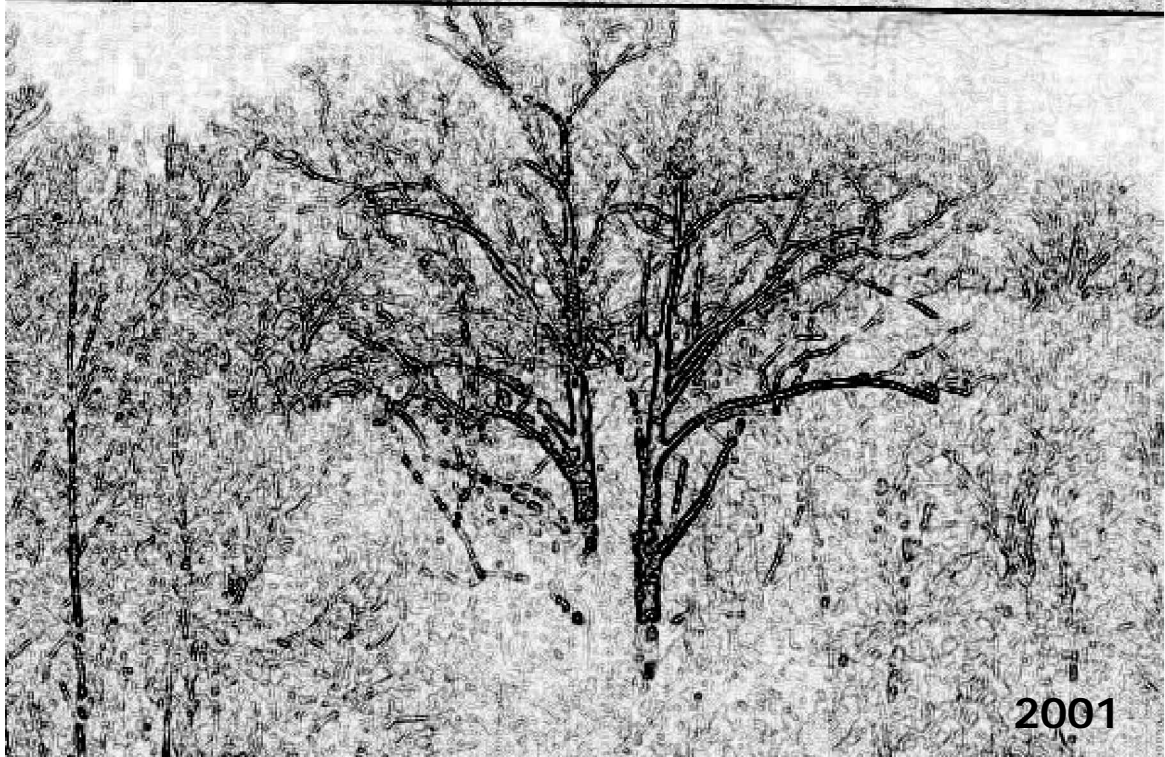


# Durham Trails and Greenways Master Plan



2001

### Durham City Council



Nicholas Tennyson, Mayor  
Pamela Blyth  
Brenda Burnette  
Lewis Cheek  
Howard Clement III  
Tamra Edwards  
Dan Hill  
Mary D. Jacobs  
Angela Langley  
Erick W. Larson II  
Floyd B. McKissick, Jr.  
Thomas Stith  
Jacqueline D. Wagstaff

Adopted  
9.17.01

### Durham County Board of Commissioners



MaryAnn E. Black, Chair  
Joe Bowser  
Philip Cousin  
Rebecca M. Heron  
Ellen Reckhow, Vice Chair

Adopted  
6.11.01

### Durham Open Space and Trails Commission



Thomas Stark, Chair  
L. Lee Beck  
Pamela Blyth  
George A. Brine  
R. Kelly Bryant, Jr.  
Wayne E. Cash  
Jerry Emison  
Duncan Floyd  
Robert B. Glenn, Jr.  
Thomas Hardy  
Larry Holt  
Thad Howard  
Valjeanne Jones-Williams  
Lydia Lavelle  
Annette G. Montgomery  
Todd Patton  
Elizabeth Pullman  
Ellen Reckhow  
John Roseboro, Jr.  
Hildegard Ryals  
John M. Wildey  
Harris E. Williams

# Durham Trails and Greenways Master Plan



2001

---

---

Durham City County Planning Department

# CONTENTS

## I PLAN MAPS

This section answers the basic question “Where are the trails and greenways in the City of Durham and Durham County?” These maps show where trails and greenways are now, where they are planned for the future, and how those routes connect with other kinds of systems in the community.

1. Trail and Greenway Index Sheets	I-5
2. Rocky Creek/Pearsontown Greenway	I-7
3. New Hope Creek Greenway	I-8
4. Lick Creek Greenway	I-9
5. Little River Greenway	I-10
6. Crooked Creek Trail	I-11
7. North/South Greenway (southern section)	I-12
8. North/South Greenway (northern section)	I-13
9. Roxboro Rail-Trail Greenway	I-14
10. Eno River Greenway	I-15
11. Little Lick Creek Greenway	I-16
12. American Tobacco Trail Greenway	I-17
13. Northeast Creek Greenway	I-18
14. Page Branch Creek Trail	I-19
15. Southwest Rail-Trail	I-20
16. Regional, State, and National Trails	I-21

I

## II GOALS AND IMPLEMENTATION

This section tells you what the City and County want to accomplish with the trails and greenways system. It also tells you what tools they plan to use to achieve those goals: how land is acquired for trails, how the program is funded, and what the priorities for development are.

1. Goals and Policies	II-2
2. Acquisition	II-6
3. Priorities for Development	II-9
4. Funding	II-14

II



**III**

**III STANDARDS**

This section discusses the basic operating instructions that the City and County have adopted for the trails and greenways system, including how the trails are designed and built, how and what they're named, and how they are managed and maintained.

- 1. Types of Greenways and Trails in the System III-2
- 2. Trail and Greenway Names III-5
- 3. Trail and Greenway Standards III-11
- 4. Maintenance and Management III-19

**IV**

**IV CONNECTIONS AND CONSTRAINTS**

This section gives you the context for the Durham Trails and Greenways plan. It tells you what local plans and regulations impact the ways trails are developed and what state and federal regulations must be addressed. It also tells you what larger trail systems the Durham system makes connections with.

- 1. City Parks and Recreation Master Plan IV-2
- 2. Policies and Regulations Affecting the Plan IV-6
- 3. Durham Ordinances IV-11
- 4. Durham County Open Space Corridor System Plan IV-14
- 5. Coordination with State and Regional Greenways and Trails Plans IV-17

**V**

**V DURHAM GREENWAY HISTORY**

This section gives you a look at Durham's original greenways plan from 1988, what that original plan has accomplished, other adopted plans that discuss greenways and trails, and how citizens have energized the work over the years.

- 1. The 1988 Durham Urban Trails and Greenways Master Plan V-2
- 2. Trails and Greenways in Durham 1988-2001 V-5
- 3. The Durham Open Space and Trails Commission V-10
- 4. Other Adopted Plans Affecting Trails and Greenways V-12

## VI APPENDICES

## VI

This section provides you with the texts of some original documents that have been crucial to the growth of the trails and greenways program in Durham.

- A. City Council Resolution on Abandoned Rail Corridors
- B. 1990 and 1996 Bond Referenda, Trails and Greenways Sections
- C. City Council Resolutions Setting Trail Priorities
- D. Interlocal Agreement Creating DOST
- E. The "Green Sheet": Information on Dedications
- F. A Policy for City Council to Consider Condemnation of Property for Trail Development



**“Everything is connected to everything else.”**

***Aldo Leopold***



## Trail Routes

### Route Selection

The trail routes designated on these maps honor as much as possible the routes designated by the 1988 Plan. Most of those routes are still the ones desired for greenways and trails for Durham citizens. They reflect an excellent distribution of routes throughout the City and County, and they add a level of protection to important riparian corridors beyond that provided by the Zoning Ordinance. Changes in the routes reflect several basic principles of selection:

(a) Trail routes designated on the property of some other government entity are not mapped unless a route has been agreed upon by all entities involved. The plan policy section notes that such routes as continuations of City and County trails are highly desired but will be settled on a site-by-site basis with the relevant agencies. One exception: “unalterable” routes like RR corridors will be shown despite underlying ownership, even though they may not become the final trail route.

(b) There is an attempt to locate Durham trails to connect with other systems’ existing routes, including bicycle and pedestrian routes in Research Triangle Park; trails in Duke Forest, Hill Forest, and Eno River State Park; and trails in neighboring jurisdictions.

(c) Routes shown on the 1988 plan have been eliminated from this plan when they seem to be unbuildable for one or more of the following reasons: they cross an interstate or divided highway where there is no road or culvert; they cross an active rail line where there is no road crossing; they pass through a large number of existing and/or developed individual parcels.

(d) Trail routes are connected to proposed Triangle Transit Authority (TTA) stations to increase their potential transportation use; trail routes are actually proposed to parallel TTA lines west of the future South Square Transit Station in a “rails with trails” layout.

(e) Given the distances between destinations, routes in the County are usually either loop trails in defined areas such as parks or on-road bicycle routes.

(f) Trail routes shown in the river corridors designated by the County for

further study (Little River, Flat River, New Hope Creek, and Little Lick Creek) are preliminary; more specific routes indicated by plans prepared for those corridors supercede those indicated in this plan.

### **The Map Index**

The following three pages are the key for the trail route maps which follow. The first map shows the county-wide trails system; the second and third indicate the location of particular greenways. Maps of each greenway follow; all trails within a greenway are shown, whether a trail is built, under construction, or proposed. Street trails are shown on the maps as a dotted line, but they are not specifically identified. All trail routes, including street trail routes are described in detail in Section III, p. 5ff.

A map at the end of this section indicates the routes of regional, statewide, or national trails through Durham and Durham County. These trails follow a combination of the routes of local trails indicated on the earlier maps. Their points of entry into and exit from the County are also indicated.

Exact on-ground location of the future trail routes indicated on these maps will be determined at the time of land acquisition and construction design.

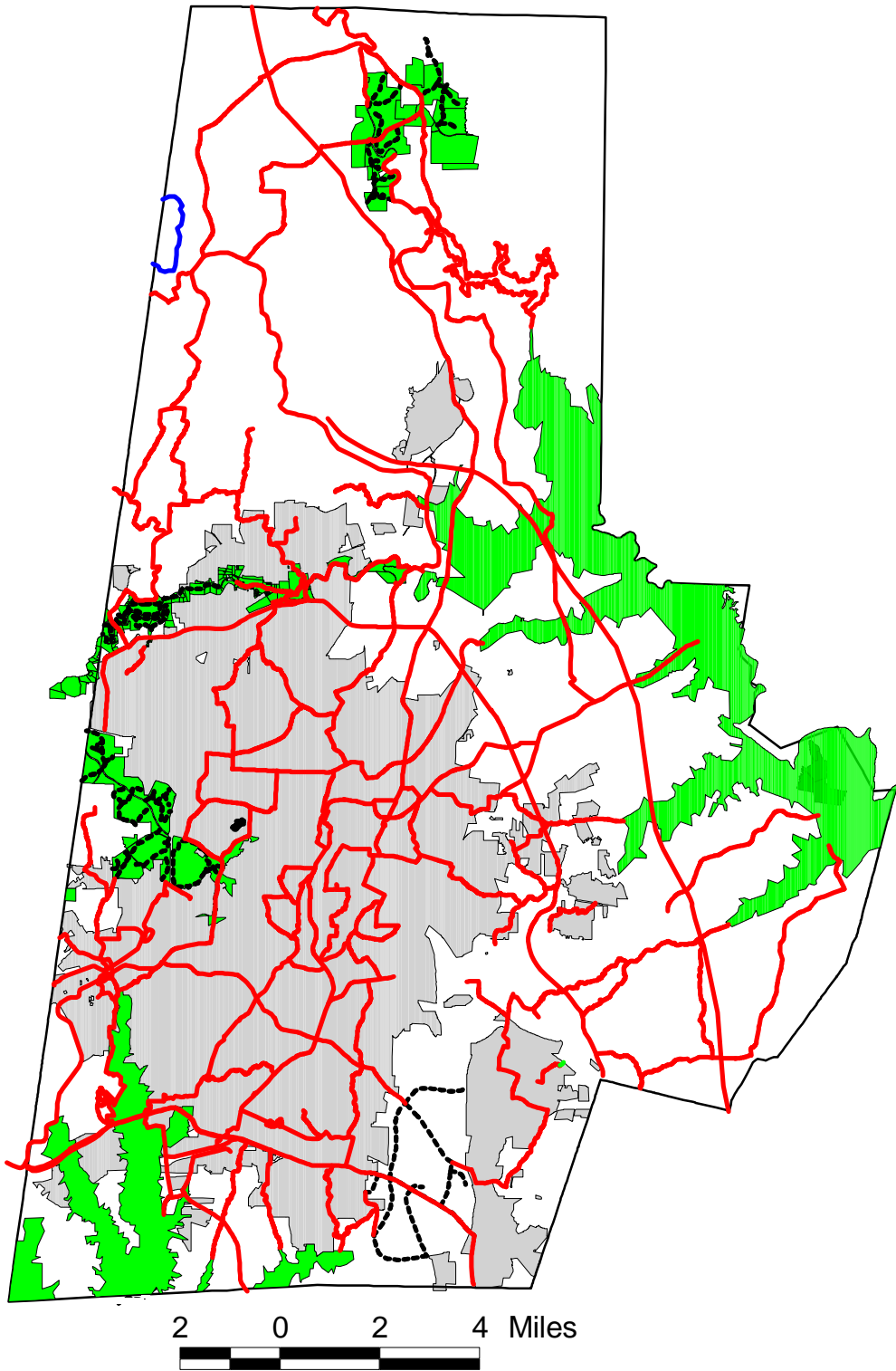
Maps for trail users, with the most current information on trail status, trail head locations, parking, and facilities, are produced by the Department of Parks and Recreation.



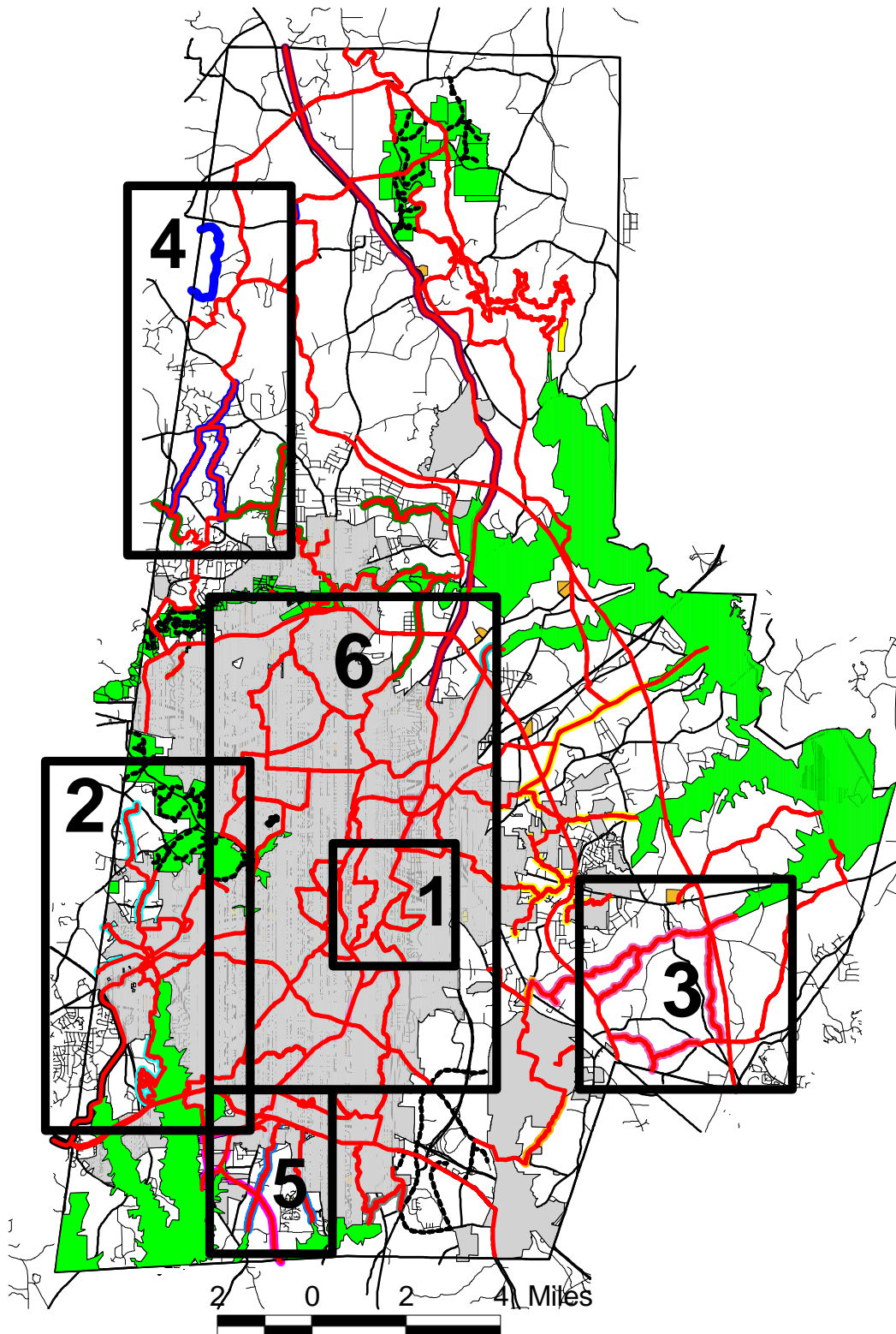
*Two future trails: the North/South Greenway connection from the South Ellerbee Creek Trail to downtown will go under the bridge and the Downtown RR Trail will go over it.*



# Trails and Greenways -- Systemwide Map

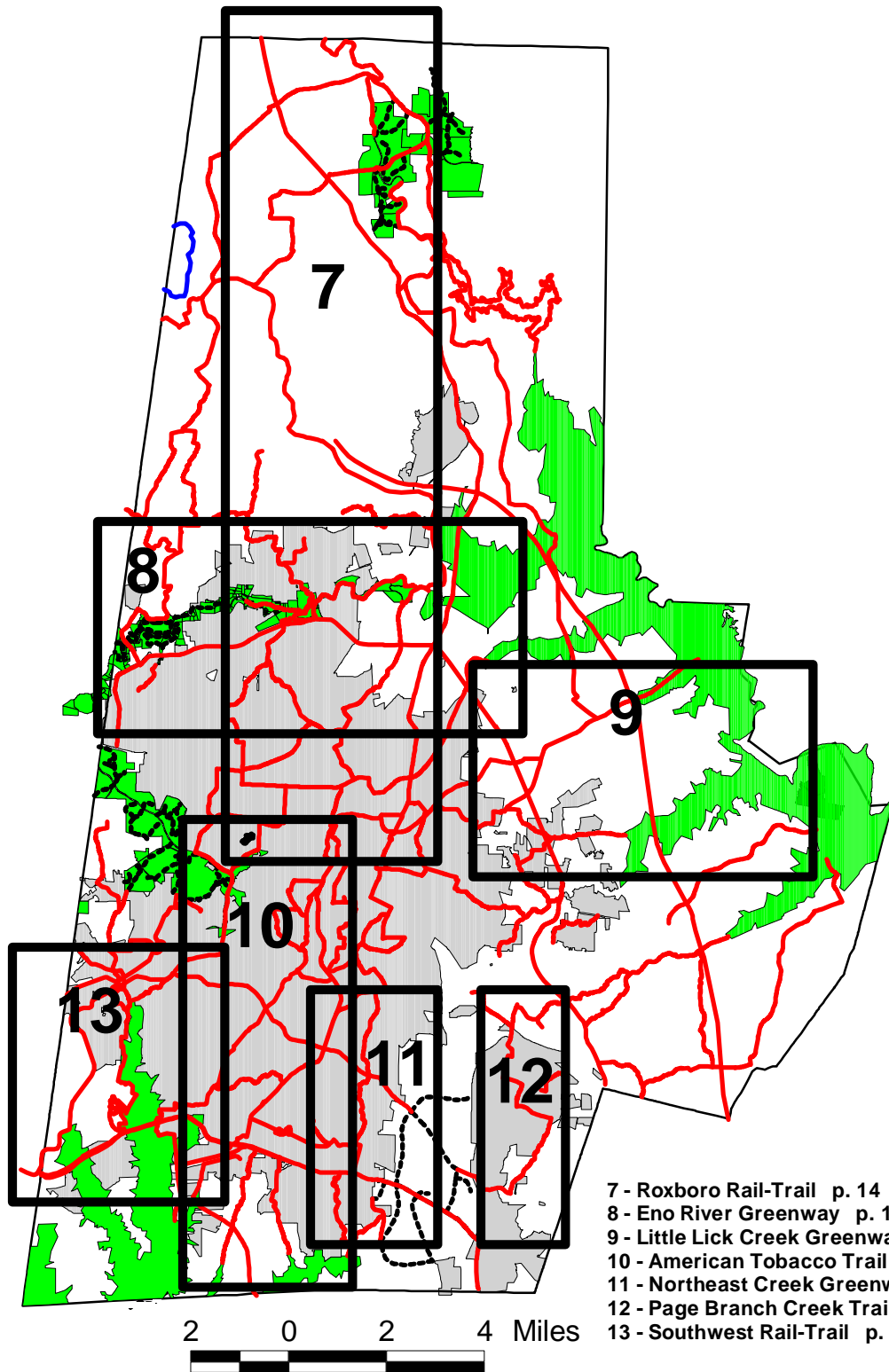


# Locations of Greenways -- Index Map 1

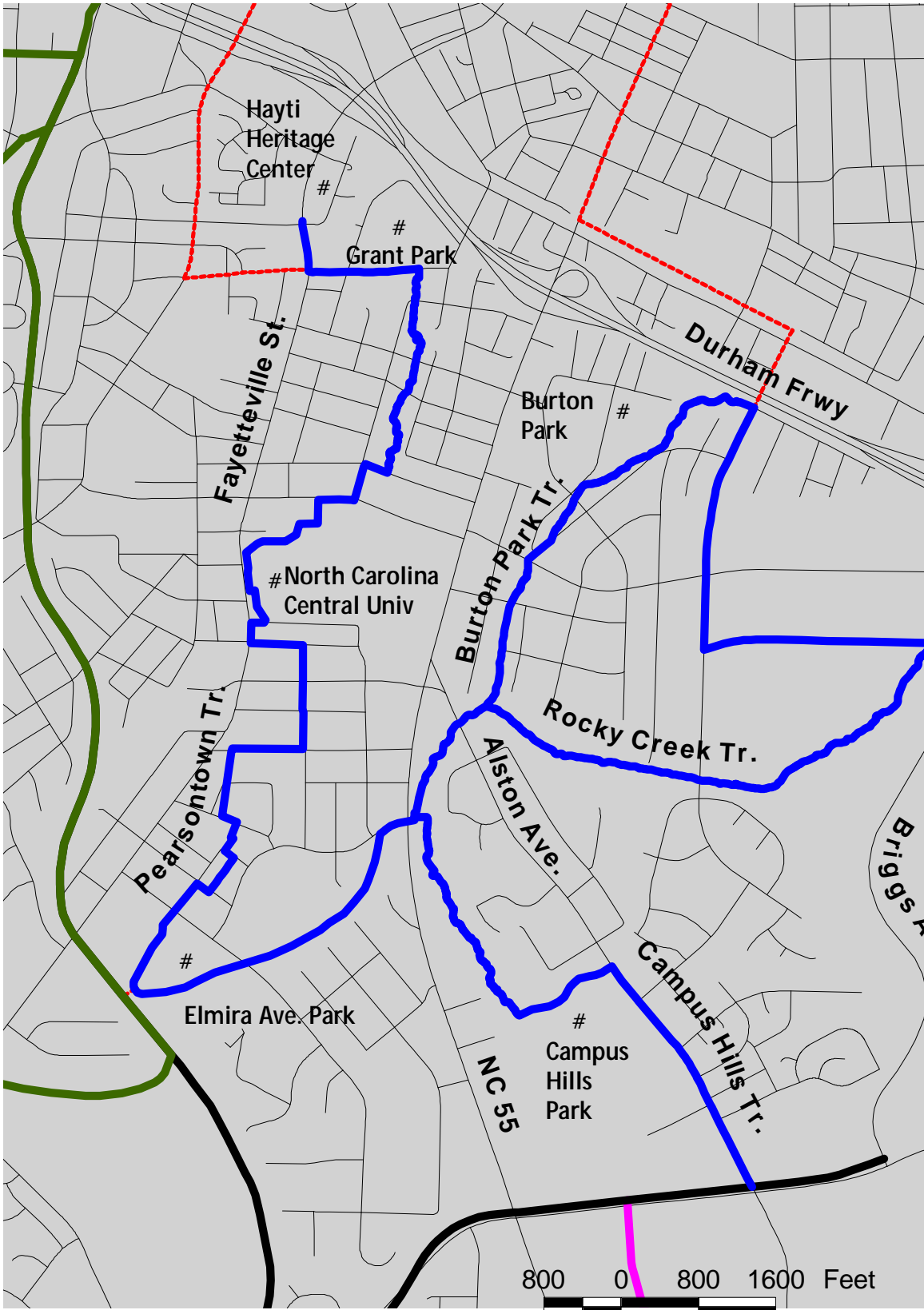


- 1 - Rocky Creek/Pearsontown Greenway p. 7
- 2 - New Hope Creek Greenway p. 8
- 3 - Lick Creek Greenway p. 9
- 4 - Little River Greenway p. 10
- 5 - Crooked Creek Trail p. 11
- 6 - North/South Greenway p. 12-13

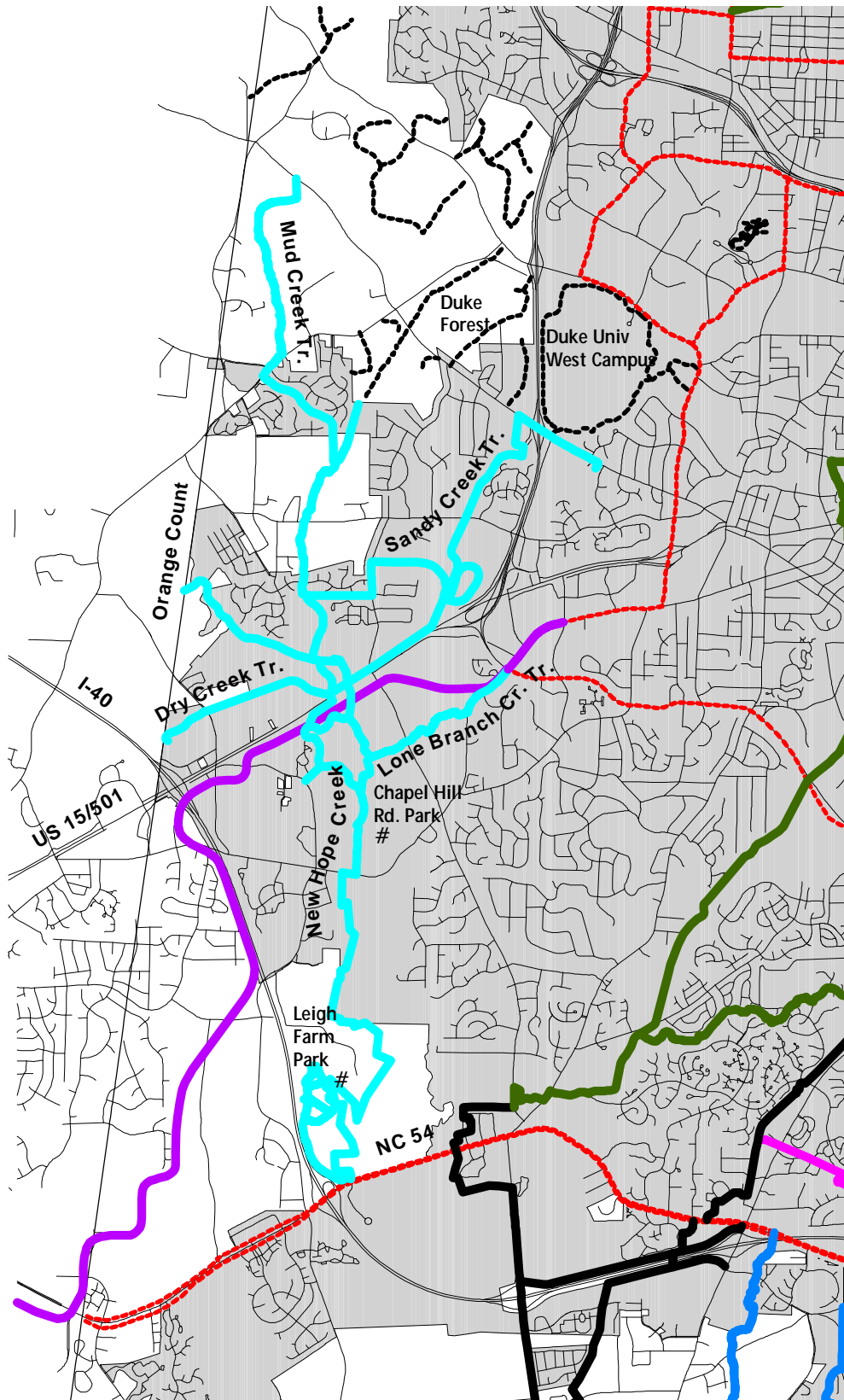
# Locations of Greenways -- Index Map 2



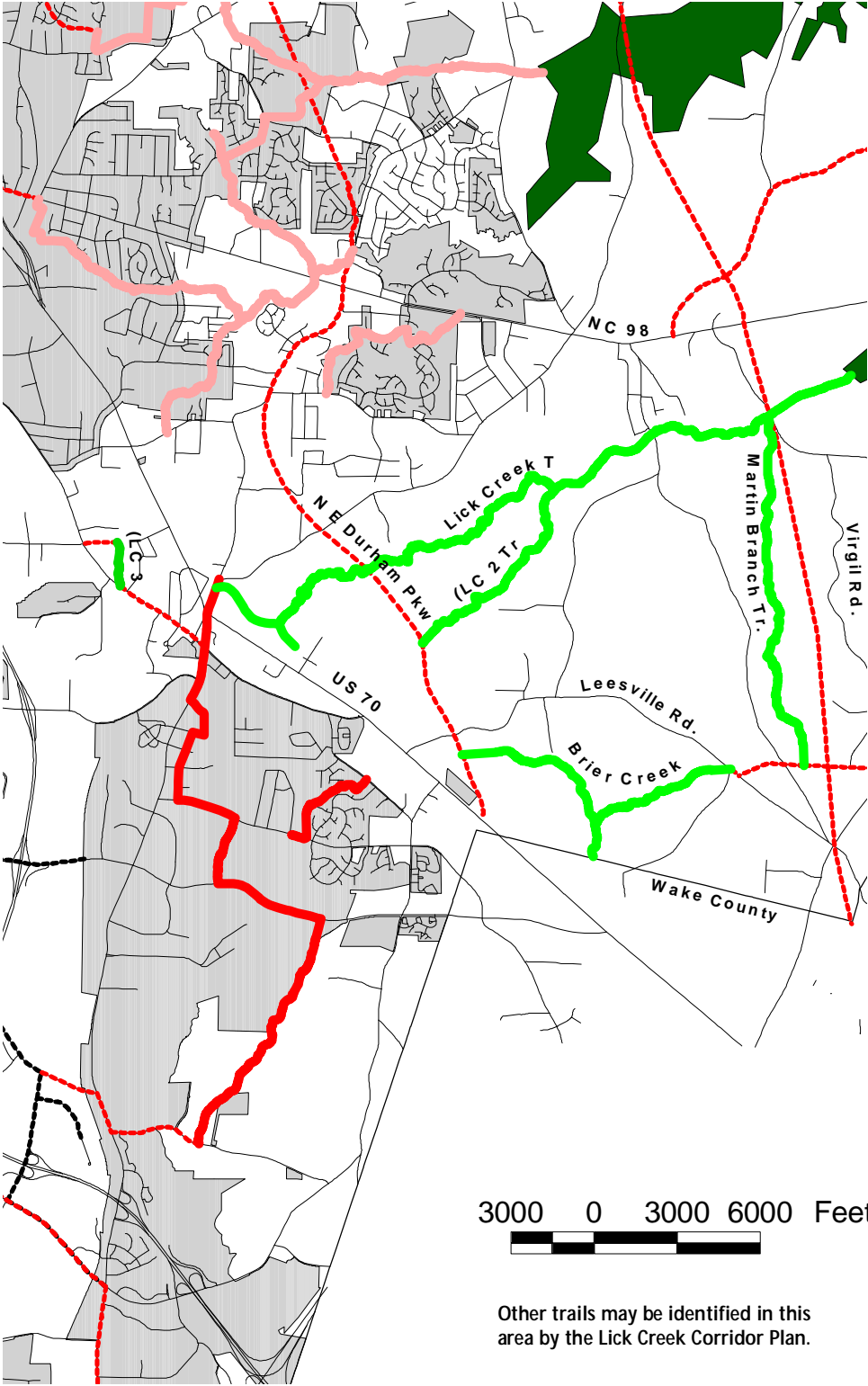
# Rocky Creek / Pearsonstown Greenway



# New Hope Creek Greenway



# Lick Creek Greenway



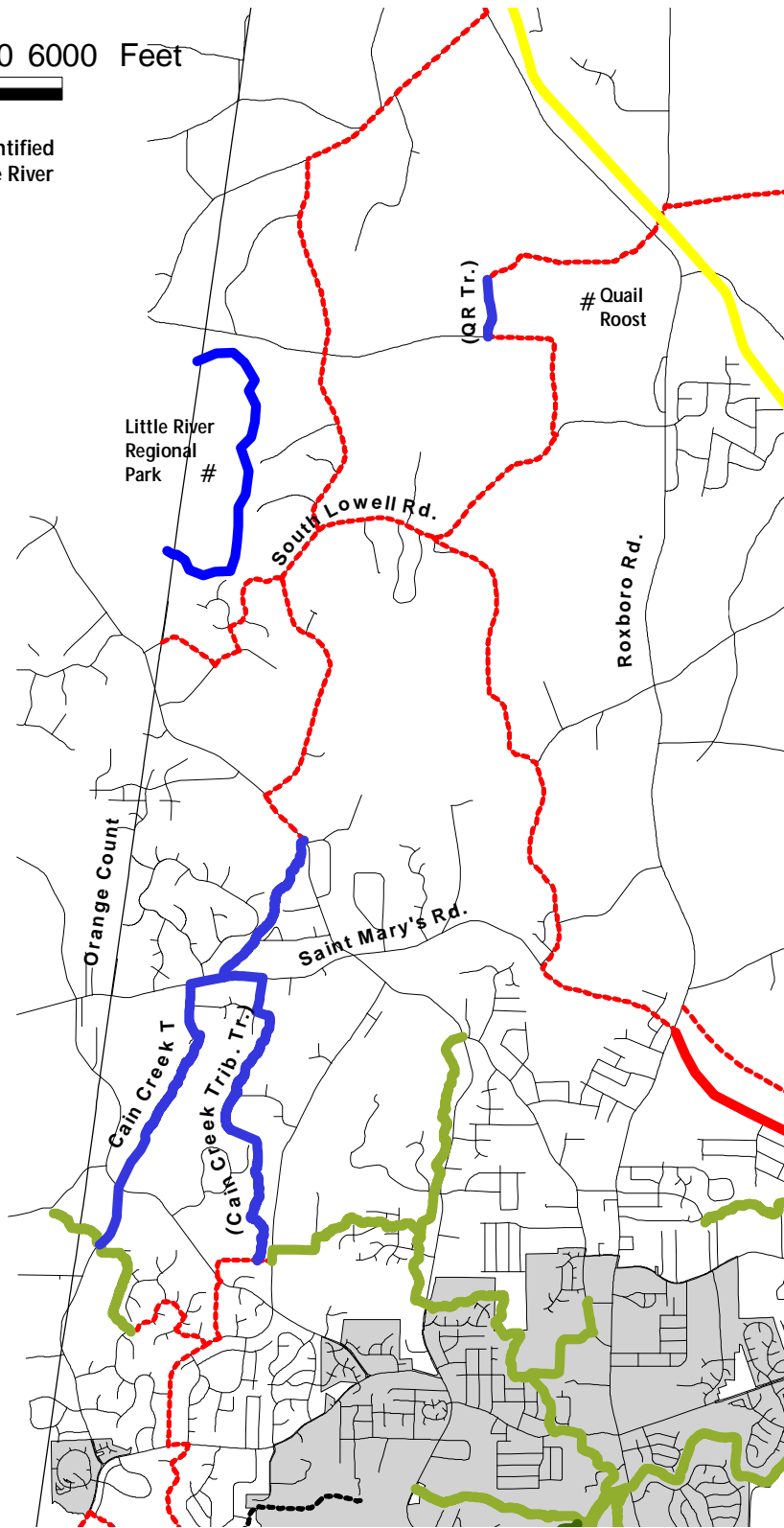


# Little River Greenway

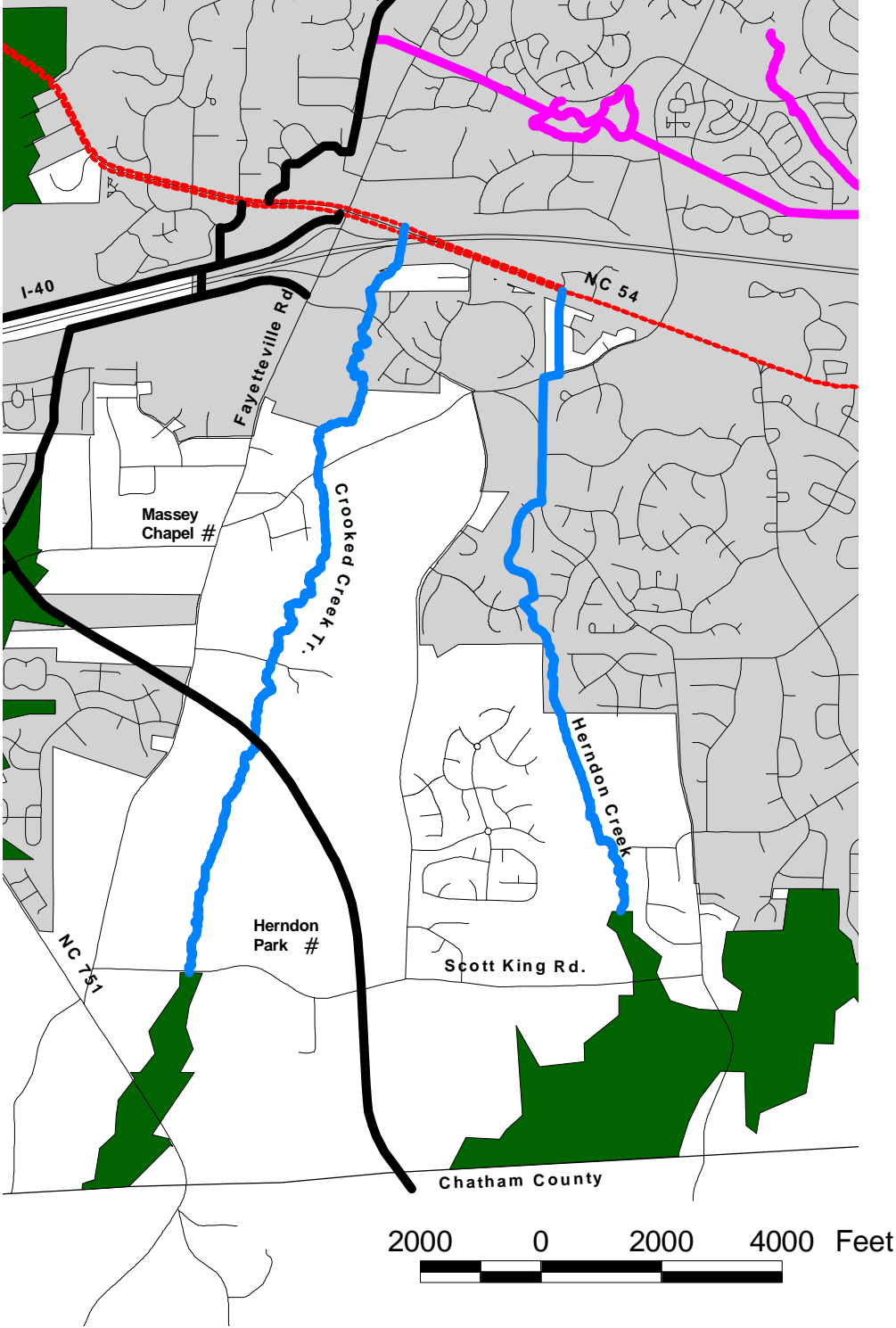
3000 0 3000 6000 Feet



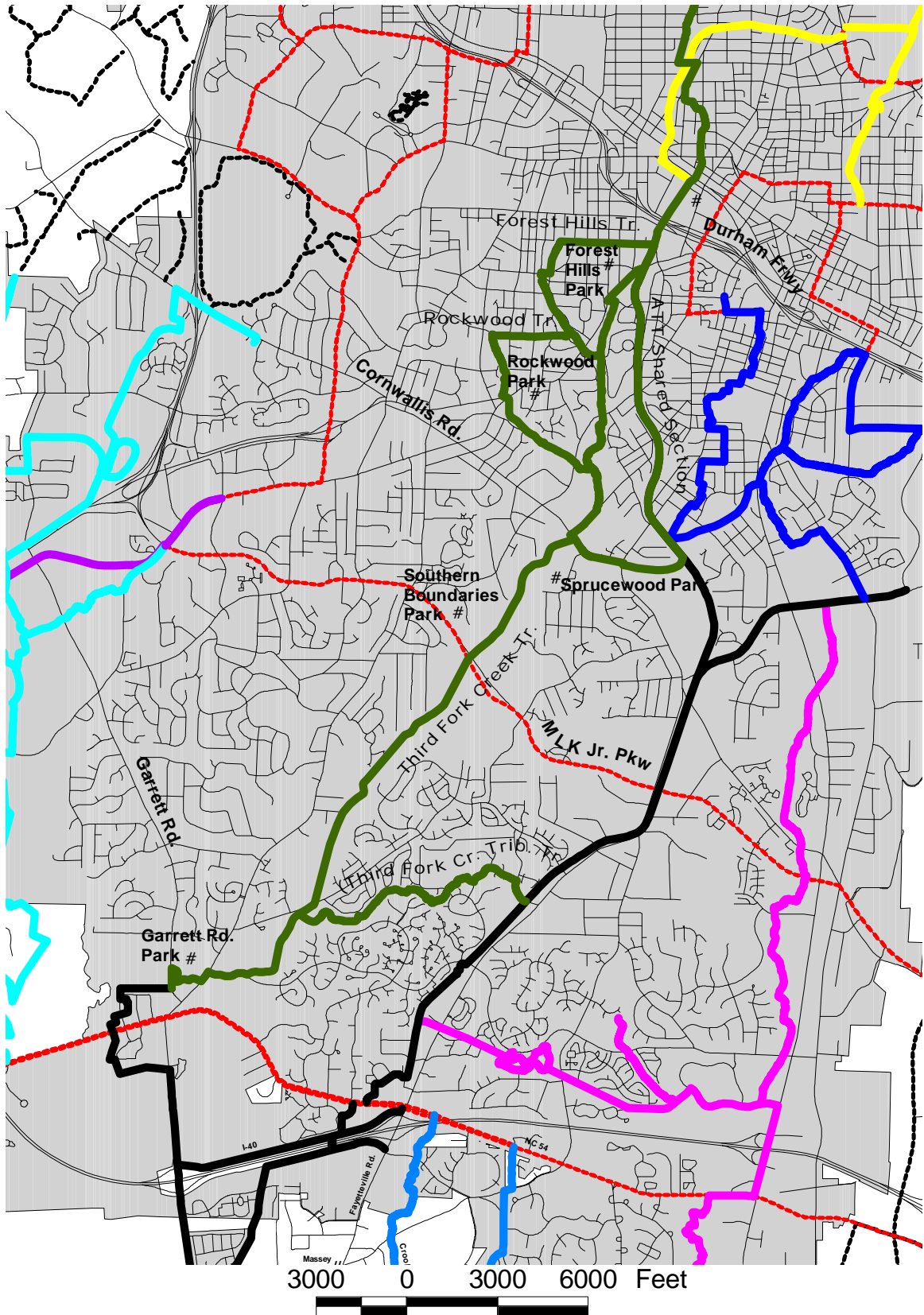
Other trails may be identified in this area by the Little River Corridor Plan.



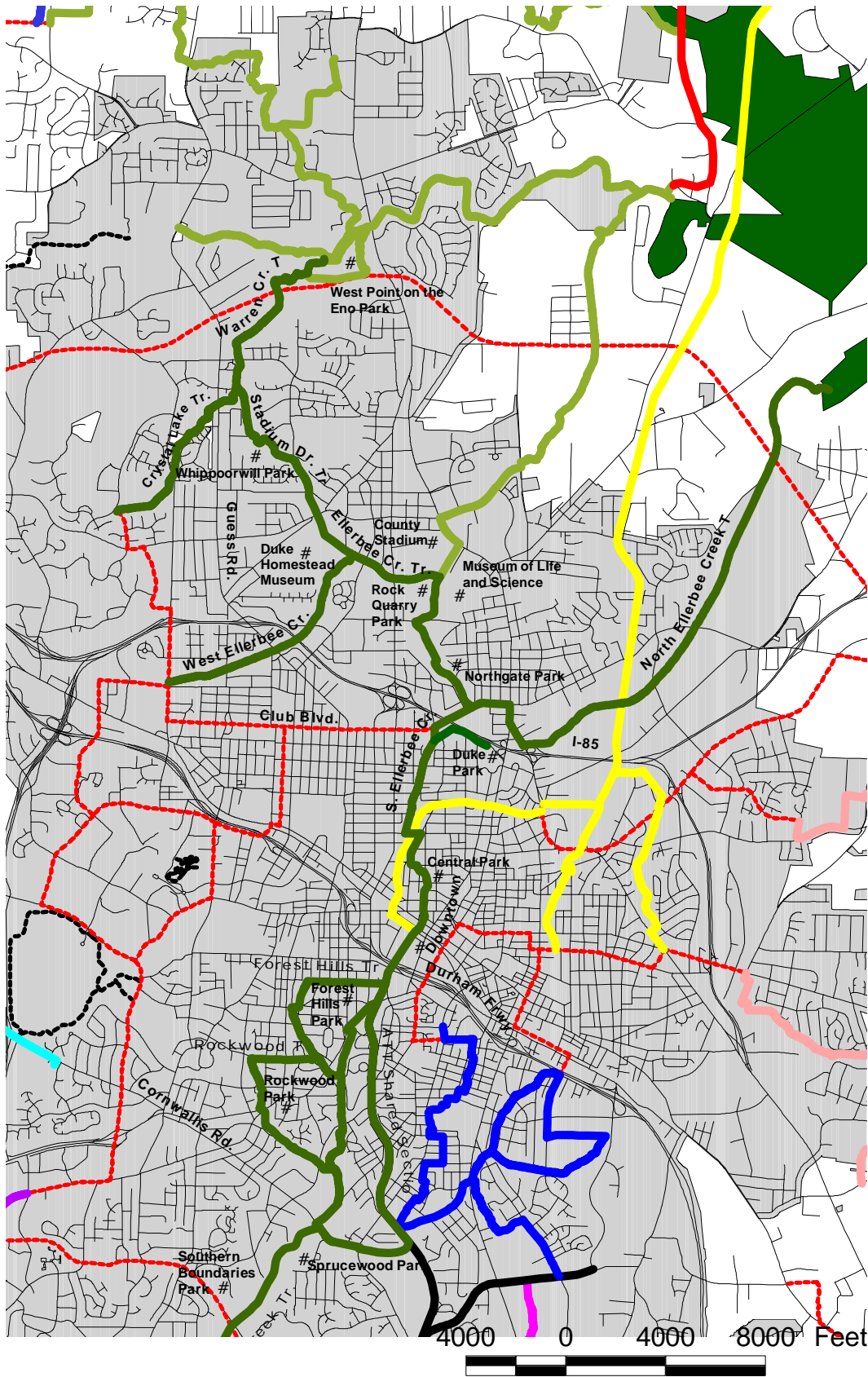
# Crooked Creek Trail



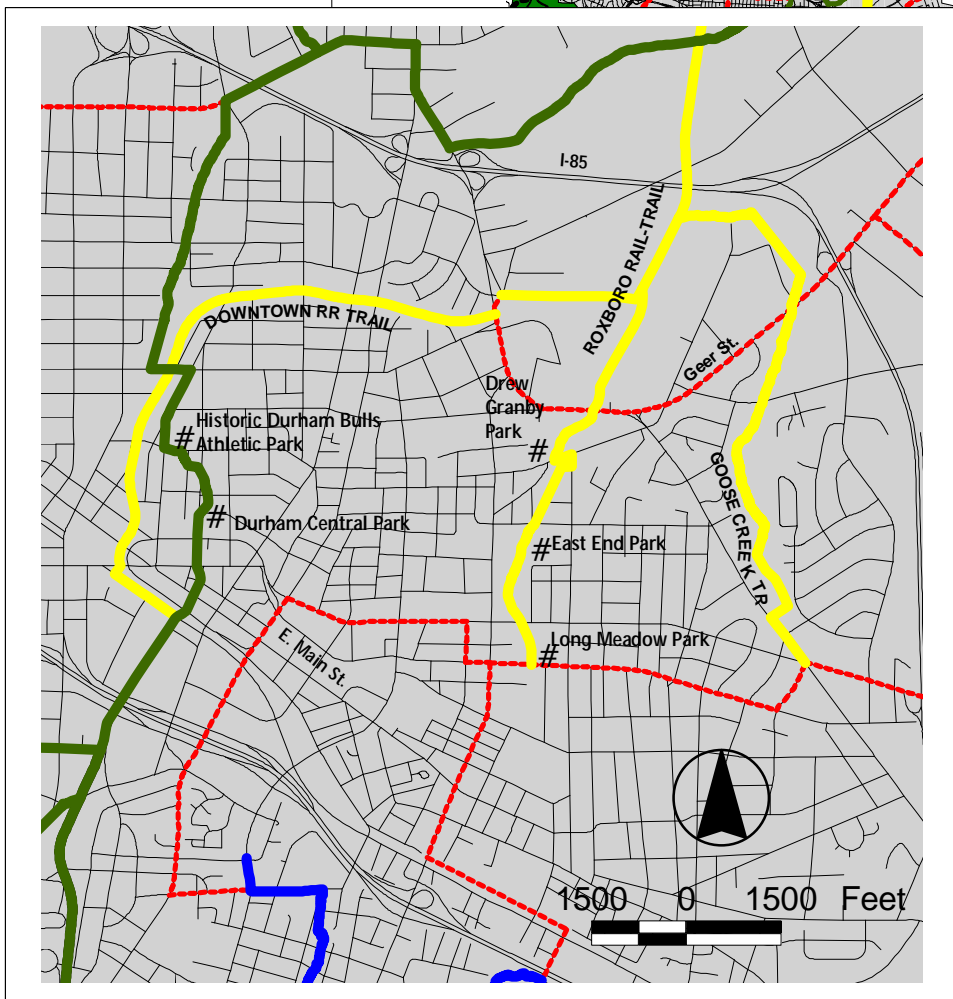
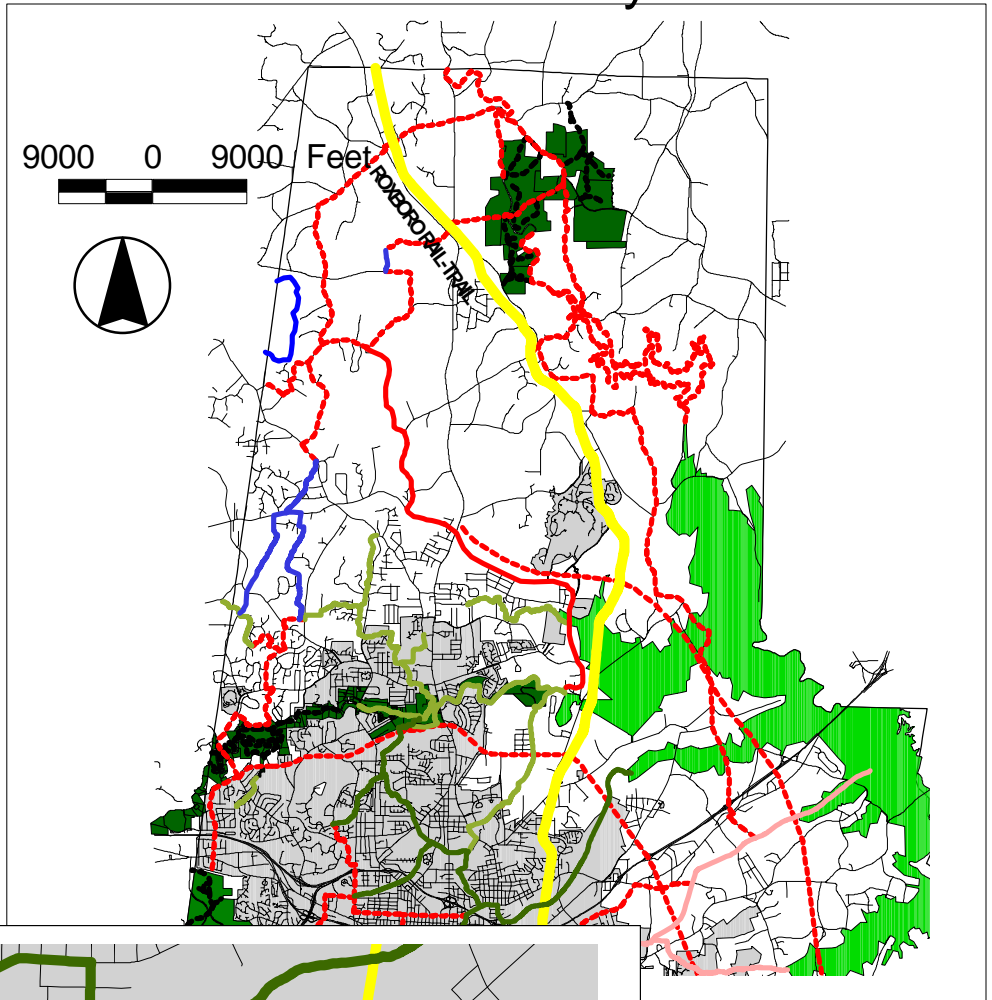
# North / South Greenway (southern section)



# North / South Greenway (northern section)

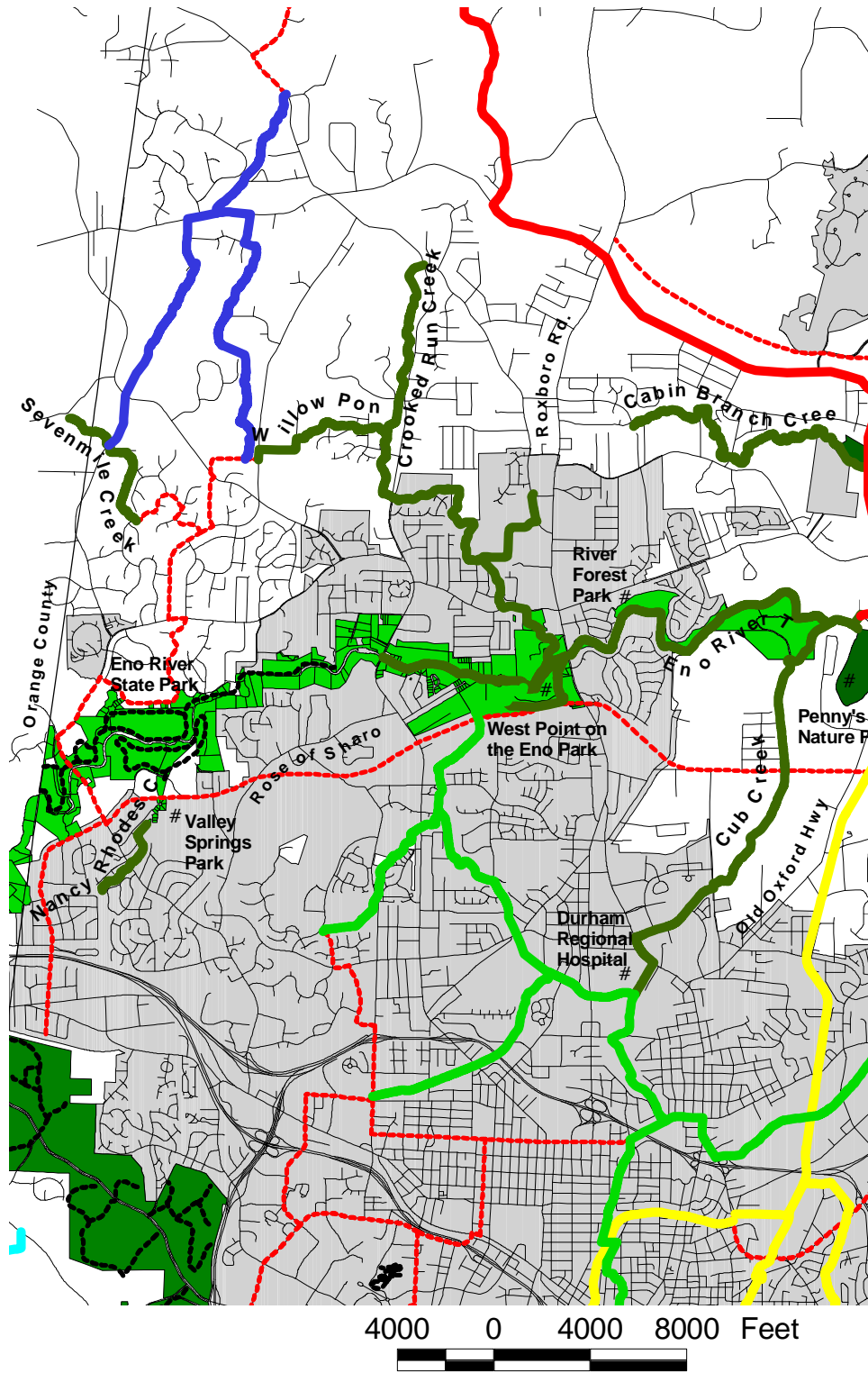


# Roxboro Rail-Trail Greenway



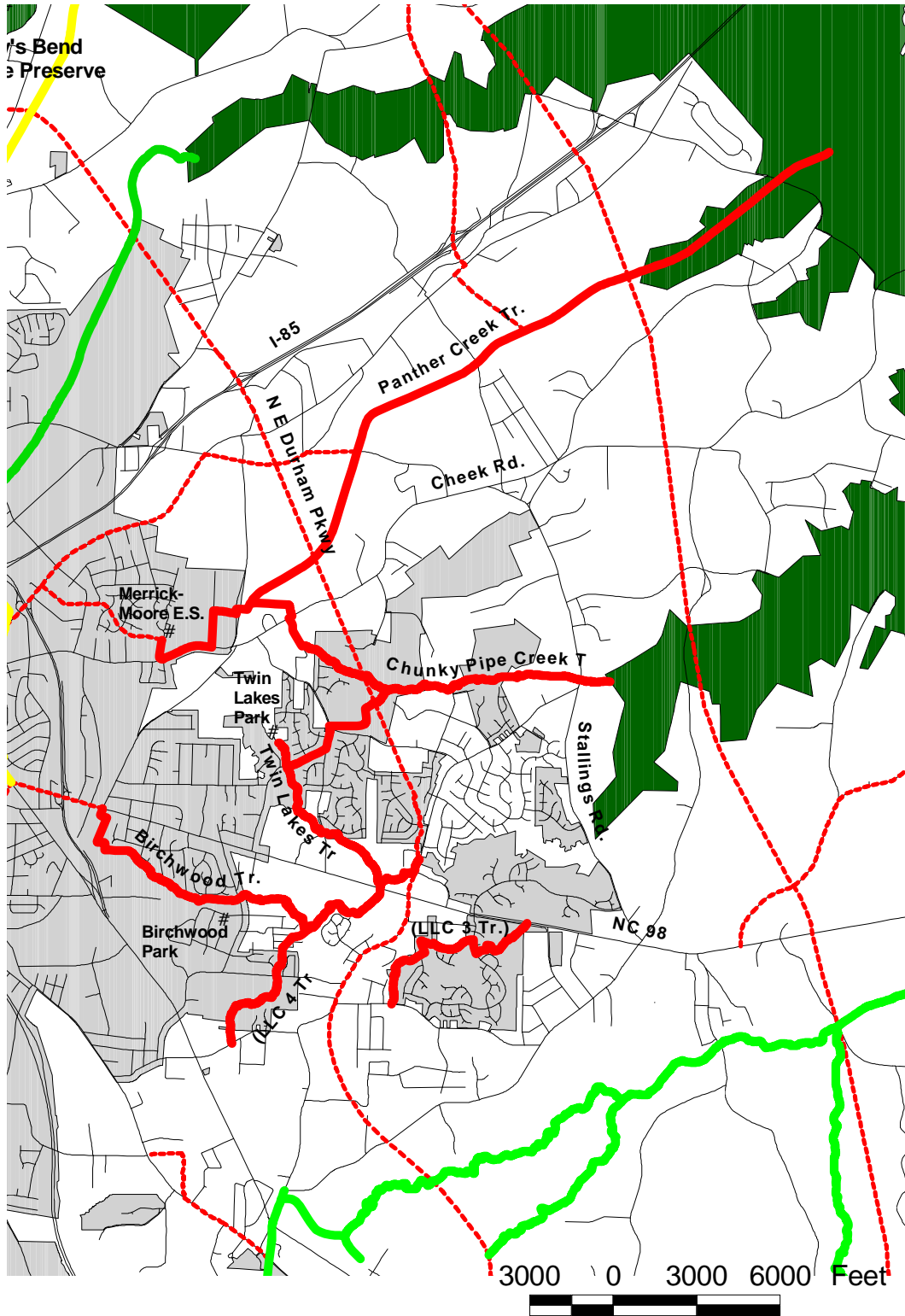


# Eno River Greenway

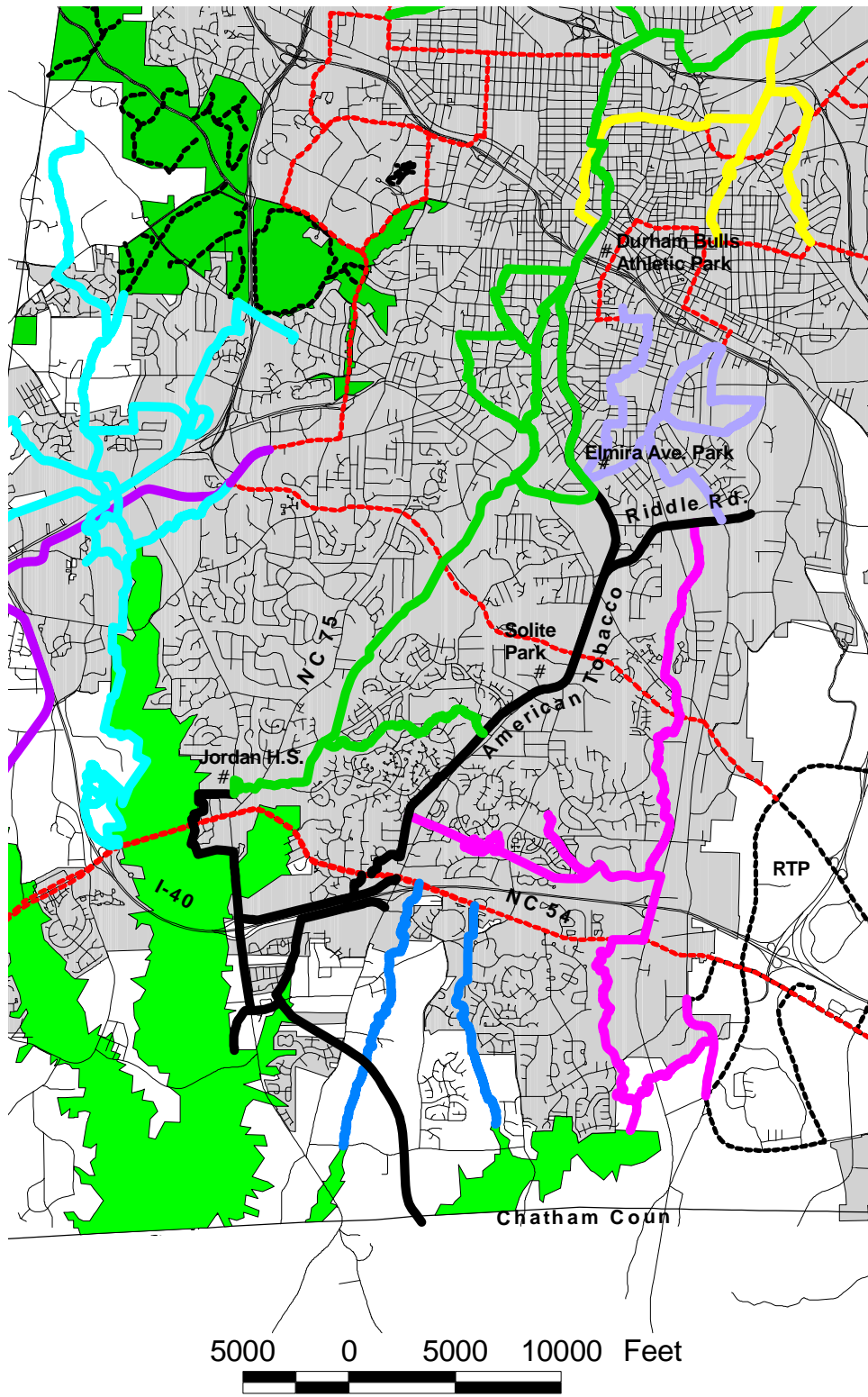




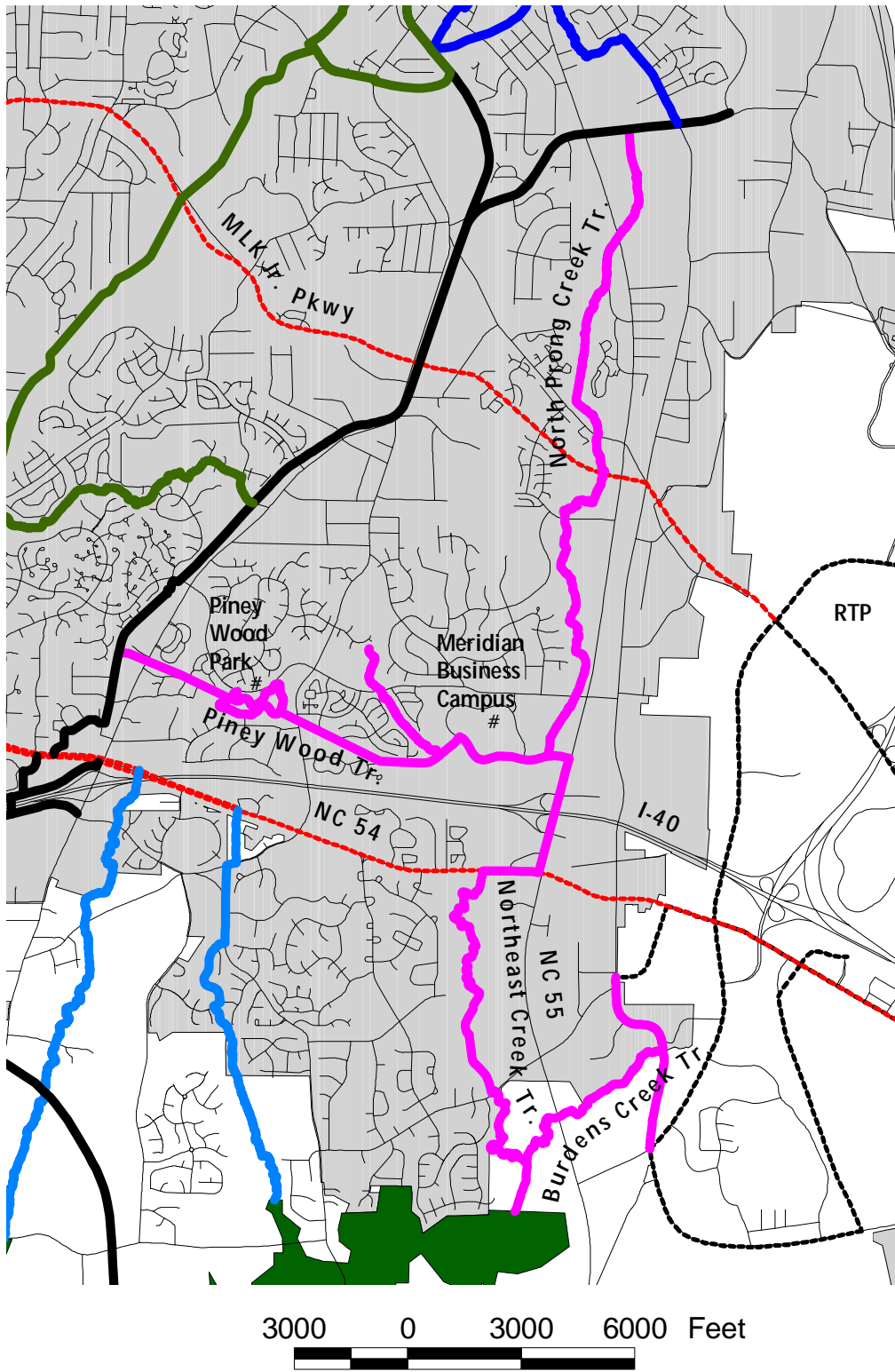
# Little Lick Creek Greenway



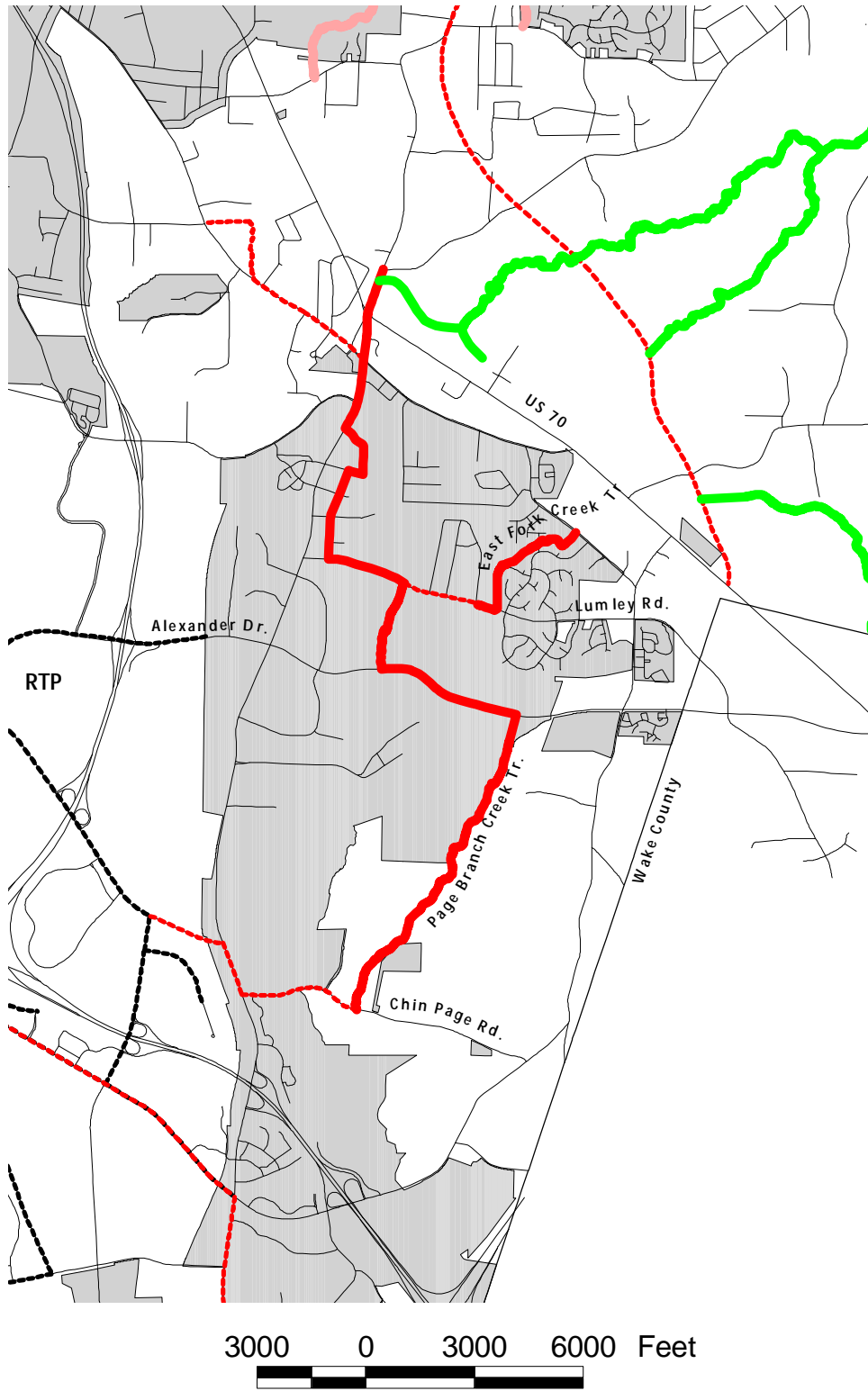
# American Tobacco Trail Greenway



# Northeast Creek Greenway

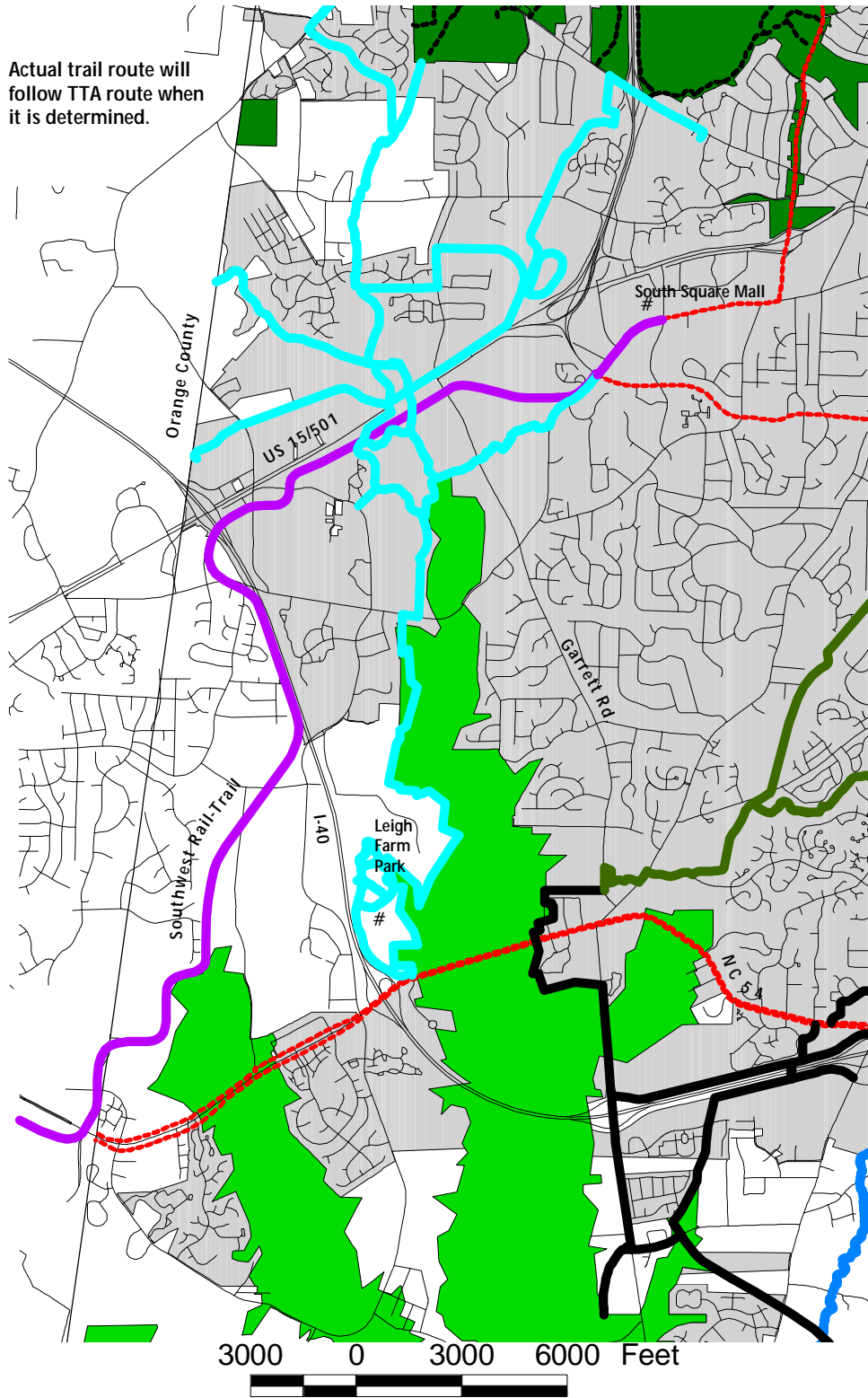


# Page Branch Creek Trail



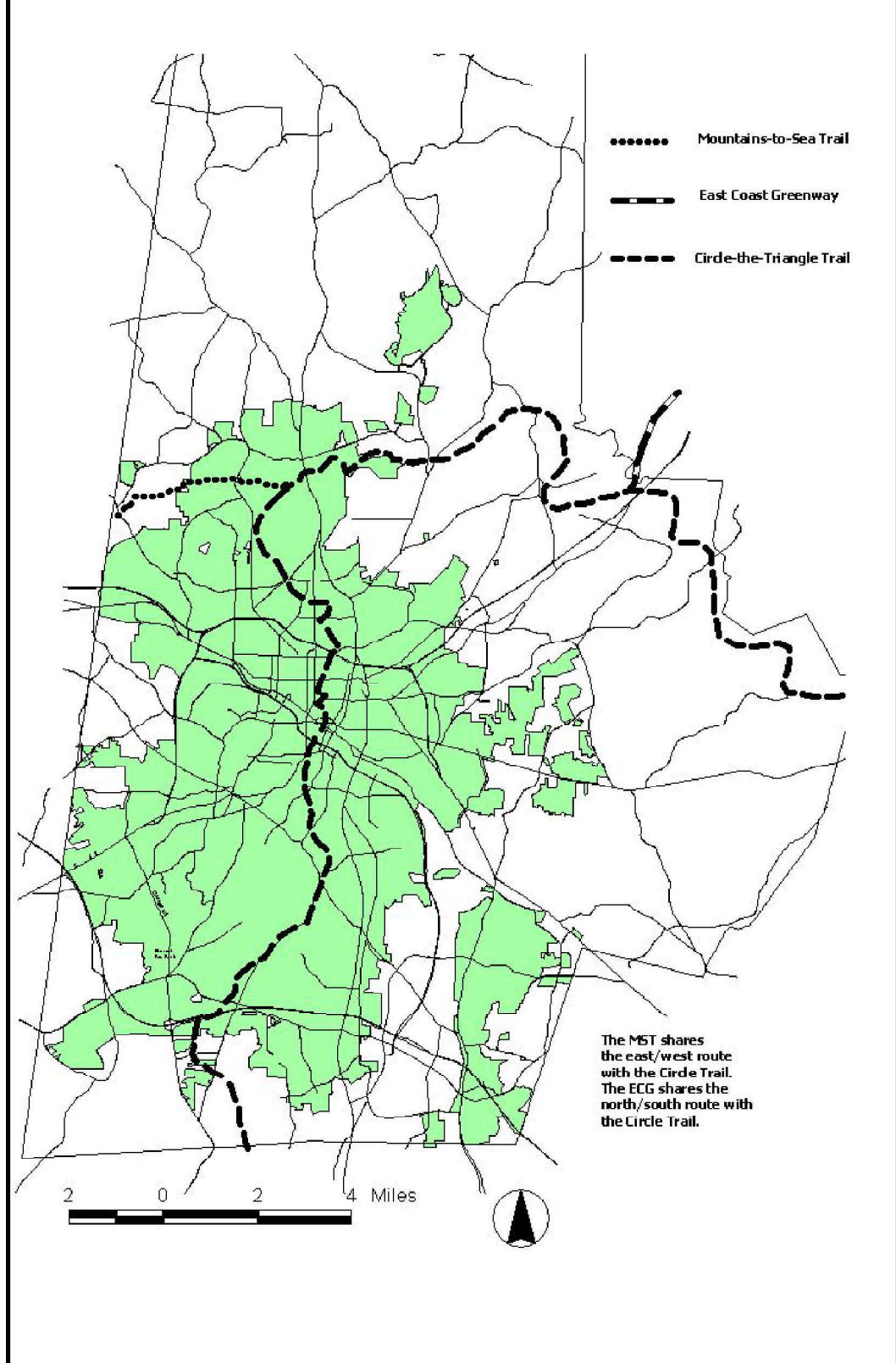
# Southwest Rail-Trail

Actual trail route will follow TTA route when it is determined.





## Regional, State, and National Trails in Durham





# Section II Goals and Implementation



## Goals and Policies

The citizens of Durham want more places to walk and bicycle in their community and they have shown themselves willing to support this desire with both money and their volunteer time. Many plans have portrayed a future for Durham that includes an enjoyment of nature, physical exercise, and bicycle and pedestrian commuting. Therefore, the vision that guided earlier trails and greenways plans remains the underlying principle of this revised edition. That general goal is as follows:

**The City and County of Durham will have a system of trails and greenways that connects people and places in the community while it preserves and enhances the region's natural environment.**

Within that broad goal are a series of more focused goals that guide its implementation. Just as the term “greenway” itself has been evolving over the past decade, so have the specific goals that Durham selects to implement its broad goal of a system of trails and greenways. The crucial element in the system now is a cooperative effort between the plan for greenways and trails and other needs in the local community and the larger regional community. A greenway system plan is one that must be linked with various other plans, including park and recreation plans, transportation plans, open space preservation plans, watershed protection plans, and even historic district plans. The following specific goals reflect that larger vision of the community's development.

Just as goals guide trail planning, so policies turn those goals from a wish list into a day-by-day implementation of projects. Policies direct the actions that a government takes to get where it says it wants to be going. The following recommendations are for policies to help to make the associated goals into realities. When the plan is adopted, staff will move them into implementation items for the elected officials.

### **Goal 1: Connectivity**

Trails and greenways will always be planned with origins and destinations in mind. They will link residential areas with schools, parks, institutions, and shopping. They will tie together the City's and County's systems of sidewalks, on-road bicycle routes, and transit to allow citizens a choice in their recreational and work commuting. The Durham network will connect with regional, state, and national trail systems wherever that is possible.

#### *Recommendations:*

**(a)** City and County staff will continue to participate in state and regional plans for trails and greenways systems. State, regional, and national trails that pass

through Durham County will be incorporated into Durham's trails plans.

**(b)** Trails and greenways plans will be coordinated with pedestrian plans, bicycle plans, public transit plans, parks and recreation plans, and other relevant land use and development plans.

**(c)** Institutions, commercial districts, and neighborhoods will be encouraged to build local connections to Durham's main trail routes, and these may be added to the plan by amendment.

**(d)** Standards will be developed for the existing Zoning and Subdivision Ordinances or for any revision of the Ordinances to require greater bicycle and pedestrian connections in both new residential and non-residential developments.

### **Goal 2: Accessibility**

Durham's urban, paved greenways will be fully accessible to persons with disabilities. Unpaved trails in the system will be accessible to a level congruent with their surrounding development. Greenways and trails will be available across the community; one priority will be balancing that development across the City and County.

#### *Recommendations:*

**(a)** All paved trails in Durham will be designed for accessibility; all recreation trails will be as accessible as possible and signed as to their level of difficulty.

**(b)** Trail construction priorities will continue to be selected to ensure that all areas of Durham have access to the greenway and trails system.

**(c)** Trails and recreation trails will be planned to serve as many types of trail users as the location and environmental setting of each one warrants.

### **Goal 3: Right-of-Way Preservation**

In a rapidly urbanizing area such as Durham and Durham County, land is increasingly valuable. Even during those periods when funding for actual trail construction lags, the City and County will still work to preserve trail and greenway corridor rights-of-way in anticipation of future trail development.

#### *Recommendations:*

**(a)** The City and County will consider matching their decisions on greenway and trail development priorities with funding for trail right-of-way acquisition, whether through bond issues, inclusion as Capital Improvements Projects, maintenance of a designated funding source to match grant awards, or all of the above.

**(b)** The City and County will consider adopting a policy to require that an easement for trail use be routinely acquired as part of any other easements the City or County acquires that includes trail routes, such as easements for utility lines or for

roadway right-of-way.

(c) Language will be retained and strengthened in any revised Ordinances that requires greenway right-of-way dedication in new developments.

#### **Goal 4: Water Quality Protection**

Since many of Durham's greenways follow stream corridors, protection of the water quality in those streams is of key importance. Greenway and trail construction in those corridors will follow best practices for environmental protection, will not seek unusual exceptions to state or federal regulations, and will include stream bank enhancement as necessary.

##### *Recommendations:*

(a) Greenway trails will not generally be constructed in the thirty-foot strip adjacent to streams in Durham unless runoff mitigation or stream bank restoration techniques are also part of the construction.

(b) Greenways that require boardwalks and/or bridges will generally not be constructed in floodways; greenways that require fill will generally not be constructed in floodways or wetlands. Areas disturbed by previous work will be utilized for trail construction as possible.

#### **Goal 5: Open Space Preservation**

Green corridors are crucial for wildlife and native plant survival in an urbanizing area. One priority criterion for greenway corridor acquisition will be those areas in Durham that are both environmentally sensitive and threatened by development. In the most sensitive areas, trail construction will be designed for minimum impact.

##### *Recommendations:*

(a) Land acquisition for a greenway or trail in an environmentally sensitive or unique area may include preservation of a wider trail corridor than would be acquired in a less sensitive area.

(b) Not all land acquired for a greenway will have a permanently constructed trail associated with it; some land may be used for recreational activities such as bird watching or wildflower identification.

(c) Acquisition for trails and greenways will work to support acquisition of open space for environmental protection.

#### **Goal 6: Community Education**

Citizens will be informed and educated about the trails and greenways programs and about the role of the Durham Open Space and Trails Commission at regular community events. City and County organizations and agencies should create greenways maps and brochures, educational programs, and events to explain and promote the system.

*Recommendations:*

(a) DOST will attempt to secure grants to fund educational programs and brochures to explain and promote the trail and greenways system. DOST will create a program to take to community groups to explain and promote the trails and greenways system.

**Goal 7: Community Involvement**

All the citizens of Durham will be encouraged to become involved in further development of the greenways and trails system through (a) the establishment of community-inspired neighborhood connector trails, (b) Matching Grant Program initiatives, and (c) citizen “adoption” of established trail sections for assistance with maintenance and surveillance.

*Recommendations:*

(a) The Department of Parks and Recreation (DPR) and Properties & Facilities Management (PFM) will create and manage an “Adopt a Trail” program to encourage citizens to be actively involved with trail maintenance and surveillance.

(b) A source of funding will be considered to assist citizen groups to build trails in their neighborhoods for local connections or to connect to the City’s and County’s trails and greenways system. These neighborhood trails can be adopted into the City’s and County’s system by plan amendment. The County’s existing Matching Grants program is one possible source of funds for this kind of neighborhood trail.



*Students from R.N.Harris Elementary School at a Walkable Communities design workshop*

## Acquisition

Trails and greenways are constructed to serve a public recreation or transportation purpose. Therefore, the owner and manager of most of the trails and greenways in the City of Durham and Durham County is the local government. There are a significant number of trails under other ownership and management in Durham, including trails on federal, state, and private lands. While the trails and greenways in this plan will make connections whenever possible with those trail systems, they remain outside the scope of its recommendations.

Local governments obtain their property for trails and greenways by various methods. The City primarily uses fee simple purchase, exaction, and easement dedication for land acquisition; the American Tobacco Trail is a major exception since most of it is constructed on land leased from the North Carolina Department of Transportation (NCDOT). The County uses those methods as well but also holds some conservation easements on land where trails are not the primary purpose. Both have received donated land; and the County has obtained some land—especially in the New Hope Creek Corridor—through bargain sale. The City can condemn land for a trail, but it has used its power of eminent domain rarely (see Appendix F).

The land acquired for a greenway or trail, whatever its acquisition method, must be wide enough to accommodate the construction and maintenance of a trail. In most cases it will be desirable to have a trail corridor wide enough to preserve natural vegetation, provide a scenic route for trail users, buffer nearby developments from trail use, and preserve undisturbed stream buffers. Environmental protection regulations necessitate as wide a corridor as possible in some riparian areas to avoid potential conflict with trail construction. Guidelines for greenway easement acquisition are as follows:

- (a) adjacent to streams with mapped floodplains in non-urbanized areas, the 100 year floodplain or a minimum of 100 feet is the desired width;
- (b) in developed urban areas, an easement of 50 feet is the minimum desired width; and
- (c) when a greenway easement is to be located on a sanitary sewer easement, the desired greenway width extends from the adjacent stream bank to the edge of the sewer easement farthest from the stream.

### **Fee Simple Purchase**

Fee simple is an outright purchase of a parcel of land and all the rights associated with it allowing for full use of the land and any level of public access deemed appropriate by the managing agency. It does remove land from the property tax rolls, and it can be expensive. Less than a third of the City's trails are on land it owns in fee simple; but since the County generally buys larger parcels for open space protection, most of its trails are actually on County-owned land.

*Recommendation:*

The City should attempt to spend down each year the money collected as the open space impact fee; that money can be a continuing and reliable source for property purchase as needed in the various districts of the City. The County has already allocated a continuing amount for open space acquisition in its capital budget; that fund should not be reduced.

**Exaction**

For certain types of development local governments can require that a developer pay an impact fee or dedicate an easement to the public for open space or recreation. All residential subdivisions in Durham City and County are required to dedicate land for a greenway if their property includes part of a trail route from the adopted master plan. Many other developments do dedicate trail right-of-way as part of the site or development review process, even when they are not required to do so by the Zoning Ordinance.

*Recommendation:*

The City and County should consider either (1) linking exactions for greenways to a transportation requirement as well as a recreation one so that development in all land use zones would be required to dedicate easements, or (2) using reservation and a set payment rate to acquire greenway corridors from non-residential uses. Multi-family residential development should be required to dedicate open space for recreational use, thus for greenways when indicated on a plan.

**Recreational Use Easement**

One right belonging to a piece of property—the right to access and use for a trail—can be separated out from a parcel and sold. Most of the City’s trails in developed areas of town are on easements that have been sold to the City for the specific purpose of a trail. The City pays the surveying and legal costs and pays the owner a percentage of the land’s value for the right of access and use. The County has only one trail, inside the City limits, which is built partially on an easement.

*Recommendation:*

The City should consider adopting a policy that encourages its Public Works Department to acquire **joint use easements**—that is, easements acquired for various utilities such as sanitary sewers should also be written to accommodate recreational use when those acquisitions follow a route on the adopted trails and greenways master plan.

**Lease**

The NCDOT purchased under its railbanking authority the rail corridor that the City leases for the American Tobacco Trail. The City pays only a nominal fee for the use of the corridor, but the arrangement does have the inherent risk that the NCDOT can reclaim the corridor for rail use. Since the corridor is 100 feet wide at most points, the City would probably try, if the corridor were reclaimed by NCDOT, to establish a trail parallel to any new rail line that was built in that same corridor.

*Recommendation:*

Leasing does not protect a trail corridor the way ownership or easement does, but it is the best way to acquire access to railbanked corridors. The NCDOT should be encouraged to purchase other rail corridors in Durham and to lease them to the City or County for interim trail use. Durham should take the lead with local governments statewide to work with NCDOT to create a policy for shared-use trail and rail corridors, anticipating a time when NCDOT may move to restore rail service in any corridor.

**Conservation easement**

Like a recreation easement, a conservation easement is one right of a piece of property that can be separated out and sold or given away. In this case, the right protects the natural resources on the property—water, forest, land—from being used. The County has itself given conservation easements to the State on lands buffering rivers and creeks which it has purchased with Clean Water Management Trust Funds. An easement to protect working farmlands or scenic viewsheds is a specialized type of conservation easement. Often conservation easements do not include a right of public access and trails are not a part of their use.

*Recommendation:*

The County will probably continue to hold more conservation easements than the City, since the most sensitive natural areas are outside the City. All conservation easements must be assessed carefully to make sure any trail use will have a minimum impact on the site’s resources. For more intensely developed areas, the County should consider including public access for trails as a part of any cluster development or transfer of development rights legislation.

There are other situations for trail development which can be explored. Since some trail and greenway routes are on roadways or sidewalks, development through transportation improvements is certainly a facet of trail growth. NCDOT is now routinely including bicycle and pedestrian improvements on projects on State roads; the City should consider following suit. The County should encourage NCDOT to follow its own published guidelines on State roads in the County as well: roads with an Average Daily Traffic Count (ADT) between 4000 and 8000 should have two-foot paved shoulders; roads with an ADT over 8000 should have four-foot paved shoulders. This one improvement would make the County roads significantly more bicycle-friendly and make connections between off-road trails much easier.



*The old rail line to Roxboro is proposed for a rail-trail in northern Durham; this view of the corridor is from Hamlin Rd.*



## Priorities for Development

### Initial Trail Priorities

The 1988 Durham Urban Trails and Greenways Master Plan stated that the priority of the first five years of the trails and greenways program would be “the completion of a trail from I-40 on Third Fork Creek to West Point on the Eno Park, i.e., a route crossing through the entire City, from north to south.” It noted that “other major trail development opportunities may occur due to railroad abandonments” and suggested watchful monitoring of the rail line to Roxboro, the downtown rail corridor, and the line “from downtown to Woodcroft and Jordan Lake.” It specifically noted that by 1993 (that is, five years after the plan’s adoption), the trails that should be in place included Phase I of the Burton Park Trail, the Lower Cub Creek Trail, both upper and lower sections of the Third Fork Creek Trail, and the South Ellerbee Creek Trail, for a total of 5.6 miles of greenway trail on the ground.

With the passage of the 1990 bond fund issue, the Durham Trails and Greenways Commission modified those recommendations somewhat. They took a motion to the City Council, which was approved on March 2, 1992, to push the following priorities:

- (a) Completion of the north-south trail, from the Eno River to NC 54;
- (b) Spending \$750,000 in southwest Durham (primarily in the New Hope Creek Corridor) for land acquisition and volunteer support, with a suggested first trail at Sandy Creek; and
- (c) Constructing a trail in the eastern part of Durham, in impact fee zone 2.

The motion concluded with the instruction that “the highest priority is the north-south trail” (Appendix C).

How have these priorities been worked out in the 1990’s? **Table 1** shows the



*The American Tobacco Trail in southern Durham County*

status of the various trails in the DUTAG actually built or under design or construction contract in 2001.

These trail construction data point out that the development of the City's trail

**Table 1: Trail Construction Status**

<b>Trail name</b>	<b>Trail length in miles</b>	<b>Status</b>
<b>North/South Greenway</b>		
Warren Creek Trail	1.2	Phase 1 (Whippoorwill Park to Horton Rd., 0.75 miles) under construction in 2001
Stadium Drive Trail	2	Under construction in late 2001 with construction of Stadium Drive extension
Ellerbe Creek Trail	1.5	Complete
South Ellerbe Creek Trail	1.5	Complete
Downtown Trail	1.1	Approximately 0.5 miles will be built in 2002 as part of downtown street re-alignment
ATT Shared Section	1.9	Complete
Third Fork Creek Trail	4.2	Under construction in late 2001
West Ellerbe Creek Trail	1.5	Phase 1 (Indian Trail Park to Westover Park, 0.75 miles) is complete
Duke Park Trail	0.5	Slated for construction in 2002 by NCDOT as part of I-85 project
<b>American Tobacco Trail Greenway</b>		
Phases A and B (DBAP to Cornwallis Rd.)	3.2	Complete
Phases C and D (Cornwallis to NC 54 and to Riddle Rd.)	4.3	Under contract for construction in late 2001 or early 2002
Phase E (NC 54 to I-40 and I-40 bridge)	0.5	Included in STP/DA funding for 2003
<b>New Hope Creek Greenway</b>		
Sandy Creek Trail	0.75	Under contract for 2001 with Sandy Creek Environmental Ed Center Park
<b>Rocky Creek/Pearsontown Greenway</b>		
Pearsontown Trail	1.75	1 mile completed, Elmira Ave. Park to NCCU
Rocky Creek Trail	2.25	1 mile completed, Elmira Ave. Park to NC 55
<b>Little Lick Creek Greenway</b>		
Twin Lakes Trail, Birchwood Trail, Panther Creek Trail	Approx. 6.0	Land acquisition ongoing; consultant has done some initial site planning work
	<b>8.95</b>	<b>Miles built by June, 2001</b>
	<b>13.5</b>	<b>Miles under contract or in construction by June, 2001</b>

system is proceeding much as that 1990 Commission-inspired resolution has dictated. The North/South Greenway has remained the top priority. That trail is nearing completion, with two remaining gaps: the downtown section, which will be constructed in parallel with downtown road re-alignments and Durham Central Park; and the final connection into the south side of West Point at the Eno Park from Horton Rd. Volunteers have built trails in the New Hope Creek Corridor on County-owned land, the first City trail in the New Hope will be the Sandy Creek trail in conjunction with a City park and a wetlands restoration project on the site of the old wastewater treatment plant.

The American Tobacco Trail has leapt into prominence in recent years, but its first few miles actually complete a section shared with the North/South Greenway; and its

construction has been heavily supported by transportation dollars with limited bond fund expenditure.

Work on the Little Lick Creek Trail supplanted the earlier DUTAG priority of the Cub Creek Trail, in an attempt to balance trail development more equitably across the City and to spend down impact fee money in that particular zone. However, the initial Little Lick Creek Trail route for which land was acquired got literally bogged down with wetlands issues. The emphasis was shifted to a bit more northerly route, still in the eastern part of the City; and work was begun in 1999 to acquire land to connect the Little Lick Creek route with the Panther Creek Trail.

The Rocky Creek Trail was one of the City's first trail sections, built in 1988 to connect Fayetteville Street Elementary School, Elmira Park, and Shepherd Middle School. Its extension northward from Elmira Park towards NC Central University and the Hayti Heritage Center—as a separate trail called the Pearsontown Trail—was made easier by the discovery of almost-forgotten public easements connecting blocks through a re-developed residential neighborhood.

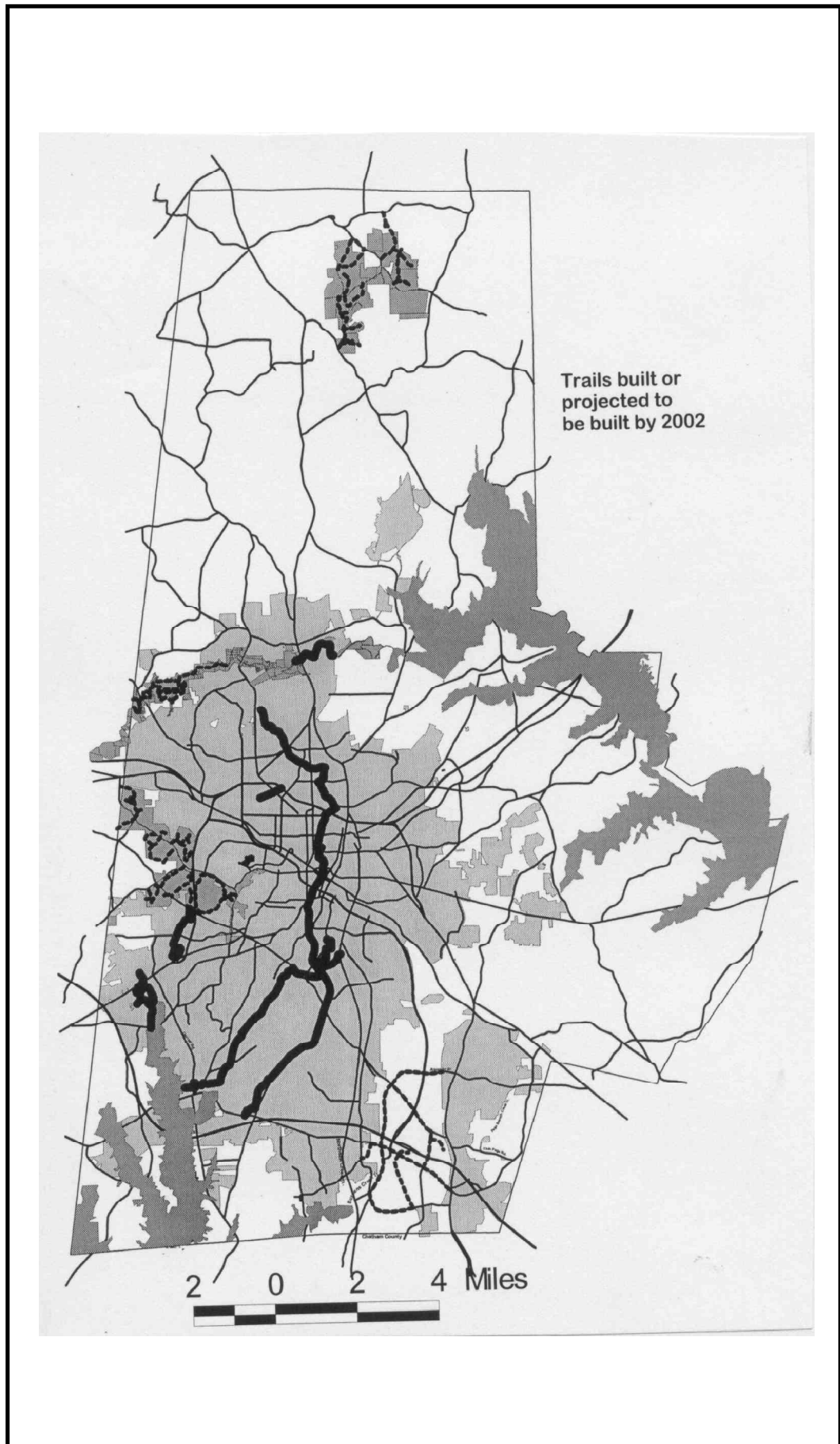
This progress shows two things clearly: that the growth of a trail system takes patient years of land acquisition to prepare for a burst of construction and that the priorities set by the DUTAG and the earliest Commissions have successfully guided the program to its current position.

### **New Trail Priorities**

While those early recommendations have been amended somewhat—with the ISTE A grant to include the American Tobacco Trail into the City's expenditures, for example—those initial priorities are close to accomplishment. The funding from the 1990 and 1996 bonds has been almost entirely spent or encumbered on these priority projects.

In 2001, the Durham Open Space and Trails Commission looked at the budget allocations of the City and County for trails and greenways (and looked as well at the recommendations of the new Little River Park Advisory Committee, the 2000 Parks and Recreation Master Plan, and ongoing Open Space Corridor plans) and recommended the next priorities for the trails program. Those priorities are included as **Table 2**. The DOST priorities will be adopted by the elected officials when this Master Plan is adopted, and the resulting priorities will guide acquisition and development for the future. Funding will determine the rate at which these priorities can be turned into trails on the ground.





**Table 2: Trail Development Priorities**

<b>Trails</b>		
<b>1<sup>st</sup> Funding Cycle</b>		
<b>Trail Rank</b>	<b>Greenway and Trail Name</b>	<b>Comments</b>
1	North/South Greenway: Phase 2 of Warren Creek, Downtown Trail	The North/South Greenway has been the top trail priority for years, the spine of the system
2	Eno River Greenway: Eno River Trail, Crooked Run Creek Trail, Cub Creek Trail	This greenway not only serves a rapidly growing part of Durham, it is a connector for a state and a regional trail
3	Rocky Creek/Pearsonstown Greenway	This greenway is partially completed; completing the sections between NCCU, Hayti Heritage Center, and Durham Tech would make valuable transportation linkages
4	New Hope Creek Greenway	Mud Creek Trail and Sandy Creek Trail (east) would make vital connections in this area
<b>2<sup>nd</sup> Funding Cycle</b>		
5	Roxboro Rail-Trail Greenway	This trail would offer a long-distance and multi-use recreation and transportation opportunity
6	Little Lick Creek Greenway	Trails are needed in this part of the County; Panther Creek makes a good connection to the Falls Lake Project lands
7	Crooked Creek Trail, Herndon Creek Trail	Connections for a rapidly growing part of Durham
8	Lick Creek Greenway	Connections for a rapidly growing part of Durham
9	Northeast Creek Greenway	Could provide good connections into RTP, especially Piney Wood Trail and Burdens Creek Trail
<b>Recreation Trails</b>		
1	Trails in Little River Regional Park	An exciting project, excellent recreation potential
2	New Hope Creek Greenway	Dry Creek Trail and Sandy Creek Trail (west) would make some needed E/W routes in the New Hope Corridor
<b>Street Trails</b>		
1	NC 54	Major E/W trail connector route in southern Durham County
2	Erwin Rd. to Main St., to Iredell Ave., to Club Blvd.	Route heavily used by local bicycle and pedestrian commuters
3	Club Blvd at Hillandale to Washington St.	Route heavily used by local bicycle and pedestrian commuters

These recommendations for trail development priorities come from DOST with two development policy recommendations as well:

1. Neighborhoods and other developments are encouraged to look for connections to the trails and greenways system and linkages between sections and to bring recommendations for this kind of trail to DOST for consideration for inclusion into master plan. DOST recommends that a portion of any money designated for trail construction be specifically set aside for this kind of trail.
2. This trail development priority list may be amended as circumstances warrant. If, for instance, the Roxboro Rail-Trail corridor becomes available or TTA advances the acquisition of the Southwest Rail-Trail corridor, DOST would want to advance that trail's ranking on the priority list.

## Funding

Money is the catalyst that turns a plan into a reality. A trails and greenways program needs funding for acquisition of land, trail design and construction, and maintenance and management. Because a greenways and trails program is a function of the local governments, some of those functions are rolled into the costs of other programs. Acquisition by dedication, for instance, is included in the development plan and site plan review process; maintenance and management for trails are included in overall parks facilities budgets.

Some costs are large and visible: acquisition by purchase of easement and fee simple rights-of-way, design consultant fees, and actual construction costs. The 2001 per mile cost of trail in the City of Durham, depending on site conditions, can run from \$200,000 to \$300,000. A successful trails and greenways program needs predictable funding to keep a steady course through the years-long process from initial landowner contacts until a trail ribbon-cutting. Some of those funding sources and recommendations on how greenways and trails might be included in them are discussed below.

### *Recommendations:*

#### **Capital Improvement Program (CIP)**

The Council and Board should consider funding a trail project for each fiscal year and include the project (or at least some phase of the project) into the CIP budget. It can be funded by any of the techniques the local governments use for funding their long-term community facilities—including bond issues and impact fees. Since the CIP is a long-term budget, financing for trails can also simply be set at a yearly amount and specific projects identified year-by year.

#### **Bonds**

Durham citizens in the 1990's approved City and County general obligation bonds which included nearly \$8 million for trails and greenways. As noted in earlier sections, that funding is either spent or encumbered by 2001. When the City or County elected officials make the decision for another bond issue, funding for trails and greenways should be a portion of it.

#### **Impact fees**

The City of Durham currently collects impact fees--a one-time charge on new developments--for open space, recreation, and transportation. There is work being done in 2001 possibly to raise these fees to require new development to pay more of the costs it imposes on the local governments. An increase in the recreation impact fee should be considered as a way to increase greenways and trails spend-



ing. Also, the transportation impact fee currently is dedicated to roadway improvements only; a small percentage of that fee should be re-directed to alternative transportation improvements—including on-road and off-road pedestrian and bicycle routes. The County is exploring the issue of charging impact fees.

### **Grants**

Substantial grants for trail and greenway construction do exist, primarily from the state and federal governments. Both the City and County have been very successful in winning trail grants: Intermodal Surface Transportation Equity Act (ISTEA) money for the American Tobacco Trail, Transportation Equity Act for the 21st Century (TEA-21) money for the Eno River Trail, National Recreation Trails Fund (NRTF) money for the New Hope Nature Trail, and Parks and Recreation Trust Fund (PARTF) money for the trails at the Little River Regional Park and the Sandy Creek Trail. While it is not a grant, getting the southern portion of the ATT into the very competitive TIP process as earmarked Surface Transportation Policy/Direct Attributable funds (STP/DA) is also a plus. But most state and federal grants, and the STP/DA funding, require some level of matching local funding. The City and County need to keep an amount of funding in reserve to match trails and greenways grants so that staff can bring more of these monies into Durham.

Other sources of grant funding than the obvious recreation/transportation links need to be pursued as well. For instance, Community Development Block Grants may help fund trails in redevelopment neighborhoods and water quality grants can help fund trails that include stream bank restoration features.

### **Public/Private Partnerships**

Private funding can augment local funding sources for greenways and trails or can provide the required matching funds for state or federal grants. The members of the Durham Open Space and Trails Commission should take the lead in searching out potential private grant sources, including local businesses, corporate giving programs, contributions with recognition (such as the embossed bricks in front of the Durham Bulls Athletic Park), and private environmentally-focused foundations. While there are significant private environmental groups who fundraise in the Durham community (such as land trusts and environmental lobbying groups) and even fundraising trail organizations (such as the Triangle Rails-to-Trails Conservancy), there may be a niche for a Durham friends-of-the-trail organization to channel individual donations into greenway and trail work.

### **Ongoing Support**

The sources discussed above are mostly one-time funding opportunities, geared towards getting a greenway or trail built. Ongoing costs for maintenance and management are generally included in some larger City or County operations budget. However, maintaining a trail at an outstanding level or providing it with trail amenities such as educational signage, benches, even water fountains, may be outside that operations budget.

Special events held on a trail, dedicated fund-raising events, and volunteer work by service clubs can fill in the gaps. Both the City and County—as their trail miles

increase—should look toward organizing volunteers to assist with trail needs. City trail volunteer work could be a program in the Department of Parks and Recreation; the County has a land manager staff member who works with trail volunteers.



*American Tobacco Trail ribbon-cutting on June 3, 2000, with Deputy Secretary of Transportation David King and Durham Mayor Nick Tennyson doing the honors*

Funding to build-out of the approximately 118 miles of off-road trail proposed by this plan update is a long-term undertaking. The timetable for construction of the next trail priorities recommended by DOST depends entirely upon the funding streams allocated to the program. An annual funding allocation of \$500,000, for example, would allow the City to construct approximately two and a half miles of greenway trail per year. The County’s yearly allocation must cover both open space acquisition and trail construction. State and federal grants, such as the City and County have been receiving, would shorten that period, as does combining sidewalk and street trails with transportation construction. Any bond funding would also shorten the time until the completion of construction. Planning staff and other City and County staff will continue to acquire trail right-of-way through development dedication, purchase, and easement acquisition.

The DOST recommendation for funding priorities, which emphasizes the completion of projects already begun, has the following associated costs:

North/South Greenway (remaining uncompleted sections after expenditure of all bond funding; the last sections not under contract August 30, 2001, are the Downtown Trail and Warren Creek Phase 2) -- \$450,000 for Downtown Trail; \$505,000 for Warren Creek Phase 2 -- funding to complete these sections may possibly be found in the final dollars of the bond funds

Eno River Trail, Phase 2 (from River Forest Park to Penny's Bend Nature Preserve, north bank of Eno River, 2.9 miles) -- \$1,044,000 (would require \$210,000 as a match if City secures another TEA-21 grant for this phase of the project as it did for the first phase)

Rocky Creek/Pearsonstown Greenway completion (section from Elmira Park to NCCU completed, north to Hayti Heritage Center not built, 1.2 miles) -- approximately \$500,000

New Hope Creek Greenway Trails (Sandy Creek Trail under contract from the future Environmental Education Center to Pickett Rd. leaving 0.75 mile between Pickett Rd. and Cornwallis Rd. Park; Mud Creek from its junction with Dry Creek to Erwin Rd., 4.5 miles) -- Sandy Creek, approximately \$330,000; Mud Creek will be constructed mostly by volunteers after land is acquired

An ongoing fiscal commitment of a trails program is maintenance and management. The average total maintenance cost—including drainage control, regular cleaning, regular mowing, minor repairs, and equipment and staff time—is approximately \$6,500 per year per mile of paved trail.

On the other hand, communities with an established greenway program have noted some substantial community-wide returns in the form of reduced flooding costs, reduced costs of water quality improvement, increased tourism revenue, decreased transportation costs, decreased health care costs, and decreased criminal activity.

# Section III Standards

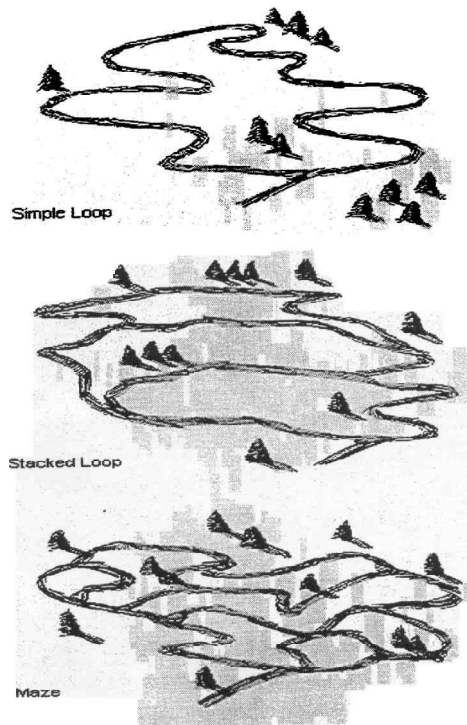
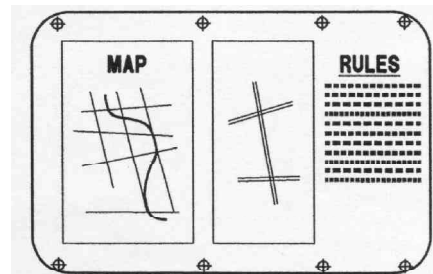
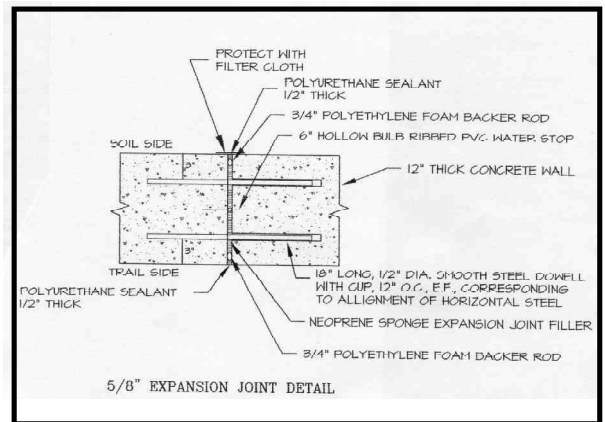


Figure 6-3: Loop Trail Designs



MAJOR ENTRANCE SIGN: Use pre-drilled holes. Screws to be 1/2" longer than for other sign types.

Center of attachment screws to be 1/2" from edge of signs.

## Types of Greenways and Trails in the System

Greenways are planned to serve multiple purposes, so their function and design can take any one of a number of forms. According to definitions in the past few years, a “greenway” can be any of the following:

- (a) a linear open space that parallels some natural feature such as a stream or a ridgeline; it may or may not have a trail associated with it;
- (b) a transportation right-of-way that has been converted to recreational use, such as a rail corridor or a canal towpath;
- (c) any natural or paved right-of-way intended for bicycle, pedestrian, or equestrian use;
- (d) any open space corridor linking parks, natural reserves, neighborhoods, etc. with each other; or finally,
- (e) anything that a community designates as a “greenway” for its own purposes.

Corridors acquired for conservation purposes such as habitat and biodiversity may have no trails or have low-impact natural surface trails. However, routes built with ISTEA or TEA-21 funding are by definition transportation corridors; they are paved and built to transportation department standards with wide shoulders and regulatory signage. City urban trails may be somewhere in between, depending upon their location.

*Recommendation:* The following terminology should be used consistently by the City and County in its planning and in its dealing with landowners and developers.

**Greenway:** a system of trails in the City or County, which may be made up of trails, sidewalk trails, and/or recreation trails – *example, the North/South Greenway.*

**Trail:** a discrete section of hard-surfaced pathway, generally between major trailheads; a trail may or may not be included in a greenway system and may or may not include a section of sidewalk trail – *example, the Third Fork Creek Trail of the North/South Greenway.* Trails will be designed for the least possible environmental impact, especially in the County’s Corridor System routes.

**Sidewalk Trail Section:** 8 to 10 foot wide paved section within or immediately adjacent to a roadway right-of-way; most sidewalk trails are included within a trail and thus do not have a separate name – *example, the sidewalk section along Club Boulevard that is part of the South Ellerbee Creek Trail.*

**Street Trail:** a designated connector between trails or greenways, consisting of a standard 5 foot wide sidewalk and a wide outside lane or bike lane on the roadway – *example, Martin Luther King Jr. Parkway between the ATT and the Third Fork Creek Trail.* Street trails in more rural areas may consist of a paved roadway shoulder only.

**Recreation Trail:** an unpaved trail, which may or may not be part of a greenway and can serve for hiking, equestrian use, or mountain biking (*example, the New Hope Creek Trail*); or a smaller paved trail contained within an urban park.

Rail-trails are a special category when it comes to acquisition and development, but as part of Durham’s larger plan they fit in as one of the types above. Thus the entire American Tobacco Trail system is, despite its name, a greenway; it consists of the main north/south route, also individually named the American Tobacco Trail, the Riddle Road Trail and various short connector trails.

**“Blueways”**

Blueways is a term that has come into use recently to indicate rivers and streams and their adjacent land uses that support recreational use. Obviously a river itself does not need to be improved for a canoe or a kayak to use it, but management of such things as public access points and scenic and/or conservation easements



*North/South Greenway at Trinity Avenue*

along a river corridor does make a river or stream into a blueway. Parts of the Eno River within the State Park and adjacent to West Point on the Eno City Park are already managed as a blueway. Durham County has some other potential blueways along the Little and Flat Rivers and sections of New Hope Creek.

*Recommendation:* The County’s Open Space Corridor Plans need to include plans for public access to these waterways and include recreational use of the water itself into management plans for the corridors. These plans need to be coordinated with all relevant land-managing agencies.

**Off-Road Vehicle Trails**

Off-road vehicles (ORV), including dirt bikes and All-Terrain Vehicles (ATV) not licensed for on-road use, are very popular in North Carolina. However, in Durham and in the larger Triangle region there are no legal public trails for ORV use. Thus trails which are not intended for ORV use, such as the New Hope Nature Trail and the Panther Creek Trail, are accessed by ORV’s; the results are frustrated neighbors and some amount of environmental damage.

*Recommendation:* Durham should develop some trail sites for ORV use, either alone or jointly with some surrounding counties. While motorized vehicles on trails are sometimes not popular with other outdoor recreationists, ORV users as a group are as responsible trail-users as other interest groups such as hikers or equestrians. Through the National Off-Road Highway Vehicle Conservation Council (NOHVCC) and its North Carolina chapter, in fact, they have set rules and standards of behavior for themselves that other trails groups could emulate.



Durham does contain at least one site that could potentially make a good ORV park with several miles of a trail system. The capped landfill and surrounding floodplains southeast of the channelized portion of Ellerbee Creek have sufficient land area, are not close to residential development, have no unusually sensitive environmental areas, and are in public ownership. Work with local ORV advocates could turn this area into a popular ORV trail system.

*Trail workday at New Hope Creek, April 1998*



*Work on the Rocky Creek Trail in 1999*

## Trail and Greenway Names

A trail system needs a simple and consistent pattern of naming to make its public use easier. The trail naming system proposed by the original DUTAG has already been altered in various ways, for instance, by the combination of the “Third Fork Creek Greenway” and the “Ellerbe Creek Greenway” into the current North/South Greenway. However, the basic principles of naming that the plan proposed are still sound. It recommended the following:

- (a) Names of relevant natural features are the preferred names for a trail.
- (b) Parks or other community features are appropriate names of trails as they are likely to be familiar trail origins and destinations.
- (c) Historic names may be appropriate in some cases.
- (d) Emphasis will be placed on naming trails so that users can identify their location without confusion.

In 2000, DOST recommended that one other source for naming trails, bridges, or sections of trails could be a name given as a memorial to someone who had made a contribution to the trails program in Durham.

The following tables show the names and locations that are adopted or proposed for the various trails. Names in parentheses are “placeholder” names for trail routes that have not yet had sufficient acquisition or development to have been named. **Table 1** describes the trails. While there may be sidewalk trail sections within these named trails, they are considered simply part of the trail. They are not called out as separate named sections of a trail and have different requirements from street trails.

**Table 2** is a list of recreation trails. Most of the recreation trails, existing or planned, are either in the County or in City parks. Those in City parks are often loop trails used for nature study or quick out-and-back hikes from the parking lot. However, as noted in Section IV, there is a public request for more trails in parks and for those trails to have more accessible surfacing. Individual trails in parks will not be identified by this master plan, but both DOST and this plan recommend that park trails be considered as part of the larger trails and greenways system for available funding and for making linkages and trailheads.

**Table 3** describes the street trails connecting the trails and greenways.

Subsequent pages in this section describe the standards for trails, recreation trails, and street trails.

**Table 1: Trails**

<b>Greenway</b>	<b>Individual Trail within Greenway</b>	<b>Trail Description</b>
<b>North/South Greenway</b>		
	Warren Creek Trail	From West Point on the Eno Park to Whippoorwill Park
	Crystal Lake Trail	From N/S Greenway at Whippoorwill Park to Stoneybrook Dr.
	Stadium Drive Trail	From Whippoorwill Park to Durham County Stadium
	Ellerbe Creek Trail	From Durham County Stadium to Northgate Park
	West Ellerbe Creek Trail	From Indian Trail Park to Stadium Drive Trail at Broad St.
	South Ellerbe Creek Trail	From Northgate Park to Trinity Ave.
	North Ellerbe Creek Trail	From Northgate Park to the Falls Lake Project Lands
	Duke Park Trail	From Duke Park at Acadia St. to Washington St.
	Downtown Trail	From Trinity Ave. to Durham Bulls Athletic Park
	ATT Trail Shared Section	From Durham Bulls Athletic Park to Homeland Ave.
	Forest Hills Trail	Loop trail, out Proctor Ave. and return through Forest Hills Park, including sidewalk section on Bivins St.
	Rockwood Trail	Loop trail, out Ward Rd. and return through Rockwood Park, including sidewalk section on Morehead Ave. and connector to Third Fork Creek Trail at Cornwallis Rd.
	(Third Fork Creek Tributary Trail)	From N/S Greenway to American Tobacco Trail between Woodcroft and Hope Valley Farms
	Third Fork Creek Trail	From Homeland Ave. to Garrett Rd. Park
<b>American Tobacco Trail Greenway</b>		
	American Tobacco Trail	From Durham Bulls Athletic Park to Chatham Co. line
	Riddle Rd. Trail	From ATT at Riddle Rd. to Briggs Ave.
	ATT Connector Trails	<ul style="list-style-type: none"> <li>• I-40 northern buffer between NC 751 and Fayetteville Rd.</li> <li>• ATT/Third Fork Creek Trail connection (from Garrett Rd. Park along NC 751 to Massey Chapel Rd.)</li> <li>• ATT to Fayetteville Rd. in I-40 southern buffer</li> </ul>
<b>New Hope Creek Greenway</b>		
	Sandy Creek Trail	From Sandy Creek Environmental Education Park northeast to Cornwallis Rd. Park
	Dry Creek Trail	From Garrett Rd. to Orange Co. line
	Leigh Farm Park Trails	From NC 54 to Leigh Farm Park and some trails within the park
<b>Little Lick Creek Greenway</b>		
	Chunky Pipe Creek Trail	From Twin Lakes Park to Southern H.S. then along Chunky Pipe Creek to Fletcher's Chapel Rd. and from Southern H.S. to Panther Creek Trail
	Twin Lakes Trail	From Twin Lakes Park to NC 98, with connection to NE Durham Parkway
	Birchwood Trail	From NC 98 via Birchwood Park to NC 98 at Carthage St.

	(LLC 4 Trail)	From Birchwood Trail south to Pleasant Dr.
	(LLC 5 Trail)	From NC 98 to Holder Rd.
	Panther Creek Trail	From Merrick Moore E.S., Cheek Rd. to abandoned RR corridor to Falls Lake Project Lands
<b>Northeast Creek Greenway</b>		
	Northeast Creek Trail	From NC 55 and Meridian Business Campus south to Jordan Lake Project Lands
	North Prong Creek Trail	From Riddle Rd. to junction with Northeast Creek at Meridian Business Campus
	Burdens Creek Trail	From Alston Ave. to junction with Northeast Creek south of Sedwick Rd.
	Piney Wood Trail	From Northeast Creek Trail at Meridian Business Campus to ATT via Piney Wood Park, between Woodcroft Parkway and Dunhill Dr., with a spur connection to Woodcroft Parkway
<b>Eno River Greenway</b>		
	Eno River Trail	From Eno River State Park to Penny's Bend Nature Preserve on north bank of river, including West Point on the Eno
	Crooked Run Creek Trail	From Eno River north to south of Milton Rd., west of Guess Rd.
	Willow Pond Trail	From Crooked Run Creek Trail west to Winkler Dr. and Russell Rd.
	Cub Creek Trail	From Durham County Stadium to Eno River west of Penny's Bend
	Nancy Rhodes Creek Trail	From Cole Mill Rd. to Eno River State Park lands
	Cabin Branch Creek Trail	From Little River near its confluence with the Eno River to Barclay Rd.
	Sevenmile Creek Trail	From Tavistock Dr. to Orange Co. line
<b>Lick Creek Greenway</b>		
	Lick Creek Trail	From US 70 to Falls Lake Project Lands past Kemp Rd.
	(LC2 Trail)	Lick Creek Trail to NE Durham Parkway
	(LC3 Trail)	From Jones Circle south to Angier Ave.
	Martin Branch Trail	From Lick Creek Trail south to Carpenter Pond Rd.
	Brier Creek Trail	From Leesville Rd. and NE Durham Parkway to Wake Co. line
<b>Pearsontown/Rocky Creek Greenway</b>		
	Pearsontown Trail	From Elmira Park to Grant Park and Hayti Heritage Center
	Rocky Creek Trail	From Elmira Park to Lawson St. at Durham Tech to Burton Park
	Burton Park Trail	From Rocky Creek Trail at Alston Ave. to Burton Park
	Campus Hills Trail	From Rocky Creek Trail at NC 55 to Riddle Rd. via Campus Hills Park
<b>Roxboro Rail-Trail Greenway</b>		
	Roxboro Rail-Trail	From Long Meadow Park north to the Person Co. line along old RR corridor
	Goose Creek Trail	Roxboro Rail-Trail to Holloway St.
	Downtown RR Trail	N/S Greenway at Ramseur St. to Avondale Dr. via old RR corridor, connect to Roxboro Rail-Trail via E. Markham Ave.

<b>The following individual trails are not part of a greenway</b>		
	Crooked Creek Trail	From NC 54 south to Jordan Lake Project Lands at Scott King Rd.
	Herndon Creek Trail	From NC 54 and Jordan Lake Project Lands just west of Williamsburg Way
	Page Branch Creek Trail	From Wake Co. impoundment at Chin Page Rd. north to Alexander Dr., then to Mineral Springs Rd. at Sherron Rd.
	East Fork Creek Trail	Lumley Rd. to Page Rd.
	Southwest Rail-Trail	From University Dr./South Square transit station, paralleling TTA route to the Orange Co. line

*South Ellerbee Creek Trail behind Ruffin St.*



**Table 2: Recreation Trails**

<b>Greenway</b>	<b>Individual Recreation Trails within Greenway</b>	<b>Recreation Trail Description</b>
<b>Flat River Greenway</b>		
	Additional trails to be determined by Flat River Corridor Plan	
	(North of the Lake Trail	Paralleling the Flat River north of Lake Michie
	(South of the Lake Trail)	Paralleling the Flat River south of Lake Michie
	(Lake Michie Trail)	Loop Trail(s) developed on public land at Lake Michie
<b>Little River Greenway</b>		
	Additional trails to be determined by Little River Corridor Plan	
	(QR Trail)	Between Hopkins Rd. and Conference Rd.
	(Reservoir Trails)	Loop trail(s) developed on public land next to Little River School Community complex at NC 501
	(Little River Park Trails)	Loop trail(s) developed in Little River Park at Durham/Orange county line
	Cain Creek Trail	From Sevenmile Creek Trail at Craig Rd. north to Guess Rd.
	(Cain Creek Tributary Trail)	From Kelvin Rd. to Saint Mary's Rd.
<b>New Hope Creek Greenway</b>		
	New Hope Creek Nature Trail	Loop between Watkins Rd. and Old Chapel Hill Rd. and between Chapel Hill Rd. Park and Leigh Farm Park
	Mud Creek Trail	From junction with Dry Creek to Erwin Rd.
	Sandy Creek Trail	From Sandy Creek Envir. Ed. Park west to to New Hope Creek, trails within park
	Leigh Farm Park trails	Trails within Leigh Farm Park
	Lone Branch Creek Trail	From New Hope Nature Trail east to University Dr.
<b>City Park Trails</b>	Various, in City Parks	



**Table 3: Street Trails**

	<b>Description of Street Trail Route</b>
1	NC 54 from Orange County to Wake County
2	Parallel to TTA transit line from University Dr. to Orange County
3	MLK Jr. Parkway from University Dr. to Cornwallis Rd.
4	Cornwallis Rd. at MLK Jr. Pkwy to S. Miami Blvd., to Chin Page Rd., to Page Branch Cr. Trail
5	University Dr. at MLK Jr. Pkwy to Academy Rd., to Cameron Blvd.
6	Cameron Blvd. at Academy Rd. to Erwin Rd.
7	Erwin Rd. to Main St., to Iredell Ave., to Club Blvd.
8	LaSalle St. at Erwin Rd. to Sprunt St., to Hillandale Rd.
9	Hillandale Rd. at Club Blvd. to Front St., to Carver St., to Stoneybrook Dr., to Crystal Lake Trail
10	Club Blvd. at Hillandale Rd. to Washington St.
11	Umstead Ave. at Fayetteville St. to Roxboro Rd., to Holloway St., to Neville St., to Liberty Ave., to Roxboro Rail-Trail
12	Liberty Ave. at Roxboro Rail-Trail to Alston Ave., to Pettigrew St., to Bacon St., to Burton Park Trail
13	Liberty Ave. at Roxboro Rail-Trail to Gary St., to Holloway St., to Junction Rd.
14	From TTA station at Glover Rd. to Jones Cir. to intersection with LC3 Trail
15	Angier Ave. from intersection with LC3 Trail to S. Miami Blvd.
16	Alexander Rd. from RTP to Page Rd.
17	Lumley Rd. between East Fork Creek Trail and Page Branch Creek Trail
18	NE Durham Pkwy at US 70 to Cole Mill Rd.
19	Durham Outer Loop route from Wake County line to US 501/Roxboro Rd.
20	Sparger Rd. from Stafford Dr. to Cole Mill Rd.
21	Cole Mill Rd. at Sparger Rd. to Umstead Rd., Continental Dr.
22	Continental Dr. to Willowhaven Dr., to Umstead Rd., to Russell Rd.
23	Heather Glen Rd. at Russell Rd. to Falkirk Dr. to Duncemore Rd. to Tavistock Dr. to Sevenmile Cr. Trail
24	Rothbury Dr. at Russell Rd. to Bivins Rd., to Kelvin Dr. to Cain Creek Trib. Trail
25	Guess Rd. at its intersection with Cain Creek Trail to South Lowell Rd., to Hopkins Rd.
26	Hopkins Rd. at South Lowell Rd. to QR Trail, to Conference Rd., to Roxboro Rd.
27	Millers Bend at South Lowell Rd. to Doughton Dr., to Lindale Dr., to Bromley Rd., to Orange County line (on to entry of Little River Regional Park)
28	Johnson Mill Rd. from South Lowell Rd. to Snow Hill Rd., Snow Hill Rd. to Wanderlust Lane to Eno River Trail
29	Rougemont Rd. at South Lowell Rd. to Bill Poole Rd., to Roxboro Rd. at Rougemont
30	Roxboro Rd. at Rougemont to Red Mountain Rd. and Roxboro Rail-Trail intersection, to Hampton Rd.
31	Hampton Rd. at Red Mountain Rd. to State Forest Rd., to Roxboro Rail-Trail and Roxboro Rd., to Conference Rd.
32	Wilkins Rd. at State Forest Rd. to Bahama Rd.
33	Bahama Rd. at Lake Michie to Staggsville Rd. and Roxboro Rail-Trail
34	Staggsville Rd. at Bahama Rd. to Wiley Mangum Rd., to Joe Ellis Rd., to Jock Rd.
35	Jock Rd. to Old Oxford Hwy at Stagville Center, south on Old Oxford Hwy to Red Mill Rd.
36	Red Mill Rd. at Old Oxford Hwy to Geer St., to Cookesbury Rd., to Panther Creek Trail
37	Carpenter Rd. at Panther Creek Trail to Ferrell Rd., to Geer St.
38	Geer St. to Avondale St. to Downtown RR Trail
39	Midland Terrace ext. at Merrick-Moore E.S. and Panther Creek Trail to Midland Terr. to Geer St.
40	Baptist Rd. at NC 98 to Falls Lake Project lands (on to Rolling View Marina area)
41	Boyce Mill Rd. from NC 98 to Falls Lake Project lands
42	NC 98 at Boyce Mill Rd. to Coley Rd., Coley Rd. to Carpenter Pond Rd.
43	Carpenter Pond Rd. at Coley Rd. to Leesville Rd., to intersection with Brier Creek Trail

## Trail and Greenway Standards

Once the trail or greenway right-of-way has been acquired, plans can begin for the development of the trail facilities. The available funding and the Council and Board approved priorities will guide the order of construction. Each type of trail described and named in the previous section has its own design requirements and standards.

*Work at Rocky Creek on the American Tobacco Trail*



The City's practice has been to hire a professional consultant for the design work on a trail project, then that consultant writes the specifications for bidding and acts as project manager for the actual construction process. Both the City and County should continue that practice for trails. Trails are paved (or hard-surfaced); must meet ADA accessibility criteria; often have structures such as bridges, boardwalks, or retaining walls; often must get Federal Emergency Management Agency (FEMA) or US Army Corps of Engi-

neers development permits; and frequently have busy street crossings. In addition, trails being constructed with funding from state or federal transportation programs must be approved by those agencies as meeting their particular specifications. Managing all those issues competently requires a licensed professional.

Recreation trails, on the other hand, can often be constructed by volunteers under the direction of a trained professional or trained volunteer. The trail layout needs to be designed by someone who can read the landscape and select a route that will have minimum impact on the natural resources, regardless of the expected trail use; but construction may be largely done by volunteers with hand tools.

Following are general trail design standards for trails, street trails, and recreation trails. These standards may be altered by an agreement among relevant City or County staff and design professionals when a particular site requires it.

### Trails

Trails are generally preferred in an urban or suburban location where use by bicyclists and urban pedestrians is expected—including such uses as roller blades, wheelchairs, scooters, and strollers. Useful guidelines for development standards include the 1999 [Guide for the Development of Bicycle Facilities](#) (American Association of State Highway and Transportation Officials, AASHTO) and the 1994 [North Carolina Bicycle Facilities Planning and Design Guidelines](#) and 1997 [Planning and Designing Local](#)

Pedestrian Facilities, both from NCDOT’s Division of Bicycle and Pedestrian Transportation. However, since these guides offer standards primarily for transportation routes, their recommendations may be as needed altered for urban trails that serve both transportation and recreation users.

A minimum trail width of ten (10) feet is recommended to assure safe two-way traffic. Exceptions will be required in some sections of trail to protect existing natural resources or existing development. The cleared trail corridor should be no more than an additional ten feet on either side of the trail tread; in an area where the existing vegetation is scarce, there should be re-vegetation in the right-of-way outside this thirty-foot expanse.

Trails in seasonally or permanently wet areas may need to be boardwalked. Trail design must address issues of on-site and off-site surface and subsurface runoff and drainage associated with the trail’s construction and use.

The pavement choice for a trail should be decided by its design load—generally the gross weight of a maintenance or emergency vehicle—as well as by the underlying soil and its compaction, the level of wetness of a trail location, and the expected use. There will be occasions to use alternative paving materials or some other hard-surface materials for a trail, but the trail standard paving material will be asphalt.

### **Sidewalk Trail Section**

*Construction of the North/South Greenway at Club Boulevard*

Sidewalk trail sections are ten (10) foot wide paved sections within or immediately adjacent to a roadway right-of-way. They link sections within a particular trail and thus should continue its width for user safety and convenience. They may be reduced to eight (8) feet wide in some sections if necessary to protect existing natural resources or existing development.



Sidewalk trail sections are generally surfaced with concrete, because they also function as regular sidewalks—often they are expansions of an existing sidewalk. Utility poles, signs, fire hydrants, etc. should be re-located outside of a sidewalk trail section to ensure the safety of wheeled traffic using the trail; if re-location is not possible, these obstacles should be marked with some warning device. The City and County should encourage residents not to leave garbage and trash containers for pick-up on these sidewalk trail sections.

### **Street Trail**

The street trail is a designated connector between trails, usually consisting of a standard five (5) foot sidewalk and a wide outer lane or bike lane on the adjacent roadway. The City or County may request an easement for additional sidewalk width on portions of these street trails if conditions warrant it, e.g., heavy vehicle traffic which could discourage some bicyclists or a back-of-curb sidewalk along a busy roadway.

The street trail cross section which follows the text illustrates some possible manifestations of a street trail: a sidewalk (ideally separated from the roadway by a planting strip) paralleled by either a wide outer lane for bicycle traffic or an actual striped bicycle lane. A roadway travel lane should be increased by four (4) feet over the design width for motorized vehicles to be a safe wide outer lane for bicycle traffic; a striped bicycle lane needs to be at least five (5) feet wide. No roadway would have both of these treatments in the same location. Street trails in rural areas may consist of a wide paved roadway shoulder only.

### Recreation Trails

Recreation trails are more varied in their design requirements than hard-surfaced urban trails. The design of each recreation trail is the solution to a unique set of site-based needs and situations: land features, resource constraints, anticipated use, and possible management and maintenance strategies. Paved trails in urban parks must connect recreation facilities within that park.

Information on those points will guide the design in its configuration on the land, the type and width of the trail tread, the necessary clearing limits, and specific construction needs such as erosion control features or creek crossings. Once those decisions are made, there are established references for directions on building the desired trail cross section, including the following recommended works:

[The Complete Guide to Trail Building and Maintenance.](#) Carl Demrow and David Salisbury, Appalachian Mountain Club. Boston, MA. 1998.

[Trail Construction and Maintenance Notebook.](#) US Department of Agriculture, Forest Service Technology and Development Program, Missoula Technology and Development Center. Publication No. 4E42A25-Trail Notebook. 1996.

[NPS Trails Management Notebook.](#) US Department of the Interior, National Park Service, Denver Service Center. US Government Printing Office Document NPS-2023. 1992.

[Lightly on the Land—The SCA Trailbuilding and Maintenance Manual.](#) Robert C. Birkby, Student Conservation Association. Seattle, WA. 1996.

[Trail Development and Construction for Mountain Bicycling.](#) Gary Sprung, ed., International Mountain Bicycling Association. Boulder, CO. 1995.

These descriptions and the following cross sections are intended as general standards for the various types of trails that exist in Durham and Durham County. Each trail is a unique construction and must be fitted onto the land in a way that will both enhance its usefulness and beauty and protect the natural environment. The relevant City and County staff members and the consultants they employ will make final determinations as to trail location within acquired rights-of-way and exact trail design specifications.

*New  
Hope  
Trail  
workday*



## Signage

As a general rule, signs used for the trails and greenways system will be for the purpose of providing users with the following information:

- (a) the name of the greenway system and the particular trail;
- (b) permitted uses and other necessary rules;
- (c) a map of the trail;
- (d) any other information which may be necessary for the safety and convenience of the trail user, including distances between points.

A **major entrance sign** will be placed at points of entry to each trail where users will access the trail, ideally where parking is also available; a **minor entrance sign** will be placed at points limited to bicycle and pedestrian access with no adjacent parking.

An **information sign** will be used to provide information to trail users about permitted use and rules of behavior and will include a map of the trail and its location within a greenway system.

A **blaze and stop sign** will be placed on both sides of a street whenever the trail crosses a street.

**Directional signs** will be used as needed to direct trail users at route intersections or direction changes.

**Trail connection signs** will provide information on connections between trails via street trails.

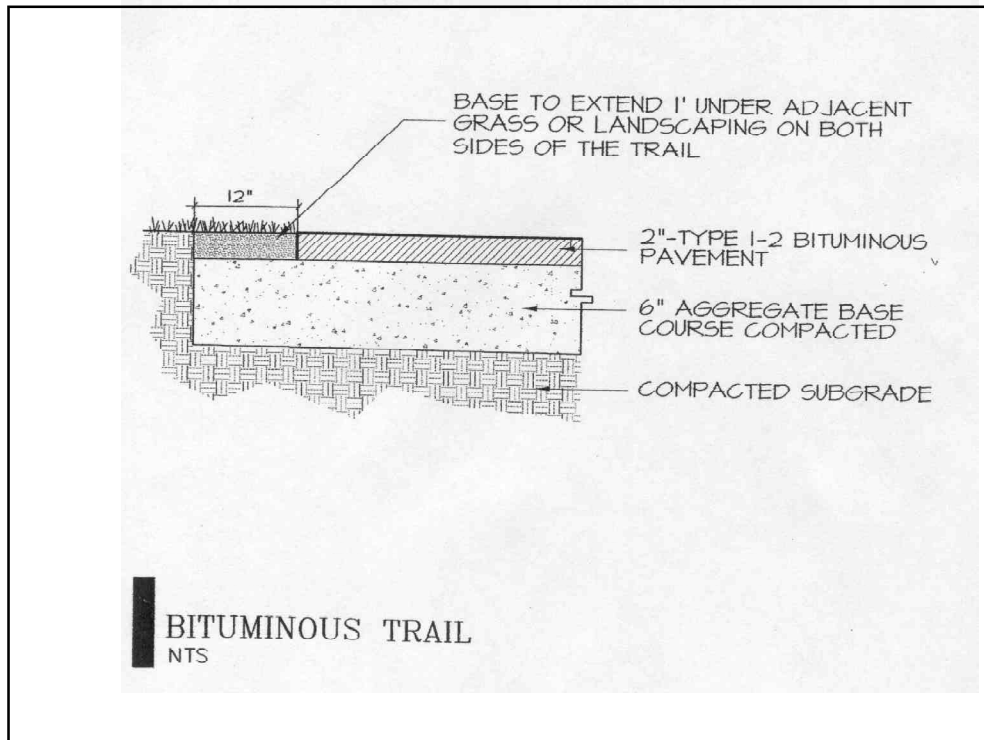
**Bollards** will be placed in the trails at road crossings to block trail access to motorized vehicles. A central bollard should be designed as a fold-down or removable type to permit access by maintenance vehicles.

Other types of signs may be used when staff and consultants determine that there is a need for them. For instance, routes constructed with funding from NCDOT may be required to have additional roadway bicycle and pedestrian markings. A trail in an historic district or a natural setting may include interpretive signage. If trails are “adopted” by volunteer groups for maintenance, they may install a sign noting their trail adoption that will be in place for the duration of their service. Trails that are part of some larger regional system may have signage indicating that fact.

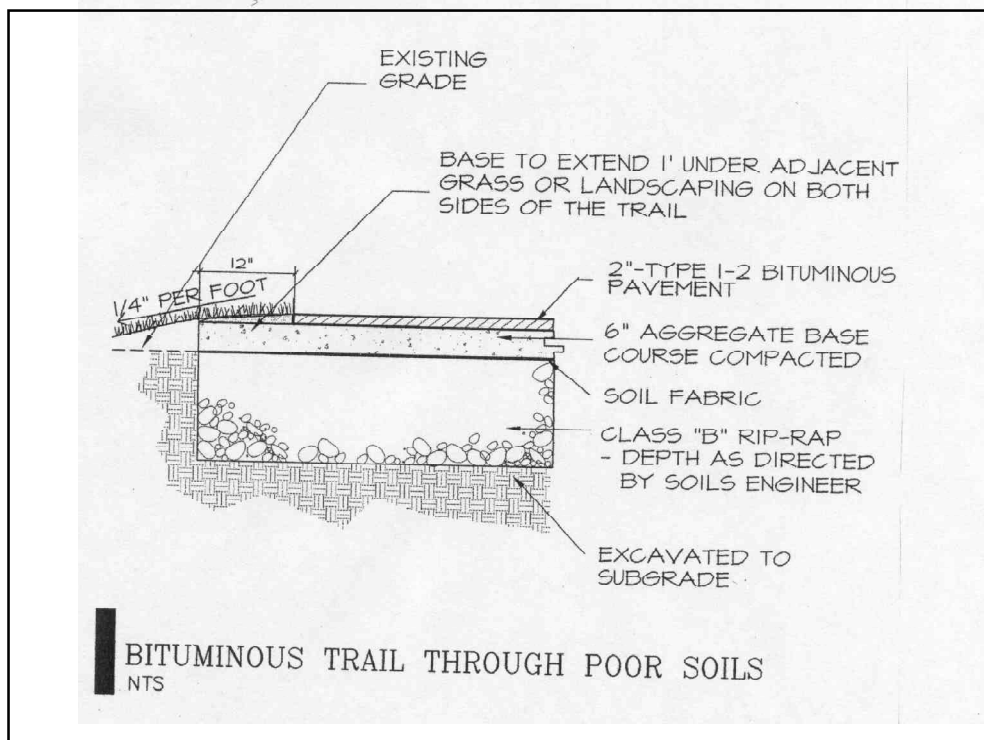
Other than signs for special situations as noted in the preceding paragraph, signs in the Durham system will be as consistent as possible in graphic design, coloration, and logos used.

Following are standard details for trail construction: asphalt trail, asphalt trail on poor soils, boardwalk section, concrete trail addition to existing sidewalk, and trail bollard. As noted previously, these details may be altered as needed by decisions of the staff and consultants. Details are courtesy of Coulter Jewell Thames, P.A.

*Detail 1: Standard asphalt trail*

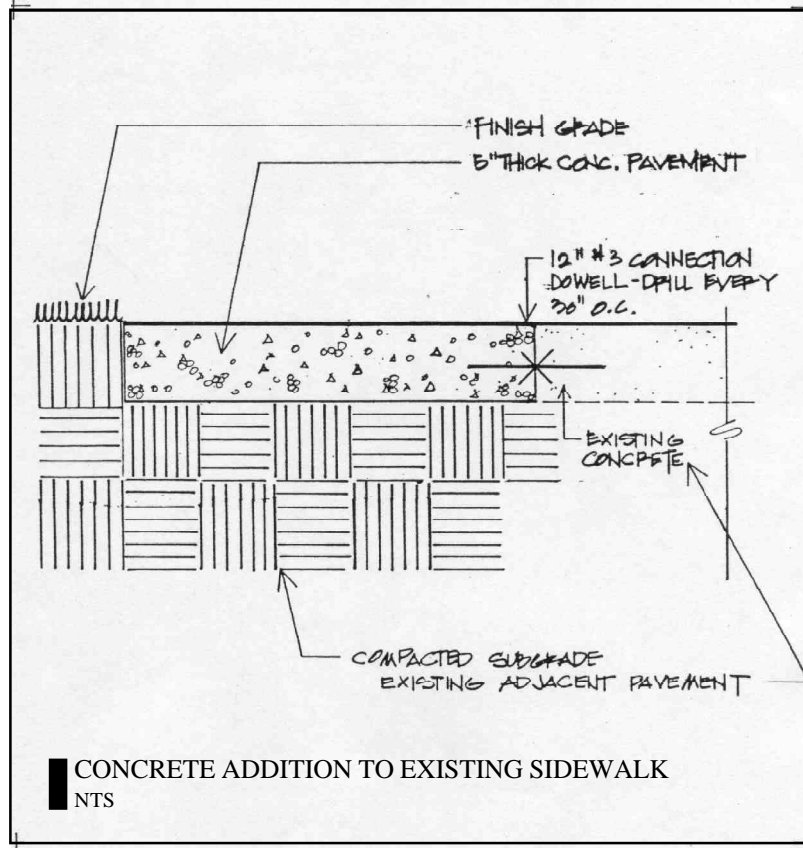


*Detail 2: Asphalt trail on poor soils*

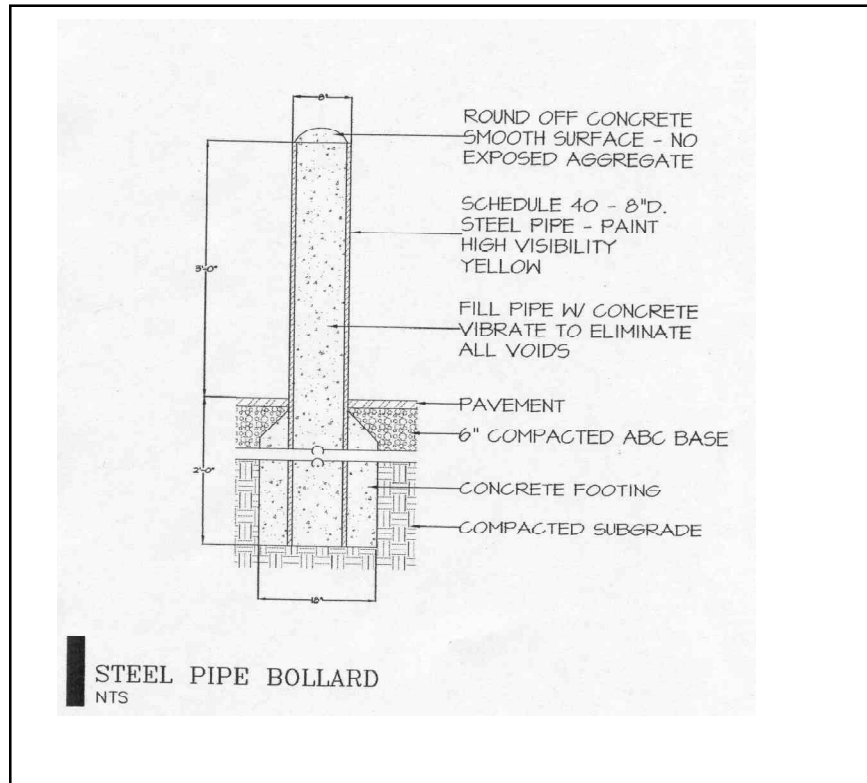




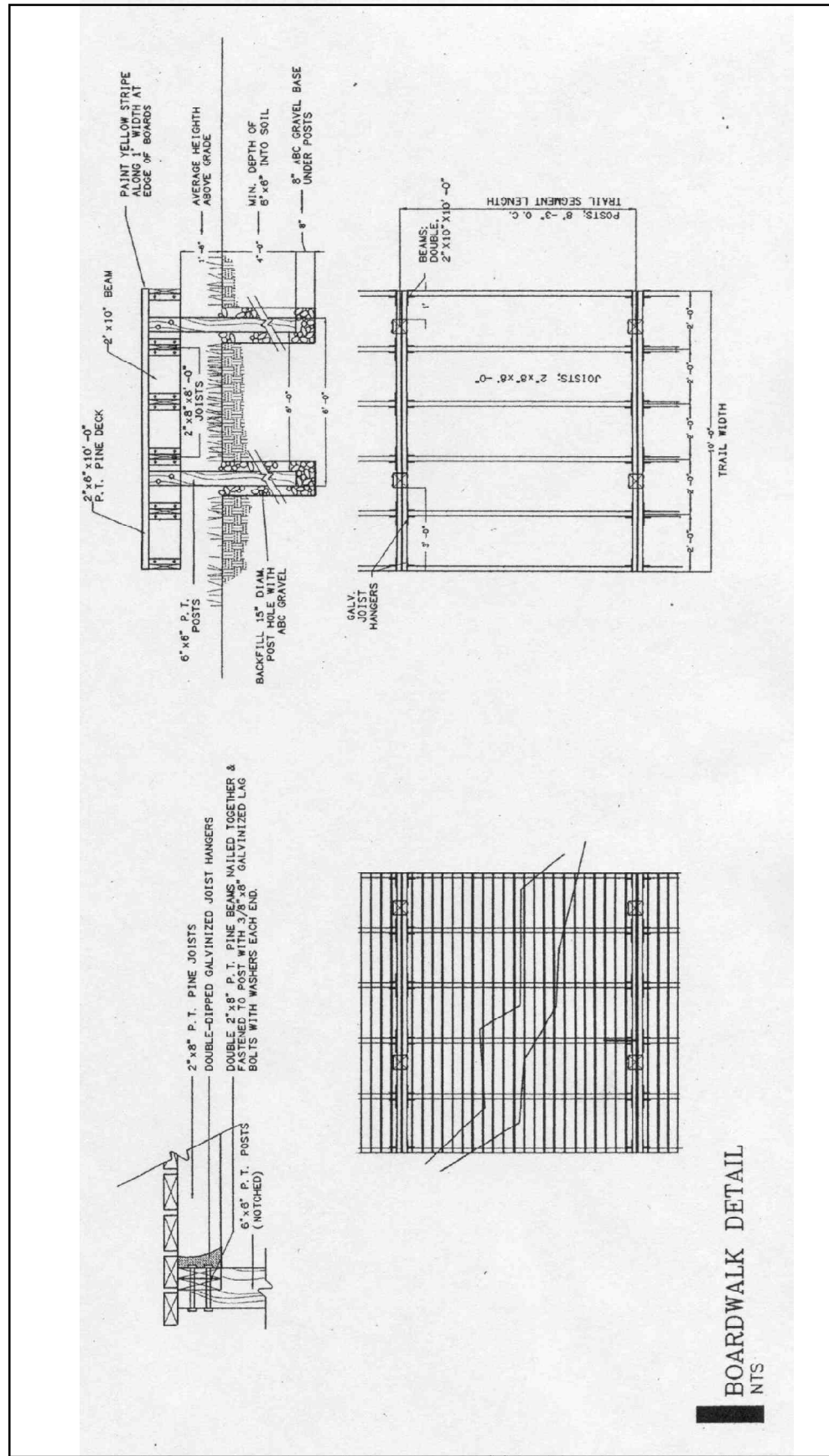
Detail 3: Sidewalk trail section addition to existing sidewalk



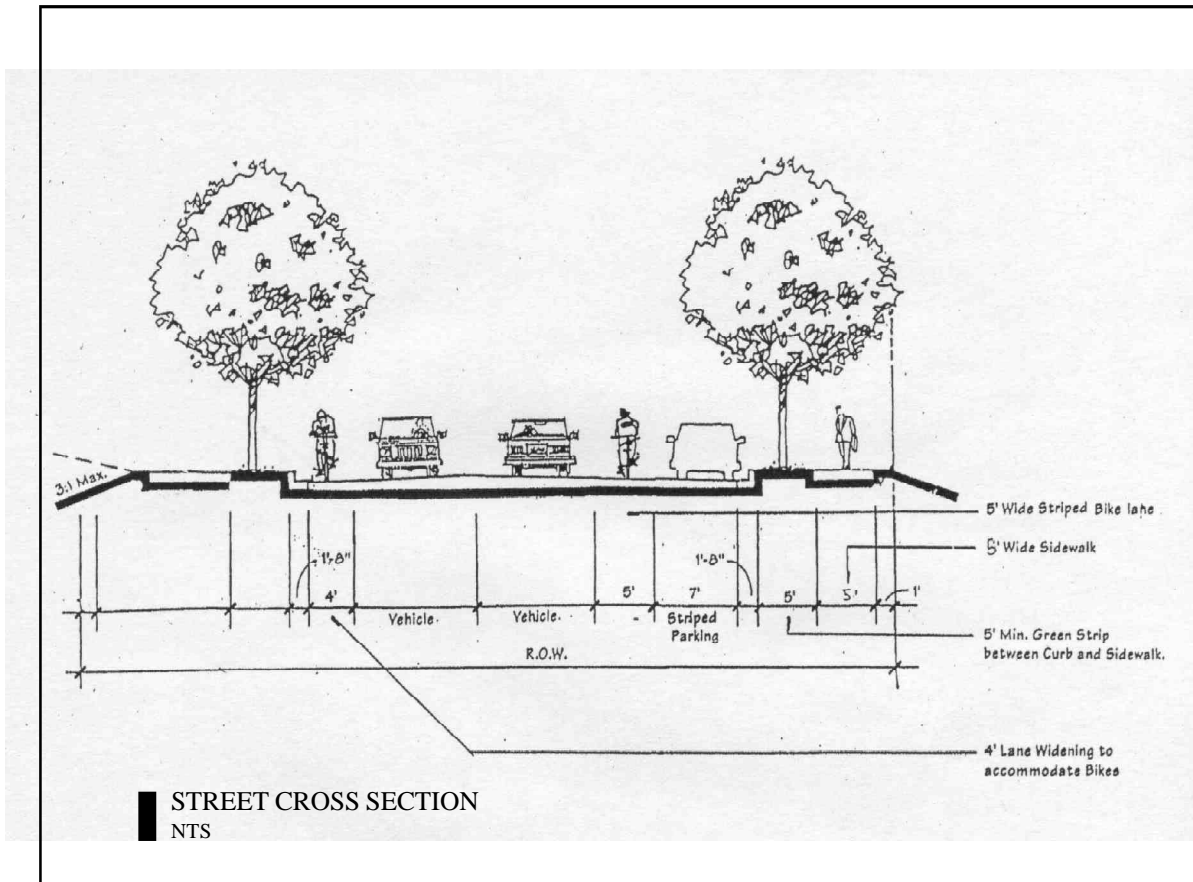
Detail 4: Standard trail bollard



Detail 5: Standard boardwalk section detail



*Detail 6: Cross section showing possible street trail design*



*Bollards (with central bollard down for maintenance access) and accessible ramp onto North/South Greenway at W. Markham Avenue*

## Maintenance and Management

Building a trail is time and labor intensive; it can take years from the first conception of a trail route until an actual trail is on the ground and open for use. But a trail's real life is just beginning when the ribbon is cut and the first user walks or rides out. Maintenance and management specifics are not within the scope of this plan. Making those decisions is the job of the City or County agency that must implement them. However, some general recommendations about maintenance and management strategies are within the scope of this plan and are discussed below.

### *Recommendations:*

- (a)** The City and County should address maintenance and management strategies early in any trail planning process. Choices made during the design phase have implications for operational issues later, in trail user safety and both maintenance and associated risk management costs.
- (b)** The City and County should involve regional travel and tourism entities in trail planning at some point, since the operation of actual trail facilities and related businesses can have an effect on economic development.
- (c)** The City and County should develop a mechanism for establishing standards of trail maintenance and for sharing trail operations duties—both between themselves and potentially with other agencies and jurisdictions in the region on trails that cross jurisdictional boundaries.
- (d)** The City and County should actively recruit volunteer assistance in trail maintenance and management and should designate a staff liaison to work with volunteer groups. “Adopt-a-Trail” and “Friends of the Trail” type groups should be encouraged with recognition and some level of support (such as provision of hand tools for trail work days).
- (e)** All plans for trail management must address trail security issues as well, including physical security features (such as emergency phones, lights, and fences) and dedicated personnel (police, sheriff deputies, park rangers).

Trail maintenance exists in a continuum from work that must be done by professionals with heavy equipment to trash pick-up that can be done by children. But there are some general recommendations that can be made about trail maintenance that must be addressed for a successful greenways and trails system. They include work that must be done routinely and work done on an as-needed basis.

*Recommendations:*

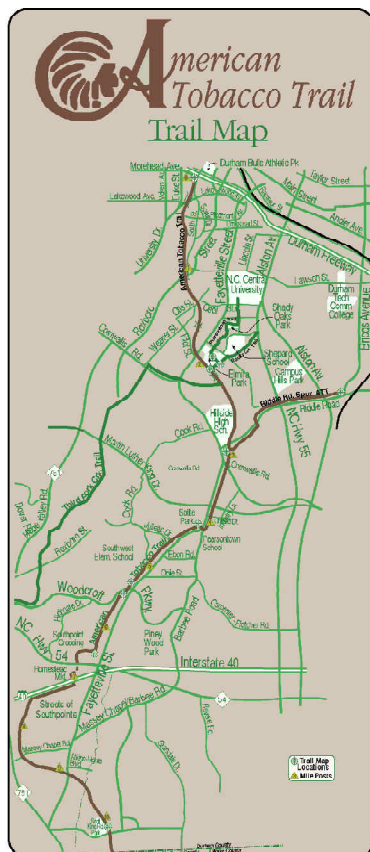
Maintenance work to be done on a regular, scheduled basis:

- a. trail safety inspections (and documentation of the inspection)
- b. trail sweeping and trash removal
- c. trailside vegetation mowing
- d. upkeep of trailside trees and shrubs
- e. trail maintenance needs inspection and scheduling

Maintenance work to be done on an as-needed basis:

- a. trail surface repair
- b. trail feature replacement (such as a bridge or steps)
- c. snow or ice removal
- d. drainage control
- e. invasive plant control
- f. trail signage repair, update, or replacement
- g. habitat enhancement

In addition to these tasks which are specific to any particular trail or recreation trail, there are tasks for the department managing the entire trails and greenways program, including



- a. volunteer coordination
- b. trails mapping and map production
- c. education and interpretation
- d. trails event planning and implementation
- e. coordination with law enforcement for trail safety
- f. keeping expense records to generate good trail program budgets
- g. training employees in trail maintenance techniques

Much citizen and staff time is expended in planning, acquiring, and building greenways and trails in Durham. Once trails are on the ground and being used, the time commitment may shift to different citizens and different staff, but there is still the need to hold these facilities to high standards. Indeed, both the City and County have a commitment to maintain rights-of-way they acquire in good condition, even prior to the construction of trails on those rights-of-way. This maintenance includes the prevention of unsafe conditions, including inspections of greenways for misuse such as dumping, and the response to citizen complaints.

*This map of the American Tobacco Trail is designed for the trailside kiosks.*

# Section IV Connections and Constraints



## City of Durham Parks and Recreation Master Plan

In 2000 the City's Department of Parks and Recreation (DPR) completed a new master plan for parks and recreation facilities, including trails and greenways. A large component of the planning work was community involvement. The consultants hired by DPR (Moore, Iacofano, Goltsman, Inc.) solicited input on the type and nature of the facilities they wanted at five community open houses, six workshops with citizens and other City staff members, a number of in-depth interviews with City and County staff and elected officials, and a mailed-out User Needs Survey (Parks and Recreation Master Plan, May 2000).

The Executive Summary notes that three of the plan's primary objectives are to (1) "develop a system of parks, greenways and trails...that fully meet community expectations for quality"; (2) "build public support for a financing strategy to implement the plan"; and (3) "develop benchmarks to measure successful outcomes and increase accountability." The master plan concludes that "Durham is clearly committed to responsible park development and open space conservation."

The User Needs Survey which was mailed in July 1999 to a random sample of Durham residents offered the following information:

The dominant interest of adult users of Durham City parks is informal recreation and leisure activities. Walking was the most frequently mentioned activity... Users put pedestrian trails, greenways, and bicycle paths at the top of the list of facilities needing improvement and as priorities for expansion. The clear implication is that citizens will support strongly the future development of a comprehensive network of greenways, nature trails, and cycleways linking neighborhoods, parks, and other community destinations. The expansion of these facilities will undoubtedly support a much higher rate of user participation in walking, jogging, and cycling...The development of an interconnected network of linear elements, offering an increasing number of neighborhood access points, will tend to reduce the current dependency on car travel to get to parks.

According to the master plan, the User Needs Survey notes that "a citywide map showing locations of all city parks and trails" is a desire of the citizens. It shows that "improvements must also focus more attention on improving the aesthetic appeal and wildlife habitat value of park landscapes. Wildlife viewing is a popular activity."

The summation of the survey results shows that "expansion of pedestrian and bicycle trail systems is ranked third in the list of priorities for improvement. This conclusion closely mirrors the emphasis noted earlier from several sources of the significance of the recreational value of the community greenway and trail network." In fact, the consultants



remarked that the User Needs Survey presents some clear and possibly surprising results. All nine items that top the list preferences are informal recreational activities. Above others is “walking... mentioned by more than half the respondents...The prominence of ‘walking,’ ‘bicycling,’ and ‘dog walking’ all point towards the importance of the trail and greenway system. The importance of the natural setting of trails is also indicated.”



*South  
Ellerbe  
Creek Trail*

The master plan also draws conclusions and makes recommendations from its community involvement process. One statement—“The highest priority needs of park users are spaces and facilities for walking”—suggests that citizen support for greenways and trails both in City parks and as separate facilities remains very strong and that any future bond issues for recreation and parks should include an identified greenways component. The plan identifies as a priority action item “a dramatic increase in interconnected greenways, trails, and all manner of facilities for walking, jogging, blading, and bicycle riding.”

The DPR master plan also points out some general issues and concerns about parks in the City that have a special relevance to the greenways and trails system:

**(a)** The plan notes “there is a critical need to counteract the misperception that there is a high risk of crime in Durham parks.” There were two highly-publicized crimes associated with Durham’s greenways in 2000, though the greenways themselves played no part in the crime. There has been a stepped-up police presence on the greenways since these incidents, and lighting has been added to the section of the N/S Greenway where the incident occurred. However, these incidents do suggest that trails and greenways in Durham are neither more nor less safe than the neighborhoods in which they are located; reducing crime must be a community-wide effort and is not a particular danger of the parks and greenways.

**(b)** The plan suggests that “DPR and Properties & Facilities Management [PFM] should collaborate to develop a standards-based maintenance system for the parks system and assess the additional staff and equipment capacity required to implement the new system.” Cooperation among various City staff is even more crucial to the greenways and trails program. Currently greenway planning is done by the Planning Department and DPR, budgeting is handled by DPR, property acquisition is handled by Planning and PFM, and maintenance and management are handled by PFM. Exactions requested by Planning for rezoning requests and site plans are checked by the Inspections Department. The system generally works but has possibilities for obvious communication gaps. Too, citizens calling to report greenway problem

or to ask for information have no clear resource.

(c) The plan recommends that “An Adopt-A-Park program should be established to encourage community volunteer involvement.” This idea would be very helpful for the greenways and trails system, since it poses an even more spread-out maintenance and oversight task for the City staff than the parks. However, such a plan would require its own staffing resources.

(d) The plan notes a need for “the development of new parks to address the under-served areas south of the city center, to provide for future new growth to the south and east, and to provide space for new, innovative, contemporary park facilities to serve the rising expectations of the citizens of Durham.” The priorities selected by the DUTAG did a good job of distributing the money for trail construction across the City; and the Third Fork Creek Trail and the American Tobacco Trail have put trails where some of the City’s fastest growth has been occurring.

However, there is a need to address other fast-growing City areas, such as areas north of the Eno River, and a need to respond to citizen desires for more off-road bicycle and pedestrian commuting. In fact, the DPR master plan also notes the need to tie the City’s trails and greenways into a real network “for walking, bicycling, blading, and horseback riding, connecting the open spaces of the city into a unified, user-friendly system.” In the future, the connections between the City’s trails should become as important as the distribution of them.

(e) The plan also discusses the issue of trails within the City parks, an area that was not covered in the DUTAG as being more specifically the concern of DPR. However, the current DOST sees the need to tie City park trails more purposefully into the larger system and to support those trails with any future bond funding, since parks serve both as trailheads and as access points for greenways. The results from the User Needs Survey done for DPR support the notion that trails close to where they live are important to citizens. Comments from the Open Houses include the following requests:

- Duke Park – nature trails
- Forest Hills Park – nice walking trail
- Garret Road Park – trails
- Northgate Park – more trails, make trails clean and smooth (no roots sticking up) for visually impaired, more roller blade areas
- Piney Wood Park – create nature trails with ID’d wildflowers
- Red Maple Park – bike trail
- The Orchard Park – trails (walking), bike trails
- Twin Lakes Park – nature trails
- West Point on the Eno – mountain bike trails, more trails, better hiking/walking trails
- Re greenway at Life & Science museum – improve for skating
- Re parks in general – a place to walk, trails accessible to visually impaired, bike trails (greenway), add bike trails if possible (along roadsides near parks)

A user needs survey was also done for the County as a part of the County Open Space Corridor System plan in 1992; that plan will be discussed in more detail in another section of this report.



*Lakewood Avenue bridge on the American Tobacco Trail*

## **Policies and Regulations Affecting the Plan**

Section V discusses plans adopted by the City of Durham and Durham County that have an effect on trails and greenways planning. There are also policies and regulations at the local, state and federal levels that increasingly have an effect on how Durham designs and implements its trails and greenways system.

### **The Americans with Disabilities Act (1990)**

ADA was enacted in 1990 to extend the rights of persons with disabilities into the private sector and to those local government agencies and functions which had not been covered by the Rehabilitation Act of 1973. The act prohibits discrimination on the basis of disability in public services or facilities provided by state and local governments. It also created a set of accessibility guidelines (the Americans with Disabilities Act Guidelines, or ADAAG) which explained how all places of public accommodation were to be made accessible. All paved trails and greenways in Durham, as well as associated facilities such as trailheads and parking, are now designed to be fully accessible.

The U.S. Access Board also created a committee to develop recommended standards for the facilities associated with less developed outdoor recreation areas such as natural parks and trails. This committee suggested that standards for levels of accessibility—easier, moderate, and difficult—be adopted for natural sites and that sites be clearly signed with information on those standards. It also made a distinction between natural recreational trails on a site and Outdoor Recreation Access Routes; ORAR are those paths which connect the primary elements of a site (such as restrooms, parking lots, and picnic areas) and must be fully accessible. Durham is currently working to make its trails within parks accessible. When nature trails are added into the City's and County's trails and greenways system, they will be designed to meet current Access Board standards.

### **Neuse River Basin Nutrient Sensitive Waters Management Strategy (1997)**

In December 1997, the North Carolina Environmental Management Commission adopted what its chairman David Moreau called "a landmark piece of basinwide water quality planning." It took effect in August 1998, in the Neuse River Basin, an area which includes northern and northeastern Durham County. The regulations are aimed at reducing nonpoint source pollution of the watershed and include new wastewater discharge requirements, nutrient management requirements, and agricultural nitrogen loading reductions; however, it is the new riparian buffer requirement sections which have an impact on Durham's trails and greenways planning.

The buffer requirements state that areas adjacent to a body of water in the basin that contain existing forest vegetation must be preserved and maintained to accomplish sheet flow and maximum pollutant removal. At least 30 feet of streamside buffer containing

forest vegetation (named Zone 1) must be preserved; and an additional 20 feet of upland area adjacent to that (named Zone 2) must be maintained in dense ground cover. Certain uses are allowed in Zone 2, provided that the health of the vegetation in Zone 1 is not compromised.



*Site of the  
Warren Creek  
Trail*

State regulations classify “greenway trails” as one of the uses that is allowed in Zone 2; however, according to sections 7 and 8, “Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the use.” The NC Division of Water Quality considers each request to build a trail in the buffer area and grants or denies authorization based on the proposed construction’s effect on vegetation and water quality. The Environmental Management Commission has said that it anticipates similar regulations will be put in place the Cape Fear River Basin in March, 2003, which impacts southern Durham County.

### **Clean Water Act, Sections 401 and 404 (1982, 1999)**

Wetlands development in North Carolina is regulated by Sections 401 and 404 of the federal Clean Water Act (CWA). While 95% of the wetlands in North Carolina are located in the coastal plain, 4% of the wetlands recorded in the National Wetlands Inventory (NWI) are in the piedmont region that includes Durham. Many of the planned trail routes retained from the original DUTAG master plan are adjacent to Durham’s many creeks; thus, some do impact on wetlands areas.

CWA Section 404 requires permits for development activities in jurisdictional wetlands. (Since 1989, the term “jurisdictional wetlands” has been used for wetlands which conform to certain criteria of wetland hydrology, wetland soils, and hydrophytic vegetation.) Section 401 requires that states certify that a proposed activity will not result in a violation of state water quality standards. Permits issued under these laws require developers to avoid, minimize, or compensate for impacts on wetlands. Section 404 has the most impact on greenway development in or near wetlands areas. It requires that a permit be obtained from the U.S. Army Corps of Engineers before undertaking any activity that will result in the discharge of dredged or fill material into “waters of the United States”—with “waters of the United States” defined as “navigable waters, their tributaries, and adjacent wetlands” (Title 33, CFR§320; NC Constitution IV.5).

Prior to 1999, greenway construction that required any filling in jurisdictional wetlands was minor enough that it could come under the general Nationwide Permit (NWP 26). New regulations, however, have reduced the NWP threshold. For a linear corridor such as a greenway, which might run for a mile or more in close proximity to a creek or in a flood plain, the threshold is almost always passed; so federal permitting is required. In addition, the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service are both notified when a 404 application permit is filed; either of these agencies can comment upon and appeal the Corps’ decision to grant a permit.

The impact on Durham’s greenways and trails system has been both delays in construction (because of required permitting) and route changes (either moving trails to

upland areas where land is more difficult to acquire or moving trails to existing sewer easements where disturbance and fill have already occurred). Certainly early coordination with relevant state and federal agencies is critical in trail planning.

### **Federal Emergency Management Agency (1979)**

The Federal Emergency Management Agency (FEMA) was created in 1979 by combining five agencies and four programs in the Executive branch of the government. Its initial purpose was assistance to citizens struck by disasters too large for local governments to deal with effectively, such as floods, tornados, or earthquakes. Increasingly, however, FEMA has moved into working towards prevention of such disasters. The National Flood Insurance Program (NFIP) has created a system of maps of Flood Hazard Areas, using hydraulic studies to plot the different potential 100-year flood zones on almost all significant rivers and creeks in the country.

Any project that is planned for construction in one of these flood zones must not only comply with the local government regulations and standards for such construction, it must also receive a CLOMR (Conditional Letter of Map Revision) or LOMR (Letter of Map Revision) from FEMA when that construction is actually in the floodway. A CLOMR is FEMA's comment on a proposed project that would affect the hydrologic and/or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway. A LOMR is an official revision to the NFIP map (which changes flood risk zones and flood plain and floodway boundary delineations).

Since a greenway is a flat structure that creates a fairly small amount of impervious surface it does not in itself have much trouble getting a FEMA approval. But any boardwalk structures or bridges that are part of a greenway may be judged to be enough of a barrier in a creek's floodway to cause a rise in adjacent flood levels. Durham's staff and greenway construction consultants have had to work to get both bridges and boardwalks permitted and have had to make significant revisions in construction plans or route plans in some instances.

### **US Army Corps of Engineers Project Lands**

Durham is fortunate to have two large reservoirs on its borders, Jordan Lake to the southwest and Falls Lake to the east and northeast. Those federal lands with their watershed buffers provide invaluable green space for the county's human and animal residents. Since those properties are public lands, they are available for hiking. The Corps of Engineers states its management goals for the project lands include recreational use, and the NC Wildlife Resources Commission (to whom much of the land is leased), suggests its primary mission may sometimes be compatible with recreational trails.

In a letter following a meeting in 1999 with representatives from Durham, the WRC outlined its position on trails in the lands it manages at Jordan Lake. The agency said,

Congress authorized the project lands to mitigate the significant impact from the construction of the reservoir...and to provide protection of the reservoir...The WRC manages a large portion of these lands as permanent game lands, for the primary purpose of hunting, fishing, and wildlife observation. State Parks and Recreation currently manages some areas as permanent recreation sites...The current management...is mostly compatible and provides complementary public

benefits. However, as use of these public lands increases there is real potential for conflict between user groups, adverse impacts to plant and animal communities and health and safety issues to occur. Therefore, any trail system will require careful planning and management to address these issues and to protect the intended uses of these lands and prevent degradation... The no trail alternative is obviously preferred from the perspective of habitat conservation and some wildlife recreation activities. However, we believe some limited nature trails can be compatible with natural resource conservation and wildlife recreation if properly planned and managed.

Several planned trails and greenways in the Durham system are indicated on plan maps as stopping at the border of Falls Lake and Jordan Lake project lands. A developed trail on project lands will not be indicated on Durham plan maps unless the trail route and trail standards have agreement from the WRC and the US Army Corps of Engineers. However, the goal is that City and County trails will continue into these other public lands.

Durham City or County trails that run into State lands—such as Hill Forest or Eno River State Park—will be indicated as connecting only with existing trails on those properties; the same protocol will be followed for trails on private lands which are open to the public, such as Duke Forest.

### **North Carolina's Million Acre Initiative (2000)**

In May 2000, the North Carolina General Assembly passed a law that is intended “to encourage, support, and accelerate the permanent protection of farmland, forestland, parkland, gameland, wetlands, open space, and conservation lands” in the state. This Million Acre Initiative sets forth a strategy for achieving the goal of adding one million acres to North Carolina’s current assemblage of permanently protected open space and farmland by the end of 2009.

The State’s role in this initiative includes (1) setting an example by accelerating its own acquisition of open space lands, (2) encouraging and facilitating acquisitions by local governments and private land trusts, (3) encouraging and facilitating mutual planning among local governments, and (4) serving as a communications clearinghouse for open space data and information.

The initiative has already created a partnership among local Councils of Government and the State’s Department of Natural Resources (DENR); the lead agency for the project is the State Division of Parks and Recreation. While it will possibly be a high profile project, it is just getting underway in the winter of 2000-01; and its funding sources are limited. However, since one of its six stated goals is to “provide public access to outdoor recreation”—including greenways, trails, and urban green spaces—it could potentially have an impact on Durham’s trails and greenways program.

### **Triangle Regional Greenprint (2000)**

One regional spinoff of the Million Acre Initiative is the Triangle Regional Greenprint project, jointly sponsored and managed by the Triangle Land Conservancy (TLC), the Triangle J Council of Governments (TJCOG), and DENR. In November and December 2000, the three organizations hosted charrettes of Triangle area professionals to map and discuss lands either currently preserved or in need of preservation in the categories



of (1) natural areas, (2) parks and greenways, and (3) farmland and forestland. Several planners from Durham participated in these discussions.

The greenprint, as it evolves, is expected to be used to demonstrate how regional planning might be able to work. One goal of the its section on greenways is to link up existing greenways plans (such as Raleigh, Durham, Cary, and Chapel Hill) so they can be integrated into an overall regional greenway plan. A regional plan could ensure that local sections could meet at jurisdictional lines, could have similar construction and signage standards, and could be planned for construction at similar times. Good GIS coverage of existing and planned greenways is also a crucial element of a regional plan.

### **NCDOT 1994 Administrative Action**

This NCDOT policy is fully titled “Administrative Action to Include Local Adopted Greenways Plans in the NCDOT Highway Planning Process.” With this policy, NCDOT says it “recognizes the importance of incorporating local greenways plans into its planning process...for highways.” The policy directs the Department’s planners, within engineering and budget constraints, to make provisions for greenway crossings or other greenway elements on highway projects. A Durham Open Space and Trails Commission representative served on the statewide Governor’s Greenway Commission which developed and recommended this action.

It does require local governments to notify NCDOT of greenway plans, to justify greenways as transportation facilities, and to formally adopt greenways plans. Because of this policy, Durham and NCDOT highway engineers have worked together on several greenways projects where the City’s planned system intersects the major improvements made on I-85.

All of these plans and policies have an impact on Durham trails and greenways, whether it’s matching up trails on our borders with trails from Chapel Hill and Raleigh or getting trail routes in riparian areas approved by FEMA and the Corps. Also, any federal or state source from which the trails program receives funding has certain associated guidelines. Durham has received significant grant funding from ISTEA and its successor TEA-21, for instance, federal money that is administered by the North Carolina Department of Transportation. That source dictates certain construction standards, such as trail width and signage, that must be met.



*DOST scouting a route for the Third Fork Creek Trail in 1990*

## Durham Ordinances

Copies of the interlocal agreement which created the Durham Open Space and Trails Commission (DOST) and the bond referenda which authorized the spending of funds for trail and greenway development are all included in the Appendices. These documents are the legal authority under which DOST operates and under which the City spends funds on greenways. Additionally, the City Council resolution of 1992 set the priorities for that spending.

However, fee simple purchase of land is not the only way that the City and County can acquire greenway and trail right-of-way. The 1988 DUTAG noted that easement or fee simple dedication could be requested from a developer during the process of approval of a development plan for rezoning. That process of requested dedication has added many parcels to future greenway corridors, even when there is currently not a plan for active acquisition or construction in a particular corridor.

In 2001, the City/County Zoning Ordinance and Subdivision Ordinance will be under review and will probably be rewritten with significant changes. However, some version, at least, of the following current provisions will be likely to exist in a new Unified Development Ordinance.

### **Subdivision Ordinance, Section 5M**

The process of dedication was strengthened when Durham City and County adopted a merged subdivision ordinance in 1992. NC General Statute 160A-372 allows cities to require subdivisions to dedicate or reserve land for recreation areas or to make a payment-in-lieu of dedication which the local government can use to fund the acquisition of land for recreation. This requirement is based on the direct connection between the proposed new residents of a subdivision and the increased recreational burden they will place on a community's resources. Since site plans far outnumber development plans, this additional source of greenway easement dedication has greatly increased the number of parcels being "banked" for future greenway development.

Section 5M of the Merged Subdivision Ordinance actually reads:

Provisions for both active and passive recreation areas, including parks, greenways, and open space, consistent with City/County policies, plans, and regulations, including but not limited to the Durham Urban Trails and Greenways Master Plan and the Durham County Open Space Plan, shall be made for all subdivisions. All such land dedicated or reserved, shall satisfy applicable City/County site suitability standards with respect to location, accessibility, size, configuration, slope, etc.

### **Zoning Ordinance, Section 17.5.8**

This requirement from the Zoning Ordinance for conformity with open space and trails planning for site plan approval (Section 17.5.8), when combined with Section 5M of the Subdivision Ordinance, has advanced the land acquisition process of the trails and greenways program. While the legal tie between recreational use and dedication is not as strong with non-residential site plans, most non-residential developers see the benefits of being linked with a bicycle and pedestrian transportation system and are willing to dedicate land when their parcels are indicated as being part of an approved greenway or trail route. The Planning Department has prepared a guidelines sheet for how to dedicate a greenway right-of-way, whether easement or fee simple (see Appendix E). One revision in the Ordinance could be linking greenways and trails more obviously to transportation thus making dedication mandatory for non-residential uses as well as residential ones.

### **Subdivision Ordinance, Section 5J**

Some of the City's greenway trails have portions on sidewalks; almost all the connections between major trails are on sidewalks. Therefore the provisions for pedestrian and bicycle systems in new subdivisions are important for making links and connections in the City's system. The relevant parts of Section 5J read as follows:

Sidewalk, walkway and trail systems sufficient to serve both existing and projected pedestrian and bicyclist needs shall be reflected in all subdivision design. Such systems may include either conventional sidewalks along street rights-of-way or walkways and trails in alternative locations as appropriate...Alternate walkway and trail systems, located outside street rights-of-way, shall be planned to serve pedestrian and bicycle traffic circulation as satisfactorily as would conventional sidewalks, and to reach locations which would otherwise be inaccessible.

However, because the language of this section of the ordinance is highly subjective—"projected needs," "as appropriate," and "satisfactorily"—and no standards have been developed to quantify that language, its use has not been pushed beyond the usual transportation demand for sidewalks on major roadways. The Planning Department has requested either a wider sidewalk or a dedication of land parallel to a sidewalk on some specific sections of sidewalk that include planned trails. A revised Ordinance should mandate more bicycle and pedestrian connectivity—and specify exactly what that entails—in both residential and non-residential development.

### **Resource Protection Ordinance Amendments**

In 1999 Durham's elected officials passed revisions to the Zoning Ordinance and the Subdivision Ordinance that set new standards for protecting natural resources in new development. They limit development in natural floodplains, on steep slopes, and adjacent to streams and wetlands. They require tree surveys of a parcel prior to development and set required tree save areas. These Ordinance changes have been a great benefit to natural resources threatened by development during Durham's rapid growth, and they have had some impact on the trails and greenways program.

On the one hand, the requirements for saving more undeveloped spaces and the provision that "[a]ny portion of a development tract which is required to be left undisturbed

by some other requirement of the Durham Zoning Ordinance shall be presumed to meet the requirements [for]...Tree Coverage, so long as the area meets the minimum size threshold,” have strengthened Section 17.5.8 in encouraging non-residential uses to dedicate land to the City for greenways. A greenway is an excellent use for land that is not developable for more intense uses.

On the other hand, state and federal regulations can make developing a greenway trail in a riparian area both difficult and expensive, even though the Ordinance itself allows for “active and passive recreational use, such as unpaved or paved trails” in stream and wetland buffers. Tree survey and tree save requirements can sometimes be problematic for a trail constructed on a narrow easement or along an already-disturbed sewer. On balance the new resource protection features have aided greenways; but future public land acquisition does need to factor them in as does any private development in the City and County.



*Future Durham trail users*

## Durham County Open Space Corridor System Plan

The City of Durham includes a large part of the land in Durham County; with its expanded Urban Growth Area (UGA), in fact, it includes more than half of the County. Large areas of land which are not in the City are under another jurisdiction as well as the County's: for example, Research Triangle Park, and the U.S. Army Corps of Engineers project lands at Falls Lake and Jordan Lake. Nonetheless, the land in the County contains some of the region's most valuable and unspoiled natural resources in the Little River corridor, the Flat River Corridor, and the watershed of Little Lick Creek and its tributaries.

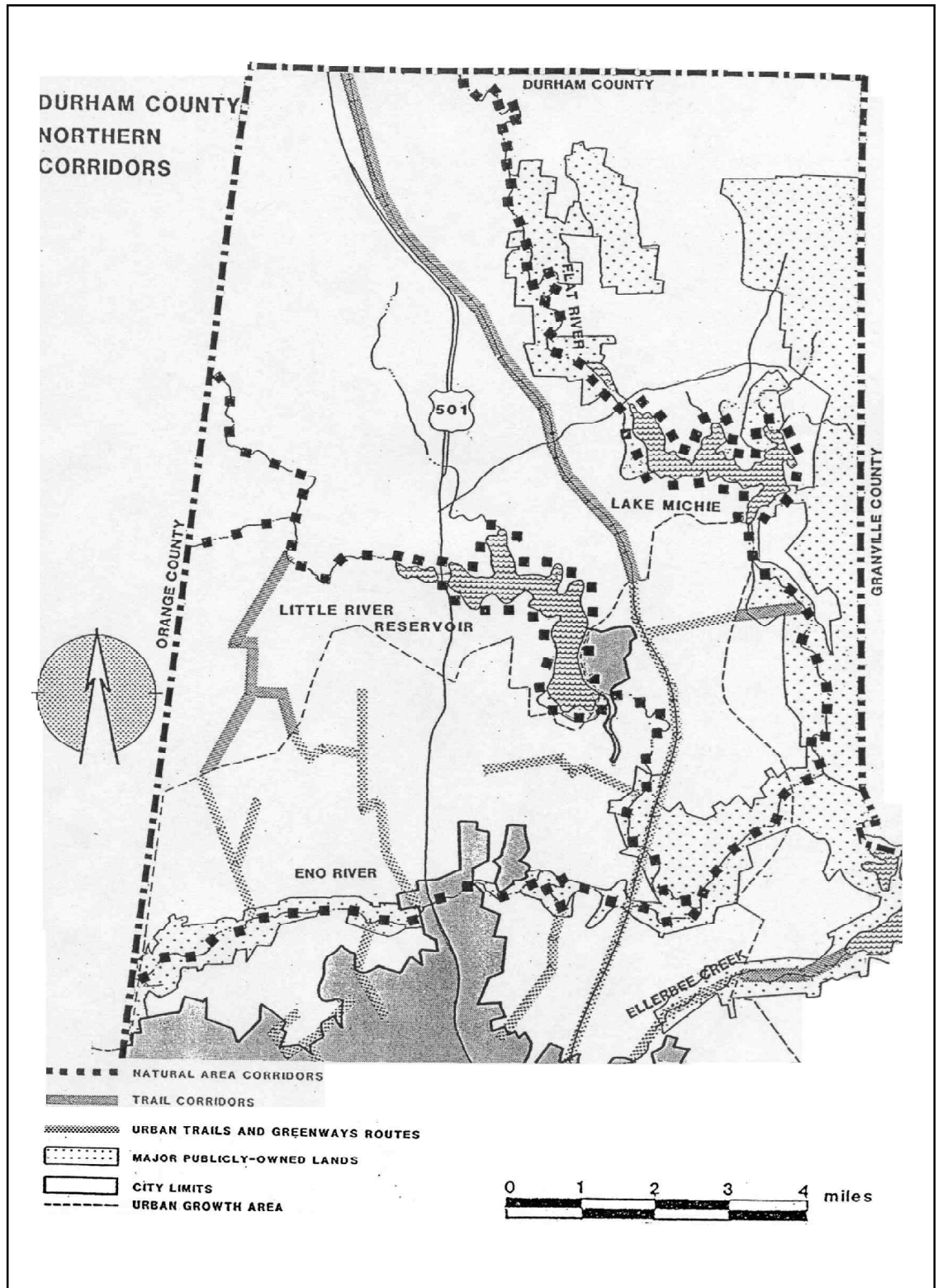
And, as the Corridor Plan notes, while “the City efforts contribute to the overall quality of life in the Durham community, they cannot go far enough to protect important open spaces in the County. The DUTAG program and the parks and recreation program do not deal specifically with natural areas...or the County-wide need for more passive recreation land for County residents.”

The City's and County's trail efforts have always been planned to be complementary. This trails and greenways master plan will not alter that goal, nor will the completion of the more specific plans for the river corridors in the County. Much coordination of the two trails and greenways efforts have already occurred. Both the City's and the County's elected officials adopted the DUTAG and the Open Space Corridor Plan. Both elected bodies adopted the New Hope Creek Corridor Plan; and land acquisition and trail-building in that corridor have been joint City and County efforts. As noted in Section V, the citizens' advisory bodies on open space and trails were merged in 1994.

The trail corridor route maps adopted in the Open Space Corridor System Plan were planned to connect to the routes of the DUTAG trails and greenways when that was appropriate. These trail corridors were conceptual; the intent has been to develop each corridor plan with a more detailed and specific map after further study of natural features. The New Hope Creek corridor plan was completed in 1992. The Little River corridor plan is being developed in 2001.

The DUTAG and the Open Space Corridor Plan have functioned together as one plan when necessary. For planning purposes and for land acquisition—whether by purchase or by exaction—they are one plan. Their underlying goals are somewhat different. The County plan's basic goal is protection of open space and resource features, with recreation as a use of the land when appropriate. The City plan's basic goal is a trail system for recreation and transportation, with protection of resource features as a trail feature when trail rights-of-way happen to include some valuable resources.

However, this Durham trails and greenways master plan looks at the trails and greenways in the City and County not by jurisdictional lines but by function. It recognizes two basic types of off-road trails that exist in Durham City and County: one is the transportation/mixed recreation use trail which exists primarily in the urban areas and into the

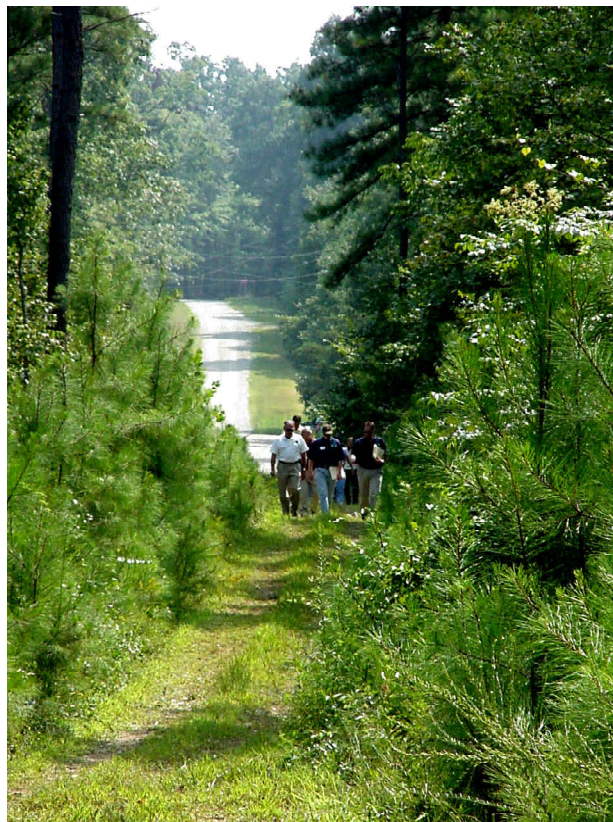


*County Open Space Corridor Plan, northern Durham County*

UGA and surrounding suburbs; and the other is the recreation/nature trail which exists primarily in parks and in environmentally sensitive areas, including the river corridors in the County. There are also trails on streets and sidewalks, which are a part of the larger transportation system and linked to the urban/suburban greenway systems. The occasions and criteria for these types of trails are discussed in Section III.

The plan recognizes the differences between City and County trail and greenway programs: different acquisition funding mechanisms, different (if partially overlapping) user groups, and different systems for trail maintenance and management. However, the planning for both systems is done by the merged City/County Planning Department, and the merged Zoning and Subdivision Ordinances determine easement exactions for both.

As the County's Corridor plans continue to be written, they will further develop the more general routes that are set forth in this master plan. The user survey that is a part of the County Open Space Corridor System Plan suggests that in general County trail user needs are similar to those identified by the City Park and Recreation Master Plan survey discussed earlier. Among the survey responses were the following: 78% wanted trails available throughout the County, trail hiking was one of the top five activities listed as needing better facilities, and 53% said they owned and used a bicycle. Likewise, this plan will not try to dictate but will complement site-specific recreation/nature trails in environmentally-sensitive areas including Natural Heritage Inventory locations, the Flat River and Little River corridors, and the Little Lick Creek corridor.



*Old logging roads cross the site of the new Little River Regional Park.*



## **Coordination with State and Regional Greenways and Trails Plans**

Other trail systems are being planned and constructed in the Triangle region that offer opportunities to connect Durham and Durham County with a network of trails beyond our jurisdictional borders. These trails include:

### **The Mountains-to-Sea Trail**

The sections of this trail owned and managed by the NC Division of Parks and Recreation now officially form a State Park. Other sections are being constructed by volunteer groups and local governments on other public land across the state with assistance from the NC Division of Parks and Recreation. The trail is planned to run from Stone Mountain in western North Carolina to Jockey's Ridge on the coast. In Durham, the trail's proposed route is along the City's Eno River Greenway. It enters the County on the west in the Eno River State Park, runs along the Eno Greenway, then leaves the County on the east through the Falls Lake Project Lands.

### **The Circle-the-Triangle Trail**

This trail is also a multi-jurisdictional, volunteer-led effort. The Triangle Greenways Council has built sections of the planned trail on the Falls Lake lands; other sections of the "circle" are greenways and trails being built by various local governments in the Triangle region. In Durham, the trail connects to the Falls Lake trails at the Eno River Trail, runs through downtown on the North/South Greenway, and heads south on the American Tobacco Trail to connect with a greenway coming out of Cary.

### **The American Tobacco Trail**

The ATT runs from downtown Durham south into Chatham and Wake Counties. The first 11 miles of this 23-mile trail are in Durham; the first three miles of the trail were opened in June of 2000. While maintenance and management are being taken on by the local jurisdictions, the volunteer Triangle Rails-to-Trails Conservancy (TRTC) has worked to ensure that issues like signage, trail standards, and mapping are consistent along the route. The TRTC may in the future take on maintenance of some sections of the trail through a volunteer friend-of-the-trail program.

### **The East Coast Greenway**

The East Coast Greenway (ECG) is a national north/south trail, envisioned to run from Calais, Maine, to Key West, Florida. The route within each state has been designed and planned by a state chapter, coordinated by the national East Coast Greenway Alliance. In North Carolina, the route enters the state near I-85 and US 1, passes through Durham, runs along the Cape Fear River, then runs into South Carolina near Wilmington. The

American Tobacco Trail in Durham is the first segment of the ECG to be designated in North Carolina.

### The Triangle “Greenprint”

Increased regional planning and cooperation will help link Durham’s trails and greenways with those of neighboring jurisdictions. Some joint work is already ongoing between Durham and Orange Counties with the Little River Regional Park purchase.

### The New Hope Creek Corridor Plan

As discussed in Section V, the New Hope Creek plan shows trails connecting between Durham and Orange Counties in many places in the corridor. The City and Chapel Hill have also been discussing how to link a major greenway along Dry Creek, roughly parallel to US 15/501.

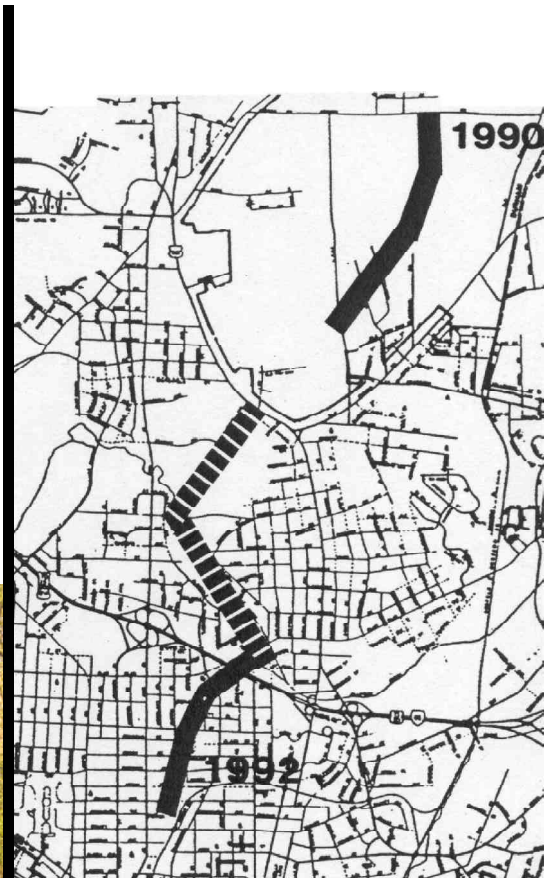
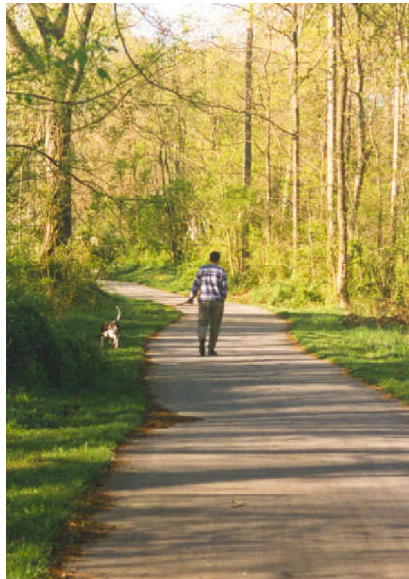


The East Coast Greenway route in North Carolina (map from the East Coast Greenway Alliance 2001 State of the Trail Report)

# Section V

# Durham Greenway

# History



## The 1988 Durham Urban Trails and Greenways Master Plan

In Greenways for America, author Charles Little notes that the greenway movement actually began in the 19<sup>th</sup> century with Boston’s “Emerald Necklace” parks system designed by landscape architect Frederick Law Olmsted. Little characterizes that movement from its inception as being “citizen-led,” with greenways and trails across the country proposed and created under the leadership of community members who have a vision for their city (Greenways for America, 2<sup>nd</sup> edition, Baltimore, 1995).

Durham made its commitment early in the 1980’s for this community to have a trails and greenways system. In 1982, the Public Works Committee of the City Council, on the initiative of Chairman Carroll Pledger, appointed a subcommittee to consider the possibilities of greenways in Durham. Council members Jane Davis and Sylvia Kerckhoff were instrumental in the initial work of the subcommittee and in the preparation of the report and recommendations. Based on the report’s findings, the subcommittee recom-

ended the formation of a Trails and Greenways Commission. The City Council established the Durham Urban Trails and Greenways Commission on June 20, 1983—made up of citizens representing all parts of the community—to develop and implement a plan for a trails and greenways system.



*The Rock Quarry Trail, the City’s first greenway.*

prevention of hazards and accidents, presence of or connection to activity centers, population density and projected development, expedient links through public land or other trails, natural corridors such as streams, and the availability of land for trail development. Another Master Plan map was prepared of on-road bicycle routes and adopted by the Council and the Board in 1988 to guide transportation-funded improvements.

A Trails and Greenways Master Plan map was prepared by the Commission and adopted by City Council and the Board of County Commissioners in 1985. This map identified 118 miles of corridors to be priority routes for transportation and recreation trails, based on six criteria: evidence of use and neighborhood interest,

The Durham Urban Trails and Greenways Master Plan (DUTAG) was subsequently written to accompany the map. It was adopted by the Council and the Board in 1988 and has been the handbook for the system’s development for twelve years, guiding both land acquisition and trail development. That plan envisioned “an extensive network of greenways and paths for bicycles and pedestrians...which will be a unique amenity for

the community. It will offer scenic and safe routes for transportation and recreation on a human, non-mechanized scale. Linear open space corridors will provide protection of floodplains, vegetation and wildlife.”

The DUTAG also noted that

the development of such a system requires a plan to guide implementation over many years...a guide to coordinate the many decisions necessary during implementation. The Subdivision Review Board, Planning and Zoning Commission, City Council, and staff can use the Master Plan to guide public Policy deliberations. The Plan will promote private actions and investments to create a unified system of public and private greenways. Planning for City infrastructure can be coordinated with planning for trails and greenways. Both long-range policy decisions and short-range implementation will be guided by the Plan, and it will serve as a standard by which to evaluate Progress.

Both the map and the DUTAG Plan included all of the City’s Urban Growth Area (UGA) as proposed in the 2005 Durham Comprehensive Plan.

On October 5, 1985, the first completed trail segment in Durham, the Rock Quarry Trail, was officially opened. A brochure was printed with a map and description of the trail, as well as a general description of the proposed trails and greenways system. A second segment, a portion of the Rocky Creek Trail connecting Fayetteville Street Elementary School, Elmira Park, and Shepard Middle School, opened in May, 1988. A third segment in 1989 extended the Rock Quarry Trail north from Murray Avenue through the Edison Johnson Community Center and Rock Quarry Park. The Durham greenways system was on the ground and starting to grow.

The DUTAG made it clear that the Durham community could expect to receive significant benefits from instituting a trails and greenways program:

- (a) minimization of soil erosion and sedimentation,
- (b) assistance in flood control,
- (c) habitat protection for plants and animals,
- (d) air and water pollution control,
- (e) microclimate control,
- (f) social and economic benefits such as health and civic pride, and
- (g) aesthetic benefits.

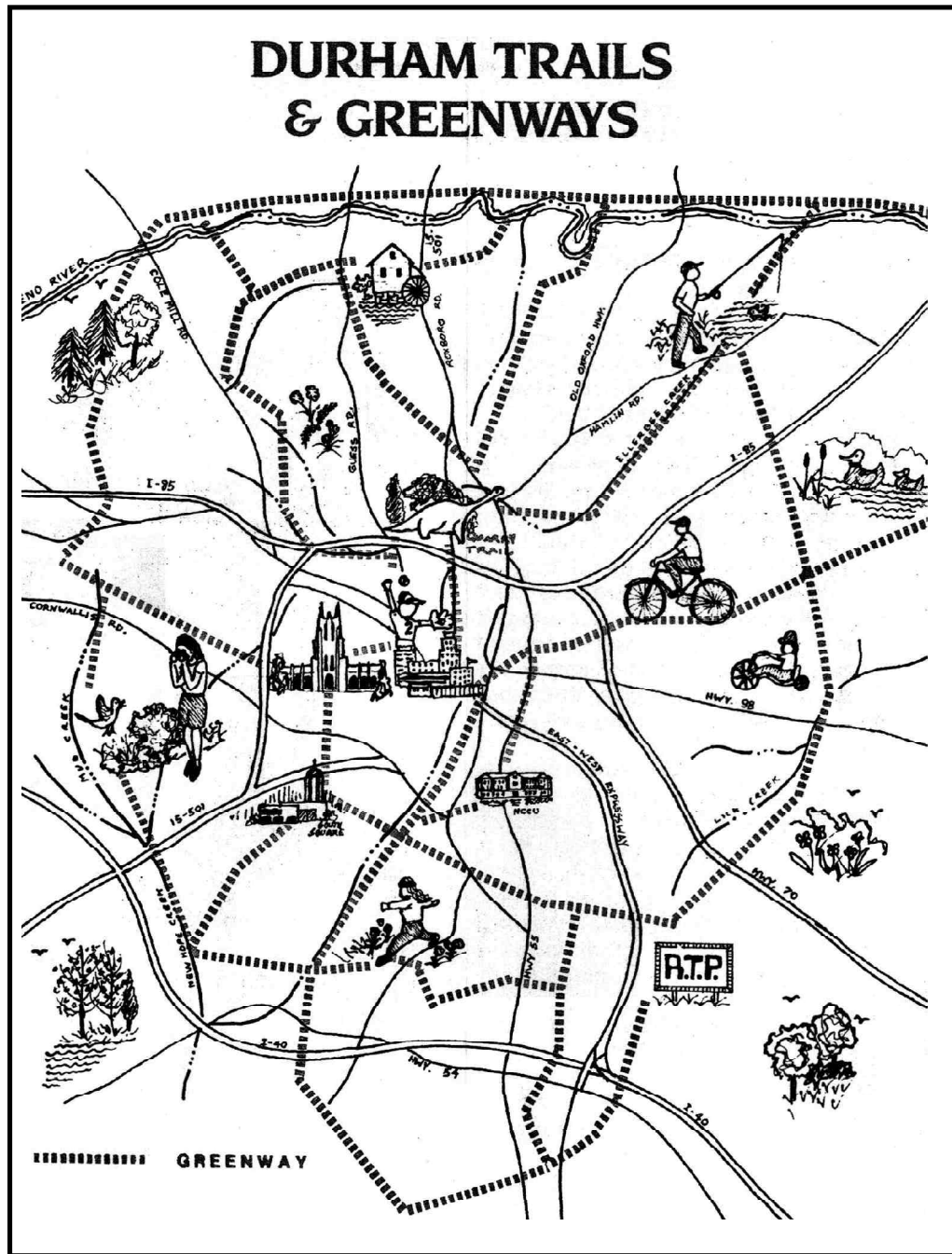
In fact, Durham has been reaping these benefits from the greenways established between that first trail in 1985 and today in 2001—both from the trail system itself and from collateral projects associated with a trail.



The original DUTAG has been amended in 1992, 1996, and 1997 to include new routes and route alterations, including the American Tobacco Trail.

*The dinosaur is an old favorite on the Rock Quarry Trail.*





*This map from City's original trail brochure shows a greenway system that connects key points around the City and County.*

## Trails and Greenways in Durham 1988-2000

The nature of plans is anticipating and directing the future shape of a community. In what it anticipated for Durham and how it directed the development of trails and greenways through the 1990's, the DUTAG was remarkably successful, even though it missed a few turns of development.

### Trail miles needed

The DUTAG-identified greenways and trail routes add up to an estimated 118 miles, excluding street and sidewalk routes. This number was deemed suitable, according to the National Parks and Recreation Association (NPRA) standard of twenty-five miles of trail for every 50,000 citizens, to meet Durham's growth into the year 2005. Durham's population in 2005, within the Urban Growth Area, was predicted to be approaching 276,000.



*The trail in Northgate Park*

Current census data show that the City grew from 136,594 people in 1990 to 179,989 in 2000. If that same rate of growth continues, it will take the City until 2009 or 2010 to reach the 276,000 population mark. But the NPRA has also changed its standards for how many miles of trail a community needs. Rather than trying to set an arbitrary miles-per-citizen figure, it suggests that each community should determine its own level of "sufficiency" for trails. Durham citizens, in bond issues

and surveys, have repeatedly said that off-road trails are a positive community good and that they support the proposed system

The State Comprehensive Outdoor Recreation Plan (SCORP) notes that "Walking for pleasure" is consistently ranked the highest by citizens in popularity and as a usage they would pay to support. Both "future demand" and "public support for funding" were ranked "high," in fact receiving the highest ranking among the 43 recreational activities scored in the survey (North Carolina Outdoor Recreation Plans 1995-2000, September 1995, NC Division of Parks and Recreation). That same survey ranks "Bicycling for pleasure" as fifth of 43 activities in future demand and eleventh of 43 in support for public funding. The SCORP also ranks counties by number of trail miles per resident; Durham County (which includes State and City trails) reported to the survey 31.4 miles of trails—5,950 residents per mile—for a rank in the state of 45 out of 100 counties

### Rail-Trails

The Durham Urban Trails and Greenways Commission was very much aware of rail-trails as a possibility for Durham. The DUTAG notes that "two resolutions initiated



by the Commission were passed by City Council on April 21, 1987. These resolutions incorporated already-abandoned railroads into the Master Plan Map.” A subsequent resolution adopted by City Council on March 6, 1989, incorporated “existing and future abandoned railroad corridors into the Durham Urban Trails and Greenways Master Plan” (see Appendix A).



*This abandoned corridor has become the American Tobacco Trail.*

The Commission’s political work set the stage for the growth and success of another citizens’ group, the Triangle Rails-to-Trails Conservancy (TRTC). This group was created in 1990 with help from the Commission. Its specific goal was the rail-to-trail conversion of an abandoned corridor running from downtown Durham south through Chatham County and into Wake County, a corridor which was named “The American Tobacco Trail” after the trailhead location in

Durham. A Master Plan for the American Tobacco Trail corridor, funded by a State grant, was prepared by a private firm and its recommendations were adopted into the DUTAG.

From 1995 until 2000, Durham worked with NCDOT and some private landowners to acquire the rail corridor for a trail. NCDOT purchased the lion’s share of the corridor in Durham and Durham County, leasing the right-of-way to the City. The City purchased other parcels to fill in the “gap” created by the construction of I-40. With its own funds, plus significant funding assistance from ISTEA, Durham put the first three miles of the American Tobacco Trail on the ground in 2000. Another four and a half miles are contracted for 2001, and a separate bicycle and pedestrian bridge over I-40 is slated for 2002. The trail will continue south to the county line.

However, two other rail-trail projects in Durham are still on hold—specifically the downtown loop and the route north toward Person County. The success of the Triangle Transit Authority’s planning efforts for a regional rail line through downtown Durham has encouraged the railroad companies to hold onto those lines for possible ~~future commuter rail use~~. **Rails** with trails might be the future for these routes. Another City project, the Panther Creek Trail, is also routed along an abandoned rail line; though in its case the line has been abandoned so long that ownership of the properties has reverted to the adjacent landowners. Nonetheless, the City is pursuing the trail route as its potential link to the Circle-the-Triangle Trail and has acquired some parcels on the route.

The TRTC also maintains a three mile rail-trail in southern Durham County through an agreement with the NC Wildlife Resources Commission; though the organization is private, the trail is open to the public and provides access to Jordan Lake.

### **The New Hope Creek Corridor**

The DUTAG expressed cautious optimism about a “cooperative effort between the City of Durham, Durham County, Carrboro, Chapel Hill, Orange County, and Duke

University” just getting underway in the late 1980’s. That effort, the plan notes, “may result in preservation of open space and possible trails” in a corridor along the New Hope Creek from Jordan Lake through Duke Forest and eventually to the Eno River.

In fact, that cooperative work resulted in the New Hope Creek Corridor Master Plan—adopted by Durham City and County, Chapel Hill, and Orange County in 1992—and the formation of the New Hope Creek Corridor Advisory Committee (NHCCAC). The NHCCAC was created with representatives from all four jurisdictions to shepherd an ambitious program of protecting the corridor and developing some recreational use of its lands as they were acquired.



*Trail work day in the New Hope Corridor, April 1998*

It has been a successful undertaking. As the NHCCAC’s ten-year report notes, approximately 802 acres of land in the corridor have been placed under some form of protection beyond that provided by regulatory controls, from purchase to easement. The report also notes that “at the start of field studies for the New Hope Creek Master Plan in May, 1989, not one inch of public trail existed in the entire planning area...By May 2000, over five miles of nature trail has been constructed by four jurisdictions and our regional land trust, with another 3 miles of rail-trail maintained by volunteers” (The New Hope Creek Corridor Master Plan and the New Hope Creek Advisory Committee: Ten Years Later; Durham and Chapel Hill, privately published, 2000).

The recommendations of the New Hope Creek Corridor Master Plan were incorporated into the DUTAG as well, though much of the land purchase in the corridor has been made by Durham County rather than the City. In 2001, construction plans are underway by the City for the development of the Sandy Creek Environmental Education Center and the Sandy Creek greenway, based at a former wastewater treatment plant in the corridor. Meanwhile, the County received a Clean Water Management Trust Fund grant of \$750,000 in 1997 to continue its land acquisition in the corridor.

### **Funding**

Funding is the fuel that converts a plan into implementation. The 1988 DUTAG observed correctly that “many different sources of funding and support are necessary” to build trails in Durham. It listed five possible funding sources for trail and greenway construction: (1) an annual budget allocation from the City, (2) impact fees, (3) bond funds, (4) NCDOT funding for incidental bicycle projects, and (5) NCDOT funding for independent bicycle projects. These funding sources have been tapped with mixed success, while the trail-funding federal programs under ISTEA and TEA-21 had not been created in 1988.

The City did allocate \$400,000 from the existing 1986 park and recreation bond

funds to the trails and greenways program at its inception in 1989. But its continuing allocation from the general budget has been limited to \$1000 annually as support for the citizens' advisory commission.

The major support for development of the program in the City has come through two bond issues, one in 1990 and another in 1996. The 1990 bond designated \$3.2 million for “trails, greenways, and other open spaces...including the acquisition of land and rights of way, the development, construction, and improvement of trails, greenways and other open spaces and the acquisition of any necessary equipment” (Appendix B). The bond in 1996 designated \$4.1 million for “additional trails, greenways and other open spaces” (Appendix B). Those two amounts have funded not only land acquisition and a staff person to do the acquisition but also trail construction and grant and impact fee matching dollars.



*The ATT from the south, looking towards downtown*

The impact fee funding has been a bit slower in getting underway. In its first years of existence, it provided amounts too small to purchase much in the way of land or construction, especially since its expenditure is limited to the same area of the City in which the funds were exacted and requires a 50% match from some other source. The City's Parks and Recreation Department notes that the total impact fee collection from 1990 through 1998 was \$499,067. However, there are now trail projects in all sections of the City; so those funds can be drawn down.

The North Carolina Department of Transportation (NCDOT) has proven to be a major player in Durham's trail and greenway development. It funded development and publication of the Durham Bicycle Map in 1991 for on-road bicycle routes. But its main contribution to this program has been the support and additional funding for the American Tobacco Trail. The City received a federal Intermodal Surface Transportation Equity Act (ISTEA) grant in 1997 for construction of the first 6 miles of the trail (downtown to NC 54) under an 80/20 matching grant agreement after NCDOT had leased the railbanked corridor to the City. The Bicycle and Pedestrian Division of NCDOT provided engineering plans for the project.

Total costs of the first three miles of the project—determined mainly by necessary construction of five bridges—was \$1.2 million. Funding for \$300,000 of the \$400,000 Riddle Road spur trail, another 1.5 miles, was included in the Transportation Improvement Program as NCDOT independent project money. NCDOT has also agreed to fund a short greenway connector trail near Duke Park as part of an I-85 upgrade project and a tunnel under the interstate for the West Ellerbee Creek Trail as another part of that same project.

Finally, the City received a TEA-21 grant (Transportation Equity Act for the

21<sup>st</sup> century, ISTEA's successor) for \$465,799 in 2000 for construction of the first phase of the Eno River Greenway from West Point on the Eno Park to River Forest Park.

The DUTAG observes that private funding is also a potential source of financial support for the trails and greenways program and that "in some cases, trails are constructed by developers." To date, two sections of the American Tobacco Trail have been constructed as part of development projects: one just north of NC 54 as part of the Southpoint Crossings shopping center and one just south of I-40 as part of the Streets at Southpoint development.

By 2001, the City had either allocated or encumbered most of the funds from the 1990-1999 impact fees and all of those from the 1990 and 1996 bond packages. Actual construction will be continuing into 2001 and possibly 2002.

The County has emphasized open space as much as trails in its acquisitions; its most significant effort in the 1990's was a nature trail in the New Hope Creek Corridor between US 15-501 and Old Chapel Hill Rd. In 1997 the County received a \$30,000 National Recreation Trails Fund grant to assist with construction of that trail. In 2000, Durham County joined with Orange County, the Eno River Association, and the Triangle Land Conservancy to purchase land along the Little River at the Durham/Orange line. A Clean Water Conservation Fund grant, a Land and Water Conservation Fund grant, and a Parks and Recreation Trust Fund grant helped in the purchase and in the subsequent development of trails and other facilities on the site in 2001.

How the City and County has successfully invested its money in trails and greenways, based on the recommendations of the Durham Open Space and Trails Commission, is discussed in Section II.



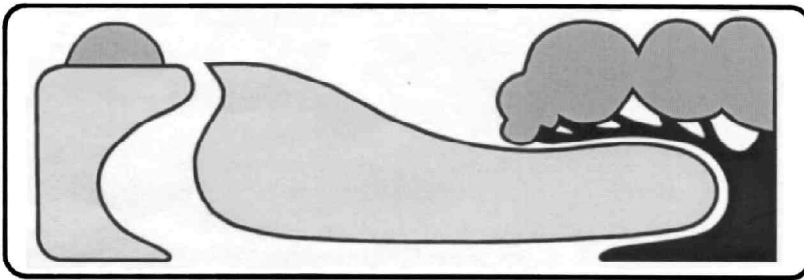
*Work in 1999 on the newest section of the Rocky Creek Trail behind Shepherd Middle School*

## The Durham Open Space and Trails Commission

The City Council of Durham created a citizens advisory body—the Durham Urban Trails and Greenways Commission—on June 20, 1983, to develop plans for a city-wide trails and greenways system. The Commission was responsible for preparing the DUTAG Master Plan that was adopted by the City in 1985. Durham County, meanwhile, had passed a bond referendum in 1986 which included funding for open space and recreation. The Board of County Commissioners had also appointed a citizens advisory body—the Open Space Commission—in 1989 to assist them with their programs in these areas. Among the first proposals of the Open Space Commission was the Matching Grants Program.

Realizing that there was significant overlap in the goals and interests of these two commissions, both elected bodies agreed to combine the Durham County Open Space

Commission and the City of Durham Urban Trails and Greenways Commission into the Durham Open Space and Trails Commission (DOST) in late 1993 through an interlocal agreement (Appendix D). The agreement cited the need for “cooperation for open space, urban trails and greenways planning and implementation”



The  
DOST  
logo

to allow for “consistent analysis of problems and opportunities...across political boundaries.” That first agreement expired in 1998, but it was renewed for four more years in early 1999.

The powers and duties of the DOST as outlined in the agreement include advising the Council and the Board and their appropriate staff members on trails, greenways, and open space issues; assisting with the County’s Matching Grants Program; educating the public about the City’s and County’s programs; and encouraging and assisting in fund raising for open space and trail purposes. DOST is made up of a maximum of 30 members, some chosen by geographic representation, some by board representation, and some to represent a specific interest or area of expertise.

DOST is staffed by a representative from the Planning Department and has *ex officio* representatives from the City Parks and Recreation Department and the County Matching Grants Program. It has a budget for its community education and newsletter programs that includes \$1000 from Durham County and \$1000 from the City of Durham.

The members of the DOST have organized themselves into several working

committees to oversee the Commission's various responsibilities. Following is a list of the committees which have existed in the 1990's and some of the tasks they have worked on:

- Community Education Committee – staffs a DOST booth at the Earth Day Festival in April, the Eno River Festival in July, and Centerfest in September to inform the public about open space and trails programs, provide maps, and encourage community involvement.
- Matching Grants Committee - conducts the application process and recommends the awards for the County's \$100,000 annual open space program.
- Bicycle Committee - represents the on-road and off-road bicycling interests in transportation and land use planning. In 1998, the committee completed a requested update of Durham's portion of the Regional Bicycle Plan for the DCHC MPO; committee members served on a special Managers' Bicycle Task Force from July 1999 to January 2000.
- Finance Committee - makes recommendations to the Council and the Board on both the ongoing budget and long-range spending priorities for greenways and open space bond funds and impact fees.
- Development Review Committee - studies and makes advisory comments on incoming development plans, re-zonings, and site plans for the Development Review Board, City Council, and Board of County Commissioners as to impacts on greenways and open space.
- Newsletter Committee - writes and edits the quarterly DOST Newsletter.
- Trails Committee - makes recommendations to PFM and Planning on trail and greenways development priorities, new trail and greenways routes, and proposals prepared by design consultants.

These working committees all meet separately, then report their recommendations to the full DOST for Commission votes on recommendations to the Council, the Board, and the appropriate staff. In addition to these committees, DOST also receives input from Commission members who serve as liaisons to the New Hope Advisory Committee, the Recreation Advisory Committee, and the Planning Commission.

DOST Commission members have also played an active role in greenways, trails, and open space issues. Members lobbied actively for bond referenda in 1990 and 1996 and worked for passage of the Resource Protection zoning ordinances in 1999. DOST hosted the statewide NC Greenways Conference in 1991 and organized and funded a Community Forum on conservation in 1997 entitled "Common Ground for the Common Good." Both meetings brought together state and local elected officials with citizens and prominent professionals.

In late 2000, DOST supported a resolution from its Bicycle Committee that it be spun off from the original group and help to compose a new Bicycle and Pedestrian Advisory Commission. That project will be on-going in 2001.

Some DOST members have served from the merger of the two commissions into the single commission's current form. Others are new to the trails, greenways, and open space program. But all the members of DOST have been committed through the years to working toward an outstanding trails and greenways system for Durham and toward preserving open space for environmental and recreational needs.



## Other Adopted Plans Affecting Trails and Greenways

### **Durham 2005 Comprehensive Plan (1986)**

This plan sets as a transportation goal the development of “urban trails and greenways and other facilities to encourage pedestrian and bicycle travel.” It recommends the adoption of a community-wide plan for trails and greenways and an annual allocation of funding for trail construction based on that plan’s priorities.

### **Durham County Open Space Plan (1989)**



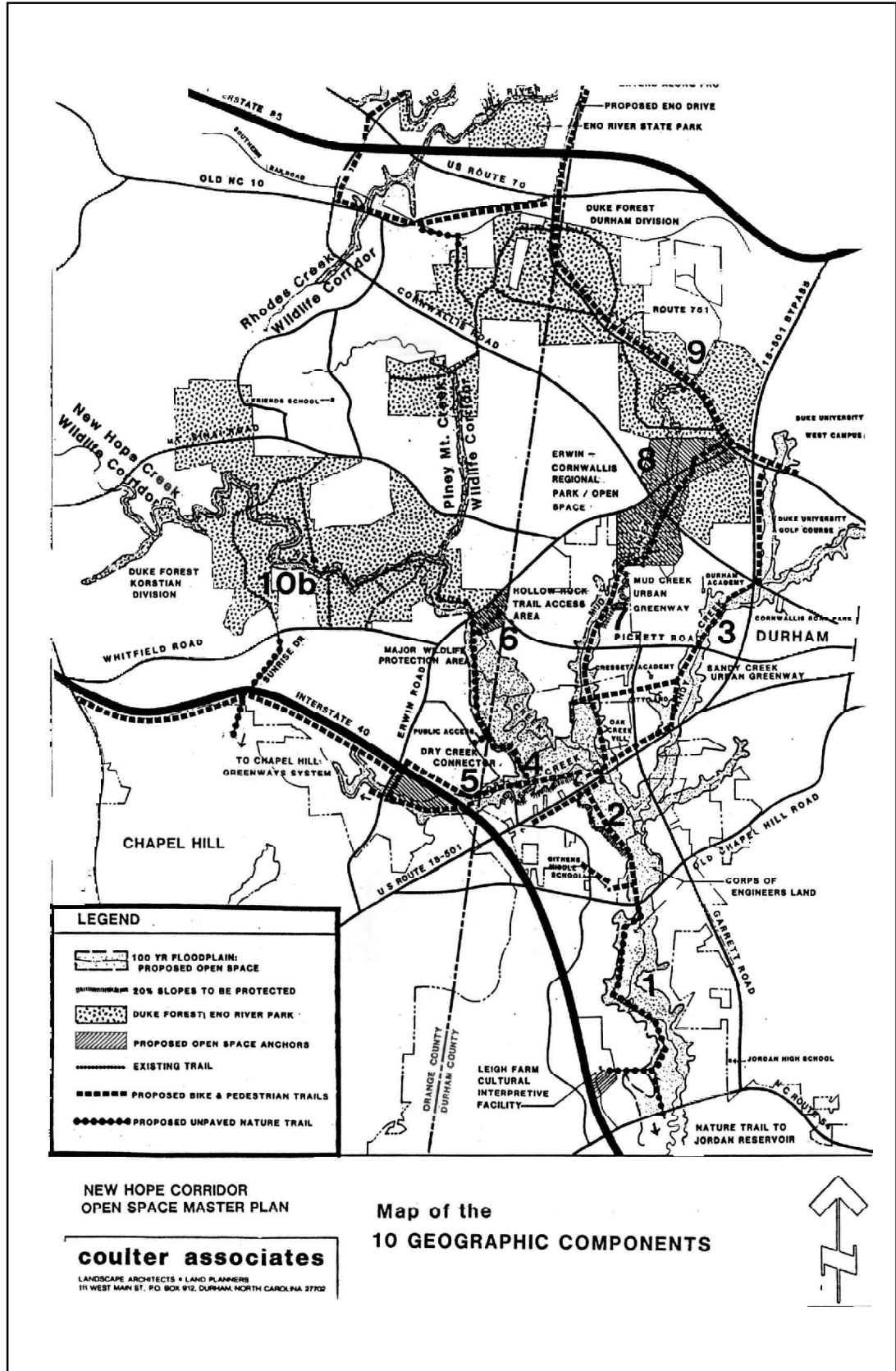
The essential impetus for this plan was protection of the County’s natural resources: farmlands, rivers and streams, and natural heritage sites. However, the plan recommends that the County recognize the DUTAG greenways and trails as part of its own open space plan to encourage linkage between the City and County natural spaces. It also recognizes that public access to protected open space lands would be appropriate in many cases; it suggests that the Board of County Commissioners consider “types of uses which are desirable including parks, walking trails and other passive activities which do not encroach on private property rights or endanger the fragile ecological balance that this Plan is designed to protect.”

### **New Hope Corridor Open Space Master Plan (1991-2)**

The New Hope Plan was a joint project of the City of Durham, Durham County, the Town of Chapel Hill, and Orange County, since the New Hope Creek Corridor as it runs from Orange County into Jordan Lake passes through all those jurisdictions. This plan encompasses land use and environmental protection issues for the New Hope Creek and several of its tributaries. However, a part of the plan also discusses potential recreational use of the planned corridor; as it says, the corridor “offers unlimited opportunity for walking [and] observing birds and other wildlife...The most active recreational use of the corridor will be trail use.”

It recommends, based on the corridor’s environmental sensitivity, a network of carefully designed and located natural surface hiking trails in the corridor, with a few “reasonably wide trails for more active use.” The plan stresses that all trail development in the corridor area must be done with an awareness of “environmental and topographical features and the critical nature of floodplains.” It follows with suggested locations for those trails for more and less active use, access points for trails, and general criteria for any recreation development in the corridor area.





Overall New Hope Corridor Plan, showing proposed trail routes

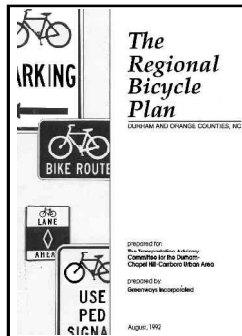
### **American Tobacco Trail Master Plan (1992)**

This plan was initially prepared for the Triangle Rails-to-Trails Conservancy to determine the feasibility of the rail-to-trail conversion project of a railbanked 30-mile rail line running from Durham to the town of Bonsal in Wake County. It was later adopted into the DUTAG Master Plan. The American Tobacco Trail (ATT), as proposed in the plan, is a 23-mile multi-use trail that runs from downtown Durham next to the Durham Bulls Athletic Park to New Hill Road in western Wake County. Amendments to the DUTAG/ATT plan were adopted in 1997 to help in identifying and securing alternatives to the planned route of the ATT for sections that had been developed before the rail corridor was purchased by the NCDOT.

### **Land Use and Transportation in Durham (1992)**

Created as a step in working toward a new comprehensive plan, this document sets a goal “to motivate people in Durham to think about our community in a new way.” It is not specifically a plan for trails and greenways, but it does strongly emphasize biking and walking as desirable transportation modes and encourages the increased construction of sidewalks and on-road bicycle facilities as well as more off-road trails, both by City efforts and by private developers.

### **Regional Bicycle Plan (1992)**



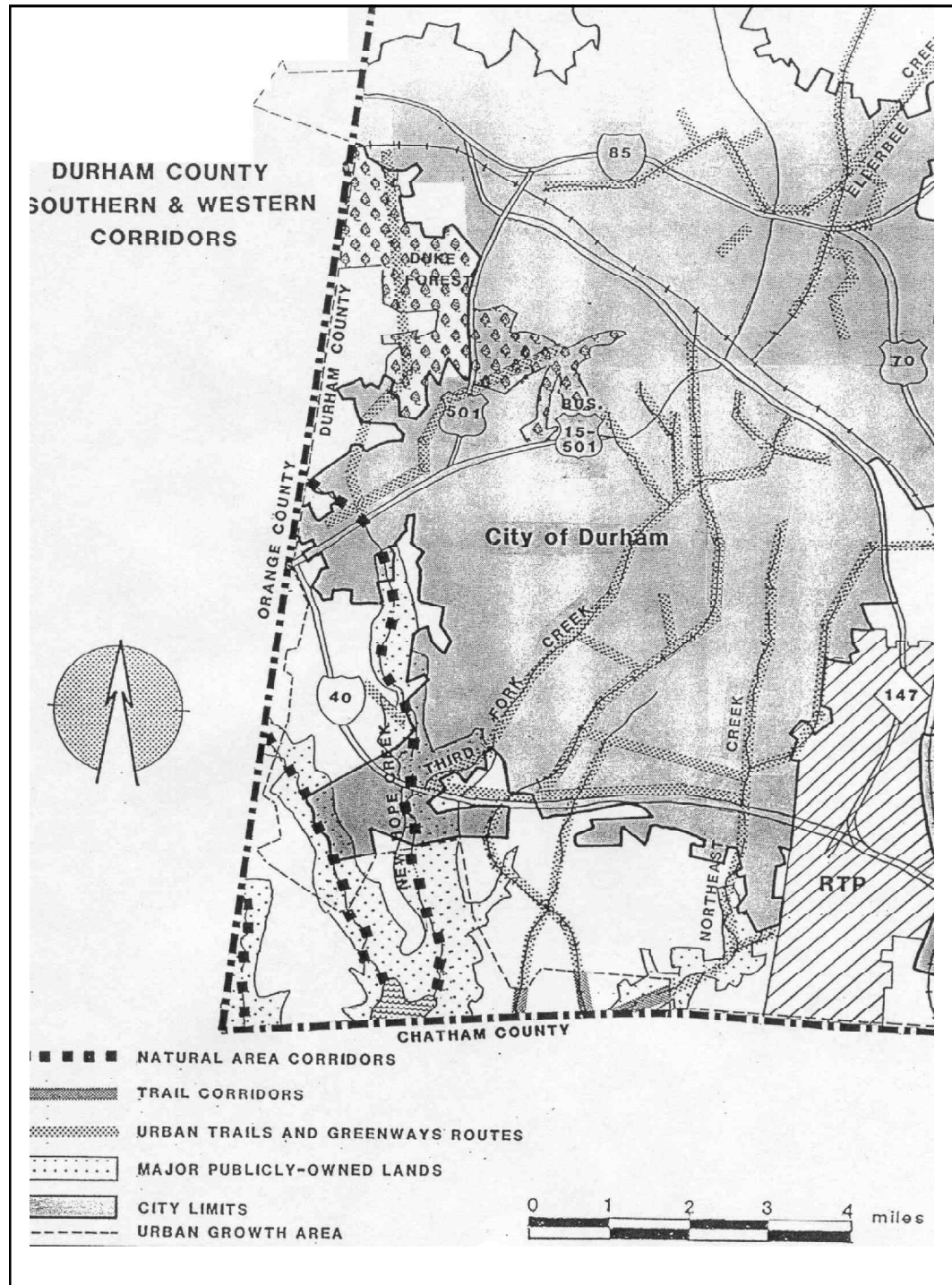
This plan was prepared by Greenways, Inc. for the Transportation Advisory Committee of the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization. It states as its primary goal “to increase the number of cyclists in the region and enhance their safety.” While this plan was never formally adopted by the Durham City Council or the Board of County Commissioners, it—with the DUTAG Bicycle Routes Master Plan Map—has served to guide bicycle projects included in transportation planning.

### **Durham County Open Space Corridor System (1993)**

Intended as a next step from the County’s open space plan of 1989, this plan both contains the policies to develop a “County-wide system of open space corridors and trails focused primarily on rivers and streams” and identifies specific corridors as potential trail routes. The routes selected—the Eno, Flat, and Little rivers and New Hope and Lick creeks—are envisioned as natural area corridors to be protected from development and are seen as “important links between trails identified in the...DUTAG Master Plan, and major open space and recreation destination points in the County that are outside of DUTAG’s planning boundaries.” Specific plans for each of the corridors without plans, including trails as appropriate, are recommended as the next step in the process. This plan also includes the results of a survey of Durham residents taken in 1990 to learn more about their opinions on open space and recreation issues.

### **Durham 2020 Comprehensive Plan (1995)**

Under the heading of “Goals,” this plan states that Durham “will provide a network of greenways, sidewalks, and bike paths throughout the community.” The basic model of community development that it encourages—growth corridors and compact urban neighborhoods—is described often as “pedestrian-oriented,” and the plan recom-



*County Open Space Corridor Plan, southwest Durham County*

mends public expenditures for greenways, walking paths, and other pedestrian-friendly amenities. Bicycling is seen as a viable alternative to many automobile trips.

### **Parks and Recreation Master Plan (2000)**

Since trails and greenways in Durham are operated as a park facility, the vision of this plan is crucial for development of the system. It is discussed at some length in Section IV.

Several plans in the next few years will have an impact on the City's trails and greenways system. The process is well underway in 2000 for fleshing out the County's general open space and corridor plan with more specific area plans; the Little River area will be the next plan completed. With the acquisition in 2000 of the land slated for the Little River Regional Park, Durham County will become more involved in creating trails than it has historically been. Also in 2001, the Bicycle Committee (or a new Bicycle and Pedestrian Advisory Commission) will begin the process of drafting a Bicycle Plan for Durham that will update the DUTAG Bicycle Routes Map and the DCHC MPO Regional Bicycle Plan. This history of adopted plans over the past fourteen years and the upcoming plans in the works show a strong commitment to trails and greenways in Durham by elected officials, citizen advisory boards, and planning staff, reflecting the wishes of the citizens of Durham.



*Councilman Clement (right) and Commissioner Heron (second from right) with citizens on Bike to Work day in 1997*

