual North Carolina Pecan Harvest Festival occurs each year in late October or early November. There are numerous events throughout the festival, including a 1-mile walk/run, a 5K run, and a 8K run. The races begin at 8AM at the corner of Madison Street and Walter Street. All event proceeds benefit Families First, a non-profit serving Columbus and Bladen Counties.

New Program Recommendations and Resources

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

Education Programs

Public Education and Educational Devices

Whiteville could develop a variety of safety materials and distribute them throughout the community. Educational materials focus on safe behaviors, rules, and responsibilities. Information may include bulleted keys for safe pedestrian travel and habits, safe motor vehicle operation around pedestrians, and general facility rules and regulations. This safety information is often available for download from national pedestrian advocacy organizations, such as the Pedestrian and Bicycle Information Center website, www.walkinginfo.org. Furthermore, NCDOT is preparing a series of pedestrian education and enforcement materials which will be available for distribution to state jurisdictions in the fall of 2014.

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

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

Coordinated Campaigns

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

Internal Education

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

Below are several training course examples:

- www.michaelronkin.com/courses
- www.pps.org/training/custom-tailored-training/
- www.fhwa.dot.gov/context/trainingguide/ExistingClasses.htm

Let's Go NC – Pedestrian Curriculum

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

Eat Smart Move More NC

Eat Smart, Move More is a statewide movement that promotes increased opportunities for healthy eating and physical activity wherever people live, learn, earn, play and pray. Through this program, grants are available for cities to implement physical activity programs in local schools.

EDUCATION RESOURCES

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

http://americawalks.org

"ONE TEXT OR CALL, YOU CAN WRECK IT ALL" is a campaign of the USDOT to discourage texting and cellphone usage while driving. Downloadable materials, research and facts are available online.

http://www.distraction.gov

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

http://www.nhtsa.gov/People/injury/olddrive/SteppingOut/index.html

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

http://www.nhtsa.gov/Pedestrians

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

tttp://www.safekids.org/

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

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

PEDESTRIAN AND BICYCLE SAFETY – Pedestrian information related to children from the FHWA.

ttp://safety.fhwa.dot.gov/ped_bike

EAT SMART, MOVE MORE is a statewide movement that promotes increased opportunities for healthy eating and physical activity wherever people live, learn, earn, play, and pray.

http://www.eatsmartmovemorenc.com

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

www.ncdot.gov/bikeped/safetyeducation/manuals/ www.ncdot.org/transit/bicycle/

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

- www.pedbikeinfo.org (Pedestrian and Bicycle Information Center)
- www.bicyclinginfo.org (Pedestrian and Bicycle Information Center)
- www.bikewalk.org/workshops (National Center for Bicycling and Walking)
- www.saferoutesinfo.org (Safe Routes to School)
- www.active-living.org (Partners for Active Living)
- http://www.campo-nc.us/bikepedestrian.html (Capital Area MPO)
- www.smartcommutechallenge.org (Triangle Area - Smart Commute Challenge)
- www.usa.safekids.org (Safe Kids Worldwide)
- www.eatsmartmovemorenc.com (Eat Smart, Move More)
- www.worldcarfree.net (Worldcarfree)
- www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html (National Resource Guide on Laws Related to Pedestrian and Bicycle Safety)

ENCOURAGEMENT

School Programs

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

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

Awareness Days & Events

A specific day of the year can be devoted to a theme to raise awareness and celebrate issues relating to that theme. A greenway trail and its amenities can serve as a venue for events that will put the greenway trail on display for the community. Popular City events such as the Fall Festival serve as excellent opportunities to include pedestrian information distribution.

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

Walk to Work Day/International Car Free Day

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

Strive Not to Drive Day

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

National Trails Day

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

Earth Day

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

Pedestrian Activities/Promotion within Local Organizations

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

Walk-Friendly Community (WFC) Designation

The Walk Friendly Communities program, administered by the Highway Safety Research Center's Pedestrian and Bicycle Information Center (PBIC), is a national recognition program developed to encourage towns and cities across the U.S. to establish or recommit to supporting safer walking environments. The WFC program recognizes communities that are working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort.

Revenue Generating Events

The City of Whiteville should consider holding events that can help fund future facilities. Program and event ideas that could be used to generate revenue for the City include:

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

Hold an Open Streets Event

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

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

"Weekend Walkabout" Program

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

Walking Youth Engagement Contest

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

ENCOURAGEMENT RESOURCES

NATIONAL WALK OUR CHILDREN TO SCHOOL DAY is usually held in October with the objective to encourage adults to teach children to practice safe pedestrian behavior, to identify safe routes to school, and to remind everyone of the health benefits of walking. To register walking events, go to the main webpage, and follow the International Walk to School link:

www.walktoschool-usa.org

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

http://www.walktoschool.org

KIDS WALK-TO-SCHOOL is a resource guide to help communities develop and implement a year-long walk-to-school initiative; sponsored by the Centers for Disease Control and Prevention.

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

PREVENTING PEDESTRIAN CRASHES Preschool/Elementary School Children' provides information to parents on pedestrian risks for preschool and elementary school children. Information about the Safe and Sober Campaign is available on the NHTSA website.

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

ENFORCEMENT PROGRAMS

Motorist Enforcement

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

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

Speed Feedback Signs

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

ENFORCEMENT ACTIONS

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

ENFORCEMENT RESOURCES

- NCDOT School Crossing Guard Program: www.ncdot.org/transit/bicycle/safety/programs_ initiatives/crossing.html
- NCDOT's A Guide to North Carolina Bicycle and Pedestrian Laws: www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html

EVALUATION PROGRAMS OR INITIATIVES

Bicycle and Pedestrian Advocacy Committee

The City of Whiteville should support the creation of a local bicycle and pedestrian committee. The Plan's Steering Committee is a good starting point for establishing this group. Even though this is a pedestrian plan, the needs and objectives of bicycle and pedestrian advocates are closely related, and stand to benefit mutually from their combined efforts. Local advocacy groups are beneficial resources

for promoting safety, providing feedback on opportunities for and challenges with the bicycle and pedestrian network, and coordinating events and outreach campaigns (such as the programs outlined throughout this section). Advocacy groups also play a critical role in encouraging and evaluating the progress of overall plan implementation.

Pedestrian Needs Checklist

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

Facility Inspection and Maintenance

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

SAFE ROUTES TO SCHOOL TOOLKIT

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

SRTS programs use a variety of strategies to make it easy, fun and safe for children to walk and bike to school. These strategies are often called the "Five E's."

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

ENCOURAGEMENT: programs that make it fun for kids to walk and bike—these programs may be challenges, incentive programs, regular events (e.g. "Walk and Bike Wednesdays") or classroom activities

ENGINEERING: physical projects that are built to improve walking and bicycling conditions

ENFORCEMENT: law enforcement strategies to improve driver behavior near schools

EVALUATION: strategies to help understand program effectiveness, identify improvements, and ensure program sustainability

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

WHO IS THIS TOOLKIT FOR?

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

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

BENEFITS OF WALKING AND BICYCLING TO SCHOOL (WHY)

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

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

SRTS also benefits neighborhoods:

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

Schools also benefit:

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

LOCAL RESOURCES (WHO)

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

THE FIVE E'S TOOLS (HOW)

Education Tools

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

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

Encouragement Tools

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

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

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

Students enjoy the walk to school during Walk to School Day.

Engineering Tools

The environment near the school is often a determining factor when a parent or guardian decides whether or not to allow their child to walk or bicycle to school. There are a variety of engineering solutions available to enhance pedestrian and bicyclist safety and comfort near schools. Engineering improvements are implemented to slow cars, increase the visibility of students walking and biking, and make it easier for students to cross the street. While some engineering efforts can be costly, many, such as posting signs and striping crosswalks or bike lanes, are relatively inexpensive.

Enforcement Tools

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

- School safety patrols and crossing guards
- Crosswalk enforcement
- School parking "citation"
- Neighborhood speed watch

Evaluation

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

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

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

TABLE 4.1 PROGRAMMATIC RECOMMENDATION REVIEW TABLE

STRATEGY	TARGET AUDIENCE	LEAD FACILITATOR	PARTNERSHIPS FOR SUCCESS	TIME FRAME	DURATION
Education					
Public Education and Educational Devices	General public	City of Whiteville	City departments, Whiteville schools, NCDOT	Short-term	Ongoing
Coordinated Campaigns	General public	Whiteville Planning & Inspections Dept	NCDOT, Cape Fear RPO, neighboring municipalities	Medium-term	Ongoing
Internal Education	City staff; Whiteville police	Whiteville Planning & Inspections Dept	NCDOT; HSRC; ITRE	Medium-term	Annual
Let's Go NC - Pedestrian Curriculum	School children	Whiteville schools	School administration; District administration; City of Whiteville	Medium-term	Ongoing
Eat Smart Move More NC	School children; General public	Whiteville schools; School administration	City agencies; Columbus County Health Dept	Medium-term	Ongoing
Encouragement					
School Programs	Schoolchildren	Whiteville schools; School administration	City agencies; Whiteville Police Department; Columbus County Health Dept	Short-term	Ongoing
Awareness Days and Events	General public	City of Whiteville; City agencies	Local non-profit; Local community groups; DENR	Medium-term	Annual
Pedestrian Activities/ Promotion within Local Organizations	General public	Local non-profit; Whiteville Chamber of Commerce	City agencies; local businesses	Medium-term	Ongoing
Walk-Friendly Community (WFC) Designation	General public	Whiteville Planning & Inspections Dept	City agencies; City administration	Medium-term	Annual
Revenue Generating Events	General public	City of Whiteville	Whiteville Chamber of Commerce; Advocacy groups; Non-profits	Medium-term	Biannual
Open Streets Event	General public	Whiteville Planning & Inspections Dept	Local advocacy groups; Non-profits; Businesses	Short-term	Biannual
"Weekend Walkabout" Program	General public	Neighborhoods; Non-profits	Local advocacy groups	Short-term	Weekly
Walking Youth Engagement Contest	Children and teens	Whiteville schools	Local advocacy groups; Non-profits	Medium-term	Annual

STRATEGY	TARGET AUDIENCE	LEAD FACILITATOR	PARTNERSHIPS FOR SUCCESS	TIME FRAME	DURATION
Enforcement					
Motorist Enforcement	Motorists	Whiteville Police Department	City of Whiteville	Short-term	Ongoing
Speed Feedback Signs	Motorists	WhitevillePolice Department	City agencies	Short-term	Ongoing
Evaluation					
Bicycle and Pedestrian Advocacy Committee	General public	City administration; City Board	Whiteville Planning & Inspections Dept	Short-term	Ongoing
Pedestrian Needs Checklist	City staff	Whiteville Public Works Dept	Whiteville Planning & Inspections Dept; Police Dept; Columbus County staff; NCDOT	Medium-term	Ongoing
Facility Inspection and Maintenance	City staff	Whiteville Public Works Dept	Whiteville Planning & Inspections Dept	Medium-term	Annual

PEDESTRIAN POLICIES

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

COMPLETE STREETS

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

- Ensure that transportation agencies, planners, engineers, and developers design and operate the entire right of way to enable safe access for all users including transit users, drivers, pedestrians, bicyclists, as well as for seniors, children, and people with disabilities.
- Educate leaders, business owners, residents, and all stakeholders of the benefits of Complete Streets including: livability, safety, increased social interaction, increased economic activity, attractiveness, healthier living, less pollution, and increased access.
- Follow NCDOT's Complete Streets Policy, Implementation and Design Guideline development. The City should ensure that these practices are followed and that local NCDOT Division staff are aware of these new guidelines.

PEDESTRIAN NETWORK AND CONNECTIVITY

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

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

SAFETY

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

- Provide raised medians or pedestrian refuge islands where practical, at crosswalks on

streets with more than three lanes, especially on streets with high volumes of traffic. They should be six to ten feet wide.

- Monitor and identify pedestrian facilities that are not ADA-compliant including missing, damaged, or non-compliant curb ramps, stairs, or sidewalk segments of inadequate width and create a plan for improving them.
- Develop a traffic calming program to slow traffic through downtown and on major residential corridors, making them aware that they share the corridors with pedestrians.
- Make pedestrian crossings a priority and initiate improvements recommended in Chapter 3. Consider variations in pavement texture and clear delineation of crosswalks. Also, ensure that crosswalks are properly lit at night.
- Implement pedestrian-scale lighting at regular intervals in areas of high pedestrian activity to promote pedestrian safety and discourage criminal activity.
- Develop and expand the City's maintenance program of sidewalk repairs, debris removal, and trimming of encroaching vegetation.
- Follow design guidelines in Appendix A to the maximum extent possible. For example, the buffer space between the sidewalk and the curb and gutter should be maximized within the available right-of-way.

AESTHETICS COMFORT AND ENJOYMENT

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

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

LAND USE AND DEVELOPMENT

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

- Encourage a mix of uses through building, zoning, and development codes to connect entrances and exits to sidewalks, and eliminate "blank walls" to promote street level activity.
- Require sidewalks have a minimum width of five feet but where pedestrian traffic is higher, including near schools, senior centers, multi-family housing, and commercial areas or where sidewalks connect or overlap with recommended on-road greenway connections.
- Require applicable buildings to build to the sidewalk. Also, prohibit parking lots from

being developed in front of buildings where possible to develop pedestrian oriented areas.

- Promote parking and development policies that encourage multiple destinations within an area to be connected by pedestrian trips. Specifically, promote the connectivity of parking lots between businesses for increased safety and avoidance of roadway traffic.
- Disallow parked vehicles from blocking pedestrian walkways.

MULTI-USE TRAILS

Goal: Establish trails as part of Whiteville's public infrastructure.

- Define 'Multi-Use Trails' as part of the Whiteville's public infrastructure. Multi-use trails are public infrastructure that provide important functions to not only offer transportation alternatives, but to protect public health safety and welfare. Within flood-prone landscapes, multi-use trails offer the highest and best use of floodplain land, mitigate the impacts from frequent flooding, and offer public utility agencies access to floodplains for inspection, monitoring and management. Multi-use trails filter pollutants from stormwater and provide an essential habitat for native vegetation that serves to cleanse water of sediment. They also provide viable routes of travel for cyclists and pedestrians and serve as alternative transportation corridors for urban and suburban commuters. Multi-use trails serve the health and wellness needs of our community, providing close-to-home and close-to-work access to quality outdoor environments where residents can participate in doctor prescribed or self-initiated health and wellness programs. All of these functions make multi-use trails a vital part of community infrastructure.
- Require subdividers to provide natural buffers along both sides of all perennial streams. Public multi-use trails with limited disturbance along perennial and intermittent streams are excellent uses for these spaces and should be dedicated during the subdivision process.
- Encourage utility corridor development practices that allow for maximum compatibility with pedestrian and bikeway corridors. Land and easements purchased for the purpose of providing utilities (such as water and sewer) can serve a greater community benefit if developed to accommodate a multi-use trail.

LOCAL REGULATORY REVIEW

The City of Whiteville is a political subdivision of the State of North Carolina and thus derives its power and authority from the provisions of state law. The City may adopt ordinances and resolutions necessary for the exercise of its powers and it may prescribe fines and penalties for the violation for such ordinances.

CITY OF WHITEVILLE'S CODE OF ORDINANCES

An ordinance holds the same authority of law, and updates or revisions to Whiteville ordinances that take pedestrians into consideration would support the City's goal of becoming more pedestrian friendly. The Code of Ordinances review table, with specific language recommendations begins on page 4-19 of this chapter.

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Definitions	154.03	"STREET. A dedicated and accepted public right-of-way for vehicular traffic."	Replace this definition, those that reference it, and those that are included under it. It is unclear about provisions for non-motorized users. The MUTCD definition for 'road' or 'roadway' is defined as the "portion of a highway improved, designed , ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder...(continued)." Alternatively, provide a well-defined, multi-modal approach, eg. "STREET. A dedicated and accepted public right-of way for motor vehicles, transit, freight, pedestrians, and/or bicycle traffic."
Definitions	154.03	"GREENWAY. A linear open space or park left in its natural state which may include paths and trails. In many cases is used as an active transportation or recreational facility."	
Definitions	154.03	"ALLEY. A public ~~vehicular~~ right-of-way used for providing service access along rear or side property lines of lots which are also served by one of the street types defined below."	Remove “vehicular” to accommodate all travel modes.
Definitions	154.03		Add "SIDEWALK. A dedicated and accepted public right-of-way exclusively for pedestrian travel from curb edge to property line, typically 10-15 feet wide, consisting of a frontage zone, through pedestrian zone, furnishing/utility zone, curb/edge and sidewalk extensions"
City's Acceptance of Dedicated Lands or Facilities	154.06	“The City Council is authorized by the General Statutes to accept the dedication of lands or facilities for streets, sidewalks, greenways, parks, public utility lines, or other public purposes when the land is located within the city’s subdivision regulation jurisdiction…(continued).”	

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Compliance with Official Plans/ Documents	154.10.B	"Thoroughfare Plan. All subdivision roads and road improvements shall be congruent with the official thoroughfare plan. All subdivision roads shall be designed to the standards set forth by this document or the thoroughfare plan, whichever is most stringent.	Change "roads" to "streets" for consistency with definitions listed in 154.03
Preparation and Contents	154.17.A.1	"The locations, names, and sizes of existing and platted property lines, streets, sidewalks, greenways, buidlings, water courses, railroads, transmission lines sewers,…(continued)."	
Preparation and Contents	154.17.A.6	"Proposed streets, street names, sidewalks, rights-of-way, pavement widths and approximate grades, curb ramps and landings."	
Preparation and Contents		"Proposed parks, greenways, school sites, or other public open spaces, if any"	
Preparation and Contents	154.26.B.4	"The location of all rights-of-way, easements and areas to be dedicated to public use with the purpose of each stated."	Amend to read more consistently with previous item (B.3). Example: "Sufficient engineering data to determine readily and reproduce on the ground all rights-of-way, easements and areas to be dedicated to public use with the purpose of each stated, including locations and dimensions, bearings or deflection angles, radii, arcs, chords, central angles and tangent distances for curved centerlines that are not the boundaries of curved public rights-of-way. All dimensions shall be measured to the nearest one-tenth of a foot and all angles to the nearest minute."
Preparation and Contents	154.26.B.7	"The widths and names where appropriate, of all proposed streets and alleys, sidewalks, greenways and/ or easements and of all adjacent streets, alleys, sidewalks, greenways and/or easements shall be properly located.	

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Certification	154.27.A	I hereby certify that I am the owner of the property shown and described heron and that I hereby adopt this play of subdivision with my free consent, establish minimum building setback lines and dedicate all streets, alleys, sidewalks, parks and other sites and easements to public or private use as noted."	Change "walks" to "sidewalks" for consistency.
City Council Review	154.29.B	I hereby certify that the Subdivisiion Plat shown hereon has been found to comply with the Subdivision Regulations for Whiteville, North Carolina, and has been approved by the City Council for recording in the office of the Register of Deeds of Columbus County. The city accepts the dedication of streets, easements, sidewalks, greenways, and parks, but the city assumes no responsibility to open or maintaing any street, easements, sidewalk, greenway, rights-of-way or other lands shown thereon and accepted hereby for public purposes until in the opinion of the Whiteville City Council it is in the public interest to do so.	
Required Improvements	154.40.A.4	"The requirement of sidewalks and street and lot trees as well as open space should be carefully considered and may be required at the discretion of the Planning Board."	Amend to reinforce sidewalk requirements. Example: " The requirement of sidewalks and street and lot trees as well as open space must be carefully considered. Exceptions to minimum standards are at the discretion of the Planning Board and City Council."
Required Improvements	154.40.B.4	"The requirement of sidewalks and street and lot trees as well as open space should be carefully considered and may be required at the discretion of the Planning Board."	Amend to reinforce sidewalk requirements: Example: " The requirement of sidewalks and street and lot trees as well as open space must be carefully considered. Exceptions to minimum standards are at the discretion of the Planning Board and City Council."

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Sidewalks	154.42.B	"When sidewalks, curbs and gutters are not provided, the developer may be required by the city to provide facilities suitable for pedestrian traffic. These facilities shall be in the form of a four foot wide, paved, and marked pedestrian walkway. This path shall run parallel to the street in the designated right-of-way."	Amend to reinforce sidewalk requirements. Example: "If a variance is requested so as to exclude the standard provision of sidewalks, curbs, curb ramps, landings, and gutters, the developer will be required to provide facilities suitable for pedestrian traffic. The pedestrian walkway (through pedestrian zone) shall be paved, marked and a minimum of five feet in width. This path shall run parallel to the street in the designated right-of-way."
Driveways	154.43	"All driveways ~~for houses~~ to be built by the developer shall be cut, graded and paved to provide a ~~minimum ten-foot wide~~ driveway. The curve radii of the driveway at the street shall be a ~~minimum of two and one-half feet.~~	Revise text to include commercial development, specify driveway-curb interface, and specify driveway radii MAXIMUM rather than minimum. Example: "All driveways to be built by the developer shall be cut, graded and paved to provide a driveway of a width no less than nine-feet and no more than 30 feet. Appropriate width shall depend on traffic volumes, vehicle turning movements, residential or commercial land use, roadway geometry and presence of parking. Driveway aprons must not extend beyond the the furnishing zone and into the through-pedestrian zone of the sidewalk to the extent possible to provide a continuous running grade and cross slope for pedestrian travel. The appropriate curve radii of the driveway at the street will vary according to sidewalk width, traffic volumes, vehicle turning movements, residential or commercial land use, roadway geometry and presence of parking, but shall not exceed 10 feet in residential areas without approval of the City traffic engineer/Director.
Open Space	154.47.A	"This may be designated in the form of recreational areas, child activity areas or playgrounds, bike or walking trails, water bodies, etc."	Make bike/pedestrian walking trails a separate requirement. Amend to exclude bike or walking trails. Example: "This may be designated in the form of recreational areas, child activity areas or playgrounds, water bodies, etc. but not bike or walking trails, or pathways necessary for residential access or connectivity."

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Open Space	154.47.B	"All land so dedicated shall have access to a public street or walkway…"	Define "access". Example: "All land so dedicated shall have access to public street or walkways in form of paved, lighted paths or sidewalks. Distances to access points shall be minimized to provide direct routes where possible."
Streets - Intersections	154 .60.G.3	"Street jogs with centerline offsets of less than 125 feet shall be prohibited when the job lies wholly within the subdivision, and shall be avoided wherever possible on the exterior boundary of the subdivision."	Revise text to include provisions for pedestrian crossings. Example: "Pedestrian crosswalks and/or enhanced treatments such as median refuge islands should be provided at each intersection offset."
Streets - Intersections	154.60.G.4	"Property lines at street intersection shall be rounded with a minimum of 20 feet."	This is good for visibility, but should really depend on sidewalk widths, pedestrian traffic, roadway geometry, signalization, parking, adjacent land use, etc. Does this consider curb extensions?
Cul-de-sac	154.60.G.3	"In general, streets with one end permanently closed shall be avoided…"	Consider provision for pedestrian/ bike cut-throughs. Example: "All proposed cul-de-sac streets must assess the feasibility of pedestrian/bike cut-throughs to enhance residential access and connectivity to and from local destinations. "
Blocks	154.61	"Length. Blocks shall not exceed 1,000 feet in length nor shall they be less than 400 feet in length, as measured from centerline to centerline."	Consider adding a provision for pedestrian accessways for larger block sizes. Example: "Pedestrian accessways at least 10 feet in width shall be provided along block centerlines for block lengths in excess of 600 feet." Alternatively,"Pedestrian accessways of at least 10 feet in width shall be provided where the Planning Board determines they are needed."
Easements	154.63	"Pedestrian easements or walkways shall be provided through the interior of blocks where the Planning Board determines they are needed. Pedestrian easements shall be at least ten feet wide and shall be laid out along front, side or rear property lines."	Revise for consistency with 154.61 Blocks.

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Definitions	155.013.C.	ACTIVE ADULT RETIREMENT COMMUNITY (h)"Walkways, curb ramps, and landings designed to meet ADA standards and located so as to provide direct access to building entrances"	
Definitions	155.013.C.	ALLEY. "A Public way which affords only a secondary means of access to abutting property and not intended for general trafic circulation, unless when designated as such for pedestrian access and connectivity."	
Definitions	155.013.C.	BUFFER	Any aesthetic considerations? Visibility considerations? Safety Considerations?
Definitions	155.013.C.	VEHICLE CIRCULATION AREA"That portion of the vehicle accommodation area used for access to parking or loading areas or other facilities on the lot. Essentially, driveways and other maneuvering areas (other than parking aisles) comprise the CIRCULATION AREA."	Amend to distinguish between circulation of vehicles and the circulation of other modes, or amend so as not to exclude circulation of other modes.
Definitions	155.013.C.	IMPROVEMENTS. The addition of any building, accessory building, sidewalk or walkway, parking area, loading area, fence, wall, hedge, lawn or mass planting (except to prevent soil erosion) to a lot or parcel of property.	
Definitions	155.013.C.	PARKING AREA AISLES. " A portion of the vehicle accommodation area consisting of lanes providing access to parking spaces."	Specify width and location. Example: ***"A portion of the vehicle accommodation area consisting of lanes providing access to parking spaces, of not less than 8 feet. It shall always be located outside of the dedicated public right-of-way."***
Definitions	155.013.C.		Add ***"SIDEWALK. A dedicated and accepted public right-of-way exclusively for pedestrian travel from the curb edge to property line, typically 10-15 feet wide, consisting of a frontage zone, through pedestrian zone, furnishing/ utility zone, curb/edge and sidewalk extensions"***

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
District Classes	155.045		Consider changing minimum residential lot sizes to maximums toward denser, more walkable development.
District Classes	155.045.J	B-1 Central Business District. The regulations for this district are designed to permit a concentrated development of business uses within the central portion of Whiteville.	Add the following to read similar to 155.045.L. ***Example: "Because these commercial areas are subject to public view, which is a matter of important concern to the whole community, they should provide an appropriate appearance, ample walkways and pedestrian amenities, access to multiple travel modes, and designed to calm traffic."***
District Classes	155.045.K	B-2 Neighborhood Business District. The B-2 Neighborhood Business District is established as a district in which the principal use of land is for commercial and service uses to serve the surrounding residential districts.	Add the following to read similar to 155.045.L. Example: ***"Because these commercial areas are subject to public view, which is a matter of important concern to the whole community, they should provide an appropriate appearance, ample walkways and pedestrian amenities, access to multiple travel modes, and designed to calm traffic."***
District Classes	155.045.L	(L) B-3 Highway Serving Business District. These districts are generally located on the major radials leading into and around the developed area and provide for retailing goods and services to the passing motorists and local residents. Because these commercial areas are subject to public view, which is a matter of important concern to the whole community, they should provide and appropriate appearance, ~~ample~~ adequate parking and designed to minimize traffic congestion.	Revise for consistency with definition of adequate parking in 155.120

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
District Classes	155.045.M	B-4 Retail/Office Complex. "The regulations for this district are designed to permit a concentrated development of retail businesses and offices within the corporate limits of Whiteville. The districts shall be limited to those areas in Whiteville where concentrated development occurred prior to the adoption of a Zoning Code and existing and/or planned uses do not conform to the more restrictive business defined in the chapter."	Add the following to read similar to 155.045.L. Example: ***"Because these commercial areas are subject to public view, which is a matter of important concern to the whole community, they should provide an appropriate appearance, ample walkways and pedestrian amenities, access to multiple travel modes, and designed to calm traffic."***
Table of Permitted Uses	155.065	Planned mixed residential/business development	Some commercial development should be considered for conditional use in R-6 MF, and R-6 along commercial corridors to encourage higher density, mixed-use development. Likewise, some residential development should be considered for conditional use in business districts.
Manufactured Home Park Regulations	155.066.F.5	"Three off-street parking spaces for each manufactured home lot."	Evaluate and revise according to residential parking demand analysis.
Manufactured Home Park Regulations - Circulation	155.066.F.7.c	"Proposed points of access and egress and pattern of internal circulation for vehicles and pedestrian walkways."	
Manufactured Home Park Regulations - Other requirements	155.066.F.9.c	"Paved walkways of not less than ~~two feet~~ four feet shall connect all service buildings to abutting drives."	Increase minimum walkway width to no less than 4 feet to accommodate wheelchair or mobility device users, and space for passing/walking two-abreast. Recommended minimum walkway width is 5 feet.
Table of Regulations for Conditional Uses	155.067	Maximum Density and Minimum Lot Size in Square Feet	Maximum Density column should reference Floor-Area-Ratio (FAR), and should be reflected in Maximum Height,especially for business/ commercial districts. Consider changing minimum residential lot sizes to maximums to promote denser, more walkable development.

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Development Standards	155.090.B.6.E	"This front yard shall be developed for ~~sidewalks~~ walkways, grass and plants and the necessary driveways.	Revise for consistency with definition of "sidewalk."
Table of Regulations for Conditional Uses	155.107		Consider adding conditional or permitted uses for retail/community spaces/service industry-related land uses in R-6/R-6MF zone(s) to provide more flexibility for developers/ property owners and promote mixed-use development. This will also serve to reinforce the stated objectives of the mixed Planned Development conditional uses. Example: Add conditional use for child care facilities, child care homes, child care institutions, and child day care in R-6MF Zone.
Table of Regulations for Conditional Uses	155.107		Consider adding/removing conditional or permitted uses for residential land uses in B-1/B-2/B-4 zone(s) to provide more flexibility for developers/property owners and promote mixed-use development. This will also serve to reinforce the stated objectives of the mixed Planned Development conditional uses. Example: Add conditional use for child care facilities, child care homes, child care institutions, and child day care in B-1 Zone. Change permitted use of Auto/motorcycle/truck/tractor dealership/used car sales, and boat sales to conditional use in B-1 Zone.
Table of Regulations for Conditional Uses	155.107	PARKING	Consider instituting a comprehensive parking demand/occupancy study by land use zone as needed to evaluate established parking minimums. Also consider establishing parking maximums for higher intensity land uses/zones.

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Table of Regulations for Conditional Uses	155.107	ACCESS AND CIRCULATION	Where applicable, amend language to include multimodal access and circulation requirements. Example: ***"Dwelling Units Above Primary Use - Access/Circulation: Proposed points of access and egress by travel mode to include paved walkways, designated public/private common areas, and patterns of internal circulation."***
Off-Street Parking Required	155.120.F	Paved sidewalks. "Paved sidewalks ~~(adjacent to parking lots)~~ as per city specifications shall be provided at the owner's expense."	Omit to allow appropriate siting for pedestrian circulation.
Illumination	155.145		Is a distinction made between monitors/screens/ electronic displays and external illumination devices? Are flashing, animated, or video permitted? Define "illumination."
Exclusion	155.147		Add exclusion for murals. Example: ***"(F) Murals. Painted murals that feature no business identification or advertisement."***
Business Identification Signs	155.153.E	No business identification sign shall be permitted that exceeds 300 square feet of sign area.	300 feet seems excessive. Consider reducing to 100 feet.
Business Identification Signs	155.153.G	"Combined total sign area of all business identification signs on the premises shall not exceed 700 square feet or six square feet or six square feet of sign area per linear foot of street frontage in single ownership, whichever is less.	Consider reducing maximum allowed sizes.
Outdoor Advertising Signs	155.154.C	An outdoor advertising sign may be illuminated.	Is a distinction made between monitors/screens/ electronic displays and external illumination devices? Are flashing, animated and/or video permitted? Define "Illuminated."

TABLE 4.2 CITY CODE OF ORDINANCE REVIEW

ORDINANCE	CHAPTER	EXISTING ORDINANCE TEXT (ABRIDGED) SUGGESTED ADDITIONS SHOWN IN RED. ATTENTION IS DRAWN TO ITALICIZED TEXT.	COMMENTS
Outdoor Advertising Signs	155.154.F	"No outdoor advertising sign shall be located within 100 feet of any residential structure or 50 feet from any permanent non-residential structure.	Minimum distances should be increased for residential structures. Example: ***"No outdoor advertising sign shall be located within 500 feet or a block length from any residential structure, whichever is greater."*** Maximum distance might also depend on size of sign.
Projecting Signs and Devices	155.155.A	Projecting signs shall not be permitted in the B-1 District	Consider extending to residential districts.

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5 Implementation Strategies

Chapter Contents

OVERVIEW

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

Given the present day economic challenges faced by local governments (as well as their state, federal, and private sector partners), it is difficult to know what financial resources will be available at different time frames during the implementation of this Plan. However, there are still important actions to take in advance of major investments, including key organizational steps, the initiation of education and safety programs, and the development of strategic, lower-cost pedestrian facilities. Following through on these priorities will allow the key stakeholders to prepare for the development of the regional network over time while taking advantage of strategic opportunities, as they arise. Key action steps fall into three categories: policies, programs, and infrastructure. Each of the recommendations that constitute these categories have been presented in the previous chapters of this Plan. Infrastructure recommendations are presented in Chapter 3, and policy and program recommendations are presented in Chapter 4. More detailed action steps tied to each of these categories are found in the table at the end of this chapter along with the responsible agency and expected time frame for completion.

Pedestrians walk along S. Madison Street near many local businesses in the downtown core.

POLICY ACTION STEPS

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

ADOPT THIS PLAN

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

- The City of Whiteville
- Columbus County
- The Cape Fear Rural Planning Organization (RPO)

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

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

ESTABLISH LAND RIGHT-OF-WAY ACQUISITION MECHANISMS

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

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

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

PROGRAMMATIC ACTION STEPS

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

FORM A BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

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

BECOME DESIGNATED AS A WALK FRIENDLY COMMUNITY

A long term goal for Whiteville should be for the City to seek a "Walk Friendly Community" (WFC) designation. The Walk Friendly Community campaign is an award program that recognizes municipalities that actively support pedestrian activities and safety. A Walk Friendly Community provides safe accommodation for walking and encourages its residents to walk for transportation and recreation. The program is maintained by the University of North Carolina Highway Safety Research Center's Pedestrian and Bicycle Information Center with support from a variety of partners. In North Carolina, Davidson, Cary, and Charlotte have each become designated as bronze-level Walk Friendly Communities.

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

COMMUNICATION AND OUTREACH

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

ESTABLISH A MONITORING PROGRAM

From the beginning, and continuously through its life, the BPAC should brainstorm specific benchmarks to track through a monitoring program and honor their completion with public events and media coverage. Monitoring should be supported by the programmatic recommendations included in Chapter 4, such as a pedestrian and bicycle needs checklist and a facility inspection and maintenance program. Benchmarks should be revisited and revised periodically as the pedestrian facility network evolves.

INFRASTRUCTURE ACTION STEPS

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

IDENTIFY FUNDING

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

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

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

COMPLETE SHORT-TERM PRIORITY PROJECTS

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

KEY PARTNERS IN IMPLEMENTATION

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

ROLE OF STATE AGENCIES (NCDOT AND NCDENR)

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

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

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

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

ROLE OF THE LOCAL NCDOT, DIVISION 6

Division 6 of the NCDOT is responsible for the construction and maintenance of pedestrian facilities on NCDOT-owned and maintained roadways in the City of Whiteville, except where it allows for the City to do so with encroachment agreements. Division 6 should be prepared to:

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

ROLE OF THE CAPE FEAR RURAL PLANNING ORGANIZATION (RPO)

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

- Become familiar with the recommendations of this Plan and support its implementation
- Oversee long range transportation planning and ensure the development of a multi-modal transportation network
- Ensure recommendations from this Pedestrian Plan are integrated into regional planning and project implementation
- Follow upcoming roadway reconstruction and resurfacing projects and work early in the design process with City and NCDOT staff to ensure pedestrian facilities are incorporated into the design
- Keep up with current and changing funding sources and opportunities such as Safe Routes to School

ROLE OF THE CITY COUNCIL

The City Council will be responsible for adopting this Plan. Through adoption, the City's leadership would further recognize the value of pedestrian transportation and put forth a well-thought out set of recommendations for improving public safety and overall quality of life (see the 'Benefits of a Walkable Community' in Chapter 1). By adopting this Plan, the City Council would also signify that they are prepared to support the efforts of other key partners in the Plan's implementation, including the work of City departments and NCDOT Division 6.

ROLE OF THE CITY OF WHITEVILLE PLANNING & INSPECTIONS DEPARTMENT

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

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

ROLE OF THE CITY OF WHITEVILLE PUBLIC WORKS DEPARTMENT

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

- Communicate and coordinate with other City departments and the BPAC on priority pedestrian projects
- Become familiar with the design standards set forth in Appendix A of this Pedestrian Master Plan, as well as state and national standards for pedestrian facility design
- Secure encroachment agreements for work on NCDOT-owned and maintained roadways
- Assist with local roadway projects and ensure pedestrian accommodations are being made
- Design, construct, and maintain pedestrian facilities
- Communicate and coordinate with NCDOT Division 6 on this Plan's recommendations for NCDOT-owned and maintained roadways, and provide comments and reminders about this Plan's recommendations no later than the design phase
- Work with Division 6 to ensure that when NCDOT-owned and maintained roadways in Whiteville are resurfaced or reconstructed, that this Plan's adopted recommendations for pedestrian facilities are included on those streets—if a compromise to the original recommendation is needed, then contact NCDOT Division of Bicycle and Pedestrian Transportation for guidance on appropriate alternatives

ROLE OF THE CITY OF WHITEVILLE PARKS AND RECREATION DEPARTMENT

The City of Whiteville Parks and Recreation Department operates eight facilities including six parks, a recreation center, and Oliver Square. The department also sponsors seasonal activities such as youth football, cheerleading, soccer, baseball, softball, basketball, tennis, track and fitness, and instructional classes.

The Parks and Recreation Department should be prepared to:

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

ROLE OF THE CITY OF WHITEVILLE POLICE DEPARTMENT

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

- Become experts on pedestrian-related laws in North Carolina
- Develop pedestrian and bicycle unit of pedestrian and bicycle-trained law enforcement officers to utilize existing equipment
- Continue to enforce not only pedestrian-related laws, but also motorist laws that affect the safety of pedestrians, such as speeding, running red lights, and aggressive driving
- Participate in pedestrian-related education programs
- Review safety considerations with the Public Works Department as projects are implemented

ROLE OF THE BICYCLE PEDESTRIAN ADVISORY COMMITTEE

The Committee should be prepared to:

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

ROLE OF DEVELOPERS

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

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

ROLE OF LOCAL & REGIONAL STAKEHOLDERS

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

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

ROLE OF LOCAL RESIDENTS, CLUBS, AND ADVOCACY GROUPS

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

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

ROLE OF VOLUNTEERS

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

FACILITY DEVELOPMENT METHODS

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

To take advantage of upcoming opportunities and to incorporate pedestrian facilities into routine transportation and utility projects, the City should keep track of NCDOT's projects and any other local transportation improvements. While doing this, the City should be aware of the different procedures for local and state roads.

NCDOT TRANSPORTATION IMPROVEMENT PROGRAM

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

There are two types of projects in the TIP: incidental and independent. Incidental projects are those that can be incorporated into a scheduled roadway improvement project. Independent are those that can stand alone such as a trail project, not related to a particular roadway.

The City of Whiteville, guided by the priority projects within this Plan, should present pedestrian projects along state roads to the Cape Fear RPO and NCDOT. Local requests for small pedestrian projects, such as crosswalks and smaller segments of sidewalk, can be directed to the Cape Fear RPO or the local NCDOT Division 6 office.

Greenway construction example.

LOCAL ROADWAY CONSTRUCTION OR RECONSTRUCTION

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

RESIDENTIAL AND COMMERCIAL REDEVELOPMENT

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

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

RETROFIT INTERSECTIONS AND ROADWAYS WITH NEW PEDESTRIAN FACILITIES

There may be critical locations in the pedestrian network that have pedestrian safety issues or are essential links to destinations. In these locations, it may be justifiable to add new pedestrian facilities before an intersection or roadway is scheduled to be repaved or reconstructed.

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

Intersection construction example.

Some roads may require a "road diet" solution in order to accommodate pedestrian facilities. Road diets involve removing vehicle travel lanes and replacing these lanes with on-road bicycle facilities and sidewalks or side paths. These are generally recommended only in situations where the vehicular traffic count can be safely and efficiently accommodated with a reduced number of travel lanes. Further study may be necessary for recommended road diets to ensure that capacity needs are balanced against pedestrian needs, maintaining expected levels of service for each.

RAIL-TO-TRAIL PROCESS

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

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

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

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

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

Above, left: Abandoned railroad bed. Above, right: Rail-Trail.

Any railroad may legally decide to re-establish rail service on a railbanked corridor. Should that occur, the trail managing agency would be entitled to compensation from the railroad that wants to re-establish rail service. In most cases, a trail group could expect to receive fair market value for the property as well as payment for all improvements. However, this issue may need to be specifically addressed in the initial contract with the abandoning railroad, since it may want to develop other payment terms.

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

Information on railbanking obtained from:

- http://www.railstotrails.org/ourWork/trailBuilding/toolbox/informationSummaries/how_to_railbank.html

BRIDGE REPLACEMENT

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

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

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

SIGNAGE AND WAYFINDING PROJECTS

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

MAINTENANCE

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

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

- Devoting a branch of the Public Works Department to sidewalk inspection and repair
- Developing a public reporting system where pedestrians can report maintenance issues
- Establishing maintenance of existing sidewalks and crosswalks as part of the overall pedestrian facility component of the capital improvement program

Typical pedestrian facility maintenance problems include:

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

It is recommended that the City of Whiteville take a three-step approach to pedestrian facility maintenance. First, the City should provide a hotline and/or maintenance request form to accept residents complaints for improvement and repair. Residents' complaints should be given first consideration for improvement or repair if the reporting involves a safety or access issue. Secondly, the City should devote some of its Public Works staff to conducting routine sidewalk and crosswalk inspection. Public Works staff will need to work closely with NCDOT staff to ensure sidewalk and crosswalk maintenance on all roads in Whiteville as part of regular practice. Third, the City should make it the responsibility of individual property owners to maintain clear sidewalks that are free of debris and vegetation.

AT-GRADE RAILROAD CROSSINGS

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

There are several railroad crossings through downtown Whiteville along Main Street. As roadway improvements for these sections are planned, the City Public Works Department and NCDOT should work with the railroad to ensure that crossing improvements are communicated and prioritized during the planning and design process.

Madison at Main is a large intersection with an at-grade railroad crossing that can be an obstacle for pedestrians.

Crossing Main Street at Lee requires pedestrians to navigate an at-grade railroad crossing without a sidewalk or other pedestrian amenities.

TABLE 5.1 IMPLEMENTATION ACTION STEPS

ACTION STEP	LEAD AGENCY	SUPPORT	DETAILS	PHASE
Present plan to City	Project Consultants	Planning & Inspections Staff	Presentation to City Council in Spring/Summer 2014.	Short term
Adopt this plan	City Council	Planning & Inspections Staff, Project Consultants	Through adoption, the Plan becomes an official planning document of the City. Adoption shows that the City of Whiteville has undergone a successful, supported planning process.	Short term
Present this plan to other local and regional bodies and agencies	Planning & Inspections Staff	BPAC	This Plan should be presented to other local and regional bodies and agencies. Possible groups to receive a presentation might include regional transportation staff, health clubs and agencies, schools and youth groups, environmental groups, civic organizations, business associations, and neighborhood groups.	Short term
Present this plan's recommendations to NCDOT Division and District Offices, as well as other Departments	Planning & Inspections Staff	NCDOT Bike/Ped Division	This Plan should be presented to other NCDOT Divisions, Districts, and Departments to integrate this Plan's recommendations into an update to the Comprehensive Transportation Plan (CTP).	Short term
Designate Staff	City Council & City Manager	Leadership of City Departments	Designate staff to oversee the implementation of this plan and the proper maintenance of the facilities that are developed. It is recommended that a combination of existing Planning & Inspections and Public Works staff oversee the day-to-day implementation of this plan.	Short term
Create a Bicycle and Pedestrian Advisory Committee (BPAC)	City Council	Planning & Inspections Staff	The committee should help coordinate the implementation of this Plan, develop programs, listen to community needs, promote the pedestrian network, and keep positive momentum going.	Short term
Provide police officers with educational material to hand out with warnings	Police Department	NCDOT Bike/Ped Division, BPAC, Planning & Inspections Staff	Provide officers with an informational handout to be used during pedestrian- and bicycle-related citations and warnings.	Short term
Adopt the recommendations for amendments to City Ordinances	City Council	Planning & Inspections Staff, City Public Works Staff, City Attorney, NCDOT Bike/Ped Division	Changing current policy has the greatest long-term implication of any action that a government can take to alter its future conditions. By doing so, it implies that the community is committed to providing an efficient multimodal transportation network such that access, mobility, and safety needs of motorists, pedestrians, and bicyclists are accommodated.	Short term

ACTION STEP	LEAD AGENCY	SUPPORT	DETAILS	PHASE
Launch new programs and expand existing programs	BPAC	Planning & Inspections Staff, School Staff, Parks & Recreation Staff	Assist in the coordination of education and encouragement programs, such as Bicycle/Pedestrian Month Activities.	Ongoing/ Medium term
Establish a monitoring program	BPAC	Public Works Staff, Planning & Inspections Staff	Brainstorm specific benchmarks to track through a monitoring program and honor their completion with public events and media coverage.	Ongoing/ Medium-term
Begin semi-annual meeting with key project partners	Planning & Inspections Staff	City Departments, NCDOT, BPAC, and local & regional stakeholders	Key project partners should meet on a semi-annual basis to evaluate the implementation of this Plan. Meetings could also occasionally include on-site tours of locations where facilities are recommended. Cape Fear RPO meetings could also serve as an opportunity to coordinate.	Ongoing/ Medium term
Seek multiple funding sources and begin facility development	Planning & Inspections Staff, Public Works Staff	Finance Department, BPAC	Chapter 3 contains recommended projects. See Appendix B for potential funding opportunities.	Ongoing/ Medium term
Design Orientation	City Engineer and NCDOT Division 6	NCDOT Bike/Ped Division	Become familiar with the guidelines featured in Appendix A of this Plan, as well as state and national standards for pedestrian facility design.	Medium term
Develop pedestrian facility and trail specifications	Public Works Staff	Planning & Inspections Staff	City staff could prepare these using the design guidelines in Appendix A.	Ongoing/ Medium term
Notify City Planning & Inspections staff of all upcoming roadway reconstruction or resurfacing/restriping projects, no later than the design phase.	Public Works Supervisor, NCDOT Division 6	Planning & Inspections Staff, NCDOT Bike/ Ped Division, & NCDOT Columbus County Maintenance Engineer	Provide sufficient time for comments. Incorporate pedestrian recommendations from this Plan. If a compromise to the original recommendation is needed, contact NCDOT DBPT staff for guidance on appropriate alternatives. Also, coordinate with the NCDOT Columbus County Maintenance Engineer, on the Annual Resurfacing Plan's 3-year project list.	Ongoing/ Medium term
Develop a long term funding strategy	City Manager & Finance Director	Planning & Inspections Staff, City Council	To allow continued development of the overall system, capital and Powell Bill funds for pedestrian facility construction should be set aside every year, even if only a small amount (small amounts of local funding can be matched to outside funding sources). Funding for an ongoing maintenance program should also be included in the City's operating budget.	Medium term
Communication and outreach	BPAC	City Staff	The BPAC should establish a communication campaign to celebrate successes as facilities are developed and otherwise raise awareness of the overall pedestrian network and its benefits.	Ongoing/ Medium term

ACTION STEP	LEAD AGENCY	SUPPORT	DETAILS	PHASE
Establish a Pedestrian/ Bicycle Wayfinding System	BPAC	Public Works Staff, Planning & Inspections Staff	Develop a wayfinding system that provides pedestrians and bicyclists with distance/travel time information to key destinations in Whiteville. See Appendix A: Design Guidelines for more information about signage and wayfinding.	Medium term
Ensure planning efforts are being integrated regionally	Planning & Inspections Staff	Regional planning organizations, neighboring municipalities, BPAC	Combining resources and efforts with neighboring jurisdictions is mutually beneficial, especially with trail development. Communicate and coordinate with regional partners on regional trails and pedestrian facilities and partner on joint-funding opportunities. After adoption by the City, this document should also be recognized in regional transportation plans.	Ongoing/ Medium term
Apply for Safe Routes to School grants and infrastructure funding	Planning & Inspections Staff	NCDOT Division 6 & BPAC	Establish 'walking school buses' or other similar activities for children through the Safe Routes to School Program. Inquire through NCDOT Division 8 about pedestrian infrastructure funding for projects within 1.5 miles of schools.	Medium term
Explore possibility of a regional multi-modal coordinator	City Manager	Planning & Inspections Staff, BPAC, Cape Fear RPO, neighboring municipalities	Explore the possibility of partnership with neighboring municipalities or the RPO in hiring a regional Multi-Modal Transportation Coordinator.	Long term
Become familiar with the pedestrian facility recommendations for NCDOT roadways in this Plan (Chapter 3); take initiative in incorporating this Plan's recommendations into the Division's schedule of improvements.	NCDOT Division 6	Planning & Community Development Staff, NCDOT Bike/Ped Division	Construct and maintain all pedestrian facilities using the highest standards allowed by the State including Complete Streets guidelines (as well as considering the possibility of using innovative treatments on a trial-basis). Seek implementation guidance and direction from the NCDOT DBPT.	Ongoing
Become designated as a Walk Friendly Community	BPAC	Planning & Inspections Staff	Apply for recognition as a Walk Friendly Community under the Pedestrian and Bicycle Information Center.	Long-term

6 Funding Resources

Chapter Contents

OVERVIEW

When considering possible funding sources for pedestrian projects in the City of Whiteville, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. It will be necessary to consider several sources of funding, that when combined, will support full project completion. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and non-profit sectors. A summary table of funding sources is included at the end of this appendix. It should be noted that this section reflects the funding available at the time of writing. Funding amounts, fund cycles, and even the programs themselves may change over time.

FEDERAL FUNDING SOURCES

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

MOVING AHEAD FOR PROGRESS IN THE TWENTY-FIRST CENTURY (MAP-21)

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

MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27-month period between July 2012 and September 2014. It is not possible to guarantee the continued availability of any listed MAP-21 programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and thus may continue to provide capital for active transportation projects and programs.

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

U.S. Department of Transportation
Federal Highway Administration

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

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

TRANSPORTATION ALTERNATIVES

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

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

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

For the complete list of eligible activities, visit:
http://www.fhwa.dot.gov/environment/transportation_enhancements/legislation/map21.cfm

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

SURFACE TRANSPORTATION PROGRAM

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

For more information: http://www.fhwa.dot.gov/map21/stp.cfm

HIGHWAY SAFETY IMPROVEMENT PROGRAM

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides $2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural roads set-aside unless safety statistics demonstrate that fatalities are increasing on these roads. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds.

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

CONGESTION MITIGATION/AIR QUALITY PROGRAM

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

For more information: http://www.fhwa.dot.gov/map21/cmaq.cfm

FEDERAL TRANSIT ADMINISTRATION ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.

For more information: http://www.fta.dot.gov/documents/MAP-21_Fact_Sheet_-_Enhanced_Mobility_of_Seniors_and_Individuals_with_Disabilities.pdf

PARTNERSHIP FOR SUSTAINABLE COMMUNITIES

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

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

For more information: http://www.sustainablecommunities.gov/

http://www.epa.gov/smartgrowth/partnership/

Resource for Rural Communities: http://www.sustainablecommunities.gov/pdf/Supporting_Sustainable_Rural_Communities_FINAL.PDF

LAND AND WATER CONSERVATION FUND

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

For more information: http://www.ncparks.gov/About/grants/lwcf_main.php

RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM

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

focusing on lasting accomplishments. This program may benefit trail development in North Carolina locales indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: http://www.nps.gov/ncrc/programs/rtca/ or contact the Southeast Region RTCA Program Manager Deirdre "Dee" Hewitt at (404) 507-5691

NATIONAL SCENIC BYWAYS DISCRETIONARY GRANT PROGRAM

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

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

For more information: http://www.bywaysonline.org/grants/

FEDERAL LANDS TRANSPORTATION PROGRAM (FLTP)

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

For more information: http://www.fhwa.dot.gov/map21/fltp.cfm

ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANTS

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

For more information: http://www1.eere.energy.gov/wip/eecbg.html

STATE FUNDING SOURCES

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STATE TRANSPORTATION IMPROVEMENT PROGRAM

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

NCDOT Current STIP

August 2013

The new Strategic Transportation Investments initiative is scheduled to be fully implemented by July 1, 2015. Projects funded for construction before then will proceed as scheduled under the current Equity Formula; projects slated for after that time will be ranked and programmed according to the new formula. The new Strategic Mobility Formula assigns projects for all modes into one of three categories: Statewide Mobility, Regional Impact, and Division Needs. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are ranked on the following five criteria:

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

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

The STIP contains funding information for various transportation divisions of NCDOT including highways, aviation, public transportation, rail, bicycle and pedestrian, and the Governor's Highway Safety Program. Access to many federal funds require that projects be incorporated into the STIP. The STIP is the primary method for allocating state and federal transportation funds. However, beginning July 1, 2015, state funds cannot be used to match federally-funded projects. Only Powell Bill or local funds can be used as a match for federally-funded bicycle and pedestrian projects.

For more information on STI: www.ncdot.gov/strategictransportationinvestments/

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

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

INCIDENTAL PROJECTS

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

In addition, bicycle-safe drainage grates are a standard feature of all highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds or with a local fund match. Incidental Projects are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multi-modal system.

For more information: http://www.ncdot.gov/bikeped/funding/process/

SPOT SAFETY PROGRAM

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

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

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

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

POWELL BILL FUNDS

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

More information: https://connect.ncdot.gov/municipalities/state-street-aid/Pages/default.aspx

HIGHWAY HAZARD ELIMINATION PROGRAM

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

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

GOVERNOR'S HIGHWAY SAFETY PROGRAM

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

For more information: http://www.ncdot.org/programs/ghsp/

EAT SMART, MOVE MORE NORTH CAROLINA COMMUNITY GRANTS

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

For more information: http://www.eatsmartmovemorenc.com/Funding/CommunityGrants.html

THE NORTH CAROLINA DIVISION OF PARKS AND RECREATION

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

For more information: http://www.ncparks.gov/About/grants/main.php

NC PARKS AND RECREATION TRUST FUND (PARTF)

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

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

For more information: http://www.ncparks.gov/About/grants/partf_main.php

NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES – RECREATIONAL TRAILS AND ADOPT-A-TRAIL GRANTS

The State Trails Program is a section of the N.C. Division of Parks and Recreation. The program originated in 1973 with the North Carolina Trails System Act and is dedicated to helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking and horseback riding to river trails and off-highway vehicle trails. The Recreation Trails Program awards grants up to $75,000 per project. The Adopt-A-Trail Program awards grants up to $5,000 per project.

COMMUNITY DEVELOPMENT BLOCK GRANT FUNDS

Community Development Block Grant (CDBG) funds are available to local municipal or county governments that qualify for projects to enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low and moderate income. State CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) to the state of North Carolina. Some urban counties and cities in North Carolina receive CDBG funding directly from HUD. Each year, CDBG provides funding to local governments for hundreds of critically-needed community improvement projects throughout the state. These community improvement projects are administered by the Division of Community Assistance and the Commerce Finance Center under eight grant categories. Two categories might be of support to pedestrian and bicycle projects in 'entitlement communities': Infrastructure and Community Revitalization.

CLEAN WATER MANAGEMENT TRUST FUND (CWMTF)

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection, eligible for application by a state agency, local government, or

non-profit. At the end of each year, a minimum of $30 million is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies, and conservation non-profits to help finance projects that specifically address water pollution problems. Funds may be used for planning and land acquisition to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits.

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

SAFE ROUTES TO SCHOOL PROGRAM (MANAGED BY NCDOT, DBPT)

Safe Routes to School (SRTS) is a program that enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children. SRTS facilitates the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The North Carolina Safe Routes to School Program is supported by federal funds through SAFETEA-LU and MAP-21 legislation. Please note that all SRTS projects "shall be treated as projects on a Federal-aid system under chapter 1 of title 23, United States Code." Although no local match is required and all SRTS projects are 100% federally funded under the SAFETEA-LU, agencies are encouraged to leverage other funding sources that may be available to them, including grant awards, local, state, or other federal funding. SRTS funds can be used for proposed projects that are within 2 miles of a school public or private, K-8, in a municipality or in the county jurisdiction. In response to the Strategic Transportation Investments law of June 2013, proposed SRTS projects will be considered as part of the Bicycle and Pedestrian project input with Strategic Prioritization Office for funding consideration. Most of the types of eligible SRTS projects include sidewalks or a shared-use path. However, intersection improvements (i.e. signalization, marking/upgrading crosswalks, etc.), on street bicycle facilities (bike lanes, wide paved shoulders, etc.) or off-street shared-use paths are also eligible for SRTS funds.

For more infrmation: http://www.fhwa.dot.gov/environment/safe_routes_to_school/overview/

Or contact DBPT/NCDOT at (919) 807-0774.

URBAN AND COMMUNITY FORESTRY GRANT

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to a more effective and efficient management of urban and community forests. Grant requests should range between $1,000 and $15,000 and must be matched equally with non-federal funds. Grant funds may be awarded to any unit of local or state government, public educational institutions, approved non-profit 501(c)(3) organizations, and other tax-exempt organizations. First-time municipal applicant and municipalities seeking Tree City USA status are given priority for funding.

For more about Tree City USA status, including application instructions, visit: http://ncforestservice.gov/Urban/urban_grant_overview.htm

LOCAL GOVERNMENT FUNDING SOURCES

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

CAPITAL RESERVE FUND

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

CAPITAL PROJECT ORDINANCES

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

LOCAL IMPROVEMENT DISTRICT (LID)

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

MUNICIPAL SERVICE DISTRICT

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

TAX INCREMENT FINANCING

Project Development Financing bonds, also known as Tax Increment Financing (TIF) is a relatively new tool in North Carolina, allowing localities to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Streets, streetscapes, and sidewalk improvements are specifically authorized for TIF funding in North Carolina. Tax Increment Financing typically occurs within designated development financing districts that meet certain economic criteria that are approved by a local governing body. TIF funds are generally spent inside the boundaries of the TIF district, but they can also be spent outside the district if necessary to encourage development within it.

OTHER LOCAL FUNDING OPTIONS

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

PRIVATE AND NON-PROFIT FUNDING SOURCES

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are several examples of private funding opportunities available.

LAND FOR TOMORROW CAMPAIGN

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. The campaign was successful in 2013 in asking the North Carolina General Assembly to continue to support conservation efforts in the state. The state budget bill includes about $50 million in funds for key conservation efforts in North Carolina. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come.

For more information: http://www.land4tomorrow.org/

THE ROBERT WOOD JOHNSON FOUNDATION

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant

making is concentrated in four areas:

- To ensure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

For more specific information about what types of projects are funded and how to apply, visit www.rwjf.org/applications/

NORTH CAROLINA COMMUNITY FOUNDATION

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for non-profit organizations and institutions throughout the state. Based in Raleigh, the foundation also manages a number of community affiliates throughout North Carolina, that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. The foundation also manages various scholarship programs statewide.

For more information: http://nccommunityfoundation.org/

WALMART STATE GIVING PROGRAM

The Walmart Foundation financially supports projects that create opportunities for better living. Grants are awarded for projects that support and promote education, workforce development/economic opportunity, health and wellness, and environmental sustainability. Both programmatic and infrastructure projects are eligible for funding. State Giving Program grants start at $25,000, and there is no maximum award amount. The program accepts grant applications on an annual, state by state basis January 2nd through March 2nd.

Online resource: http://foundation.walmart.com/apply-for-grants/state-giving

THE RITE AID FOUNDATION GRANTS

The Rite Aid Foundation is a foundation that supports projects that promote health and wellness in the communities that Rite Aid serves. Award amounts vary and grants are awarded on a one year basis to communities in which Rite Aid operates. A wide array of activities are eligible for funding, including infrastructural and programmatic projects.

Online resource: https://www.riteaid.com/about-us/rite-aid-foundation

Z. SMITH REYNOLDS FOUNDATION

This Winston-Salem-based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. They have two grant cycles per year and generally do not fund land acquisition. However, they may be able to offer support in other areas of open space and greenways development.

For more information: www.zsr.org

BANK OF AMERICA CHARITABLE FOUNDATION, INC.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

For more information: www.bankofamerica.com/foundation

DUKE ENERGY FOUNDATION

Funded by Duke Energy shareholders, this non-profit organization makes charitable grants to selected non-profits or governmental subdivisions. Each annual grant must have:

- An internal Duke Energy business "sponsor"
- A clear business reason for making the contribution

The grant program has three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training, and research around environmental and energy efficiency initiatives.

For more information: http://www.duke-energy.com/community/foundation.asp

AMERICAN GREENWAYS EASTMAN KODAK AWARDS

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants ($250 to $2,000) to stimulate the planning, design, and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying, or political activities.

For more information: www.conservationfund.org

NATIONAL TRAILS FUND

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a $200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than $240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from $500 to $10,000 per project.

Projects the American Hiking Society will consider include:

- Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements.

- Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage.
- Constituency building surrounding specific trail projects - including volunteer recruitment and support.

For more information: http://www.americanhiking.org/national-trails-fund/

THE CONSERVATION ALLIANCE

The Conservation Alliance is a non-profit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about $35,000 each. Since its inception in 1989, The Conservation Alliance has contributed $4,775,059 to environmental groups across the nation, saving over 34 million acres of wild lands.

The Conservation Alliance Funding Criteria:

- The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation.
- The Alliance does not look for mainstream education or scientific research projects, but rather for active campaigns.
- All projects should be quantifiable, with specific goals, objectives, and action plans and should include a measure for evaluating success.
- The project should have a good chance for closure or significant measurable results over a fairly short term (one to two years).
- Funding emphasis may not be on general operating expenses or staff payroll.

For more information: http://www.conservationalliance.com/grants

NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation awards matching grants under its Keystone Initiatives to achieve measurable outcomes in the conservation of fish, wildlife, plants, and the habitats on which they depend. Awards are made on a competitive basis to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year. Grants generally range from $50,000-$300,000 and typically require a minimum 2:1 non-federal match.

Funding priorities include bird, fish, marine/coastal, and wildlife and habitat conservation. Other projects that are considered include controlling invasive species, enhancing delivery of ecosystem services in agricultural systems, minimizing the impact on wildlife of emerging energy sources, and developing future conservation leaders and professionals.

For more information: http://www.nfwf.org/pages/grants/home.aspx

THE TRUST FOR PUBLIC LAND

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the TPL is the only national non-profit working exclusively to protect land for human enjoyment and well-being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

For more information: http://www.tpl.org

BLUE CROSS BLUE SHIELD OF NORTH CAROLINA FOUNDATION (BCBS)

Blue Cross Blue Shield (BCBS) focuses on programs that use an outcome approach to improve the health and well-being of residents. The Health of Vulnerable Populations grants program focuses on improving health outcomes for at-risk populations. The Healthy Active Communities grant concentrates on increased physical activity and healthy eating habits. Eligible grant applicants must be located in North Carolina, be able to provide recent tax forms and, depending on the size of the non-profit, provide an audit.

For more information: http://www.bcbsncfoundation.org/

ALLIANCE FOR BIKING & WALKING: ADVOCACY ADVANCE GRANTS

Bicycle and pedestrian advocacy organizations play the most important role in improving and increasing biking and walking in local communities. Advocacy Advance Grants enable state and local bicycle and pedestrian advocacy organizations to develop, transform, and provide innovative strategies in their communities. With sponsor support, the Alliance for Biking & Walking has awarded more than $500,000 in direct grants, technical assistance, and scholarships to advocacy organizations across North America since the Advocacy Advance Grant program's inception. In 2009 and 2010, these one-year grants were awarded twice annually to startup organizations and innovative campaigns to dramatically increase biking and walking. The Advocacy Advance Partnership with the League of American Bicyclists also provides necessary technical assistance, coaching, and training to supplement the grants.

For more information, visit www.peoplepoweredmovement.org

LOCAL TRAIL SPONSORS

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

CORPORATE DONATIONS

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

PRIVATE INDIVIDUAL DONATIONS

Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Municipalities typically create funds to facilitate and simplify a transaction from an individual's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

FUNDRAISING/CAMPAIGN DRIVES

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

VOLUNTEER WORK

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers form church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.

TABLE 6.1 FUNDING RESOURCE SUMMARY TABLE

FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/ CONSTRUCTION
FEDERAL FUNDING			
Transportation Alternatives	x	x	x
Surface Transportation Program			x
Highway Safety Improvement Program		x	x
Congestion Mitigation/Air Quality		x	x
FTA Metropolitan Planning Program	x		
FTA Enhanced Mobility of Seniors and Individuals with Disabilities		x	x
Partnership for Sustainable Communities	x	x	x
Land and Water Conservation Fund	x		x
Rivers, Trails, and Conservation Assistance Program	x		
National Scenic Byways Discretionary Grant Program			x
Federal Lands Transportation Program	x		x
Energy Efficiency and Conservation Block Grants	x		x
STATE FUNDING			
NCDOT State Transportation Improvement Program			x
Incidental Projects			x
Spot Safety Program			x
High Hazard Elimination Program			x
Governor's Highway Safety Program			x
Bicycle and Pedestrian Planning Grant Initiative	x	x	
Eat Smart, Move More North Carolina Community Grants		x	x
The North Carolina Division of Parks and Recreation			x
The North Carolina Parks and Recreation Trust Fund (PARTF)			x
Adopt-a-Trail Program			x
Powell Bill Funds			x
Community Development Block Grant	x	x	x
Clean Water Management Trust Fund	x	x	x
Safe Routes to School Program	x	x	x
Urban and Community Forestry Grant	x		x

FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/ CONSTRUCTION
LOCAL FUNDING			
Capital Reserve Fund			x
Capital Project Ordinance			x
Local Improvement District			x
Municipal Service District			x
Tax Increment Financing			x
Bonds and Loans			x
Revenue Bonds			x
General Obligation Bonds (cities, counties, and service districts)			x
Special Assessment Bonds			x
State Revolving Fund Loans			x
Sales Tax	x		x
Property Tax	x		x
Excise Tax			x
Occupancy Tax			x
Stormwater Utility Fees			x
Streetscape Utility Fees			x
Impact Fees			x
Exactions			x
Installment Purchase Financing			x
In-Lieu-of Fees			x
PRIVATE/NON-PROFIT FUNDING			
The Robert Wood Johnson Foundation	x	x	
North Carolina Community Foundation	x	x	
Walmart State Giving Program	x	x	x
The Rite Aid Foundation Grant		x	x
Z. Smith Reynolds Foundation			x
Bank of America Charitable Foundation	x	x	
Duke Energy Foundation		x	
American Greenways Eastman Kodak Awards	x	x	x
National Trails Fund		x	x
The Conservation Alliance	x	x	
National Fish and Wildlife Foundation	x	x	x
The Trust for Public Land	x	x	
Blue Cross Blue Shield of North Carolina Foundation		x	x
Alliance for Biking and Walking Advocacy Advance Grants			x
Local Trail Sponsors			x
Corporate Donations	x	x	x
Private Individual Donations	x	x	x
Fundraising/Campaign Drives	x	x	x
Volunteer Work	x	x	x


Felix Smith
Memorial Park

A Design Guidelines

OVERVIEW

Appendix Outline

The sections that follow serve as an inventory of pedestrian and bicycle design treatments and provide guidelines for their development. These treatments and design guidelines are important because they represent the tools for creating a pedestrian and bicycle-friendly, safe, accessible community. The guidelines are not, however, a substitute for a more thorough evaluation by a landscape architect or engineer upon implementation of facility improvements. Some improvements may also require cooperation with the NCDOT for specific design solutions. The following standards and guidelines are referred to in this guide:

- The Federal Highway Administration's *Manual on Uniform Traffic Control Devices* (MUTCD) – the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings
- American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities* – updated in June 2012 provides guidance on dimensions, use, and layout of specific bicycle facilities
- The National Association of City Transportation Officials' (NACTO) 2012 *Urban Bikeway Design Guide* is the newest publication of nationally recognized bikeway design standards, and offers guidance on the current state of the practice designs (all of the NACTO *Urban Bikeway Design Guide* treatments are in use internationally and in many cities around the US)
- Meeting the requirements of the Americans with Disabilities Act (ADA) is an important part of any bicycle facility project – the United States Access Board's proposed *Public Rights-of-Way Accessibility Guidelines* (PROWAG) and the 2010 ADA *Standards for Accessible Design* (2010 Standards) contain standards and guidance for the construction of accessible facilities
- The North Carolina Department of Transportation (NCDOT) houses a number of design guidelines that are referenced here – the *Bicycle Facilities Planning and Design Guidelines* (1994), *Traditional Neighborhood Development Guidelines* (TND) (2000), and the *Complete Streets Planning and Design Guidelines* (2012).

Should the national standards be revised in the future and result in discrepancies with this chapter, the national standards should prevail for all design decisions. A qualified engineer or landscape architect should be consulted for the most up to date and accurate cost estimates at the time of project implementation.

DESIGN NEEDS OF PEDESTRIANS

TYPES OF PEDESTRIANS

Pedestrians have a variety of characteristics and the transportation network should accommodate a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical characteristics, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. They also perceive the environment differently at various stages of their cognitive development. Older adults walk more slowly and may require assistive devices for walking stability, sight, and hearing. Table A-1 below summarizes common pedestrian characteristics for various age groups.

The MUTCD recommends a normal walking speed of three and a half feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to three feet per second for areas with older populations and persons with mobility impairments. While the type and degree of mobility impairment varies greatly across the population, the transportation system should accommodate these users to the greatest reasonable extent.

TABLE A-1: PEDESTRIAN CHARACTERISTICS BY AGE

AGE	CHARACTERISTICS
0-4	Learning to walk
	Requires constant adult supervision
	Developing peripheral vision and depth perception
5-8	Increasing independence, but still requires supervision
	Poor depth perception
9-13	Susceptible to "dart out" intersection dash
	Poor judgment
	Sense of invulnerability
14-18	Improved awareness of traffic environment
	Poor judgment
19-40	Active, fully aware of traffic environment
41-65	Slowing of reflexes
65+	Difficulty crossing street
	Vision loss
	Difficulty hearing vehicles approaching from behind Could become disoriented or have limited cognitive abilities

SIDEWALKS

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel that is separated from vehicle traffic. Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped planting strip area. Sidewalks are a common application in both urban and suburban environments. Attributes of well-designed sidewalks include the following:

Accessibility: A network of sidewalks should be accessible to all users.

Adequate width: Two people should be able to walk side-by-side and pass a third comfortably. Different walking speeds should be possible. In areas of intense pedestrian use, sidewalks should accommodate a high volume of walkers.

Safety: Design features of the sidewalk should allow pedestrians to have a sense of security and predictability. Sidewalk users should not feel they are at risk due to the presence of adjacent traffic.

Continuity: Walking routes should be obvious and should not require pedestrians to travel out of their way unnecessarily.

Landscaping: Plantings and street trees should contribute to the overall psychological and visual comfort of sidewalk users, and be designed in a manner that contributes to the safety of people.

Drainage: Sidewalks should be well graded to minimize standing water.

Social space: There should be places for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can safely participate in public life.

Quality of place: Sidewalks should contribute to the character of neighborhoods and business districts.

This Section Includes:

- Sidewalk Widths
- Sidewalk Obstructions and Driveway Ramps
- Pedestrian Amenities

SIDEWALK WIDTHS


SIDEWALK OBSTRUCTIONS AND DRIVEWAY RAMPS


PEDESTRIAN AMENITIES

SIDEWALK WIDTHS

Description

The width and design of sidewalks will vary depending on street context, functional classification, and pedestrian demand. Below are preferred widths of each sidewalk zone according to general street type. Standardizing sidewalk guidelines for different areas of the city, dependent on the above listed factors, ensures a minimum level of quality for all sidewalks.

Discussion

It is important to provide adequate width along a sidewalk corridor. Two people should be able to walk side-by-side and pass a third comfortably. In areas of high demand, sidewalks should contain adequate width to accommodate the high volumes and different walking speeds of pedestrians. The Americans with Disabilities Act requires a 4 foot clear width in the pedestrian zone plus 5 foot passing areas every 200 feet.

STREET CLASSIFICATION	PARKING LANE/ ENHANCEMENT ZONE	FURNISHING/ GREEN ZONE	PEDESTRIAN THROUGH ZONE	FRONTAGE ZONE	TOTAL SIDEWALK AREA
Local Streets	7 feet	4 - 8 feet	5 - 6 feet	N/A	9 - 12 feet
Commercial Areas	8 - 10 feet	6 - 8 feet	6 - 12 feet	2 - 8 feet	14- 28 feet
Arterials and Collectors	8 - 10 feet	6 - 8 feet	4 - 12 feet	2 - 4 feet	12 -24 feet

Areas that have significant accumulations of snow during the winter may prefer a wider furnishing zone for snow storage.

Six feet enables two pedestrians (including wheelchair users) to walk side-by-side, or to pass each other comfortably

Total sidewalk area excludes parking dimensions

Recommended dimensions shown here are based on the NCDOT Complete Streets Planning and Design Guidelines. Exact dimensions should be selected in response to local context and expected/desired pedestrian volumes.

Materials and Maintenance

Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped boulevard. Surfaces must be firm, stable, and slip resistant.

Additional References

USADOT. (2010). ADA Standards for Accessible Design.
United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

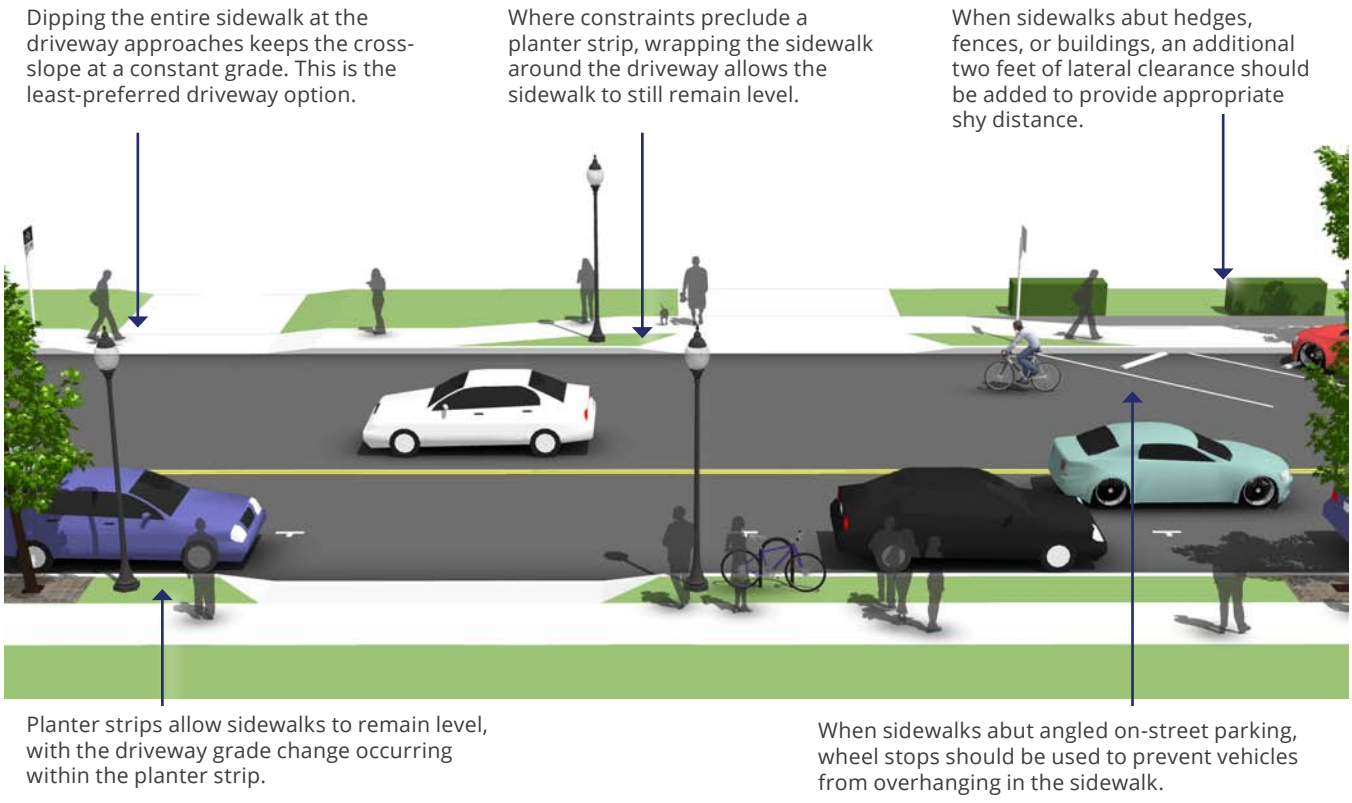
SIDEWALK OBSTRUCTIONS AND DRIVEWAY RAMPS

Description

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

Guidance

- Reducing the number of accesses reduces the need for special provisions. This strategy should be pursued first.
- Obstructions should be placed between the sidewalk and the roadway to create a buffer for increased pedestrian comfort.



Discussion

Driveways are a common sidewalk obstruction, especially for wheelchair users. When constraints only allow curb-tight sidewalks, dipping the entire sidewalk at the driveway approaches keeps the cross-slope at a constant grade. However, this may be uncomfortable for pedestrians and could create drainage problems behind the sidewalk.

Materials and Maintenance

Excessive cracks, gaps, pits, settling, and lifting of the sidewalk creates a pedestrian tripping hazard and reduces ADA accessibility; damages sidewalks should be repaired.

Additional References

USDOT. (2010). ADA Standards for Accessible Design.
United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

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

PEDESTRIAN AMENITIES

Description

A variety of streetscape elements can define the pedestrian realm, offer protection from moving vehicles, and enhance the walking experience. Pedestrian amenities should be placed in the furnishing zone on a sidewalk corridor. Signs, meters, and tree wells should go between parking spaces. Key features are presented below.

Street Trees

In addition to their aesthetic and environmental value, street trees can slow traffic and improve safety for pedestrians. Trees add visual interest to streets and narrow the street's visual corridor, which may cause drivers to slow down. It is important that trees do not block light or the vision triangle.

Street Furniture

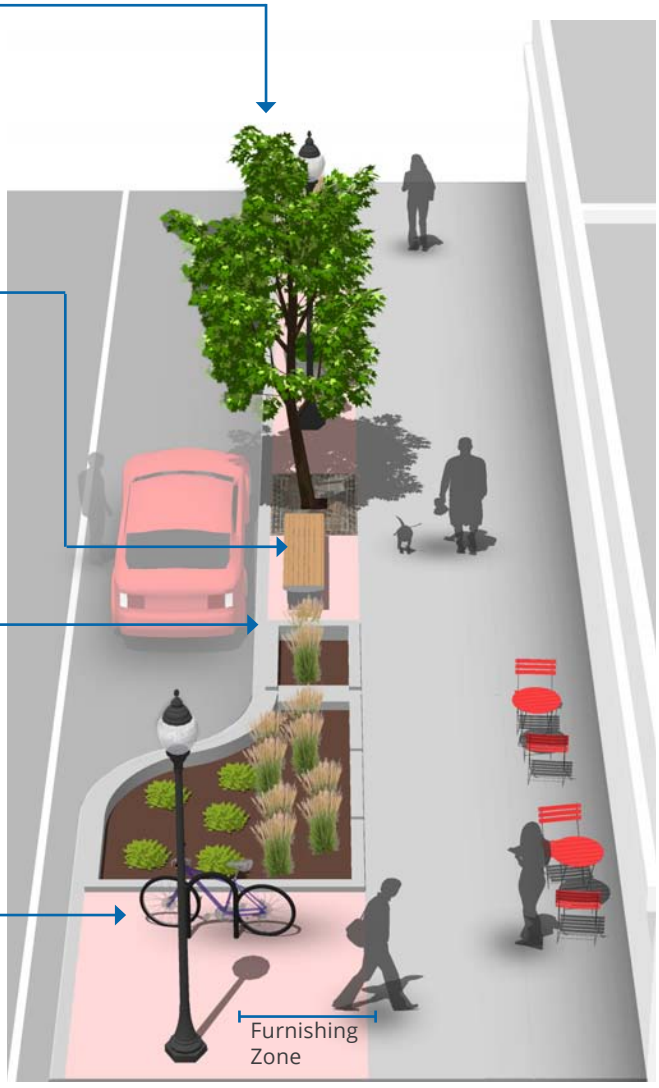
Providing benches at key rest areas and viewpoints encourages people of all ages to use the walkways by ensuring that they have a place to rest along the way. Benches should be 20" tall to accommodate elderly pedestrians comfortably. Benches can be simple (e.g., wood slats) or more ornate (e.g., stone, wrought iron, concrete). If alongside a parking zone, street furniture must be 3 feet from the curbface.

Green Features

Green stormwater strategies may include bioretention swales, rain gardens, tree box filters, and pervious pavements (pervious concrete, asphalt and pavers). Bioswales are natural landscape elements that manage water runoff from a paved surface. Plants in the swale trap pollutants and silt from entering a river system.

Lighting

Pedestrian scale lighting improves visibility for both pedestrians and motorists - particularly at intersections. Pedestrian scale lighting can provide a vertical buffer between the sidewalk and the street, defining pedestrian areas.



Materials and Maintenance

Establishing and caring for your young street trees is essential to their health. Green features may require routine maintenance, including sediment and trash removal, and clearing curb openings and overflow drains.

Additional References

United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

PEDESTRIANS AT INTERSECTIONS

Attributes of pedestrian-friendly intersection design include:

Clear Space: Corners should be clear of obstructions. They should also have enough room for curb ramps, for transit stops where appropriate, and for street conversations where pedestrians might congregate.

Visibility: It is critical that pedestrians on the corner have a good view of vehicle travel lanes and that motorists in the travel lanes can easily see waiting pedestrians.

Legibility: Symbols, markings, and signs used at corners should clearly indicate what actions the pedestrian should take.

Accessibility: All corner features, such as curb ramps, landings, call buttons, signs, symbols, markings, and textures, should meet accessibility standards and follow universal design principles.

Separation from Traffic: Corner design and construction should be effective in discouraging turning vehicles from driving over the pedestrian area. Crossing distances should be minimized.

Lighting: Adequate lighting is an important aspect of visibility, legibility, and accessibility.

These attributes will vary with context but should be considered in all design processes. For example, suburban and rural intersections may have limited or no signing. However, legibility regarding appropriate pedestrian movements should still be taken into account during design.

This Section Includes:

- Marked/Raised Crosswalks
- Median Refuge Islands
- At-grade Railroad Crossings
- Minimizing Curb Radii
- Curb Extensions
- ADA Compliant Curb Ramps


MINIMIZING CURB RADII


MARKED/RAISED CROSSWALKS


CURB EXTENSIONS


MEDIAN REFUGE ISLANDS


ADA COMPLIANT CURB RAMPS

MARKED CROSSWALKS

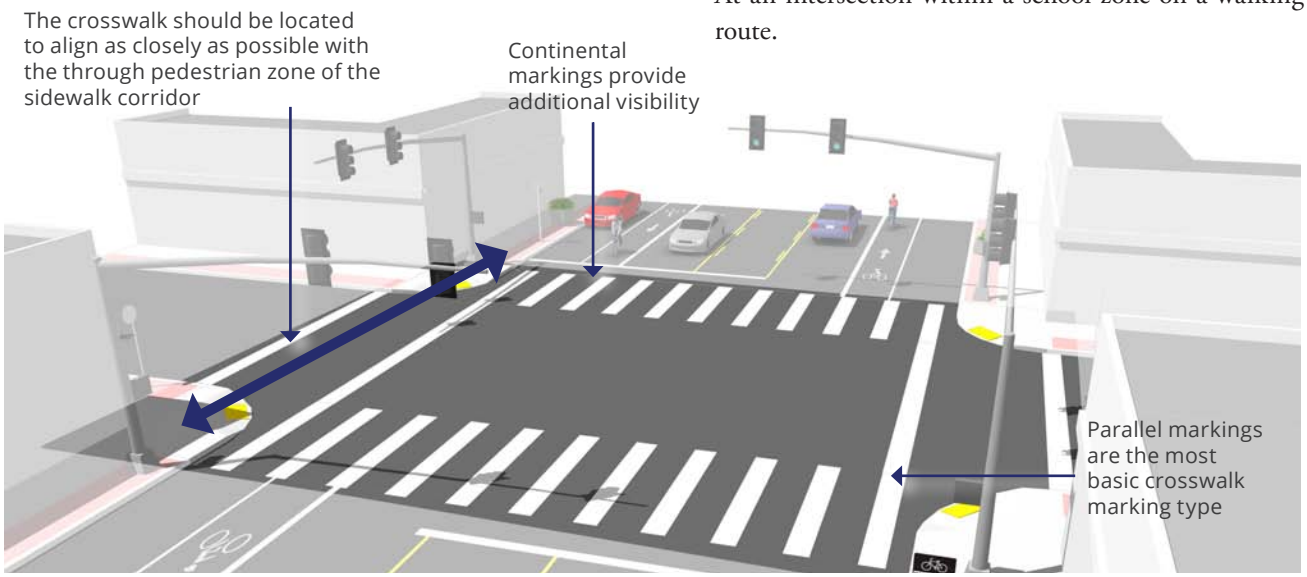
Description

A marked crosswalk signals to motorists that they must stop for pedestrians and encourages pedestrians to cross at designated locations. Installing crosswalks alone will not necessarily make crossings safer especially on multi-lane roadways.

At mid-block locations, crosswalks can be marked where there is a demand for crossing and there are no nearby marked crosswalks.

Guidance

- At signalized intersections, all crosswalks should be marked. At unsignalized intersections, crosswalks may be marked under the following conditions:
- At a complex intersection, to orient pedestrians in finding their way across.
- At an offset intersection, to show pedestrians the shortest route across traffic with the least exposure to vehicular traffic and traffic conflicts.
- At an intersection with visibility constraints, to position pedestrians where they can best be seen by oncoming traffic.
- At an intersection within a school zone on a walking route.



Discussion

Continental crosswalk markings should be used at crossings with high pedestrian use or where vulnerable pedestrians are expected, including: school crossings, across arterial streets for pedestrian-only signals, at mid-block crosswalks, and at intersections where there is expected high pedestrian use and the crossing is not controlled by signals or stop signs.

Materials and Maintenance

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority. Thermoplastic markings offer increased durability compared to conventional paint.

Additional References

FHWA. (2009). Manual on Uniform Traffic Control Devices. (3B.18)

FHWA. (2005). Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations.

FHWA. (2010). Crosswalk Marking Field

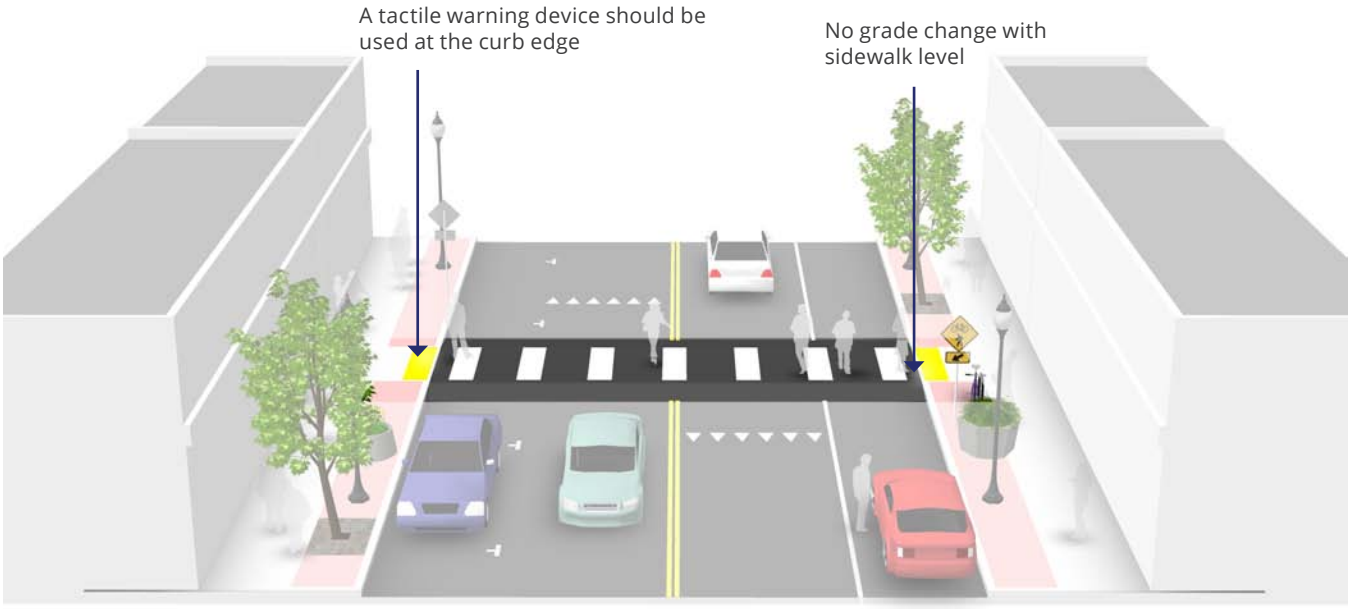
RAISED CROSSWALKS

Description

A raised crosswalk or intersection can eliminate grade changes from the pedestrian path and give pedestrians greater prominence as they cross the street. Raised crosswalks should be used only in very limited cases where a special emphasis on pedestrians is desired, and application should be reviewed on case-by-case basis.

Guidance

- Use detectable warnings at the curb edges to alert vision-impaired pedestrians that they are entering the roadway.
- Approaches to the raised crosswalk may be designed to be similar to speed humps.
- Raised crosswalks can also be used as a traffic calming treatment.



Discussion

Like a speed hump, raised crosswalks have a traffic slowing effect which may be unsuitable on emergency response routes.

Materials and Maintenance

Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority.

Additional References

FHWA. (2009). Manual on Uniform Traffic Control Devices. (3B.18)

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

USDOT. (2010). ADA Standards for Accessible Design.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

PEDESTRIAN AT-GRADE RAILROAD CROSSINGS

Description

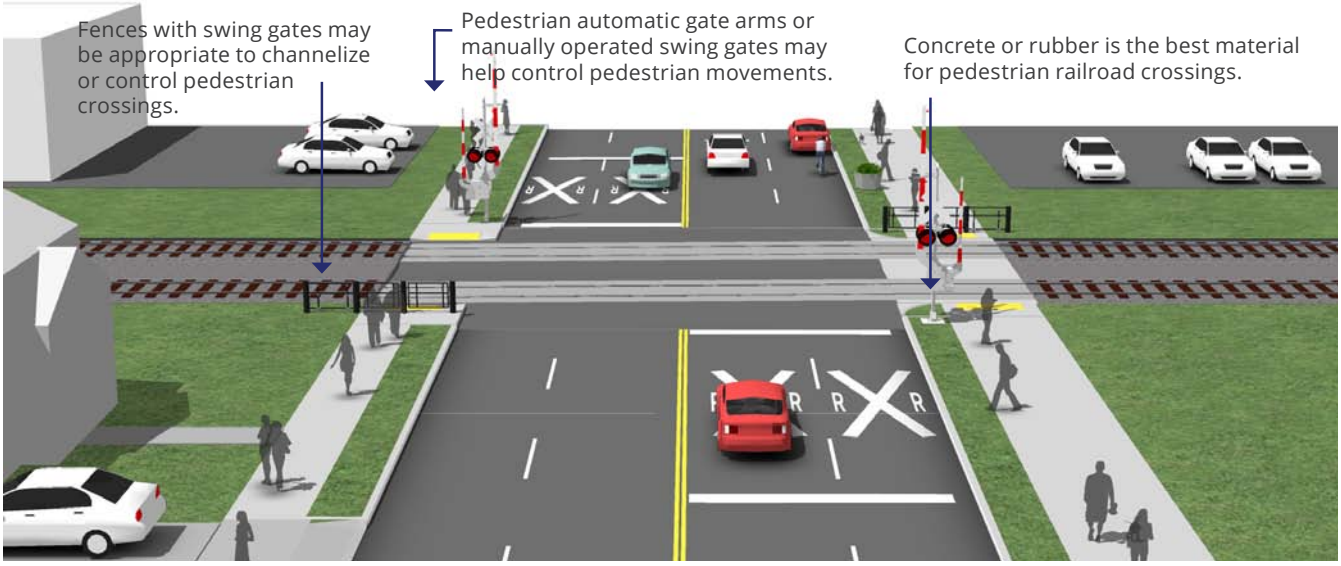
Locations where sidewalks must cross railroad tracks are problematic for pedestrians, particularly for those with mobility or vision impairments.

Wheelchair and scooter casters can easily get caught in the flangeway gap, and slippery surfaces, degraded rough materials, or elevated track height can cause tripping hazards for all pedestrians.

Angled track crossings also limit sight triangles, impacting the ability to see oncoming trains.

Guidance

- Bells or other audible warning devices may be included in the flashing-light signal assembly to provide additional warning for pedestrians and bicyclists.
- Pedestrians need clear communication and warning to know that they may encounter a train and when a train is coming. Provide clear definition of where the safest place to cross is.
- The crossing should be as close as practical to perpendicular with tracks. Ensure clear lines of sign and good visibility so that pedestrians can see approaching trains
- The crossing must be level and flush with the top of the rail at the outer edge and between the rails.
- Flangeway gaps should not exceed 2.5 in (3.0 in for tracks that carry freight.)



Discussion

Crossing design and implementation is a collaboration between the railroad company and highway agency. The railroad company is responsible for the crossbucks, flashing lights and gate mechanisms, and the highway agency is responsible for advance warning markings and signs. Warning devices should be recommended for each specific situation by a qualified engineer based on various factors including train frequency and speed, path and trail usage and sight distances.

Additional References

AASHTO. Planning, Design, and Operation of Ped. Facilities. 2004.

FHWA. Manual on Uniform Traffic Control Devices. 2009.

FHWA. Railroad-Highway Grade Crossing Handbook. 2007.

TRB. TCRP 17: Integration of Light Rail Transit into City Streets. 1996.

NCDOT. Complete Street Planning and Design Guidelines. 2012.

Rails-to-Trails Conservancy. Rails-with-Trails: A Preliminary Assessment of Safety and Grade Crossings. 2005.

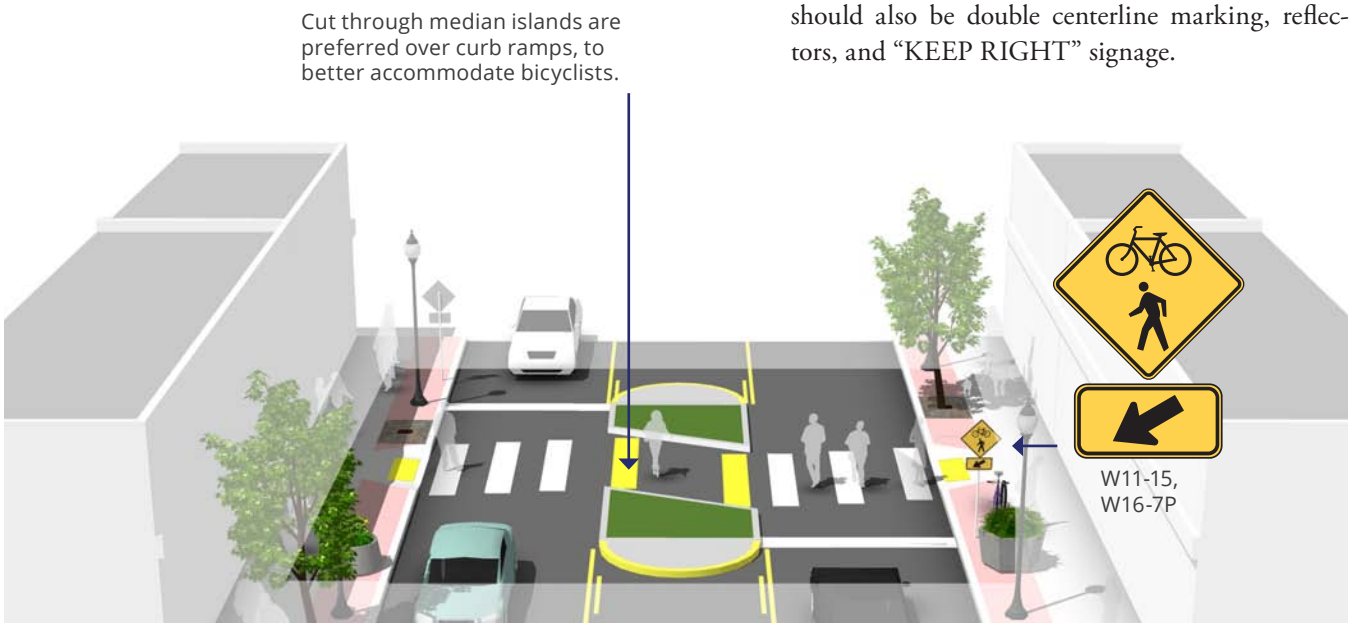
MEDIAN REFUGE ISLANDS

Description

Median refuge islands are located at the mid-point of a marked crossing and help improve pedestrian safety by allowing pedestrians to cross one direction of traffic at a time. Refuge islands minimize pedestrian exposure by shortening crossing distance and increasing the number of available gaps for crossing.

Guidance

- Can be applied on any roadway with a left turn center lane or median that is at least 6' wide.
- Appropriate at signalized or unsignalized crosswalks
- The refuge island must be accessible, preferably with an at-grade passage through the island rather than ramps and landings.
- The island should be at least 6' wide between travel lanes (to accommodate bikes with trailers and wheelchair users) and at least 20' long.
- On streets with speeds higher than 25 mph there should also be double centerline marking, reflectors, and "KEEP RIGHT" signage.



Discussion

If a refuge island is landscaped, the landscaping should not compromise the visibility of pedestrians crossing in the crosswalk. Shrubs and ground plantings should be no higher than 1 ft 6 in. On multi-lane roadways, consider configuration with **active warning beacons** for improved yielding compliance.

Materials and Maintenance

Refuge islands may collect road debris and may require somewhat frequent maintenance. Refuge islands should be visible to snow plow crews and should be kept free of snow berms that block access.

Additional References

FHWA. (2009). Manual on Uniform Traffic Control Devices.

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

NACTO. (2012). Urban Bikeway Design Guide.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

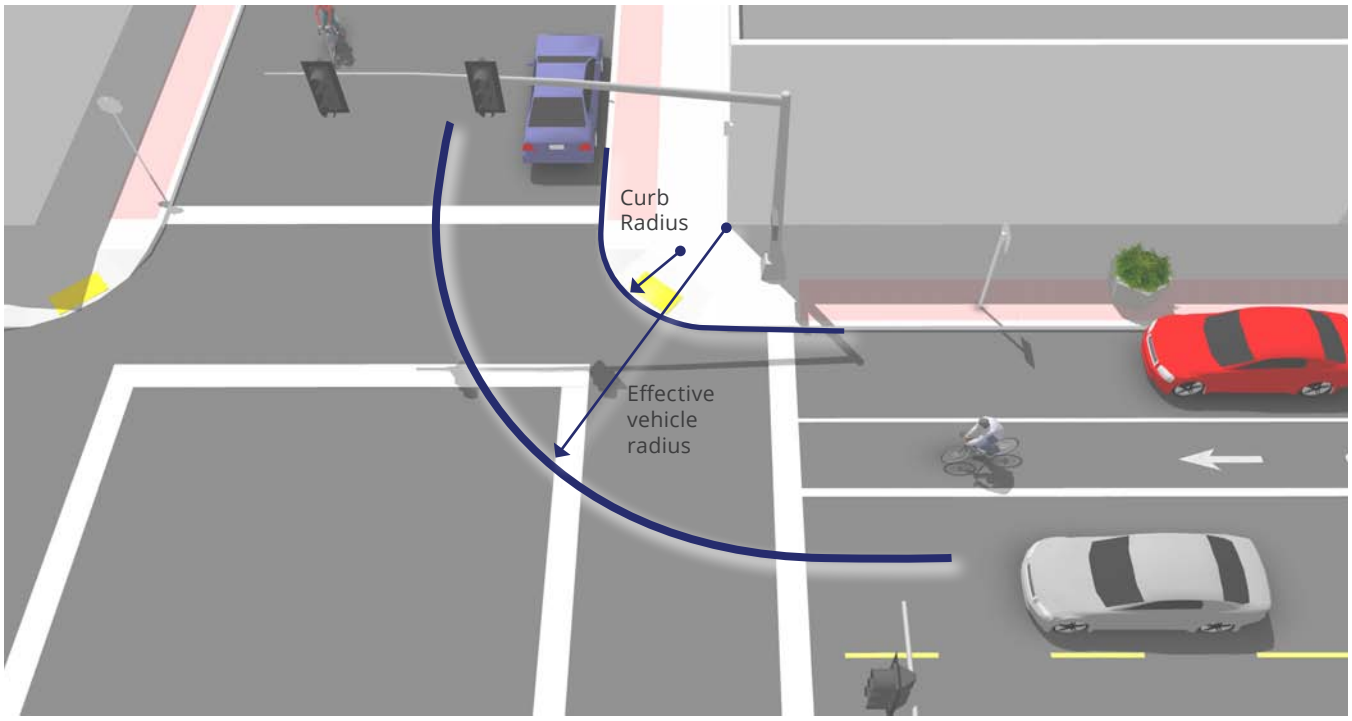
MINIMIZING CURB RADII

Description

The size of a curb's radius can have a significant impact on pedestrian comfort and safety. A smaller curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crossing distance and requires vehicles to slow more on the intersection approach. During the design phase, the chosen radius should be the smallest possible for the circumstances.

Guidance

- The radius may be as small as 3 ft where there are no turning movements, or 5 ft where there are turning movements, adequate street width, and a larger effective curb radius created by parking or bike lanes.



Discussion

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

Materials and Maintenance

Improperly designed curb radii at corners may be subject to damage by large trucks.

Additional References

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

AASHTO. (2004). A Policy on Geometric Design of Highways and Streets.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

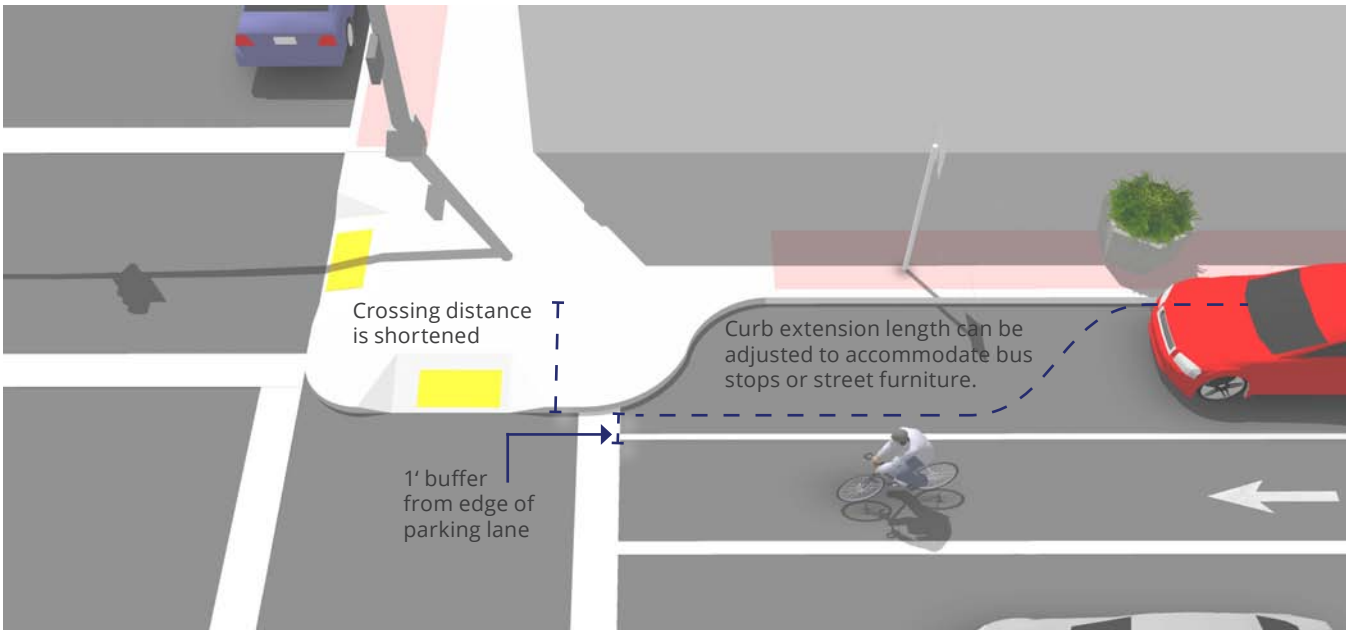
CURB EXTENSIONS

Description

Curb extensions minimize pedestrian exposure during crossing by shortening crossing distance and giving pedestrians a better chance to see and be seen before committing to crossing. They are appropriate for any crosswalk where it is desirable to shorten the crossing distance and there is a parking lane adjacent to the curb.

Guidance

- In most cases, the curb extensions should be designed to transition between the extended curb and the running curb in the shortest practicable distance.
- For purposes of efficient street sweeping, the minimum radius for the reverse curves of the transition is 10 ft and the two radii should be balanced to be nearly equal.
- Curb extensions should terminate one foot short of the parking lane to maximize bicyclist safety.



Discussion

If there is no parking lane, adding curb extensions may be a problem for bicycle travel and truck or bus turning movements.

Materials and Maintenance

Planted curb extensions may be designed as a bioswale, a vegetated system for stormwater management.

Additional References

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

AASHTO. (2004). A Policy on Geometric Design of Highways and Streets.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

ADA COMPLIANT CURB RAMPS

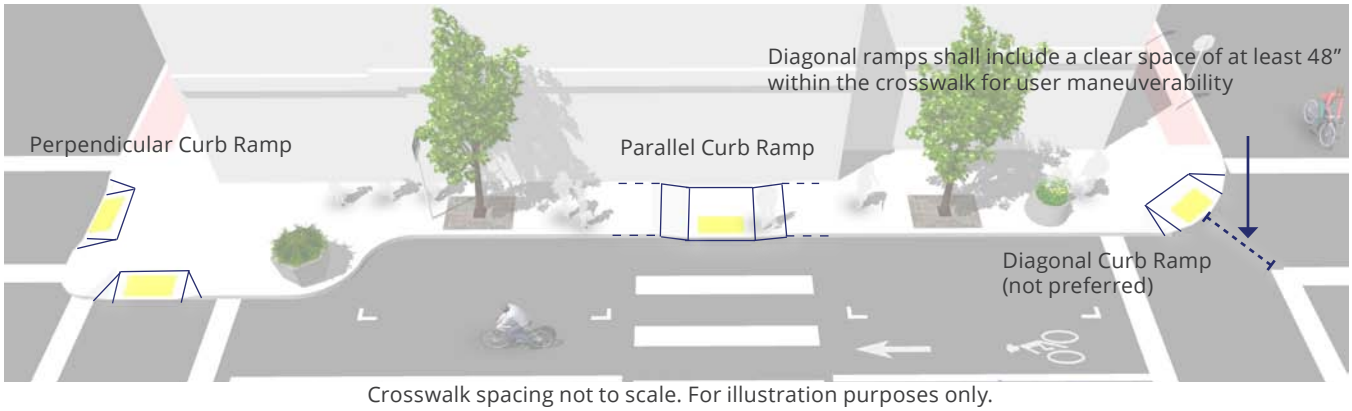
Description

Curb ramps are the design elements that allow all users to make the transition from the street to the sidewalk. There are a number of factors to be considered in the design and placement of curb ramps at corners. Properly designed curb ramps ensure that the sidewalk is accessible from the roadway. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access.

Although diagonal curb ramps might save money, they create potential safety and mobility problems for pedestrians,including reduced maneuverability and increased interaction with turning vehicles, particularly in areas with high traffic volumes. Diagonal curb ramp configurations are the least preferred of all options.

Guidance

- The landing at the top of a ramp shall be at least 4 feet long and at least the same width as the ramp itself.
- The ramp shall slope no more than 1:50 (2.0%) in any direction.
- If the ramp runs directly into a crosswalk, the landing at the bottom will be in the roadway.
- If the ramp lands on a dropped landing within the sidewalk or corner area where someone in a wheelchair may have to change direction, the landing must be a minimum of 5'-0" long and at least as wide as the ramp, although a width of 5'-0" is preferred.



Crosswalk spacing not to scale. For illustration purposes only.

Discussion

The edge of an ADA compliant curb ramp will be marked with a tactile warning device (also known as truncated domes) to alert people with visual impairments to changes in the pedestrian environment. Contrast between the raised tactile device and the surrounding infrastructure is important so that the change is readily evident. These devices are most effective when adjacent to smooth pavement so the difference is easily detected. The devices must provide color contrast so partially sighted people can see them.

Materials and Maintenance

It is critical that the interface between a curb ramp and the street be maintained adequately. Asphalt street sections can develop potholes at the foot of the ramp, which can catch the front wheels of a wheelchair.

Additional References

United States Access Board. (2002). Accessibility Guidelines for Buildings and Facilities.

United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

USDOT. (2010). ADA Standards for Accessible Design.

SIGNALIZATION

Crossing beacons and signals facilitate crossings of roadways for pedestrians and bicyclists. Beacons make crossing intersections safer by clarifying when to enter an intersection and by alerting motorists to the presence of pedestrians and bicyclists.

Flashing amber warning beacons can be utilized at unsignalized intersection crossings. Push buttons, signage, and pavement markings may be used to highlight these facilities for pedestrians, bicyclists and motorists.

Determining which type of signal or beacon to use for a particular intersection depends on a variety of factors. These include speed limits, traffic volumes, and the anticipated levels of pedestrian and bicycle crossing traffic.

An intersection with crossing beacons may reduce stress and delays for crossing users, and discourage illegal and unsafe crossing maneuvers.

This Section Includes:

- Pedestrians at Signalized Crossings
- Pedestrian Hybrid Beacon

PEDESTRIANS AT SIGNALIZED CROSSINGS

PEDESTRIAN HYBRID BEACON

PEDESTRIANS AT SIGNALIZED CROSSINGS

Description

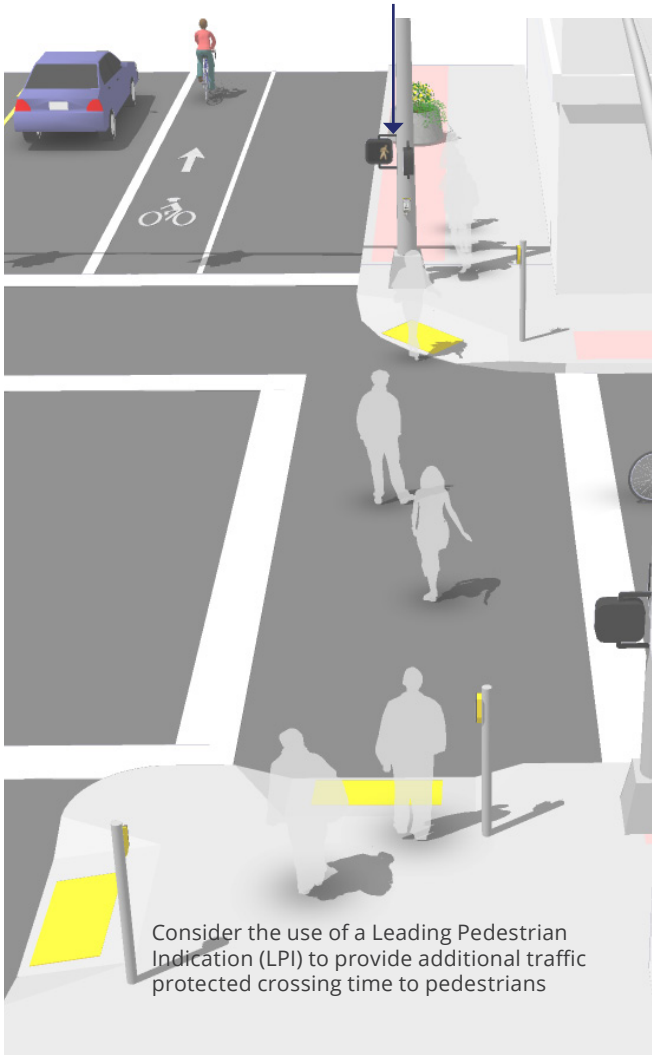
Pedestrian Signal Head

- All traffic signals should be equipped with pedestrian signal indications except where pedestrian crossing is prohibited by signage.
- Countdown signals should be used at all signalized intersections to indicate whether a pedestrian has time to cross the street before the signal phase ends.

Signal Timing

- Providing adequate pedestrian crossing time is a critical element of the walking environment at signalized intersections. The MUTCD recommends traffic signal timing to assume a pedestrian walking speed of 3.5' per second, meaning that the length of a signal phase with parallel pedestrian movements should provide sufficient time for a pedestrian to safely cross the adjacent street.
- At crossings where older pedestrians or pedestrians with disabilities are expected, crossing speeds as low as 3' per second may be assumed.
- In busy pedestrian areas such as downtowns, the pedestrian signal indication should be built into each signal phase, eliminating the requirement for a pedestrian to actuate the signal by pushing a button.

Audible pedestrian traffic signals provide crossing assistance to pedestrians with vision impairment at signalized intersections



Discussion

When push buttons are used, they should be located so that someone in a wheelchair can reach the button from a level area of the sidewalk without deviating significantly from the natural line of travel into the crosswalk, and marked (for example, with arrows) so that it is clear which signal is affected. In areas with very heavy pedestrian traffic, consider an all-pedestrian signal phase to give pedestrians free passage in the intersection when all motor vehicle traffic movements are stopped.

Materials and Maintenance

It is important to repair or replace traffic control equipment before it fails. Consider semi-annual inspections of controller and signal equipment, intersection hardware, and loop detectors.

Additional References

United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG).

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

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

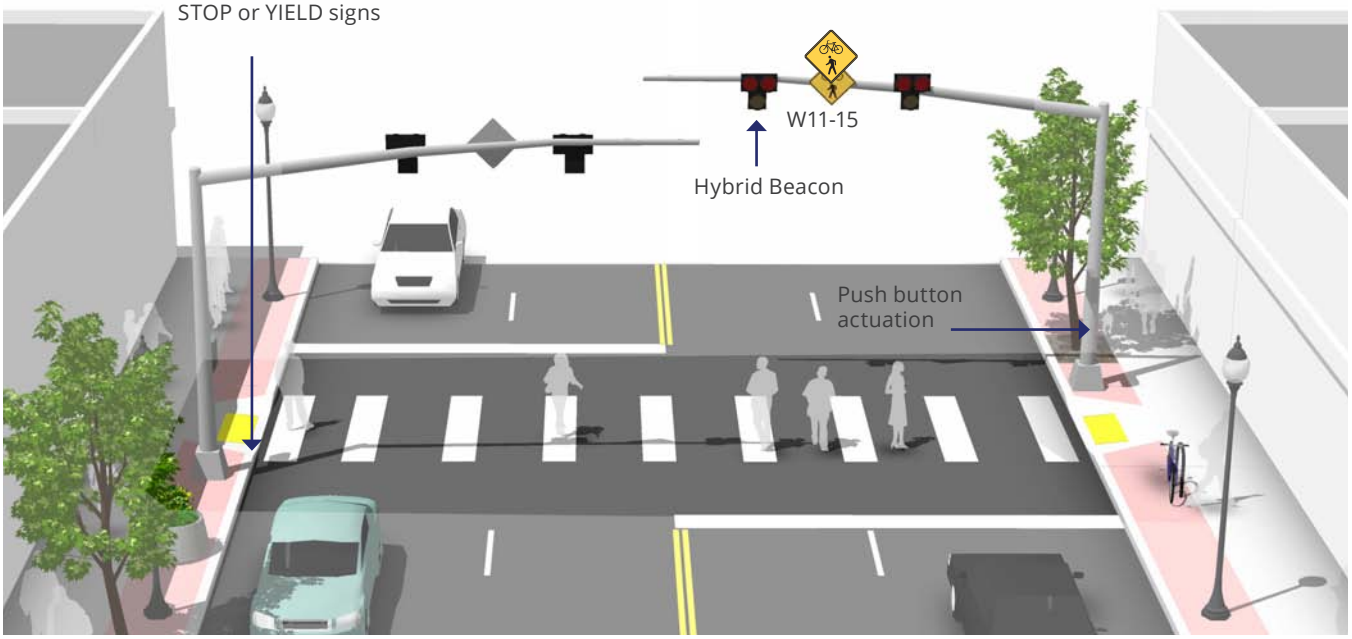
PEDESTRIAN HYBRID BEACON

Description

Hybrid beacons are used to improve non-motorized crossings of major streets. A hybrid beacon consists of a signal-head with two red lenses over a single yellow lens on the major street, and a pedestrian signal head for the crosswalk

Guidance

- Hybrid beacons may be installed without meeting traffic signal control warrants if roadway speed and volumes are excessive for comfortable pedestrian crossings.
- If installed within a signal system, signal engineers should evaluate the need for the hybrid signal to be coordinated with other signals.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.



Discussion

Hybrid beacon signals are normally activated by push buttons, but may also be triggered by infrared, microwave or video detectors. The maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street. Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.

Materials and Maintenance

Hybrid beacons are subject to the same maintenance needs and requirements as standard traffic signals. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

Additional References and Guidelines

FHWA. (2009). Manual on Uniform Traffic Control Devices.

NACTO. (2012). Urban Bikeway Design Guide.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

ACTIVE WARNING BEACONS

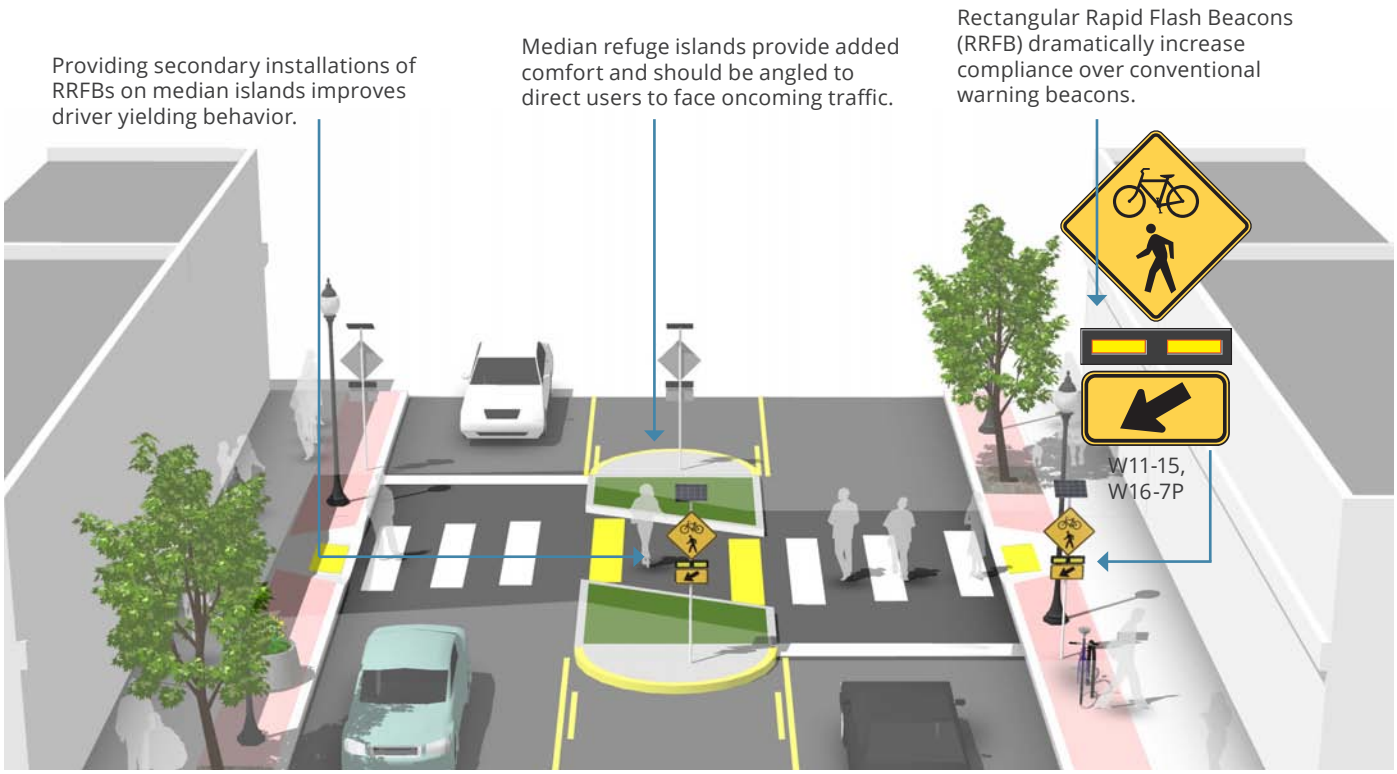
Description

Active warning beacons are user actuated illuminated devices designed to increase motor vehicle yielding compliance at crossings of multi lane or high volume roadways.

Types of active warning beacons include conventional circular yellow flashing beacons, in-roadway warning lights, or rectangular rapid flash beacons (RRFB).

Guidance

- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs or traffic signals.
- Warning beacons shall initiate operation based on pedestrian or bicyclist actuation and shall cease operation at a predetermined time after actuation or, with passive detection, after the pedestrian or bicyclist clears the crosswalk.



Discussion

Rectangular rapid flash beacons have the highest compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88 percent. Additional studies over long term installations show little to no decrease in yielding behavior over time.

Materials and Maintenance

Depending on power supply, maintenance can be minimal. If solar power is used, RRFBs can run for years without issue.

Additional References

NACTO. (2012). Urban Bikeway Design Guide.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

FHWA. (2008). MUTCD - Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11).

PEDESTRIAN SIGNS AND WAYFINDING

Signage provides important safety and wayfinding information to motorist and pedestrian residents and tourists. From a safety standpoint, motorists should be given advance warning of upcoming pedestrian crossings or of traffic calming areas. Signage of any type should be used and regulated judiciously. An inordinate amount of signs creates visual clutter. Under such a condition, important safety or wayfinding information may be ignored resulting in confusion and possible pedestrian vehicle conflict. Regulations should also address the orientation, height, size, and sometimes even style of signage to comply with a desired local aesthetic.

Regulatory Signage

Regulatory signage is used to inform motorists or pedestrians of a legal requirement and should only be used when a legal requirement is not otherwise apparent (AASHTO, 2004: Guide for the Planning, Design, and Operation of Pedestrian Facilities).

Warning Signage

Warning signage is used to inform motorists and pedestrians of unexpected or unusual conditions. When used, they should be placed to provide adequate response times. These include school warning signs and pedestrian crossing signs.

Informational and Wayfinding Signage

Informational and wayfinding signage can provide information providing guidance to a location along a trail or other pedestrian facility. Wayfinding signage should orient and communicate in a clear, concise and functional manner. It should enhance pedestrian circulation and direct visitors and residents to important destinations. In doing so, the goal is to increase the comfort of visitors and residents while helping to convey a local identity.

Maintenance of signage is as important as walkway maintenance. Clean, graffiti free, and relevant signage enhances guidance, recognition, and safety for pedestrians.

Regulatory signs

Below: Wayfinding signs promote aesthetics as well as provide important information (image from Stefton, UK: http://www.sefton.gov.uk

S1-1

S3-1

W11-2

W15-1

I-4

SIGN	MUTCD CODE	MUTCD SECTION	CONVENTIONAL ROAD	
Yield here to Peds	R1-5	2B.11	450x450 (18x18)	REGULATORY
Yield here to Peds	R1-5a	2B.11	450x600 (18x24)	
In-Street Ped Crossing	R1-6, R1-6a	2B.12	300x900 (12x36)	
Peds and Bikes Prohibited	R5-10b	2B.36	750x450 (30x18)	
Peds Prohibited	R5-10c	2B.36	600x300 (24x12)	
Walk on Left Facing Traffic	R9-1	2B.43	450x600 (18x24)	
Cross only at Crosswalks	R9-2	2B.44	300x450 (12x18)	
No Ped Crossing	R9-3a	2B.44	450x450 (18x18)	
No Hitch Hiking	R9-4	2B.43	450x600 (18x24)	
No Hitch Hiking (symbol)	R9-4a	2B.43	450x450 (18x18)	
Bikes Yield to Peds	R9-6	9B.10	300x450 (12x18)	
Ped Traffic Symbol	R10-4b	2B.45	225x300 (9x12)	
School Advance Warning	S1-1	7B.08	900x900 (36x36)	SCHOOL, WARNING, INFORMATIONAL
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.41	750x750 (30x30)	
Playground	W15-1	2C.42	750x750 (30x30)	
Hiking Trail	I-4	--	600x600 (24x24)	

1. Larger signs may be used when appropriate.
2. Dimensions are shown in millimeters followed by inches in parentheses and are shown as width x height.
3. First dimension in millimeters; dimensions in parentheses are in inches.
4. All information in table taken directly from MUTCD.

For a step-by-step guide to help non-professionals participate in the process of developing and designing a signage system, as well as information on the range of signage types, visit the Project for Public Places website:

http://www.pps.org/info/amenities_bb/signage_guide

MULTI-USE TRAILS

A multi-use trail (greenway trail) allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Path facilities can also include amenities such as lighting, signage, and fencing (where appropriate).

Key features of multi-use trails include:

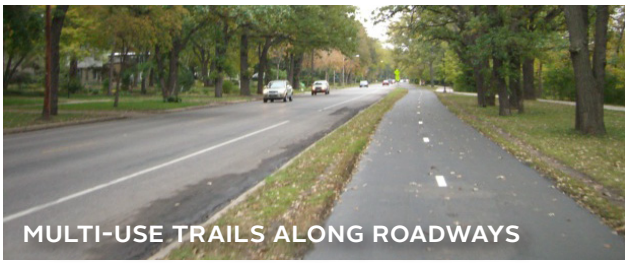
- Frequent access points from the local road network.
- Directional signs to direct users to and from the path.
- A limited number of at-grade crossings with streets or driveways.
- Terminating the path where it is easily accessible to and from the street system.
- Separate treads for pedestrians and bicyclists when heavy use is expected.

This Section Includes:

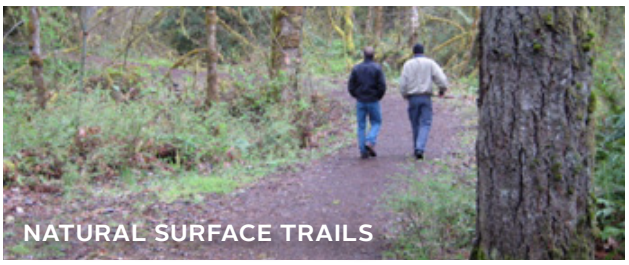
- General Design Practices
- Trails in River and Utility Corridors
- Multi-Use Trails along Roadways
- Multi-Use Trails in Existing Active Rail Corridors
- Multi-Use Trails in Inactive Rail Corridors
- Natural Surface Trails
- Neighborhood Greenways
- Local Neighborhood Accessways


GENERAL DESIGN PRACTICES


TRAILS IN RIVER AND UTILITY CORRIDORS


MULTI-USE TRAILS ALONG ROADWAYS


TRAILS IN RAIL CORRIDORS


NATURAL SURFACE TRAILS


LOCAL NEIGHBORHOOD ACCESSWAYS


NEIGHBORHOOD GREENWAYS

GENERAL DESIGN PRACTICES

Description

Multi-use paths can provide a desirable facility, particularly for recreation, and users of all skill levels preferring separation from traffic. Bicycle paths should generally provide directional travel opportunities not provided by existing roadways.

Guidance

Width

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users. A separate track (5' minimum) can be provided for pedestrian use.

Lateral Clearance

- A 2 foot or greater shoulder on both sides of the path should be provided. An additional foot of lateral clearance (total of 3') is required by the MUTCD for the installation of signage or other furnishings.

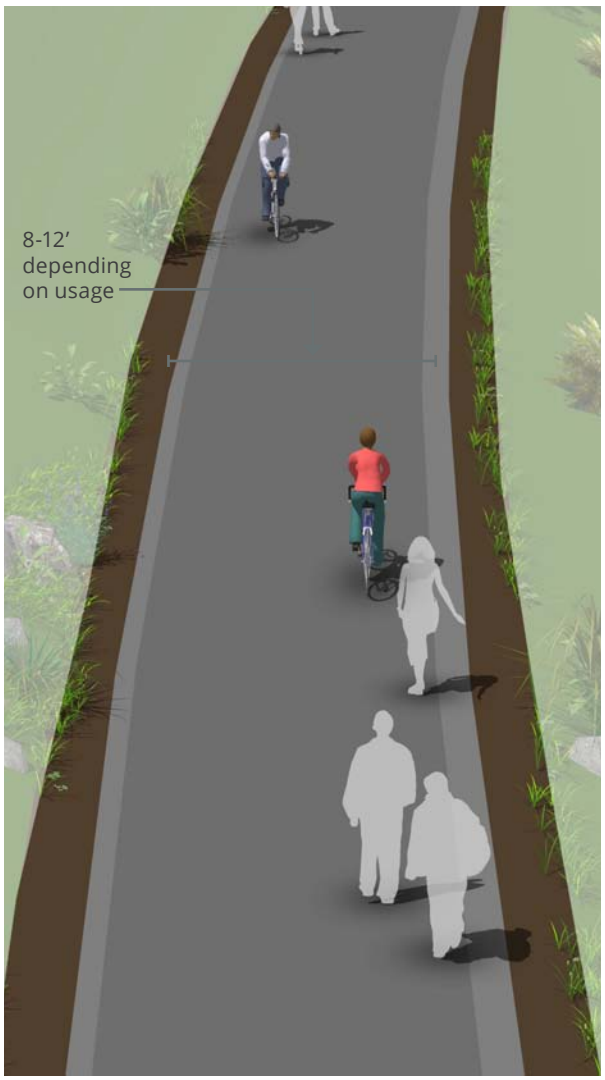
Overhead Clearance

- Clearance to overhead obstructions should be 8 feet minimum, with 10 feet recommended.

Striping

- When striping is required, use a 4 inch dashed yellow centerline stripe with 4 inch solid white edge lines.
- Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.

Terminate the path where it is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street.



Discussion

The AASHTO Guide for the Development of Bicycle Facilities generally recommends against the development of shared use paths along roadways. 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 when either entering or exiting the path.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

Flink, C. (1993). Greenways: A Guide To Planning Design And Development.

MULTI-USE TRAILS IN RIVER AND UTILITY CORRIDORS

Description

Utility and waterway corridors often offer excellent multi-use trail development and bikeway gap closure opportunities. Utility corridors typically include powerline and sewer corridors, while waterway corridors include canals, drainage ditches, rivers, and beaches. These corridors offer excellent transportation and recreation opportunities for bicyclists of all ages and skills.

Guidance

Multi-use trails in utility corridors should meet or exceed general design practices. If additional width allows, wider paths, and landscaping are desirable.

Access Points

Any access point to the path should be well-defined with appropriate signage designating the pathway as a bicycle facility and prohibiting motor vehicles.

Path Closure

Public access to the greenway may be prohibited during the following events:

- Canal/flood control channel or other utility maintenance activities
- Inclement weather or the prediction of storm conditions

Discussion

Similar to railroads, public access to flood control channels or canals is undesirable by all parties. Hazardous materials, deep water or swift current, steep, slippery slopes, and debris all constitute risks for public access. Appropriate fencing may be required to keep path users within the designated travel way. Creative design of fencing is encouraged to make the path facility feel welcoming to the user.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

Flink, C. (1993). Greenways: A Guide To Planning Design And Development.

MULTI-USE TRAILS ALONG ROADWAYS

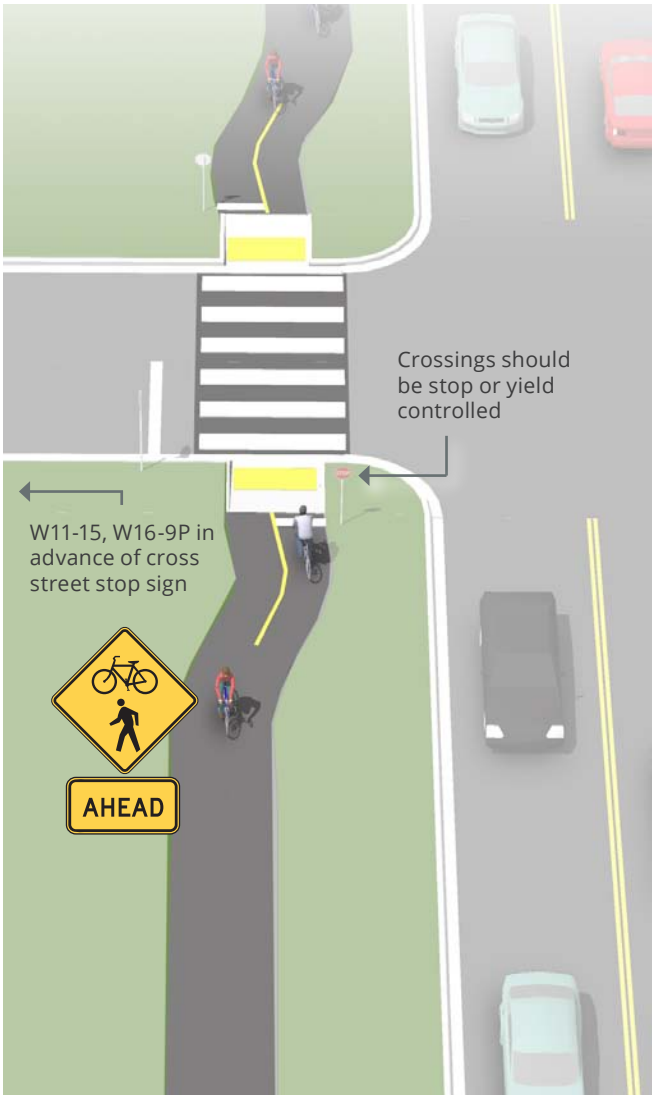
Description

A multi-use trail or path allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles.

Along roadways, these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding where bicyclists enter or leave the path.

The AASHTO Guide for the Development of Bicycle Facilities generally recommends against the development of multi-use paths directly adjacent to roadways.

Pay special attention to the entrance/exit of the path as bicyclists may continue to travel on the wrong side of the street.



Guidance

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users such as joggers, bicyclists, rollerbladers and pedestrians. A separate track (5' minimum) can be provided for pedestrian use.
- Bicycle lanes should be provided as an alternate (more transportation-oriented) facility whenever possible.

Discussion

When designing a bikeway network, the presence of a nearby or parallel path should not be used as a reason to not provide adequate shoulder or bicycle lane width on the roadway, as the on-street bicycle facility will generally be superior to the "sidepath" for experienced bicyclists and those who are cycling for transportation purposes.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

NACTO. (2012). Urban Bikeway Design Guide. See entry on Raised Cycle Tracks.

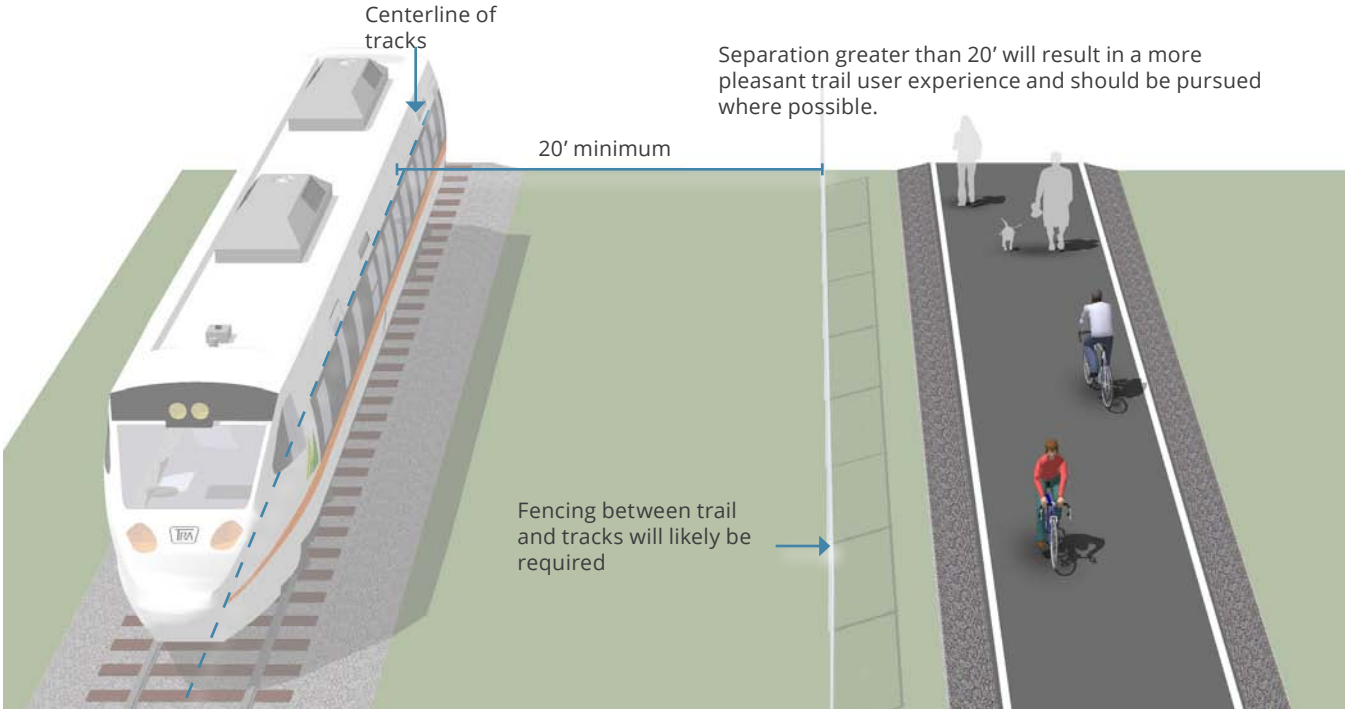
MULTI-USE TRAILS IN EXISTING ACTIVE RAIL CORRIDORS

Description

Rails-with-Trails projects typically consist of paths adjacent to active railroads. It should be noted that some constraints could impact the feasibility of rail-with-trail projects. In some cases, space needs to be preserved for future planned freight, transit or commuter rail service. In other cases, limited right-of-way width, inadequate setbacks, concerns about safety/trespassing, and numerous mid-block crossings may affect a project's feasibility.

Guidance

- Multi-use trails in utility corridors should meet or exceed General Design Practices. If additional width allows, wider paths, and landscaping are desirable.
- If required, fencing should be a minimum of 5 feet in height with higher fencing usual next to sensitive areas such as switching yards. Setbacks from the active rail line will vary depending on the speed and frequency of trains, and available right-of-way.



Discussion

Railroads typically require fencing with all rail-with-trail projects. Concerns with trespassing and security can vary with the amount of train traffic on the adjacent rail line and the setting of the bicycle path, i.e. whether the section of track is in an urban or rural setting.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

FHWA. (2002). Rails-with-Trails: Lessons Learned.

MULTI-USE TRAILS IN INACTIVE RAIL CORRIDORS

Description

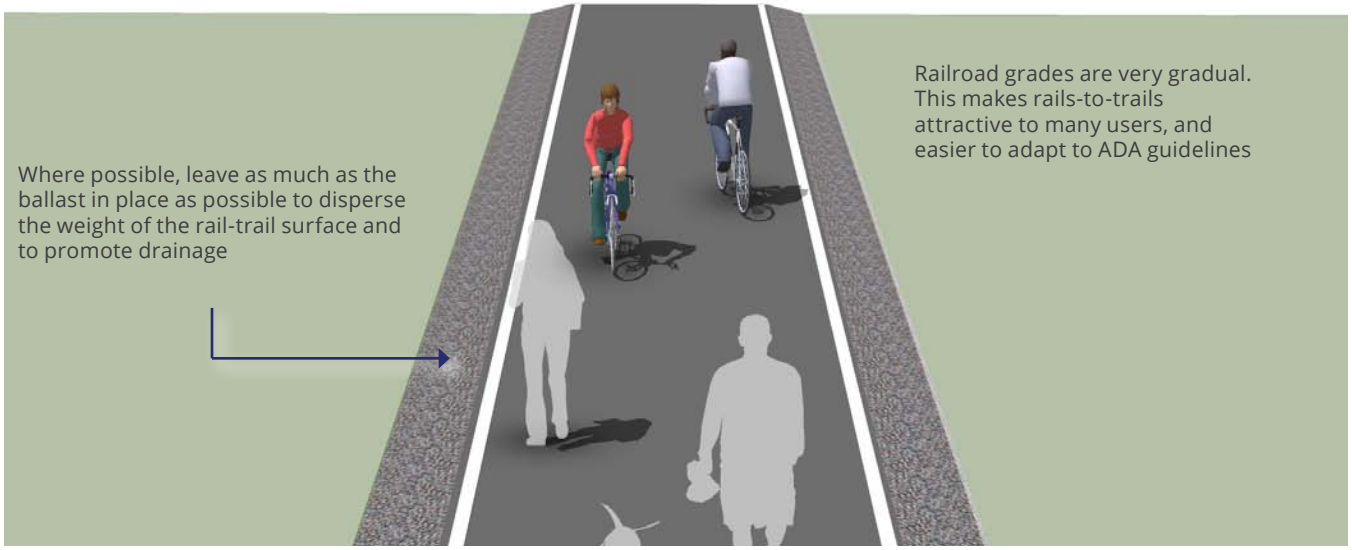
Commonly referred to as Rails-to-Trails or Rail-Trails, these projects convert vacated rail corridors into off-street paths. Rail corridors offer several advantages, including relatively direct routes between major destinations and generally flat terrain.

In some cases, rail owners may rail-bank their corridors as an alternative to a complete abandonment of the line, thus preserving the rail corridor for possible future use.

The railroad may form an agreement with any person, public or private, who would like to use the banked rail line as a trail or linear park until it is again needed for rail use. Municipalities should acquire abandoned rail rights-of-way whenever possible to preserve the opportunity for trail development.

Guidance

- Multi-use trails in abandoned rail corridors should meet or exceed general design practices. If additional width allows, wider paths and landscaping are desirable.
- In full conversions of abandoned rail corridors, the sub-base, superstructure, drainage, bridges, and crossings are already established. Design becomes a matter of working with the existing infrastructure to meet the needs of a rail-trail.
- If converting a rail bed adjacent to an active rail line, see Multi-use trails in Existing Active Rail Corridors.



Discussion

It is often impractical and costly to add material to existing railroad bed fill slopes. This results in trails that meet minimum path widths, but often lack preferred shoulder and lateral clearance widths.

Rail-to-trails can involve many challenges including the acquisition of the right of way, cleanup and removal of toxic substances, and rehabilitation of tunnels, trestles and culverts. A structural engineer should evaluate existing railroad bridges for structural integrity to ensure they are capable of carrying the appropriate design loads.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

Flink, C. (1993). Greenways: A Guide To Planning Design And Development.

NATURAL SURFACE TRAILS

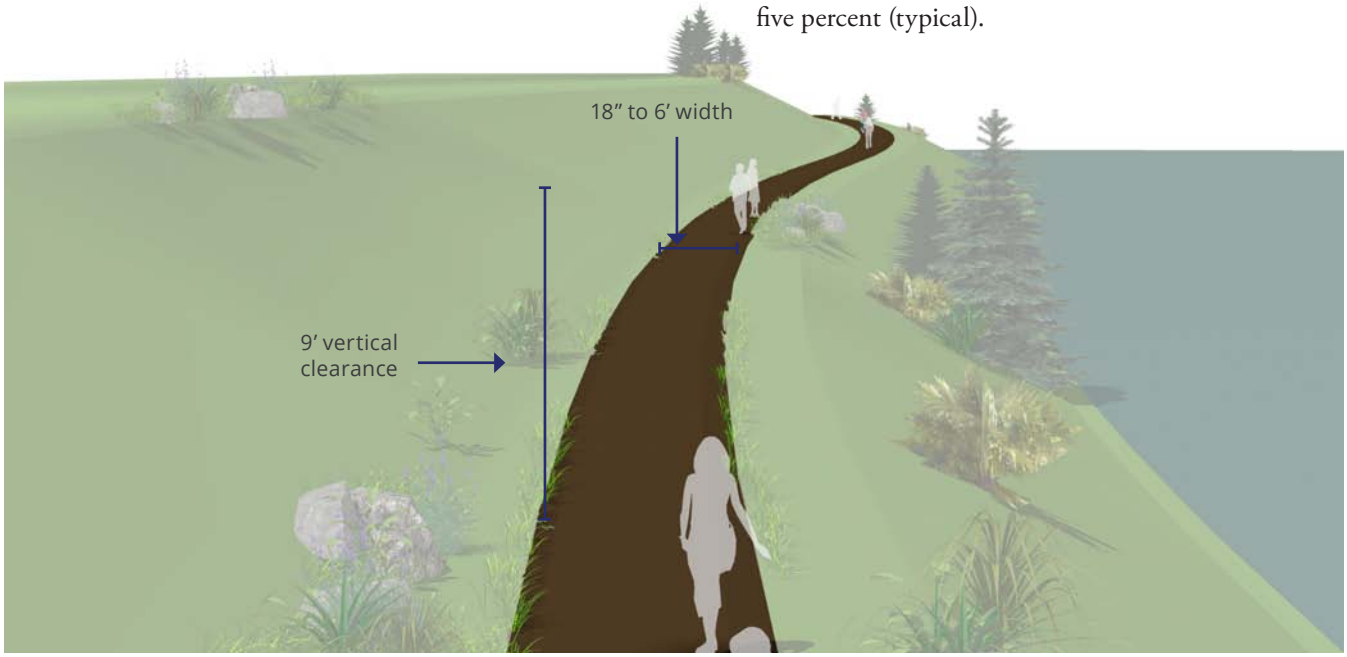
Description

Sometimes referred to as footpaths or hiking trails, the natural surface trail is used along corridors that are environmentally-sensitive but can support bare earth, wood chip, or boardwalk trails. Natural surface trails are a low-impact solution and found in areas with limited development or where a more primitive experience is desired.

Guidance presented in this section does not include considerations for bicycle users. Natural surface trails designed for bicycle users are typically known as single track trails.

Guidance

- Trails can vary in width from 18 inches to 6 feet or greater; vertical clearance should be maintained at nine-feet above grade.
- Base preparation varies from machine-worked surfaces to those worn only by usage.
- Trail surface can be made of dirt, rock, soil, forest litter, or other native materials. Some trails use crushed stone (a.k.a. "crush and run") that contains about 4% fines by weight, and compacts with use.
- Provide positive drainage for trail tread without extensive removal of existing vegetation; maximum slope is five percent (typical).



Discussion

Trail erosion control measures include edging along the low side of the trail, steps and terraces to contain surface material, and water bars to direct surface water off the trail; use bedrock surface where possible to reduce erosion.

Materials and Maintenance

Consider implications for accessibility when weighing options for surface treatments.

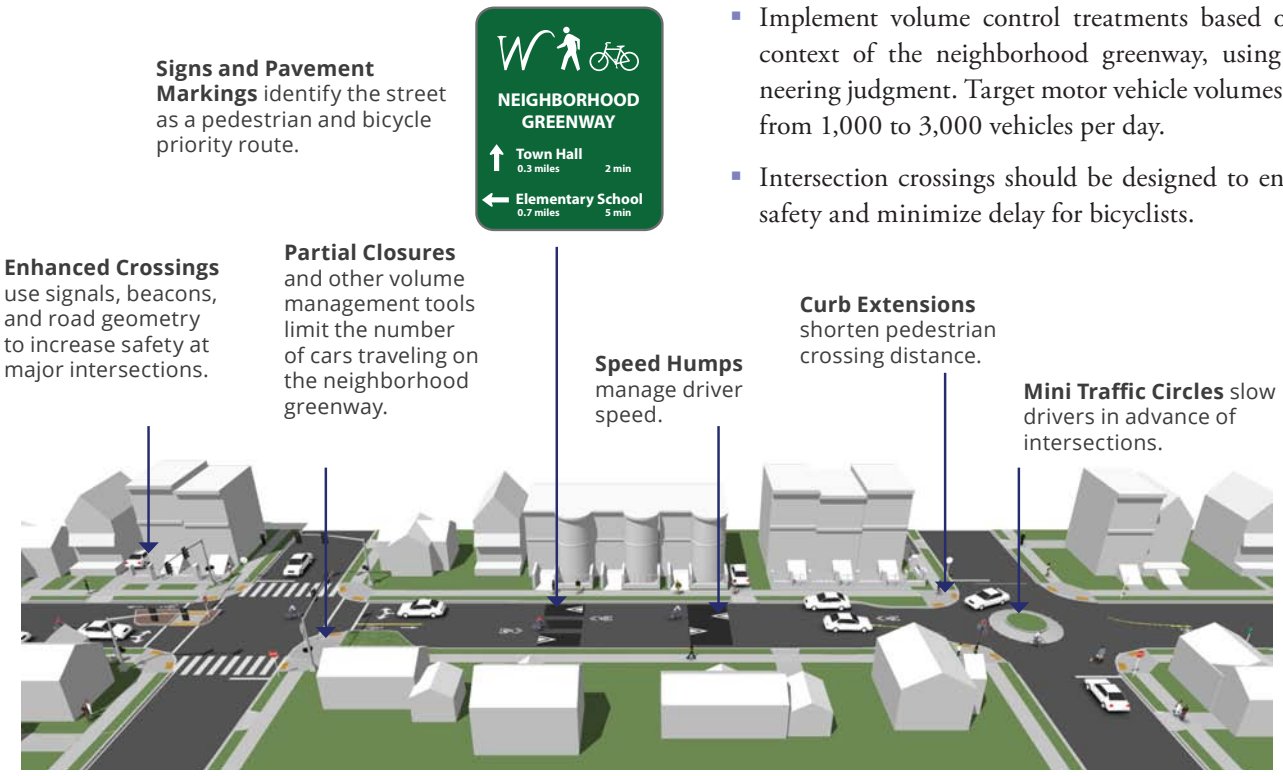
Additional References

Flink, C. (1993). Greenways: A Guide To Planning Design And Development.

NEIGHBORHOOD GREENWAYS

Description

Neighborhood greenways are low-volume, low-speed streets modified to enhance bicyclist comfort by using treatments such as signage, pavement markings, traffic calming and/or traffic reduction, and intersection modifications. These treatments allow through movements of bicyclists while discouraging similar through-trips by non-local motorized traffic.



Guidance

- Signs and pavement markings are the minimum treatments necessary to designate a street as a neighborhood greenway.
- Neighborhood greenways should have a maximum posted speed of 25 mph. Use traffic calming to maintain an 85th percentile speed below 22 mph.
- Implement volume control treatments based on the context of the neighborhood greenway, using engineering judgment. Target motor vehicle volumes range from 1,000 to 3,000 vehicles per day.
- Intersection crossings should be designed to enhance safety and minimize delay for bicyclists.

Discussion

Neighborhood greenway retrofits to local streets are typically located on streets without existing signalized accommodation at crossings of collector and arterial roadways. Without treatments to assist pedestrian crossing, these intersections can become major barriers along the neighborhood greenway and compromise safety.

Traffic calming can deter motorists from driving on a street. Anticipate and monitor vehicle volumes on adjacent streets to determine whether traffic calming results in inappropriate volumes.

Materials and Maintenance

Maintenance needs for bicycle signs are similar to other signs. Signs will need periodic replacement due to wear.

Additional References

Alta Planning + Design and IBPI. (2009). Bicycle Boulevard Planning and Design Handbook.

BikeSafe. (No Date). Bicycle countermeasure selection system.

Ewing, Reid. (1999). Traffic Calming: State of the Practice.

Ewing, Reid and Brown, Steven. (2009). U.S. Traffic Calming Manual.

LOCAL NEIGHBORHOOD ACCESSWAYS

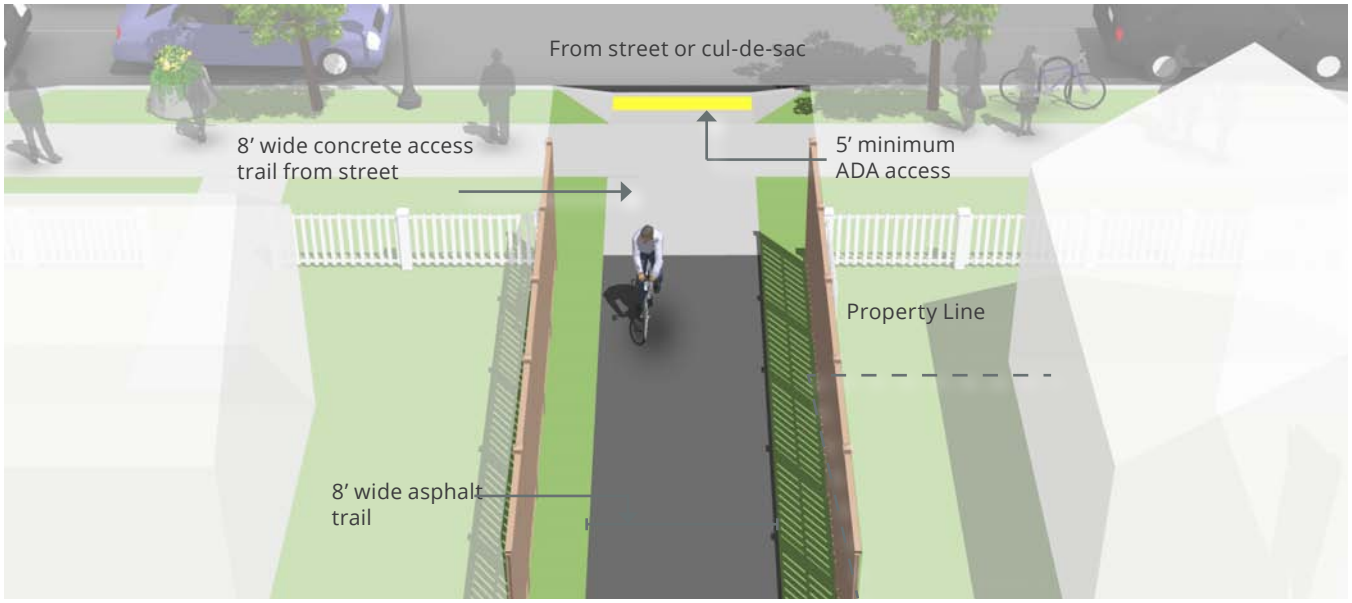
Description

Neighborhood accessways provide residential areas with direct bicycle and pedestrian access to parks, trails, greenspaces, and other recreational areas. They most often serve as small trail connections to and from the larger trail network, typically having their own rights-of-way and easements.

Additionally, these smaller trails can be used to provide bicycle and pedestrian connections between dead-end streets, cul-de-sacs, and access to nearby destinations not provided by the street network.

Guidance

- Neighborhood accessways should remain open to the public.
- Trail pavement shall be at least 8' wide to accommodate emergency and maintenance vehicles, meet ADA requirements and be considered suitable for multi-use.
- Trail widths should be designed to be less than 8' wide only when necessary to protect large mature native trees over 18" in caliper, wetlands or other ecologically sensitive areas.
- Access trails should slightly meander whenever possible.



Discussion

Neighborhood accessways should be designed into new subdivisions at every opportunity and should be required by City/County subdivision regulations.

For existing subdivisions, Neighborhood and homeowner association groups are encouraged to identify locations where such connects would be desirable. Nearby residents and adjacent property owners should be invited to provide landscape design input.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

FHWA. (2006). Federal Highway Administration University Course on Bicycle and Pedestrian Transportation. Lesson 19: Greenways and Shared Use Paths.

MULTI-USE TRAIL CROSSINGS

At-grade roadway crossings can create potential conflicts between path users and motorists. However, well-designed crossings can mitigate many operational issues and provide a higher degree of safety and comfort for path users. This is evidenced by the thousands of successful facilities around the United States with at-grade crossings. In most cases, at-grade path crossings can be properly designed to provide a reasonable degree of safety and can meet existing traffic and safety standards. Path facilities that cater to bicyclists can require additional considerations due to the higher travel speed of bicyclists versus pedestrians.

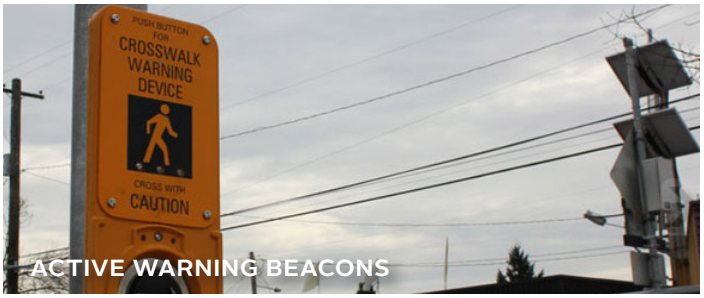
Consideration must be given to adequate warning distance based on vehicle speeds and line of sight, with the visibility of any signs absolutely critical. Directing the active attention of motorists to roadway signs may require additional alerting devices such as a flashing beacon, roadway striping or changes in pavement texture. Signing for path users may include a standard "STOP" or "YIELD" sign and pavement markings, possibly combined with other features such as bollards or a bend in the pathway to slow bicyclists. Care must be taken not to place too many signs at crossings lest they begin to lose their visual impact.

A number of striping patterns have emerged over the years to delineate path crossings. A median stripe on the path approach will help to organize and warn path users. Crosswalk striping is typically a matter of local and State preference, and may be accompanied by pavement treatments to help warn and slow motorists. In areas where motorists do not typically yield to crosswalk users, additional measures may be required to increase compliance.

This Section Includes:

- Marked/Unsignalized Crossings
- Active Warning Beacons
- Route Users to Existing Signals

MARKED/UNSIGNALIZED CROSSINGS



ACTIVE WARNING BEACONS

ROUTE USERS TO EXISTING SIGNALS

UNSIGNALIZED MARKED CROSSINGS

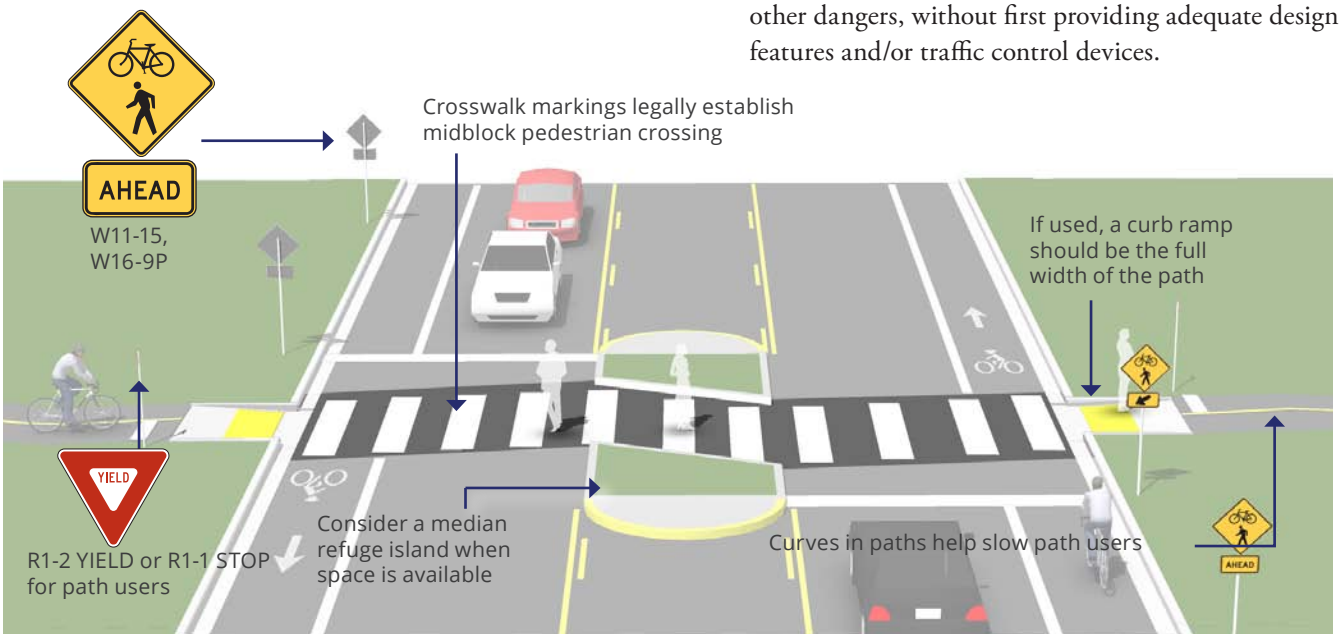
Description

An unsignalized marked crossing typically consists of a marked crossing area, signage, and other markings to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, pathway traffic, use patterns, vehicle speed, road type, road width, and other safety issues such as proximity to major attractions.

When space is available, using a median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the safe crossing of one side of the street at a time.

Guidance

- Refer to the FHWA report, "Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations" for specific volume and speed ranges where a marked crosswalk alone may be sufficient.
- Where the speed limit exceeds 40 miles per hour, marked crosswalks alone should not be used at unsignalized locations.
- Crosswalks should not be installed at locations that could present an increased risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices.



Discussion

Marked crosswalks alone will not make crossings safer, nor will marked crosswalks necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g. raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions, etc.) as needed to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding which treatment to use.

Materials and Maintenance

Locate markings out of wheel tread when possible to minimize wear and maintenance costs.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

ACTIVE WARNING BEACONS

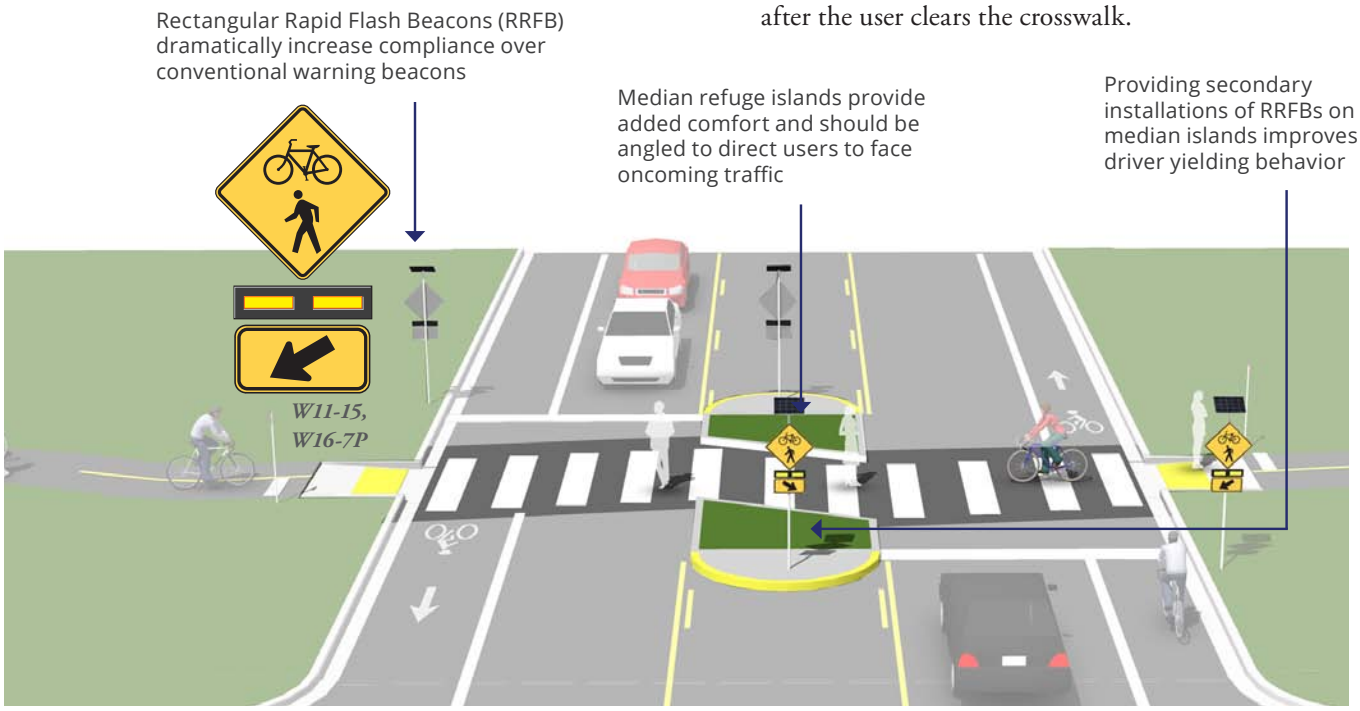
Description

Enhanced marked crossings are unsignalized crossings with additional treatments designed to increase motor vehicle yielding compliance on multi-lane or high volume roadways.

These enhancements include pathway user or sensor actuated warning beacons, Rectangular Rapid Flash Beacons (RRFB) shown below, or in-roadway warning lights.

Guidance

- Guidance for Unsignalized Marked Crossings applies.
- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.
- Warning beacons shall initiate operation based on user actuation and shall cease operation at a predetermined time after the user actuation or, with passive detection, after the user clears the crosswalk.



Discussion

Rectangular rapid flash beacons show the most increased compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88 percent. Additional studies of long term installations show little to no decrease in yielding behavior over time.

Materials and Maintenance

Depending on power supply, maintenance of active warning beacons can be minimal. If solar power is used, signals should run for years without issue.

Additional References

NACTO. (2012). Urban Bikeway Design Guide.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

FHWA. (2008). MUTCD - Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11) NCDOT. (2012). Complete Streets Planning and Design Guidelines.

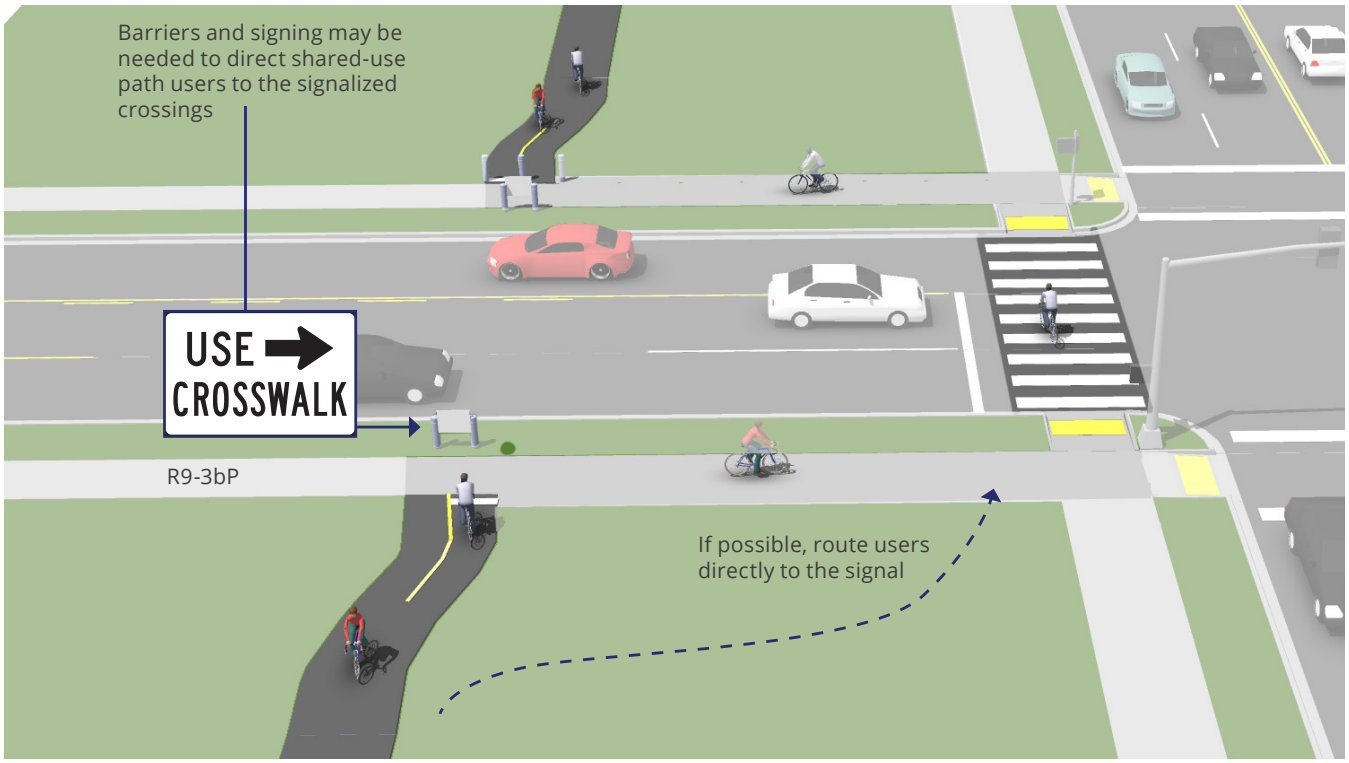
ROUTE USERS TO SIGNALIZED CROSSINGS

Description

Path crossings within approximately 400 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection to avoid traffic operation problems when located so close to an existing signal. For this restriction to be effective, barriers and signing may be needed to direct path users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.

Guidance

- Path crossings should not be provided within approximately 400 feet of an existing signalized intersection. If possible, route path directly to the signal.



Discussion

In the US, the minimum distance a marked crossing can be from an existing signalized intersection varies from approximately 250 to 660 feet. Engineering judgement and the context of the location should be taken into account when choosing the appropriate allowable setback. Pedestrians are particularly sensitive to out of direction travel and jaywalking may become prevalent if the distance is too great.

Materials and Maintenance

Municipalities should maintain comprehensive inventories of the location and age of bicycle wayfinding signs to allow incorporation of bicycle wayfinding signs into any asset management activities.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

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

BOARDWALKS

Description

Boardwalks are typically required when crossing wetlands or other poorly drained areas. They are usually constructed of wooden planks or recycled material planks that form the top layer of the boardwalk. The recycled material has gained popularity in recent years since it lasts much longer than wood, especially in wet conditions. A number of low-impact support systems are also available that reduce the disturbance within wetland areas to the greatest extent possible.

Guidance

- Boardwalk width should be a minimum of 10 feet when no rail is used. A 12 foot width is preferred in areas with average anticipated use and whenever rails are used.
- When the height of a boardwalk exceeds 30", railings are required.
- If access by vehicles is desired, boardwalks should be designed to structurally support the weight of a small truck or a light-weight vehicle.

Discussion

In general, building in wetlands is subject to regulations and should be avoided.

The foundation normally consists of wooden posts or auger piers (screw anchors). Screw anchors provide greater support and last much longer.

Materials and Maintenance

Decking should be either non-toxic treated wood or recycled plastic. Cable rails are attractive and more visually transparent but may require maintenance to tighten the cables if the trail has snow storage requirements.

Additional References

AASHTO. (2012). Guide for the Development of Bicycle Facilities.

FHWA. (2001). Wetland Trail Design and Construction.

TRAFFIC CALMING MEASURES

Traffic calming is a design approach that seeks to lower motor vehicle traffic speeds using physical and visual cues. These tools are typically self-enforcing: the roadway's physical conditions influence drivers directly rather than regulatory devices and enforcement measures. Traffic calming works best on local streets with residential areas and highly trafficked commercial corridors.

Extensive research shows that slower motorist speeds reduce overall crash severity and frequency, and improve comfort of bicyclists and pedestrians along the street. Slower traffic also tends to reduce roadway noise, which contributes to overall neighborhood livability and walking comfort.

Traffic calming measures must include special considerations for bicyclists. Measures such as narrowing the roadway may adversely affect bicyclists' ability to share the road, while introducing vertical or horizontal deflections to slow traffic may introduce an unexpected hazard to the cyclist. Conversely, carefully designed and applied traffic calming measures can enhance bicyclist safety and access.

This Section Includes:

- Mini Traffic Circles
- Planted Median Islands
- Chicanes

MINI TRAFFIC CIRCLES

PLANTED MEDIAN ISLANDS

CHICANES

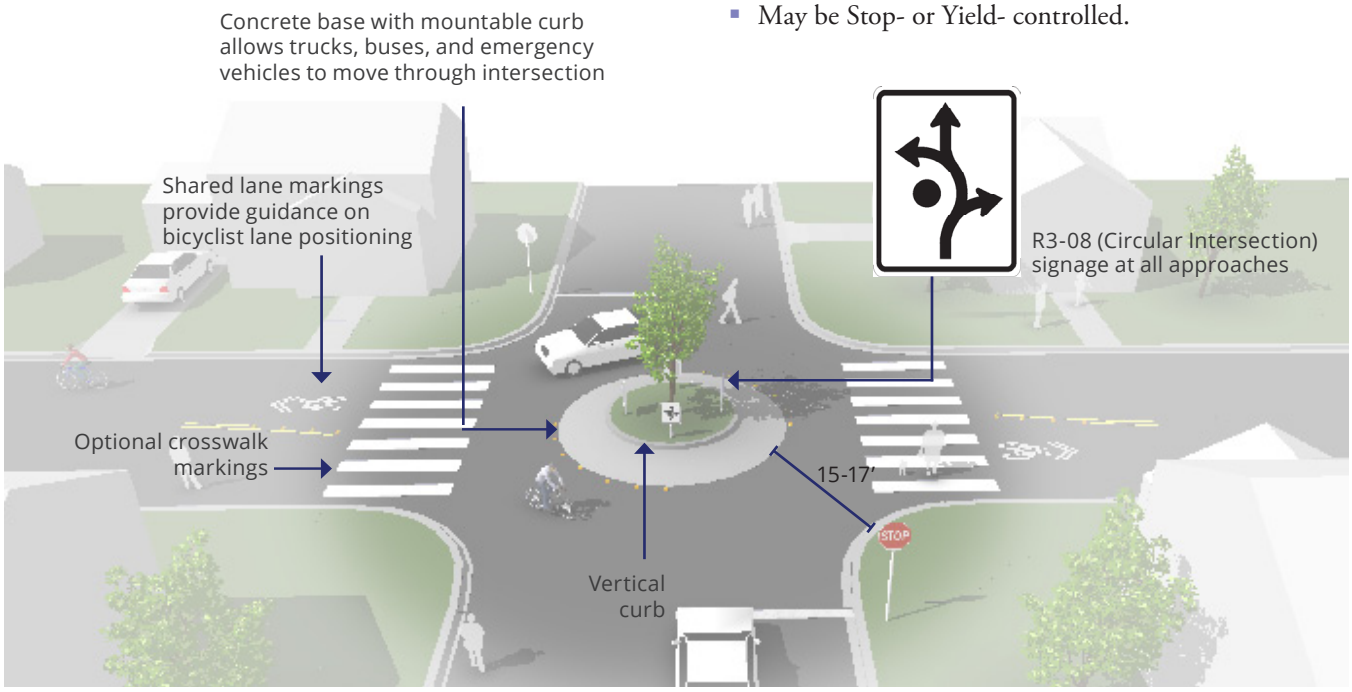
MINI TRAFFIC CIRCLES

Description

Mini traffic circles are raised, circular islands placed in the middle of local roadway intersections that control turning movements and help reduce vehicle speeds by forcing slow turns in a predictable manner. Additional benefits include reductions in local air and noise pollution from the removal of stop –and-go traffic, as well as visual and environmental benefits of added landscaping and tree planting opportunities.

Guidance

- Best suited for low-volume, local streets.
- Design must have low turning radii to reduce vehicular turning speeds, which improves pedestrian and bicyclist safety.
- Install signage and pavement markings to guide motorists, pedestrians, and bicyclists through the allowed turning movements and crossing areas.
- May be Stop- or Yield- controlled.



Discussion

Work with emergency service providers when considering mini traffic circles. Traffic circles can also include a paved apron to accommodate the turning radii of larger vehicles including fire trucks and school buses where necessary.

Materials and Maintenance

Raised concrete planters provide opportunities to integrate landscaping or green stormwater features such as bioswales. Temporary mini traffic circles created with paint and/or removable raised features can be useful in gauging support and finalizing design.

Additional References

Ewing & Brown. (2009) U.S. Traffic Calming Manual.

NACTO. (2013) Urban Street Design Guide.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

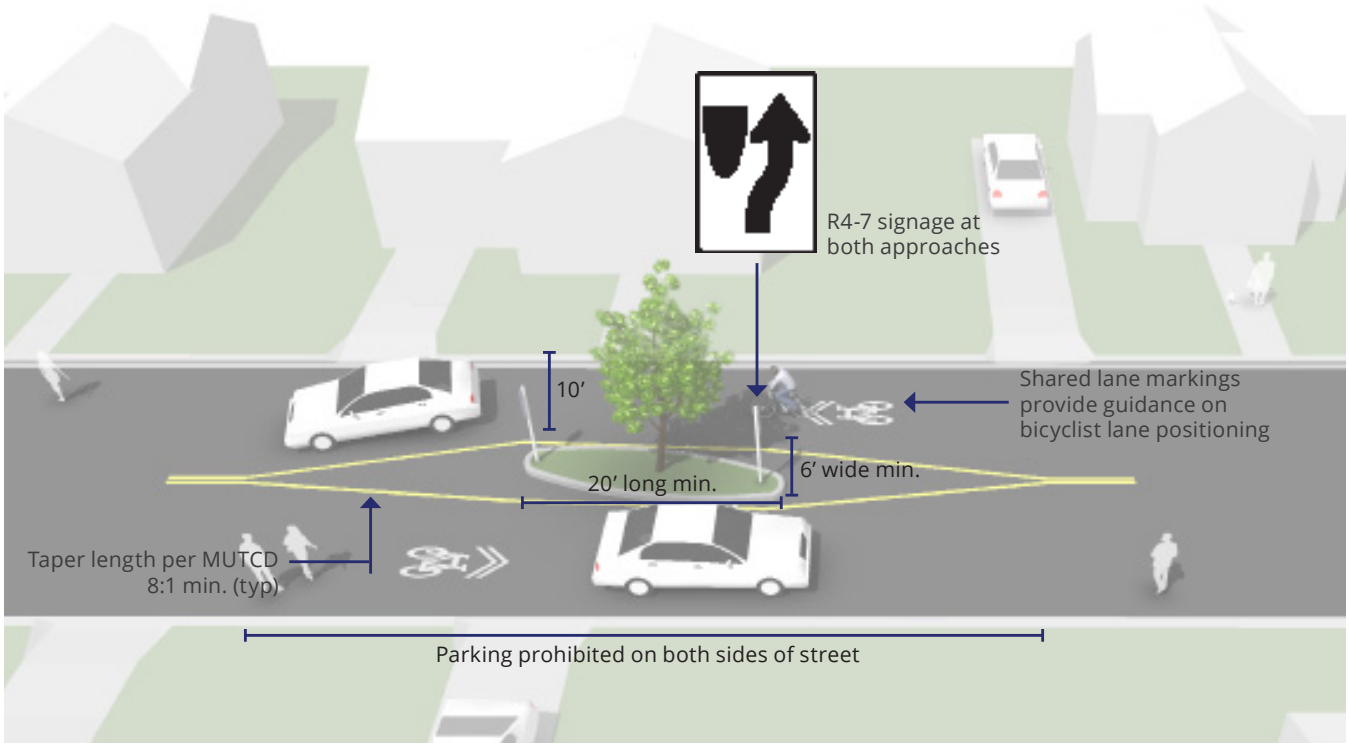
PLANTED MEDIAN ISLANDS

Description

Planted median islands are horizontal traffic calming features placed in the center of a street. Planted median islands increase visual interest and narrow the street, encouraging drivers to reduce speeds. They may integrate pedestrian refuge islands and be paired with other traffic calming features such as speed humps or textured paving. Width, length, and the amount of horizontal deflection created will vary based on context.

Guidance

- Use short median islands on neighborhood streets to slow traffic and indicate that drivers are entering a residential area.
- Long planted medians may be used on multi-lane streets as a visual narrowing technique.
- Median islands can also be configured as diverters at intersections (with pedestrian and bicycle refuges) in situations where volume management is desired.



Discussion

Consider midblock pedestrian refuges where blocks are long and crossing demand is high.

Local plantings can enhance sense of place. Median islands may also incorporate green stormwater infrastructure such as bioswales and flow-through planters.

Materials and Maintenance

Hardscaping may be used at narrow points or at pedestrian crossing points. At crossing points, landscaping and tree limbs should be maintained to allow pedestrian and motorist visibility.

Additional References

NCDOT. (2012). Complete Streets Planning and Design Guidelines.

NACTO. (2013) Urban Street Design Guide.

Ewing & Brown. (2009) U.S. Traffic Calming Manual.

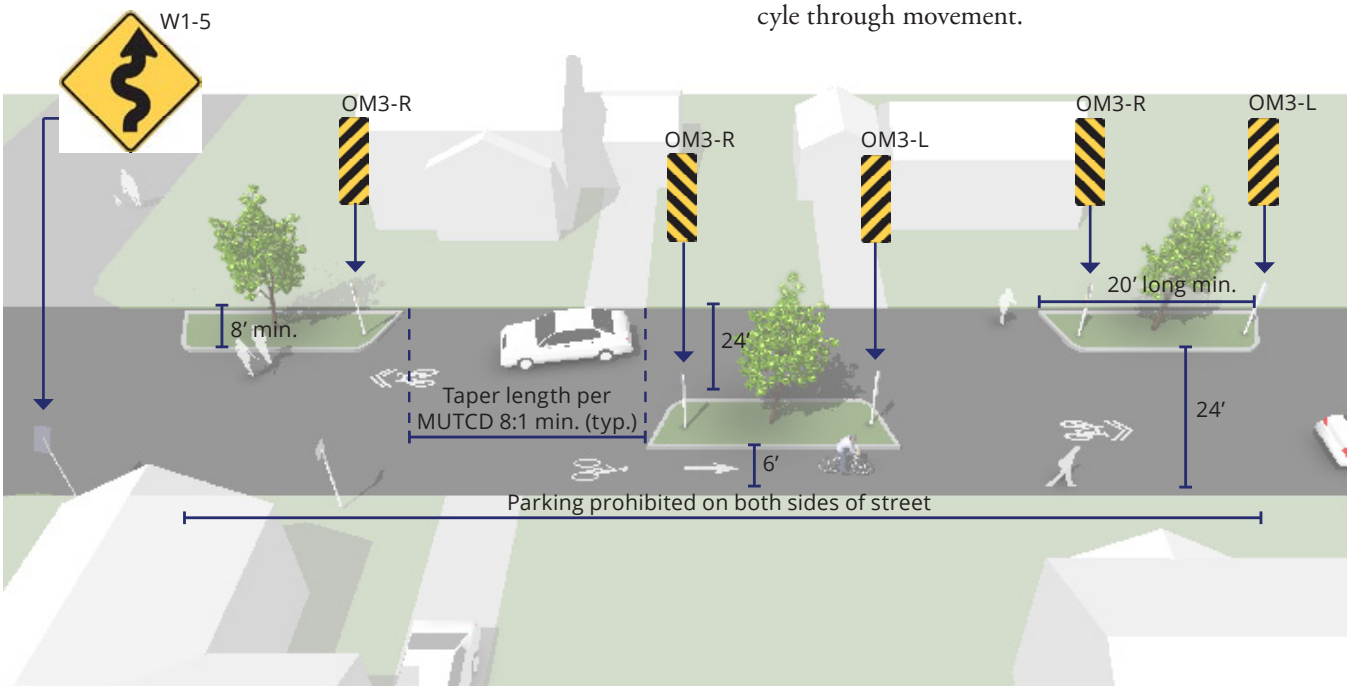
CHICANES

Description

Chicanes introduce horizontal deflections in the roadway through the use of alternating curb extensions, edge islands, or parking bays. The intent of chicanes is to slow traffic speeds thereby increasing the comfort of pedestrians and bicyclists. They may also be used to indicate a roadway transition such as from a commercial corridor to a low-speed residential area.

Guidance

- Use on low traffic residential streets.
- Use a series of at least three curb extensions, islands, or parking bays to effectively slow motorists.
- Narrowing the roadway to one lane with deflection angles of 45 degrees may help prevent "straight line racing."
- Consider leaving a 5-6 foot gap between the curb and Chicane islands on bicycle boulevards to facilitate bicyle through movement.



Discussion

Chicane design must prevent motorists from being able to maintain their speed by cutting across the centerline, and must ensure that passing motorists do not squeeze cyclists at conflict points. Signage and pavement markings can reinforce the need for motorists and bicyclists to share the road if no exclusive bicycle pathway is provided near curbs.

Work with emergency service providers when considering traffic calming or street closures/diverters.

Materials and Maintenance

Raised concrete planters provide opportunities to integrate landscaping or green stormwater features such as bioswales. Temporary chicanes created with paint and/or removable raised features can be useful in guaging support and finalizing design.

Additional References

NACTO. (2013) Urban Street Design Guide.

Ewing & Brown. (2009) U.S. Traffic Calming Manual.

FHWA. (2009). Manual on Uniform Traffic Control Devices.

B Public Involvement

Overview

The public engagement process for the Pedestrian Master Plan was essential to spreading awareness of the planning process and to ensure that a variety of local perspectives were appropriately incorporated into the plan. Project consultants developed multiple public engagement media and resources that were distributed throughout the planning process to ensure that residents and stakeholders in Whiteville had the opportunity to participate.

The public engagement component of this Plan included the following:

1. Steering Committee meetings
2. Public outreach events
3. Project information resources
   - Project comment forms
   - Project website with link to online comment form
   - Project information cards
   - Informational project display board

Steering Committee Meetings

The Steering Committee was involved throughout the planning process. During the kick-off meeting, the group reviewed and provided feedback on the project website, project comment form, established a vision statement and goals for the plan, and discussed the timeline and schedule of the planning process. Members of the Steering Committee worked with the consultant team to mark up local and regional maps to identify gaps in the current network, unsafe crossing locations, and other high priority areas. Input from the Steering Committee is reflected throughout the recommendations of this planning document.

The Pedestrian Plan Steering Committee read programmatic review boards and voted on priority programs for the draft plan during a steering committee meeting.

Appendix Contents

Public Outreach Events

Whiteville Candlelight Walk and Tree Lighting

The first public outreach event for the pedestrian plan was held at the Whiteville Candlelight Walk and Tree Lighting on Monday, December 9, 2013, from 6 pm to 8 pm. The project consultant team set up an informational booth at Whiteville High School, the starting point of the Candlelight Walk. A second booth was set up at the end of the Candlelight Walk route, outside of the Vineland Historic Train Station in downtown Whiteville. Residents stopped by the booths to pick up project information cards, ask questions about the plan, and provide feedback on where they would like to see new and improved sidewalks, intersection improvements, and trails. Over fifty people were reached during the event. Some took extra project information cards home to share with family, friends, classmates, and coworkers. Many people at the event had not yet heard about the pedestrian plan and were interested to learn that the city is taking steps to become a more pedestrian-friendly place.

2nd Public Outreach Event

The second public outreach event was held from 6PM-8PM on June 18, 2014 at City Hall. A public open house was set up by the project consultants and members of the public were invited to review highlights of the draft plan document, ask questions, and provide guidance on further refining the recommendations. Excitement about corridor enhancement recommendations and Complete Streets concepts was expressed by many members of the public.

Kids stopped by the plan information booth with their parents during the Candlelight Walk and Tree Lighting event.

Project Resources

A number of resources were developed to share plan information with residents, gather feedback on pedestrian opportunities and challenges, and encourage public participation at events. These tools also played a significant role in broadcasting the plan to a wide audience to help ensure that all members of the community would have the opportunity to participate in the planning process in some form.

Project Website

A project website was developed to provide further project information, maps, contact information, and additional resources. The website also featured a link to the online public comment form page, offering an additional medium for the Whiteville community to become engaged and participate in the planning process.

Public Comment Form

A comment form, shown on the following page, was developed and was made available in both hard copy and online formats. The comment form was available online throughout the duration of the project. To maximize responses to the online form, the web address was distributed at public meetings, advertised in press releases, sent out to local interest groups, and included on flyers that were distributed around town.

Results of the comment form were collected and tabulated by the project consultant to provide insight into local residents' values and opinions about the project. The form can be seen on the following page and the results are included in this appendix.

Project Information Cards

The information card shown on page B-4 was designed to spread awareness of the project as well as to direct interested citizens to the website and to project contacts for further information. By providing the general public with access to different avenues of public input, these public engagement components provided a variety of opportunities for the voices of Whiteville residents to be heard.

The Pedestrian Plan Steering Committee reviewed maps of Whiteville during the first Steering Committee meeting.

Project information card for the Pedestrian Master Plan

Informational Project Display Board

An informational display board featuring the pedestrian plan project information was developed in early 2014. The board was put on display during local meetings and public events, such as the public open house, to raise awareness about the project and direct interested citizens to the project website.

City of Whiteville, NC

Pedestrian Master Plan
Public Comment Form

Project Website:
www.whitevillepedplan.com

We would like for everyone to be able to safely walk in Whiteville. This survey will help the city decide where to plan and build new sidewalks, trails, and crossings.

1. How do you rate current walking conditions (sidewalks, trails, crosswalks, etc.) in Whiteville? (Please select one option)

☐ Excellent ☐ Above Average ☐ Average ☐ Below Average ☐ Poor

2. Whiteville should be a community where: (Please select any that apply)

☐ Sidewalks are only provided on major roads
☐ Sidewalks are provided on neighborhood roads
☐ Sidewalks are provided on all roads
☐ Greenway trails are available throughout the community and people can use them to get to important places
☐ Sidewalks are not provided on roads

3. Which walking improvements should be required with future road projects or development projects? (Select any that apply)

☐ Sidewalks ☐ Better Lighting
☐ Pedestrian Signs ☐ Marked Crosswalks
☐ Grass between Sidewalk and Roadway
☐ Better walking connections between Neighborhoods, Shopping Centers, Parks, and Other Important Places
☐ Traffic Calming (stop signs, raised crosswalks, etc.)

4. How should walking projects and options be paid for? (Please select any that apply)

☐ Public Grants ☐ Local Funds ☐ Federal Funds
☐ State Funds ☐ Private Funds ☐ Capital Improvement Funds

5. In your opinion, which road, location, or neighborhood in Whiteville is the least safe for walking?

☐ Tram Road ☐ Lee Street ☐ US 74/Jefferson Street
☐ 701 Bypass/JK Powell Blvd ☐ Virgil Street
☐ Madison Street ☐ Lewis Street
☐ Main Street ☐ Columbus Street
Other (please specify) _____

6. In your opinion, which road crossings are the least safe to walk across? (Please select any that apply)

☐ Madison St & Main St ☐ Franklin St & Lewis St
☐ 701 Bypass/ JK Powell Blvd & Lewis St
☐ 701 Bypass/ JK Powell Blvd & Williamson St
☐ 701 Bypass/ JK Powell Blvd & Virgil St
☐ 701 Bypass/ JK Powell Blvd & Washington St/Jefferson St
Other (please specify) _____

7. How often do you walk now? (Check one)

☐ Never ☐ A few times per month
☐ A few times per week ☐ 5+ times per week

8. Why do you walk now, and/or why would you want to walk in the future? (Please select any that apply)

☐ Fitness or Recreation ☐ Town Events
☐ Spending Time Outdoors ☐ Visit Friends/Family
☐ Reaching a Place (shopping area, downtown, work, etc.) ☐ Walking to School
Other (please specify) _____

9. Where do you walk, or where would you like to walk? (Please select any that apply)

☐ Downtown ☐ Pharmacy/Drug Store
☐ Place of Work ☐ In My Neighborhood / On My Street
☐ Place of Worship ☐ Trails & Greenways
☐ School ☐ No Destination / Just for Fun or Exercise
☐ Parks ☐ Libraries / Public Rec Centers
☐ Shopping ☐ Friend/Relative's House
☐ Entertainment ☐ I don't walk to any of these places or for any of these reasons
☐ Town Hall
☐ Gym
☐ Fast Food Restaurant
☐ Non-Fast Food Restaurant
Other (road, trail, place, etc.): _____

10. What makes walking difficult in Whiteville? (Please select any that apply)

☐ Lack of Sidewalks & Trails ☐ Lack of Nearby Places to Visit
☐ Narrow Roads ☐ Aggressive Driver Behavior
☐ Lack of Street Lighting ☐ Automobile Traffic & Speed
☐ Sidewalks in Need of Repair ☐ Criminal Activity
☐ Lack of Landscaping or Grass between Sidewalk and Road
☐ Lack of Pedestrian Countdown Timers at Traffic Lights
☐ Lack of Crosswalks at Traffic Lights

11. Do you have any other thoughts for improving walking in Whiteville?

_____
_____
_____

What is your age? ☐ <18 ☐ 18-26 ☐ 27-35 ☐ 36-44 ☐ 45-54 ☐ 55-64 ☐ 65-74 ☐ 75+ | ☐ MALE ☐ FEMALE

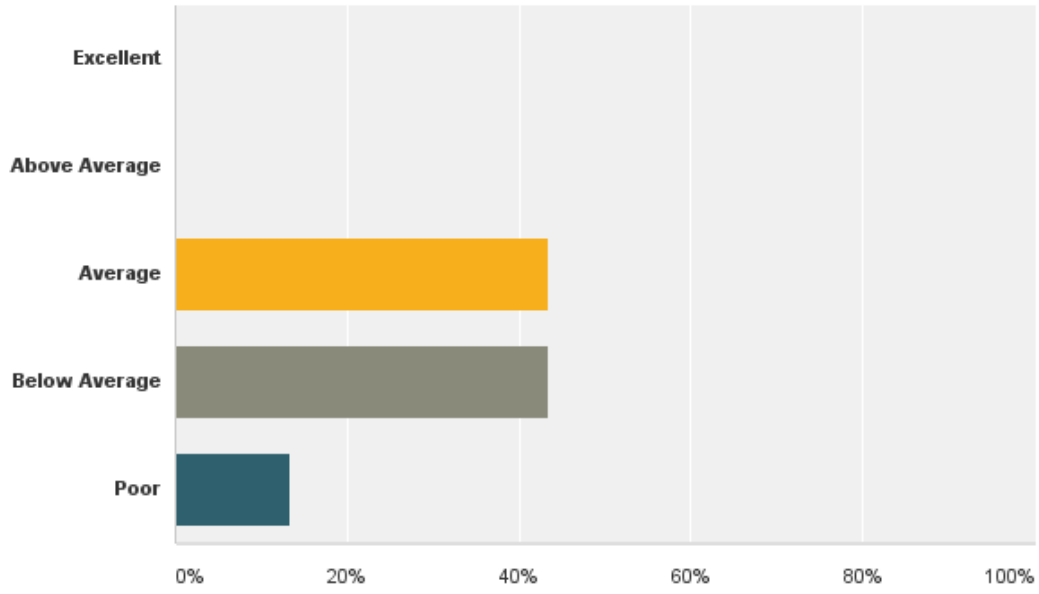
Return Completed Form To: Mr. Hiram Marziano II, Planning Director, 817-B South Madison Street, Whiteville, NC 28472

Top: Public comment form for the Pedestrian Master Plan

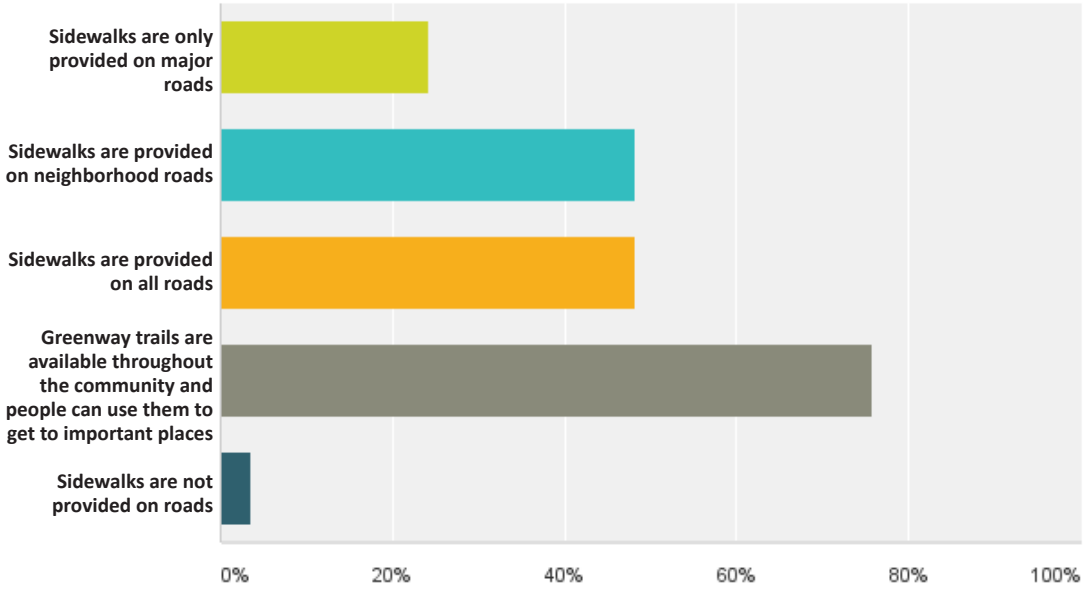
Bottom: Steering Committee member responses to an exercise held during the plan kick-off meeting

Public Comment Form Responses

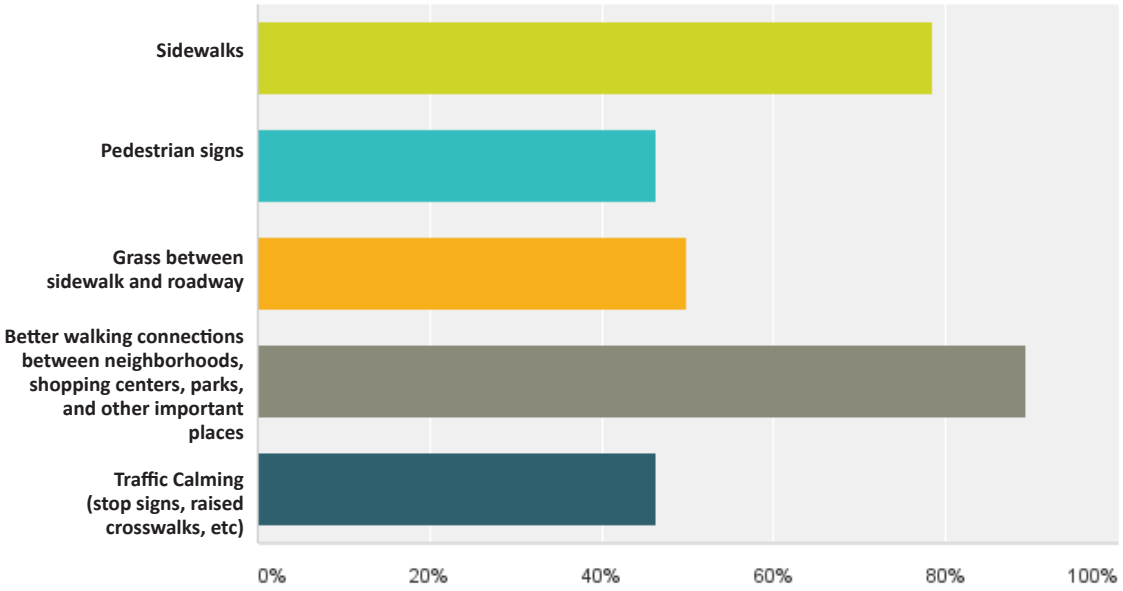
1. How do you rate current walking conditions (sidewalks, trails, cross-walks, etc.) in Whiteville? (Select one)



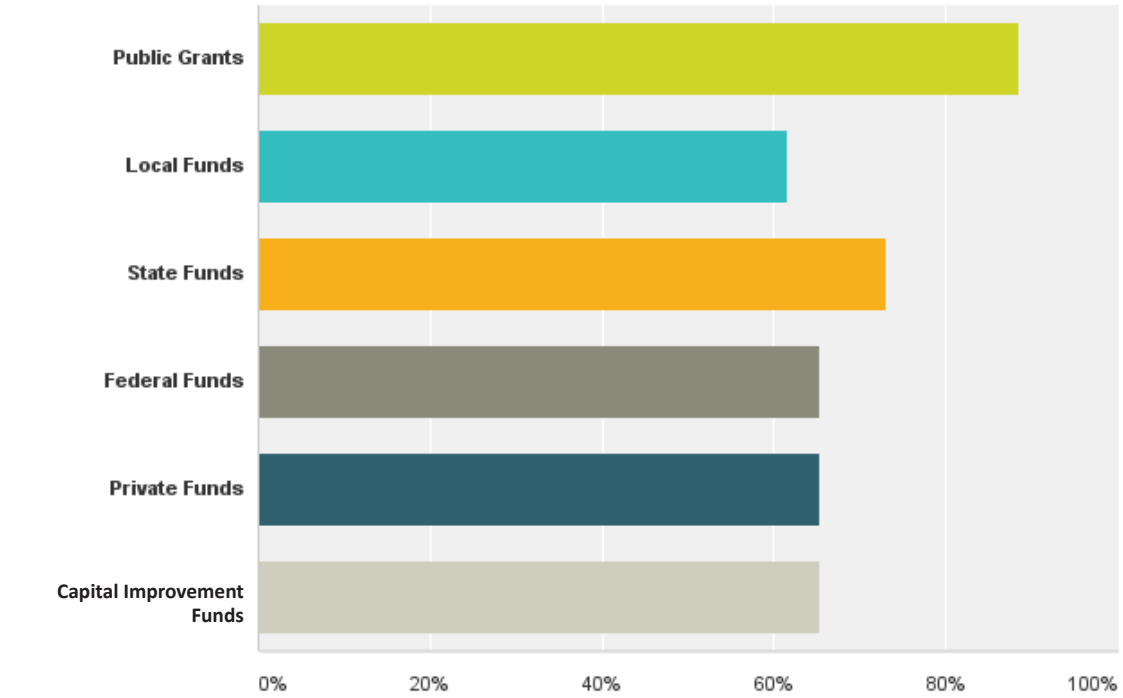
2. Whiteville should be a community where: (Please select any that apply)



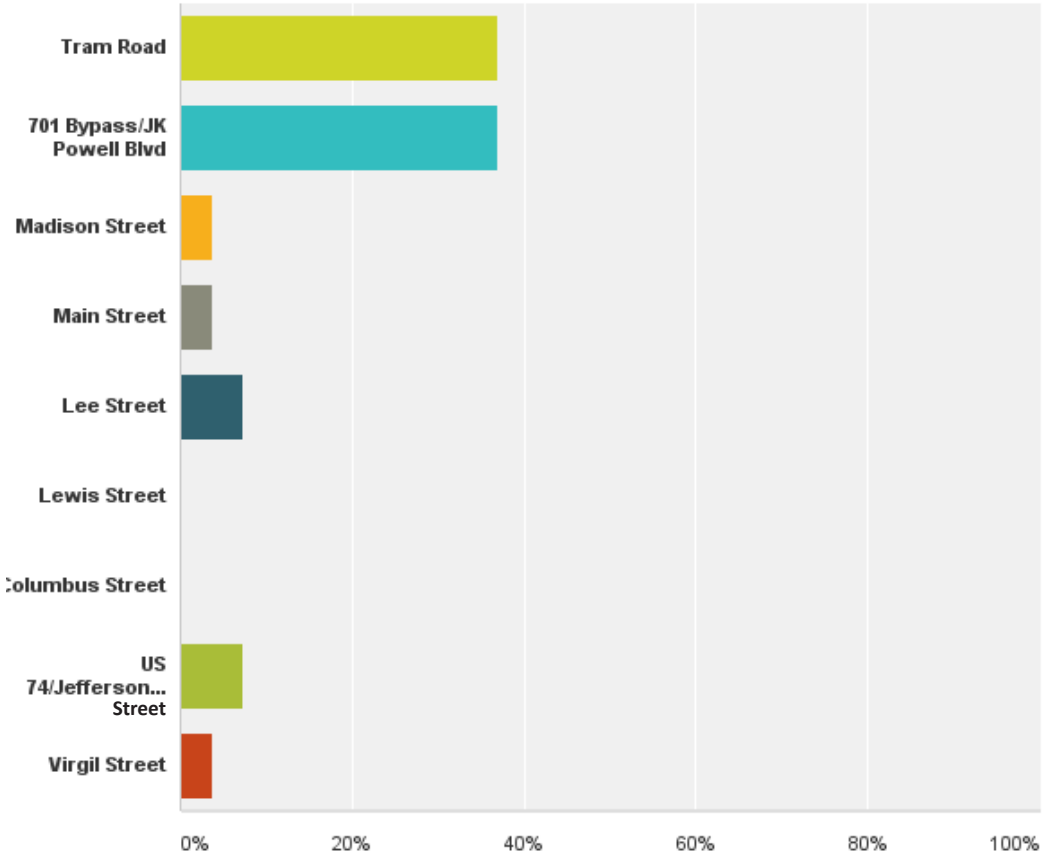
3. Which walking improvements should be required with future road projects or development projects? (Select any that apply)



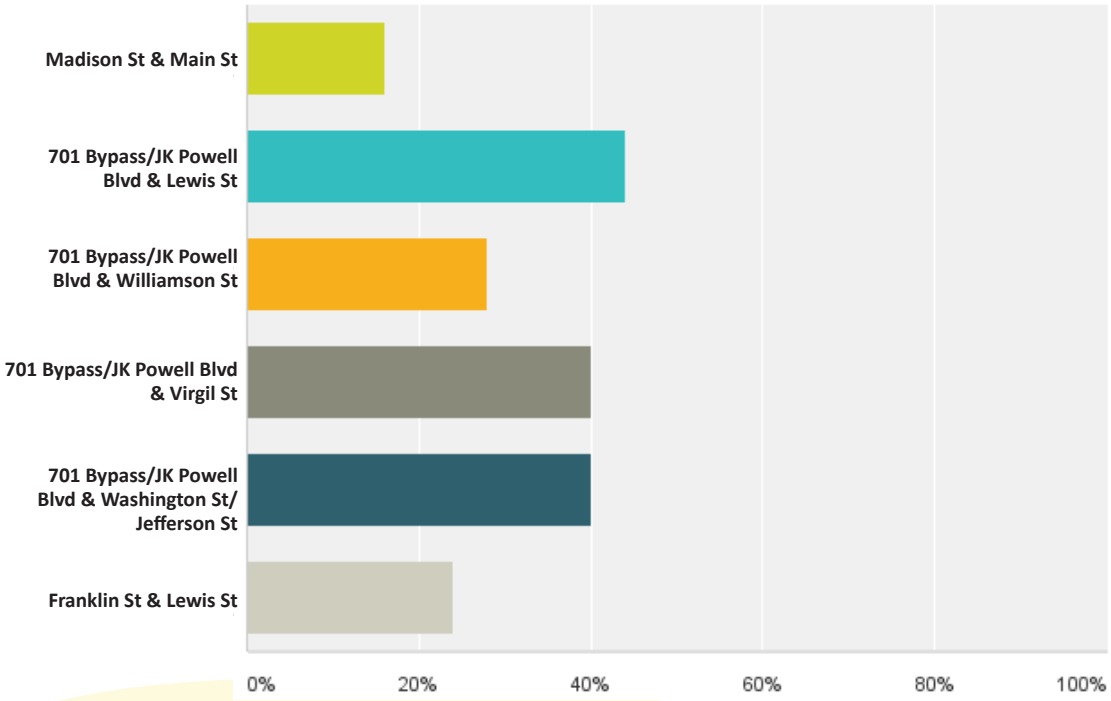
4. How should walking projects and options be paid for? (Please select any that apply)



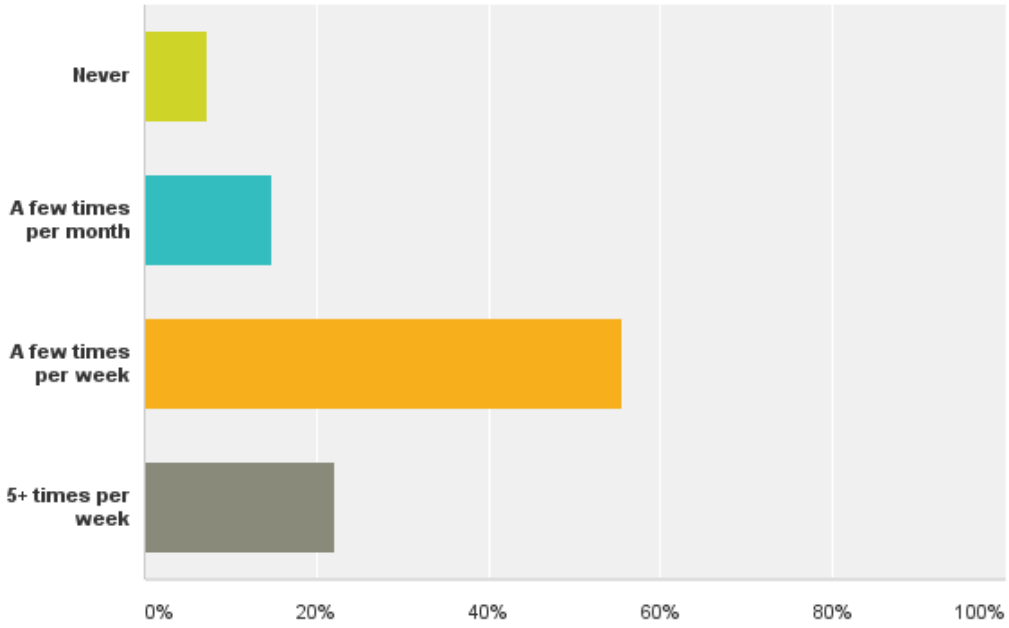
5. In your opinion, which road, location, or neighborhood in Whiteville is the least safe for walking? (Please select one)



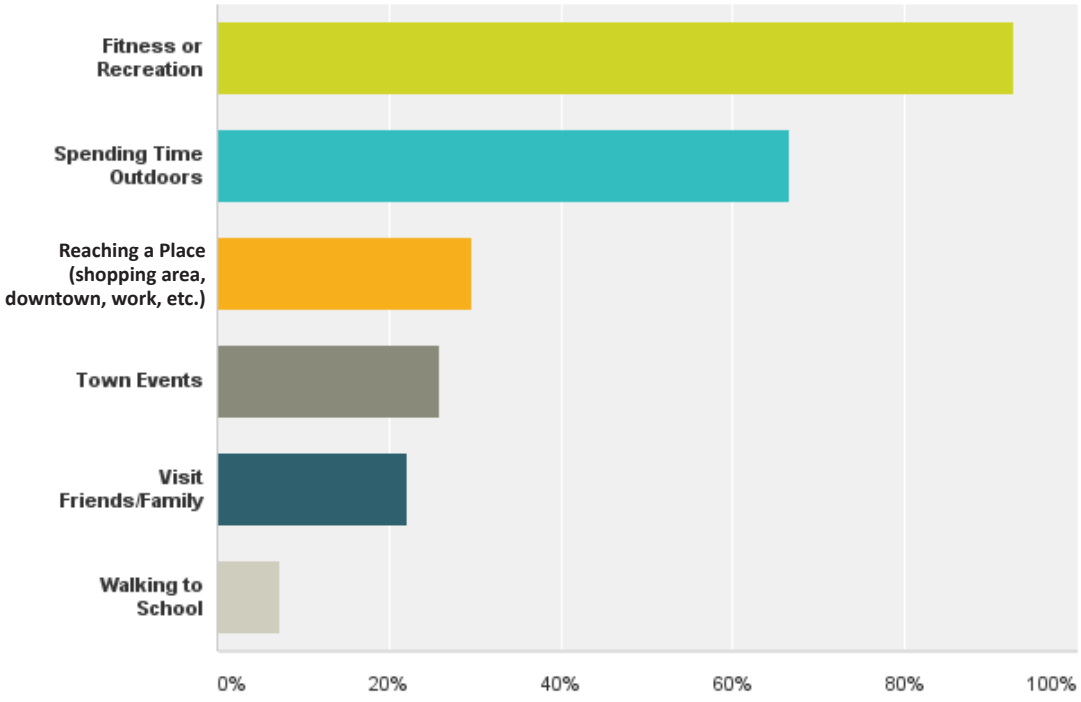
6. In your opinion, which road crossings are the least safe to walk across? (Please select any that apply)



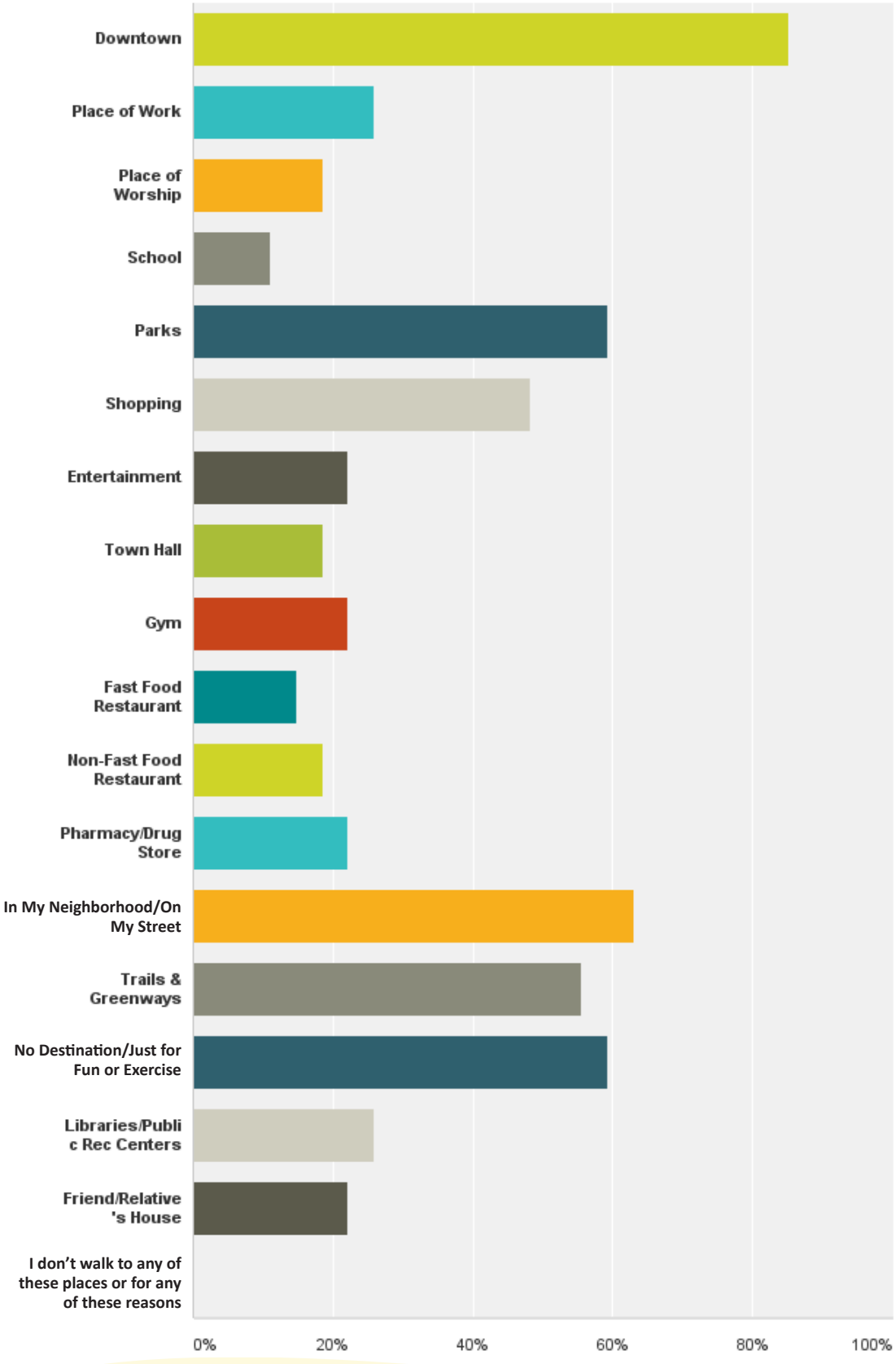
7. How often do you walk now? (Check one)



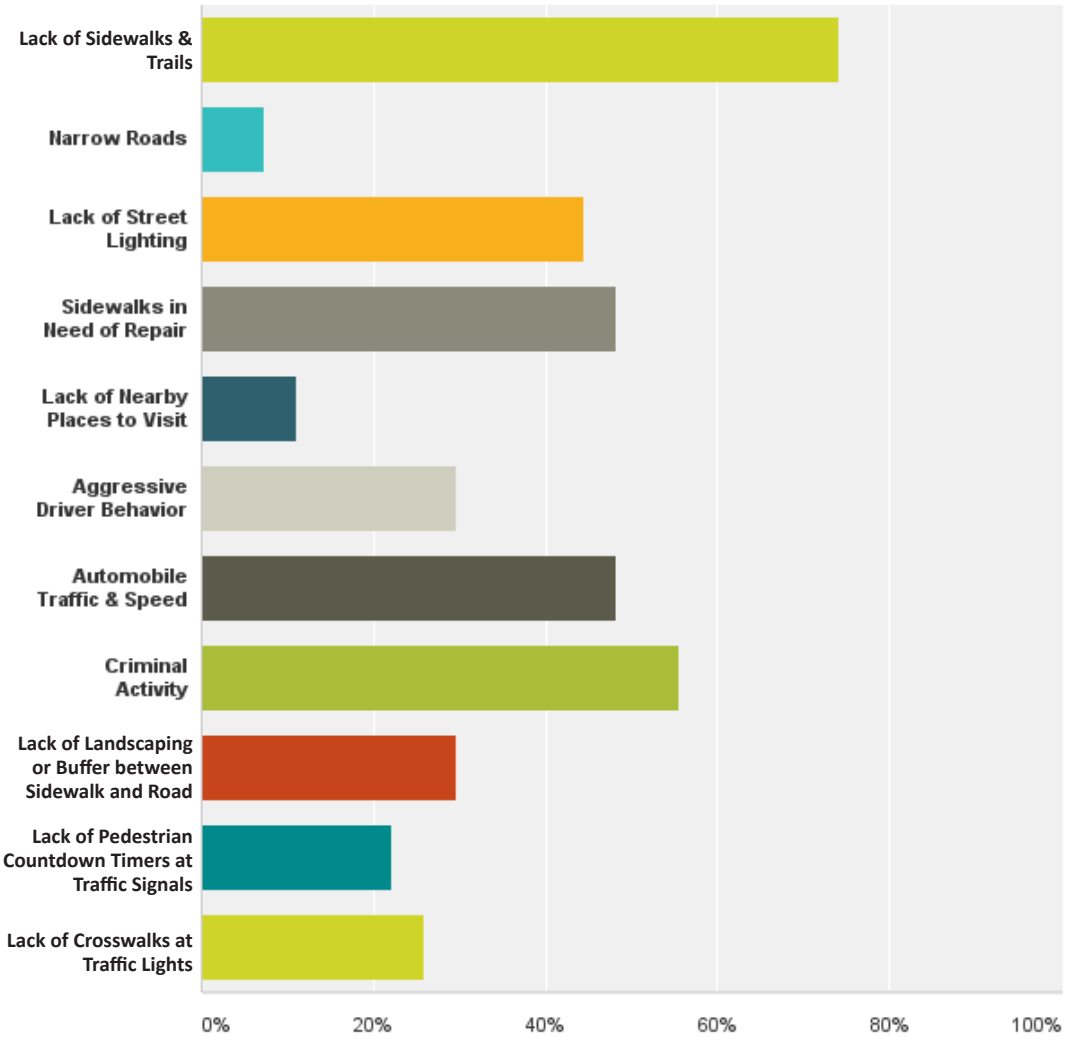
8. Why do you walk now, and/or would you want to walk in the future? (Please select any that apply)



9. Where do you walk, or where would you like to walk? (Please select any that apply)



10. What makes walking difficult in Whiteville? (Please select any that apply)



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