



Eastern Durham Open Space Plan

Durham County Board of Commissioners, April 9, 2007
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Cover Photos

Leatherwood (*Dirca palustris*)

Little Lick Creek, Eastern Durham County

Osprey (*Pandion haliaetus*)

Tobacco field and barn, Eastern Durham County

Adoption

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I. Introduction

The term “open space” has different meanings for different people. For the purposes of this Plan, covering an area largely rural and suburban in character, open space includes areas with cultural and natural resource values, farmland, parkland, and greenway trails. These undeveloped areas enhance the quality of life by protecting water quality, providing residents with places to recreate for wellbeing and fitness, and protecting the biological diversity of irreplaceable landscapes.

Lick, Little Lick, and Panther Creeks are tributaries of Falls Lake, a drinking water supply for the City of Raleigh. These tributaries drain almost 55 square miles in eastern Durham County in the Upper Neuse River Basin. In general, these watersheds are bounded to the north by East Geer Street and to the south by Angier Avenue and Leesville and Carpenter Pond Roads. The headwaters of these creeks drain a portion of the City of Durham comprised primarily of older urban and newer suburban developments as well as rural landscapes farther to the east (See Map 1, Regional Context and Map 2, Eastern Durham Drainage Basins).

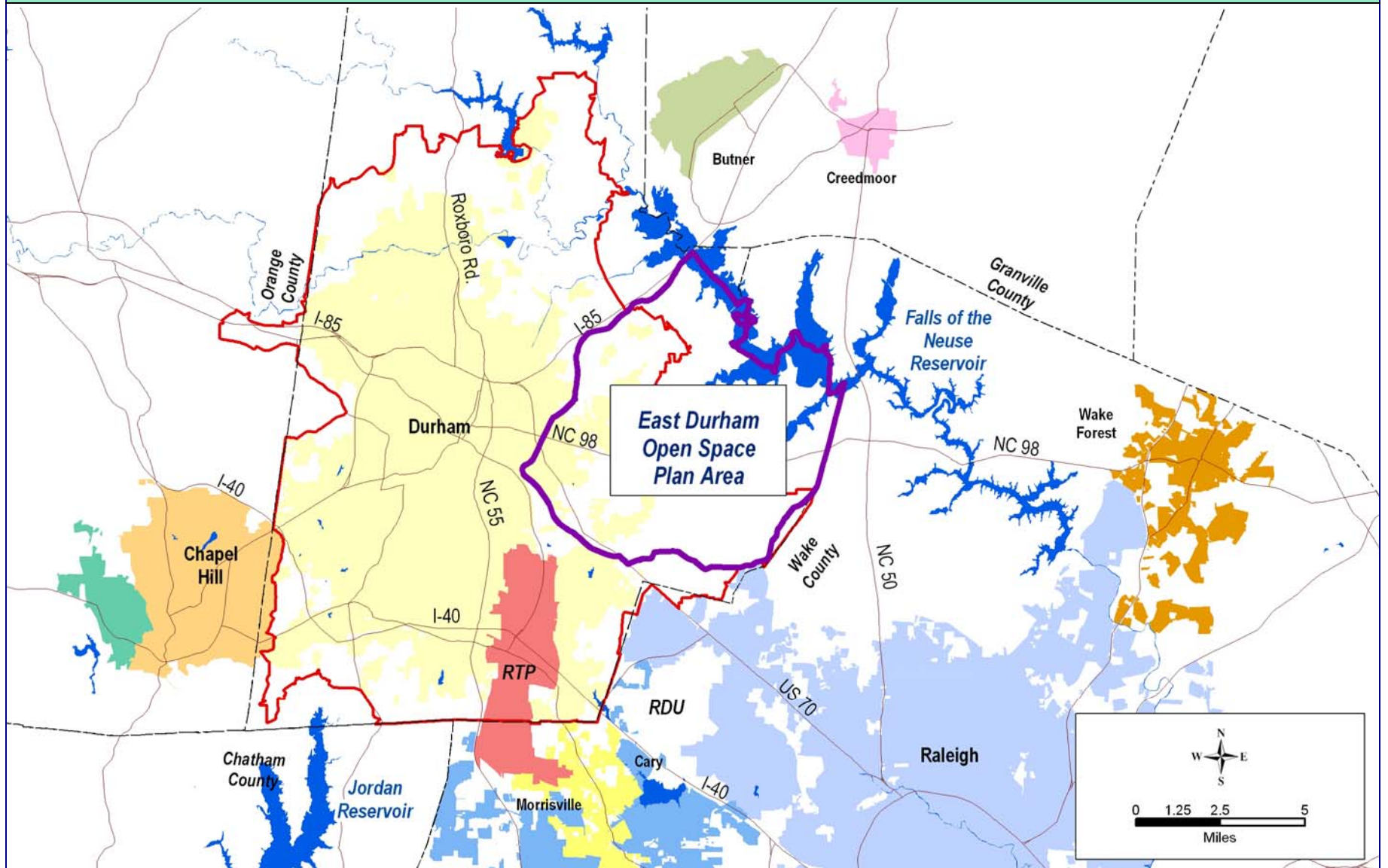
Historically, the watersheds of Lick, Little Lick, and Panther Creeks were primarily rural with a number of large cattle farms as well as tobacco and horse farms. Over the past ten years, the Little Lick Creek watershed area has experienced a dramatic increase in suburban development. The Lick and Panther Creek watersheds are also experiencing pressure for new suburban development. Durham needs an effective plan of action to protect valuable open space resources in these areas.

The Benefits of Open Space

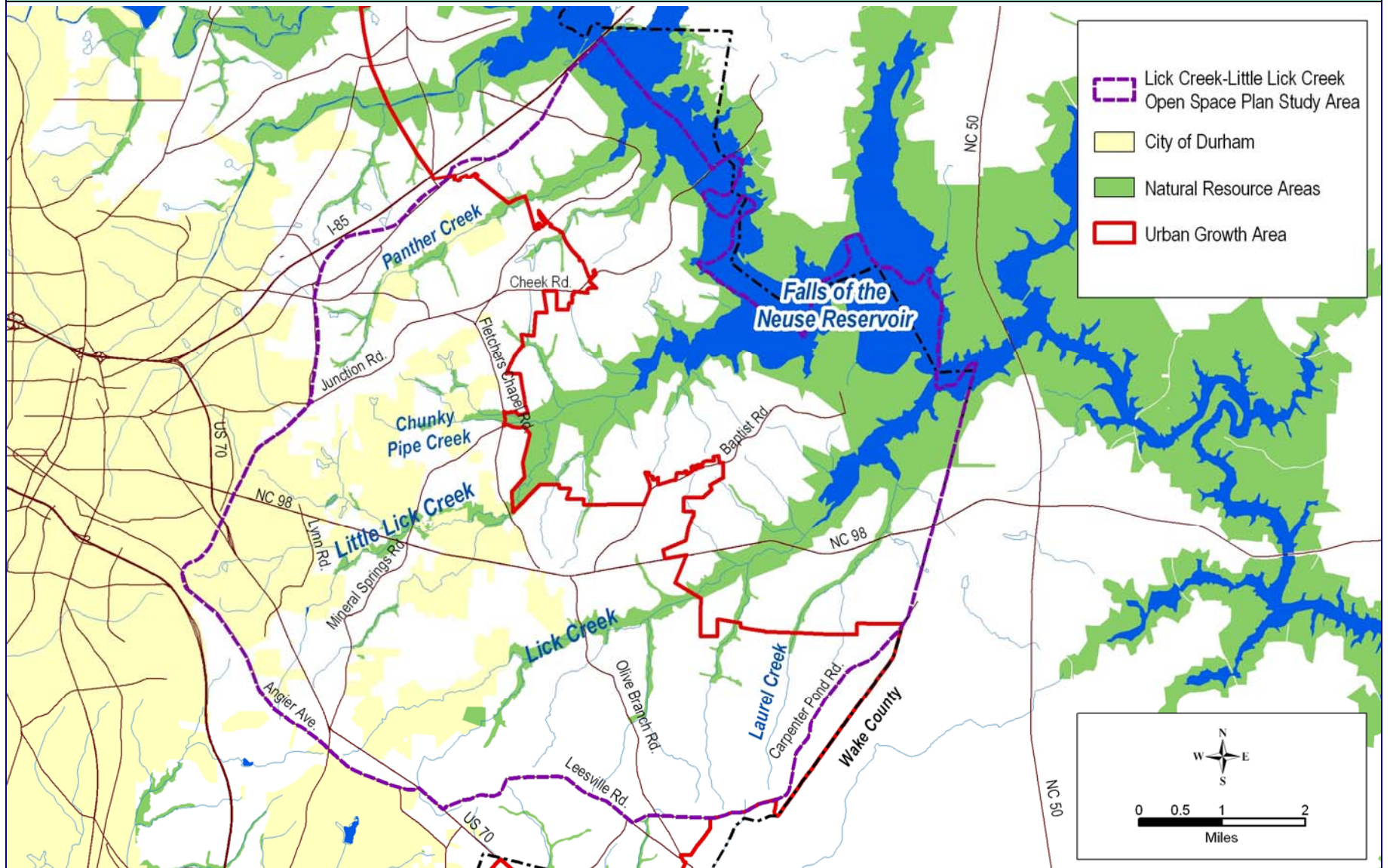
Open space provides a variety of benefits to the citizens of Durham and the Triangle Region.

1. Open space improves the overall quality of life of a community by maintaining a healthier environment and cleaner water as well as by providing recreational opportunities.

Map 1, Regional Context



Map 2, Eastern Durham Drainage Basins



2. In an age of shortened leisure time, there is an increasing demand for recreational opportunities that are close to home and work. An interconnected open space network of greenway trails, natural areas, as well as community and neighborhood parks is crucial to meeting the public's demand for these opportunities.
3. Open space, especially wetlands and wooded buffers located adjacent to waterways, filters runoff and associated pollutants.
4. Open space protects the rural character and landscapes of a region.
5. Open space includes not only natural resources but resources that exemplify the heritage of our region. These cultural resources can include historic home sites, churches, cemeteries, Native American sites, Civil War sites, and old mills.
6. Preservation of open space is an important way to maintain significant habitat for wildlife.
7. As traffic conditions and air pollution continue to deteriorate, encouraging alternative modes of transportation has become imperative. Multiple use trails within greenways connecting neighborhoods to schools, work places and shopping centers provide another transportation option for the community.
8. The preservation of open space provides educational opportunities in a variety of fields of study including botany, zoology, geography, geology, and history.
9. Preservation of floodplains and other flood prone areas reduces the potential of property damage as a result of large amounts of stormwater runoff.

II. Existing Conditions

A. Water Quality

Non-Point Sources of Pollution

- Construction activities
- Existing impervious surfaces such as roads, parking lots, and rooftops
- Failing septic systems
- Agriculture
- Clear-cut timber harvesting

Point Sources of Pollution

- Municipal wastewater treatment plants
- Industrial wastewater treatment plants
- Small package wastewater treatment plants

Human activities can adversely affect the quality of surface waters such as streams, rivers, and lakes if the sources of pollution are not managed properly. Pollutants that enter our waters are categorized as point sources and non-point sources. Point sources of pollution are directly discharged to surface waters through a pipe. Non-point sources result from a broad range of land use activities and are transported to surface waters by rainfall and snowmelt. Types of non-point pollution include sediment, nutrients, fecal coliform bacteria, heavy metals, oil, and grease.

The North Carolina Division of Water Quality (DWQ) has assigned all surface waters a classification that defines the best uses to be protected within these waters (for example swimming, fishing, drinking water supply). The classification of surface waters is one tool that state and federal agencies use to manage and protect surface waters in North Carolina. Classifications are designed to protect water quality, fish and wildlife habitat, the free flowing nature of a stream or river, or other important characteristics.

A stream, river, or lake may have several classifications applied to the same area. Lick, Little Lick, and Panther Creeks are classified as Water Supply IV (WS IV) and Nutrient Sensitive Waters (NSW). Surface waters protected as sources of potable water in moderately to highly developed watersheds are classified as WS IV. The NSW classification is a supplemental classification intended for waters that need additional nutrient management as a result of excessive vegetation growth. Management strategies to control point and non-point sources of nutrients are required in these drainage areas.

The Falls Lake also has a WS IV classification. In addition, areas close to the lake have a Critical Area designation. Critical Areas include the area adjacent to a water supply intake or reservoir where risk associated with pollution is greater than from the remaining portions of the watershed.

The DWQ monitors a number of chemical, physical, and biological parameters to determine how well a particular stream or lake supports its uses and then rates the surface water as “supporting” or “impaired”. Little Lick Creek (7.8 miles long) and Lick Creek (7.2 miles long) from their source to Falls Lake are rated as “impaired” because the streams are not sufficiently supporting aquatic life. In addition, Little Lick Creek has consistently had problems with low dissolved oxygen levels. The DWQ has not begun monitoring Panther Creek.

The City of Durham Storm Water Services Division has been intensively monitoring Little Lick Creek since 2000, and the data support the DWQ rating of “impaired” for aquatic life. The Division began monitoring Lick and Panther Creeks in 2004 (DENR, 2002), and preliminary results indicate relatively low biological diversity in both of these creeks. Durham Storm Water Services will be working with the DWQ to develop appropriate benthic macroinvertebrate criteria for Triassic Basin streams since the general benthic criteria for the Piedmont are probably not appropriate within this particular geologic region.

Currently, there are no discharges from wastewater treatment plants into Lick, Little Lick, and Panther Creeks. The City previously operated a wastewater treatment plant on Little Lick Creek, but that facility was converted in 1994 to a pump station to pump wastewater out of the basin

Benthic Macroinvertebrate Monitoring

The condition of aquatic life is measured by the diversity of aquatic organisms or benthic macro-invertebrates that live in and on the bottom of streams. These aquatic organisms are sensitive to subtle changes in water quality and, as a result, are reliable monitoring tools. The types and diversity of aquatic organisms present in a stream can provide important information on the overall health of a stream.

According to Durham County Environmental Health records, there are 439 discharging sand filter systems that may require permits in the Little Lick watershed. The DWQ has been inspecting these systems and issuing permits, requiring homeowners to install chlorinators or other means of treating effluent. So far, permits have only been issued for 56 systems in this watershed. Preliminary results indicate that discharging sand filter systems may also be a significant source of pollutants in Panther Creek and much less of a problem in Lick Creek.

The State has been issuing permits for wastewater collection systems since sanitary sewer overflows from the city-maintained portion of these systems are considered to be point source discharges. From 2001-2004 there have been 12 sanitary sewer overflows within the Little Lick watershed. The DWQ has targeted Lick and Little Lick Creeks for further intensive study to try and determine more specifically those factors contributing to poor water quality. Little Lick Creek has also been targeted by the state’s Ecosystem Enhancement Program (EEP) for an additional watershed study to identify strategies to improve water quality.

B. Little Lick Creek Local Watershed Plan

The Upper Neuse Basin Association, Center for Watershed Protection, Durham City Storm Water Services, and Durham Planning Department are in the process of developing a Local Watershed Plan for Little Lick Creek. Support for this effort comes from the State’s EEP, the DWQ, and the U.S. Geological Survey. The objectives of the Little Lick Creek Local Watershed Plan are to:

10. Evaluate current watershed conditions.
11. Analyze possible causes of stream impairment.
12. Predict future water quality degradation in the watershed.
13. Identify management strategies for restoring water quality and preventing future degradation.
14. Conduct additional water quality monitoring to address gaps in data.
15. Assist stakeholders involved in the process to implement the plan.

C. Clean Water Management Trust Fund

The Durham County Soil and Water Conservation District has applied to the state's Clean Water Management Trust Fund (CWMTF) for a grant to restore approximately 1,400 linear feet of Lick Creek immediately downstream of Olive Branch Road. To date, the CWMTF has approved funding for \$97,000 that will be used for the design of this project. The remaining \$292,500 of the total requested in the application for construction and monitoring will be applied for at a later date.

This restoration project is located at a DWQ benthic macro-invertebrate sampling site where impacts from sediment have been a concern since 1995. Vertical stream banks are collapsing into the stream channel contributing large amounts of sediment to Falls Lake. The watershed in the immediate project area is primarily forested and also contains relatively small agricultural fields and subdivisions. Upstream of the project, the watershed is more developed and is currently experiencing development activity.

A primary goal of this project involves stabilizing the eroding channel using only natural materials and re-establishing a forested buffer adjacent to the stream. This effort provides a start for the restoration of water quality in Lick Creek that will ultimately require the implementation of a number of new practices in the watershed. In addition, the restoration site provides an excellent opportunity to educate landowners, local leaders, and other agencies as well as promote complimentary sediment control measures in the watershed.

D. Geology, Soils, and Topography

The entire watersheds of Lick, Little Lick, and Panther Creeks are found within the Triassic Basin. Formed approximately 200 million years ago, the Triassic Basin is comprised of primarily sedimentary rocks such as shales, sandstones, mudstones, and siltstones. The soils have low permeability inhibiting infiltration and promoting excessive surface runoff during rainstorms. Triassic soils are especially subject to erosion; rain water washes small soil particles into the stream, causing problems for aquatic plants and animals. Diabase igneous intrusions are found within the sedimentary soils in the area. These intrusions are more

resistant to erosion than Triassic soils providing a source of rock that would otherwise be absent in streams.

With easily eroding soils, the elevation and slopes are generally less than surrounding areas. Topography is gently rolling and stream valleys that cross the region are generally broad and flat. These broad floodplains indicative of the Triassic Basin are created by the migration of streams over millions of years (USEPA, 2002).

E. Wildlife Habitat and Natural Heritage

Falls of the Neuse Lake

The US Army Corps of Engineers dammed the Neuse River in the early 1970s to create the Falls of the Neuse Lake. The lake, covering about 12,400 acres, and the open space surrounding it, provides benefits to Triangle Region residents, including flood control, water supply, water quality, recreation and wildlife habitat.

Prior to the damming of the Neuse River in 1983, Lick, Little Lick, and Panther Creeks fed directly into the upper reaches of this river. Since that time, these creeks empty into Falls Lake, a body of water surrounded by over 5,000 acres of land owned by the Corps of Engineers. The Corps of Engineers lands are leased to the State of North Carolina and managed by the NC Wildlife Resources Commission as game lands. The NC Division of Parks and Recreation also manages a portion of the land for the Rolling View State Recreation Area.

Bottomland hardwood forests along the lower reaches of these creeks still provide refuge for at least some species of the forest interior. Among the notable bird species in these lower reaches are Bald Eagles (*Haliaeetus leucocephalus*) and Osprey (*Pandion haliaetus*). Double-crested Cormorants (*Phalacrocorax auritus*) have established nesting colonies along the lake shore and continue to be successful. In addition, the continuity of wildlife habitat around the edge of Falls Lake provides a means for the passage of terrestrial wildlife between the upper and lower portions of the Neuse River Basin. Waterfowl habitat is provided by impoundments on the headwaters of Little Lick Creek south of NC 98 and west of Sherron Road and on Lick Creek down stream from Southview Road and above NC 98. These impoundments were constructed as mitigation for the loss of waterfowl habitat resulting from the creation of Falls Lake.

The *Durham County Inventory of Important Natural Areas, Plants, and Wildlife* identifies 34 sites within nine river and creek corridors in Durham County including seven sites within the planning area, which are listed in Table 1 and shown on Map 3. These Inventory sites provide habitat for a high diversity of plant and animal species, support populations of rare plants and animals, or serve as critical corridors for

Interior and Edge Species

Interior species require large areas of forested land with minimal disturbance from roads, power lines, and subdivisions. Box turtles, barred owls, scarlet tanagers, wild turkeys, red-shouldered hawks, and bobcats are all examples of forest interior species.

Edge species of wildlife can thrive in areas that are a combination of smaller areas of forested land interspersed with pastures, yards, roads, and sewer easements. Raccoons, opossums, cardinals, blue jays, red-tailed hawks, and deer are all considered edge species.

Source: *Little River Corridor Open Space Plan*, 2001.

Table 1, Eastern Durham Inventory Sites

Sites	Zoological Significance	Botanical Significance
Falls Lake/Neuse River Corridor		
Falls Lake Shoreline and Tributary Bottomlands		
B2, Falls Lake Shoreline	National	State
B3, Little Lick Creek Bottomlands	National	State
U5, Skypark Upland Forest	County	State
Lick Creek Bottomlands		
LK1, Upper Lick Creek	County	County
LK2, Middle Lick Creek Bottomlands	County	State
LK3, Lower Lick Creek Bottomlands	Regional	State
LK4, Leatherwood Cove	County	State

Note: Source is *Durham County Inventory of Important Natural Areas, Plants, and Wildlife*, Fall 1999.

animal movements. Based on diversity and rarity criteria, sites are ranked as significant at the national, state or regional level. Probably the most valuable remaining wildlife habitat resource for this area is the large area of intact forest, mainly Corps land along the shoreline and the bottomlands along the seven creeks (Panther, Little Lick, Chunky Pipe, Lick, Martin, Rocky, and Laurel).

Most of the headwater areas of the Little Lick Creek drainage have been developed with only narrow stream buffers left intact. The portion of this creek on Corps of Engineers property contains a mature bottomland hardwood forest. When this site was originally surveyed in 1994, Douglass Bittercress (*Cardamine douglassi*), a species state-listed as “significantly rare” as well as Leatherwood (*Dirca palustris*), a species on the North Carolina “watch list” were found. The presence of these species indicated that the site was still intact with a good diversity of plant species.

In contrast to Little Lick Creek, the forests within the watershed of Lick Creek are still relatively intact. They contain stands of bottomland hardwood forests that are among the most mature and diverse in the southeastern portion of Durham County. While the area in public ownership along Falls Lake will remain protected, the headwater areas on private property are subject to development. The most significant species that was found in the lower portion of the Lick Creek bottomlands in 1990 was the Four-toed Salamander (*Hemidactylium scutatum*), a species state-listed as “special concern.” The health and potentially the survival of this population will be affected by development in the area.

In addition to the high diversity of breeding birds recorded along Lick Creek, four species of permanent residents of large woodland tracts were also surveyed. They include Red-Shouldered Hawks (*Buteo lineatus*), Barred Owls (*Strix varia*), Hairy Woodpeckers (*Picoides*

villosus), and Pileated Woodpeckers (*Dryocopus pileatus*). Although historically Lick Creek supported Carolina Darters (*Etheostoma collis*), another animal species state-listed as “special concern”, it is unlikely that this fish could survive within the recently degraded aquatic habitat of Lick Creek.

Middle Lick Creek Bottomlands (96 acres) and Lower Lick Creek Bottomlands (65 acres) are both Registered Natural Heritage Areas on Corps of Engineers property. Both sites contain the rare plants Douglass’ Bittercress as well as Leatherwood. Middle Lick Creek also has colonies of Dissected Cress (*Cardamine dissecta*) and Doll’s Eyes (*Actea pachypoda*), the first being significantly rare in NC and the second regionally rare. Lower Lick Creek Bottomlands has a NC “Watch List” plant, Sweet Shrub (*Calycanthus floridus*), and also good colonies of three species of *Lycopodium* (*flabellum*, *obscurum* and *lucidulum*), also known as Ground Pine or Ground Cedar. The forest within Middle Lick Creek Bottomlands is characterized as young to middle-aged whereas the Lower Lick Creek Bottomlands is more mature with a greater diversity of tree species.

On the east side of Laurel Creek, a former tributary to Lick Creek prior to the impoundment of Falls Lake, is found a natural area referred to as Leatherwood Cove. This site contains Leatherwood as well as Douglass’ Bittercress and Doll’s Eyes. The Yellow Lady’s Slipper (*Cypripedium calceolus*) grows here, one of four known locations in Durham County. The site is also unique for having five species of hickory including Southern Shagbark Hickory (*Carya carolina* var. *septentrionalis*), Mockernut Hickory (*Carya tomentosa*), Pignut Hickory (*Carya glabra*), Northern Shagbark Hickory (*Carya ovata*), and Bitternut Hickory (*Carya cordiformis*). This extensive undisturbed area of 140 acres is on private property and is, therefore, subject to potential development.

F. Farmland Preservation

The Durham County Farmland Protection board administers Voluntary Agricultural Districts (VADs) in order to preserve farmland. (See Map 4, Farmland Preservation). The program was approved by the County Board of Commissioners in 1996 to encourage farmers to keep their land in agriculture. As the county continues to be developed, the importance of maintaining a variety of open spaces including farmland has gained momentum.

To qualify for this program, farmers must have at least 20 acres of land and agree to forego developing their property for 10 years, although farmers can cease to participate at any time. In return, the farmers receive a sign identifying the farm as a VAD as well as the right to a public hearing before land is condemned for landfills or other governmental projects. Most importantly, farmers are exempt from paying assessment fees when water and sewer lines are extended across their lands.

At present, two eastern Durham farms participate in the VAD program. The Chandlers family enrolled their 85-acre cattle farm along Stallings Road and Little Lick Creek into the program. Mr. Bunnie Finch enrolled a 21-acre tract along Cheek Road in the VAD program. This tract of land is farmed primarily for tobacco.

Another tool for farmland preservation is the agricultural present use taxation program. Land that is used for agricultural production can be taxed at a rate for agricultural land even if its actual market value is higher, saving farmers money on property taxes. One of the requirements for participating in the VAD program is that the land has to qualify for agricultural present use taxation. In Durham County, present use tax value is applied to about 8,570 acres in 176 parcels. About 30 percent of the land under present use value is for agriculture, while the remaining is for forestry.

In addition to the Chandler and Finch farms, there are still a number of tobacco farms in this part of Durham County. These farms are scattered throughout eastern Durham County on Sherron, Olive Branch, Holder, Leesville, Cheek, Patterson, and Carpenter Pond Roads. Triple Crown Farm is a large horse farm along Highway 98 and a new dairy farm operation is underway on Kemp Road.

G. Historic and Cultural Resources

Homes and Churches

Historic homes and churches are scattered throughout eastern Durham County, providing a glimpse into the past of former lifestyles and prominent families in this area (See Map 5, Historic Resources and

Definitions

“Significantly Rare” plant species generally only have 1-20 populations remaining in the state and are usually substantially reduced in numbers by habitat destruction. These species are also typically more common somewhere else in their ranges, occurring mostly in habitats that are unusual in North Carolina.

“Watch List” plant species are believed to be rare but do not warrant active monitoring at this time.

“Special Concern” animal species are those species native to North Carolina that are determined by the Wildlife Resources Commission to require monitoring but may still be taken under certain regulations.

Registered Natural Heritage Areas involve the voluntary listing of property with the state’s Natural Heritage Program. The listing is a nonbinding commitment to preserve the ecological integrity of the natural area.

Source: *Durham County Inventory of Important Natural Areas, Plants, and Wildlife*, 1999.

Cemeteries). The most significant of these historic buildings are currently on the Study List for the National Register and are highlighted below. Refer to Appendix A for a comprehensive list of historic properties as well as descriptions of the architectural details of these buildings (where available).

a. Dr. William Norwood Hicks House

This well preserved house was completed just prior to the Civil War (circa 1860) by a physician in the Confederate Army who allegedly manufactured patent medicine at this site. Residential development has since sprouted up all around this historic residence making it barely detectable amongst all of the much more contemporary homes along Mineral Springs Road. (Durham County Historic Inventory, Number 186)

b. Fendol Bevers House

The Fendol Bevers House sits along Leesville Road, formerly a major route between Raleigh and Hillsborough. This circa 1850 structure represents what is now Durham County's most well preserved I-house (two rooms wide and one room deep) with Greek Revival styling. (Durham County Historic Inventory, Number 32)

c. Jones House

Passersby on Carpenter Pond Road cannot miss this intricately ornamented and brightly painted, large, wood-frame house. Constructed by the Jones Family, circa 1900, the ornamentation gives this house a distinctly Victorian appearance. Charley Sandling, a tobacco farmer and miller, added the long wrap-around porch, circa 1920. (Durham County Historic Inventory, Number 215)



Jones House (Photo by Cherri Smith)

d. John Nichols House

The John Nichols House was built circa 1812, making it one of the oldest remaining houses in Durham County. Even more unusual is the fact that this house has remained in John Nichols' family by marriage since that time. (Durham County Historic Inventory, Number 274)

e. Joseph Holloway House

When Joseph Holloway married in the middle 1880's, he built an impressive two-story home on the foundation of an earlier dwelling that had burned. This house is distinguished from the typically less ornate Durham County farmhouses of the same time period by the incorporation of a wealth of Italianate architectural details. (Durham County Historic Inventory, Number 199)

Fish Dam Road

The original Fish Dam Road began as a foot trail in the 1600s and connected an Indian village on the Neuse River and one on the Eno River. Settlers later used the route of this trail to travel by horses, mules,

and wagons between eastern Durham County and Hillsborough in Orange County. This route became known as Fish Dam Road because the Indians living along the Neuse River used the shallow water to make a giant fish trap. A portion of this historic road traverses the study area crossing Redwood Road and Panther Creek and continues in a generally western direction until reaching the Eno River in Hillsborough. Carver Street and US 70 east of Hillsborough are modern roads that follow the route of Fish Dam Road.

Joe Liles, an art instructor at the NC School of Science and Math, has become a local expert on Fish Dam Road. Locating undisturbed remnants of the old road bed in the woods in Durham and Orange Counties has become a popular student project for successive years at this school. As interest has grown regarding the road, the school project became the subject of the 2005 Eno River Association calendar.

Prehistoric Cultures

North Carolina has been inhabited by human beings for over 12,000 years and has experienced several major changes in the cultural traditions of its residents. Most of our knowledge of prehistoric cultures in the Falls Lake area is from archaeological studies performed for the Reservoir and studies required as part of development proposals.

Prehistory is divided into generalized time periods. The first indisputable evidence of human occupation in the Southeastern United States is during the Paleo-Indian period from approximately 10,000 to 8,000 B.C. Although little is known about the life of these people, it is believed that they were highly mobile hunters with a subsistence strategy based on large migratory animals, such as mastodons.

The Archaic period is divided into Early, Middle, and Late Archaic periods. The Early Archaic period, circa 8,000 to 6,000 B.C., is marked by the end of the glacial climate and the extinction of numerous large animals. By the Late Archaic period dating from circa 3,000 to 800 B.C. some groups were living for long periods of time in one location laying the foundation for the establishment of villages in later periods. The Woodland period from 800 B.C. to 1,000 A.D. is characterized by the appearance of farming as well as the development of complex tribal, chiefdom, and other political forms. The last part of the prehistoric period, ca 1000 to 1540, was marked by extensive epidemics among the Native American populations due to increasing Euro-American intrusions.

Evidence of prehistoric cultures can be found throughout the Falls Lake Tributaries study area. Most of the documented sites are scattered and isolated finds from the Archaic period consisting of a chip or piece of stone flaked off during tool manufacture or an isolated arrowhead. One archaeological site at the Little Lick Creek Impoundment is eligible to be on the study list for the National Register of Historic Places. Those sites not eligible for the National Register are still significant for the information they may contain about Durham County's little known earliest inhabitants.

H. Recreation Facilities and Greenways

Parks

The City of Durham owns and manages two community parks within the Lick and Little Lick Creek watersheds (See Map 6, Park and Trail Facilities). C.R. Woods Park is 17 acres and offers play equipment, restrooms, and sport fields to the surrounding community. About 50 acres in size, Twin Lakes Park offers play equipment, restrooms, paths/trails, and picnic shelters.

There is one neighborhood park owned by the City of Durham within the study area. Birchwood Park is a small 5-acre neighborhood park with sport fields and paths/trails.

Currently in the master planning phase of development, Bethesda Park will be about 20 acres in size. Recognizing the need for more recreational facilities in the southeast part of Durham, the Parks and Recreation Department has made the acquisition of 20-40 acres for a community size park a high priority when future bond funds become available. The City of Durham Capital Improvements Program for fiscal year 2006-2007 allocates \$400,000 for land acquisition for a new park in eastern Durham. In addition, land at Falls Lake in this study area may be available for sublease to the City or County from the Corps.

Trails and Greenways

Greenways are typically narrow strips of land along creeks that provide trails for walking and bicycling. The trails and greenways system recommended in the 2001 *Durham Trails and Greenways Master Plan* aims to connect schools, parks, and shopping centers. Land acquisition is ongoing for the Little Lick Creek and Lick Creek Greenway System. In addition to land along the main channel of Little Lick Creek, the planned greenway system consists of Panther Creek Trail, Chunky Pipe Creek Trail, Twin Lakes Trail, and Birchwood Trail (See Map 6, Park Facilities and Trails). The Little Lick Creek Greenway will connect the Birchwood Heights neighborhood and Birchwood Park with Twin Lakes Park and the Mineral Springs Shopping Center. As proposed, the Lick Creek Greenway will begin near US 70 and Sherron Road and will follow the creek northeastward, through the Lick Creek Natural Area, crossing Highway 98 between Southview and Coley Roads. These trails will eventually provide a transportation route and recreational opportunity for southeast and northeast Durham residents.

Funding for the acquisition of greenways has come from the 1990 and 1996 bonds, impact fees, and payment-in-lieu funds. Impact fees are collected by the City of Durham as a one-time charge on new developments for open space, recreation, and transportation. Dedication of land for recreation or payment-in-lieu of dedication is required through Durham's current ordinance regulating the subdivision of land for new residential development. The Durham Open Space and Trails Commission, with the assistance from the City-County Planning Department, proposes plans and policies for adoption by the City

Council and Board of Commissioners about the trails and greenways system.

Rolling View State Recreation Area, situated at the mouth of Lick Creek, is one of a number of recreation areas on Falls Lake managed by the North Carolina Division of Parks and Recreation on land leased from the Corps of Engineers. Rolling View offers 80 campsites with water and electric hookups for RV's and 35 campsites for tents and trailers. Campsites include picnic tables, outdoor grills, and tent pads. In addition, this recreation area provides boat ramps as well as picnic shelters and a sandy swimming beach. Group camping facilities accommodating up to 30 people and a lakeside community building providing a meeting room, kitchen facilities, and restrooms can both be reserved. A privately managed concession near Rolling View offers boat launching, slips and mooring, a snack bar, equipment rental, supplies, and gasoline.

Mountains-to-Sea Trail

As the name implies, the Mountains-to-Sea Trail (MST) is proposed to span the distance between Murphy and Manteo. This effort gets support from the North Carolina Division of Parks and Recreation with implementation primarily through volunteers and local governments.

Although the MST has not been built through Durham County, a proposed 25 mile route along Falls Lake within property owned by the Corps of Engineers has been flagged by the Friends of the Mountains-to-Sea Trail volunteers. The Corps of Engineers is interested in working with Durham to ensure the eventual construction and long term management of this trail. The Mountains-to-the-Sea Trail also follows the Eno River upstream and into Orange County.

I. Land Use

Existing Land Use

The majority of the land in the eastern Durham drainage basins watersheds remains rural and largely undeveloped, with 69 percent of the land uses in recreation and open space, agriculture, and undeveloped categories. Most of these areas are located in the eastern portion of the watersheds and include the Falls Lake game lands as well as areas without sanitary sewer and water utilities. The landscape in the western portion of these watersheds is transitioning toward more suburban/urban uses and constitutes the majority of the remaining residential, commercial and office, and institutional categories (See Table 2, Existing Land Use). The area is seeing greater pressure for new residential development which may affect the character of the area and impact public services and facilities.

Zoning

Zoning is the set of rules and procedures that describe how a property may be used by its owner. Durham has nearly 28 different zoning districts and overlays, each with its own regulations pertaining to

Table 2, Existing Land Use		
Land Use Designation	Existing Development, Acres	Existing Development, Percent
Recreation and Open Space	8,114	24%
Agricultural	11,353	33%
Residential	8,973	26%
Commercial and Office	431	1%
Institutional	794	2%
Industrial	114	--
Undeveloped	4,190	12%
Total	33,969	98%

Note: Source is Durham County tax records.

uses that are allowed, building setbacks and heights, and minimum lot sizes. Additional requirements, or performance standards, are also specified for many individual uses.

The current zoning for the eastern Durham watersheds is shown in Table 3, Current Zoning. The majority of the area is zoned for rural and low density residential uses, accounting for 73 and 19 percent of the total, respectively. The Rural District allows agricultural and the lowest density residential uses. In addition, various community services, such as churches, schools, parks, family care homes, and conference centers are also allowed in this district (See Map 7, Zoning, Generalized). Only a small portion of the area is zoned for commercial, office or industrial uses.

Watershed Protection Zoning Districts

In addition to these zoning classifications, Durham applies zoning rules for the protection of water supplies. Falls Lake is the primary water supply for the City of Raleigh so a portion of the watersheds of Lick, Little Lick, Panther, and Laurel Creeks lie within Watershed Protection Districts. These regulations keep the intensity of development relatively low in order to prevent pollution of the lake (See Map 8, Watershed Protection Districts).

The Falls Lake Critical Area (F/J-A) includes the land generally within one mile of the reservoir and is the most restrictive for development. Non-residential uses are only permitted in this area if the land was zoned for such uses prior to September 1992. Residential lot size must be a minimum of three acres (1 acre in the Urban Growth Area), and the allowed impervious surfaces are restricted.

The Falls Lake Protected Area (F/J-B) includes the land between one and five miles from the reservoir and has fewer restrictions on development. Industrial, commercial, and office uses are permitted in this district, and the minimum lot size for residential development ranges from approximately one half acre to two acres. Although there are limits on impervious surface in this district, the limits are significantly less restrictive. It is important to note that both districts require the preservation of undisturbed vegetated buffers of 50 to 150 feet along each side of intermittent and perennial streams. Preserving vegetated buffers is the most cost-effective way to help protect the quality of our surface waters.

J. The Durham Comprehensive Plan

In early 2005, the City Council and the Board of Commissioners adopted the *Durham Comprehensive Plan*. The Plan guides for the growth and development of the Durham community. It offers a vision, goals, objectives that allow Durham to more effectively manage change over the next two decades. The Plan’s Future Land Use Plan provides a desired pattern of land use for citizens, appointed officials and governing boards. The Plan’s public facility elements set level of service standards and provide a framework for the expansion of public infrastructure to accommodate the expected future population.

Table 3, Current Zoning		
Zoning District	Size, Acres	Percent
Rural Districts (RR, PDRs <2.0 DU/Ac.)	26,140	75%
Low Density Residential Districts (RS-8, RS-10, RS-20, and PDRs 2-4 DU/Ac.)	6,440	19%
Medium Density Residential Districts (RU-5, RU-5(2), RU-M, and PDRs, 4-8 DU/Ac.)	550	2%
High Density Residential Districts (PDRs >8 DU/Ac.)	130	--
Commercial Districts(CN, CG, and CC)	480	1%
Office Districts (OI)	20	--
Industrial Districts (I, IL, and IP)	920	3%
Total	34,680	100%

Note: Source is Durham City-County Planning Department. PDR means Planned Density Residential District.

Tiers and the Urban Growth Area Boundary

The *Durham Comprehensive Plan* establishes a series of five development Tiers (Rural, Suburban, Urban, Compact Neighborhood, and Downtown) to guide growth and development in distinctive parts of the community. According to the Future Land Use Map, the Lick, Little Lick, Panther Creek study area is found entirely within the Rural and Suburban Tiers. The Map also shows extensive natural resource areas in eastern Durham, covering public open space, parks and floodplains.

Established as a tool to manage growth, the Urban Growth Area (UGA) forms the boundary between the Suburban and Rural Tiers. The Rural Tier is established to provide sufficient land for agricultural, rural residential, small-scale commercial and industrial purposes. The Suburban Tier includes all land within the UGA that is not included in the Urban, Compact Neighborhood, or Downtown Tiers. The Suburban Tier ensures sufficient land for residential, commercial, institutional, office, research, and industrial purposes.

Durham's UGA boundary dramatically impacts the character of development found within the Eastern Durham watersheds. The UGA boundary was drawn in eastern Durham County primarily to protect Falls Lake. With the exception of extensions to schools, industries, and properties with existing health hazards from failing wells or septic systems, the urban growth policy prohibits the extension of public water and sanitary sewer utilities outside of the UGA boundary. As a result, those portions of the Lick, Little Lick, Panther, and Laurel Creeks watersheds that are within the UGA will experience relatively dense residential development whereas residential development outside of this boundary will have larger lots of sufficient acreage to locate a well and septic drain field (See Map 9, Tiers and the UGA Boundary).

Proposed Future Land Uses

Almost 60% of the plan area is designated for very low or low density residential uses on the *Durham Comprehensive Plan* Future Land Use Map. (See Table 4, Proposed Future Land Uses.) Only about 12% of the area is designated for low-medium or medium density land uses; those areas are generally in the western portion of the study plan area along US 70 and NC 98. Recreation and open space comprise the majority of the remaining future land use with 23 percent in this category. Commercial, industrial, and institutional land uses, combined, account for 5 percent of the future land use (See Table 4, Proposed Future Land Uses).

Roads

Lick and Little Lick Creeks flow from west to east with the watersheds of both of these creeks bisected by NC 98. According to the 2030 Long Range Transportation Plan, NC 98 will continue to be the major east-west thoroughfare through southeastern Durham. Current north to south thoroughfares consist of Mineral Springs Road and Sherron/Patterson Roads. The *2030 Long Range Transportation Plan* extends Olive Branch Road south to Highway 70 in Wake County and

changes its northern alignment to connect with Baptist Road, providing another north-south thoroughfare.

Construction of the proposed North Durham Parkway is a priority for the City and County with funding provided by the Highway Trust Fund. The southern end of this major north-south thoroughfare will connect with Highway 70 at the Wake County line. This new road will generally follow a northwest alignment, cross I-85 near Glenn Road, and terminate at US 501 just north of Snow Hill Road. As planned, the North Durham Parkway will cross Highway 98 at Mineral Springs Road (FY 2004-2010 Metropolitan Transportation Improvement Program).

Bikeways and Sidewalks

Chapter 8 of the *Durham Comprehensive Plan* emphasizes the need for pedestrian and bicycle movement as well as automobile travel. This Section also provides the basis for the 2006 *Durham Walks Pedestrian Plan* and the 2006 *Durham Comprehensive Bicycle Transportation Plan*. Both of these plans recommend paved shoulders, bike lanes and sidewalks along identified roads in eastern Durham County.

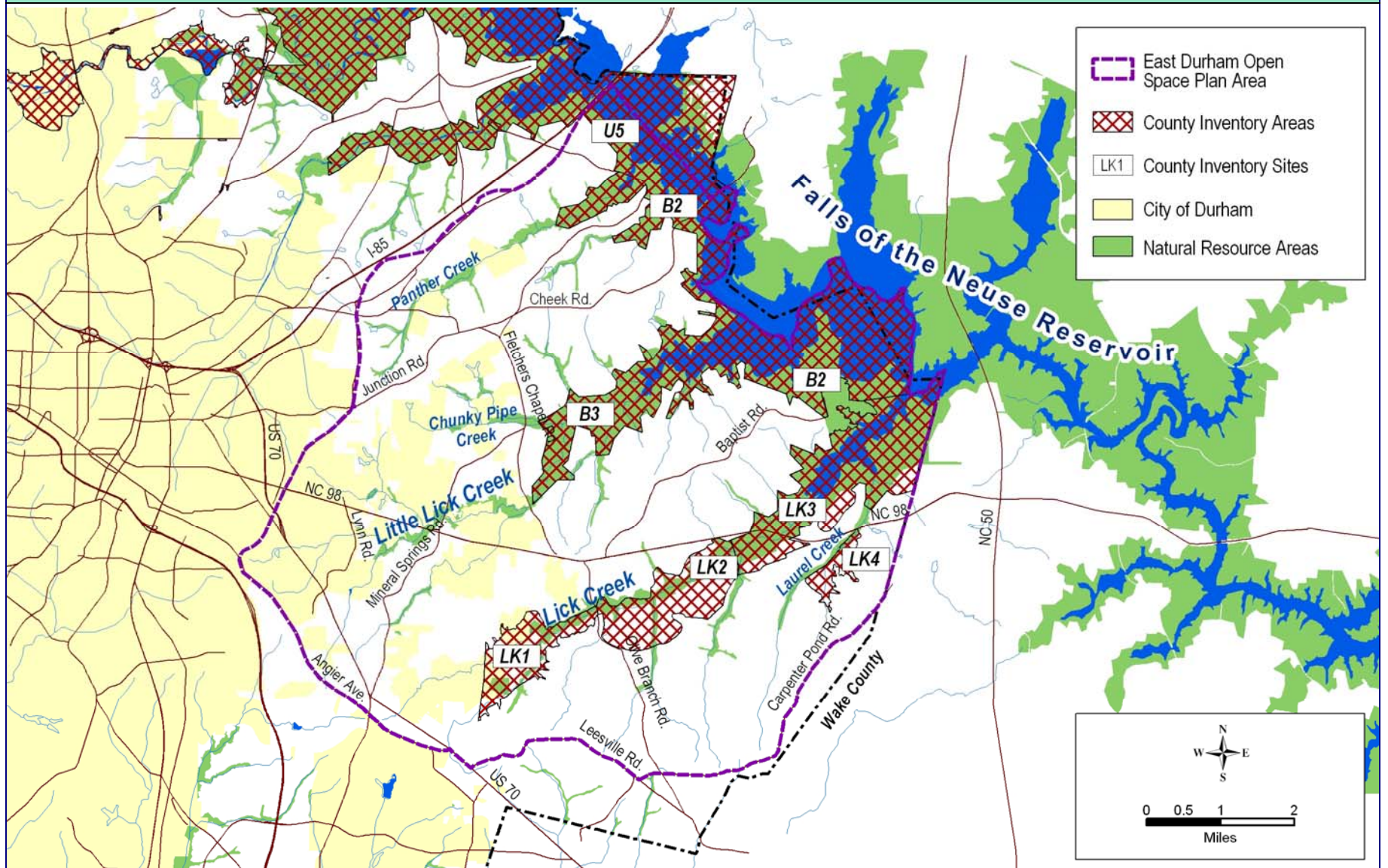
Table 4, Proposed Future Land Uses		
Land Use Designations	Proposed Development, Acres	Proposed Development, Percent
Rural Density Residential (0.5 dwellings units per acre or less)	7,411	21%
Very Low Density Residential (2 dwelling units per acre or less)	8,185	24%
Low Density Residential (4 dwelling units per acre or less)	4,944	14%
Low-Medium Density Residential (4-8 dwelling units per acre)	3,470	10%
Medium Density Residential (6-12 dwelling units per acre)	584	2%
Commercial	631	2%
Office	61	--
Institutional	268	1%
Industrial	843	2%
Recreation and Open Space	8,286	23%
Total	34,683	99%

Note: Source is *Durham Comprehensive Plan*, adopted February 28, 2005.

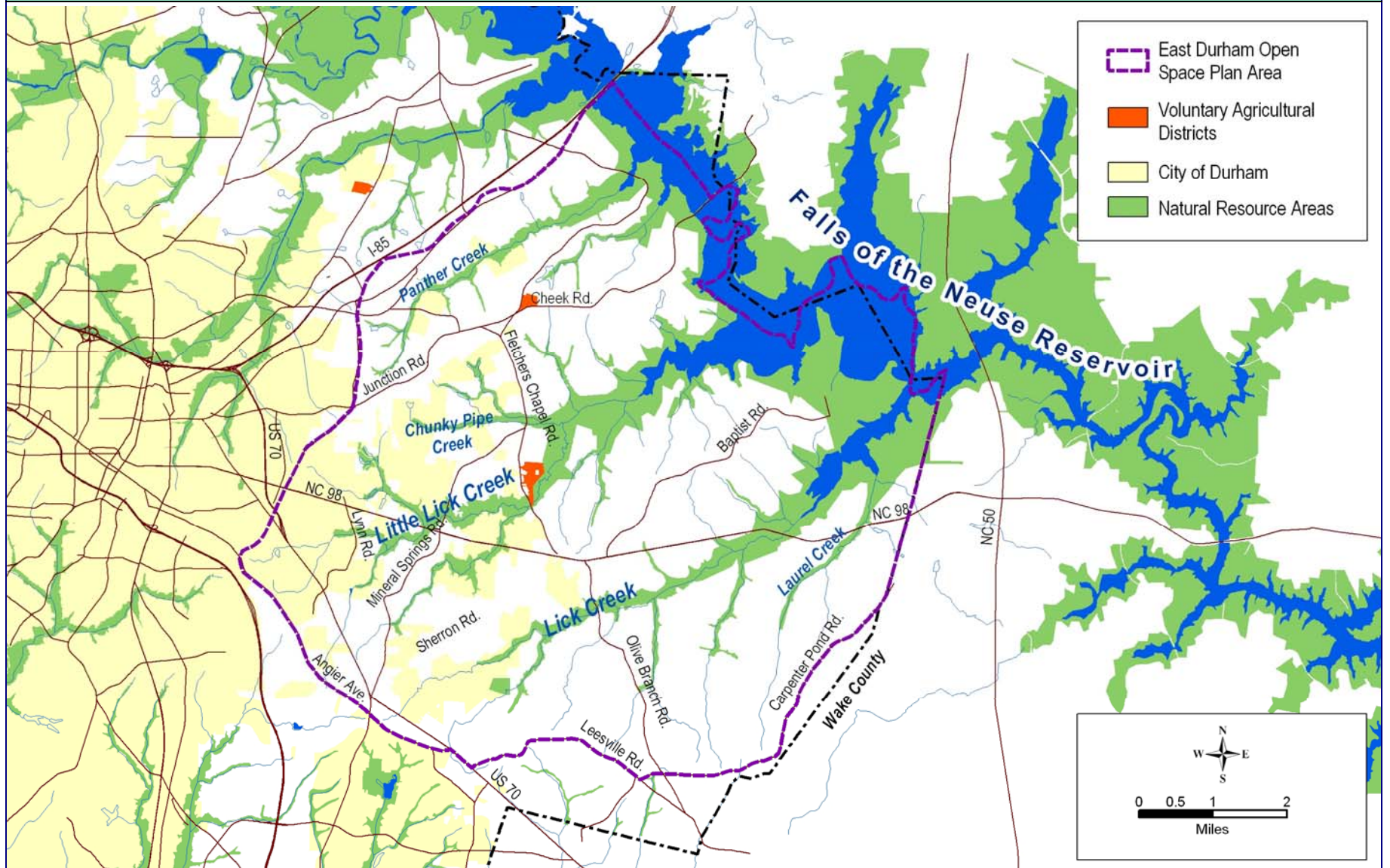
K. Summary of Issues

1. **Urbanization and Rural Character.** The eastern Durham area is experiencing increasing development pressure. Farm fields and forests are being converted to houses, apartments, stores and offices. Residents are concerned about the change in the rural character of the area. Many residents perceive the change as adversely affecting their quality of life.
2. **Water Quality.** New development in eastern Durham will affect water quality. Hard surfaces associated with streets, parking lots and buildings change the character and rate of stormwater runoff. Hard surfaces increase the potential of delivering pollutants to receiving streams, ponds and reservoirs. Required control of stormwater runoff will address much of the impact. The water quality in the area's streams is already compromised and may suffer further deterioration.
3. **Recreation Needs.** New development in eastern Durham will also place greater demands on public services and facilities in the area, including streets, schools, and parks. Recreational needs have been met largely by golf courses, large churches and recreational associations. These private facilities may not be able to meet the demand of significant additional population.
4. **Pedestrian and Trail Connections.** Walking and bicycling have become important for Durham residents as a leisure activity and for commuting. Citizens of eastern Durham County have expressed their desire for more pedestrian and trail facilities in the area. Durham has recognized the importance of pedestrian connections within and between residential neighborhoods and workplaces.
5. **Wildlife Habitat and Movement Corridors.** New development the eastern Durham will likely reduce the natural habitat for wildlife. Measures need to be taken to identify important wildlife habitat and movement corridors and to protect them.
6. **Impact of New Development on Scenic Beauty.** Eastern Durham citizens are concerned about the effect of new development on the visual quality of the area. They expressed concern about the impact on eastern Durham's scenic beauty.

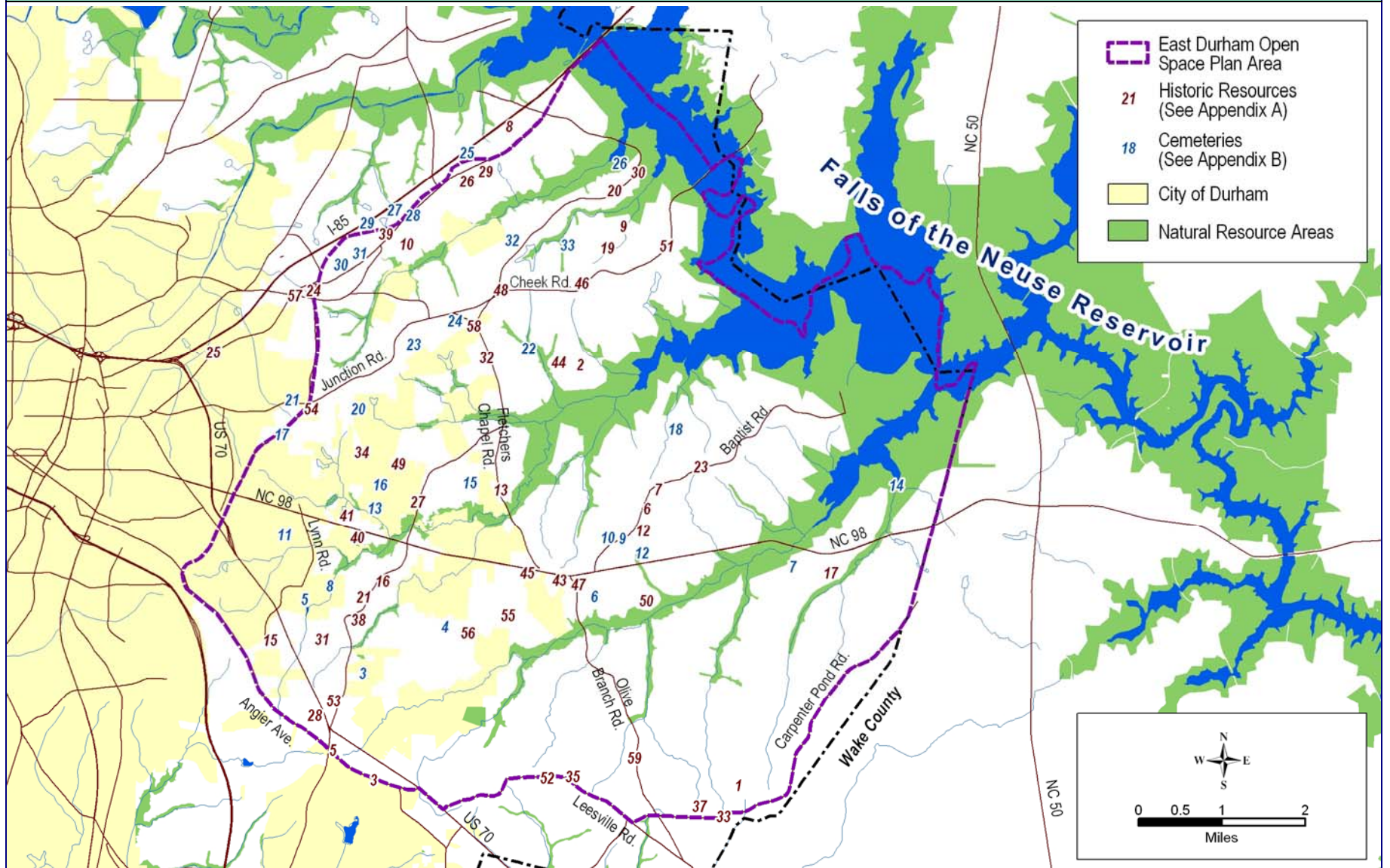
Map 3, Natural Heritage Inventory Sites



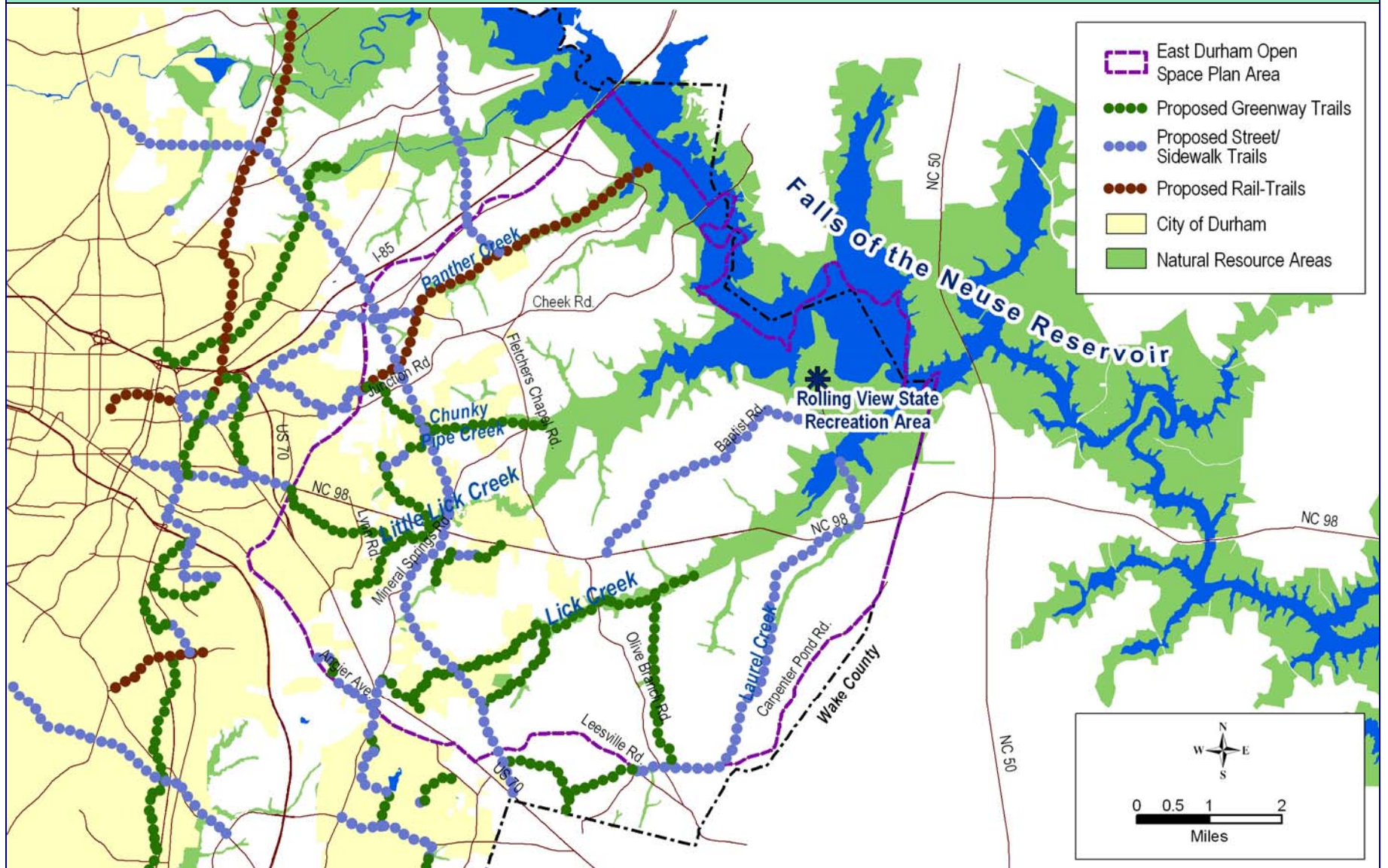
Map 4, Farmland Preservation



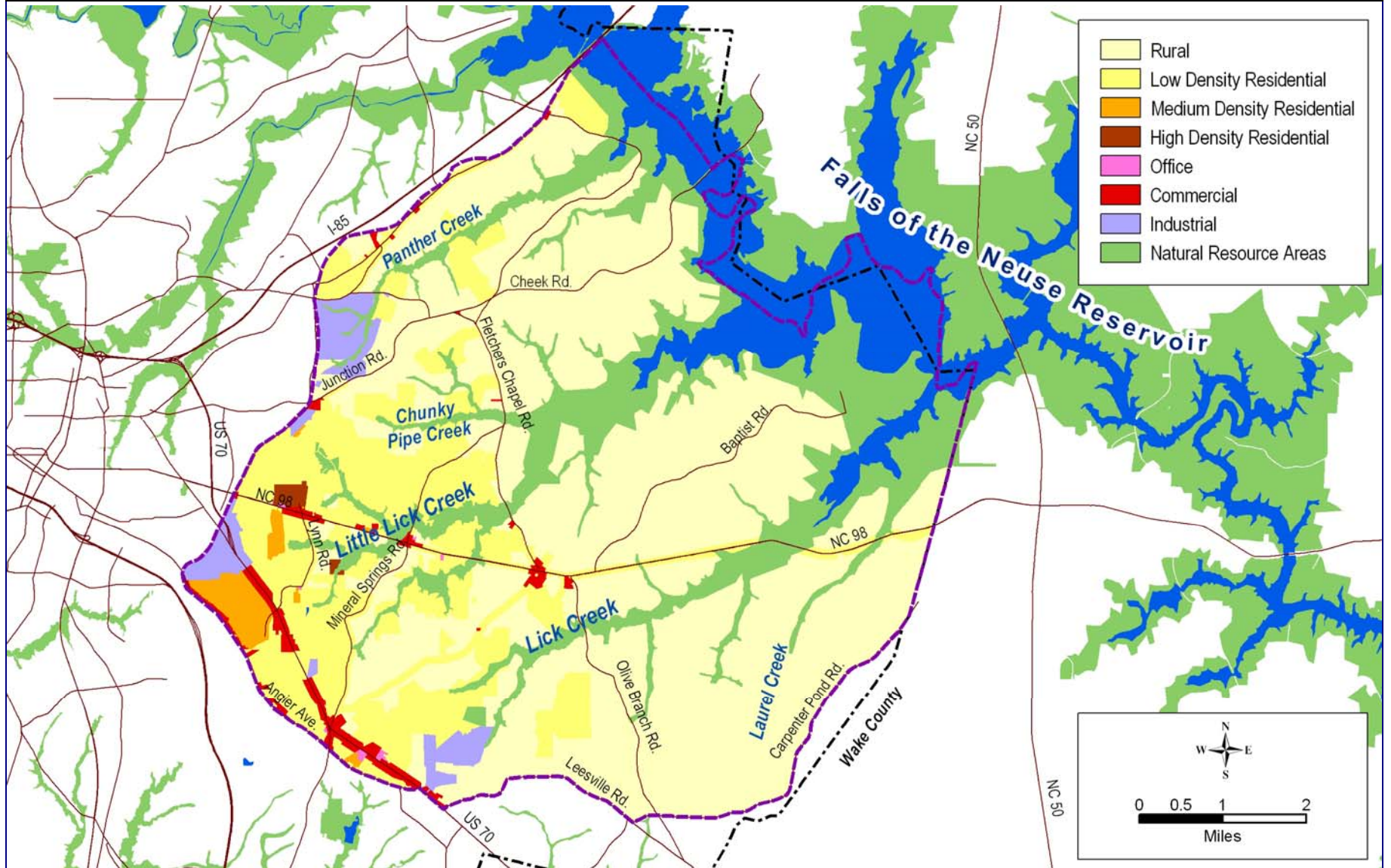
Map 5, Historic Resources and Cemeteries



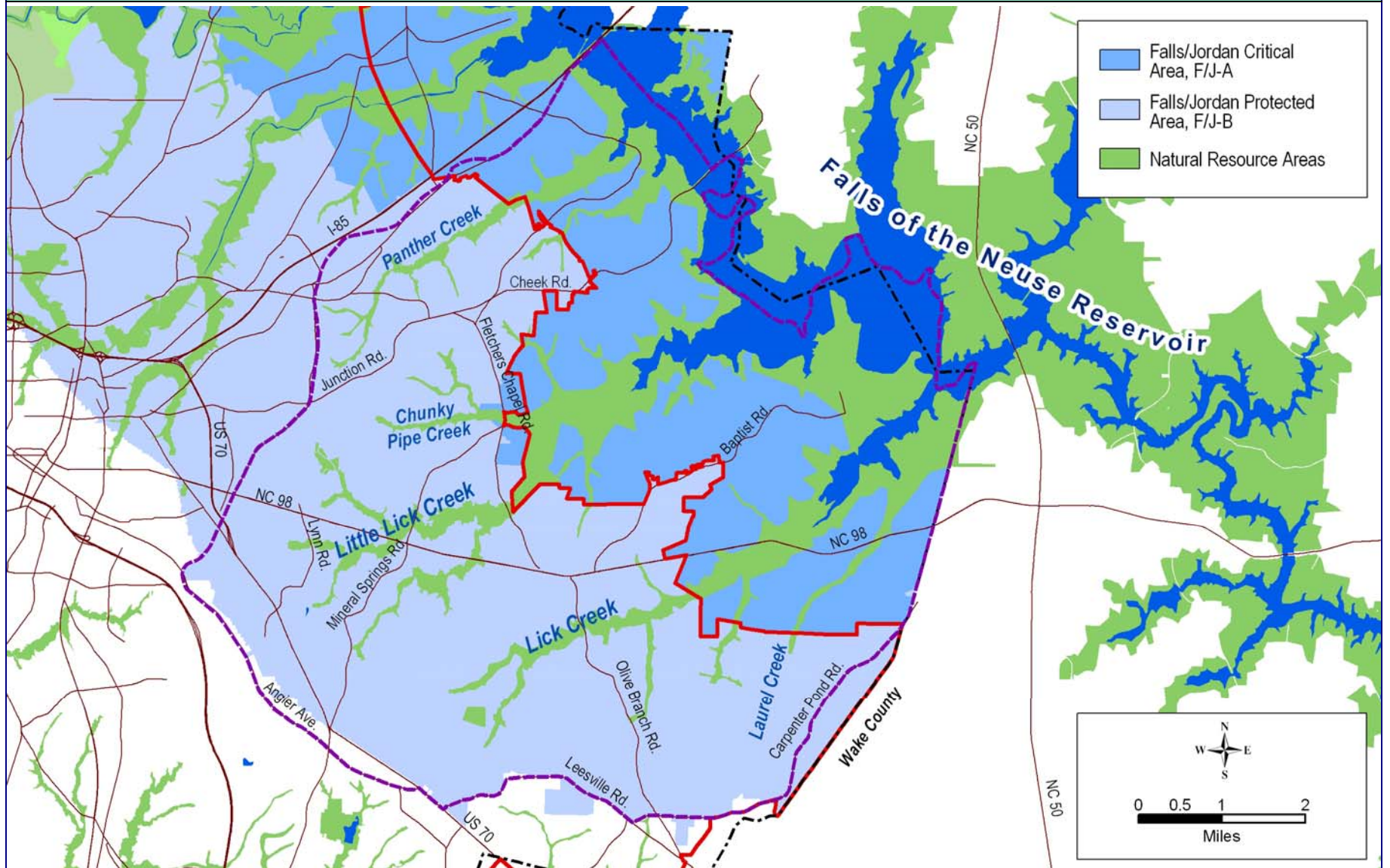
Map 6, Park and Trail Facilities



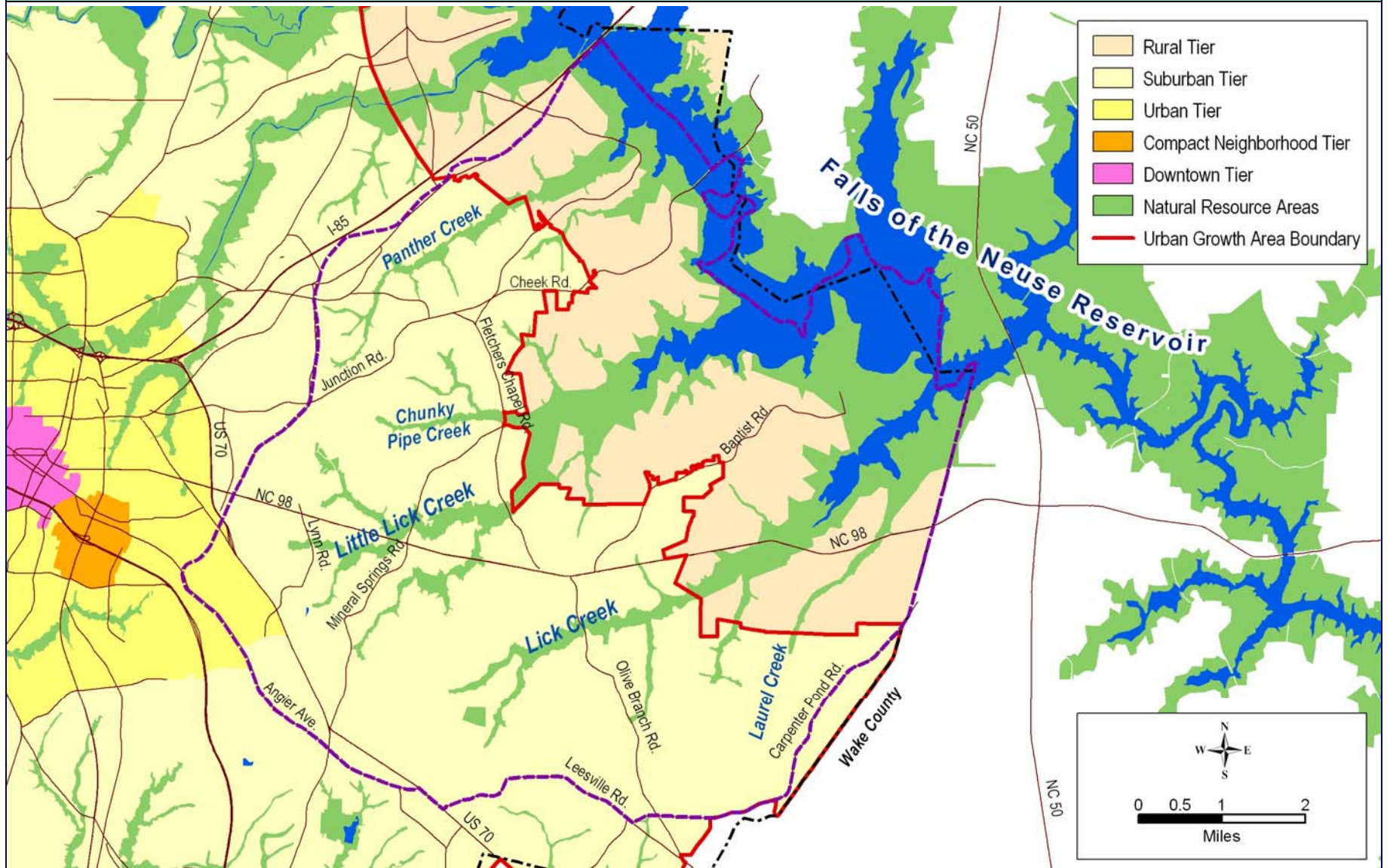
Map 7, Zoning, Generalized



Map 8, Watershed Protection Districts



Map 9, Tiers and the UGA Boundary



III. Open Space Vision, Goals, and Objectives

The Vision, Goals and Objectives

The *Durham Comprehensive Plan* Vision provides a starting point in crafting a vision for the Eastern Durham Open Space Plan:

- Promote the creation and enhancement of a livable, safe and beautiful community for all Durham citizens.
- Promote a range of choices in transportation, education, housing and economic opportunities to effectively serve a diverse community.
- Promote the identity of our distinct neighborhoods by encouraging design elements and public facilities appropriate to the character of each area.
- Protect our historic heritage, open spaces and natural resources.
- Provide opportunities for high quality growth and development.

The last two of these five parts of the vision are especially relevant to the development of any open space plan. A fundamental vision of the Eastern Durham Open Space Plan is to identify important natural resources, open spaces and wildlife habitats in order to protect them before they experience deterioration associated with urbanization. At the same time, residents recognize that property owners have certain rights and expectations for development of their land. Open space protection needs to be a cooperative effort with residents and property owners, acknowledging community as well as individual needs.

What are Goals and Objectives?

Goals are reasons for taking action. The goals of the Eastern Durham Open Space Plan embody the hopes and desires of the Durham community and eastern Durham residents for preserving valuable open spaces and managing future growth. Goals set the overall tone and direction for public and private actions.

Objectives address the “how.” They describe a general course of action for accomplishing the Plan’s goals. Objectives help to narrow the focus from broad goals and point to the types of actions needed to

implement them. Objectives guide decisions to effectively implement the goals of the Plan.

Goal Settings

An important element of community involvement in preparing the Eastern Durham Open Plan was consideration of goals for the Plan. Residents' concerns were gleaned through a series of meetings, each including a survey of the people present. Residents were able to indicate by informal voting which goal areas the Plan should focus on. The goal areas and the residents' voting are indicated in Table 5. Approximately 50 citizens were involved in goal setting.

Table 5, Citizen's Indication of Goals	
Goal Area	Votes
Private Land Stewardship	40
Recreation	32
Water Quality	23
Natural Beauty	19
Habitat Preservation	18

Residents had two strong messages. First, family farms are very important to the community, not only for their historic value but their visual contribution to the landscape. Second, land acquisition that might take place in implementing the Plan should be voluntary and only with the consent of willing landowners. Residents still hold some residual negative feeling regarding land acquisitions made by the Corps of Engineers for Falls Lake. Both of these issues are reflected in the strength of residents' desire to recognize the private stewardship of the land in eastern Durham.

The highest rated goals were the stewardship of private lands, recreation, water quality, preserving the area's natural beauty, and wildlife habitat protection. The goals for the Eastern Durham Open Space Plan and objectives to accomplish the goals are explained in the next section.

Policies

The Eastern Durham Open Space Plan includes implementation policies that Durham should embrace to put the plan into practice. Many of the specific policies support more than one Plan goal. Each policy notes which City, County or other agency is primarily responsible for its accomplishment. Maps 10 through 13 indicate the locations in eastern Durham for improvements called for in the Plan. At the end of the Plan, a summary table shows the policy recommendations at a glance and indicates whether they are high, medium, or low priority.

A. Parks and Recreation

Goal: Provide additional recreation opportunities for Durham County residents, especially for the residents of the eastern Durham area.

As Durham continues to grow, so does the demand for nature trails and nature-based recreation. Based on projected population growth over the next decades, it is particularly important to set aside additional public lands for Durham’s residents while open space is still available.

Nature-based recreation needs such as trails, fishing, and environmental education are the main focus of this Plan. Based on the interests expressed by the public, active recreation needs such as soccer or baseball fields have been taken into account on a limited basis. It appears that most of the community uses the Falls Lake area for hunting, fishing, and boating, while historically many private entities have provided ball fields, soccer fields, and other amenities.

Residents of eastern Durham have also expressed a desire for active recreation facilities, including playgrounds and ball fields. The *Durham Parks and Recreation Master Plan, 2003-2013* addresses active recreation.

Objectives

Identify additional park sites in eastern Durham to accommodate the recreation needs of present and future residents and to take advantage of the Falls Lake. Provide additional nature and hiking trails, picnicking sites, fishing spots, athletic fields, and canoe and kayak access points.

Design recreation facilities to be compatible with multiple open space goals such as water quality, wildlife habitat, and historic preservation.

Policies

- 1. Cardinal Point/Redwood Point Park.** The City Parks and Recreation Department shall work with the Corps to place the Cedar Point/Redwood Point park site (north of Cheek Road and east of Hereford Road) under a long term lease agreement. The City Parks and Recreation Department shall then develop a park on the site (see Map 10, Parks and Recreation Recommendations). Develop facilities for picnicking, a canoe and kayak launch, and interpretive signage about the history of the Fish Dam Road. Develop this site with respect for the resources on the Skypark Upland Forest (U-2) site identified in the *Durham County Inventory of Important Natural Areas, Plants, and Wildlife*.
- 2. Wahadkee Point Park.** The City Parks and Recreation Department shall work with the Corps to place the Wehadkee Point park site (north of NC 98, east of Boyce Mill Road and west of NC 50) under a long term lease agreement. The City Parks and Recreation Department should continue to assess timing for the

Partnerships

When the Falls Lake Reservoir was created, a number of specific areas adjacent to the Lake were identified as possible park sites appropriate for “low density use.” The City or County could manage these sites with no land acquisition involved since they exist within the boundaries of the Corps lands. Several of these parcels are of interest due to their environmental sensitivity and location and could provide excellent locations for nature trails, canoe and kayak access points, picnic spots, and other low-impact recreational activities.

future development of a park on the site (see Map 10, Parks and Recreation Recommendations). The facilities would include bank fishing, open meadow play, nature trails, and picnicking, and canoe and kayak access. The park should include sufficient parking for access to the Mountains-to-the-Sea Trail. The site is approximately 640 acres.

3. **Kinnard Road Park.** The City Parks and Recreation Department shall develop the Kinnard Road 30 acre park site for nature trails, picnicking, and/or other appropriate activities (see Map 10, Parks and Recreation Recommendations.) The site is approximately 30 acres.
4. **Canoe and Kayaking Access Facilities.** The City Parks and Recreation Department shall develop canoe and kayaking access facilities (see Map 10, Parks and Recreation Recommendations), including appropriate parking and signage, when the proposed parks at Cardinal Point/Redwood Point Park and Wahadkee Point Park are developed.
5. **Mountains-to-the-Sea Trail.** The County Open Space and Real Estate Division shall work with the Corps of Engineers, public and private organizations, and state agencies to develop and manage the Mountains-to-the-Sea trail on Corps of Engineers land in Durham County. The trail alignment should generally follow the edge of the Falls Lake from the Durham County and Wake County line near the proposed Wahadkee Point Park north to the Eno River toward Orange County (see Map 11, Natural Corridor Recommendations.)
6. **Management Policies and Procedures.** The City Parks and Recreation Department and the County Open Space and Real Estate Division shall develop management policies and procedures and an organizational structure to facilitate future open space land management. Address management and security issues when developing public recreation amenities in order to minimize adverse impact on the natural features of acquired properties.
7. **Trail Access to Falls Lake Lands.** When development is proposed adjacent to Corps land, the City-County Planning Department, the County Open Space and Real Estate Division and the City Park and Recreation Department shall work with the Corps of Engineers and the Wildlife Resources Commission to develop a cooperative partnership to allow the construction of nature trails from private parcels into the adjacent Falls Lake lands where appropriate.
8. **Joint School and Park Site.** The Durham Public Schools and the City Parks and Recreation Department shall work together to develop a joint school/park recreation facility in eastern Durham. Recreation facilities at the site should include an athletic complex with junior soccer fields and/or a wildlife/conservation habitat area. (See *Durham Comprehensive Plan*, Policy 10.1.5a., pg. 10-7.)

9. **Greenway Trails.** The City Parks and Recreation Department shall develop the Lick Creek, Little Lick Creek, Twin Lakes, Birchwood, Laurel Creek, Chunky Pipe, and Martin Branch Creek trails as described in the 2001 *Durham Trails and Greenways Master Plan* as funding becomes available. The Lick Creek Trail is identified as a priority trail in the 2005 Center of the Region Enterprise Pedestrian-Bicycle-Green Space Plan, as it would serve as a direct connection to RTP.
10. **Northern Durham Parkway Design.** The Durham-Chapel Hill-Carrboro Metropolitan Planning Organization and the City Transportation Division shall request that the NC Department of Transportation design and construct the proposed Northern Durham Parkway in accordance with the “Complete Streets: design concept in the adopted 2006 *Durham Comprehensive Bicycle Transportation Plan*. Bike lanes and side paths along the Parkway will link several proposed greenway trails and bikeways in eastern Durham County.
11. **Panther Creek Rail-Trail.** The City Parks and Recreation Department shall develop the Panther Creek Rail Trail along the abandoned rail right-of-way between Junction Road and Redwood Road in accordance with the Durham Trails and Greenways Master Plan (see Map 11, Natural Corridor Recommendations). Acquire land or easements, as needed. Design the rail trail for mountain biking, hiking, and equestrian use. Do not locate access points that adversely impact sensitive wildlife habitats and wetlands. Locate the trail route to the north or south side of the Corps of Engineers property, which is managed for wildlife and crosses paths with the proposed Mountains-to-Sea Trail.
12. **Panther Creek Nature Trails.** The City-County Planning Department shall encourage developers to construct nature trails in any required open space areas that may abut Panther Creek or its tributaries in lieu of other forms of active recreation.
13. **Natural Corridors.** The City-County Planning Department, the City Parks and Recreation Department and the County Open Space and Real Estate Division shall work with private landowners, developers, and land trusts to establish and preserve natural corridors in the locations indicated in the following Table 6 (see Map 11, Natural Corridor Recommendations) for purposes of wildlife habitat, passive recreation, and water quality. The corridor should include any floodplain and average a minimum of 300 feet on both sides of the creek unless precluded by existing development. Preserve these areas using clustered development, open space requirements in new developments, voluntary landowner agreements, cost share programs, conservation easements, or fee simple purchase. Retain any City and/or County ownership of appropriate parcels in these areas.

Table 6, Proposed Natural Corridors	
Area	Location
a. Panther Creek	From the proposed Northern Durham Parkway to the Corps of Engineers land north of Redwood Road, approximately 240 acres
b. Chunky Pipe Creek	From Southern High School to the Corps of Engineers land east of Fletcher Chapel Road/Stallings Road, approximately 170 acres
c. Martin Branch Creek	From its origin east and west of Olive Branch Road to its confluence with Lick Creek, approximately 290 acres
d. Rocky Branch Creek	From its origin north of Carpenter Pond Road to the Corps of Engineers land east of Southview Road, approximately 240 acres
e. Laurel Creek	From its origin south of Kemp Road to the Corps of Engineers land east of Boyce Mill Road, approximately 240 acres
f. Little Lick Creek	From Twin Lakes Park and the Ganyard Farms development to the Corps of Engineers land east of Stallings Road, approximately 340 acres
g. Lick Creek	From the proposed Northern Durham Parkway to the Corps of Engineers land south of NC 98, approximately 420 acres

14. **Grants and Partnerships.** The City Parks and Recreation Department and the County Open Space and Real Estate Division shall seek grants and partnerships as a way to stretch local funds and to maximize community involvement and ownership over public recreation facilities.
15. **Publicly Owned Parcels.** The City Parks and Recreation Department and the County Open Space and Real Estate Division shall take advantage of the parcels that the City and County presently own for developing new recreational opportunities where appropriate.
16. **Responsible Stewardship.** The City Parks and Recreation Department and the County Open Space and Real Estate Division shall maintain good relationships with adjoining landowners by being responsible stewards of any acquired lands and address management concerns that may arise from public use. Design and locate recreation facilities in a manner to minimize the effect on adjacent properties.
17. **Site Steward Programs.** The City Parks and Recreation Department and the County Open Space and Real Estate Division shall utilize the assistance of volunteers to monitor conditions on publicly acquired lands, where appropriate. Site steward programs have been successfully used by non-profit land trusts. They utilize the “eyes and ears” of interested volunteers to help monitor lands and alert staff to management issues. This program could be effectively used on the Mountains-to-Sea Trail.
18. **Falls Lake Interim Management Lands.** The County Open Space and Real Estate Division shall continue to investigate low impact recreational opportunities on Falls Lake Interim Management Lands owned by the Corps. Seek long term lease

arrangements for those areas open to leasing where recreation areas have been proposed.

B. Habitat Preservation

Goal: Protect significant plant and animal habitats and provide for wildlife movement corridors.

Every community has a stewardship responsibility to protect its most significant natural resources and to ensure that future generations can also enjoy the community’s natural and cultural heritage. Stewardship responsibility means preserving significant habitats for rare and unusual plant and animal species, as well as for the more common species that make up the natural environment.

Objectives

Identify and preserve wildlife habitat areas in eastern Durham. Preserve greenway corridors for wildlife movement that are at least 300 feet wide on both sides of the stream bank, to create a total corridor width of 600 feet, unless precluded by existing or approved developments, or other unique physical features. Use the existing network of perennial and intermittent streams as the framework for wildlife movement corridors. Use upland connections as necessary to provide a continuous system for wildlife movement.

Implement the Eastern Durham Open Space Plan by developing partnerships with interested landowners to preserve wildlife habitat areas and greenway corridors using voluntary wildlife enhancement plans, cost share programs, clustered development, conservation subdivisions, conservation easements, fee simple acquisitions, or combinations of these options.

Policies

- 1. Wildlife Habitat Areas.** The City-County Planning Department and the County Open Space and Real Estate Division shall work with private landowners, developers, and land trusts to establish and preserve wildlife habitat areas in the locations shown on the following (see Map 12, Wild Life Habitat Areas Recommendations and table 7). Preserve these areas using clustered development, open space requirements in new developments, voluntary landowner agreements, cost share programs, conservation easements, or fee simple purchase. Retain any City and/or County ownership of appropriate parcels in these areas.

Table 7, Proposed Wildlife Habitat Areas	
Area	Location
a. Martin Branch Creek	In the vicinity of Kemp Road, Lick Creek and Martin Branch Creek, approximately 590 acres
b. Rocky Branch Creek	Between Southview Road, Kemp Road, Coley Road and the Corps of Engineers land along Lick Creek, approximately 171 acres

c.	Leatherwood Cove	Along Laurel Creek south of NC 98, approximately 292 acres
d.	Laurel Creek	North of NC 98 and east of Boyce Mill Road, approximately 119 acres

2. **Creek Crossings.** The Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) and the City Transportation Division shall request that NC Department of Transportation design any future bridge improvements or new bridges (especially those associated with the Northern Durham Parkway) across the following creeks to include bridges with sufficiently sized opening and other design features adequate to facilitate wildlife movement along the Creek.
 - a. Panther Creek
 - b. Chunky Pipe Creek
 - c. Martin Branch
 - d. Rocky Branch Creek
 - e. Laurel Creek
 - f. Lick Creek at Olive Branch Road

3. **Duke Power Easements.** When opportunities arise, the County Open Space and Real Estate Division should develop a cooperative partnership with Duke Power to enhance any electric transmission line easements for wildlife habitat where appropriate. This could provide additional corridor protection for various species using tributaries and open areas for movement to Falls Lake.

4. **Regional Wildlife Movement Connections.** The County Open Space and Real Estate Division shall coordinate with Wake County to identify potential regional wildlife movement corridors to connect tributaries of Laurel Creek with Upper Barton Creek in Wake County.

5. **Durham County Inventory Update.** The City-County Planning Department shall work with the Durham Inventory Review Committee and the NC Natural Heritage Program to update the *Durham County Inventory of Important Natural Areas, Plants and Wildlife*. The update should include addressing situations where previously identified resources have been altered or no longer exist and where new resources have been subsequently identified.

6. **Stewardship Endowment Trust Fund.** The County Open Space and Real Estate Division shall establish a mechanism, such as a stewardship endowment trust fund, to ensure that a core of sufficient management funds will be available to managers of open space. A stewardship endowment trust fund is a long-term source of management dollars; annual income available from the trust is based on the interest generated from the principal.

7. **Grants for Acquisition.** The County Open Space and Real Estate Division and the City Parks and Recreation Department shall seek grants to assist with the costs of preserving wildlife habitat areas and greenway corridors. The NC Clean Water Management Trust Fund could be a source of funding for acquisition of riparian-based easements or fee simple parcels from willing sellers. Raleigh's

Falls Lake Initiative could be another source of funding for acquisition.

8. **Bridges.** The Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) and the City Transportation Division shall request that any new bridges and future bridge replacements over creeks along movement corridors have clearances wide enough to support its functioning as a wildlife movement corridor. Request that bridges be used to replace culverts. Request that the use of permanent riprap be avoided, and that bioengineering methods be used to stabilize the soil adjacent to streams and within the construction area.
9. **Habitat Acquisition Opportunities.** When opportunities arise for acquisition of additional wildlife habitat areas in eastern Durham County, the County Open Space and Real Estate Division and the City-County Planning Department shall evaluate the potential acquisition in relation to the goals and objectives of this Plan and make a recommendation to the Durham Open Space and Trails Commission and/or the appropriate governing body.

C. Natural Beauty

Goal: Protect the natural beauty and special places of eastern Durham for present Durham residents and future generations.

Preserving Durham County's natural beauty is important for maintaining its attractiveness for citizens, future residents, businesses, and visitors. The scenic character is an important asset to eastern Durham, both in terms of scenic enjoyment and enhanced property values. In order to maintain the area's most appealing features, scenic locations need to be identified and appropriate measures put into place to protect them.

In community discussions, residents indicated that natural beauty can mean two things. Natural beauty can refer to scenes of nature, including the Falls Lake, streams, forests, and the abundant wildlife of the area. Natural beauty can also refer to the views people experience from local roadways. Residents appreciate expansive views of farms and pastures; livestock; and historic tobacco barns, homes, churches and cemeteries.

Objectives

Preserve and enhance the scenic qualities of rural roads in eastern Durham. Develop zoning tools to address specific features along scenic roads.

Identify and protect farms that contribute to the economy and scenic character of eastern Durham.

Policies

1. **Scenic Roads Overlay UDO Text Amendment.** In order to protect and enhance the scenic qualities of Durham’s roadways, the City-County Planning Department and the Appearance Commission shall propose a text amendment to the Unified Development Ordinance to establish a scenic roads overlay and shall recommend road segments for application of the overlay, such as Baptist Road, from NC 98 to Rolling View Marina. The overlay should:
 - a. Encourage the use of native plant species and existing vegetation for roadside plantings;
 - b. Encourage supplementing or replanting with traditional fencerow species, such as cedars, to maintain and enhance the visual character;
 - c. Encourage the placement of all modern accessory structures (gazebos, garages, play equipment) behind the line of the house structure;
 - d. Encourage the use of historic and/or traditional architecture in the design of homes and other structures;
 - e. Encourage the reduction of large expanses of grass in front yards;
 - f. Encourage the use of low-maintenance, visually appealing plantings, such as native shrubs and wildflowers;
 - g. Discourage large opaque fences in the front of structures and plantings that block scenic views; and
 - h. Require the use of conservation subdivisions with large open spaces located to enhance the scenic qualities.
2. **Corridor Plans.** The City-County Planning Department and the Appearance Commission shall prepare corridor plans to improve the function and appearance of major roadways into and through Durham, including US 70 and NC 98. Focus attention on their major road intersections and emphasize landscaping with traditional and/or native plant species. (See *Durham Comprehensive Plan*, Policy 4.4.1a, Corridor Plans.)
3. **Farmland Preservation Easement Assistance.** The County Open Space and Real Estate Division shall request annual budget allocations targeted for financial support for farmers considering donation or sale of farmland preservation easements. The funds would assist in covering costs related to appraisals and surveys.
4. **Priority in Farmland Preservation.** The Durham County Farmland Preservation Board shall establish a high priority for acquisition of farmland preservation easements for eastern Durham properties that abut designated wildlife habitat areas, wildlife movement corridors, and impaired streams.

D. Historic Preservation

Goal: Identify and preserve the important historic and cultural features of the eastern Durham open space.

Humans have depended on the land for countless generations. The eastern Durham planning area is rich in both cultural and historic features, including unusual archaeological sites, vestiges of Fish Dam Road, and historically significant farmsteads and former mill sites. These cultural and historic features reinforce Durham's present connections with the past and they are important to preserve as part of Durham's historic legacy for future generations.

Durham should formally recognize and celebrate its valuable historic buildings and sites. One tool for historic preservation is landmark designation. A site can be placed on the National Register of Historic Places or designated as a local historic landmark. Durham could encourage the owners of historically significant properties in eastern Durham to apply for local historic landmarks designation and the owners of historic properties on the Study List of the National Register of Historic Places to apply for designation.

Objectives

Identify, designate, and protect historic landmarks in eastern Durham.

Assess, document, and protect historic travel corridors in eastern Durham.

Policies

- 1. Historic Landmark Designations.** The City-County Planning Department and the Historic Preservation Commission shall contact the owners of the following historic properties (see Map 13, Historic Preservation Recommendations) about designation as historic landmarks:
 - a. Dr. William Norwood Hicks House;
 - b. Fendol Bevers House;
 - c. Jones House;
 - d. John Nichols House; and
 - e. Joseph Holloway House
- 2. Fendol Bevers Farmstead.** The City-County Planning Department and the Historic Preservation Commission shall work with developers to find a suitable place to relocate the historic Fendol Bevers House and associated outbuildings, presently located within a portion of a proposed major subdivision.
- 3. Historic Markers.** The City-County Planning Department and the Historic Preservation Commission shall develop and propose a program of historic markers to highlight the history of the eastern Durham area.

4. **Fish Dam Road Preservation.** The City-County Planning Department, the Durham Open Space and Trails Commission, the Historic Preservation Commission, and the County Open Space and Real Estate Division shall prepare a plan to assess, document, and preserve of the remnants of Fish Dam Road from the Falls Lake northwest to Geer Street. (see Map 13, Historic Preservation Recommendations). The Plan should consider partnerships with the landowners to preserve this area using voluntary landowner agreements, cost share programs, clustered development, conservation easements, or fee simple purchases. Rely on the expertise of the State Division of Archives to provide guidance on the publicizing of extant Fish Dam Road locations.
5. **Priority for Sites of Historic or Archeological Significance.** The County Open Space and Real Estate Division shall assign a higher priority to acquisition of open space sites that include features of historic or archaeological significance.

E. Citizen Involvement and Coordination

Goal: Respect the traditional role that eastern Durham landowners have held as private stewards of the land and their desire to retain their landholdings. Create partnerships between Durham governments, local property owners, and other entities to protect and preserve open space resources.

Protection of the special features of eastern Durham will require a joint effort of the landowners and City and County agencies. The Eastern Durham Open Space Plan can provide a framework for protection of the basin's most important resources for both the private actions of present landowners, as well as future initiatives of local government and non-profit organizations.

Open space preservation requires a finely tuned balance between land as a community resource and property owners' rights. This Plan acknowledges the critical role that landowners have had as private stewards of the land for decades. Any public and private land preservation efforts should respect private property rights.

Objectives

Public land acquisition efforts should be voluntary and respect a landowner's private interests in retaining his or her landholdings. Establish priorities for future easement and/or fee simple acquisitions based on the landowner's interest in pursuing these options with the City, County or some other entity.

Develop collaborative partnerships with community organizations to implement the Eastern Durham Open Space Plan. Use their expertise and talents to provide open space and recreation amenities in eastern Durham. These community organizations could include the Carolina Canoe Club, soccer clubs, and other groups.

Policies

- 1. Site Steward Programs.** The City Parks and Recreation Department and the County Open Space and Real Estate Division shall utilize volunteer site steward programs to monitor conditions on publicly acquired lands, where appropriate. Site steward programs have been successfully used by non-profit land trusts. They utilize the “eyes and ears” of interested volunteers to help monitor lands and alert staff to management issues.
- 2. Open Space Education and Outreach.** The County Open Space and Real Estate Division and the Durham Open Space and Trails Commission (DOST) shall develop materials for landowners that describe the range of benefits and programs available to support open space preservation, including local, state, and federal conservation programs, tax benefits of easements, and grants.
- 3. Right of First Refusal.** The County Open Space and Real Estate Division shall consider obtaining “rights of first refusal” for key parcels where landowners are not interested in easements or fee simple transfers in the short term.
- 4. Open Space Advocacy.** The Durham Open Space and Trails Commission (DOST) shall be the voice for, and advocate of, protection of open spaces in eastern Durham.
- 5. The Durham County Open Space and Parks Exchange.** The County Open Space and Real Estate Division and the City Parks and Recreation Department shall establish a coordinating forum for the organizations involved with preserving open space and providing recreation in eastern Durham. The Durham County Open Space and Parks Exchange, as it could be called could meet two or three times per year to discuss management issues of mutual concern, and to consider opportunities to work together. Agencies invited to participate could include Durham Soil and Water Conservation, City Parks and Recreation, the Wildlife Resources Commission, Upper Neuse River Basin Association and others.

F. Land Use and Development

Goal: Ensure the preservation of eastern Durham’s natural, historic and scenic features as the area continues to grow.

Growth and change is inevitable throughout eastern Durham. Farms and rural home sites are an integral part of the community, and so now, too, are suburban developments. Practical and effective Plan recommendations must work with both existing and planned land uses. The Plan should seek innovative ways to accommodate anticipated growth while preserving the natural and cultural features that make eastern Durham a desirable place to live.

Objectives

Preserve valuable open spaces in new residential subdivisions.

Encourage present and future landowners within the Eastern Durham basin to incorporate wildlife habitat areas into the use of their land.

Encouraging developers to use Durham's conservation subdivision provisions of the Unified Development Ordinance would allow for innovative design on more sensitive lands. The open space could be located to preserve agricultural lands and wildlife habitat, or to retain greater buffers on steep slopes and stream buffers. The open space is required to have permanent restrictions placed on it to prevent destruction of natural areas. Such ordinances to preserve substantial permanent open space have been effective in other communities.

The open space can be retained in private ownership or, at times, dedicated to the public. Presently, the soils in eastern Durham County have limitations for traditional septic systems that cause practical difficulties for clustering residential home sites closer together. Use of alternative systems may be needed.

Purchase strategically important open space properties ahead of development pressure.

When purchasing important open space lands in advance of development, the City or County has two options. The local government could resell the parcel with easement restrictions that achieve the open space objectives. Or, the local government could subdivide the parcel to retain the important open space portions and then sell the remainder tract. The Falls Lake Initiative, the Homebuilders Association, and the Durham Realtors Association might be able to identify buyers and builders with conservation interests in such lots.

Policies

1. Conservation Subdivisions. The City-County Planning Department and the Durham Open Space and Trails Commission (DOST) shall encourage residential subdivision developers to utilize the conservation subdivision and/or the community wastewater treatment provisions of the Unified Development Ordinance, where appropriate, to preserve environmentally sensitive areas, wildlife habitat and movement corridors, historic and archeological resources, or other open spaces. Residential subdivisions should:

- a. Preserve wildlife habitat areas as common open space by using cluster subdivisions;
- b. Retain or create wildlife habitat areas by preserving wooded areas along lot lines that can combine with woods on other lots to create larger, privately-owned wildlife habitats and contiguous wildlife movement corridors; and
- c. Reserve and/or donate conservation easements on the portions of the development that has the most wildlife value.

2. **Impervious Surface Transfer.** The City-County Planning Department shall encourage residential subdivision developers to utilize the impervious surface transfer provisions of the Unified Development Ordinance, where appropriate, to preserve environmentally sensitive areas, wildlife habitat and movement corridors, historic and archeological resources, or other open spaces (Section 8.7.2b.2).
3. **Development Review.** The City-County Planning Department and the Durham Open Space and Trails Commission (DOST) shall use the Eastern Durham Open Space Plan when evaluating new development and may require that new development provide land in conformance with the Plan.
4. **Development Adjacent to Corps Land.** The City-County Planning Department shall encourage new residential developments adjacent to property owned by the Corps of Engineers to provide common open space or wooded buffers to create separation from incompatible Corps of Engineers and/or Wildlife Managed Game Lands activities.

G. Water Quality

Goal: Protect the existing water quality of eastern Durham, both for the aquatic habitat and for human use.

Falls Lake provides water supply to over 300,000 people, and many more use the Lake for recreation. Although most of Durham's residents do not benefit from Falls Lake public water supply, maintaining the high water quality in eastern Durham is very important. Falls Lake supports abundant plant and animal wildlife. It provides opportunities for fishing, hunting, hiking, and canoeing. Protecting and enhancing water quality in eastern Durham is important for the health of Falls Lake and Lick, Little Lick, Panther, Laurel and Chunky Pipe Creeks.

This Plan spells out numerous policies that Durham can adopt to protect and preserve open space. Fortunately, many actions that support the goals of wildlife habitat protection, recreation or natural beauty also support water quality.

Objectives

Incorporate stream buffers in new development.

Make Durham citizens aware of the importance of water quality to their overall quality of life.

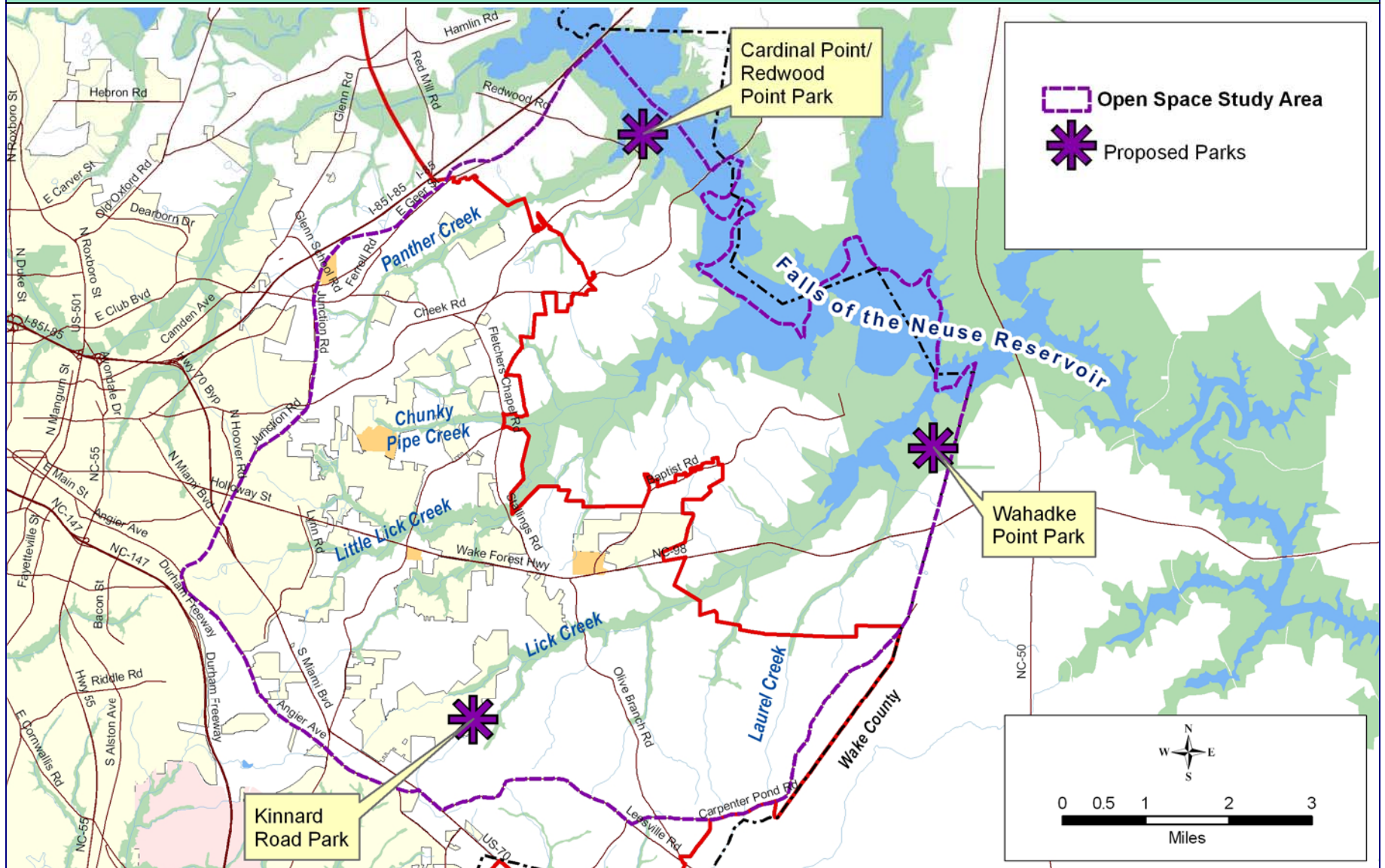
Providing buffers of undisturbed vegetation along streams is one of the most effective means of preserving water quality. Preventing pollution from reaching water courses is much less costly than trying to clean water that is already polluted.

Policies

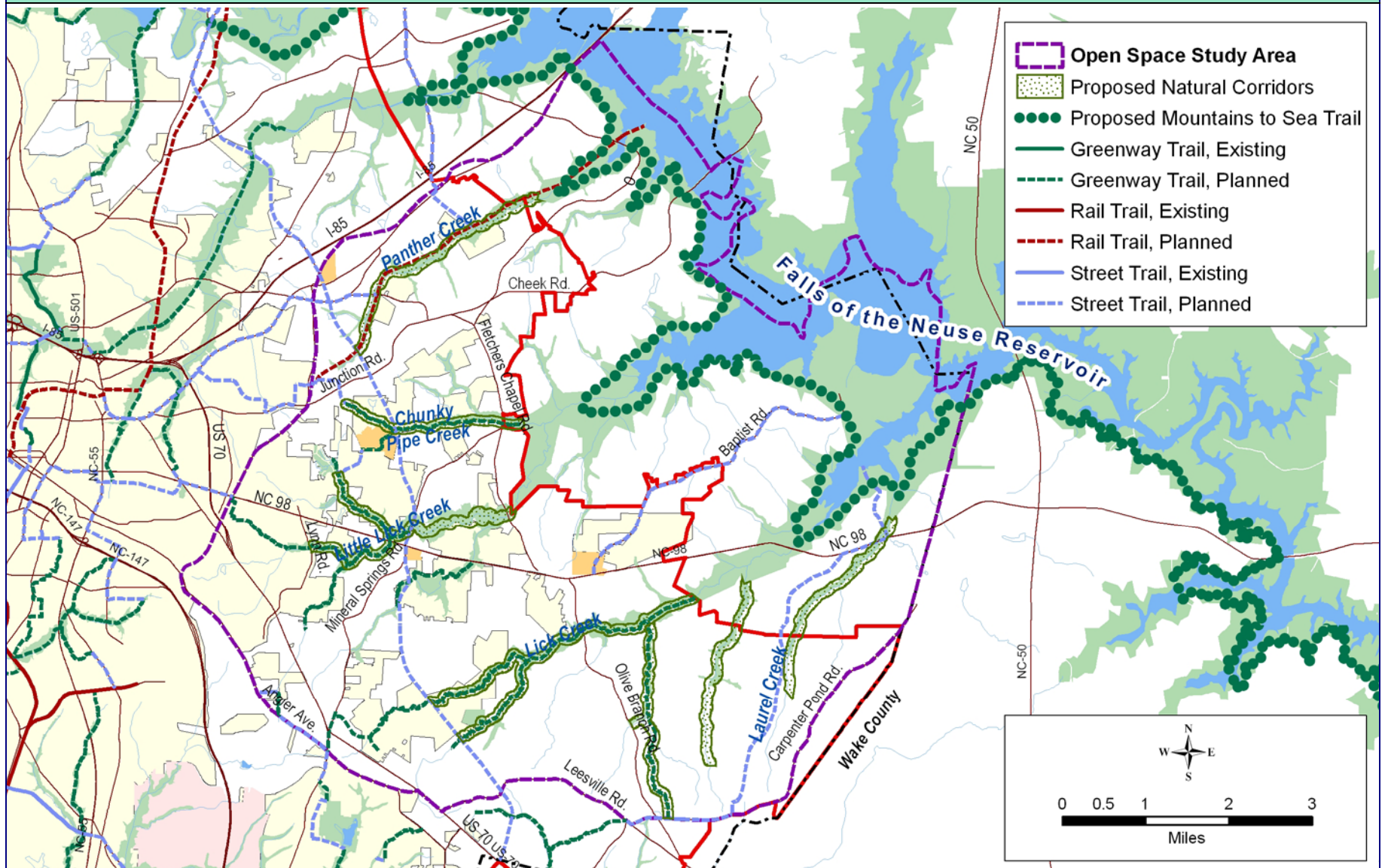
1. **Stream Buffers.** The City-County Planning Department shall continue to enforce UDO requirements for preserving land along intermittent and perennial streams in Durham. Providing buffers of undisturbed vegetation along streams is one of the most effective means of preserving water quality.
2. **Wider Stream Buffers.** The City-County Planning Department shall encourage developers to locate required open space areas adjacent to stream buffers to provide a wider buffer and along minor drainage ways that flow into regulated streams.
3. **Priority for Water Quality.** The County Open Space and Real Estate Division shall assign higher priority for land acquisition to those land or easement acquisitions that support water quality goals.
4. **Water Quality Educational Programs.** The City Public Works Department shall continue its public education programs about water quality:
 - a. Prepare and distribute informative newsletters;
 - b. Establish and maintain a telephone hotline for citizens to report suspected incidents of stormwater pollution;
 - c. Create and make presentations to schools and community groups about the stormwater runoff, and
 - d. Conduct workshops for the development community and for local government officials about the stormwater management program.

(See *Durham Comprehensive Plan*, Policy 9.4.5a., pg. 9-13.)

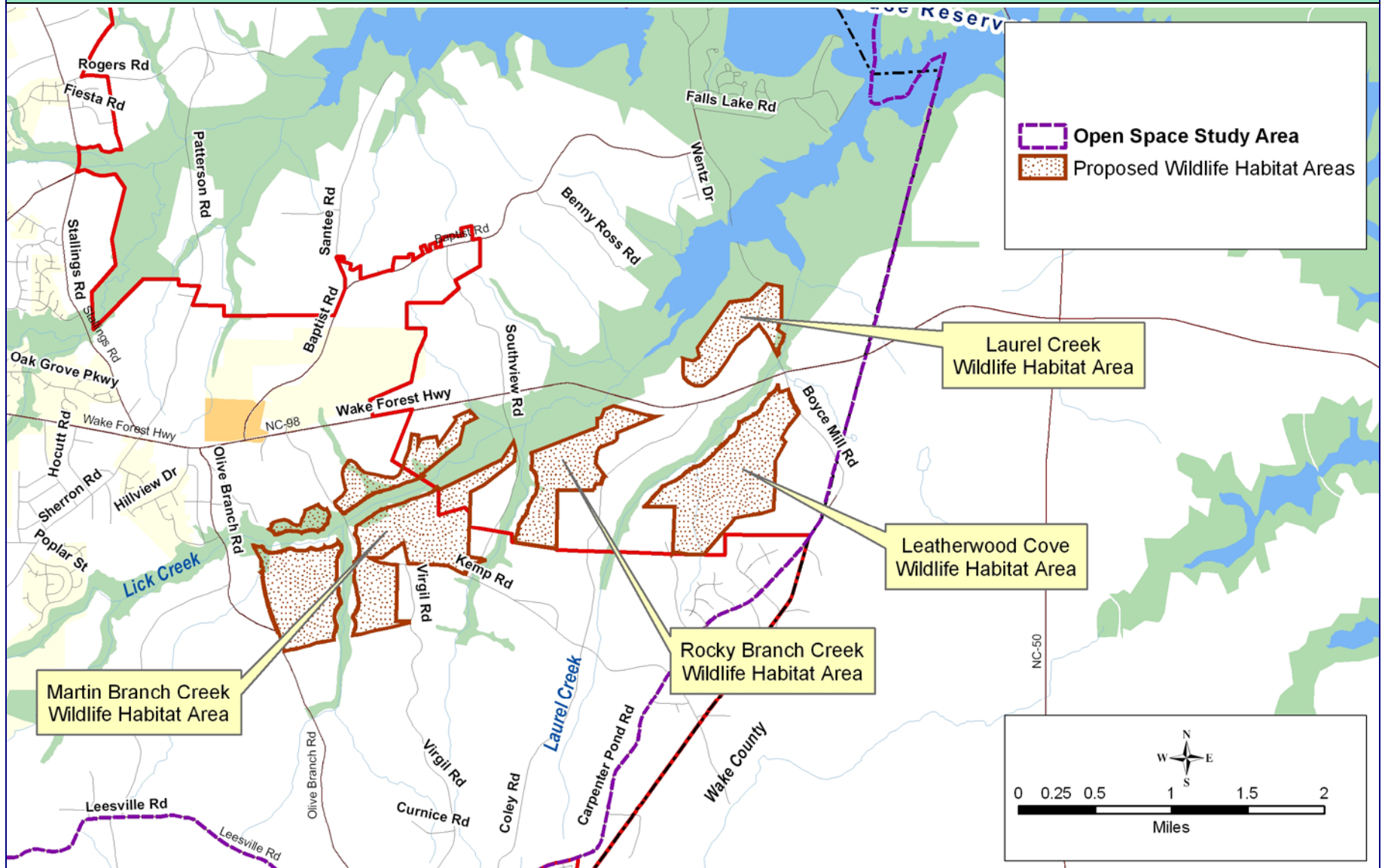
Map 10, Parks and Recreation Recommendations



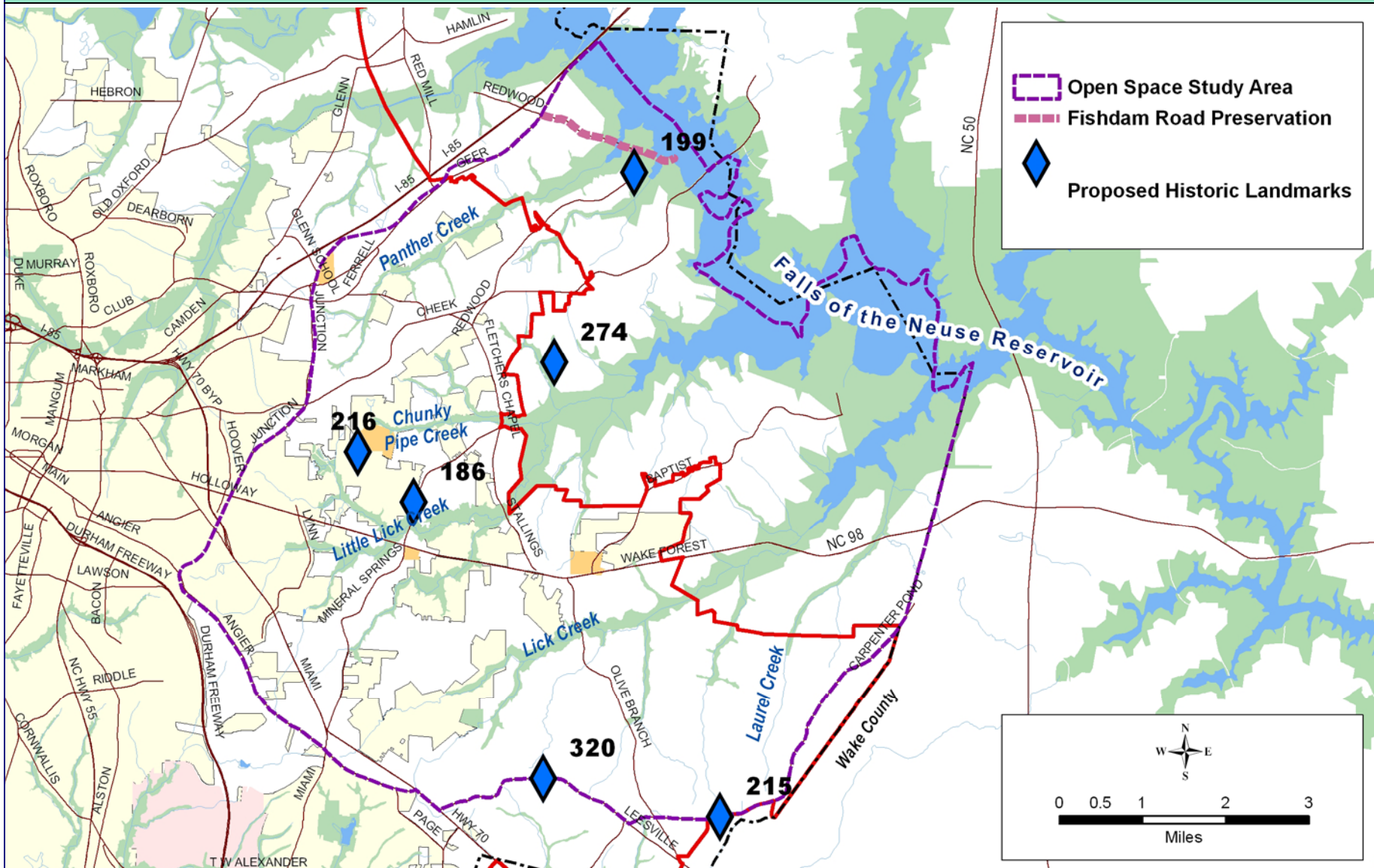
Map 11, Natural Corridor Recommendations



Map 12, Wildlife Habitat Area Recommendations



Map 13, Historic Preservation Recommendations



IV. Summary of Policies

As previously noted, the successful implementation of the Eastern Durham Open Space Plan will depend on the actions of private landowners as much or more than government agencies. Local government has a role to be sure, but open space protection happens when individual landowners see benefits for themselves and the community in protecting the open space resources on their properties. Because of this private sector emphasis, the timetable for implementation is difficult to predict. Even with willing landowners, the timing of public participation in acquisition or site development depends upon the availability of federal, state, county and city funding.

The following table summarizes the policies for the Eastern Durham Open Space Plan. For each policy, the table indicates the primary department or agency responsible for implementation. Likewise, for each policy, the table provides an indication of the relative priority as low, medium, or high. The policies are arranged in order of priority within each section.

The priorities reflect the urgency of the implementation and the number of goals that a measure would achieve. For instance, a location with water quality, wildlife habitat, and potential recreation benefits would rate as a higher priority than an area that provides only wildlife habitat benefits. The present management capabilities of the responsible party(s) have been factored into the priority given, although cost factors have not.

Table 8, Policies and Priorities			
Policies		Priority	Responsible Party/Parties
Recreation Policies			
1.	Cardinal Point/Redwood Point Park	High	City Parks and Recreation Department
4a.	Canoe and Kayaking Access Facilities: Cardinal Point/Redwood Point Park	High	City Parks and Recreation Department
5.	Mountains-to-the-Sea Trail	High	County Open Space and Real Estate Division
8.	Joint School and Park Site	High	Durham Public Schools, City Parks and Recreation Department

Table 8, Policies and Priorities			
Policies		Priority	Responsible Party/Parties
9.	Greenway Trails	High	City Parks and Recreation Department
10.	North Durham Parkway	High	Durham-Chapel Hill-Carrboro Metropolitan Planning Organization
12.	Panther Creek Nature Trails	High	City-County Planning Department
13e.	Natural Corridors: Laurel Creek	High	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
13g.	Natural Corridors: Lick Creek	High	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
17.	Site Steward Program	High	City Parks and Recreation Department, County Open Space and Real Estate Division
18.	Falls Lake Interim Management Lands	High	County Open Space and Real Estate Division
6.	Management Policies and Procedures	Medium	City Parks and Recreation Department, County Open Space and Real Estate Division
7.	Trail Access to Falls Lake Lands	Medium	City-County Planning Department, County Open Space and Real Estate Division
11.	Panther Creek Rail-Trail	Medium	City Parks and Recreation Department
13a.	Natural Corridors: Panther Creek	Medium	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
13b.	Natural Corridors: Chunky Pipe Creek	Medium	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
13c.	Natural Corridors: Martin Branch Creek	Medium	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
13d.	Natural Corridors: Rocky Branch Creek	Medium	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
13f.	Natural Corridors: Little Lick Creek	Medium	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division

Table 8, Policies and Priorities			
Policies		Priority	Responsible Party/Parties
14.	Grants and Partnerships	Medium	City Parks and Recreation Department, County Open Space and Real Estate Division
15.	Publicly Owned Parcels	Medium	City Parks and Recreation Department, County Open Space and Real Estate Division
16.	Responsible Stewardship	Medium	City Parks and Recreation Department, County Open Space and Real Estate Division
2.	Wahadkee Point Park	Low	City Parks and Recreation Department
3.	Kinnard Road Park	Low	City Parks and Recreation Department
4b.	Canoe and Kayaking Access Facilities: Wahadkee Point Park	Low	City Parks and Recreation Department
Habitat Preservation			
1c.	Wildlife Habitat Area: Leatherwood Cove	High	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
1d.	Wildlife Habitat Area: Laurel Creek	High	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
2.	Creek Crossings	High	Durham-Chapel Hill-Carrboro Metropolitan Planning Organization, City Transportation Division
9.	Habitat Acquisition Opportunities	High	County Open Space and Real Estate Division, City-County Planning
1a.	Wildlife Habitat Area: Martin Branch Creek	Medium	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
1b.	Wildlife Habitat Area: Rocky Branch Creek	Medium	City-County Planning Department, City Parks and Recreation Department, County Open Space and Real Estate Division
4.	Regional Wildlife Movement Connections	Medium	County Open Space and Real Estate Division
5.	Durham County Inventory Update	Medium	City-County Planning Department
6.	Stewardship Endowment Trust	Medium	County Open Space and Real Estate Division
7.	Grants for Acquisition	Medium	County Open Space and Real Estate Division, City Parks and Recreation Department

Table 8, Policies and Priorities			
Policies		Priority	Responsible Party/Parties
8.	Bridges	Medium	Durham-Chapel Hill-Metropolitan Planning Organization, City Transportation Division
3.	Duke Power Easements	Low	County Open Space and Real Estate Division
Natural Beauty			
4.	Priority in Farmland Preservation	High	County Farmland Preservation Board
3.	Farmland Preservation Easement Assistance	Medium	County Open Space and Real Estate Division
1.	Scenic Roads Overlay UDO Text Amendment	Low	City-County Planning Department, Appearance Commission
2.	Corridor Plans	Low	City-County Planning Department, Appearance Commission
Historic Preservation			
2.	Fendol Bevers Farmstead	High	City-County Planning Department, Historic Preservation Commission
4.	Fish Dam Road Preservation	High	City-County Planning Department, Durham Open Space and Trails Commission, Historic Preservation Commission, County Open Space and Real Estate Division
1.	Historic Landmark Designations	Medium	City-County Planning Department, Historic Preservation Commission
3.	Historic Markers	Medium	City-County Planning Department, Historic Preservation Commission
5.	Priority for Sites of Historic or Archeological Significance	Low	County Open Space and Real Estate Division
Citizen Involvement and Coordination			
1.	Site Steward Program	High	City Parks and Recreation Department, County Open Space and Real Estate Division
4.	Open Space Advocacy	High	Durham Open Space and Trails Commission
5.	Durham County Open Space and Parks Exchange	High	County Open Space and Real Estate Division, City Parks and Recreation Department
2.	Open Space Education and Outreach	Medium	County Open Space and Real Estate Division, Durham Open Space and Trails Commission
3.	Right of First Refusal	Medium	County Open Space and Real Estate Division

Table 8, Policies and Priorities			
Policies		Priority	Responsible Party/Parties
Land Use and Development			
1.	Conservation Subdivisions	High	City-County Planning Department, Durham Open Space and Trails Commission
2.	Impervious Surface Credit Transfer	High	City-County Planning Department
3.	Development Review	High	City-County Planning Department, Durham Open Space and Trails Commission
4.	Development Adjacent to Corps Land	Medium	City-County Planning Department
Water Quality			
1.	Stream Buffers	High	City-County Planning Department
2.	Wider Stream Buffers	High	City-County Planning Department
3.	Priority for Water Quality	Medium	County Open Space and Real Estate Division
4.	Water Quality Educational Programs	Medium	City Public Works Department

V. Appendices

Appendix A. Historic Resources

1. **Adams-Black House.** Colley Road. No description.
2. **John T. Allen House.** Rogers Road. No description.
8. **Angier Avenue Houses.** Angier Avenue. No description.
12. **Angier Avenue Houses (North side).** Angier Avenue. No description.
18. **Dewitt Bailey Tenant Farm.** South Miami Boulevard. Small 1920's tenant farm complex, perhaps built by Bethesda landowner Dewitt Bailey. The farm contains a small one-story front gable frame house and three log farm buildings.
19. **Baptist Road House.** Baptist Road. This dwelling retains certain features that date it to the fourth quarter of the nineteenth century. Its main block displays a gable sided roof configuration rather than the tri-gable pattern which later became typical. Exterior end chimneys have stacks and shoulders of coursed fieldstone. The wing at the end of the ell exhibits unusual saw tooth patterned siding in the gables and the ghost mark of an attic window under the eaves. Except where openings have been sized down to fit modern replacements, windows consist of six-over-six, double-hung sashes.
20. **Baptist Road Old House.** Baptist Road. Edward Carpenter built this two-story tri-gable house as a residence on his farm. The architecture is typical of the two-story farmhouses built in Durham County around the beginning of the twentieth century. It has the characteristic three-bay facade and follows the pattern as seen in later frame residences in which a single exterior end chimney occupies a blank end wall. The porch wraps around one end and has a shallow hipped roof. The original windows consist of two-over-two double-hung sash.

32. **Fendol Bevers House.** Leesville Road. Standing over a fieldstone foundation, the house has an archetypal elongated form, a low hipped roof, and end chimneys with squared stone bases, a feature not commonly found in Durham County. Windows, six-over-nine on the first floor and six-over-six on the second floor, have four-part surrounds ornamented with plain corner blocks.
52. **Cleveland Bragg House.** Geer Street. No description.
56. **Dr. John Bullock House.** Bullock Road. Circa 1920. John Bullock, a veterinarian, built this house to serve as his family's home as well as his business office. His widow remained in the house until the middle 1970s. The house is a story and a half with an attached single story rear ell.
62. **Edward Carpenter House.** Baptist Road. No description.
63. **H. O. Carpenter House and Store.** The circa 1920 house consists of a one story gable sided frame structure with full width rear shed attached. The simple facade is made up of a single-leaf entrance door, flanked by paired windows. Plain weatherboards make up the exterior of the dwelling. The store building is a gable front structure sheltered by a gable entrance porch that is finished with vertical board-and-batten siding. Six-over-six double-hung windows are found in the main portion as well as the full-length side shed.
71. **Chandler House.** Stallings Road. The exterior of the house has been altered and covered with artificial siding, but it retains stately proportions and a large double-shouldered exterior end chimney on the north facade. Important interior details were preserved during the renovation. The house has its original hall-parlor plan and a very fine mantel in the parlor. An enclosed corner stair accesses the second level, which retains wide flush-board paneling and another handsome early mantel.
72. **James Chandler House.** Baptist Road. No description.
75. **Choplin House.** Pleasant Drive. No description.
77. **Clark Farm.** Mineral Springs Road. Circa 1900. This typical one-story tri-gable farmhouse still retains one exterior end fieldstone chimney. The interior center hall plan has some intact late Victorian details, including mantels, doors, and door and window trim. The property where this house sits was probably formerly a dairy farm.
53. **Colclough-Bragg House.** Creech Road. No description.
88. **Millard Colley House.** Colley Road. No description.
95. **Copley Log House.** Geer Street. No description.
109. **James W. Creech, Jr. House.** Creech Road. This single story tri-gable house was built by James W. Creech, Jr. around 1917. A distinguishing feature is the use of paired windows on either side of the entrance. The hipped roof porch has four full-length square columns with two pilasters attached to the walls of the house.
110. **James W. Creech, Sr. House.** Redwood Road. The late nineteenth century Creech home was originally a log house with an engaged porch. This log portion of the house has subsequently been covered with weatherboards and also has an addition.

111. **Cress House.** Mineral Springs Road. No description.
133. **Ferrell House.** Fletchers Chapel Road. This center-chimney frame dwelling consists of a one-and-a-half story main section with a full-width rear shed and a one story wing addition. A shed-roofed front porch shelters the three-bay facade. Square porch columns are made up of plain boards nailed together. Four-over-four and six-over-six double-hung windows are set in plain surrounds.
134. **Edgar Lee Ferrell House.** Baptist Road. A stately grove of mature oaks surrounds the well-proportioned Triple-A I-house constructed by farmer Edgar Lee Ferrell ca. 1901. The frame dwelling is classic with its three bay facade, regularly placed four-over-four windows and single shouldered brick end chimneys. More unusual are decorative shingles on the center gable, and a shed-roofed front porch with slender tapered box-columned supports. Interior finishes are largely obscured by modern wall coverings and ceiling tile, but turned newels and balusters and bracketed mantels remain in place.
154. **East Geer Street Bungalow.** Geer Street. No description.
155. **Geer Street Houses.** North and South side of Geer Street. No description
156. **Geer Street Stores.** Geer Street. No description.
162. **Gooch House.** Gooch Road. This turn-of-the-century farmhouse is located at the end of a long dirt road and is so well screened it can only be seen in the winter. The house consists of a single-pile main block with a short ell added to the rear. The hipped roof porch displays full-length tapered square columns and wraps around the front end of the house and runs alongside the ell.
186. **Dr. William Norwood Hicks Farm.** Mineral Springs Road. This structure is well preserved; it rests on brick and fieldstone piers with brick infill, has much original weatherboard siding, and six-over-six windows that retain many early panes. A hipped-roof front porch with narrow paired posts is a late 19th century replacement. A one-story ell extended to the rear has an enclosed porch.
196. **Holloway House.** Geer Street. No description.
199. **Joseph Holloway House.** Redwood Road. Architectural details of this ornate circa 1885 farmhouse include paired eve brackets, a paneled frieze board, a double-leaf entry door with rounded glazed panels, pedimented door and window surrounds, ornate porch columns, and a porch balustrade with turned spindles.
187. **Highway 70 Houses, Bethesda.** West side US 70. Five 1920s Craftsman style houses are all that remains of the community of Bethesda on US 70. These houses are typical of the houses built elsewhere in Bethesda during its development in the 1920s.
204. **Horseshoe Road House.** Horseshoe Road. This early 20th Century farmhouse is a much-altered frame I-house, three-bays wide with a long one-story rear ell. It was apparently the main house for a large farm in this vicinity prior to the creation of a 1960s subdivision around the house.
209. **Husketh House.** Fletchers Chapel Road. No description.

- 215. Jones House.** Carpenter Pond Road. The exterior end chimneys have corbelled caps. The roof has patterned metal shingles. A frieze board beneath the eaves is paneled, and a prominent center gable has rows of decorative shingles and a circular vent with a sawn work rosette. The interior is ornate, with machine-made mantels, different in each room; narrow beaded board wainscoting and siding-coved walls. The interior features turned balusters and an elegant newel with a ball finial line the stairs.
- 216. Jones House.** Clayton Road. Although it is now surrounded by new residential subdivisions, this circa 1900 pyramidal cottage occupies a prominent site at the intersection of Clayton and Junction Roads. It retains original tall interior brick chimneys but has vinyl siding, a replacement porch and replacement front door.
- 230. Leesville Road Bungalow.** Leesville Road. No description.
- 248. Marley & Peyton Road Houses.** Marley & Peyton Roads. No description.
- 249. Martin Family House.** Virgil Road. A shingled center gable adds decoration to a handsome turn-of-the-20th century Triple-A I-house, archetypal in its two-story, one room deep form. The common frame dwelling has a three bay entry facade, a hipped-roof front porch, single-shouldered brick end chimneys, a one story rear ell, and is part of a small farmstead.
- 250. Mason House.** Mineral Springs Road. This tri-gable I-house was probably the seat of the farm in the late 19th century. Although the exterior has been greatly altered, the house still retains its original six-over-six windows.
- 268. NC 98 House, Dirt Lane.** NC 98. Circa 1900. This much-altered, dilapidated house occupies a lovely hilltop site south of NC 98. It is comprised of two small houses side by side. One is an L-shaped cottage with one interior brick chimney and one exterior end stone chimney, and four-over-four and six-over-six windows. The other is a tiny side-gabled house.
- 269. NC 98 and Breedlove House.** NC 98 and Breedlove Road. This substantial 1920s frame bungalow, with a deep engaged front porch, large front dormer window, German siding and nine-over-nine Craftsman style windows, sits on a knoll above NC 98, with its vista now partially blocked by a brick ranch built closer to the highway in front of it. It was probably built as a farmhouse.
- 272. Nichols House.** Wake Forest Highway. No description.
- 273. Doc Nichols House.** Wake Forest Highway. As originally constructed, the house consisted of a massive main block, rectangular in plan, with a rear ell and small doctor's office attached. The later porch diminishes the visual effect of the characteristic central dormer. The elaborate pedimented entrance dates from the mid-20th Century remodeling carried out by Mr. Glover.

274. **John Nichols House.** Rogers Road. An unusual house type for Durham County, the frame one-and-half story cottage thought to have been built ca. 1812 by John Nichols, has been in his family-by-marriage for almost 185 years. A broad gable roof notable for prominent dormers, shelters an engaged front porch and a full width rear shed thought to be original to the house. The interior of the house has a hall-parlor plan, and retains many early elements that include wide-board flush sheathing, paneled wainscoting, beaded ceiling joists, and a paneled mantel.
275. **O.B. Nichols House.** Wake Forest Highway. The house consists of an older portion dating from the turn-of-the-century with recent additions made in stages. The facade differs from the traditional Piedmont three-bay pattern in its use of paired windows flanking the entrance. Also of note is the rectangular window found in the central gable.
276. **Fred Myers House.** Beck Road. This circa 1920 largely unaltered Bungalow Style house is unique because of its rural location. While many Bungalow Style houses were built in the early twentieth century neighborhoods of Durham, few were built in the countryside.
277. **Neuse River Baptist Church.** Cheek Road. Circa 1937. This gabled church incorporates the shape of the cross where at the peak of the gabled facade, a small square tower serves as the base of the cross. The weatherboard exterior is accentuated by six-over-six windows. The double-leaf entrance door has six flat panels beneath a five panel transom.
282. **Olive Branch Baptist Church.** Olive Branch Road. The Olive Branch Church is built over a raised basement in the shape of a cross. From central block with a pyramid roof, a pedimented entry portal extends north, identical pedimented gable-roofed wings extend east and west, and a hipped-roof wing extends south. The basement is concrete, exterior walls above it are brick veneer laid in a running bond over a single soldier course, and gable-end pediments are stuccoed beneath artificial siding.
301. **Pendergraft House.** Cheek Road. Distinguishing this tri-gable farmhouse is the detail of the central gable consisting of alternating saw tooth rows of butt-edge shingles in a variety of shapes. Four-over-four, double-hung windows are set in post and lintel frames, and the hipped roof of the wraparound front porch is supported by full length square columns.
303. **Penny Family House.** Freeman Road. The early 19th century frame one-and-a-half story cottage, said to have been built for the Penny Family, has been moved from a location near the Wake County line and restored. The broad gable roof, prominent dormers, and engaged porch are typical of the Georgian and Federal Style cottages of eastern North Carolina. The six panel front door appears to be original although other exterior elements, including beaded weatherboard siding, chamfered porch posts, six-over-nine and four-over-six windows and foundation piers are new. Chimneys, no doubt at one or both gable ends of the earlier house, have been omitted in the restoration, and a new ell has been added at the rear.
305. **Perry House.** Kemp Road. No description.

- 313. **Pollard House.** Cheek Road. This late nineteenth century tri-gable house has architectural details of generous proportions. The molded eaves of the relatively tall gables project strongly. The molded, peaked window lintels and double leaf entrance door have ornamental appliqué. The hipped-roof front porch incorporates full-length tapered square columns.
- 324. **Rich-Yates House.** Mineral Springs Road. Circa 1900. This one-story frame side-gabled farmhouse with the original brick chimney, turned porch posts that may be original. The two-over-two windows are typical for the turn-of-the-century. A gable front smokehouse of round logs stands to the side. The house is said to have been lived in by the Rich family and later by the Yates family.
- 338. **Ross Primitive Baptist Church.** Cheek Road. Circa 1900. Small gable-front frame church facing the intersection of Cheek and Junction Roads. The church is significant as one of a small number of historic Primitive Baptist churches surviving in Durham County. The plain exterior with no steeple is typical of 19th century churches of this denomination.
- 350. **Brantley Sherron House.** Sherron Road. No description.
- 351. **Claude Sherron House.** Holder Road. No description.
- 367. **Suggs Grocery.** Geer Street. No description.
- 368. **Suitt House.** Fletchers Chapel Road. No description.
- 417. **Wilkerson House.** Olive Branch Road. No description.

Source is the Durham County Historic Inventory, 1992

Appendix B. Cemeteries

- 1. **Unknown Owner,** Bungalow Avenue
- 2. **Cemetery,** Carpenter Pond Road
- 3. **Evans Cemetery,** Mineral Springs Road
- 4. **Hopson Cemetery,** Plantation Road
- 5. **Barnes Realty and Construction,** Lynn Road
- 6. **Unknown Owner,** Olive Branch Road
- 7. **Gullie Cemetery and Fannie Coley Storms,** Old Road
- 8. **Lynn Cemetery,** Lynn Road
- 9. **Rogers Grove Church Trustees,** Baptist Road.
- 10. **Rogers Minnie Parker Heirs,** Baptist Road.
- 11. **Holloway Cemetery,** Carr Road
- 12. **Rogers Family Cemetery,** Baptist Road
- 13. **Breedlove Cemetery,** Clayton Road
- 14. **Calvary Baptist Church,** Boyce Mill Road
- 15. **Nichols and Fletcher Cemetery,** Armitage Roa
- 16. **CCB Trust Company for Fletchers Cemetery,** Clayton Road
- 17. **Frazier Cemetery,** Overhill Road

18. **Gooch Cemetery**, Shaw Road
19. **Cemetery**. Baptist Road
20. **Lunsford Cemetery**, Freeman Road
21. **Clover Cemetery**, Junction Road
22. **Cemetery /Freeman Elizabeth Carpenter Heirs**, Fletchers Chapel Road
23. **Cemetery**, Cheek Road
24. **Woodlawn Memorial Gardens, Inc.**, Cheek Road
25. **Holloway Cemetery**, Gorman Church Road
26. **Creech Cemetery**, Redwood Road
27. **Rigsbee Cemetery**, East Geer Street
28. **Rigsbee Cemetery**, East Geer Street
29. **Cemetery**, East Geer Street
30. **Glenn Heirs Cemetery Lot**, Joyner Road
31. **Glenn Heirs Cemetery Lot**, Joyner Road
32. **Cemetery**, Bragg Road
33. **Cemetery**, Redwood Road

Appendix C. References

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