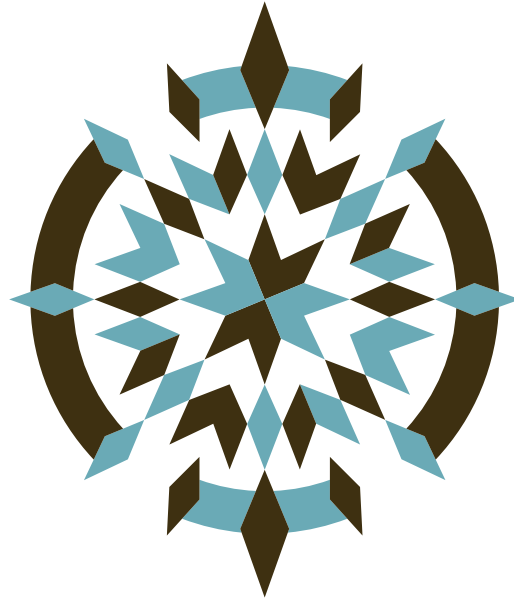


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CAROLINA THREAD TRAIL  
MASTER PLAN  
FOR LINCOLN COUNTY  
COMMUNITIES

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**CAROLINA  
THREAD  
TRAIL**

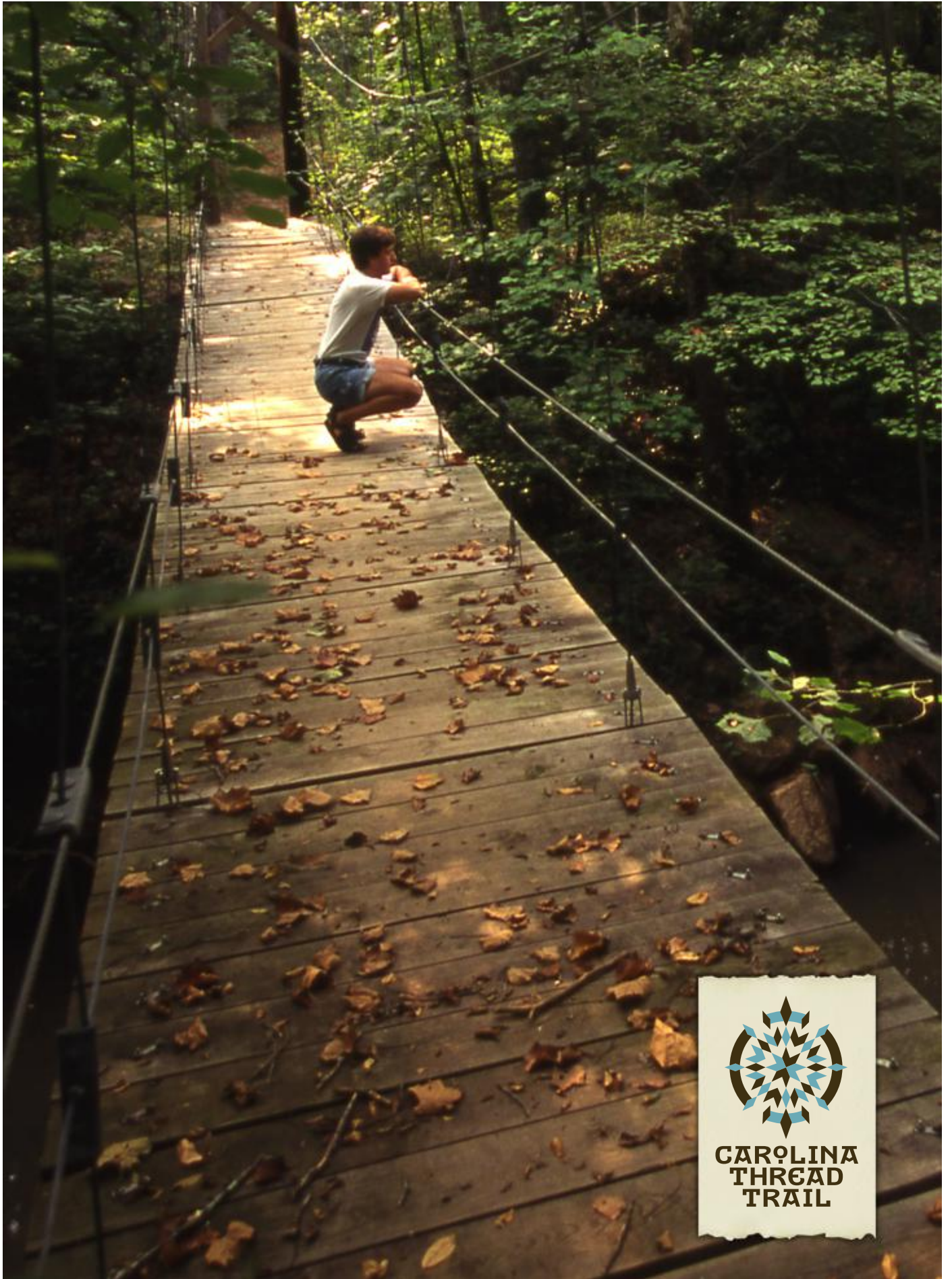
*Weaving  
Communities  
Together*

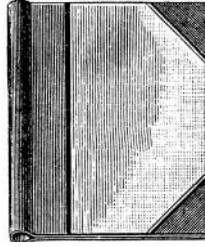
NOVEMBER 2009



## VISION STATEMENT

**A network of bicycle and pedestrian trails will connect the communities, businesses, schools, parks and historic resources of Lincoln County, offering valuable opportunities for recreation, transportation, and economic development. This network of trails will also contribute to the future viability of the County through the conservation of open space along trail corridors, protecting natural resources and, wherever possible, providing opportunities to experience the County's rich history. The linear parks will be open to all, providing positive opportunities for active living among neighbors, coworkers, families, visitors, and friends. Lincoln County will also feature its own portion of the Carolina Thread Trail, linking the local trail network to people and places throughout the 15-county region.**





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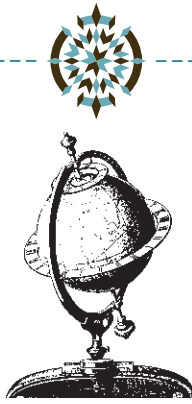
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## ACKNOWLEDGEMENTS

*The following organizations signed resolutions of support at the outset of this effort to work with neighboring communities and with the Carolina Thread Trail to plan, design, and build trails that will connect our communities:*

**East Lincoln Betterment Association**

**Lincoln County Board of Commissioners**

**City of Lincolnton**

**Lincolnton-Lincoln County Chamber of Commerce**

**Lincoln Natural Resources Committee**

**Lincoln Soil & Water Conservation District Board**

**PROBUS Club of Lake Norman**

*Lincoln County Communities  
Carolina Thread Trail ~  
Trail Advisory Committee Members:*

**Tom Anderson**

*Lincoln County Board of Commissioners*

**Sam Ausband**

*Interested Citizen*

**Andrew Bryant**

*Lincoln County, Staff Support*

**Larry Cagle**

*Woodmill Winery*

**Pete Capece**

*Co-Chair*

**Rob Carson**

*Lincoln County, Staff Support*

**Dr. Les Cloninger**

*Lincolnton City Council*

**Jerry Cochrane**

*Interested Citizen*

**Patricia Finster**

*City of Lincolnton, Staff Support*

**Steve Gurley**

*City of Lincolnton*

**Bjorn Hansen**

*Lake Norman RPO*

**Jason Harpe**

*Lincoln County Historical Association*

**Ray Holmes**

*East Lincoln Betterment Association*

**Sylvia Holmes**

*Lincoln County Recreation Commission*



**Tom Howard**

*Catawba Lands Conservancy Board*

**Erma Deen Hoyle**

*Lincoln County Parks and Recreation*

**Allen Hubbard**

*Lincoln Natural Resources Committee*

**Harry Huss**

*Interested Citizen*

**Ron Johnston**

*YMCA*

**Scott Jolley**

*Duke Energy*

**Joe Kiser**

*Interested Citizen*

**Martha Lide**

*East Lincoln Betterment Association*

**Rick McSwain**

*Soil and Water Conservation District*

**Laura Shidal**

*Mountain Island Educational State Forest*

**Kevin Starr**

*Cooperative Extension Services*

**Sylvia Wallace**

*Co-Chair, Lincoln Natural Resources Committee*

**Randy Williams**

*Lincoln County*

**Craig Wyant**

*A Fine Line Design*

*Thanks also to the members of the Mapping Technical Advisory Team (MTAT) who assisted in collecting and analyzing data, and proposing alternative scenarios for consideration by the public and the steering committee: Robert Carson (Lincoln County), Andrew Bryant (Lincoln County), Steve Gurley (City of Lincoln), Tom Howard (Catawba Lands Conservancy Board), Jason Harpe (Lincoln County Historical Association), Allen Hubbard (Lincoln Natural Resources Committee), and Matt Card (Catawba Lands Conservancy).*



## EXECUTIVE SUMMARY

This report outlines a means for long-term coordination of greenway and trail development within the communities of Lincoln County to help promote the preservation and improvement of residents' quality of life. It builds on past plans (including the Lincolnton Greenway Master Plan of 2002) to integrate all existing and proposed municipal and county trails with greenway/trail segments that will together create a comprehensive multi-use network for connecting people to popular destinations throughout Lincoln County and surrounding counties.

This plan is the outcome of a nine-month public process spearheaded by the Carolina Thread Trail initiative and supervised by a Trail Advisory Committee of representatives from municipal and county governments as well as interested organizations, businesses and individuals. The Carolina Thread Trail's mission is to bring resources to the 15 county region in the south-central piedmont of North Carolina and the north-central portion of South Carolina in order to create an interconnected trail system with major regional trails designated as the Carolina Thread Trail (CTT).

One outcome of the planning process is a map that includes a network of trails recommended for inclusion in community trail and greenway plans, as applicable (See pages 32-40). Trails displayed in purple are those recommended for the CTT designation and trails in green are presented for consideration to further tie together the people and destinations of Lincoln County communities. The trail corridors in this plan are depicted with ¼ mile wide lines to show the general location of the intended route. The trail itself will be narrower, in recognition that communities will determine the exact location of their segments upon trail design and development.

In summary, the 89-mile CTT greenway network in Lincoln County includes about 2 miles of existing trails, and it incorporates many trails that were already proposed in the City of Lincolnton's 2002 Greenway Master Plan.

About 51% of The Thread in Lincoln County would be along streams and river corridors, 23% along existing bike routes (10.6 miles of which coincide with the Lake Norman Bike Route), 9% along utility rights-of-way where feasible, 9% along road rights-of-way, and about 5% along inactive rail lines.

It is well understood that building a trail system of this scale is no small undertaking. Segments will likely appear one at a time, and adjustments will be made to the proposed routes as circumstances change and more information becomes available. Similarly, trail development will follow various access and use arrangements with multiple partners. Nevertheless, the following actions are recommended to take this plan from concept to reality in an intentional, coordinated, fair and transparent way, consistent with the planning to date.

### ADOPT THIS PLAN

The first order of business will be to have Lincoln County and the City of Lincolnton adopt this plan and make it an official element of their comprehensive plan. In addition to adopting the Master Plan, the City and the County may wish or need to make revisions to zoning ordinances, land development codes and other policies, plans and procedures that enable greenway development to take place. It will be incumbent upon the local governments to properly assess the changes that are needed and to make these changes, amendments and policy decisions as soon as practically possible.

### BUILD PUBLIC SUPPORT

One of the most important implementation steps is the continued involvement of residents in the future greenway development. It is recommended that the County constitute a Greenways and Trails Advisory Committee, as a component of the Planning Department or as a stand alone advisory group to the Board of County Commissioners. This advisory





group can provide valuable assistance, feedback, support and coordination on all aspects of implementation.

The County should also form partnerships with other non-profits and consider convening a partnership among local governments, in particular park and recreation providers, to coordinate future greenway implementation. One of the goals with non-profits would be to work together to secure land and/or rights-of-way for greenway corridors.

#### COMPLETE PRIORITY GREENWAY SEGMENTS

This master plan has identified some top priority greenway corridors and projects that should be developed by Lincoln County and its partners. The CTT staff stands ready to assist the county and its partners with implementation, including providing catalytic grants that can jump start acquisition and trail development. In order to develop the future greenway system in an orderly and systematic manner, the following criteria is used to select trail segments for future phased development: *Proximity to population; available land/right-of-way; functionality; ease of development; and, available funding.* Based on this criteria, the following segments of Carolina Thread Trail are recommended as priorities (see map on page 40):

- Clark Creek and Walker Creek Connector
- Rail Trail Extensions
- Rail Trail to Lick Run
- Forney Creek Corridor
- Connector: East Lincoln Recreation Center to Hwy 73
- Hwy 73 to State Educational Forest
- Connector to Beatties Ford Park

#### DEFINE FUNDING AND FINANCING

It is recommended that local, state and federal funding is used to achieve implementation objectives. Page 48 offers a summary of possible funding sources for use in developing the Lincoln County Greenway System, and Appendix III provides brief descriptions of many more funding sources available.

#### EVALUATE LAND OR RIGHT-OF-WAY ACQUISITION OPTIONS

Acquiring land and/or right of way for the countywide greenway system will be one of the most important objectives for the County and its partners. Methods of land acquisition can include donations, purchase, zoning/development regulations, developer contributions, etc. Descriptions of each method are provided in Appendix IV of this plan.

#### DESIGN, CONSTRUCT AND MAINTAIN TRAILS

Once the land or right-of-way for a trail segment has been acquired, trail design and development will follow. The three most common trail construction surfaces are granite screening, asphalt, and concrete. The trail design process should accurately describe the intended final use in order to fully understand the costs and potential savings when making a decision between one surface material over another. Appendix V offers detailed guidance for designing and constructing trails in Lincoln County.

#### CONCLUSION

Through a collaborative planning process, community members in Lincoln County articulated a vision for a community greenway system and put forth thoughtful recommendations for how best to connect people and places with trails throughout the county. The many community partners who have been involved in the planning process recognize the urgency of starting a county-wide and region-wide linear park system now, while opportunities still exist for making connections and linking important places. They also recognize that this plan will not be implemented overnight, and that while segments should begin appearing soon, it will take years, if not decades, to link them all together. The time to start is now.

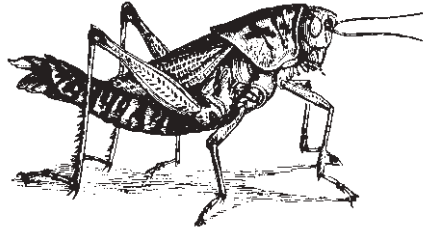
# COMMUNITY INPUT



## COMMUNITY INPUT



With a key guiding principle of the Carolina Thread Trail being Community Self-Determination, the master planning process was infused with citizen input with 200+ participating in person and 300+ providing comments online.



## CHAPTER 1. INTRODUCTION

The Carolina Thread Trail Master Plan for Lincoln County Communities defines a 100-year vision, 20-year master plan and 5-year action plan for developing an interconnected system of lands and waters that will conserve important natural resources and, over time, provide public access to some of the most scenic and important cultural areas of the County. Implementation of this plan will take place during the course of the next several decades, and it is important for all county residents to understand that participation in this greenway program will occur through a partnership with willing landowners. Most importantly, this Plan defines Lincoln County's desire to be linked with the 15-county regional Carolina Thread Trail (CTT, or 'The Thread'). Careful thought and consideration has been given to select routes and corridors that will become designated as elements of The Thread.

With oversight provided, a Trail Advisory Committee of municipal, county and interested non-governmental organizations, residents in Lincoln County, North Carolina, participated in a locally-driven process to create this Master Plan. This plan is meant to serve as a guiding document for greenway and trail development throughout the county.

This master plan includes an introduction to the benefits of greenways and trails, a description of current conditions in Lincoln County, summary of the planning process, a concept map for a network of greenways and trails throughout the county, introduction to the Carolina Thread Trail and proposed route, and a description of recommended implementation steps. These action steps are intended to provide ideas for local governments to fund segments and expeditiously put them on the ground.

The Carolina Thread Trail initiative, which has helped to spur the development of this plan, is an effort to encourage

15 counties in the south-central piedmont of North Carolina and the north-central portion of South Carolina to create a large, interconnected trail system that will preserve and increase the quality of life within the local communities. This plan presents a conceptual route for trails throughout the county, some of which will receive the CTT designation. Lands to be incorporated can include wildlife habitat, environmentally fragile lands, open fields and forests.

In general, a greenway is a linear corridor of undeveloped land preserved for recreational use, transportation or environmental protection. A trail is a linear route on land or water with protected status and public access typically for recreation or transportation purposes. For the sake of brevity, the word "trail" will be used throughout the plan to encompass both types of amenities.

### CAROLINA THREAD TRAIL

The Carolina Thread Trail is a regional network of trails and conserved land that will reach approximately 2.3 million citizens. It will link people, places, cities, towns and attractions. The Thread will help preserve our natural areas and will be a place for the exploration of nature, culture, science and history, for family adventure and celebrations of friendship. It will be for young, old, and people of all abilities. This is a landmark project, and creates a legacy that will give so much, to so many, for so long.

The scale of the Carolina Thread Trail's connectivity is unparalleled and is based on certain guiding principles and core values: collaboration, community self determination, connectivity, inclusivity, leverage and respect for the land, and respect for landowners.



### COLLABORATION AND SELF-DETERMINATION

Collaboration and communication among the communities of Lincoln County is as important as connectivity. This master plan has been produced through a collaborative process in which greenway corridors have been conceived and located in cooperation with adjoining communities in such a way that regional asset is created from a series of interrelated local decisions and actions.

### CONNECTIVITY AND INCLUSIVITY

Creating connections between communities and historical, cultural and recreational attractions is important. The Carolina Thread Trail seeks to create a region known for its “ribbons of green” connecting people to each other and to their heritage. In offering the vision of greater community interaction, the program seeks to build bonds among diverse neighborhoods, as well as afford all residents greater access to our natural surroundings. Through this master plan, these goals are established.

### LEVERAGE

The success of this master plan depends on generating additional investment of outside capital in the county’s natural resources. Funding sources at the local, state and federal level are included in Chapter 5 and Appendix III.

### RESPECT FOR THE LAND AND LANDOWNERS

During the planning process, Lincoln County and its partners determined the locations for countywide greenways and segments of the Carolina Thread Trail by considering alternative routes and alignments that took into account public lands, property owned by landowners willing to participate in future greenway development and land developers that view greenways as an amenity to neighborhoods. The broadly defined greenway corridors

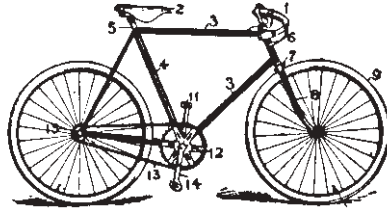
present multiple opportunities and adjustments for a defined route, so that landowners can continue to be involved in fine tuning and defining the location of trails and amenities. Expert trail builders indicate that trails are built by assimilating land parcels over time in this manner and that eminent domain is very rarely, if ever, used.

Through an inclusive, collaborative process, Lincoln County and the City of Lincoln have determined where the countywide greenway system will be developed and how this system links to the Carolina Thread Trail. Not all local trails and greenways are destined to be part of The Thread. Analogous to our highway systems, The Thread will be developed as a “green interstate” focused on linking local trails and regionally significant attractions. Other trails will continue to exist or be planned but may not receive The Thread designation. Local trails will retain their own identities, whether or not they are designated as part of The Thread.

The look and feel of the Carolina Thread Trail may vary from community to community, county to county. Designation as the Carolina Thread Trail will signify that a particular trail is part of a plan to create an interconnected system, and a plan created by local communities working together with their neighbors to identify connection points and to build trails that will grow together over time.



*Respect for landowners is a guiding principle of The Thread.*



## CHAPTER 2. PUBLIC BENEFITS OF TRAILS AND GREENWAYS

When considering the dedication in time and resources that it will take to fulfill the goals of this plan, it is also important to measure the immense value of trails and greenways. Trails help to improve people’s health and fitness, enhance environmental conditions, generate economic activity, and will contribute to a greater sense of community. Scores of studies from experts in the fields of public health, urban planning, urban ecology, real estate, transportation, sociology, and economics have supported such claims and have acknowledged the substantial value in supporting trails and greenways.

Communities across the United States and throughout the world are implementing strategies for greenway and trail development, and have been doing so for many years. They do this because of their obligations to promote health, safety and welfare, and also because of the growing awareness of the many public benefits outlined below.

### TRAILS ENHANCE VALUE OF REAL ESTATE

There are many examples, both nationally and locally, that affirm the positive connection between greenspace and property values.<sup>1</sup> Residential properties will realize a greater gain in value the closer they are located to trails and greenspace. In the 2007 *Economic Impact Study: The Potential Economic Impacts of the Proposed Carolina Thread Trail*, homes in the affected area of the Carolina Thread Trail are estimated to increase approximately 4% in value after trail construction.

According to a 2002 survey of homebuyers by the National Association of Home Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices.<sup>2</sup> Additionally, the study found that ‘trail availability’ outranked 16 other options including security, ball fields, golf courses, parks, and access to shopping or business centers.

Examples of where this is true in the region are as follows:

#### ***Testimonial from Bill Gartland, VP, Crosland:***

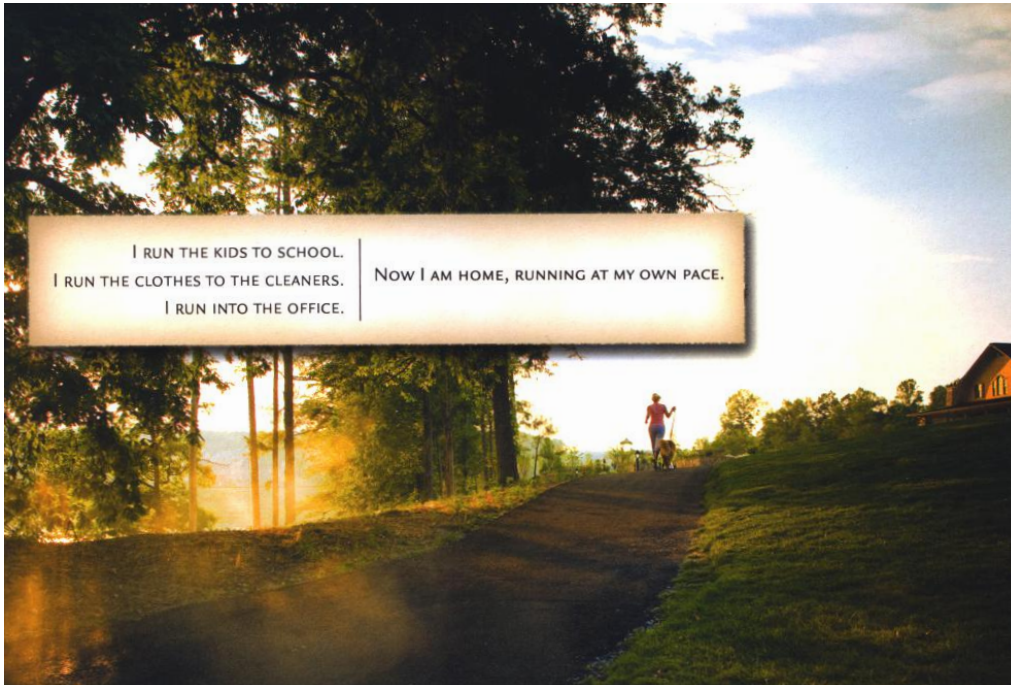
“We feel that greenway trails are a great amenity for residential & mixed use developments as walking trails and open space are critical elements for making great places. It is difficult to quantify the impact of incorporating greenways on property values as they are only one component of the amenity package which include parks, pools, etc., in our communities. However, homes that front on significant greenway space are easier to sell and do often generate premiums of 5% or more than comparable homes internal to the neighborhood.” (Bill Gartland, Vice President, Crosland, 2006)

#### ***Testimonial from Ivan Jecklin, VP, Weinstein Properties:***

“We market the (Bexley) greenway as a great amenity for our residents. If we are looking at two equal properties and one had a greenway and the other did not, we would definitely go for the one with the greenway!” (Jecklin, 2006)

Findings from the Trust for Public Land’s *Economic Benefits of Parks and Open Space*, and the Rails-to-Trails Conservancy’s *Economic Benefits of Trails and Greenways* (listed below) illustrate how the value of trails are realized in property values across the country:

- Apex, NC: The Shepard’s Vineyard housing development added \$5,000 to the price of 40 homes adjacent to the regional greenway – and those homes were still the first to sell.<sup>3</sup>



I RUN THE KIDS TO SCHOOL.  
I RUN THE CLOTHES TO THE CLEANERS.  
I RUN INTO THE OFFICE.

Now I AM HOME, RUNNING AT MY OWN PACE.

Developers are taking advantage of the positive impact of trails on property values by marketing their greenways; left and below are examples of two magazine advertisements from North Carolina developers that focus their marketing on greenways.



**I WANT**  
top schools nearby  
my kids to get fresh air  
my kids to have lots of friends  
our TV to be ignored

A place where video games get lonely from lack of use. A place where people are always going somewhere—families hiking on the miles of trails, or kids biking to our onsite top-rated schools. A place with best-in-class amenities, including a huge Aquatic Club. A place with a natural setting and tight-knit neighbors that always seem to be doing something together. All this and beautiful homes to match? That's FishHawk Ranch.





- Front Royal, VA: A developer who donated a 50-foot-wide, seven-mile-long easement along a popular trail sold all 50 parcels bordering the trail in only four months.
- Salem, OR: Land adjacent to a greenbelt was found to be worth about \$1,200 an acre more than land only 1000 feet away.
- Oakland, CA: A three-mile greenbelt around Lake Merritt, near the city center, was found to add \$41 million to surrounding property values.
- Seattle, WA: Homes bordering the 12-mile Burke-Gilman trail sold for six percent more than other houses of comparable size.
- Brown County, WI: Lots adjacent to the Mountain Bay Trail sold faster for an average of nine percent more than similar property not located next to the trail.
- Dayton, OH: Five percent of the selling price of homes near the Cox Arboretum and park was attributable to the proximity of that open space.

#### TRAIL TOURISM CREATES ECONOMIC IMPACTS

Tourism and recreation-related revenues from trails and greenways come in several forms. Trails and greenways create opportunities in construction and maintenance, recreation rentals (such as bicycles, kayaks, and canoes), recreation services (such as shuttle buses and guided tours), historic preservation, restaurants and lodging.

In nearby Cabarrus County (also part of the Carolina Thread Trail), the tourism benefits of trails and greenways are becoming known and quantified, as described by the following:

***Testimonial from John Cox, CEO, Cabarrus Regional Partnership:*** “Cox said he feels a pathway (along the Rocky River in Concord) connecting the golf club with the hotel would be a certain draw for tourists, adding that a walkway encompassing the entire Concord Mills and Lowe’s Motor Speedway area would be ideal for the area.” (Independent Tribune, 2006. In reference to Cabarrus Regional Partnership CEO, John Cox)

Expected tourism benefits from the fully built-out multi-county trail in the 2007 Potential Economic Impacts of the Proposed Carolina Thread Trail study are \$42-\$84 million in new tourism spending for the local economy and \$3-\$6 million in additional state and local tax revenues.

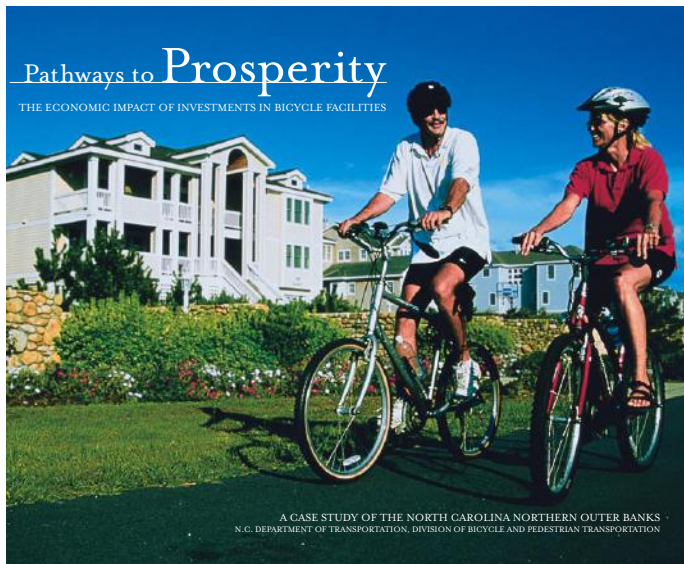
#### ***Other Tourism related benefits include:***

- The Outer Banks, NC: Bicycling is estimated to have an annual economic impact of \$60 million and 1,407 jobs supported from the 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area. The annual return on bicycle facility development in the Outer Banks is approximately nine times higher than the initial investment.<sup>4</sup>
- Damascus, VA: At the Virginia Creeper Trail, a 34-mile trail in southwestern Virginia, locals and non-locals spend approximately \$2.5 million annually





Download this full report, "Pathways to Prosperity" from:  
[http://ncdot.org/transit/bicycle/safety/safety\\_economicimpact.html](http://ncdot.org/transit/bicycle/safety/safety_economicimpact.html)



related to their recreation visits. Of this amount, non-local visitors spend about \$1.2 million directly in the Washington and Grayson County economies.<sup>5</sup>

- Morgantown, WV: The 4.5-mile Mon River trail system is credited by the Convention and Visitors Bureau for revitalizing an entire district of the city, with a reported \$200 million in private investment as a direct result of the trail.<sup>6</sup>
- San Antonio, TX: Riverwalk Park, created for \$425,000, has surpassed the Alamo as the most popular attraction for the city's \$3.5-billion tourism industry.<sup>7</sup>
- Tallahassee, FL: The Florida Department of Environmental Protection Office of Greenways and Trails estimate an economic benefit of \$2.2 million annually from the 16-mile St. Marks Trail.<sup>8</sup>

- Pittsburgh, PA: Mayor Tom Murphy credits trail construction for contributing significantly to a dramatic downtown revitalization.
- Allegheny Passage, PA: The direct economic impact of the trail exceeded \$14 million a year, encouraging the development of several new businesses and a rise in property values in the first trailhead town.
- Leadville, CO: In the months following the opening of the Mineral Belt Trail, the city reported a 19 percent increase in sales tax revenues.
- Dallas, TX: The 20-mile Mineral Wells to Weatherford Trail attracts 300,000 people annually and generates local revenues of two million dollars.

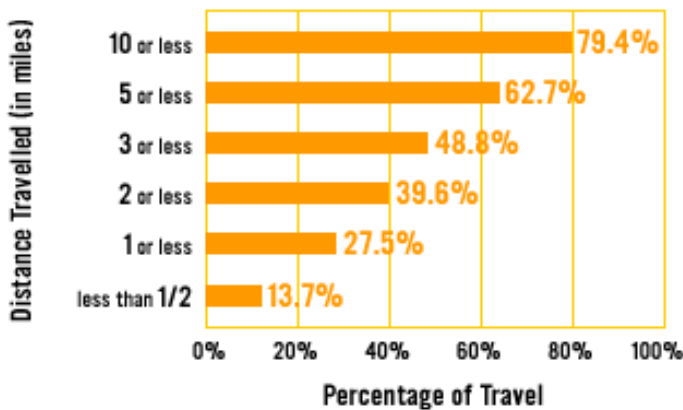
#### BICYCLE AND PEDESTRIAN TRANSPORTATION

The sprawling nature of many land development patterns often leaves residents and visitors with no choice but to drive, even for short trips. In fact, two-thirds of all trips we make are for a distance of five miles or less. Surveys by the Federal Highway Administration show that Americans are willing to walk as far as two miles to a destination and bicycle as far as five miles. A complete trail network, as part of the local transportation system, will offer effective transportation alternatives by connecting homes, workplaces, schools, parks, downtown, and cultural attractions.

Greenway networks can provide people with alternative transportation links that are currently unavailable. Residents who live in subdivisions outside of downtown areas are able to walk or bicycle downtown for work, or simply for recreation.



'Daily Trip Distances' chart from the Bicycle and Pedestrian Information Center website, [www.pedbikeinfo.org](http://www.pedbikeinfo.org)



Also, regional connectivity through alternative transportation could be achieved once adjacent trail networks are completed and combined.

Additionally, many people do not have access to a vehicle or are not able to drive. According to the National Household Travel Survey (NHTS), one in 12 U.S. households does not own an automobile and approximately 12 percent of persons 15 or older do not drive.<sup>9</sup> An improved greenway network provides greater and safer mobility for these residents.

#### IMPROVING HEALTH THROUGH ACTIVE LIVING

A region's trail network will contribute to the overall health of residents by offering people attractive, safe, accessible places to bike, walk, hike, jog, skate, and possibly places to enjoy water-based trails. In short, the trails network will create better opportunities for active lifestyles. The design of our communities—including towns, subdivisions, transportation systems, parks, trails and other public recreational facilities—affects people's ability to reach the recommended 30 minutes each day of moderately intense physical activity (60 minutes for youth). According to the Centers for Disease Control and

Prevention (CDC), "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".<sup>10</sup>

In identifying a solution, the CDC determined that by creating and improving places in our communities to be physically active, there could be a 25 percent increase in the percentage of people who exercise at least three times a week.<sup>11</sup> This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits.<sup>12</sup> Additionally, as people become more physically active outdoors, they make connections with their neighbors that contribute to the health of their community.

Many public agencies are teaming up with foundations, universities, and private companies to launch a new kind of health campaign that focuses on improving people's options instead of reforming their behavior. A 2005 Newsweek Magazine feature, *Designing Heart-Healthy Communities*, cites the goals of such programs (*italics added*): "The goals range from updating restaurant menus to restoring mass transit, but the most visible efforts focus on making the built environment more conducive to *walking and cycling*."<sup>13</sup> Clearly, the connection between health and trails is becoming common knowledge. The Rails-to-Trails Conservancy puts it simply: "Individuals must choose to exercise, but communities can make that choice easier."

#### CLEAR SKIES, CLEAN RIVERS, AND PROTECTED WILDLIFE

There are a multitude of environmental benefits from trails, greenways, and open spaces that help to protect the essential functions performed by natural ecosystems. Greenways protect and link fragmented habitat and provide opportunities for protecting plant and animal species. Trails and greenways



reduce air pollution by two significant means: first, they provide enjoyable and safe alternatives to the automobile, which reduces the burning of fossil fuels; second, they protect large areas of plants that create oxygen and filter air pollutants such as ozone, sulfur dioxide, carbon monoxide and airborne particles of heavy metal. 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. According to the 2007 *Economic Impact Study: The Potential Economic Impacts of the Proposed Carolina Thread Trail*, 130 tons of air particulate matter would be removed per year with the associated multi-county greenway tree cover.

As an educational tool, trail signage can be designed to inform trail-users about water quality issues particular to each watershed. Such signs could also include tips on how to improve water quality. Similarly, a greenway can serve as a hands-on environmental classroom for people of all ages to experience natural landscapes, furthering environmental awareness.

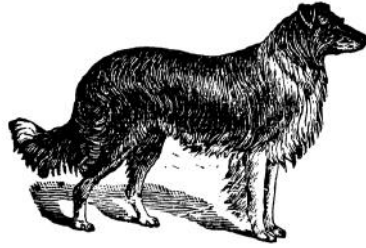
#### PROTECTING PEOPLE AND PROPERTY FROM FLOOD DAMAGE

The protection of open spaces associated with trail and greenway development often also protects natural floodplains along rivers and streams. According to the Federal Emergency Management Agency (FEMA), the implementation of floodplain ordinances is estimated to prevent \$1.1 billion in flood damages annually. By restoring developed floodplains to their natural state and protecting them as greenways, many riverside communities are preventing potential flood damages and related costs.<sup>14</sup>

#### ENHANCING CULTURAL AWARENESS AND COMMUNITY IDENTITY

Trails, greenways, and open space can serve as connections to local heritage by preserving historic places and by providing access to them. They provide a sense of place and an understanding of the past by drawing greater public attention to historic and cultural resources. Trails often provide access to historic sites such as battlegrounds, bridges, buildings, and canals that otherwise would be difficult to access or interpret. Each community and region has its own unique history, its own features and destinations, and its own landscapes. By recognizing, honoring, and connecting these features, the combined results serve to enhance cultural awareness and community identity, potentially attracting tourism. Being aware of the historical and cultural context when naming parks and trails and designing features will further enhance the overall trail- and park-user experience.

Finally, greenways provide opportunities for people to interact with one another outside of work and their immediate neighborhood. Positive interaction (such as through exercising, strolling, or even just saying 'hello') among people from a wider community helps to build trust and awareness of others, which strengthens the overall sense of community.



## CHAPTER 3. EXISTING CONDITIONS

### GEOGRAPHY OF THE STUDY AREA/LAND COVER

Lincoln County is situated in the southwestern portion of North Carolina’s Piedmont region. The county’s boundaries, encompassing 305 square miles of which 299 square miles is land and 8 square miles (2.68%) is water, extend in to form a long rectangle measuring 30 miles in length and 10 miles wide. Bordered by the Catawba River and Lake Norman to the east, Cleveland County to the west, Gaston County to the south and Catawba County to the north, Lincoln County’s landscape contains a rolling terrain full of gentle streams and creeks and natural resources that enrich the area’s environment and contribute to the growing economy and population.

The county was formed in 1779 from the eastern part of Tryon County. It was named for Benjamin Lincoln, a general in the American Revolutionary War. In 1782 the southeastern part of Burke County was annexed to Lincoln County. In 1841 parts of Lincoln County and Rutherford County were combined to form Cleveland County. In 1842 the northern third of Lincoln County became Catawba County. In 1846 the southern half of what was left of Lincoln County became Gaston County.

As early as the mid-18th century, settlers from areas of Pennsylvania, Maryland, Virginia, and South Carolina migrated to this area to take advantage of the inexpensive land and rich farmland prevalent in the Carolina backcountry. The Madison Iron Furnace was built in 1806 near Lincolnton. Madison Cold-blast Charcoal Iron Furnace was built in 1809 on Leiper’s Creek, outside Lincolnton. By 1815, North Carolina had 23 iron works, mostly in the Piedmont area. By 1823, Lincoln County had ten operating forges and four furnaces, producing 900 tons of bar iron and 200 tons of cast hollow ware items.

The County has only one incorporated municipality, Lincolnton, which is located in the central portion of the County and serves as the County seat. The county is divided into five townships: Catawba Springs, Howards Creek, Ironton, Lincolnton, and North Brook. A few of the other unincorporated areas within Lincoln County include Denver and Crouse.

### POPULATION

As of the 2000 Census, there were 63,780 people and in 2006 the population had increased 13% to 71,894 (2006 American Community Survey). This is a moderate increase

**Table 1:**

**A Demographic View of Lincoln County and the Metropolitan Area**

	North Carolina	Cabarrus	Gaston	Lincoln	Mecklenburg	Rowan	Union	York
Population	8,856,505	156,395	199,397	71,894	827,445	136,254	175,272	208,827
Population Growth Since 2000	10.0%	19.0%	5.0%	13.0%	19.0%	5.0%	42.0%	26.0%
Hispanic/Latino	4.7%	8.0%	5.0%	5.7%	10.0%	6.1%	9.0%	3.0%
White	72.1%	81.0%	79.0%	90.2%	60.0%	77.7%	82.0%	77.0%
Black or African American	21.6%	15.0%	14.0%	6.4%	30.0%	15.0%	12.0%	19.0%

Source: US Census Bureau, 2006 American Community Survey (2000 Census used for Lincoln County Race and Ethnicity)



compared to some of the surrounding Counties. However, the creation of Lake Norman in 1963 and with growth from Charlotte expanding, the County’s population has more than doubled since 1970. Quality of life draws some who want to live in small towns and gain employment and other opportunities of a nearby city.

As seen below, the City of Lincolnton grew by 11% between 2000 and 2007. The other unincorporated areas within Lincoln County do not have large enough populations to be reported by the 2006 American Community Survey.

**Table 2:**  
**Population Change in the City of Lincolnton**

	2000	2007	% Increase
Lincolnton	9,965	11,061	11%

Source: The State Demographer’s Office

From 2005-2007 there were 27,000 households in Lincoln County. The average household size was 2.6 people. Families made up 76 percent of the households in Lincoln County.

Lincoln County had a total of 30,000 housing units, 10 percent of which were vacant. Of the total housing units, 71 % was in single-unit structures, 7 % was in multi-unit structures, and 22 % was mobile homes. Forty-three percent of the housing units were built since 1990.

From 2005-2007, 75 % of people 25 years and over had at least graduated from high school and 17 % had a bachelor’s degree or higher. Twenty-five percent were dropouts; they were not enrolled in school and had not graduated from high school. The total school enrollment in Lincoln County was 18,000.

Eighty-three percent of Lincoln County workers drove to work alone from 2005-2007, 11 % carpooled, less than 0.5 % took public transportation, and 2 % used other means. The remaining 3% worked at home. Among those who commuted to work, it took them on average 27.4 minutes to get to work. (American Community Survey 2005-2007)

**ECONOMY**

Employment and industry in Lincoln County began with foundry work and agriculture, and has since diversified to a more rounded economy. Today the economy relies on manufacturing 27%, trade transportation and utilities 19%, professional and business services 6%, educational and health services 17%, and leisure and hospitality 9%. As of 2008, the top ten largest employers in Lincoln County are Lincoln County Schools, The Timken Co (manufacturing), Lincoln County, RSI Home Products (manufacturing), Lincoln Health Systems, Wal-Mart Assoc (trade transportation and utilities), Julius Blum (manufacturing), Robert Bosch Tool Co (manufacturing), Mohican Mills Inc (manufacturing), Actavis (manufacturing). (ES NC Labor Market Information—Workforce In Depth)

The Lincoln County School System services the entire county. Lincoln County Schools has 12 elementary schools, two intermediate schools, five middle schools, four high schools and one school of technology. The system is generally regarded as one of the better school districts in the state with high student achievement and low instances of violence and other problems. Gaston College Lincoln Campus is located within Lincolnton.

As seen in Table 3 on the following page, the unemployment rate as of 2009 was at 14.6%, which was the second highest in the region. As of 2007, the median household income was \$49,250 and the poverty rate was at 10.5%.



**Table 3:**  
**An Economic View of Lincoln County and the Metropolitan Area**

	<i>Persons Below Poverty Percent</i>	<i>Median Household Income</i>	<i>Unemployment Rate</i>
Cabarrus	11.1%	\$51,927	11.7%
Gaston	14.8%	\$42,292	15%
<b>Lincoln</b>	10.5%	\$49,250	14.6%
Mecklenburg	11.0%	\$56,114	11.5%
Rowan	12.3%	\$46,071	13.1%
Union	7.9%	\$60,612	11.3%

Source: US Census Bureau, 2007 American Community Survey and the Employment Security Commission of North Carolina—June 2009  
Unemployment figures

**DEVELOPMENT TRENDS**

The eastern half of Lincoln County being within 30 miles of downtown Charlotte has led to this part of the County to witness dramatic growth over the last 10 years. This growth is beginning to spread to Lincoln County as people are looking for affordable places to live with a small town atmosphere. Furthermore, three interstate highways are within twenty miles of Lincoln to the north (I-40), south (I-85) and east (I-77). Improvements to US Highway 321 and State Highway 16 have been recently completed or are in-progress and planned, making access easier to the interstate highways as well as to the cities of Charlotte, Gastonia and Hickory and to the Charlotte-Douglas International Airport. An industrial park along US 321 nears the Catawba County line and easy access to Lake Norman and Mountain Island Lake also attract new residents and businesses.

The central section of the County is growing as well since this is comprised by the City of Lincolnton which has a large historic district and an attractive downtown. The western section of the County remains mostly rural today and has the largest concentration of farmland within the County.

Due to this high growth in the eastern and central sections, there will be shortages of undeveloped land and increasing traffic congestion. Road improvements will help mitigate these problems in the long term, but pose other problems such as creating physical barriers to citizens trying to access destinations by foot or bicycle.

The University of North Carolina Charlotte Urban Institute, a non-partisan applied research and community outreach center, found that the 15-county region surrounding Charlotte and including Lincoln County is losing open space at a rate of forty-one acres per day as a whole. As of 2006 there was 26% of the land developed within Lincoln County and by 2025 this is expected to grow to 45% at a rate of 5 acres per day. With this high amount of growth projected, smart land use and transportation planning is critical to preserve open space and provide opportunities for pedestrians and bicyclists for transportation and recreation throughout the County. (<http://www.gis.uncc.edu/OSPC/summary/>)

Therefore, with the current and expected growth throughout the County, it will be important for Lincoln County and the City of Lincolnton to actively work together in pursuing planning and constructing parks, open space, greenways/trails, and alternative transportation facilities (pedestrian and bicycle).

**EXISTING PARKS AND TRAILS**

There are 12 parks and recreation areas within Lincoln County totaling nearly 209 acres. Lincoln County Parks and Recreation operates seven countywide parks. Lincolnton operates four parks within the city limits. Lincolnton also has a 1 mile greenway trail constructed on an old railroad bed located in the downtown area. Additionally, four park facilities and programs are provided by four optimist and booster clubs in the county.



*Marcia Cloninger Rail-Trail, Downtown Lincolnnton; Photo by Craig R. Wyant*



A countywide parks and recreation interest survey taken in Lincoln County found that safe walking trails and greenways, close to home neighborhood parks to visit, and indoor fitness facilities top the list of improvements desired by the citizens of Lincoln County.

**Lincoln County** operated parks include:

- Beattys Ford Access
- Block Smith Gym
- East Lincoln Park
- Howards Creek Community Center
- McBee Street Park
- North Brook Community Center
- West Lincoln Park
- Rock Springs Park (undeveloped)

**City of Lincolnton** operated parks include:

- Betty G Ross Park
- City Park
- Highland Drive Park
- Oaklawn School Site
- Marcia H. Cloninger Rail-Trail

The City of Lincolnton completed a Greenway Master Plan in February 2002 that recommends over 12 miles of additional greenway and over 12 miles of greenway neighborhood connectors be constructed in the future within the city limits.

**Additional parks** run by booster and optimist clubs include:

- Boger City Boosters Park
- East Lincoln Optimist Park
- Lincoln Optimist Park
- West Lincoln Optimist Park

Additional recreational facilities within Lincoln County include the Lincoln Medical Center’s partnership with the YMCA community center on East Gaston Street in Lincolnton, a one-mile trail along the South Fork Catawba River that was once an old railroad bed and three golf courses. The South Fork Catawba River Rail Trail was constructed and is maintained by the Catawba Lands Conservancy.

#### COMMUNITY PLANS

Many of the planning documents from the City of Lincolnton and Lincoln County share open space, greenway, and alternative transportation (pedestrian and bicycle) goals. Several of these plans mention the need for greenways and their importance to the community with health, economic viability, connectivity, and open space preservation. A few of the most relevant plans are summarized below:

#### **Lincoln County Land Use Plan (2007)**

The 2007 Lincoln County Land Use Plan was developed to provide goals, guidance, and recommendations for the many various planning realms within the county. This plan set forth and built upon several recommendations for greenways and bicycle and pedestrian facilities. Greenways are mentioned throughout this plan which demonstrates their importance and community behind them. Below are some relevant excerpts from the plan:

“Plan for bikeways, as referenced in Lincoln County CTP, and ensure connectivity for new developments into any proposed bikeway or trail systems.” (page 37)

“Work in concert with Lincolnton to expand current greenways and recreational facilities in greater Lincolnton and beyond.” (page 38)





“Strategy 2.3.1: Plan for pedestrian facilities (sidewalks, trails, and greenways) in new residential developments in a manner that will attract walkers for transportation and recreation purposes, and ensure connection with compatible land uses.” (page 63)

“Strategy 2.3.2: Ensure that commercial and mixed-use nodes are connected by and well served with safe and attractive pedestrian facilities.” (page 63)

“Strategy 3.1.3: Require pedestrian and bicycle connectivity and accessibility to appropriate community uses.” (page 66)

“Objective 5.2: Expand the network of parks, greenways and trails in the County.” (page 72)

“Strategy 5.2.2: Work in concert with Lincolnton and the adjoining local governments to expand current greenways and recreational facilities in greater Lincolnton and beyond.” (page 72)

Recommended greenways from the 2007 Land Use Plan include:

- “A greenway starting at Cowan’s Ford Dam and which extends south along the Catawba River, and then hooks up with Forney Creek and extends north to the Denver area along Campground Road.” (page 50)
- “A greenway along the South Fork River south of Lincolnton.” (page 50)
- “A greenway which connects West Lincoln Park, North Brook Elementary and West Lincoln Middle and High Schools in the western part of the County.” (page 50)

### ***Lincolnton-Lincoln County Comprehensive Parks and Recreation Master Plan (2006)***

This plan examines existing conditions and future recreational needs for both the City of Lincolnton and Lincoln County. The plan made recommendations for new community and neighborhood parks, as well as greenways throughout Lincolnton and Lincoln County. The existing and recommended parks would be connected by the system of greenways. Public input during the creation of this plan identified that walking and hiking trails were among the highest needs not currently met. This plan realizes the importance of greenways connecting to parks and other surrounding communities and recommends 136 miles of greenways throughout the county, as recommended in the Lincolnton Greenway Plan. This plan also established a timeframe for constructing these greenways between 1-10 years and 11+ years.

### ***Lincoln County Comprehensive Transportation Plan (2006)***

The CTP recommends several off-road bicycle paths for bicycle and pedestrian travel. These include the Catawba River Path, Fairfield Forest Road Path, Forney Creek Path, Howards Creek Path, Inactive Rail Corridor, Killian Creek Path, and Webbs Road Path.

### ***Lake Norman Bike Route (2006)***

The Lake Norman Bike Route is a system of connected roadways and multi-use paths encircling Lake Norman totaling 125 miles. This plan sets forth facility recommendations for this bike route including connections to the bike route via greenways. Since Lake Norman rests in several counties and near several municipalities this plan helps to direct and inform agencies toward a connected



network. Below is an excerpt from the plan:

“Multi-purpose paths are recommended as complementary facilities near the route. These paths should connect to the route and encourage additional users from nearby greenways and trails. In the case of land development, local land-use regulating agencies are encouraged to require such improvements as a part of the site plan or subdivision review process. Such paths can also be located on utility corridors or easements, typically associated with electricity, water or sewer lines. There must be sufficient room available to accommodate the 20-foot width, which includes 10 feet of travel surface, and two-foot gravel shoulders on either side.” (Page 12)

The Lake Norman Bike Route Plan is currently being updated with input from both Lincoln County staff and CTT staff, making sure that off-road segments of the LNBR are consistent with CTT routes.

#### ***Lincolnton Main Street 2010 Work Plan (2003)***

This work plan was produced from input from over 100 downtown stakeholders and the Downtown Development Association of Lincolnton to create a vision for the future of downtown. Amongst the many goals within this work plan, the goals within the design work group relate to pedestrian and bicycle transportation in the downtown area. Goals and objectives relevant to the CTT are listed below:

- *Enhance Downtown Pedestrian Environment (page 8):*  
“Correct appearance/safety of cross walks throughout downtown beginning with Court Square.”  
“Encourage outdoor seating and dining”

“Discourage long expanse of blank walls or occupied vacancies”

- *Create Organizational and Physical Connections Between Surrounding Neighborhoods (page 8):*  
“Complete streetscape improvements: sidewalk repairs, street trees, street lights, etc..”  
“Enhance edges of downtown areas”
- *Encourage the Development of Projects that Highlight Our History and Culture (page 10):*  
“Seek ways to assist other groups such as the Historical Association, the Rail Trail Committee,... that will establish Lincolnton as a destination for tourists and enhance the quality of living for our residents.”

#### ***Lincolnton Land Use Plan (2003)***

The 2003 Lincolnton Land Use Plan was developed to provide goals, guidance, and recommendations for the many various planning realms within the city. This plan set forth and built upon several recommendations for greenways and bicycle and pedestrian facilities. Greenways, open space, and trails are mentioned throughout this plan which demonstrates their importance and the support of the community behind them. Below are some relevant excerpts from the plan:

“Open space preservation was viewed as a major priority for the City. Residents expressed a desire to see the City’s greenway system expanded and eventually be linked with the South Fork River. The preservation of Open space in residential subdivisions, as well as tree preservation, in general, were also viewed as being of high importance.” (page 4-7)



“The City has developed a greenway that has been well received by local residents. The City has a long-range greenway masterplan that calls for a greenway to eventually link the City with the South Fork River. New developments that lie along the proposed greenway should be developed in such manner that access to the greenway can be provided.” (page 5-3)

“Objective D: Ensure that residential development promotes pedestrian and bicycle, as well as automotive use.” (page 5-7)

“Strategy R-D4: Establish bicycle paths within the City’s greenway system and also on roads that lead to greenways.” (page 5-7)

“Strategy R-D8: Continue to implement the City’s Greenway Master Plan.” (page 5-7)

“Strategy R-E3: Ensure that residential development is in harmony with and provides pedestrian connectivity to the City’s greenway system.” (page 5-8)

“Objective A: Provide for open space areas throughout the community.” (page 5-19)

“Strategy O-A1: Continue to implement the City’s Greenway Master Plan. Use greenways to connect residential areas with schools, park facilities, commercial areas and other areas that receive significant amounts of pedestrian traffic.” (page 5-19)

### ***Lincolnton Greenway Master Plan (2002)***

The Lincolnton Greenway Master Plan provides a vision

for potential greenways throughout the city and into the surrounding county. These recommendations provide a system of connected corridors that encircle the city and provide a foundation of the core system of trails. Additionally, the plan recommends a number of neighborhood greenways that would serve as connectors to the primary system.

*The main greenway corridors from the 2002 plan are:*

- East Main Street to Danbrook Circle
- Danbrook Circle to Clarks Creek
- Walkers Branch and Clarks Creek to Betty Ross Park
- South Fork Catawba River to Kennedy Drive
- Clark Drive to East Main Street
- Country Club Road to East Main Street Area

*The neighborhood connector greenways from the 2002 plan are:*

- Walkers Branch to East View Drive
- Danbrook Circle to East McBee Street
- Danbrook Circle to East Main Street
- West Pine Street to Walkers Branch
- Proposed Rail Trail to Clarks Creek
- Clarks Creek to Rollings Road
- Clarks Creek to Mauney Drive
- Clarks Creek to Jeb Seagle Drive
- Clarks Creek to North Grove Street
- Betty Ross Park to Highway 150 Bypass
- Highway 150 Bypass to Jacob Trail

### ***Lincoln County Natural Heritage Inventory (2005)***

This document inventories the significant natural areas within Lincoln County by describing their features, documenting natural communities and the many species



of plants and animals associated with them. The habitat conditions, natural processes, and threats are also explained. This inventory was written to aid and provide guidance for land use decisions throughout the county so as to protect these natural features in the county. This document identifies twenty six sites of significance.

**Lake Norman Rural Planning Organization  
Coordinated Comprehensive Public  
Transportation Plan (2009)**

The four transit providers in the Lake Norman RPO coordinated efforts to produce this plan in order to meet increased transportation needs within the area. This plan identifies opportunities for efficiencies and improved marketing to provide and increase services. This plan includes recommendations for park and ride facilities that are near or adjacent to the proposed Carolina Thread Trail routes. Pairing these park and ride facilities with the proposed CTT routes will provide important multi modal transportation opportunities throughout the RPO.

**DESTINATIONS**

Lincoln County offers many destinations for residents and visitors to travel to. While all of these destinations can be reached by an automobile, few can be reached safely by a pedestrian or bicyclist. Therefore it is important to link these destinations together with county wide pedestrian and bicycle facilities such as greenways and trails. Through public input sessions that were held during this planning process, the following destinations were mentioned most frequently.

**Specific Destinations:**

- Betty G Ross Park
- Lincolnton City Park
- West Lincoln Park
- Rock Springs Park
- Beatties Ford Park (Lake Norman Boat Launch)
- East Lincoln Recreation Center
- Marcia H. Cloninger Rail-Trail
- Lincolnton Downtown Festivals
- Gaston College
- Cat Square
- Denver
- Crouse
- Pumpkin Center
- Lowesville
- Lincolnton Historic Districts
- Laboratory Area (Rhyne Preservation Area)
- Ramsour’s Mill & Park
- Lincolnton Highland Drive Park
- Lincolnton Optimist Park
- Rocksprings Campground
- Vesuvius House & Furnace
- Mariposa Rd. Bridge
- Howards Creek Mill
- YMCA in Lincolnton
- YMCA at Forney Creek (Sally’s Y)

**General Destinations:**

- Downtowns
- Schools
- Public parks, and existing trails and greenways
- Historic areas
- Retail centers/services
- Neighborhoods
- Museums
- Libraries
- Waterways
- Natural areas
- Public transportation connections



*Laboratory Area; Photo by Craig R. Wyant*



*Apple Festival in Downtown Lincolnton*



*Beatties Ford Park*



*Historic Foundation and Chimney Remnants at Rock Springs Park*



*Marcia H. Cloninger Rail-Trail  
Photo by Craig R. Wyant*



*Southfork River Rail-Trail; Photo by Craig R. Wyant*



## CHAPTER 4. PROPOSED TRAIL NETWORKS

### PLANNING PROCESS

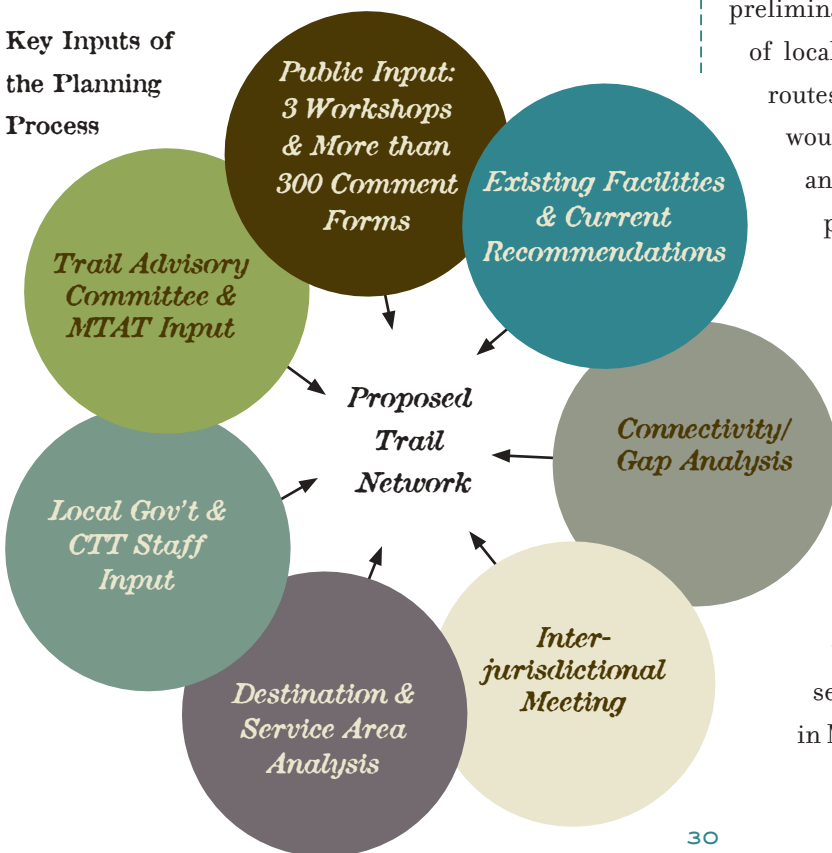
What follows is a description of the planning process for Lincoln County communities that resulted in the recommended conceptual trail routes.

**February 2009:** This process started with a with a Kick-Off Meeting in February 2009. A Trail Advisory Committee with representation from the county, local communities, and local community organizations met to agree upon a process for developing the proposed trail network, while maximizing community input. The key inputs for the planning process are shown in the diagram below. The committee also established the vision statement, found on page 2 of this plan, during the Kick-Off Meeting.

**March 2009:** Before making any recommendations about potential trail corridors, local representatives and plan consultants introduced the project at the first of three public open house workshops in March 2009. Participants viewed recommendations from previous planning efforts, and shared their thoughts about trails in Lincoln County through public input maps, comment forms, and through dialogue with project planners. An online version of the public comment form also began in March, which eventually yielded responses from more than 300 area residents.

**April 2009:** The Trail Advisory Committee and a sub-committee, called the Mapping Technical Advisory Team (MTAT), met several times with planners via teleconference and web-conference to review and develop preliminary draft recommendations. The technical team of local experts used GIS software to map alternative routes for trails. They sought to develop scenarios that would maximize connections to popular destinations, and would build off of existing facilities and current plans. Draft scenarios were based on public input to date, previous plans, gap analysis (making sure recommended trails are linked together), and an analysis of potential destinations and areas served by proposed trails.

### Key Inputs of the Planning Process



**May 2009:** Representatives from the surrounding counties were invited to an interjurisdictional trails meeting to view alternative scenarios and advise on the best way for trails to cross into neighboring counties. The second public open house workshop also took place in May, at Lincolnton City Hall.



**June-July 2009:** The third public open house workshop (held in July at the Lincoln County Family YMCA) featured the draft recommendations to date, building on the work completed in the previous months, and using input from hundreds of local residents that participated in the online comment form.

**August 2009:** After concluding the majority of public input on the draft routes, this planning document was assembled to present all of the information collected throughout the process, including recommendations for implementation. Public support for the plan was very high from those who participated in the planning process, with over 90% indicating that the goal of creating more trails and greenways in Lincoln County is important. (see public input summaries in Appendix I and Appendix II).

**Fall 2009:** A final public input opportunity was held at the Apple Festival on September 19, 2009, where 150 people stopped at the CTT booth to learn about the complete Draft Plan and recommendations. The official adoption process for this plan included presentations to Lincoln County, the City of Lincolnton, and the Lincoln Natural Resources Committee. Presentations covered the planning process, recommendations, and implementation strategy.



CTT booth at the Apple Festival in Downtown Lincolnton

## GREENWAY MASTER PLAN TRAIL ROUTES

**Map 4.1** (See page 32) represents the entire proposed trail network. This map features 87.5 miles of newly proposed regionally significant trails (in purple), supplemented by local county and municipal trails (in green). The regionally significant purple trails qualify for the Carolina Thread Trail designation.

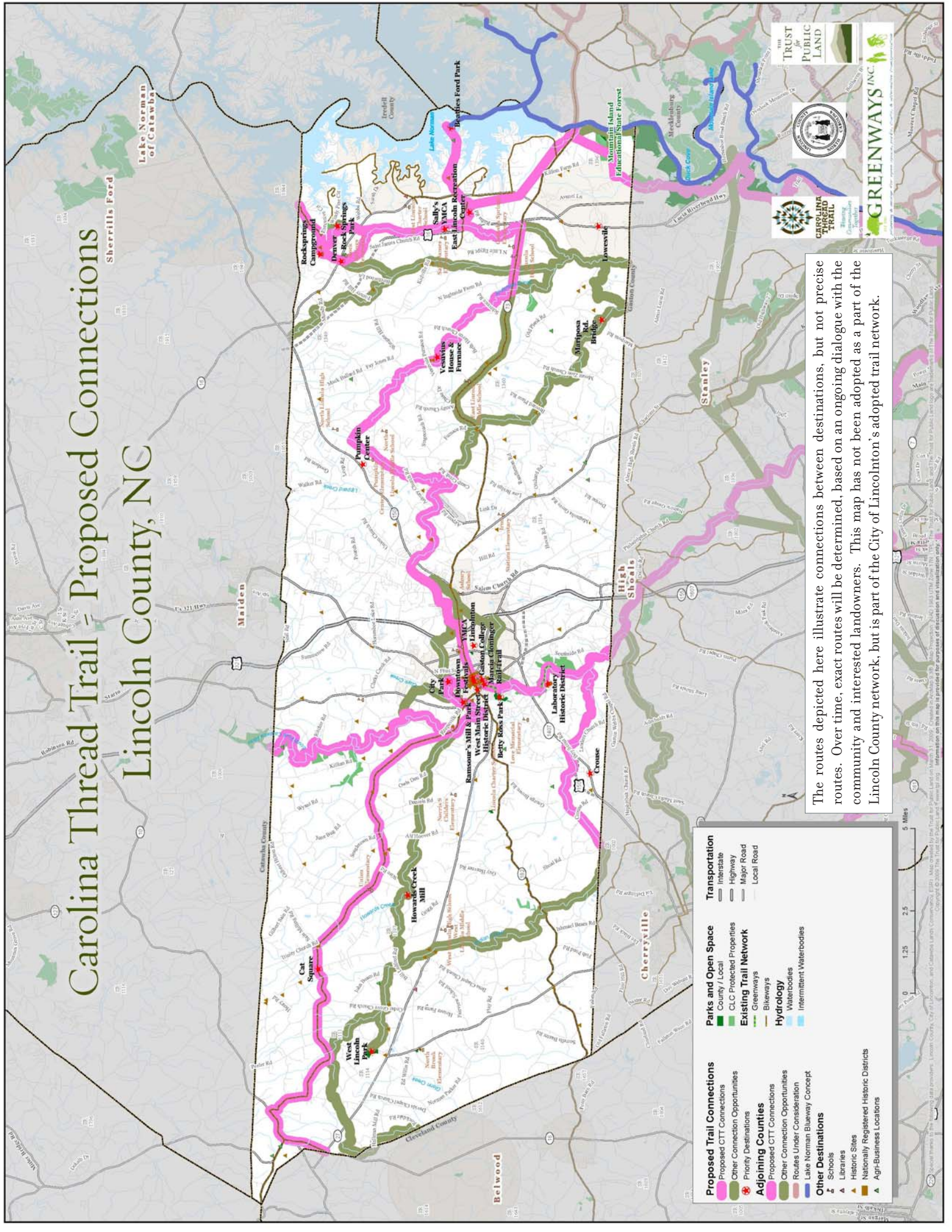
The trail routes in this plan are depicted with ¼ mile wide lines to show the general location of the intended route. The trail itself will be narrower, in recognition that communities will determine the exact location of their segments upon trail design and development.

In sum, the 89.2-mile Carolina Thread Trail route includes 1.7 miles of existing trails, and it incorporates many trails that were already proposed in the City of Lincolnton Greenway Master Plan. About 51% of The Thread in Lincoln County would be along streams and river corridors, 23% along existing bike routes (10.6 miles of which coincide with the Lake Norman Bike Route), 9% along utility rights-of-way where feasible, 9% along road rights-of-way, and about 5% along inactive rail lines. It is understood that the utility rights-of-way are easements and owned by the underlying property owners.

Forty-three percent of all county residents live within ½ mile of the proposed trail route (30,994 residents). About 49% of seniors and children live within that service area, and about 47% of low income households (defined as households with combined income of less than \$35,000 per year, based on 2007 census projections).

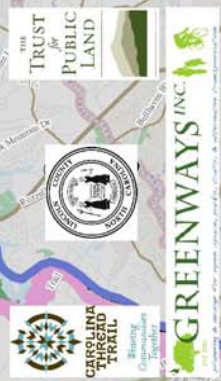
A zoom-in map is provided for each of the priority routes on pages 33-39, and descriptions of all segments begin on page 41.

# Carolina Thread Trail = Proposed Connections Lincoln County, NC



Proposed Trail Connections	Parks and Open Space	Transportation
Proposed CTT Connections	County / Local	Interstate
Other Connection Opportunities	CLC Protected Properties	Highway
Priority Destinations	Existing Trail Network	Major Road
Adjoining Counties	Greenways	Local Road
Proposed CTT Connections	Bikeways	
Other Connection Opportunities	Waterbodies	
Routes Under Consideration	Intermittent Waterbodies	
Lake Norman Blueway Concept		
Other Destinations		
Schools		
Libraries		
Historic Sites		
Nationally Registered Historic Districts		
Agri-Business Locations		

The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincoln County network, but is part of the City of Lincolnton's adopted trail network.



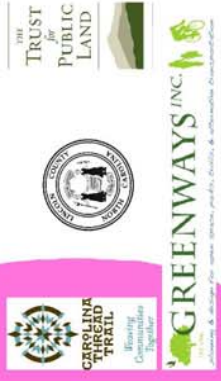
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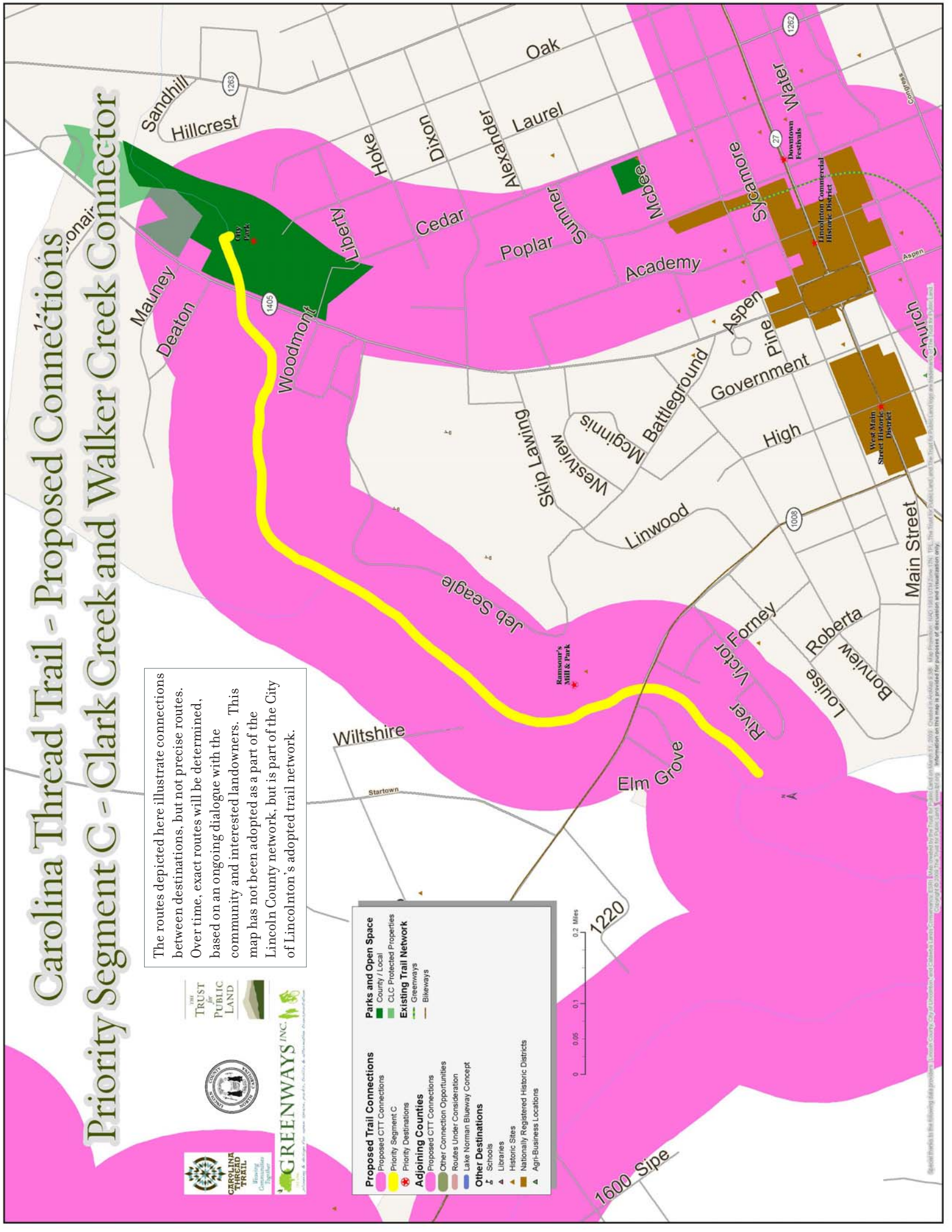
# Carolina Thread Trail - Proposed Connections

## Priority Segment C - Clark Creek and Walker Creek Connector

The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincoln County network, but is part of the City of Lincolnton's adopted trail network.

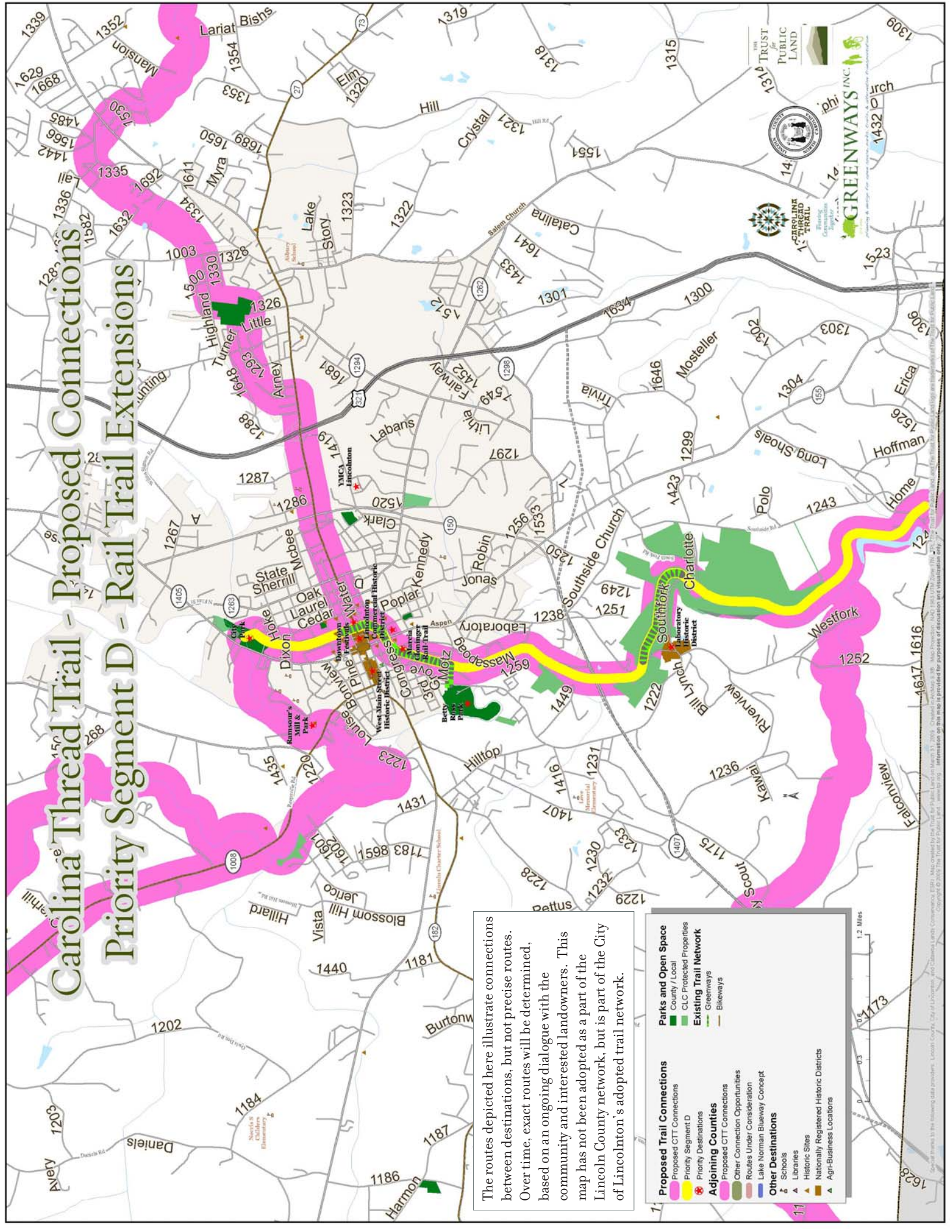


<b>Proposed Trail Connections</b> Proposed CTT Connections Priority Segment C Priority Destinations	<b>Parks and Open Space</b> County / Local CLC Protected Properties
<b>Adjoining Counties</b> Proposed CTT Connections Other Connection Opportunities Routes Under Consideration Lake Norman Blueway Concept	<b>Existing Trail Network</b> Greenways Bikeways
<b>Other Destinations</b> Libraries Schools Historic Sites Nationally Registered Historic Districts Agri-Business Locations	



Special thanks to the following staff members: Lincoln County, City of Lincolnton, and Lincoln County. Map created by The Trust for Public Land on March 13, 2020. Created in ArcGIS 10.8.1. Map Projection: NAD 1983 UTM Zone 18N. The Trust for Public Land and The Trust for Public Land logo are registered trademarks of The Trust for Public Land. Information on this map is provided for purposes of discussion and visualization only.

# Carolina Thread Trail - Proposed Connections Priority Segment D - Rail Trail Extensions



The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincanton County network, but is part of the City of Lincanton's adopted trail network.

Proposed Trail Connections	Parks and Open Space
Proposed CTT Connections	County / Local
Priority Segment D	CLC Protected Properties
Priority Destinations	Existing Trail Network
Adjoining Counties	Greenways
Proposed CTT Connections	Bikeways
Other Connection Opportunities	
Routes Under Consideration	
Lake Norman Blueway Concept	
Other Destinations	
Schools	Libraries
Historic Sites	Nationally Registered Historic Districts
Agri-Business Locations	

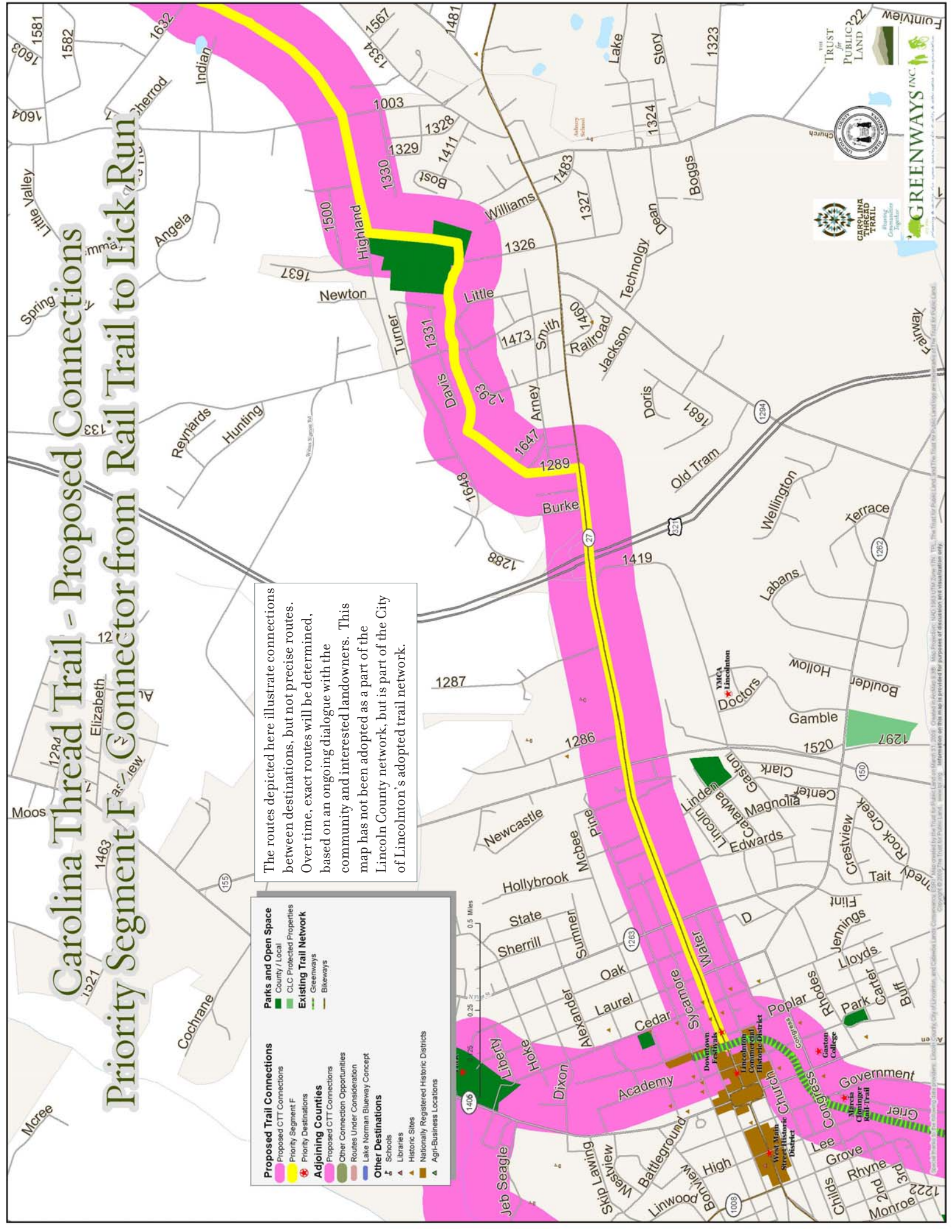
Scale: 0 to 1.2 Miles

Map created for the Trail Map Update on March 31, 2016. Copyright © 2016 The Trust for Public Land. All rights reserved. Information on this map is provided for purposes of discussion and visualization only.

# Carolina Thread Trail - Proposed Connections Priority Segment F - Connector from Rail Trail to Lick Run

- Proposed Trail Connections**
  - Priority Segment F
  - Priority Destinations
  - Adjoining Counties
  - Proposed CTT Connections
  - Other Connection Opportunities
  - Routes Under Consideration
  - Lake Norman Blueway Concept
- Parks and Open Space**
  - County / Local
  - CLC Protected Properties
  - Existing Trail Network
  - Greenways
  - Bikeways
- Other Destinations**
  - Libraries
  - Historic Sites
  - Nationally Registered Historic Districts
  - Agri-Business Locations

The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincoln County network, but is part of the City of Lincolnton's adopted trail network.



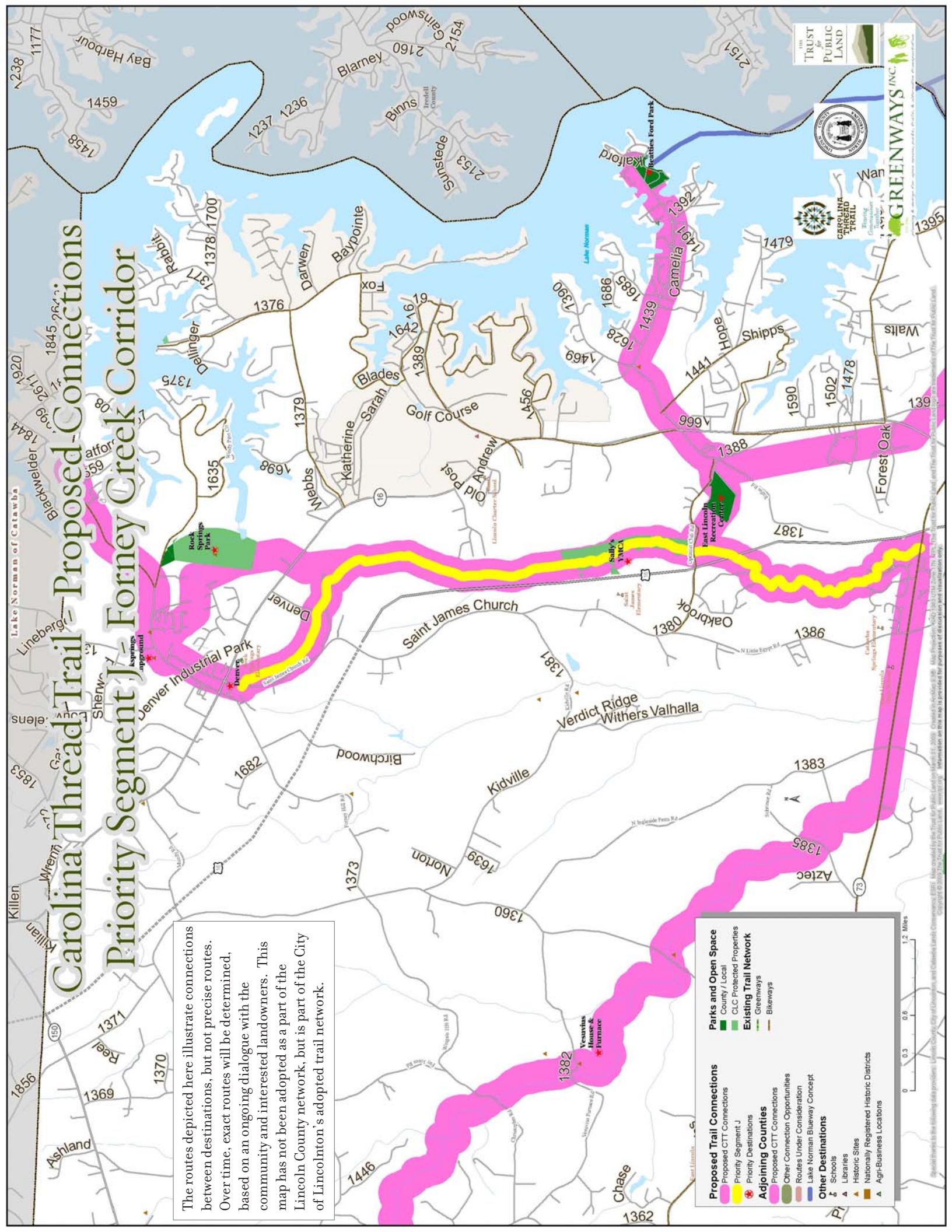
Carolina Thread Trail - Proposed Connections - Priority Segment F - Connector from Rail Trail to Lick Run. This map was created by the City of Lincolnton and the Trust for Public Land. The Trust for Public Land is a 501(c)(3) nonprofit organization. The map is provided for informational purposes only. It is not intended to be used for legal or other purposes. The Trust for Public Land is not responsible for any errors or omissions on this map. © 2023 The Trust for Public Land. www.tpl.org

# Carolina Thread Trail - Proposed Connections

## Priority Segment J - Forney Creek Corridor

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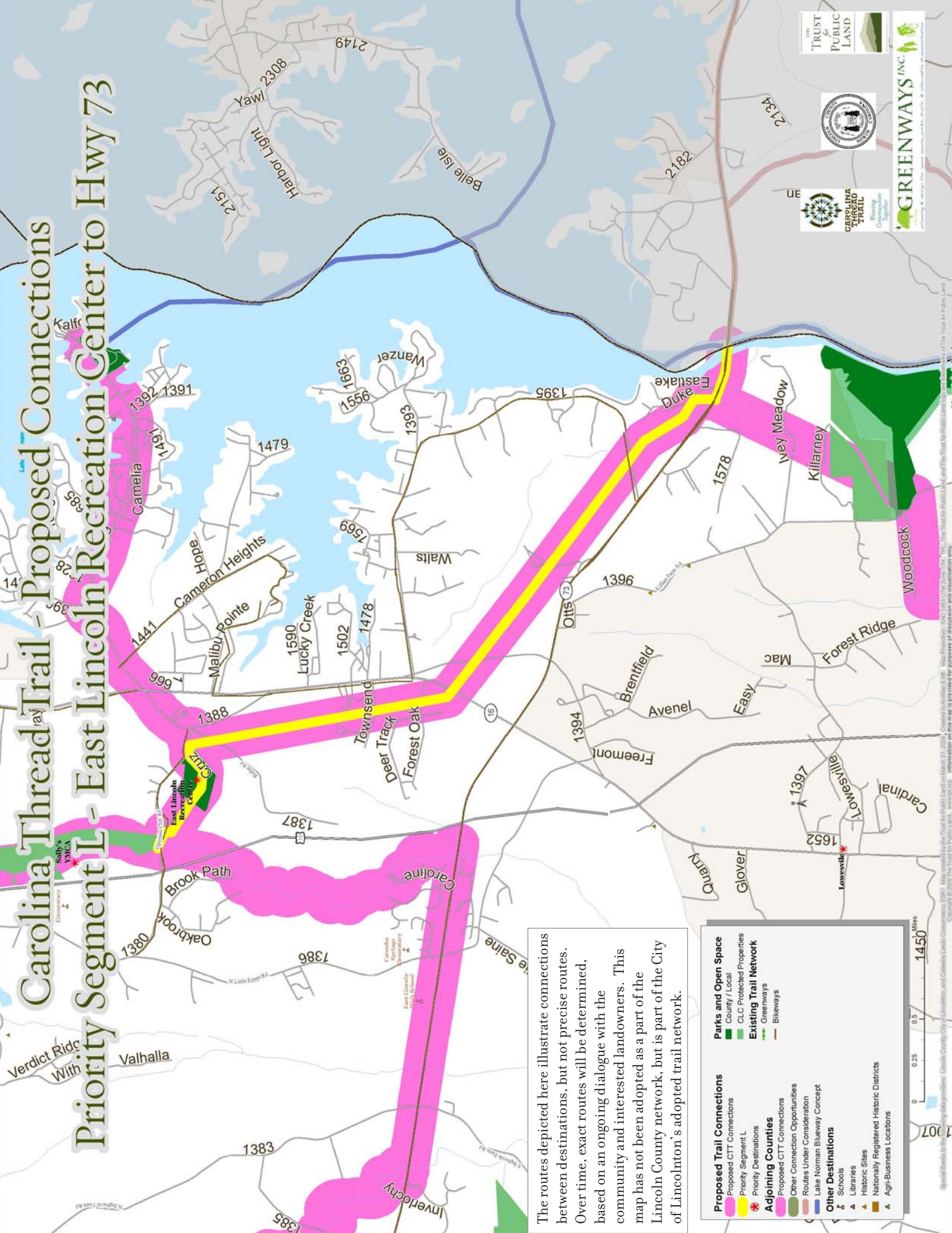
<b>Proposed Trail Connections</b> Priority Segment J Priority Destinations Adjoining Counties Proposed CTT Connections Other Connection Opportunities Routes Under Consideration Lake Norman Blueway Concept	<b>Parks and Open Space</b> County / Local CLC Protected Properties Existing Trail Network Greenways Bikeways	<b>Other Destinations</b> Schools Libraries Historic Sites Nationally Registered Historic Districts Agri-Business Locations
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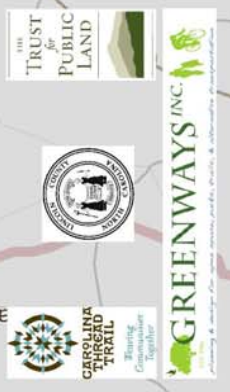
# Carolina Thread Trail - Proposed Connections

## Priority Segment L - East Lincoln Recreation Center to Hwy 73

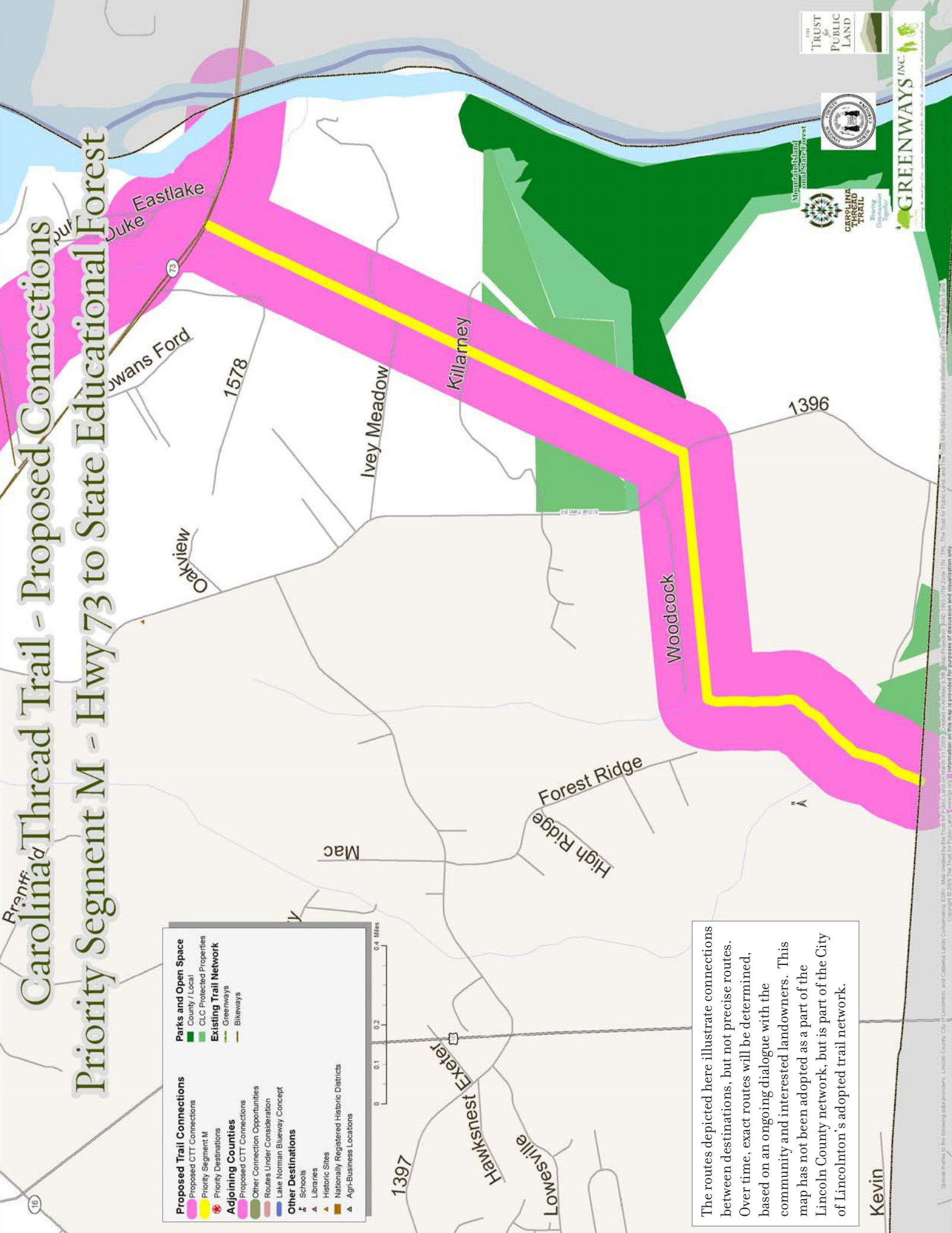


The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincoln County network, but is part of the City of Lincoln's adopted trail network.

Proposed Trail Connections	Parks and Open Space
Proposed CTT Connections	County / Local
Priority Segment L	CLC Protected Properties
Priority Destinations	Existing Trail Network
Adjoining Counties	Greenways
Proposed CTT Connections	Bikeways
Other Connection Opportunities	
Routes Under Consideration	
Lake Norman Blueway Concept	
Other Destinations	
Schools	
Libraries	
Historic Sites	
Nationally Registered Historic Districts	
Agri-Business Locations	



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# Priority Segment M - Hwy 73 to State Educational Forest

Proposed Trail Connections	
	Proposed CTT Connections
	Priority Segment M
	Priority Destinations
Adjoining Counties	
	Proposed CTT Connections
	Other Connection Opportunities
	Routes Under Consideration
	Lake Norman Blueway Concept
Other Destinations	
	Schools
	Libraries
	Historic Sites
	Nationally Registered Historic Districts
	Agri-Business Locations



The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincoln County network, but is part of the City of Lincolnton's adopted trail network.

Kevin

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# Carolina Thread Trail - Proposed Connections Priority Segment N - Connector to Beatties Ford Park

The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincoln County network, but is part of the City of Lincolnton's adopted trail network.

**Proposed Trail Connections**

- Proposed CTT Connections
- Priority Segment N
- Priority Destinations

**Adjoining Counties**

- Other Connection Opportunities
- Routes Under Consideration
- Lake Norman Blueway Concept

**Other Destinations**

- Schools
- Libraries
- Historic Sites
- Nationally Registered Historic Districts
- Agri-Business Locations

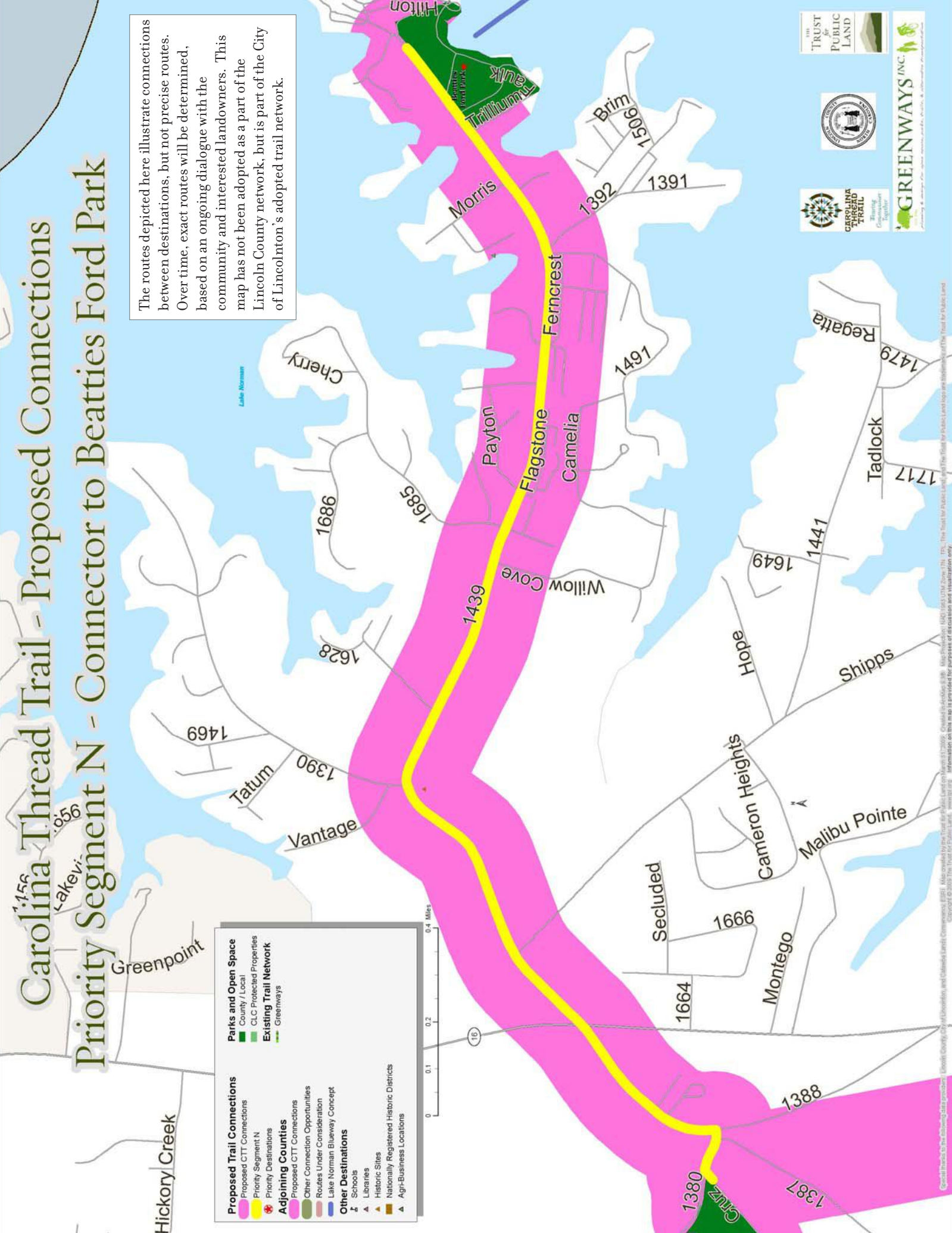
**Parks and Open Space**

- County / Local
- CLC Protected Properties

**Existing Trail Network**

- Greenways

0 0.1 0.2 0.4 Miles

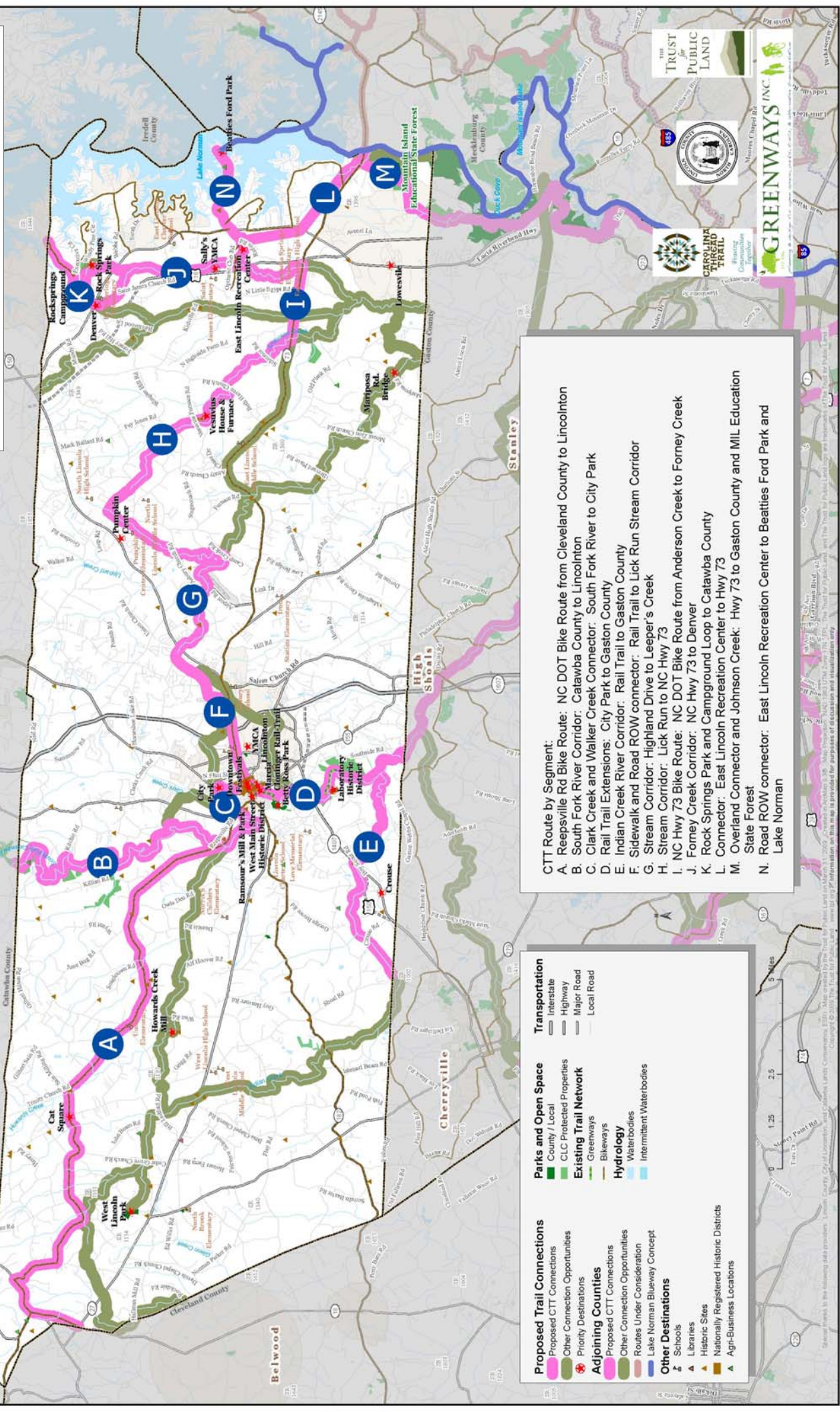


Carolina Thread Trail is a project of the Trust for Public Land. The Trust for Public Land is a 501(c)(3) non-profit organization. The Trust for Public Land is a 501(c)(3) non-profit organization. The Trust for Public Land is a 501(c)(3) non-profit organization.

# Carolina Thread Trail - Proposed Connections by Segment

## Lincoln County, NC

The routes depicted here illustrate connections between destinations, but not precise routes. Over time, exact routes will be determined, based on an ongoing dialogue with the community and interested landowners. This map has not been adopted as a part of the Lincoln County network, but is part of the City of Lincoln's adopted trail network.



- CTT Route by Segment:**
- A. Reepsville Rd Bike Route: NC DOT Bike Route from Cleveland County to Lincoln
  - B. South Fork River Corridor: Catawba County to Lincoln
  - C. Clark Creek and Walker Creek Connector: South Fork River to City Park
  - D. Rail Trail Extensions: City Park to Gaston County
  - E. Indian Creek River Corridor: Rail Trail to Gaston County
  - F. Sidewalk and Road ROW connector: Rail Trail to Lick Run Stream Corridor
  - G. Stream Corridor: Highland Drive to Leeper's Creek
  - H. Stream Corridor: Lick Run to NC Hwy 73
  - I. NC Hwy 73 Bike Route: NC DOT Bike Route from Anderson Creek to Forney Creek
  - J. Forney Creek Corridor: NC Hwy 73 to Denver
  - K. Rock Springs Park and Campground Loop to Catawba County
  - L. Connector: East Lincoln Recreation Center to Hwy 73
  - M. Overland Connector and Johnson Creek: Hwy 73 to Gaston County and MIL Education State Forest
  - N. Road ROW connector: East Lincoln Recreation Center to Beatties Ford Park and Lake Norman

**Transportation**

- Interstate
- Highway
- Major Road
- Local Road

**Parks and Open Space**

- County / Local
- CLC Protected Properties

**Existing Trail Network**

- Greenways
- Bikeways
- Waterbodies
- Intermittent Waterbodies

**Hydrology**

- Waterbodies
- Intermittent Waterbodies

**Proposed Trail Connections**

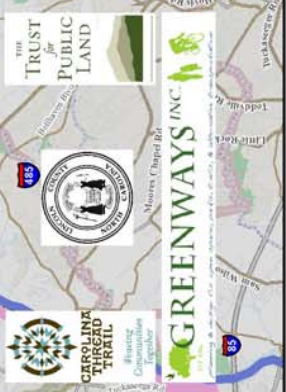
- Proposed CTT Connections
- Other Connection Opportunities
- Priority Destinations

**Adjoining Counties**

- Proposed CTT Connections
- Other Connection Opportunities
- Routes Under Consideration
- Lake Norman Blueway Concept

**Other Destinations**

- Schools
- Libraries
- Historic Sites
- Nationally Registered Historic Districts
- Agri-Business Locations







**DESCRIPTION OF CTT ROUTE BY SEGMENT:**

**A. Reepsville Rd Bike Route: NC DOT Bike Route from Cleveland County to Lincolnton**

Route Profile:

- 17.8 miles in length (all NC DOT designated bike route, 1.3 mi along NC Hwy 18)

Population within 1/2 mile of proposed segment:

- 2,068 residents
- 116 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- Cat Square

Cross-County Connections:

- Cleveland County (via NC Hwy 18)
- Burke County (possible connection to South Mountain, which already has an extensive trail system)
- Catawba County (possible link north along NC 18 to Baker's Mountain and the soccer complex in western Catawba)

Issues and Challenges:

- Bridges need widening at multiple stream crossings, or construction of pedestrian bridges
- Cat square intersection is one of the larger intersections in the NW corner of the county

**B. South Fork River Corridor: Catawba County to Lincolnton**

Route Profile:

- 12.1 miles in length (all along the South Fork River)

Access Opportunities

- Adjacent to 539 acres of Catawba Lands Conservancy properties and easements

Population within 1/2 mile of proposed segment:

- 2,061 residents

- 170 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- Ramsour's Mill and Park

Cross-County Connections:

- Catawba County (South Fork Catawba River)

Issues and Challenges:

- Reepsville Rd Crossing

**C. Clark Creek and Walker Creek Connector: South Fork River to City Park**

Route Profile:

- 1.3 miles in length (along Clark and Walker Creek corridors)

Access Opportunities

- Adjacent to City Park

Population within 1/2 mile of proposed segment:

- 1,442 residents
- 1,109 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- Ramsour's Mill and Park
- City Park

Issues and Challenges:

- Reepsville Rd Crossing
- Clark Creek Crossing



Battle of Ramsour's Mill Reenactment



North end of the existing Rhyne trail, also called the "South Fork Catawba River Rail-Trail"

**D. Rail Trail Extensions: City Park to Gaston County**

**Route Profile:**

- 6.2 miles in length (inactive rail corridor)
- Extends existing Marcia Cloninger Rail-Trail north to City Park
- Connects Marcia Cloninger Rail-Trail south to existing Rhyne Trail
- Extends Rhyne trail to the south to connect to Gaston County
- Includes 1.7 miles of existing greenway

**Access Opportunities**

- Adjacent to City Park
- Adjacent to 293 acres of Catawba Lands Conservancy

properties and easements

- Includes 1.7 miles of existing greenway

Population within 1/2 mile of proposed segment:

- 6,181 residents
- 997 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- City Park
- Lincolnton Commercial Historic District
- Downtown Festivals
- West Main Street Historic District
- Marcia Cloninger Rail-Trail
- Gaston College
- Betty Ross Park
- Laboratory Historic District

Cross-County Connections:

- Gaston County (South Fork Catawba River trail)

Issues and Challenges:

- Rail Crossing
- Hwy 150 Crossing
- Treatment plant property crossing

**E. Indian Creek River Corridor:**

**Rail Trail to Gaston County**

**Route Profile:**

- 6.8 miles in length (all along Indian Creek)

Population within 1/2 mile of proposed segment:

- 1,411 residents
- 208 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- Crouse

Cross-County Connections:

- Gaston County (connection to Cherryville)

Issues and Challenges:

- Hwy 150 Crossing
- South Fork Crossing



**F. Sidewalk and Road ROW connector:  
Rail Trail to Lick Run Stream Corridor**

Route Profile:

- 3.8 miles in length (East Main Street, Hubbard Street, Highland Drive Park, Highland Drive)
- 2.5 miles along existing roads
- 0.4 miles of parkland connector
- 0.9 miles of overland connectors

Access Opportunities

- Adjacent to Highland Drive Park

Population within 1/2 mile of proposed segment:

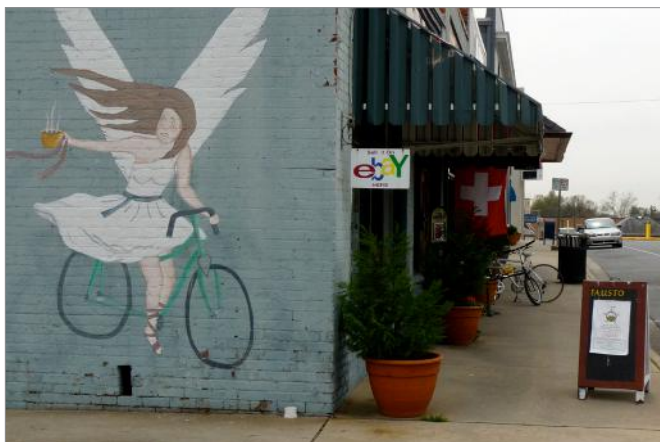
- 4,817 residents
- 1,268 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- Lincolnton Commercial Historic District
- Downtown Festivals
- West Main Street Historic District
- Marcia Cloninger Rail-Trail
- Gaston College

Issues and Challenges:

- Hwy 321 Crossing, no pedestrian crossing area



*Shops in Downtown Lincolnton.*

**G. Stream Corridor: Highland Drive to Leeper's Creek**

Route Profile:

- 4.9 miles in length (Along Lick Run Stream Corridor)

Population within 1/2 mile of proposed segment:

- 2,692 residents
- 549 residents / greenway mile

Issues and Challenges:

- Hwy 150 Crossing

**H. Stream Corridor: Lick Run to NC Hwy 73**

Route Profile:

- 12.4 miles in length (Along Leeper's Creek, Ore Bank Branch, Ballard Creek, Anderson Creek)

Population within 1/2 mile of proposed segment:

- 2,175 residents
- 175 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- Pumpkin Center
- Vesuvius House & Furnace

**I. NC Hwy 73 Bike Route: NC DOT Bike Route from Anderson Creek to Forney Creek**

Route Profile:

- 2.1 miles in length (all NC DOT designated bike route)

Population within 1/2 mile of proposed segment:

- 458 residents
- 218 residents / greenway mile

Issues and Challenges:

- High Speeds on NC 73
- NC 16 Bridge does not accommodate pedestrian crossing



**J. Forney Creek Corridor: NC Hwy 73 to Denver**

Route Profile:

- 6.7 miles in length (Along Forney Creek)

Access Opportunities

- Adjacent to 85 acres of Catawba Lands Conservancy properties and easements

Population within 1/2 mile of proposed segment:

- 1,741 residents
- 260 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- East Lincoln Recreation Center
- Sally's YMCA
- Denver



Hwy NC 73: NCDOT Bike Route



Denver, Lincoln County

Cross-County Connections:

- Catawba County (specific connection to Catawba County from Denver TBD)

Issues and Challenges:

- Hwy 16 Bypass crossing

**K. Rock Springs Park and Campground Loop to Catawba County**

Route Profile:

- 4.5 miles in length (combination of Road ROW on Will Proctor Street and Campground Rd, Utility ROW where feasible, and Little Creek)
- 0.7 miles along Will Proctor Street
- 1.8 miles along Camp Ground Rd
- 0.3 miles river corridor
- 1.3 miles utility ROW - where feasible
- 0.4 miles overland connector

Access Opportunities

- Adjacent to Little Creek Cove Park
- Adjacent to Rock Springs Park
- Adjacent to Rock Springs Campground
- Adjacent to 108 acres of Catawba Lands Conservancy properties and easements

Population within 1/2 mile of proposed segment:

- 1,337 residents
- 297 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- Denver
- Rock Springs Campground
- Rock Springs Park

Cross-County Connections:

- Catawba County (via Campground Rd)

Issues and Challenges:

- Hwy 16 Crossings



Utility Corridor in east Lincoln County

**L. Connector: East Lincoln Recreation Center to Hwy 73**

Route Profile:

- 5.2 miles in length (Primarily Utility ROW - where feasible, with 0.3 miles along Hwy 73 to Mecklenburg County Line)

Access Opportunities

- Adjacent to East Lincoln Park

Population within 1/2 mile of proposed segment:

- 1,861 residents
- 358 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- East Lincoln Recreation Center

Cross-County Connections:

- Mecklenburg County (via Hwy 73)

Issues and Challenges:

- Rail Crossing west of East Lincoln Recreation Center
- Hwy 16 Crossing
- Hwy 73 Bridge needs significant upgrades to accommodate pedestrians

**M. Overland Connector and Johnson Creek: Hwy 73 to Gaston County and MIL Education State Forest**

Route Profile:

- 2.6 miles in length (combination of Utility ROW -

where feasible, and stream corridor along Johnson Creek)

- 0.6 miles river corridor
- 2 miles utility ROW where feasible and overland connectors

Access Opportunities

- Adjacent to 492 acres of Catawba Lands Conservancy properties and easements
- Adjacent to MIL Educational State Forest

Population within 1/2 mile of proposed segment:

- 583 residents
- 224 residents / greenway mile

Cross-County Connections:

- Gaston County (connecting to MIL Education State Forest)

Issues and Challenges:

- Rail Crossing

**N. Road ROW connector: East Lincoln Recreation Center to Beatties Ford Park and Lake Norman**

Route Profile:

- 2.9 miles in length (Optimist Club Rd, Triangle Circle, Unity Church Rd)

Access Opportunities

- Adjacent to Beatties Ford Park

Population within 1/2 mile of proposed segment:

- 2,167 residents
- 747 residents / greenway mile

Priority Destinations within walking distance (1/4 mi):

- East Lincoln Recreation Center
- Beatties Ford Park



## CHAPTER 5. RECOMMENDED ACTIONS FOR IMPLEMENTATION

Implementation of this Master Plan will require a commitment and leadership from Lincoln County to engage its public and private sector partners and follow the recommendations that are provided in this chapter. The following provides key elements of implementation that need to be addressed and resolved.

### ADOPT THIS PLAN

Upon completion of the Master Plan, the first order of business will be to have Lincoln County and the City of Lincoln adopt this plan and make it an official element of the comprehensive plan. In addition to adopting the Master Plan, the City and the County may wish or need to make revisions to zoning ordinances, land development codes and other policies, plans and procedures that enable greenway development to take place. It will be incumbent upon each local government to properly assess the changes that are needed and to make these changes, amendments and policy decisions as soon as practically possible.

#### Phase I - Plan Adoption

#### Priority

Review and take action: City and County advisory boards	High
Review and adopt Greenway Master Plan	High
Review and amend zoning and land development codes	Medium
Review and amend floodplain ordinances to limit construction in floodprone landscapes	Medium
Review and amend zoning and land development codes to protect riparian zones	Medium
Review and amend current open space and park land dedication requirements along with fee-in-lieu programs	Medium

High Priority- Within 1 Year

Medium Priority- Within 2-5 Years

Low Priority- Within 6-10 Years

### BUILD PUBLIC SUPPORT

One of the most important implementation steps that will need to be taken by Lincoln County is the continued involvement of residents in the future greenway development. It is recommended that the County constitute a Greenways and Trails Advisory Committee, either as a component of the County Planning and Inspections Department or as a stand alone advisory group to the Board of County Commissioners. This advisory group can become the citizens champion for this master plan and provide valuable assistance, feedback, support and coordination on all aspects of implementation.

The advisory group should be encouraged to file an annual report regarding its activities and to also report on the progress made with the countywide greenway master plan. This group should work with county and municipal governments to promote, market and inform fellow residents about the greenway program. The group should also look into hosting an annual "Greenway Day" event on an existing greenway segment within the county, to showcase completed projects and further engage citizens in the implementation process.

The County should also form partnerships with other local non-profits and consider convening a partnership among local governments, in particular park and recreation



March 2009 Public Meeting.



providers, to coordinate future greenway implementation. One of the goals with non-profits would be to work together to secure land and/or rights-of-way for greenway corridors.

**Phase II - Build Public Support**

*Priority*

Establish a county citizens Greenways and Trails Advisory Committee to champion this plan	High
GTAC implements a marketing, promotion and information campaign to engage citizens	High
Host an annual Greenway Day Event	Medium
Form partnerships with regional non-profits to secure land for greenway corridors	Medium
Form partnership among local government parks and recreation providers to coordinate implementation	Medium
High Priority- Within 1 Year	
Medium Priority- Within 2-5 Years	
Low Priority- Within 6-10 Years	

**COMPLETE PRIORITY GREENWAY SEGMENTS**

This master plan has identified some top priority greenway corridors and projects that should be developed by Lincoln County and its partners. The Carolina Thread Trail staff stands ready to assist the county and its partners with implementation, including providing catalytic grants that can jump start acquisition and trail development.

In order to develop the future greenway system in an orderly and systematic manner, the entire network needs to be evaluated and prioritized for development. The following criteria is used to select segments of the Lincoln County Greenway System and Carolina Thread Trail for future phased development.

**1) Near Population:** Candidate segments of greenway need to be near or within populated areas. Greenways provide numerous benefits to the residents in the

form of health and wellness activities, recreation and transportation. The County should build trail segments where the majority of people live.

**2) Available Land/Right-of-Way:** An assessment should be made for segments of each greenway corridor to determine where land or right-of-way is contiguous and capable of supporting future trail development.

**3) Functional Segment:** Each greenway should have an “anchor” or destination landscape on each end, such as a park, neighborhood, school, shopping area, or other popular destination (such as a YMCA).

**4) Ease of Development:** Candidate segments should be studied to better understand obstacles to future facility development, such as environmental permits.

**5) Available Funding:** An assessment should be made as to how each individual segment will be funded. For example, if a project presents a strong case for transportation funding, NCDOT would be the logical choice for a matching grant.

Based on this criteria, the following segments of Carolina Thread Trail are recommended as priorities:

- Clark Creek and Walker Creek Connector
- Rail Trail Extensions
- Rail Trail to Lick Run
- Forney Creek Corridor
- Connector: East Lincoln Recreation Center to Hwy 73
- Hwy 73 to State Educational Forest
- Connector to Beatties Ford Park

This evaluation and prioritization of projects will need to be completed on an annual basis by the County, the Greenway



and Trails Advisory Committee, its municipal partners and non-profit partners. With all of this in mind, a flexible and pragmatic approach is needed that focuses on opportunities throughout the county, occurring on an annual basis, where greenway development can most likely occur.

**Phase III - Prioritization**

*Priority*

Review the phase one priority segments listed in this Plan and begin implementation steps	High
Identify future phases of greenway implementation using the criteria presented in this plan	Medium
Review current and future utility corridors and easements for greenway opportunity	Medium
Consider a multi-year, dedicated funding source for greenway acquisition, development & stewardship	Medium
Prepare an acquisition plan that is based on priority segments and work with local non-profits to implement	Medium
High Priority- Within 1 Year Medium Priority- Within 2-5 Years Low Priority- Within 6-10 Years	

**DEFINE FUNDING AND FINANCING**

It is recommended that a funding quilt be used by Lincoln County to fund future acquisition, development and stewardship of greenway lands and facilities. A funding quilt combines local, state and federal funding to achieve implementation objectives. The following offers a summary of possible funding sources for use in developing the Lincoln County Greenway System, and elements of the Carolina Thread Trail.

**1. Private Funding**

Private funding from citizens, philanthropic organizations, non-profits and businesses can and should be used to build segments of the Lincoln County Greenway System and the Carolina Thread Trail. The Catawba Lands Conservancy (CLC) currently serves as home for the Carolina Thread Trail

operations, and is spearheading a private fund raising effort to make available catalytic seed dollars to local governments and communities that plan for and adopt greenway master plans. These private dollars are available in the form of grants that can be used to fund trail planning, design, land acquisition, and construction. These grant funds should be supplemented with other local, private sector monies to support future implementation of this master plan.

**2. Public Funding**

A variety of public funding dollars are available to support future development of the Lincoln County Greenway System.

**a. Federal Funding:**

Federal funding programs are more thoroughly described in Appendix III: Funding and Financing. Trail related funding programs appear at the top of this list, while other programs that may not directly fund trail development, but could be used to fund greenway development follow. Federal funding is administered in different ways. Some federal funds are direct appropriations to States and are therefore distributed and managed by a state agency. Other funds are distributed directly from the federal program. The United States Congress also earmarks funds for project development. The descriptions in Appendix III are intended to provide a broad overview of funding potential.

**b. State of North Carolina Funding:**

A majority of state funding for greenway acquisition and development in North Carolina comes from four large trust funds and through NCDOT (covered in depth within Appendix III of this plan). NCDOT will fund standard paved 10' multi-purpose paths, bicycle lanes, sidewalks, and other similar facilities. One of the keys to receiving state funding is





for the local governments to have matching funds, therefore consideration should be given to establishing a dedicated, recurring source of revenue for greenway acquisition and development.

**a. Local Funding Options:**

Generally, there are three types of revenue sources that local governments can use to fund parks and trail development in North Carolina: discretionary annual spending (General Fund); dedicated funding; and debt financing. Funding will vary by community dependent on taxing capacity, budgetary resources, voter preference, and political will. The ability to establish dedicated funding

sources may also depend on enabling authority. North Carolina has given local governments a limited number of options to fund land conservation and trail projects. Table 4 provides a summary of these options.

Lincoln County and the City of Lincolnton should support park, recreation, open space and greenway projects on a consistent basis for successful implementation. The majority of matching funds come from the general funds of local governments. Some consideration should be given to a countywide fund for greenway acquisition and development. Mecklenburg County, for example, recently passed a bond referendum to fund park and greenway development.

**Table 4:**  
**Local Conservation Financing Options in North Carolina**

<i>Method</i>	<i>Definition</i>	<i>Pros</i>	<i>Cons</i>
General Obligation Bond	Loan taken out by a city against the value of the taxable property	<ul style="list-style-type: none"> <li>•Allows for immediate purchase of open space, locking in land at current prices</li> <li>•Distributes the cost of acquisition</li> </ul>	<ul style="list-style-type: none"> <li>•Extra interest costs of borrowing</li> <li>•Funds may be used only for capital projects and improvements</li> <li>•Voter approval required</li> </ul>
Property Tax	Tax on real property paid for by commercial and residential property owners	<ul style="list-style-type: none"> <li>•Steady source of revenue</li> <li>•Relatively easily administered</li> <li>•Tax burden fairly &amp; broadly distributed</li> <li>•Small increases create substantial funding</li> </ul>	<ul style="list-style-type: none"> <li>•Competition for other public purposes</li> <li>•Overall concern among taxpayers about high rates</li> <li>•Cannot be permanently dedicated</li> </ul>
Impact Fee	One-time fee paid by developer to off-set costs of infrastructure caused by new development	<ul style="list-style-type: none"> <li>•Nexus between taxing new development and protecting remaining open spaces</li> </ul>	<ul style="list-style-type: none"> <li>•Projects must be directly linked to new development</li> </ul>
Real Estate Transfer Tax	Tax that may be imposed on the privilege of transferring real property	<ul style="list-style-type: none"> <li>•Is a familiar tool for land conservation</li> </ul>	<ul style="list-style-type: none"> <li>•Unpredictable source of revenue</li> <li>•May have opposition from Realtor community</li> <li>•Revenues may not be restricted</li> </ul>
Local Sales Tax	Tax levied on the retail price of an item	<ul style="list-style-type: none"> <li>•Distributes the cost of acquisitions</li> </ul>	<ul style="list-style-type: none"> <li>•Unpredictable source of revenue</li> <li>•Relies on the strength of the local economy</li> <li>•Revenues may not be restricted</li> </ul>



**Phase IV Funding Sources**

	<i>Priority</i>
Identify and pursue public and private grants to fund greenway acquisition, development and stewardship	High
Consider local bonds to fund greenway acquisition, development and stewardship	Medium
Create a local, dedicated, recurring source of revenue to be used in support of federal and state grants	Medium
Consider a countywide funding source for greenways, such as a bond referendum	Medium

High Priority- Within 1 Year  
 Medium Priority- Within 2-5 Years  
 Low Priority- Within 6-10 Years

**EVALUATE LAND OR RIGHT-OF-WAY ACQUISITION OPTIONS**

Acquiring land and/or right of way for the countywide greenway system will be one of the most important objectives for the County and its partners. As noted in Chapter 1, 'Respect for the land and the landowner' is a guiding principle for the Carolina Thread Trail. The Carolina Thread Trail is interested in working with landowners, through *voluntary participation*, to secure the right-of-public access and use for the countywide greenway system. Methods of land acquisition can include the following; more detailed descriptions are provided in Appendix IV of this plan:

*Donations* – land or easements (the right to use a portion of land for certain purposes, as defined in a contract, while fee simple ownership is retained) can be donated to a local government or a local land trust by private citizens or business owners, which in turn can generate a tax reduction for them. In North Carolina, landowners that dedicate land for greenways are eligible for a tax credit. Details of donations should be confirmed with a qualified tax advisor.

*Purchase* – this method is commonly used to acquire land for greenways, and land trusts can often help acquire land at less than fair market value by working with a landowner to offset the purchase price with other incentives beneficial to the landowner.

*Zoning/Development Regulations* – buffers along certain stream corridors in North Carolina are already protected in order to prevent building intrusion into sensitive areas which in turn may be used for some trail corridors. Additional development regulations can also be adopted that create building restrictions and dedication requirements. Examples of these requirements include, but are not limited to, setbacks from perennial streams, flood plain development restrictions and open space/trail dedication requirements.

*Developer Contributions* – Once a conceptual route is officially incorporated into community plans, it can be included in GIS layers for local governments. As discussed previously, if a developer applies for a permit for a development and it overlaps with any of the proposed trail connections, local governments can request, require and/or offer incentives for an open space set aside or for that portion of the trail corridor to be developed as part of the subdivision approval process. The trail will be a marketing benefit to the developer and will in turn allow them to charge a higher premium for the homes adjacent to the trail. This sets up a win – win situation for everyone involved.

*Abandoned Rail Corridors* – Discussions will need to be held with the rail corridor owners as well as NCDOT Rails Division. The cost of trail construction is typically lower along abandoned rail corridors because a graded corridor with gradual slopes is already established.



**Phase V Acquisition**

*Priority*

Work with landowners and discuss the possibility of acquiring voluntary easements or property donations	High
Through the land development process, work with land owners and developers to have right-of-way and land donated or set aside for greenways	High
High Priority- Within 1 Year	
Medium Priority- Within 2-5 Years	
Low Priority- Within 6-10 Years	

**DESIGN, CONSTRUCT AND MAINTAIN TRAILS**

Once a segment of the Lincoln County Greenway System is selected and the land or public access right-of-way has been acquired, trail design and development will follow. It will be important for communities to determine the intended use(s) of a particular segment and design the trail facility with that in mind. Designing for safety and for affordable maintenance is also required. Intended uses of the trail will dictate the tread width and surface material to be used and have a direct bearing on the construction and maintenance costs. Refer to Appendix V Design Guidelines for more on trail design.

Trail construction costs will vary, and until a project is put out for competitive bid, there is no way to accurately determine local prices. The three most common trail construction surfaces are granite screening, asphalt, and concrete. The trail design process should accurately describe the intended final use in order to fully understand the costs and potential savings when making a decision between one surface material over another.

Preliminary site plans should be reviewed by community or county staff, including emergency service personnel, so they can offer suggestions and guidance. Historically, there has been a disconnect, at times, between the design process and operations. Designs that are pleasing to the eye are not always conducive to good and inexpensive maintenance.

Therefore, it is imperative that cost saving should be a part of any design with a thorough review of the plans while they are still in a preliminary stage.

Security starts in the design phase as well. There is much that can be done in designing a trail system that greatly reduces the risk of crime. All designs should utilize Crime Prevention through Environmental Design (CPTED). Security experts such as the local police chief or county sheriff should be consulted early on in order to seek their advice and to alert them that the trail will be built and that they need to plan for it as well. Well placed lights, wide-open spaces along the trail, removal of underbrush, and easily accessible trailheads all add to the security matrix. Routine patrols and staff members in uniform will alert people that the trail is being watched. Security tips and procedures can be conveyed on bulletin boards, on brochures and in informal gatherings by park staff along the trail.

**Phase VI Design and Construction of Trails**

*Priority*

Prepare construction documents for trails and work with law enforcement and maintenance staff	High
Develop a maintenance and operations plan	High
Upon acquisition of corridor complete design checklist	Medium
Complete operations and management of new trails	Medium

High Priority- Within 1 Year  
 Medium Priority- Within 2-5 Years  
 Low Priority- Within 6-10 Years



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## CHAPTER 6. CONCLUSION

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Through a collaborative planning process community members in Lincoln County articulated a vision for a community greenway system and put forth much time and effort developing thoughtful recommendations for how best to connect people and places with trails throughout the county. This report outlines an ambitious plan for developing a comprehensive network of trails across Lincoln County. The many community partners who have been

involved in the planning process recognize the urgency of starting a county-wide and region-wide linear park system now, while opportunities still exist for making connections and linking important places. They also recognize that this plan will not be implemented overnight, and that while segments should begin appearing soon, it will take years, if not decades, to link them all together. The time to start is now.



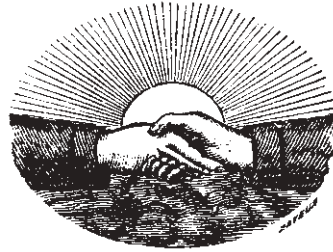
*Lake Norman at Beatties Ford Park*



*The Rhyne Trail along the South Fork of the Catawba River; Photo by Craig R. Wyant.*



*Downtown Lincolnton.*



## APPENDIX I: CAROLINA THREAD TRAIL PUBLIC MEETING SUMMARY

Lincoln County public workshops for the Carolina Thread Trail were held at North Lincoln (Pumpkin Center) Middle School on March 31, 2009, Lincolnton City Hall (Council Chambers) on May 14, 2009, the Lincoln County Family YMCA on July 7, 2009, and at the Apple Festival, September 19, 2009.

These meetings served as an opportunity for the residents of Lincoln County and the local municipalities to learn about the project and provide their input. All three workshops had the same basic set-up, including CTT display boards, a display map of the existing conditions/draft recommendations, a public input map, and comment

forms. Participants talked directly with project staff and were encouraged to share their ideas by writing and drawing their comments on the input maps.

About 50 people total participated in the first three workshops, and 150 people came by the CTT public input booth at the Apple Festival to learn about the plan and provide comment. Feedback from these meetings was overall very positive. Questions were focused mainly on the overall concept of The Thread, the steps in the planning process, and the timeline for implementation. Public comments taken through paper comment forms were entered online, and the results start on page 56.



Public Workshop Flyers



# PROJECT NEWSLETTER for the LINCOLN COUNTY GREENWAY MASTER PLAN

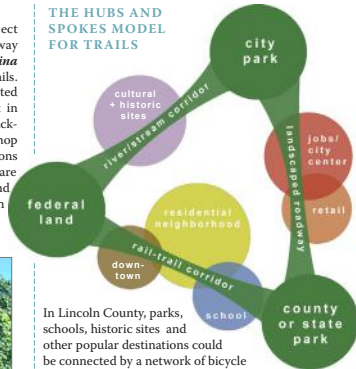
## PROJECT DESCRIPTION

Lincoln County, local communities, and other project stakeholders are working together to develop a greenway plan that will feature a core segment of the *Carolina Thread Trail*, a 15-county regional network of trails. Several counties in the region have already completed and are adopting similar trail plans. The project in Lincoln County has just begun, starting with a Kick-off Meeting (February 2009) and a Public Workshop (March 2009). Before making any recommendations about potential trail corridors, the project partners are introducing the project at the Public Workshop and gathering input through an online comment form (see web address at bottom right).



Above: Marcia H. Cloninger Rail-Trail Downtown Lincolnton.

## THE HUBS AND SPOKES MODEL FOR TRAILS



In Lincoln County, parks, schools, historic sites and other popular destinations could be connected by a network of bicycle and pedestrian trails. In the 'Hubs and Spokes Model' such destinations serve as the 'hubs' of the network, while the 'spokes' consist of trails, sidewalks, and bicycle-friendly roadways.

A key part of this early stage in planning is to gather public input on what Lincoln County residents feel are the most important destinations for their future trail network. Visit [www.greenways.com/lincoln](http://www.greenways.com/lincoln) to provide your input on key destinations and other important aspects of this project.

## PROJECT CONTACT INFO:

R. S. Williams, AICP, Principal Planner  
Lincoln County Building and Land Development  
704.736.8472; e-mail: [rwilliams@lincolncounty.org](mailto:rwilliams@lincolncounty.org)

## ONLINE COMMENT FORM:

[www.greenways.com/lincoln](http://www.greenways.com/lincoln)

## DRAFT VISION STATEMENT

*A network of bicycle and pedestrian trails will connect the communities, businesses, schools, parks and historic resources of Lincoln County, offering valuable opportunities for recreation, transportation, and economic development. This network of trails will also contribute to the future viability of the County through the conservation of open space along trail corridors, protecting natural resources and, wherever possible, providing opportunities to experience the County's rich history. The linear parks will be open to all, providing positive opportunities for active living among neighbors, coworkers, families, visitors, and friends. Lincoln County will also feature its own portion of the Carolina Thread Trail, linking the local trail network to people and places throughout the 15-county region.*



## GUIDING PRINCIPLES for the CAROLINA THREAD TRAIL (THE THREAD):

There are a few guiding principles that are fundamental to the philosophy of the Carolina Thread Trail and guide the work of its Governing Board, volunteers, staff and partners:

### Connectivity and collaboration

- By getting municipalities working with their county, and counties working with each other in a collaborative way, we can achieve our goal of connectivity.

### Inclusiveness and free accessibility to all

- The Thread will be an asset available for the use of all of our citizens in urban, suburban and rural settings. The process by which it is built needs to include many different voices.

### Leverage

- Carolina Thread Trail grants can provide catalytic funding for segments of The Thread. Private capital will only go so far, but it can help stimulate activity and attract state and federal sources that require match funds and value initiatives that are regional in scope.

### Respect for the land and respect for the landowner

- It is critical to inform landowners about the project and include them in the process. By doing so, opportunities to develop trails with willing landowners will be identified.



## TASKS for the LINCOLN COUNTY THREAD PROJECT:

As of March 2009, the project partners are working on the first three tasks. All tasks are scheduled for completion by October 2009.

- Task 1: Background/Data Collection
- Task 2: Base Mapping
- Task 3: Community Engagement
- Task 4: Public Open House Review
- Task 5: Identify CTT Segments
- Task 6: Inter-Jurisdictional Discussions
- Task 7: Creating GIS-based Trail Maps
- Task 8: Draft GISMap
- Task 9: Review Draft Plan
- Task 10: Final CTT Greenway Plan
- Task 11: Present to City/County
- Task 12: Lincoln Co. CTT Brochure

# PROJECT NEWSLETTER for the LINCOLN COUNTY GREENWAY MASTER PLAN

## PROJECT BACKGROUND

Lincoln County, local communities, and other project stakeholders are working together to develop a greenway plan that will feature a core segment of the *Carolina Thread Trail*, a 15-county regional network of trails. Several counties in the region have already completed and are adopting similar trail plans.

## PUBLIC INPUT

The project in Lincoln County started with a Kick-off Meeting in early 2009 and Public Workshops in March and May 2009. The third workshop will be on July 7, 2009, at the Lincoln County YMCA, and the last one is scheduled for the Apple Festival in September.



Photo from the March public workshop.

As of June 2009, more than 300 people have participated in the planning process for Lincoln County, through the workshops and online comment form! About 90% of participants in the online comment form indicated that the goal of creating more trails is important. Local residents primarily want trails for fitness, recreation, and social visits.

## PROJECT CONTACT INFO:

R. S. Williams, AICP, Principal Planner  
Lincoln County Building and Land Development  
704.736.8472; e-mail: [rwilliams@lincolncounty.org](mailto:rwilliams@lincolncounty.org)

## STUDENT PARTICIPATION

In addition to the public workshops, project representatives also presented and gathered input from elementary school children. The 5th graders learned about the plan and made their own maps of where they walk and bike now, and where they would like to be able to walk and bike in the future.



An example of one of the student-drawn maps from the school workshop.

## THE DRAFT PLAN

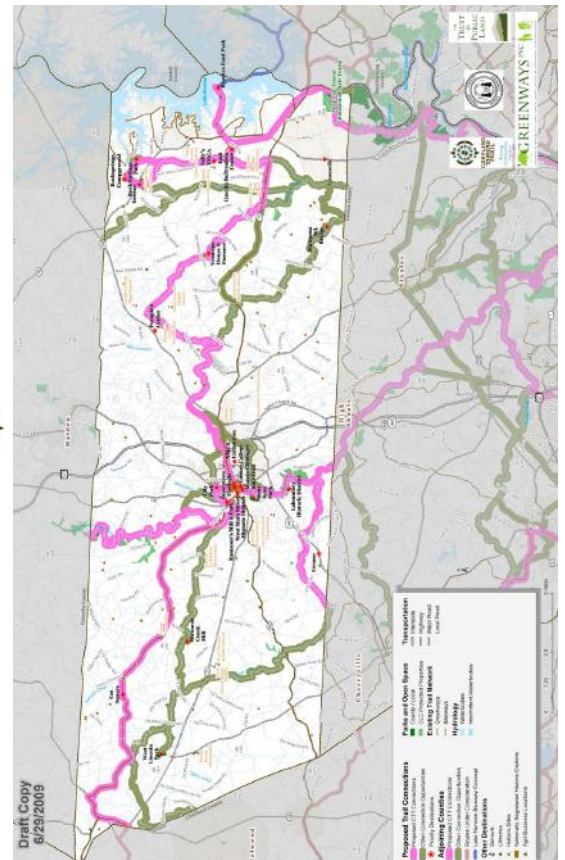
The draft map (on reverse side) was developed out of many sources, including:

- Public input from workshops
- Public input from online comments, including a ranking of desired destinations for trails
- Steering Committee input
- Input from neighboring jurisdictions to ensure regional connectivity
- Current planning efforts throughout Lincoln County and the local communities

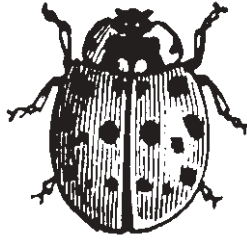
The draft will be refined through further public input and technical analysis. Please visit the project website for updates.

## WEBSITES + ONLINE COMMENT FORM:

[WWW.GREENWAYS.COM/LINCOLN](http://WWW.GREENWAYS.COM/LINCOLN)  
[WWW.CAROLINATHREADTRAIL.ORG](http://WWW.CAROLINATHREADTRAIL.ORG)



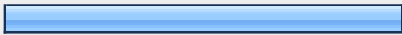
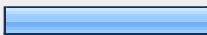

Above: Project Newsletters #1 (top) and #2 (bottom)

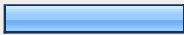
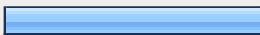
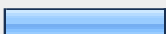



**APPENDIX II:  
PUBLIC COMMENT FORM SUMMARY**

The online public comment form was utilized to gain an understanding of trail-related needs and priorities of residents. More than 300 people responded to the comment forms. This information helped project planners identify peoples’ perceptions about trails, destinations to connect with trails, and obstacles to using trails today. The answers to most questions have been tabulated and are shown in the form of a graph below. However, some questions were open-ended and samples of those responses have been listed verbatim.

**RESULTS FROM PUBLIC COMMENT FORM**

<b>1. How important to you is the goal of creating more trails? (select one)</b>			
		<b>Response Percent</b>	<b>Response Count</b>
<b>very important</b>		<b>61.3%</b>	<b>193</b>
somewhat important		30.8%	97
not important		7.9%	25
<i>answered question</i>			<b>315</b>

<b>2. How often do you use trails now? (select one)</b>			
		<b>Response Percent</b>	<b>Response Count</b>
never		27.4%	86
<b>few times per year</b>		<b>39.2%</b>	<b>123</b>
few times per month		24.5%	77
few times per week		8.9%	28





**3. Would you use trails more often if you could easily bike or walk to one?**

		Response Percent	Response Count
Yes		90.4%	283
No		9.6%	30

**4. For what purposes do you walk or bike most often? (Or for what purposes would you use trails in the future?). (Rank Top 3).**

	#1	#2	#3	Rating Average	Response Count
Fitness or recreation	<b>79.9% (223)</b>	14.3% (40)	5.7% (16)	1.26	279
Transportation to some destination	6.9% (7)	<b>52.5% (53)</b>	40.6% (41)	2.34	101
Social visits	5.5% (9)	43.6% (72)	<b>50.9% (84)</b>	2.45	165
Walking the dog	20.5% (31)	<b>47.0% (71)</b>	32.5% (49)	2.12	151
Walking with a baby/stroller	20.0% (15)	34.7% (26)	<b>45.3% (34)</b>	2.25	75

**5. What are the most important benefits and uses of a trail system? Select all that apply.**

		Response Percent	Response Count
Transportation		25.6%	76
Recreation		89.6%	266
<b>Exercise</b>		<b>94.9%</b>	<b>282</b>
Community-building and events		42.1%	125
Connectivity to surrounding area		45.8%	136
Environmental improvements		57.2%	170
Tourism		31.6%	94
Education and interpretation		39.7%	118



## 6. What destinations would you most like to get to by trail? (Rank Top 3)

	#1	#2	#3	Rating Average	Response Count
Betty G Ross Park	<b>39.3% (11)</b>	35.7% (10)	25.0% (7)	1.86	28
Lincolnton City Park	13.3% (2)	<b>60.0% (9)</b>	26.7% (4)	2.13	15
West Lincoln Park	<b>46.2% (6)</b>	23.1% (3)	30.8% (4)	1.85	13
Rocksprings Park	16.7% (5)	23.3% (7)	<b>60.0% (18)</b>	2.43	30
Beatties Ford Park (Lake Norman Boat Launch)	<b>47.9% (46)</b>	29.2% (28)	22.9% (22)	1.75	96
East Lincoln Recreation Center	18.3% (13)	<b>54.9% (39)</b>	26.8% (19)	2.08	71
Marcia H. Colinger Rail-Trail	33.3% (12)	27.8% (10)	<b>38.9% (14)</b>	2.06	36
Lincolnton Downtown Festivals	28.1% (9)	<b>37.5% (12)</b>	34.4% (11)	2.06	32
Gaston College	30.0% (3)	<b>60.0% (6)</b>	10.0% (1)	1.80	10
Cat Square	<b>50.0% (7)</b>	28.6% (4)	21.4% (3)	1.71	14
Denver	<b>60.0% (69)</b>	20.9% (24)	19.1% (22)	1.59	115
Crouse	0.0% (0)	25.0% (1)	<b>75.0% (3)</b>	2.75	4
Pumpkin Center	30.8% (4)	30.8% (4)	<b>38.5% (5)</b>	2.08	13
Lowesville	<b>66.7% (4)</b>	0.0% (0)	33.3% (2)	1.67	6
Lincolnton Historic Districts	18.2% (4)	36.4% (8)	<b>45.5% (10)</b>	2.27	22
Laboratory Area (Rhyne Preservation Area)	<b>43.3% (13)</b>	30.0% (9)	26.7% (8)	1.83	30
Ramsour Mill & Park	38.5% (5)	15.4% (2)	<b>46.2% (6)</b>	2.08	13
Lincolnton Highland Drive Park	37.5% (3)	12.5% (1)	<b>50.0% (4)</b>	2.13	8
Lincolnton Optimist Park	0.0% (0)	<b>55.6% (5)</b>	44.4% (4)	2.44	9
Rocksprings Campground	15.2% (5)	<b>42.4% (14)</b>	<b>42.4% (14)</b>	2.27	33
Vesuvius House & Furnace	30.0% (3)	30.0% (3)	<b>40.0% (4)</b>	2.10	10



**6. What destinations would you most like to get to by trail? (Rank Top 3) (Continued)**

Mariposa Rd. Bridge	25.0% (2)	<b>37.5% (3)</b>	<b>37.5% (3)</b>	2.13	8
Howards Creek Mill	11.1% (2)	<b>55.6% (10)</b>	33.3% (6)	2.22	18
YMCA in Lincolnnton	32.3% (10)	25.8% (8)	<b>41.9% (13)</b>	2.10	31
Salley's YMCA	32.8% (19)	<b>34.5% (20)</b>	32.8% (19)	2.00	58

**7. What do you think are the biggest factors that discourage trail, sidewalk, or bicycle facility use? Rank Top 3.**

	#1	#2	#3	Rating Average	Response Count
Lack of information about local trails	<b>52.2% (93)</b>	25.8% (46)	21.9% (39)	1.70	178
Unsafe street crossings	24.4% (21)	<b>41.9% (36)</b>	33.7% (29)	2.09	86
High traffic volume	<b>35.9% (23)</b>	34.4% (22)	29.7% (19)	1.94	64
Lack of interest	<b>36.4% (12)</b>	27.3% (9)	<b>36.4% (12)</b>	2.00	33
Lack of time	24.2% (8)	33.3% (11)	<b>42.4% (14)</b>	2.18	33
Personal safety concerns	26.3% (30)	33.3% (38)	<b>40.4% (46)</b>	2.14	114
Aggressive motorist behavior	16.3% (8)	<b>49.0% (24)</b>	34.7% (17)	2.18	49
Deficient sidewalks	33.1% (42)	<b>42.5% (54)</b>	24.4% (31)	1.91	127
Lack of nearby destinations	35.1% (39)	22.5% (25)	<b>42.3% (47)</b>	2.07	111



**8. Are there other specific destinations in Lincoln County that you believe should be connected by trails?**

*The 100+ responses to this question varied greatly. Below is a small sample of the responses.*

"It would be nice to connect all of the many historic areas of the County by a trail or greenway system"

"As many parks as possible"

"Neighborhoods and shopping areas"

"Any trails along or in view of Lake Norman would be great."

"Areas that have a natural environment, such as a small pond or stream along the path. By making trails along these existing areas would help to preserve them and protect them from development."

"Love to have sidewalks and trails that cut through places so the kids have something to do, rather than have to drive them every where. Also if they could be off the main road to protect the kids and adults would be great."

"I would like to see a trail network that would connect the county parks and city parks together."

"Greenways through subdivisions in Denver to help connect the community and the schools.  
Kids could ride their bikes more to school and have a safer area to play."

"Trails should take advantage of our natural areas (rivers, lakes, larger creeks) and connect  
fitness and community areas"

"I want the trails to go thru Lincolnton via Marcia H. Cloninger Rail Trail."

"Any destinations would be good. I would just like to see the system expanded in any capacity."

"I would love to see the trail system enlarged in any capacity;  
shopping center connectivity to central Lincolnton would be a plus"

"It would be outstanding if a public trail allowed views of the South Mountains or the setting sun  
or something to that effect! There are such beautiful views in Lincoln County I only wish that you  
could publicly access them to stroll along and enjoy!!"



## 9. What other trail-related improvements do you consider priorities?

*The 100+ responses to this question varied greatly. Below is a small sample of the responses.*

“Lincoln County has many rural back roads. It would be outstanding if we could get a bike trail from the East to the West of the County”

“How about emergency phones for those people who are nervous or in case of a problem?”

“Sidewalks, sidewalks, sidewalks. There are so few!” “More family activities, more information”

“Promote trails so folks would know that they are available. Took us over 3 years to find first one.”

“Having group organizations adopt parts of the trail, and maintain it. (Girl Scouts, Cub Scouts, Church Youth Groups) These groups always need Community Service Hours and it would help the project.”

“Lighting for signage; Adequate signage - clear trail markers; Safety (rangers, etc.)”

“Mainly easy access areas. Also, make it connect to other trail areas.”

“Restroom facilities, water stations, emergency stations” “Improve information regarding trails”

“Bike lanes!” “Paved trails, benches along the way”

“Please make the trails wider if possible to anticipate increased usage in the coming years.”

“Having the trails available for the community with parking and sidewalks for the public to use the trails. Have points of interest to exercise and enjoy nature. A nice greenway will always attract nice healthy living.”

“Issues dealing with attractiveness and accessibility (grass, flowers, steps, bridges, facilities, etc.)”

“Whatever does not take our tax dollars - especially now.”

“Continuation of the Marcia Cloninger Rail-Trail in both directions!  
We must continue this project. This is a wonderful Lincoln County feature.”

“INFORMATION. Where are the trails located? Where do they go? How far have you walked? There needs to be ample signs so citizens don't feel as if they are just walking down a hunting path in the woods to no particular destination.

The gang vandalism is terrible. I would prefer to see our local art work along the trail.

This town is full of talented artists!”



## APPENDIX III: FUNDING AND FINANCING

The purpose of this appendix is to define and describe possible funding sources that could be used to support the planning, design and development of greenway improvements.

Implementing the recommendations of this plan will require a strong level of local support and commitment through a variety of local funding mechanisms. Perhaps most important is the addition of bicycle and greenway recommendations from this Plan into the Lincoln County and the City of Lincolnton's annual budgets. These improvements should become a high priority and be supported through portions of the funding currently used for public safety, streets, parks and recreation, planning, Powell Bill funds, community development, travel and tourism, downtown, and local bonds.

Lincoln County and the City of Lincolnton should also seek a combination of funding sources that include local, state, federal, and private money. Fortunately, the benefits of protected greenways are many and varied. This allows programs in Lincoln County to access money earmarked for a variety of purposes including water quality, hazard mitigation, recreation, air quality, alternate transportation, wildlife protection, community health, and economic development. Competition is almost always stiff for state and federal funds, so it becomes imperative that local governments work together to create multi-jurisdictional partnerships and to develop their own local sources of funding. These sources can then be used to leverage outside assistance.

For the past two decades, a variety of funding has been used throughout North Carolina to support the planning, design and construction of urban and rural bicycle and greenway projects. The largest single source of funding for these projects has come from the Surface Transportation Act, first the Intermodal Surface Transportation Efficiency Act (ISTEA) in the early to mid 1990's; then its successor, Transportation Equity Act for the Twenty-First Century (TEA-21) through the early part of

2002; and now the Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The North Carolina Department of Transportation manages and distributes the majority of federal funds that are derived from the Act to support the development of bicycle/trail development.

The majority of federal funding is distributed to states in the form of block grants and is then distributed throughout a given state for specific projects. State funding programs in North Carolina also support the creation of greenways. North Carolina has developed a broad array of funding sources that address land acquisition, green infrastructure development, and trail facility development.

Additionally, there are many things Lincoln County and the City of Lincolnton can do to establish their own funding for greenway initiatives. For the most part, it takes money to get money. For Lincoln County and the City of Lincolnton, it will be necessary to create a local funding program through one of the methods that is defined within this report. Financing will be needed to administer the continued planning and implementation process, acquire parcels or easements, and manage and maintain facilities.

This appendix is organized by first addressing the state sources of funding, then addresses separate federal and local government funding sources. It is by no means an exhaustive list as there are many other funding sources available that should be researched and pursued as well. Creative planning and consistent monitoring of funding options will likely turn up new opportunities not listed here.

### ***I. HIGH PRIORITY FUNDING OPTIONS***

While there are a number of funding sources provided in the following pages, these sources should be the highest priority in order to achieve successful implementation. It is critical for



local governments to step up given the competitiveness and finite availability associated with most funding sources. Details about the following sources are found later in this appendix.

- Local Capital Improvements Program (CIP)
- Local Bond
- Local Fees
- The Metropolitan Planning Organization
- NCDOT Division of Bicycle and Pedestrian Transportation
- State Transportation Improvements Program (STIP)
- State Powell Bill Funds
- State Safe Routes to School Program
- State Parks and Recreation Trust Fund (PARTF)
- State Health and Wellness Trust Fund (HWTF)
- Private Sources
- Stimulus funding (potential for second round of stimulus funding)

## II. STATE FUNDING SOURCES

The most direct source of public-sector funding for Lincoln County and the City of Lincolnton will come from state agencies in North Carolina. Generally, these funds are made available to local governments based on grant-in-aid formulas. The single most important key to obtaining state grant funding is for local governments to have adopted plans for greenway, open space, bicycle, pedestrian or trail systems in place prior to making an application for funding. Unfortunately, there is no direct correlation between any of the programs listed and a constant stream of funding for greenway or trail projects and all projects are funded on the basis of grant applications. There is no specific set aside amount that is allocated for greenway and trail development within a given program. Funding is based solely on need and the need has to be expressed and submitted in the form of a grant application. Finally, all of these programs

are geared to address needs across the entire state, so all of the programs are competitive and must allocate funding with the needs of the entire state in mind.

The Powell Bill Program is an annual state allocation to municipalities for use in street system maintenance and construction activities. There is considerable local control over Powell Bill Funds (it is not a grant application process). In the past, the State allocated a considerable portion of these revenues for construction purposes. However, budgetary constraints since 2001 have led to a shift of new Powell Bill funds to cover maintenance and operations activities. Both the Powell Bill reserves and the 2000 Transportation Bond funds are limited funding sources that will eventually be depleted.

In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT) has been the single largest source of funding for bicycle and greenway projects, including non-construction projects such as brochures, maps, and public safety information for more than a decade. DBPT offers several programs in support of bicycle facility development. The following information is from NCDOT's interactive web site ([www.ncdot.org](http://www.ncdot.org)). Contact the NCDOT, Division of Bicycle and Pedestrian Transportation at (919) 807-2804 for more information.

North Carolina programs are listed below. A good starting website with links to many of the following programs is [www.enr.state.nc.us/html/tax\\_credits.html](http://www.enr.state.nc.us/html/tax_credits.html).

### FUNDING OPPORTUNITIES THROUGH NCDOT

Bicycle and Pedestrian Independent Projects Funded Through the Transportation Improvement Program (TIP):

In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT) manages the Transportation Improvement Program (TIP) selection process for bicycle, pedestrian, and greenway projects.



Projects programmed into the TIP by the DBPT are independent projects – those which are not related to a scheduled highway project. Incidental projects – those related to a scheduled highway project – are handled through other funding sources described in this section.

DBPT has an annual budget of \$6 million. Eighty percent of these funds are from STP-Enhancement funds, while the State Highway Trust provides the remaining 20 percent of the funding. Prospective applicants are encouraged to contact the DBPT regarding funding assistance for bicycle projects. For a detailed description of the TIP project selection process, visit [www.ncdot.org/transit/bicycle/funding/funding\\_TIP.html](http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html). Another \$500,000 of the division’s funding is available for miscellaneous projects.

### ***Incidental Projects***

Bicycle accommodations such as bike lanes, widened paved shoulders, and bicycle-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 bicycle safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of National Highway System funds and State Highway Trust Funds.

### ***Governor’s Highway Safety Program (GHSP)***

The mission of the GHSP is to promote highway safety awareness and reduce the number of traffic crashes in the state of North Carolina through the planning and execution of safety programs. GHSP funding is provided through an annual program, upon approval of specific project requests. Amounts of GHSP funds vary from year to year, according to the specific amounts requested. Communities may apply for a GHSP grant to be used as seed money to start a program to enhance

highway safety. Once a grant is awarded, funding is provided on a reimbursement basis. Evidence of reductions in crashes, injuries, and fatalities is required. For information on applying for GHSP funding, visit [www.ncdot.org/programs/ghsp/](http://www.ncdot.org/programs/ghsp/).

### ***FUNDING AVAILABLE THROUGH NORTH CAROLINA RURAL PLANNING ORGANIZATIONS (RPO)***

The first step of Lincoln County and the City of Lincolnton would be to contact the RPO with priority greenway projects for the TIP list. Ensuring that greenway projects are on this TIP list will allow the possibility of being funded from the statewide TIP.

RPOs in North Carolina which are located in air quality nonattainment or maintenance areas also have the authority to program Congestion Mitigation Air Quality (CMAQ) funds. CMAQ funding is intended for projects that reduce transportation related emissions. Some NC RPOs have chosen to use the CMAQ funding for bicycle/pedestrian projects. Local governments in air quality nonattainment or maintenance area should contact their RPO for information on CMAQ funding opportunities for greenway facilities.

### ***TRANSPORTATION ENHANCEMENT CALL FOR PROJECTS, EU, NCDOT***

The Enhancement Unit administers a portion of the enhancement funding set-aside through the Call for Projects process. In North Carolina the Enhancement Program is a federally funded cost reimbursement program with a focus upon improving the transportation experience in and through local North Carolina communities either culturally, aesthetically, or environmentally. The program seeks to encourage diverse modes of travel, increase benefits to communities and to encourage citizen involvement. This is accomplished through





the following twelve qualifying activities:

- Bicycle and Pedestrian Facilities
- Bicycle and Pedestrian Safety
- Acquisition of Scenic Easements, Scenic or Historic Sites
- Scenic or Historic Highway Programs (including tourist or welcome centers)
- Landscaping and other Scenic Beautification
- Historic Preservation
- Rehabilitation of Historic Transportation Facilities
- Preservation of Abandoned Rail Corridors
- Control of Outdoor Advertising
- Archaeological Planning and Research
- Environmental Mitigation
- Transportation Museums

Funds are allocated based on an equity formula approved by the Board of Transportation. The formula is applied at the county level and aggregated to the regional level. Available fund amount varies. In previous Calls, the funds available ranged from \$10 million to \$22 million.

The Call process takes place on even numbered years or as specified by the Secretary of Transportation. For more information, visit [www.ncdot.org/financial/fiscal/Enhancement/](http://www.ncdot.org/financial/fiscal/Enhancement/)

#### ***BICYCLE AND PEDESTRIAN PLANNING GRANT INITIATIVE, MANAGED BY NCDOT, DBPT***

To encourage the development of comprehensive local bicycle plans and pedestrian plans, the NCDOT Division of Bicycle and Pedestrian Transportation (DBPT) and the Transportation Planning Branch (TPB) have created a matching grant program to fund plan development. This program was initiated through a special allocation of funding approved

by the North Carolina General Assembly in 2003 along with federal funds earmarked specifically for bicycle and pedestrian planning by the TPB. The planning grant program was launched in January 2004, and it is currently administered through NCDOT-DBPT and the Institute for Transportation Research and Education (ITRE) at NC State University. Over the first six grant cycles, 92 municipal plans have been selected and funded. A total of \$ 2,270,168 has been allocated. Funding was secured in 2009 for \$315,850. Additional annual allocations will be sought for subsequent years. For more information, visit [www.itre.ncsu.edu/ptg/bikeped/ncdot/index.html](http://www.itre.ncsu.edu/ptg/bikeped/ncdot/index.html)

#### ***SAFE ROUTES TO SCHOOL PROGRAM, MANAGED BY NCDOT, DBPT***

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

In its first funding cycle (2008), the state of North Carolina allocated \$1.46 million for six infrastructure projects, \$135,450 for non-infrastructure projects, and \$315,000 for action planning. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is



construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding. For more information, visit [www.ncdot.org/programs/safeRoutes/](http://www.ncdot.org/programs/safeRoutes/) or contact NCDOT's Division of Bicycle and Pedestrian Transportation at (919) 807-0774.

#### ***THE NORTH CAROLINA CONSERVATION TAX CREDIT, MANAGED BY NCDENR***

This program, managed by the North Carolina Department of Environment and Natural Resources, provides an incentive (in the form of an income tax credit) for landowners that donate interests in real property for conservation purposes. Property donations can be fee simple or in the form of conservation easements or bargain sale. The goal of this program is to manage stormwater, protect water supply watersheds, retain working farms and forests, and set-aside greenways for ecological communities, public trails, and wildlife corridors. For more information, visit [www.enr.state.nc.us/conservationtaxcredit/](http://www.enr.state.nc.us/conservationtaxcredit/).

#### ***LAND AND WATER CONSERVATION FUND (LWCF)***

The Land and Water Conservation Fund (LWCF) program is a reimbursable, 50/50 matching grants program to states for conservation and recreation purposes, and through the states to local governments to address "close to home" outdoor recreation needs. LWCF grants can be used by communities to build a trail within one park site, if the local government has fee-simple title to the park site. Grants for a maximum of \$250,000 in LWCF assistance are awarded yearly to county governments, incorporated municipalities, public authorities and federally recognized Indian tribes. The local match may be provided with in-kind services or cash. The program's funding comes primarily from offshore oil and gas drilling receipts, with

an authorized expenditure of \$900 million each year. However, Congress generally appropriates only a small fraction of this amount. The allotted money for the year 2007 was \$632,846.

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources. Since 1965, the LWCF program has built a permanent park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than \$63 million in matching grants to protect land and support more than 800 state and local park projects. More than 37,000 acres have been acquired with LWCF assistance to establish a park legacy in our state. For more information, visit <http://ils.unc.edu/parkproject/lwcf/home1.html>

#### ***NC ADOPT-A-TRAIL GRANT PROGRAM***

This program, operated by the Trails Section of the NC Division of State Parks, offers annual grants to local governments to build, renovate, maintain, sign and map and create brochures for pedestrian trails. Grants are generally capped at about \$5,000 per project and do not require a match. A total of \$108,000 in Adopt-A-Trail money is awarded annually to government agencies. Applications are due during the month of February. For more information, visit <http://ils.unc.edu/parkproject/trails/grant.html>.

#### ***RECREATIONAL TRAILS PROGRAM***

The Recreational Trails Program (RTP) is a grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. This program's intent is to meet the trail and trail-related recreational needs identified by



the Statewide Comprehensive Outdoor Recreation Plan. Grant applicants must be able contribute 20% of the project cost with cash or in-kind contributions. The program is managed by the State Trails Program, which is a section of the N.C. Division of Parks and Recreation.

The grant application and instruction handbook are available through the State Trails Program website at <http://ils.unc.edu/parkproject/trails/home.html>. Applications are due during the month of February. For more information, call (919) 715-8699.

#### ***NORTH CAROLINA PARKS AND RECREATION TRUST FUND (PARTF)***

The fund was established in 1994 by the North Carolina General Assembly and is administered by the Parks and Recreation Authority. Through this program, several million dollars each year are available to local governments to fund the acquisition, development and renovation of recreational areas. Applicable projects require a 50/50 match from the local government. Grants for a maximum of \$500,000 are awarded yearly to county governments or incorporated municipalities. The fund is fueled by money from the state's portion of the real estate deed transfer tax for property sold in North Carolina.

The trust fund is allocated three ways:

- 65 percent to the state parks through the N.C. Division of Parks and Recreation.
- 30 percent as dollar-for dollar matching grants to local governments for park and recreation purposes.
- 5 percent for the Coastal and Estuarine Water Access Program.

For information on how to apply, visit [www.partf.net/learn.html](http://www.partf.net/learn.html)

#### ***POWELL BILL PROGRAM***

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by statute. This program is a state grant to municipalities 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. Funding for this program is collected from fuel taxes. Amount of funds are based on population and mileage of town-maintained streets. For more information, visit [www.ncdot.org/financial/fiscal/ExtAditBranch/Powell\\_Bill/powellbill.html](http://www.ncdot.org/financial/fiscal/ExtAditBranch/Powell_Bill/powellbill.html).

#### ***CLEAN WATER MANAGEMENT TRUST FUND***

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection. At the end of each fiscal year, 6.5 percent of the unreserved credit balance in North Carolina's General Fund, or 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. CWMTF funds may be used to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits. The fund has provided funding for land acquisition of numerous greenway projects featuring trails, both paved and unpaved. For a history of awarded grants in North Carolina and more information about this fund and applications, visit [www.cwmtf.net/](http://www.cwmtf.net/).

#### ***NATURAL HERITAGE TRUST FUND***

This trust fund, managed by the NC Natural Heritage Program, has contributed millions of dollars to support the



conservation of North Carolina's most significant natural areas and cultural heritage sites. The NHTF is used to acquire and protect land that has significant habitat value. Some large wetland areas may also qualify, depending on their biological integrity and characteristics. Only certain state agencies are eligible to apply for this fund, including the Department of Environment and Natural Resources, the Wildlife Resources Commission, the Department of Cultural Resources and the Department of Agriculture and Consumer Services. As such, municipalities must work with State level partners to access this fund. Additional information is available from the NC Natural Heritage Program. For more information and grant application, visit [www.ncnhtf.org/](http://www.ncnhtf.org/).

#### ***NORTH CAROLINA CONSERVATION TAX CREDIT PROGRAM***

North Carolina has a unique incentive program to assist land-owners to protect the environment and the quality of life. A credit is allowed against individual and corporate income taxes when real property is donated for conservation purposes. Interests in property that promote specific public benefits may be donated to a qualified recipient. Such conservation donations qualify for a substantial tax credit. For more information, visit [www.enr.state.nc.us/conservationtaxcredit/](http://www.enr.state.nc.us/conservationtaxcredit/).

#### ***URBAN AND COMMUNITY FORESTRY ASSISTANCE PROGRAM***

This program offers small grants that can be used to plant urban trees, establish a community arboretum, or other programs that promote tree canopy in urban areas. The program operates as a cooperative partnership between the NC Division of Forest Resources and the USDA Forest Service, Southern Region. To qualify for this program, a community must pledge

to develop a street-tree inventory, a municipal tree ordinance, a tree commission, and an urban forestry-management plan. All of these can be funded through the program. For more information and a grant application, contact the NC Division of Forest Resources and/or visit [www.dfr.state.nc.us/urban/urban\\_grantprogram.htm](http://www.dfr.state.nc.us/urban/urban_grantprogram.htm).

#### ***ECOSYSTEM ENHANCEMENT PROGRAM***

Developed in 2003 as a new mechanism to facilitate improved mitigation projects for NC highways, this program offers funding for restoration projects and for protection projects that serve to enhance water quality and wildlife habitat in NC. Information on the program is available by contacting the Natural Heritage Program in the NC Department of Environment and Natural Resources (NCDENR). For more information, visit [www.nceep.net/pages/partners.html](http://www.nceep.net/pages/partners.html) or call 919-715-0476.

#### ***AGRICULTURE COST SHARE PROGRAM***

Established in 1984, this program assists farmers with the cost of installing best management practices (BMPs) that benefit water quality. The program covers as much as 75 percent of the costs to implement BMPs. The NC Division of Soil and Water Conservation within the NC Department of Environment and Natural Resources administers this program through local Soil and Water Conservation Districts (SWCD). For more information, visit [www.enr.state.nc.us/DSWC/pages/agcostshareprogram.html](http://www.enr.state.nc.us/DSWC/pages/agcostshareprogram.html) or call 919-733-2302.

#### ***WATER RESOURCES DEVELOPMENT GRANT PROGRAM***

The NC Division of Water Resources offers cost-sharing grants to local governments on projects related to water



resources. Of the seven project application categories available, the category which relates to the establishment of greenways is “Land Acquisition and Facility Development for Water-Based Recreation Projects.” Applicants may apply for funding for a greenway as long as the greenway is in close proximity to a water body. For more information, see [www.ncwater.org/Financial\\_Assistance](http://www.ncwater.org/Financial_Assistance) or call 919-733-4064.

#### ***SMALL CITIES COMMUNITY DEVELOPMENT BLOCK GRANTS***

State level funds are allocated through the NC Department of Commerce, Division of Community Assistance to be used to promote economic development and to serve low-income and moderate-income neighborhoods. Greenways that are part of a community’s economic development plans may qualify for assistance under this program. Recreational areas that serve to improve the quality of life in lower income areas may also qualify. Approximately \$50 million is available statewide to fund a variety of projects. For more information, visit

[www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/](http://www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/) or call 919-733-2853.

#### ***NORTH CAROLINA HEALTH AND WELLNESS TRUST FUND***

The NC Health and Wellness Trust Fund was created by the General Assembly as one of 3 entities to invest North Carolina’s portion of the Tobacco Master Settlement Agreement. HWTF receives one-fourth of the state’s tobacco settlement funds, which are paid in annual installments over a 25-year period.

Fit Together, a partnership of the NC Health and Wellness Trust Fund (HWTF) and Blue Cross and Blue Shield of North Carolina (BCBSNC) announces the establishment of Fit Community, a designation and grant program that recognizes

and rewards North Carolina communities’ efforts to support physical activity and healthy eating initiatives, as well as tobacco-free school environments. Fit Community is one component of the jointly sponsored Fit Together initiative, a statewide prevention campaign designed to raise awareness about obesity and to equip individuals, families and communities with the tools they need to address this important issue.

All North Carolina municipalities and counties are eligible to apply for a Fit Community designation, which will be awarded to those that have excelled in supporting the following:

- physical activity in the community, schools, and workplaces
- healthy eating in the community, schools, workplaces
- tobacco use prevention efforts in schools

Designations will be valid for two years, and designated communities may have the opportunity to reapply for subsequent two-year extensions. The benefits of being a Fit Community include:

- Heightened statewide attention that can help bolster local community development and/or economic investment initiatives (highway signage and a plaque for the Mayor’s or County Commission Chair’s office will be provided)
- Reinvigoration of a community’s sense of civic pride (each Fit Community will serve as a model for other communities that are trying to achieve similar goals)
- Use of the Fit Community designation logo for promotional and communication purposes.
- The application for Fit Community designation is available on the Fit Together Web site: [www.FitTogetherNC.org/FitCommunity.aspx](http://www.FitTogetherNC.org/FitCommunity.aspx).



Fit Community grants are designed to support innovative strategies that help a community meet its goal to becoming a Fit Community. Eight to nine, two-year grants of up to \$30,000 annually will be awarded to applicants that have a demonstrated need, proven capacity, and opportunity for positive change in addressing physical activity and/or healthy eating. For more information, visit [www.healthwellnc.com/](http://www.healthwellnc.com/)

#### ***EAT SMART, MOVE MORE NC COMMUNITY GRANTS***

The Eat Smart, Move More (ESMM) NC Community Grants program provides funding to local communities to implement strategies that advance the goals and objectives of the ESMM NC Plan. These goals include increasing physical activity opportunities and increasing the number of citizens who get the recommended amount of physical activity. Administered by the Physical Activity and Nutrition branch of the Division of Public Health, the program awards \$10,000 - 20,000 to local communities each year. Interested applicants must submit a letter of intent in late June and an application in mid-July. For more information, visit [www.eatsmartmovemorenc.com/funding/index.html](http://www.eatsmartmovemorenc.com/funding/index.html).

#### ***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. See [www.dfr.state.nc.us/urban/urban\\_ideas.htm](http://www.dfr.state.nc.us/urban/urban_ideas.htm)

### ***III. FUNDING ALLOCATED BY FEDERAL AGENCIES***

#### ***WETLANDS RESERVE PROGRAM***

This federal funding source is a voluntary program offering technical and financial assistance to landowners who want to restore and protect wetland areas for water quality and wildlife habitat. The US Department of Agriculture's Natural Resource Conservation Service (USDA-NRCS) administers the program and provides direct payments to private landowners who agree to place sensitive wetlands under permanent easements. This program can be used to fund the protection of open space and greenways within riparian corridors. For more information, visit <http://www.nrcs.usda.gov/PROGRAMS/wrp/>.

#### ***THE COMMUNITY DEVELOPMENT BLOCK GRANT (HUD-CDBG)***

The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate income areas. Several communities have used HUD funds to develop greenways, including the Boulding Branch Greenway in High Point, North Carolina. Grants from this program range from \$50,000 to \$200,000 and are either made to municipalities or non-profits. There is no formal application process. For more information, visit [www.hud.gov/offices/cpd/communitydevelopment/programs/](http://www.hud.gov/offices/cpd/communitydevelopment/programs/).

#### ***USDA RURAL BUSINESS ENTERPRISE GRANTS***

Public and private nonprofit groups in communities with populations under 50,000 are eligible to apply for grant assistance to help their local small business environment. \$1 million is available for North Carolina on an annual basis and may be used for sidewalk and other community facilities. For more information from the local USDA Service Center, visit [www.rurdev.usda.gov/rbs/busp/rbeg.htm](http://www.rurdev.usda.gov/rbs/busp/rbeg.htm)



### ***RIVERS TRAILS AND CONSERVATION ASSISTANCE PROGRAM (RTCA)***

The Rivers, Trails, and Conservation Assistance Program, also known as the Rivers & Trails Program or RTCA, is the community assistance arm of the National Park Service. RTCA staff provide technical assistance to community groups and local, State, and federal government agencies so they can conserve rivers, preserve open space, and develop trails and greenways. The RTCA program implements the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America. For more information, visit <http://www.nps.gov/nrcr/programs/rtca/>

### ***PUBLIC LANDS HIGHWAYS DISCRETIONARY FUND***

The Federal Highway Administration administers discretionary funding for projects that will reduce congestion and improve air quality. The FHWA issues a call for projects to disseminate this funding. PLHD funding for 2009 is approximately \$88 million (this figure is in addition to what Congress has earmarked for 2009). For information on how to apply, visit <http://flh.fhwa.dot.gov/programs/plh/discretionary/>

### ***DEPARTMENT OF ENERGY***

The Department of Energy's Energy Efficiency and Conservation Block Grants (EECBG) may be used to reduce energy use 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. North

Carolina was allocated \$20,925,300 in 2009. More information can be found at <http://www.eecbg.energy.gov/>

## ***IV. LOCAL FUNDING SOURCES***

Municipalities often plan for the funding of pedestrian facilities or improvements through development of Capital Improvement Programs (CIP). In Raleigh, for example, the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from \$100,000 to \$500,000, administered through the Recreation and Parks Department. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the following: capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each of these categories are described below.

### ***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 an 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.



### ***MUNICIPAL SERVICE DISTRICT***

Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the citywide 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.

### ***TAX INCREMENT FINANCING***

Tax increment financing is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project, such as the construction of a greenway, is carried out, there is an increase in the value of surrounding real estate. Oftentimes, new investment in the area follows such a project. This increase in value and investment creates more taxable property, which increases tax revenues. These increased revenues can be referred to as the "tax increment." Tax Increment Financing dedicates that increased revenue to finance debt issued to pay for the project. TIF is designed to channel funding toward improvements in distressed or underdeveloped areas where development would not otherwise occur. TIF creates funding for public projects that may otherwise be unaffordable to localities. The large majority of states have enabling legislation for tax increment financing.

### ***INSTALLMENT PURCHASE FINANCING***

As an alternative to debt financing of capital improvements, communities can execute installment/ lease purchase contracts for improvements. This type of financing is typically used for relatively small projects that the seller or a financial institution is willing to finance or when up-front funds are unavailable. In a lease purchase contract the community leases the property or improvement from the seller or financial institution. The lease is paid in installments that include principal, interest, and associated costs. Upon completion of the lease period, the

community owns the property or improvement. While lease purchase contracts are similar to a bond, this arrangement allows the community to acquire the property or improvement without issuing debt. These instruments, however, are more costly than issuing debt.

### ***TAXES***

Many communities have raised money through self-imposed increases in taxes and bonds. For example, Pinellas County residents in Florida voted to adopt a one-cent sales tax increase, which provided an additional \$5 million for the development of the overwhelmingly popular Pinellas Trail. Sales taxes have also been used in Allegheny County, Pennsylvania, and in Boulder, Colorado to fund open space projects. A gas tax is another method used by some municipalities to fund public improvements. A number of taxes provide direct or indirect funding for the operations of local governments. Some of them are:

#### ***Sales Tax***

In North Carolina, the state has authorized a sales tax at the state and county levels. Local governments that choose to exercise the local option sales tax (all counties currently do), use the tax revenues to provide funding for a wide variety of projects and activities. Any increase in the sales tax, even if applying to a single county, must gain approval of the state legislature.

#### ***Property Tax***

Property taxes generally support a significant portion of a municipality's activities. However, the revenues from property taxes can also be used to pay debt service on general obligation bonds issued to finance greenway system acquisitions. Because of limits imposed on tax rates, use of property taxes to fund greenways could limit the municipality's ability to raise funds for other activities. Property taxes can provide a steady stream





of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.

### *Excise Taxes*

Excise taxes are taxes on specific goods and services. These taxes require special legislation and the use of the funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation related activities.

### *Occupancy Tax*

The NC General Assembly may grant towns the authority to levy occupancy tax on hotel and motel rooms. The act granting the taxing authority limits the use of the proceeds, usually for tourism-promotion purposes.

### *FEES*

Three fee options that have been used by local governments to assist in funding pedestrian and bicycle facilities are listed here:

#### *Stormwater Utility Fees*

Greenway sections may be purchased with stormwater fees, if the property in question is used to mitigate floodwater or filter pollutants.

Stormwater charges are typically based on an estimate of the amount of impervious surface on a user's property. Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of stormwater runoff compared to natural

conditions. Such surfaces cause runoff that directly or indirectly discharge into public storm drainage facilities and creates a need for stormwater management services. Thus, users with more impervious surface are charged more for stormwater service than users with less impervious surface. The rates, fees, and charges collected for stormwater management services may not exceed the costs incurred to provide these services. The costs that may be recovered through the stormwater rates, fees, and charges includes any costs necessary to assure that all aspects of stormwater quality and quantity are managed in accordance with federal and state laws, regulations, and rules.

#### *Streetscape Utility Fees*

Streetscape Utility Fees could help support streetscape maintenance of the area between the curb and the property line through a flat monthly fee per residential dwelling unit. Discounts would be available for senior and disabled citizens. Non-residential customers would be charged a per foot fee based on the length of frontage on streetscape improvements. This amount could be capped for non-residential customers with extremely large amounts of street frontage. The revenues raised from Streetscape Utility fees would be limited by ordinance to maintenance (or construction and maintenance) activities in support of the streetscape.

#### *Impact Fees*

Developers can be required to provide greenway impact fees through local enabling legislation. Impact fees, which are also known as capital contributions, facilities fees, or system development charges, are typically collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide capacity to serve new growth. The intent of these fees is to avoid burdening existing customers with the costs of providing capacity to serve new



growth (“growth pays its own way”). Greenway impact fees are designed to reflect the costs incurred to provide sufficient capacity in the system to meet the additional needs of a growing community. These charges are set in a fee schedule applied uniformly to all new development. Communities that institute impact fees must develop a sound financial model that enables policy makers to justify fee levels for different user groups, and to ensure that revenues generated meet (but do not exceed) the needs of development. Factors used to determine an appropriate impact fee amount can include: lot size, number of occupants, and types of subdivision improvements. If the City of Lincoln is interested in pursuing open space impact fees, it will require enabling legislation to authorize the collection of the fees.

### *Exactions*

Exactions are similar to impact fees in that they provide facilities to growing communities. The difference is that through exactions it can be established that it is the responsibility of the developer to build the greenway or pedestrian facility that crosses through the property, or adjacent to the property being developed.

### *In-Lieu-Of Fees*

As an alternative to requiring developers to dedicate on-site greenway sections that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval and recovers the cost of the off-site land acquisition or the development’s proportionate share of the cost of a regional facility serving a larger area. Some communities prefer in-lieu-of fees. This alternative allows community staff to purchase land worthy of protection rather than accept marginal land that meets the

quantitative requirements of a developer dedication but falls a bit short of qualitative interests.

### *BONDS AND LOANS*

Bonds have been a very popular way for communities across the country to finance their pedestrian and greenway projects. A number of bond options are listed below. Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote. Billings, Montana used the issuance of a bond in the amount of \$599,000 to provide the matching funds for several of their TEA-21 enhancement dollars. Austin, Texas has also used bond issues to fund a portion of their bicycle and trail system.

### *Revenue Bonds*

Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue annually to cover the program’s operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.

### *General Obligation Bonds*

Cities, counties, and service districts generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus



may carry a lower interest rate than a revenue bond. Frequently, when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of land acquisition and greenway development and make funds available for immediate purchases and projects. Voter approval is required.

#### ***Special Assessment Bonds***

Special assessment bonds are secured by a lien on the property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.

#### ***State Revolving Fund (SRF) Loans***

Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply related projects including many watershed management activities. These loans typically require a revenue pledge, like a revenue bond, but carry a below market interest rate and limited term for debt repayment (20 years).

### ***V. OTHER LOCAL OPTIONS***

#### ***FACILITY MAINTENANCE DISTRICTS***

Facility Maintenance Districts (FMDs) can be created to pay for the costs of on-going maintenance of public facilities and

landscaping within the areas of the Town where improvements have been concentrated and where their benefits most directly benefit business and institutional property owners. An FMD is needed in order to assure a sustainable maintenance program. Fees may be based upon the length of lot frontage along streets where improvements have been installed, or upon other factors such as the size of the parcel. The program supported by the FMD should include regular maintenance of streetscape of off road trail improvements. The City of Lincolnton can initiate public outreach efforts to merchants, the Chamber of Commerce, and property owners. In these meetings, City staff will discuss the proposed apportionment and allocation methodology and will explore implementation strategies.

Lincolnton can manage maintenance responsibilities either through its own staff or through private contractors.

#### ***PARTNERSHIPS***

Another method of funding facilities is to partner with public agencies and private companies and organizations. Partnerships engender a spirit of cooperation, civic pride and community participation. The key to the involvement of private partners is to make a compelling argument for their participation. Very specific routes that make critical connections to places of business would be targeted for private partners' monetary support following a successful master planning effort. Potential partners include major employers which are located along or accessible to pedestrian facilities such as multi-use paths or greenways. Name recognition for corporate partnerships would be accomplished through signage at trail heads or interpretive signage along greenway systems. Utilities often make good partners and many trails now share corridors with them. Money raised from providing an easement to utilities can help defray the costs of maintenance. It is important to have a lawyer review the legal agreement and



verify ownership of the subsurface, surface or air rights in order to enter into an agreement.

### **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.

### **VOLUNTEER WORK**

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

## **VI. PRIVATE FOUNDATIONS AND ORGANIZATIONS**

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are a few examples of private funding opportunities available in North Carolina and locally to Lincoln County.

### **LAND FOR TOMORROW CAMPAIGN**

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals and community groups committed to securing support from the public and General Assembly for protecting land, water and historic places. The campaign is asking the North Carolina General Assembly to support issuance of a bond for \$200 million a year for five years to preserve and protect its special land and water resources. Land for Tomorrow will enable North Carolina to reach a goal of ensuring that working farms and forests; sanctuaries for wildlife; land bordering streams, parks and greenways; land that helps strengthen communities and promotes job growth; historic downtowns and neighborhoods; and more, will be there to enhance the quality of life for generations to come. For more information, visit [www.landfortomorrow.org/](http://www.landfortomorrow.org/)

### **THE TRUST FOR PUBLIC LAND**

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities. TPL's legal and real estate specialists work with landowners, government agencies, and community groups to:

- Create urban parks, gardens, greenways and riverways
- Build livable communities by setting aside open space in the path of growth
- Conserve land for watershed protection, scenic beauty, and close-to home recreation
- Safeguard the character of communities by preserving historic landmarks and landscapes.



The following are TPL's Conservation Services:

- Conservation Vision: TPL helps agencies and communities define conservation priorities, identify lands to be protected, and plan networks of conserved land that meet public need.
- Conservation Finance: TPL helps agencies and communities identify and raise funds for conservation from federal, state, local, and philanthropic sources.
- Conservation Transactions: TPL helps structure, negotiate, and complete land transactions that create parks, playgrounds, and protected natural areas.
- Research and Education: TPL acquires and shares knowledge of conservation issues and techniques to improve the practice of conservation and promote its public benefits.

Since 1972, TPL has worked with willing landowners, community groups, and national, state, and local agencies to complete more than 3,000 land conservation projects in 46 states, protecting more than 2 million acres. Since 1994, TPL has helped states and communities craft and pass over 330 ballot measures, generating almost \$25 billion in new conservation-related funding. For more information, visit [www.tpl.org/](http://www.tpl.org/).

#### **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. The foundation has two grant cycles per year and generally does not fund land acquisition. However, the foundation may be able to support municipalities in other areas of greenways development. More information is available at [www.zsr.org](http://www.zsr.org).

#### **CANNON FOUNDATION, INC**

The Cannon Foundation gives grants across the State. Preference is given to rural communities. Grants have been provided in the fields of health, environment, cultural/historic, human services, and education. The majority of the grants go to capital improvements (75%) while 25% goes to project support and programs. For more information, visit <http://www.cannonfoundation.org/>

#### **NORTH CAROLINA COMMUNITY FOUNDATION**

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

#### **NATIONAL TRAILS FUND**

In 1998, the American Hiking Society created the National Trails Fund, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. Each year, 73 million people enjoy foot trails, yet many of our favorite trails need major repairs due to a \$200 million in badly needed maintenance. National Trails Fund grants give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. For 2005, American Hiking distributed over



\$40,000 in grants thanks to the generous support of Cascade Designs and L.L.Bean, the program's Charter Sponsors. To date, American Hiking has granted nearly \$382,000 to 105 different trail projects across the U.S. for land acquisition, constituency building campaigns, and a variety of trail work projects. Awards typically range from \$500 to \$5,000 per project.

The American Hiking Society considers several project types:

- 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.

Web site: [www.americanhiking.org/NTF.aspx](http://www.americanhiking.org/NTF.aspx)



*Envisioning a Carolina Thread Trail segment.*



## APPENDIX IV: CONSERVATION TOOLBOX

There are many different ways for Lincoln County to secure trail right-of-way for the Carolina Thread Trail. The recommended alignment of the trail will follow publicly owned land (easements, parklands, and conservation lands) wherever possible through a significant portion of its length. However, it will be necessary to work with landowners along the route to secure trail right-of-way. The following text provides a list of options that should be considered in securing right-of-way for the Carolina Thread Trail.

### *I. Partnerships*

Lincoln County and the City of Lincolnton should pursue partnerships with land trusts and land managers to make more effective use of their land acquisition funds and strategies. The following offers recommendations on how these partnerships could be strengthened

#### *Land Trusts*

Land trust organizations, such as the Trust for Public Land, the Catawba Lands Conservancy, and Conservation Trust for North Carolina, to name just few, are valuable partners, when it comes to acquiring land and rights-of-way for greenways. These groups can work directly with landowners and conduct their business in private so that sensitive land transactions are handled in an appropriate manner. Once the transaction has occurred, the land trust will usually convey the acquired land or easement to a public agency, such as a town or county for permanent stewardship and ownership.

#### *Private Land Managers*

Another possible partnership that could be strengthened would be with the utility companies that manage land throughout the Lincoln County region. Trails and greenways can be built on

rights-of-ways that are either owned or leased by electric and natural gas companies. Electric utility companies have long recognized the value of partnering with local communities, non-profit trail organizations, and private land owners to permit their rights-of-ways to be used for trail development. This has occurred all over the United States and throughout North Carolina.

Lincoln County and the City of Lincolnton should actively update and maintain relationships with private utility and land managers to ensure that a community wide bicycle, pedestrian and greenway system can be accommodated within these rights-of-way. The respective municipalities will need to demonstrate to these companies that maintenance will be addressed, liability will be reduced and minimized and access to utility needs will be provided.

### *II. Greenway Acquisition Tools*

The following menu of tools describe various methods of acquisition that can be used by landowners, land conservation organizations, Lincoln County, and the City of Lincolnton to acquire greenway lands.

#### *IIA. Government Regulation*

Regulation is defined as the government's ability to control the use and development of land through legislative powers. Regulatory methods help shape the use of land without transferring or selling the land. The following types of development ordinances are regulatory tools that can meet the challenges of projected suburban growth and development as well as conserve and protect greenway resources.





### *Exactions*

An exaction is a condition of development approval that requires development to provide or contribute to the financing of public facilities at their own expense. For example, a developer may be required to build a greenway on-site as a condition of developing a certain number of units because the development will create the need for new parks or will harm existing parks due to overuse. This mechanism can be used to protect or preserve greenway lands, which are then donated to Lincoln County or the City of Lincoln. Consideration should be given to include greenway development in future exaction programs. Most commonly, exactions are in the form of mandatory dedications of lands for parks and infrastructure, fees in lieu of mandatory dedication, or impact fees.

### *Mandatory Dedication*

This is a type of exaction where subdivision regulations require a developer to dedicate or donate improved land to the public interest. A dedication may involve the fee simple title to the land, an easement, or some other property interest. Sometimes, the construction of an improvement itself is required such as a park or greenway.

### *Fee-in-Lieu*

An exaction can take the form of a fee-in-lieu of mandatory dedication. It can also complement negotiated dedications (described below). Based on the density of development, this program allows a developer the alternative of paying money for the development/protection of open space and greenways in lieu of dedicating greenway and park lands. Payments are made representing the value of the site or improvement that would have been dedicated or provided. This allows local governments to pool fees from various subdivisions to finance facilities like

parks and greenways. This money can be used to implement greenway management programs or acquire additional open space.

### *Impact Fee*

A final type of exaction, an impact fee can fund a broader range of facilities that serve the public interest. They are commonly imposed on a per unit rather than a build out basis, making them more flexible and keeping developers from having to pay large up front costs. These do not have to be directly tied to any requirements for improvements or dedications of land. They can be more easily applied to off-site improvements.

### *Growth Management Measures (Concurrency)*

Concurrency-based development approaches to growth management simply limit development to areas with adequate public infrastructure. This helps regulate urban sprawl, provides for quality of life in new development, and can help protect open space. In the famous case with the Town of Ramapo (1972), the Town initiated a zoning ordinance making the issue of a development permit contingent on the presence of public facilities such as utilities and parks. This was upheld in Court and initiated a wave of slow-growth management programs nationwide. This type of growth management can take the form of an adequate public facilities ordinance.

### *Performance Zoning*

Performance zoning is zoning based on standards that establish minimum requirements or maximum limits on the effects or characteristics of a use. This is often used for the mixing of different uses to minimize incompatibility and improve the quality of development. For example, how a commercial use is designed and functions determines whether it could be allowed next to a residential area or connected to a greenway.



### *Incentive Zoning (Dedication/Density Transfers)*

This mechanism allows greenways to be dedicated for density transfers on development of a property. The potential for improving or subdividing part or all of a parcel can be expressed in dwelling unit equivalents or other measures of development density or intensity. Known as density transfers, these dwelling unit equivalents may be relocated to other portions of the same parcel or to contiguous land that is part of a common development plan. Dedicated density transfers can also be conveyed to subsequent holders if properly noted as transfer deeds.

### *Conservation Zoning*

This mechanism recognizes the problem of reconciling different, potentially incompatible land uses by preserving natural areas, open spaces, waterways, and/or greenways that function as buffers or transition zones. It can also be called buffer or transition zoning. This type of zoning, for example, can protect waterways by creating buffer zones where no development can take place. Care must be taken to ensure that the use of this mechanism is reasonable and will not destroy the value of a property.

### *Overlay Zoning*

An overlay zone and its regulations are established in addition to the zoning classification and regulations already in place. These are commonly used to protect natural or cultural features such as historic areas, unique terrain features, scenic vistas, agricultural areas, wetlands, stream corridors, and wildlife areas.

### *Negotiated Dedications*

This type of mechanism allows municipalities to negotiate with landowners for certain parcels of land that are deemed beneficial to the protection and preservation of specific stream corridors. This type of mechanism can also be exercised through dedication of greenway lands when a parcel is subdivided. Such dedications would be proportionate to the relationship between the impact of the subdivision on community services and the percentage of land required for dedication—as defined by the US Supreme Court in *Dolan v Tigard*.

### *Reservation of Land*

This type of mechanism does not involve any transfer of property rights but simply constitutes an obligation to keep property free from development for a stated period of time. Reservations are normally subject to a specified period of time, such as 6 or 12 months. At the end of this period, if an agreement has not already been reached to transfer certain property rights, the reservation expires.

### *Planned Unit Development*

A planned unit development allows a mixture of uses. It also allows for flexibility in density and dimensional requirements, making clustered housing and common open space along with addressing environmental conditions a possibility. It emphasizes more planning and can allow for open space and greenway development and connectivity.

### *Cluster Development*

Cluster development refers to a type of development with generally smaller lots and homes close to one another. Clustering can allow for more units on smaller acreages of land, allowing for larger percentages of the property to be used for open space and greenways.



### ***IIB. Land Management***

Management is a method of conserving the resources of a specific greenway parcel by an established set of policies called management plans for publicly owned greenway land or through easements with private property owners. Property owners who grant easements retain all rights to the property except those which have been described in the terms of the easement. The property owner is responsible for all taxes associated with the property, less the value of the easement granted. Easements are generally restricted to certain portions of the property, although in certain cases an easement can be applied to an entire parcel of land. Easements are transferable through title transactions, thus the easement remains in effect perpetually.

#### ***Management Plans***

The purpose of a management plan is to establish legally binding contracts which define the specific use, treatment, and protection for publicly owned greenway lands. Management plans should identify valuable resources; determine compatible uses for the parcel; determine administrative needs of the parcel, such as maintenance, security, and funding requirements; and recommend short-term and long-term action plans for the treatment and protection of greenway lands.

#### ***Conservation Easement***

This type of easement generally establishes permanent limits on the use and development of land to protect the natural resources of that land. When public access to the easement is desired, a clause defining the conditions of public access can be added to the terms of the easement. Dedicated conservation easements can qualify for both federal income tax deductions and state tax credits. Tax deductions are allowed by the Federal government for donations of certain conservation easements. The donation may reduce the donor's taxable income.

#### ***Preservation Easement***

This type of easement is intended to protect the historical integrity of a structure or important elements in the landscape by sound management practices. When public access to the easement is desired, a clause defining the conditions of public access can be added to the terms of the easement. Preservation easements may qualify for the same federal income tax deductions and state tax credits as conservation easements.

#### ***Public Access Easements***

This type of easement grants public access to a specific parcel of property when a conservation or preservation easement is not necessary. The conditions of use are defined in the terms of the public access easement.

### ***IIC. Acquisition***

Acquisition requires land to be donated or purchased by a government body, public agency, greenway manager, or qualified conservation organization.

#### ***Donation or Tax Incentives***

In this type of acquisition, a government body, public agency, or qualified conservation organization agrees to receive the full title or a conservation easement to a parcel of land at no cost or at a "bargain sale" rate. The donor is then eligible to receive a federal tax deduction of up to 30 to 50 percent of their adjusted gross income. Additionally, North Carolina offers a tax credit of up to 25 percent of the property's fair market value (up to \$5000). Any portion of the fair market value not used for tax credits may be deducted as a charitable contribution. Also, property owners may be able to avoid any inheritance taxes, capital gains taxes, and recurring property taxes.



### *Fee Simple Purchase*

This is a common method of acquisition where a local government agency or private greenway manager purchases property outright. Fee simple ownership conveys full title to the land and the entire “bundle” of property rights including the right to possess land, to exclude others, to use land, and to alienate or sell land.

### *Easement Purchase*

This type of acquisition is the fee simple purchase of an easement. Full title to the land is not purchased, only those rights granted in the easement agreement. Therefore the easement purchase price is less than the full title value.

### *Purchase / Lease Back*

A local government agency or private greenway organization can purchase a piece of land and then lease it back to the seller for a specified period of time. This lease may contain restrictions regarding the development and use of the property.

### *Bargain Sale*

A property owner can sell property at a price less than the appraised fair market value of the land. Sometimes the seller can derive the same benefits as if the property were donated. Bargain Sale is attractive to sellers when the seller wants cash for the property, the seller paid a low cash price and thus is not liable for high capital gains tax, and/or the seller has a fairly high current income and could benefit from the donation of the property as an income tax deduction.

### *Installment Sale*

An installment sale is a sale of property at a gain where at least one payment is to be received after the tax year in which

the sale occurs. These are valuable tools to help sellers defer capital gains tax. This provides a potentially attractive option when purchasing land for open space from a possible seller.

### *Option / First Right of Refusal*

A local government agency or private organization establishes an agreement with a public agency or private property owner to provide the right of first refusal on a parcel of land that is scheduled to be sold. This form of agreement can be used in conjunction with other techniques, such as an easement to protect the land in the short-term. An option would provide the agency with sufficient time to obtain capital to purchase the property or successfully negotiate some other means of conserving the greenway resource.

### *Purchase of Development Rights*

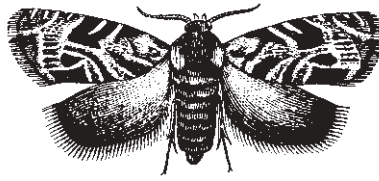
A voluntary purchase of development rights involves purchasing the development rights from a private property owner at a fair market value. The landowner retains all ownership rights under current use, but exchanges the rights to develop the property for cash payment.

### *Land Banking*

Land banking involves land acquisition in advance of expanding urbanization. The price of an open space parcel prior to development pressures is more affordable to a jurisdiction seeking to preserve open space. A City or County might use this technique to develop a greenbelt or preserve key open space or agricultural tracts. The jurisdiction should have a definite public purpose for a land banking project.



*Appendix IV. Conservation Toolbox, continued*



## APPENDIX V: DESIGN GUIDELINES

### INTRODUCTION

This appendix provides guidelines to both public and private entities for the future development of various types of trails. The guidelines noted herein are based on the best practices in use throughout the United States, as well as accepted national standards for greenway facilities.

The guidelines should be used with the understanding that each trail project is unique and that design adjustments will be necessary in certain situations in order to achieve the best results. Each segment should be evaluated on a case-by-case basis, in consultation with local or state bicycle and pedestrian coordinators, a qualified engineer and a landscape architect. Should these national standards be revised in the future and result in discrepancies with this chapter, the national standards should prevail for all design decisions.

Facility design is a broad topic that covers many issues. This section provides guidelines for typical greenway facilities and is not a substitute for more thorough design and engineering work. For more in-depth information and design development standards, the following publications should be consulted:

*Greenways: A Guide to Planning, Design and Development*  
Island Press, 1993. Authors: Charles A. Flink and Robert Searns

*Trails for the Twenty-First Century*  
Island Press, 2nd ed. 2001. Authors: Charles A. Flink, Robert Searns, Kristine Olka

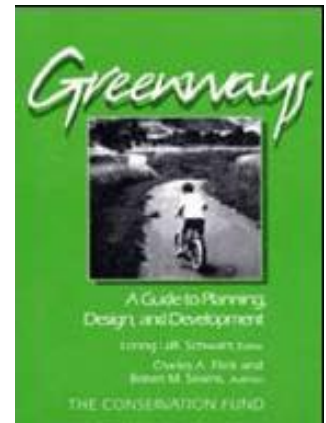
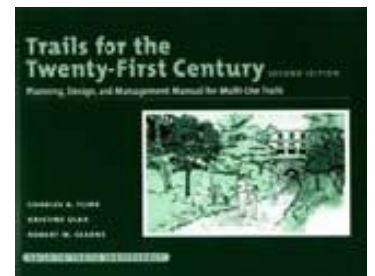
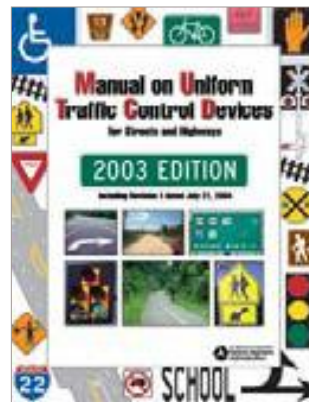
*Guide to the Development of Bicycle Facilities*  
American Association of State Highway Transportation Officials (AASHTO), 1999.

*Manual on Uniform Traffic Control Devices (MUTCD)*  
U. S. Department of Transportation, Washington, DC, 2004.

*Universal Access to Outdoor Recreation: A Design Guide*  
PLAE, Inc., Berkeley, CA, 1993.

*North Carolina Bicycle Facilities Planning and Design Guidelines*  
NCDOT Office of Bicycle and Pedestrian Transportation, Raleigh, NC, 1994

Some trails and trail-related improvements will also require compliance with the NCDOT (for specific design solutions), and with the Americans with Disabilities Act (for portions of trail). Finally, AASHTO is completing an updated Bicycle Design Guidelines in the fall of 2009 with an updated Pedestrian Design Guidelines in the following years. These guidelines should be used to update this appendix when they become available.





## CREEKSIDE TRAIL (*urban areas only*)

- Located only in urban areas, where right-of-way constraints and channelized streams restrict trail development to the floodway.
- Typically positioned directly adjacent to the stream channel and are therefore subject to frequent flooding.
- Parking areas near urban creeks can also be retrofitted to accommodate this type of trail.
- When box culverts are built along creeks on planned trail routes, they should be designed to meet with this trail type, and should have sufficient space for trail users.
- Require hard paved surfaces of concrete to withstand high-velocity stream flows.
- Retaining walls or other structural elements may also be required for stable construction and to protect the trail from erosion and flood damage.
- The installation of railings, benches, signage, and trash receptacles, that could obstruct flow during storm events, should be carefully considered.
- The use of retaining walls as seat walls is one way in which non-obtrusive amenities can be included.
- Special consideration should be paid to the mitigation of impacts from trail construction on the natural environment.
- Minimum 10' wide for multi-use trails.



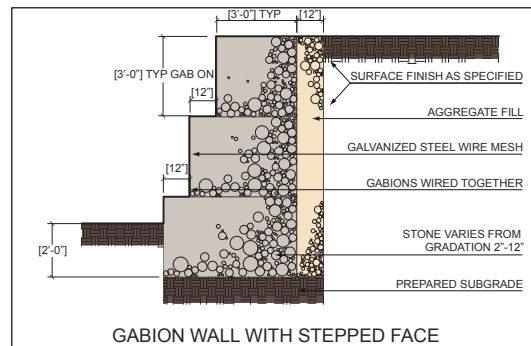
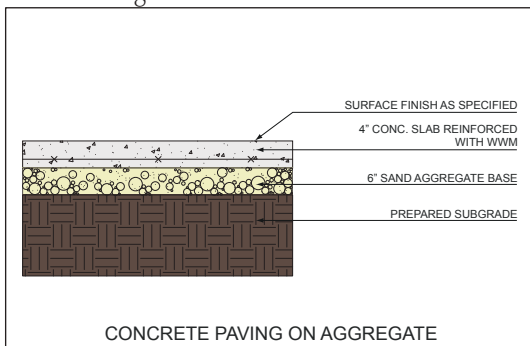


**FLOODWAY TRAIL (*limited areas*)**

- Typically positioned within the floodway, but not directly adjacent to streams; some vegetative buffer between the stream and trail should be left intact.
- Subject to infrequent, periodic flooding.
- Require paved surfaces of either asphalt or concrete depending on frequency of flooding and expected velocity of flow.
- Proper trail foundation (see details) will increase the longevity of the trail.
- No soft shoulder should be constructed due to flood considerations.
- All elements of the trail, including the trail tread, railings, benches, and trash receptacles, will be periodically flooded; design and materials should be carefully selected and sited accordingly.
- Special consideration should be paid to the mitigation of impacts from trail construction on the natural environment.
- Minimum 10' wide for multi-use trails.



**Creek Paving Details**





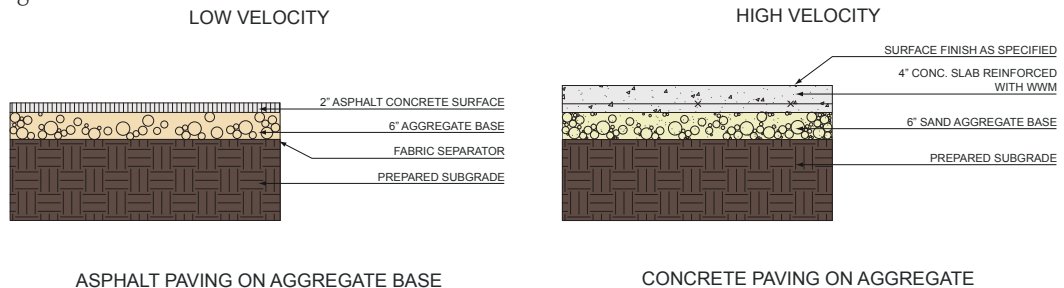


## FLOODPLAIN TRAIL

- Typically positioned outside the floodway, within the floodplain; significant vegetative buffer between the stream and trail should be left intact.
- Subject to occasional flooding, during large storm events.
- Paved asphalt recommended, though an aggregate stone surface may be adequate in some locations.
- Proper trail foundation (see details) will increase the longevity of the trail.
- Minimum 2' graded shoulder recommended.
- Minimum 10' wide for multi-use trails.



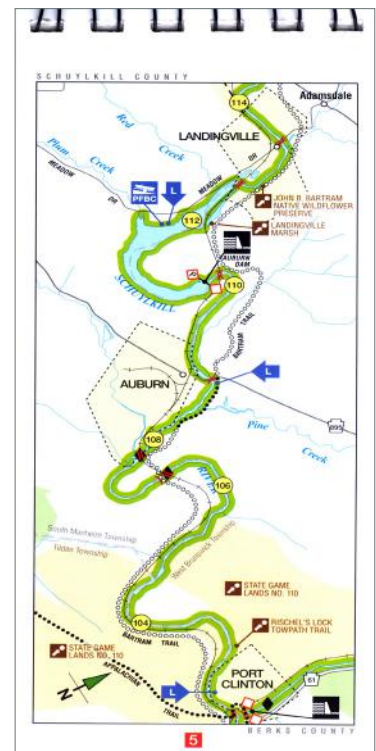
### Creek Paving Details





## WATER TRAIL AND WATER TRAIL ACCESS SITES

- Also known as water-based trails, paddle trails, blueways or blue trails.
- Typically defined as sections of rivers, creeks, wetlands, and other water bodies that are designated as routes for canoeing, kayaking, and tubing.
- Clearly marked access points and/or trailheads should be provided.
- Educational signs, directional signs, and regulatory signs should inform users of their surroundings and how to navigate the watercourse safely.
- Improved rapids are increasingly popular along water trails; they should only be used in areas where high usage is expected and a demand for such a facility has been established.
- The provision of designated picnic areas and camp sites along water trails can reduce the problem of trespassing private property along the watercourse.
- If a pathway from parking area to water access exceeds 1500 feet, a permanently affixed canoe or kayak stand should be positioned every 1000 feet.
- Informational signs containing emergency contact numbers, as well as contact numbers for the managing partner, must be displayed at the parking space area and/or within 150 feet of the access site.
- Access to waterway must be firm, compacted, and permanently delineated
- Minimum construction for facilities
- Lights in parking and picnic areas are recommended
- Maps should be provided to guide users along the watercourse and to access sites for drop-in and take-out.
- Natural but well maintained pathway from parking to water access:
  - Pathway at least 6' wide
  - Grass not higher than 5"
  - Tree overhang not lower than 14'
  - Grade must not exceed 20%



Right: An example water trail map and guide for Shuylkill River, PA



## NATURAL SURFACE TRAIL

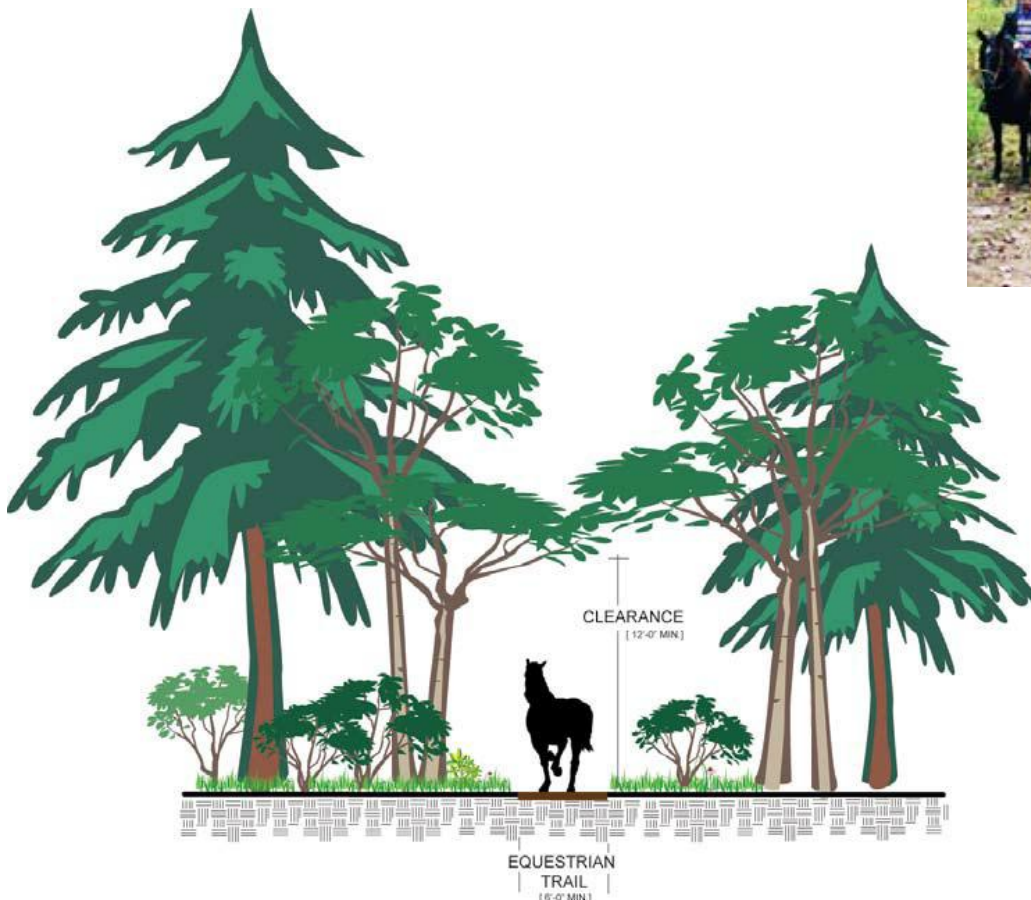
- Also known as footpaths or hiking trails
- Designed to accommodate pedestrians on foot; not intended for cyclists or other wheeled users.
- Trail surface typically made of dirt, rock, soil, forest litter, snow, ice, pine mulch, leaf mulch, or other native materials.
- Preparation varies from machine-worked surfaces to those worn only by usage.
- May be more appropriate for ecologically sensitive areas.
- Provide positive drainage for trail tread without extensive removal of existing vegetation.
- Varies in width from 1' - 6" to 5'.
- Vertical clearance should be maintained at 9'.





## EQUESTRIAN TRAIL

- Vertical clearance for equestrians is at least 10 feet, with 12 feet preferred.
- A horizontal clearance should be at least five feet.
- Dirt or stabilized dirt is a preferred surface. Crushed granite screenings are also acceptable. Hard surfaces like asphalt and concrete are undesirable for equestrians because they can injure horses' hooves. Granular stone may also present problems because loose aggregate can get stuck in hooves.
- Within the tread, large rocks, stumps, and other debris should be cleared.
- Sight distances for equestrians, who usually travel between 4 and 6 miles per hour, should be at least 100 feet.
- Hitching posts should be installed at rest stops, picnic areas, and rest rooms.
- For horseback riders, a water crossing is preferred to a high and narrow bridge. If erosion is a concern, or if water crossing is for some reason undesirable, then provide mounting blocks at the bridge, so riders can dismount and lead their horses.
- Equestrians should be expected to remove their horse's manure from trail surfaces. Many riders are not comfortable dismounting and taking care of this as it occurs. Therefore, equestrians should be strongly encouraged (or possibly required in exchange for use of the trail) to join fellow riders on manure clean-up days.



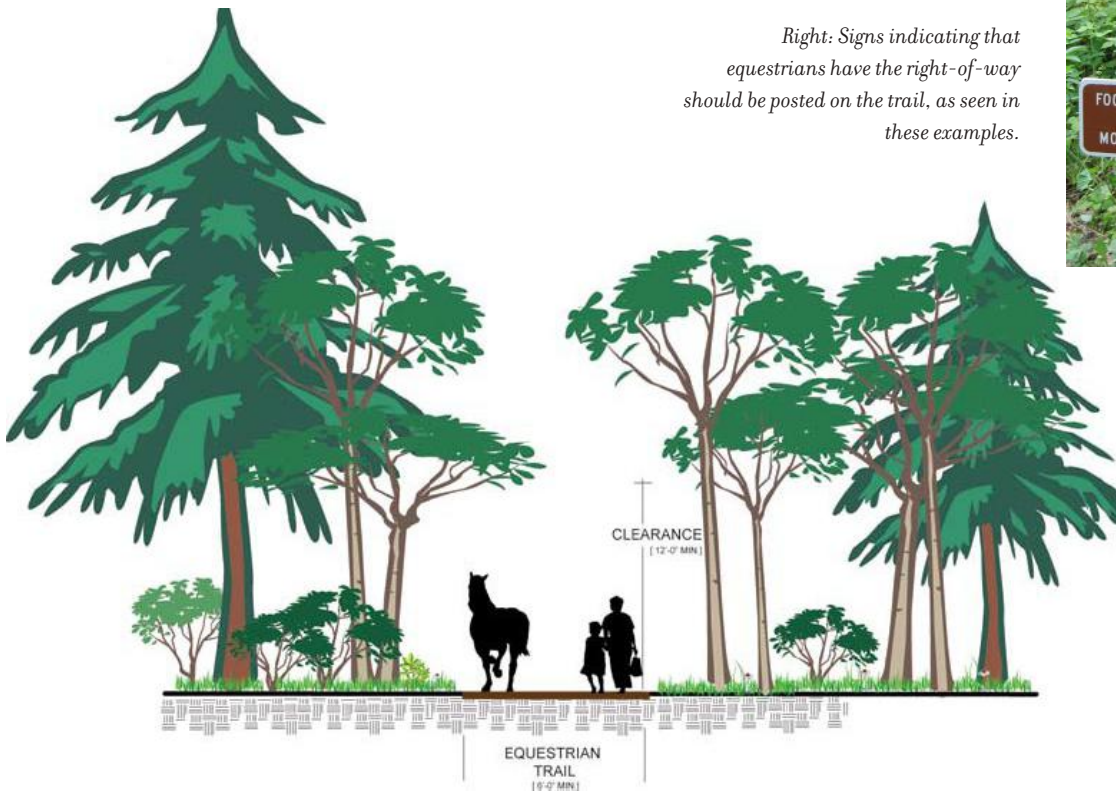


## MULTI USE EQUESTRIAN TRAIL

- Standards from 'Equestrian Trail' on preceding page also apply here.
- Although equestrians prefer a separate tread, a cleared shoulder could suffice if necessary.
- If a single tread is used to accommodate numerous users, including equestrians, extra effort should be used to ensure the sub-base and sub-grade of the trail are firm and properly prepared.
- Signs indicating that equestrians have the right-of-way on a multi-use trail should be included in the design plan and posted on the trail. Signs that can quickly and clearly indicate trail protocol can help educate trail users about equestrians.
- Maps should be provided to guide users along the watercourse and to access sites for drop-in and take-out.
- Natural but well maintained pathway from parking to water access:
  - Pathway at least 6' wide
  - Grass not higher than 5"
  - Tree overhang not lower than 14'
  - Grade must not exceed 20%



Right: Signs indicating that equestrians have the right-of-way should be posted on the trail, as seen in these examples.

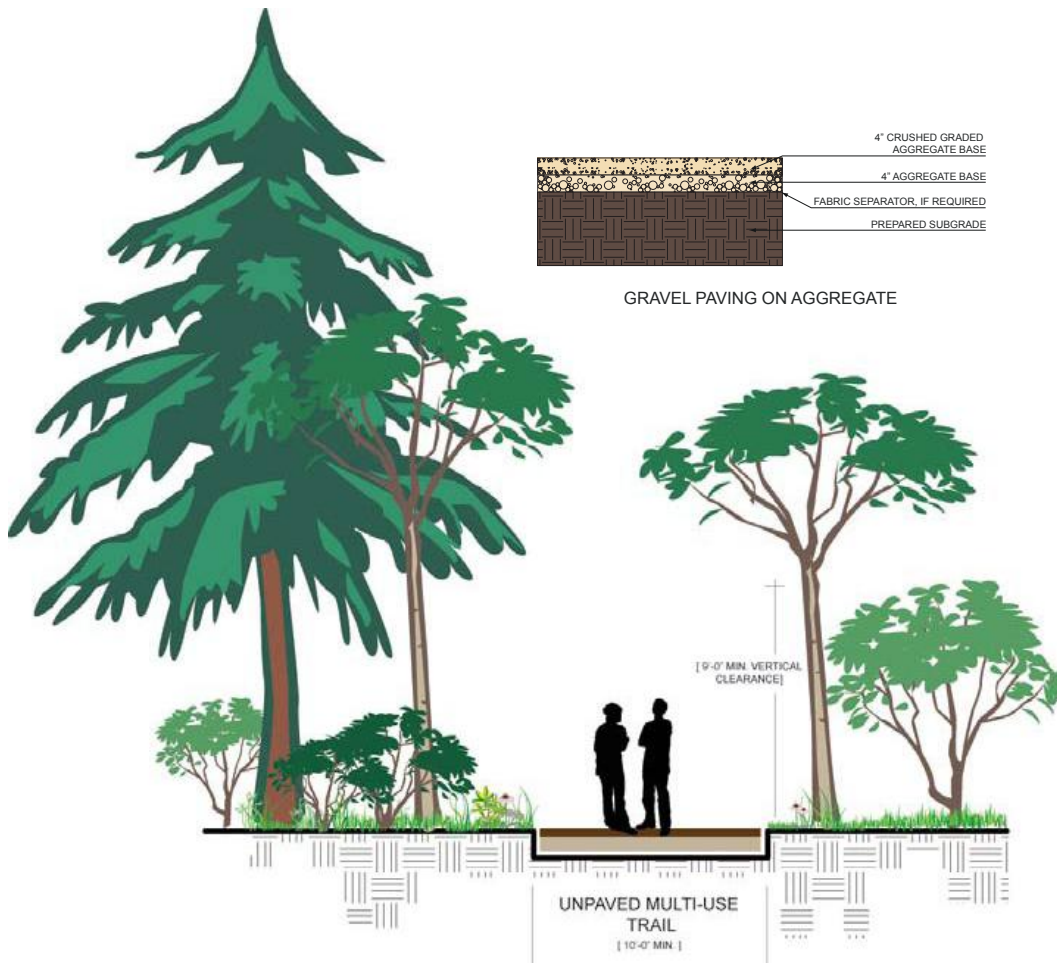




## UNPAVED MULTI USE TRAIL

(10' wide typ.)

- Potential materials used to surface an unpaved, multi-use trail include natural materials, soil cement, graded aggregate stone, and shredded wood fiber.
- The soft surface materials are less expensive to install and compatible with the natural environment, however, they do not accommodate certain users, such as roller-bladers and the physically disabled. Soft surface trails are preferred, however, by some runners and mountain bicyclists.
- While soil cement will accommodate most users, bicyclist should have only restricted use to prevent premature degradation of the surface.
- Graded aggregate may need to be kept in place with wood or metal edging, and is limited to flatter slopes.
- If properly compacted and constructed, granular stone surface trails can support bicycles and wheel-chairs.
- Shredded wood fiber blends with the natural environment, but decays rapidly and must be installed on flat subgrades.

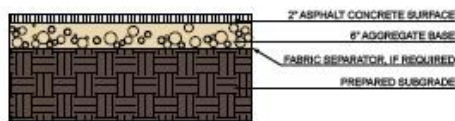




## PAVED MULTI USE TRAIL

(10' wide typ.)

- Typically composed of asphalt or concrete, paved multi-use trails should be designed to withstand the loading requirements of occasional maintenance and emergency vehicles.
- In areas prone to frequent flooding, it is recommended that concrete be used for its excellent durability.
- As a flexible pavement, asphalt should be considered when installing a paved multi-use trail on slopes.
- A concern for the use of asphalt is the deterioration of trail edges. Installation of geotextile fabric beneath a layer of aggregate base course (ABC) can help to maintain the edge of the trail. It is also important to provide a 2 foot wide graded shoulder to prevent edges from crumbling.
- Most often, concrete is used for intensive urban applications. It is the strongest surface type and has the lowest maintenance requirement if it is installed properly.
- Centerline stripes should be considered for trails that generate substantial amounts of traffic. Centerline stripes are particularly useful along curving sections of trail.



ASPHALT PAVING ON AGGREGATE BASE

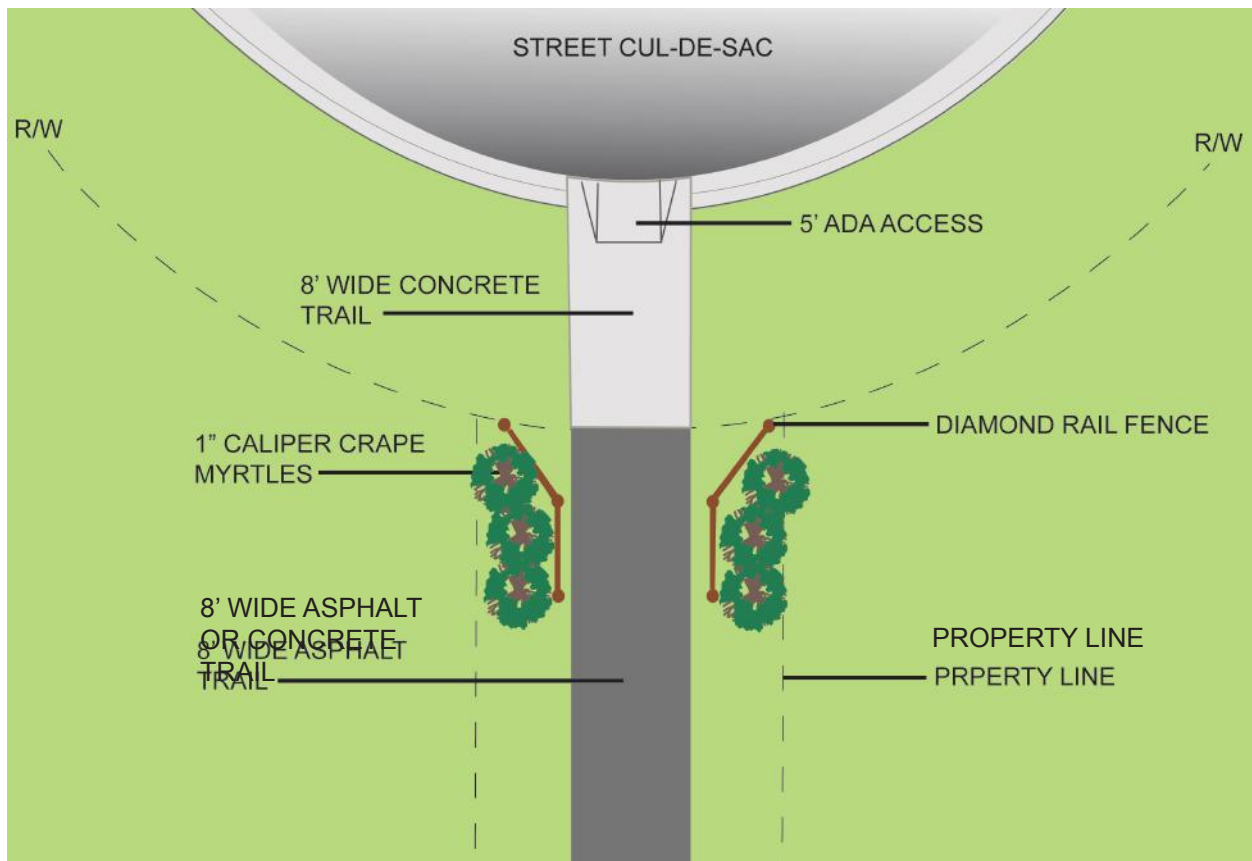




## NEIGHBORHOOD ENTRANCE TRAIL

In any instance that an access trail is developed in a residential area to link to a greenway the following standards shall be applied:

- Trail pavement shall be 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.
- Trail pavement shall not encroach within the sideyard set back to a distance equal to the sideyard setback of the adjacent property.
- No access trail shall be less than 5' wide.
- Access trails should meander whenever possible.
- All landscape materials shall be installed during the appropriate planting season for the particular species.
- Other ornamental landscape shall be included at the street frontage of the access trail based upon input from the residents of the cul-de-sac. If the access is not in a cul-de-sac the adjacent property owners and property owners directly across from the access trail will be invited to provide landscape design input.
- Annuals may be provided when there is a commitment from at least 3 neighbors or a Home Owners Association to install and maintain these plants.
- Two sections of diamond rail fencing shall be included on each side of the trail near the street frontage. Diamond rail will not be included if the respective neighborhood deeds and covenants do not permit it.

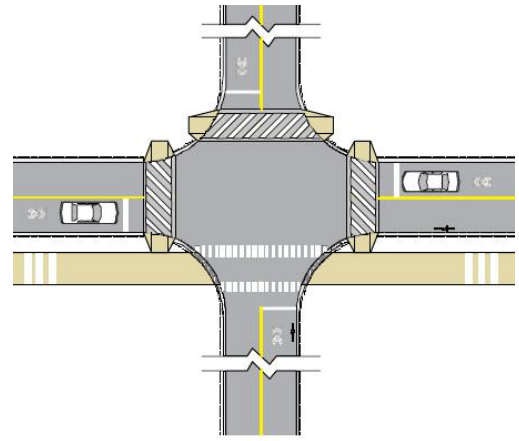




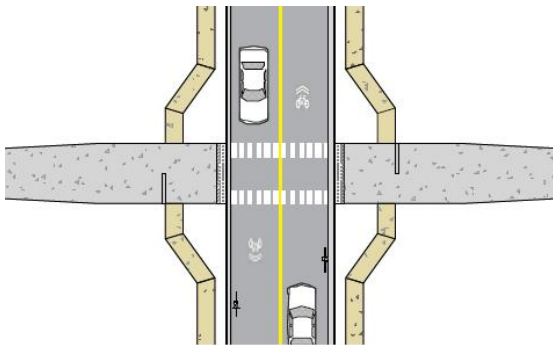


## TRAIL INTERSECTIONS

- Site the crossing area at a logical and visible location.
- Warn motorists of the upcoming trail crossing and trail users of the upcoming intersections.
- Maintain visibility between trail users and motorists.
- Intersection approaches should be made at relatively flat grades so that cyclists are not riding down hill into intersections.
- If the intersection is more than 75 feet from curb to curb, it is preferable to provide a center median refuge area.

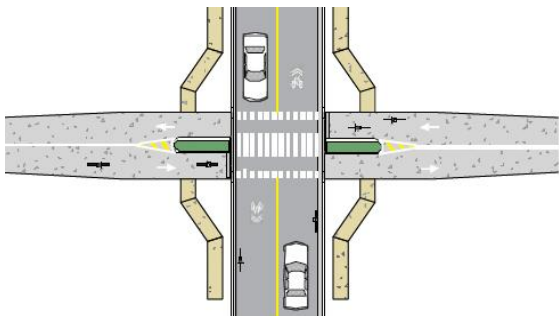
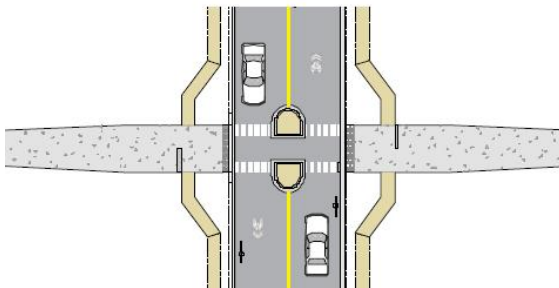


4-WAY INTERSECTION CROSSING  
Shared Use Path



MID-BLOCK INTERSECTION  
Shared Use Path with Sidewalks

MEDIAN REFUGE  
Shared Use Path with Sidewalks



MIDBLOCK CROSSING  
Shared Use Path with Sidewalks and Medians

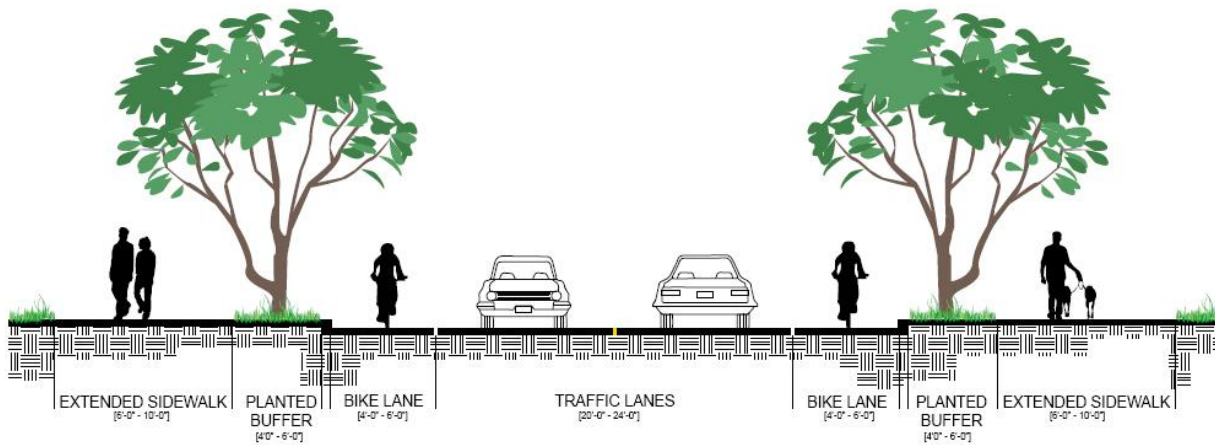


MIDBLOCK CROSSING



**STREET BASED TRAIL:**  
*Sidewalks and Bikeways*

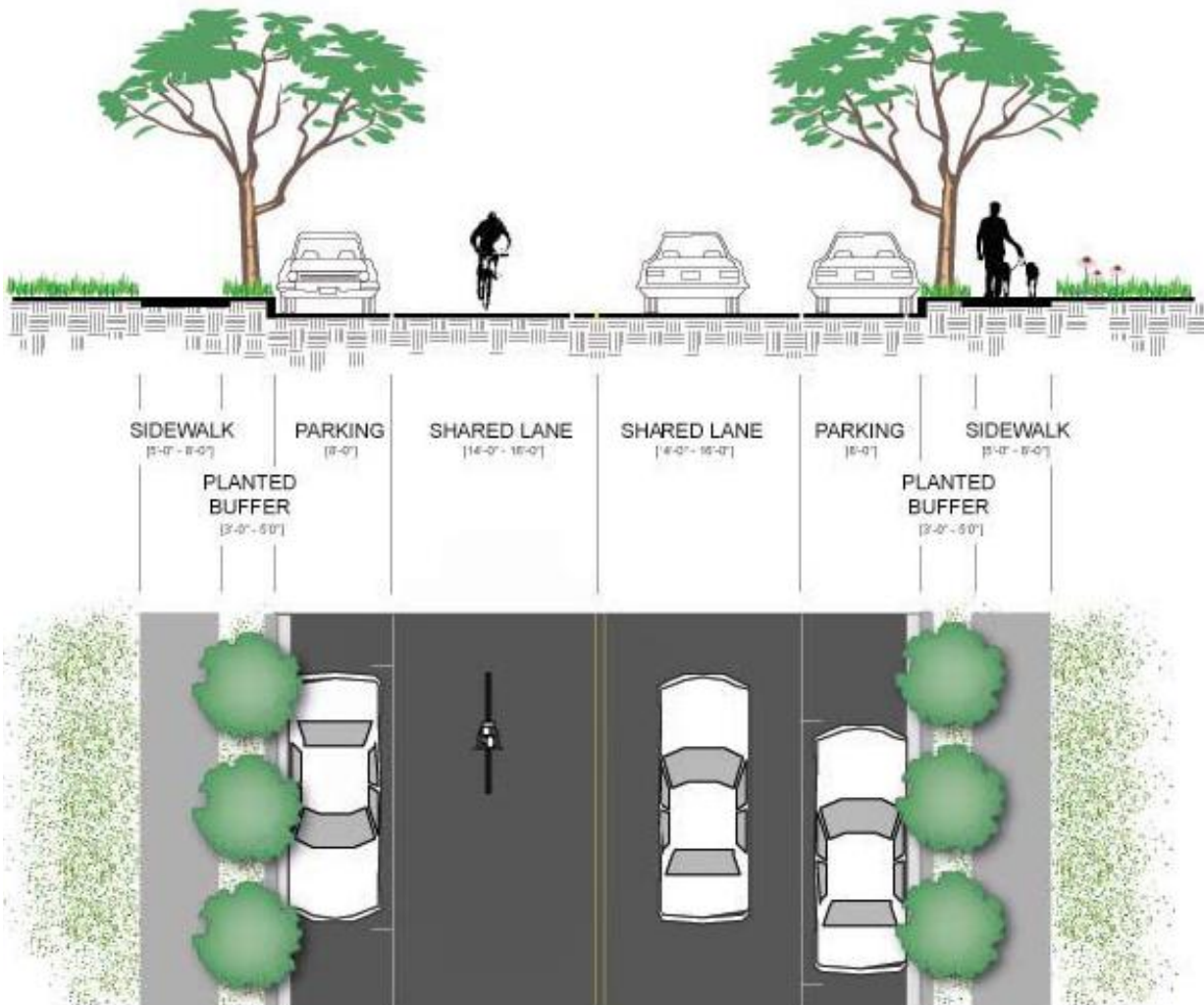
On the following pages (99-104) several different types of bicycle facilities are described for street based trails, including signed/shared roadways, wide outside lanes, bicycle lanes, and side paths. In addition to bicycle facilities, all street based trails should also have a wide sidewalk (6-10 feet wide), except where pedestrians are accommodated on sidepath.





**STREET BASED TRAIL:**  
*Signed/Shared Roadway*

- May either be a low volume (less than 3000 cars per day) roadway with traffic calming and signage to create a safe shared use environment, OR a higher volume roadway with wide (14') outside lanes.

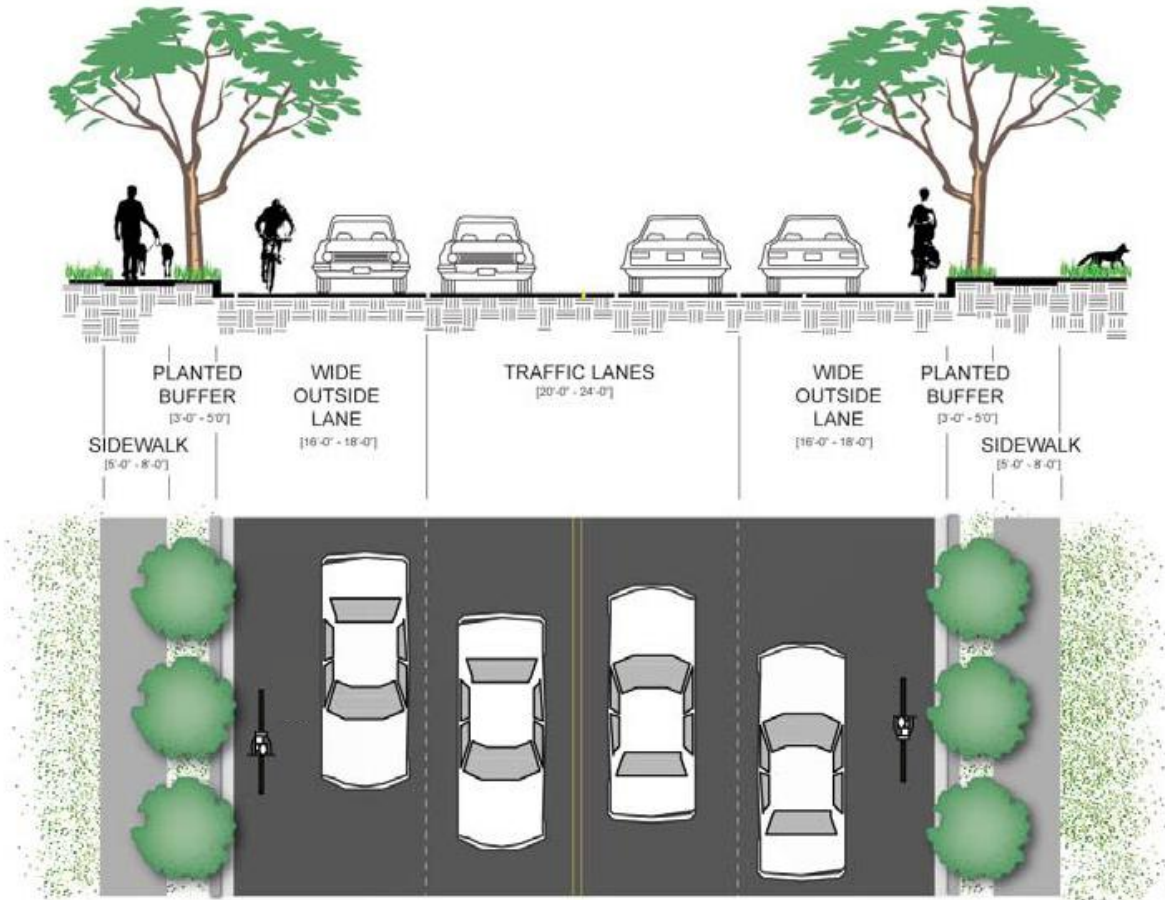




STREET BASED TRAIL:

*Wide Outside Lane*

- For skilled bicyclist who are capable of sharing the road with motor vehicles.
- Provide smooth pavement, free of debris.
- Provide compatible storm grates (so that grate openings do not run parallel to the roadway)

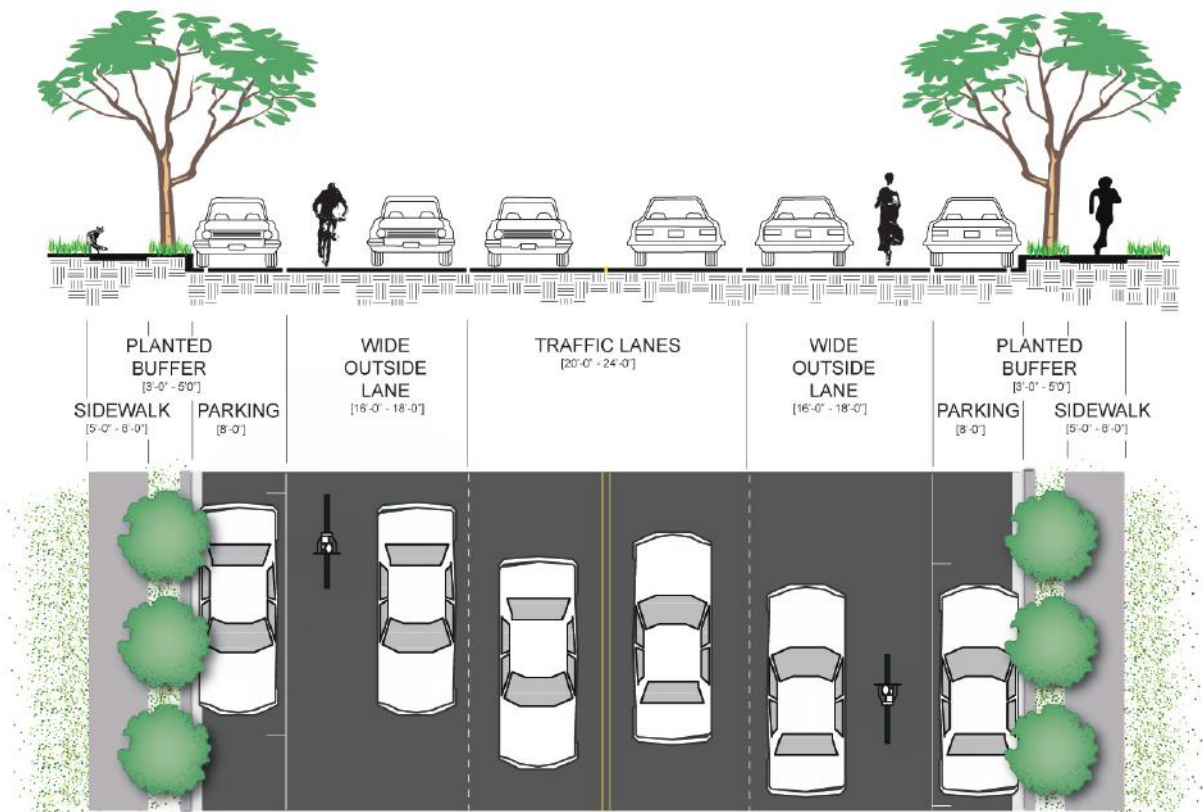




STREET BASED TRAIL:

*Wide Outside Lane with Parking*

- Refer to 'Wide Outside Lane' standards on preceding page.

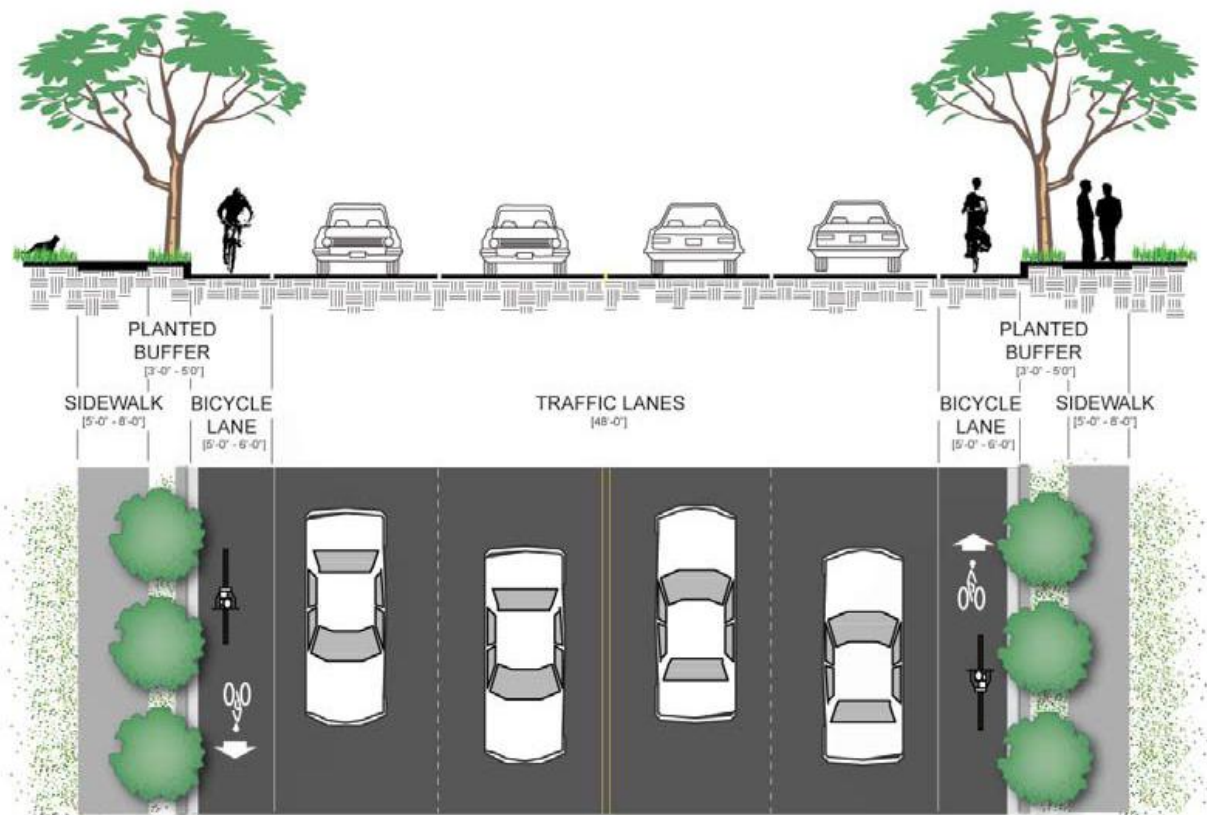




STREET BASED TRAIL:

*Bicycle Lane*

- Should be used on roadways with 3,000 or more ADT.
- Recommended width of 5'-6'. Minimum width is 4' (ASHTO national standard is 5').

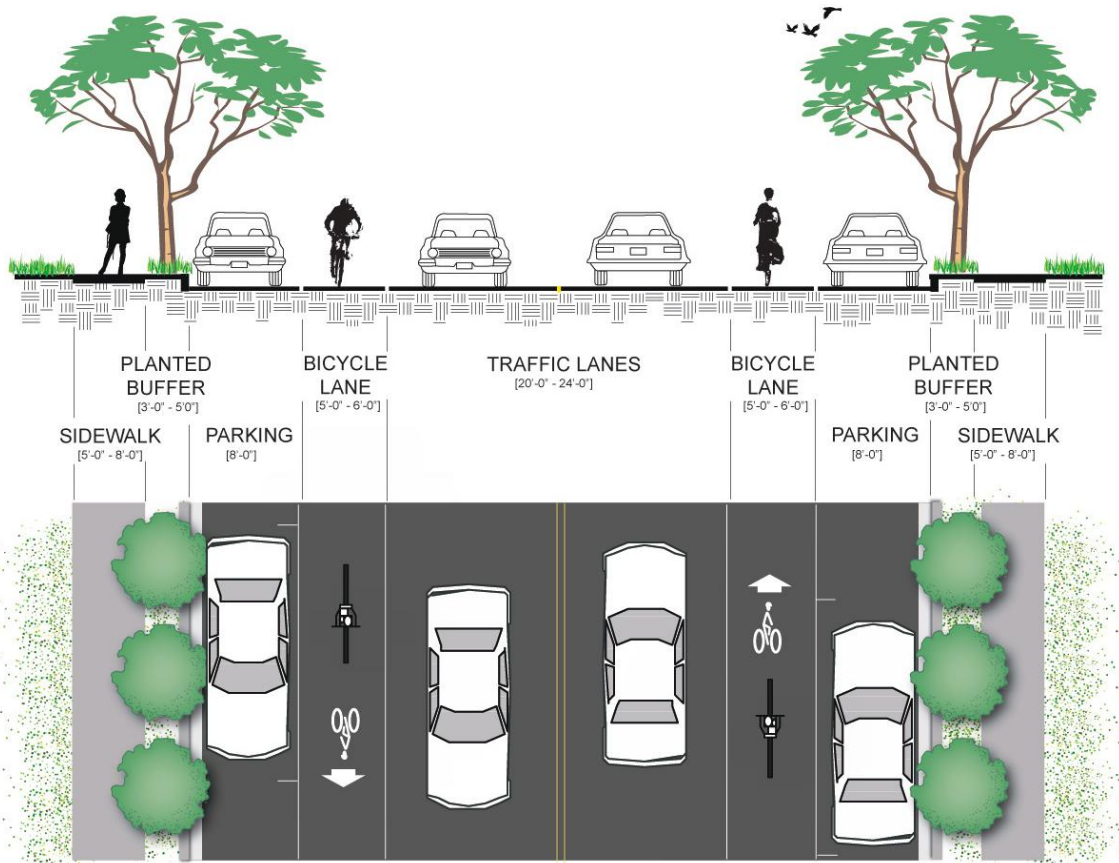




**STREET BASED TRAIL:**

***Bicycle Lane with Parking***

- On moderate volume roadways, such as minor collectors, where on-street parking is permitted and a bike lane is provided, the bike lane must be between parking and the travel lane.
- Appropriate space must be allocated to allow passing cyclists room to avoid open car doors.





STREET BASED TRAIL:

*Side Path*

- This type of trail works best in corridors where there are limited driveway/intersection crossings and more desirable destinations along one side of the roadway, or where no roadway space is available to provide bike lanes.
- The trail should be at least 10' wide (preferable 12') with a 3-5' (preferable 6') vegetated buffer where possible.
- Side paths are the preferred facility when the primary trail is a street-based.







## TRAIL UNDERPASS

- Typically utilize existing overhead roadway bridges adjacent to streams or culverts under the roadway that are large enough to accommodate trail users
- Vertical clearance of the underpass must be at least 8', preferably 10'.
- Width of the underpass must be at least 12'
- Proper drainage must be established to avoid pooling of stormwater.
- Lighting is recommended for safety.





## TRAIL OVERPASS

- Safety should be the primary consideration in bridge/overpass design.
- Specific design and construction specifications will vary for each bridge and can be determined only after all site-specific criteria are known.
- Always consult a structural engineer before completing bridge design plans, before making alterations or additions to an existing bridge, and prior to installing a new bridge.
- A 'signature' bridge should be considered in areas of high visibility, such as over major roadways. While often more expensive, a more artistic overpass will draw more attention to the trail system in general, and could serve as a regional landmark.



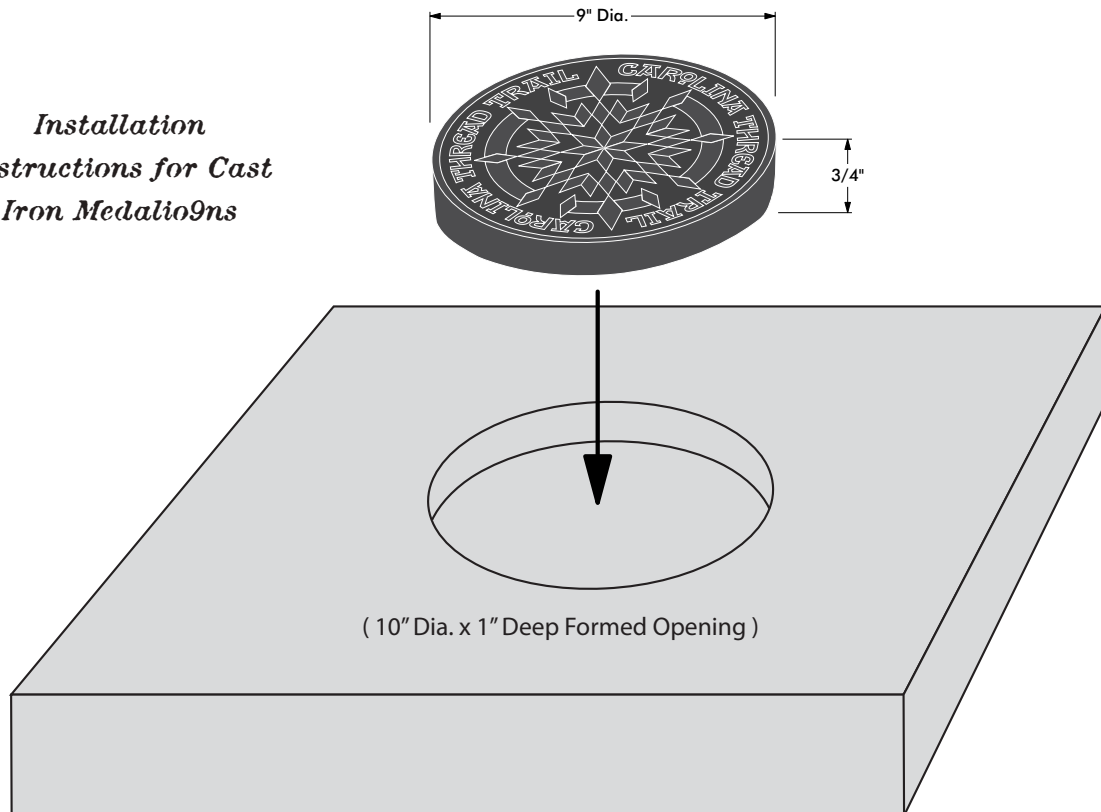


## SIGNAGE AND WAYFINDING

Informational and wayfinding signage can provide guidance to a location along or near the trail corridor. Wayfinding signage should orient and communicate in a clear, concise, consistent and functional manner. It should enhance 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. Below are some general guidelines on signage, followed by specific guidelines for use of the Carolina Thread Trail signage,

- Regulatory signage is used to inform trail users and motorists 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 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.
- 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.
- Maintenance of signage is as important as trail maintenance. Clean, graffiti free, and relevant signage enhances guidance, recognition, and safety.

### *Installation Instructions for Cast Iron Medallions*

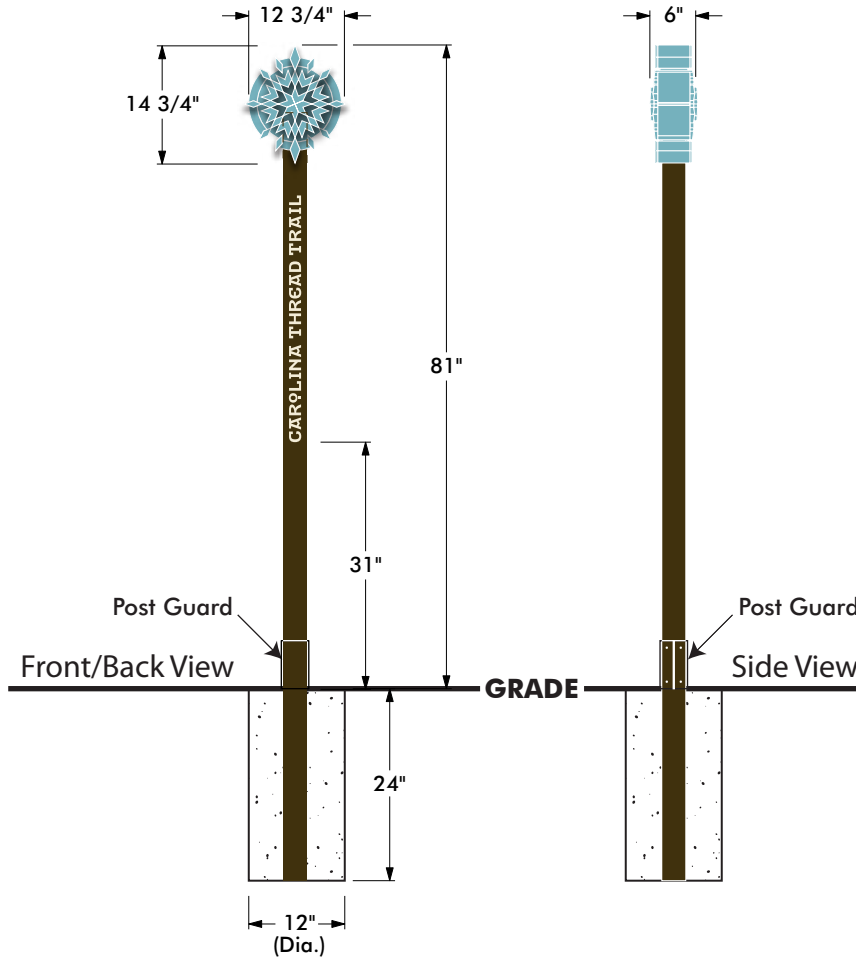


1. When pouring concrete or asphalt walkway, paver or footing, create a 10" dia. x 1" deep form of plywood, pvc, etc to use as a mold in creating an opening for the medallion. After the concrete sets, remove the mold & install the medallion, centered, with thinset mortar, so medallion is flush to the surface. Allow mortar to fill the perimeter void as necessary. Wipe excess mortar off the medallion surface.
2. If you need additional assistance, call our installation department toll-free at 1-800-727-6884. In North Carolina, Call 1-704-588-5000 Ext. 123.



## SIGNAGE AND WAYFINDING (CONTINUED)

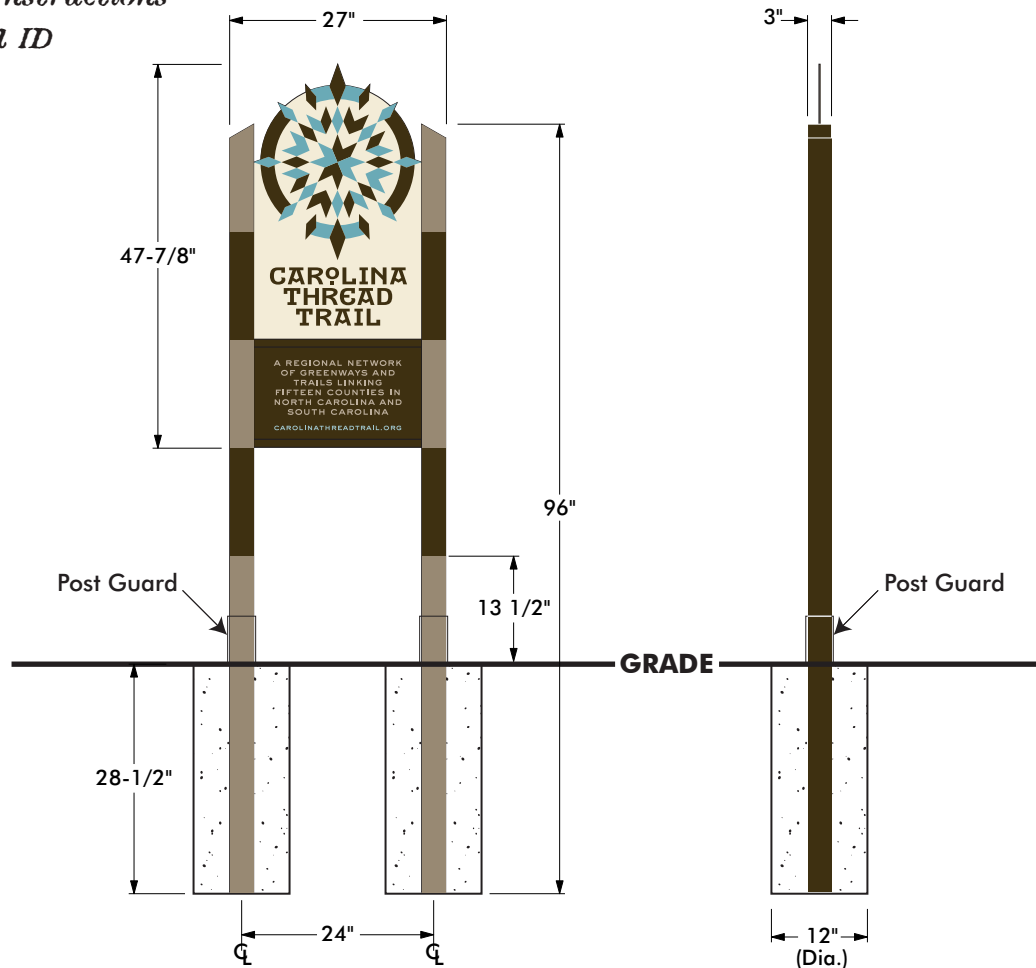
### Installation Instructions for Logo Blaze



1. Dig a 12" diameter hole 24" deep (the copy on the post should start 31" above grade). Place assembled sign in hole. Post bottom should rest firmly on flat, packed dirt.
2. Use carpenter's level to assure sign is horizontally and vertically straight. Support sign in this position, and pour concrete. If you opt to use dry ready mix concrete (1 to 2 bags per hole depending on depth of hole), pack it down as tight as possible. Fill holes to top with dirt, again packing down as tight as possible. Check level again. Wipe any concrete off post before moistening the ground around it to help concrete harden.
3. Open post guard and slip around post near ground.
4. Slide down sufficiently to prevent any exposed post between guard and ground.
5. Secure each in place with (4) #8 x 3/4" Pan Head Sheet Metal Screws.
6. It is recommended that you leave a small mulched area around the sign to protect it from lawnmowers, weed trimmers, etc.
7. If you need additional assistance, call our installation department toll-free at 1-800-727-6884. In North Carolina, Call 1-704-588-5000 Ext. 123.



*Installation Instructions  
for Trailhead ID*



1. Dig 12" diameter holes 28-1/2" deep (leave 13-1/2" of light colored post above grade). Place assembled sign in holes. Post bottom should rest firmly on flat, packed dirt.
2. Use carpenters level to assure sign is horizontally and vertically straight. Support sign in this position, and pour concrete. If you opt to use dry ready mix concrete (1 to 2 bags per hole depending on depth of hole), pack it down as tight as possible. Fill holes to top with dirt, again packing down as tight as possible. Check level again. Wipe any concrete off post before moistening the ground around it to help concrete harden.
3. Open post guard and slip around post near ground.
4. Slide down sufficiently to prevent any exposed post between guard and ground.
5. Secure each in place with (4) #8 x 3/4" Pan Head Sheet Metal Screws.
6. It is recommended that you leave a small mulched area around the sign to protect it from lawnmowers, weed trimmers, etc.
7. If you need additional assistance, call our installation department toll-free at 1-800-727-6884. In North Carolina, Call 1-704-588-5000 Ext. 123.



## TRAILHEADS AND SUPPORT FACILITIES

Major access point should be established near commercial developments and transportation nodes, making them highly accessible to the surrounding communities. Minor trailheads should be simple pedestrian and bicycle entrances at locally known spots, such as parks and residential developments.

A minor trailhead could include facilities such as parking, drinking fountains, benches, a bicycle rack, trash receptacles, and an information kiosk and/or signage. Major trailheads could include all of the above plus additional facilities, such as rest rooms, shelters, picnic areas, a fitness course, an emergency telephone, and a larger parking area.



*Example layouts for a minor trailhead (top) and a major trailhead (bottom).*





## TRAIL AMENITIES

### *Benches*

#### **Description:**

There are a wide variety of benches to choose from in terms of style and materials. The illustrated bench is a custom design that reflects the industrial feel of the warehouse district it is found in. Material selection should be based on the desired design theme as well as cost.

#### **Recommendations:**

Due to a wide range of users, all benches should have a back rest. A bench should normally be 16 - 20" above ground with sturdy handrails on either side. The seating depth should be 18-20" and the length should vary between 60 - 90". Provide wheelchair access alongside benches, at least a 30-by-48-inch area for adequate maneuvering. If benches are next to each other (either side by side or face to face), allow 4 feet between them.



### *Other Seating*

#### **Description:**

Other more informal seating opportunities may exist along a trail or near a parking area where other furniture like a picnic table may be appropriate.

#### **Recommendations:**

This type of furniture can be triangulated with cooking facilities, and a trash receptacle. Wheelchair access spacing recommendations, as noted in the preceding section on 'benches,' also applies to other seating.



### *Lighting*

#### **Description:**

There are two basic types of suggested lighting illustrated: Pole lighting and Bollard lighting. Pole lighting is typically employed in high use areas such as an esplanade or where a trail meets a parking lot or other urbanized area. The bollards can be used to guide individuals along a trail to a specific location.

#### **Recommendations:**

In general lighting is not appropriate for off-road trails where there is little or no development. A licensed and qualified lighting expert should be consulted before making any lighting design decisions. Doing so should reduce up-front fixed costs as well as long-term energy costs.





## Trash Receptacles

### Description:

Trash receptacles should be constructed of a suitable material to withstand the harsh elements of the outdoor environment. Additionally trash receptacles should ensure that litter is contained securely preventing contamination or spillage into the surrounding environment.

### Recommendations:

Trash receptacles should be placed along the trail and at all trailheads. Adequate trash receptacles will combat littering and preserve the natural environment for all trail users.



## Bicycle Racks

### Description:

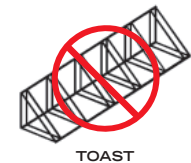
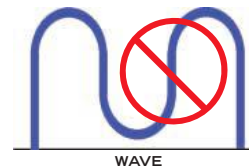
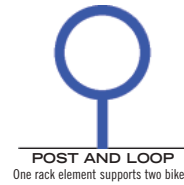
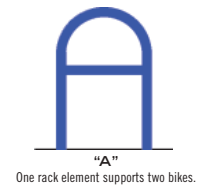
There are many types of bike racks available however the two recommended methods are to secure a bike in an enclosed storage, or to lock it to a rack as illustrated here.

### Recommendations:

A bike rack is recommended as the most inexpensive way to secure a bicycle. An enclosed structure with rented keys is appropriate only in very high bicycle use situations. Bike racks can also be designed to reinforce a particular design theme.

See Bicycle Parking Design Guidelines for more info:

[www.bicyclinginfo.org/pdf/bikepark.pdf](http://www.bicyclinginfo.org/pdf/bikepark.pdf)

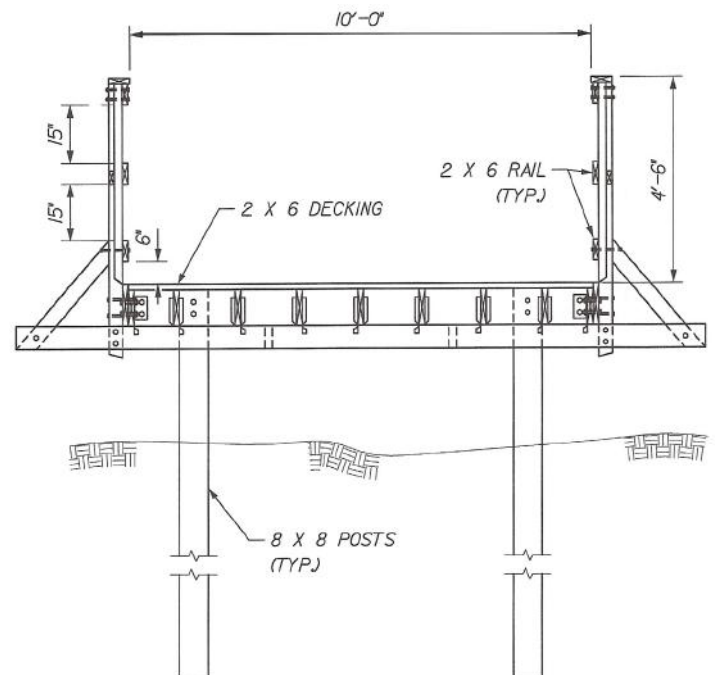


## BOARDWALK AND BRIDGES

### Boardwalk

Boardwalks are used in environmentally sensitive areas where they function as "mini-bridges"

- When the height of a boardwalk exceeds 30", railings are required
- The thickness of the decking should be a minimum of 2"
- Decking should be either non-toxic treated wood or recycled plastic.
- The foundation normally consists of wooden posts or auger piers (screw anchors). Screw anchors provide greater support and last much longer.
- Opportunities exist to build seating and signage into boardwalks.
- In general, building in wetlands should be avoided.



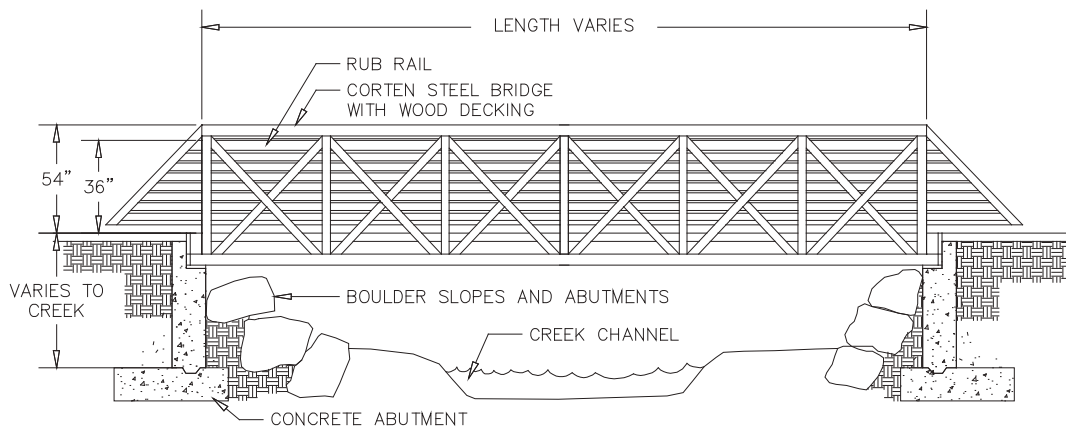
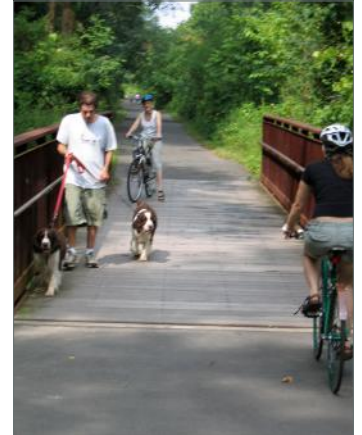




## Bicycle/Pedestrian Bridge

The function of a bridge in an off-road, multi-use trail situation is to provide access to the user over certain natural (i.e. streams) or man-made (i.e. roadways) features.

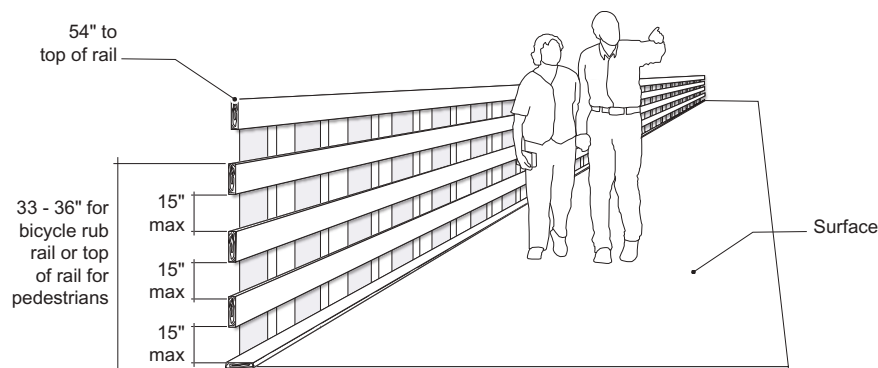
- If a corridor already contains a bridge such as an abandoned rail bridge, an engineer should be consulted to assess the structural integrity before deciding to remove or reuse it.
- A trail bridge should support 6.25 tons.
- Information about the load bearing capacity of bridges can be found in the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges.
- There are many options in terms of high quality, prefabricated pedestrian bridges available.



## Railings

Railings are important safety features on bridges, some boardwalks or in any areas where there may be a hazardous drop-off.

- At a minimum, railings should consist of a vertical top, bottom, and middle rail. Picket style fencing should be avoided as it may present a safety hazard for bicyclists.
- A pedestrian railing should be 42" above the surface.
- The middle railing functions as a "rub rail for bicyclists and should be located between 33 and 36" above the surface.
- Local, state, and/or federal regulations and building codes should be consulted to determine when it is appropriate to install a railing.

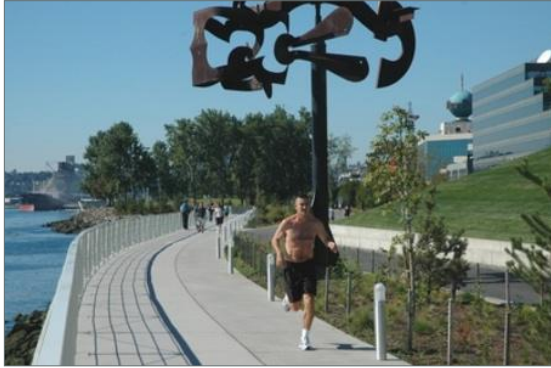




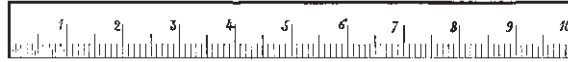
## PUBLIC ART

Explore opportunities to include public art within the overall design of the trail system. Below are examples of public art along trails. According to *American Trails*, “Art is one of the best ways to strengthen the connection between people and trails. Across America and elsewhere, artists are employing a remarkably wide range of creative strategies to support all phases of trail activities, from design and development to stewardship and interpretation. In particular, art can be an effective tool for telling a trail’s story compellingly and memorably.”

- Example art programs for trails can be found at: [www.americantrails.org/resources/art/ArtfulWays.html](http://www.americantrails.org/resources/art/ArtfulWays.html)







## FOOTNOTES

- [1] *American Planning Association. (2002). How Cities Use Parks for Economic Development.*
- [2] *National Association of Realtors and National Association of Home Builders. (2002). Consumer's Survey on Smart Choices for Home Buyers.*
- [3] *Rails to Trails Conservancy. (2005). Economic Benefits of Trails and Greenways.*
- [4] *NCDOT and ITRE. (2006). Bikeways to Prosperity: Assessing the Economic Impact of Bicycle Facilities.*
- [5] *Virginia Department of Conservation. (2004). The Virginia Creeper Trail: An Assessment of User Demographics, Preferences, and Economics.*
- [6] *Rails to Trails. (Danzer, 2006). Trails and Tourism.*
- [7] *American Planning Association. (2002). How Cities Use Parks for Economic Development.*
- [8] *Rails to Trails. (Danzer, 2006). Trails and Tourism.*
- [9] *U.S. Department of Transportation (DOT), Bureau of Transportation Statistics (BTS) and the Federal Highway Administration (FHWA). (2002). National Household Travel Survey.*
- [10] *U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (1996). Physical Activity and Health: A Report of the Surgeon General.*
- [11] *U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2002). Guide to Community Preventive Services.*
- [12] *Rails-to-Trails Conservancy. (2006) Health and Wellness Benefits.*
- [13] *Newsweek Magazine. (10/3/2005). Designing Heart-Healthy Communities.*
- [14] *Federal Emergency Management Agency. (2005) Building Stronger: State and Local Mitigation Planning.*



*The Marcia H. Cloninger Rail-Trail; Photo by Craig R. Wyant.*

