

NEW HOPE CORRIDOR OPEN SPACE MASTER PLAN

**Coulter Associates, Landscape Architects & Land Planners
and
New Hope Corridor Advisory Committee**

for

**The City of Durham
Durham County
Orange County
and
The Town of Chapel Hill**

April, 1991

NEW HOPE CORRIDOR OPEN SPACE MASTER PLAN

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PREPARED FOR THE JURISDICTIONS OF:

Town of Chapel Hill, NC
City of Durham, NC
Orange County, NC
Durham County, NC

ADVISORY COMMITTEE MEMBERS:

Appointed jointly by all
four jurisdictions:

Judd Edeburn
Pearson Stewart,
Chair
Ray Green
Susan S. Rose

Orange County:

Gail Boyarsky
Susan Waldroup
Jean Hamilton

Durham County:

Mary Whitmore
Oliver W. Alphin
Wade Penny, Jr.

Chapel Hill:

Gene Davis
June Dunnick
Kathryn Harris

City of Durham:

Robert Healy
Annette Montgomery
Thomas Krakauer

PLANNING DEPARTMENT STAFF:

Orange County	Emily Crudup
Durham County	Vonda Frantz
Chapel Hill	Michelle Overby
	Chris Berndt
City of Durham	Vonda Frantz

**VEGETATION STUDIES, SITE
DESCRIPTIONS, AND FIELD
MAPS: Ed Harrison**
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Conservancy

CONSULTANT

Coulter Associates, Landscape Architects and Land Planners, Durham, NC

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Jonathan Howes - Mayor, Chapel Hill, NC
William Bell - Chair, Durham Board of County Commissioners
Moses Carey - Chair, Orange Board of County Commissioners

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Mike Waldroup
Jane Korest
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New Hope Audubon Society
Triangle Land Conservancy

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ADOPTION OF THE NEW HOPE CORRIDOR OPEN SPACE MASTER PLAN

The New Hope Corridor Open Space Master Plan was adopted as follows:

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Chapel Hill: November 25, 1991, adopted as an amendment to the Comprehensive Plan.

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Executive Summary

In 1989, in passing a common resolution, the governing boards of Chapel Hill, Durham, Durham County, and Orange County recognized the value of the New Hope corridor and took steps to preserve this open space as a natural asset. The 1987 Inventory of Natural Areas and Rare Species of Durham County recognized as significant the New Hope Corridor itself and three specific natural areas within the corridor. The New Hope corridor received Federal recognition when, in August 1990, the US Fish and Wildlife Service designated New Hope Creek as an "Important Regional Wetland." This designation may offer the possibility of receiving Federal funding. Since October 1989, an Advisory Committee representing each of the jurisdictions has worked with members of the planning staffs and a Consultant, Coulter Associates, Landscape Architects & Land Planners, to prepare a Master Plan for the preservation of the corridor.

The Consultant and the Advisory Committee were charged with....

"....creating an open space corridor linking the Eno River State Park, the New Hope Creek, Corps Lands, and the growing communities of Durham and Chapel Hill for aesthetic, environmental, educational, and recreational purposes, and as a means of shaping the urban form of the area."

The New Hope Corridor Open Space Master Plan identifies the critical environmental areas to be protected to achieve those goals and recommends that the following land areas be acquired through purchase, acquisition of development rights, or donation:

- The stream course;
- Adjacent floodplains;
- Steep slopes (defined as 20 percent or greater) adjacent to floodplains;
- Larger tracts of particular historic, educational, or recreational value (open space anchors); and
- The NC 751 Scenic Road (designation and some acquisition).

These areas would provide locations for such features as wildlife habitats, trails, and access areas.

The Advisory Committee recommends that the participating governing boards move to protect the following areas:

- New Hope Creek from NC 54 north and west to Erwin Road in Orange County;
- Dry Creek from New Hope Creek on the north side of the Chapel Hill-Durham Boulevard west to Erwin Road and the future Chapel Hill greenway;
- Mud Creek from New Hope Creek north to NC 751;
- Connections between Mud Creek-NC 751 and the Eno River State Park along NC 751 and Orange County roads (to the west); and
- Sandy Creek from New Hope Creek on the south side of Chapel Hill-Durham Boulevard northeast across the Boulevard to NC 751.

After adoption of the Master Plan by the four jurisdictions, a permanent Advisory Committee should be established to monitor and advise in carrying out the recommendations of the plan and to nurture and foster citizens' involvement in preservation and acquisition. The membership of the Committee would be drawn from the planning and open space agencies of the four jurisdictions with additional representation of interested citizens and property owners.

The Committee should be official and permanent and should be charged with the responsibility of overseeing the corridor's future, including reviewing and making recommendations concerning development proposals, annual budgets, etc., that affect the corridor. The Committee should not be responsible for operations related to the corridor. The Committee should require only minimal staff support in carrying out its duties.

The Implementation Recommendations (Section III.) consist of three phases, which would take place over a maximum of 20 years:

Phase 1. Priority Corridor Acquisition (Years 1-5)

Objective: Through acquisition, to utilize land presently under control of the City of Durham, Duke University, and the Corps of Engineers, as well as that acquired through purchase of opportunity in the Wildlife Protection Area and other acquisition opportunities that are presented through rezoning, negotiation, or donation.

Phase 2. Completion of Corridor Acquisition (Years 5-10)

- Objectives:**
- To complete the acquisition of land needed for the Wildlife Protection Area and for steep slope protection.
 - To acquire land needed for stream protection and for anchors and access areas.
 - To construct trails as needed to connect schools, parks, and other locations.

Phase 3. Completion of Trails and Access Areas (Years 10-20)

- Objective:**
- To prepare plans, obtain needed financing for construction, and construct trails and access areas.

Protecting the New Hope corridor and establishing open space anchors will require the acquisition of approximately 1100 acres of floodplain, 45 acres of steep slopes, and 554 acres of uplands, and the purchase of development rights to an additional 103 acres. To achieve the passive recreation potential of the corridor, approximately 20 miles of trails should be developed.

The estimated cost of land acquisition ranges between \$12.5 million and \$22.5 million. The cost of developing the recreational potential and trails is estimated to be between \$1.8 million and \$2.7 million. The total project cost is estimated to be between \$14.3 million and \$25.3 million dollars.

The partnership between citizens and government that has led to the preservation of the Eno River basin has brought increasing national recognition to our community. Employing a similar private-public partnership to establish the New Hope corridor will ensure that the western side of the Triangle will continue to be a desirable place in which to work and live. The benefits from maintaining open space, maintaining and improving environmental quality, and providing potential for passive recreation are immediate and real. They augment and complement the benefits of preserving for the benefit of all our citizens, a significant buffer of green trees and free-flowing water.

I. New Hope Corridor Open Space Master Plan: Narrative

New Hope Corridor Open Space Master Plan

I. New Hope Corridor Open Space Master Plan: Narrative

A. Introduction and Overview

In 1989, the separate governing boards of Chapel Hill, Durham, Durham County, and Orange County adopted a common resolution recognizing the open space value of the New Hope Creek corridor and supporting its preservation. A copy of the resolution is provided as Appendix B.

The governing boards established an Advisory Committee and retained Coulter Associates to work with the Committee as a Consultant in preparing recommendations for the corridor. This Master Plan Narrative and the Master Plan Details (Section II) that follows constitute the findings of the Committee and provide the requested recommendations.

The recommendations in this report are not simply recapitulations of the pre-resolution studies or of the resolution itself. Rather, they are the result of detailed studies, on-site inspections, map reviews, consultations with area professionals, and committee judgements.¹ In addition, of great importance, they incorporate the knowledge and suggestions of residents of the jurisdictions affected.

Defining the Corridor's Geographical Extent

The New Hope corridor can be defined in a number of ways. An all encompassing definition could include lands from the western reaches of Orange County east and south to the waters of Jordan Lake. The narrowest definition could limit the corridor to the central portions of New Hope and Mud Creeks, with little regard for tributaries. Rather than defining the corridor to be all encompassing or in a way that is too limited to answer environmental and land use needs, the Committee

recommends that the area's governing boards accept the following delineation of the corridor as that land to which they will give attention:

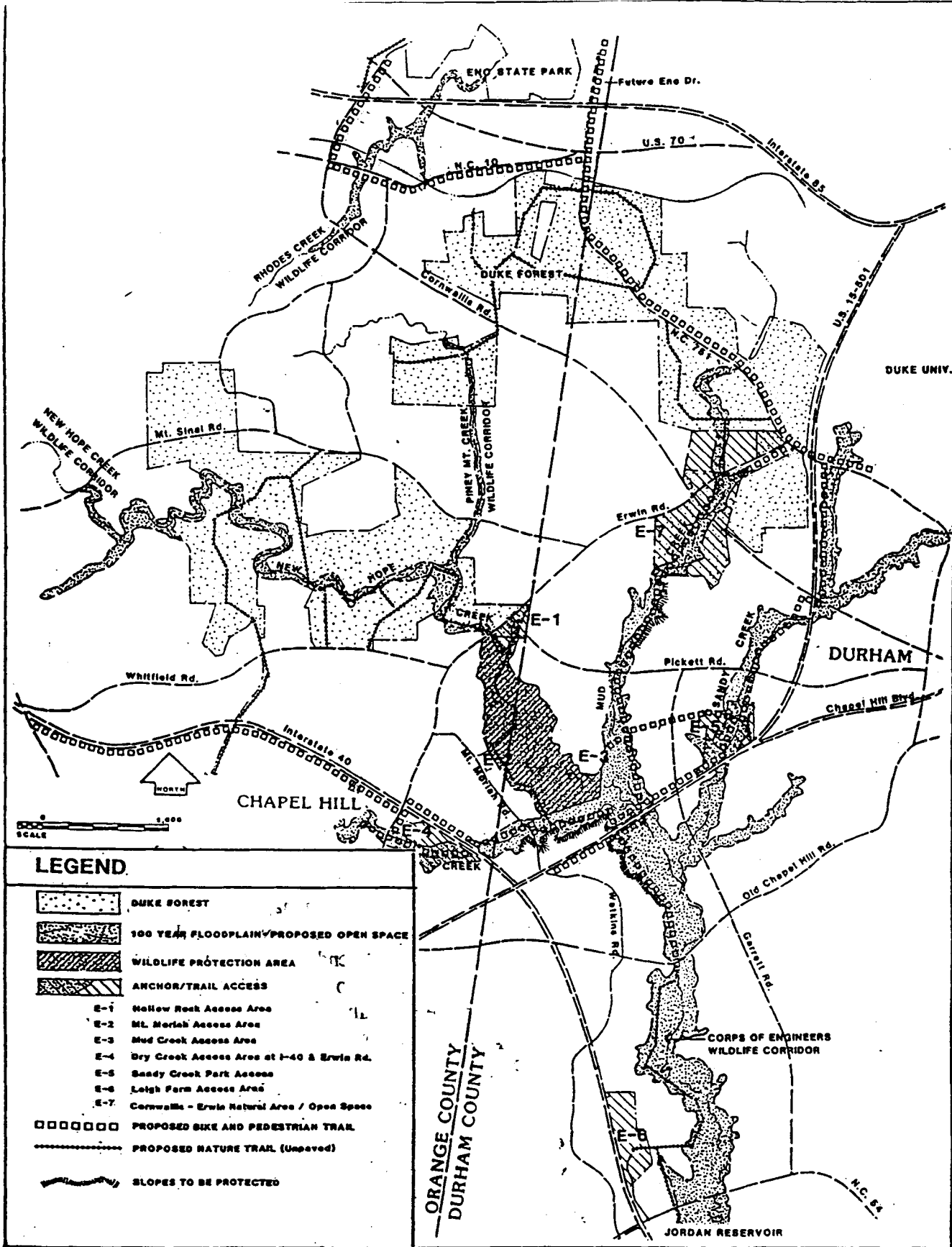
- New Hope Creek, from NC 54 north and west to Erwin Road in Orange County;
- Dry Creek from New Hope Creek on the north side of the Chapel Hill-Durham Boulevard west to Erwin Road;
- Mud Creek from New Hope Creek north of the Chapel Hill-Durham Boulevard north to NC 751;
- Sandy Creek from New Hope Creek south of the Chapel Hill-Durham Boulevard northeasterly across the Boulevard to NC 751; and
- Strip connections between Mud Creek-NC 751 and the Eno River State Park along NC 751, old NC 10, Mount Herman Church Road, and Pleasant Green Road.

The New Hope Corridor Open Space Master Plan Map (page 3) indicates the extent of the New Hope corridor recommended for priority attention.

The Committee recognizes that the portions of New Hope Creek and its tributaries that extend upstream of these limits have significant value for water quality protection and other open space purposes. However, the Committee suggests that these values be recognized and incorporated into the normal course of execution of local government development policies.

Lateral Extent. Clearly, the areas adjacent to the actual stream courses of New Hope Creek and its tributaries, as well as the associated floodplains and steep slopes (i.e., slopes of 20 percent grade or higher), have great significance for any proposed open space corridor. To some degree, this important area extends to the upper edge of the watershed. However, the Committee recommends that detailed attention should be given to much more limited areas, specifically:

- The stream course itself;
- Adjacent floodplains;
- Steep slopes adjacent to floodplains; and
- The remaining land between the top of a slope and the nearest road or existing development.



NEW HOPE CORRIDOR OPEN SPACE MASTER PLAN MAP

CITY OF DURHAM, N.C.
 CITY OF CHAPEL HILL, N.C.
 DURHAM COUNTY
 ORANGE COUNTY

Coulter Associates - Landscape Architects - Land Planners Durham, N.C.

The Value of the Corridor's Topography and Natural Habitat

The New Hope corridor, especially the portions adjacent to or near the streams, is an unusual combination of wet areas, drier floodplains, steep slopes, gradual slopes, typical common vegetation, regionally rare plant communities, and fine remnant stands of bottomland hardwoods, all of which provide habitat for a diversity of wildlife. Each natural component of the corridor enhances the value of the corridor as a whole.

All slopes adjacent to the floodplains contribute to both the environmental quality and the beauty of the corridor. Even the steepest of the slopes should remain open and undeveloped. This is not because it is not possible to build upon them; with care, delicacy, very good design, and appropriate uses, it is possible to build there. Rather, they should be left in their natural state because they are dramatic, botanically significant, they offer inspiring scenic views, and provide a very different natural environment for people to have as part of their heritage. While it is important to protect floodplains for water quality, wildlife, and to prevent property damage, it is these slopes which provide habitat diversity, unique scenic qualities, and wildflower displays.

All portions of the corridor are different and intriguing to the naturalist or any curious mind. The western side, south of the Boulevard, has dramatic ravines. The wide floodplain between the Boulevard and Erwin Road is a natural wildlife protection area, with remnants of pastures. The Dry Creek floodplain is anything but dry. The Mud Creek tributary is narrow and, although it has an existing sewer line, it is an oasis between residential areas.

The portion of the corridor directly north of the Chapel Hill-Durham Boulevard exemplifies the unusual qualities, the diversity, and the value of the entire corridor. The northern portion of the Boulevard ridge extends from the Boulevard some 1000 to 1500 feet north to the floodplain. The area slopes gently from the Boulevard, but in some portions near the floodplain it eventually slopes quite precipitously. Several ravines cut through to the floodplain. In its own right, the topography of the area is varied and challenging. Although portions can be built on, some portions are quite unsuitable for building.

The botanical communities present in this portion of the corridor are diverse, with spectacular displays of spring wildflowers. The area nearest New Hope Creek, known as the Patterson Wildflower Slopes, is essentially a hardwood forest, with sizable northern red oaks, smaller sugar maples, and tulip poplars. More than 50 species of flowering trees, shrubs, and herbs also can be found. Four tenths of a mile

east of Mt. Moriah Church Road, one finds the Biscayne Road White Oak stand, which has large numbers of large white oaks, some more than two feet in diameter and some of which are estimated to be between 100 and 120 years old. In themselves, these species are neither rare nor unique. However, in this day and age, it is uncommon to find them in such numbers and in an area between and so close to two cities.

The corridor also provides habitat for wildlife, ranging from deer to four-toed salamanders. True, it is seldom that a person, casually walking or riding through the corridor, sees a deer or a salamander, but these and other species are part of the natural diversity that is essential to the well-being of our environment.

Finally, the corridor contributes to the protection of the water quality enjoyed by the community. Although the corridor is not the only source of protection for Jordan Lake water quality, the floodplains and steep slopes in the corridor are very valuable in maintaining the water quality of the creeks that feed into Jordan Reservoir and, consequently, are valuable components of the overall water quality protection available to the region.

Detailed descriptions of the areas in the corridor are provided in Section II, Master Plan: Details.

The Value of Keeping the Corridor Open. If the corridor were abandoned today to whatever may happen in the future, it would be reasonable to expect gradual intrusions into portions of the floodplains. Timber removal and installation of non-building uses would be likely to occur over increasingly large areas of the floodplain. As a result of removal of vegetation and other topographical disturbances, erosion and sedimentation from adjacent development would affect more and more of the steep slopes. Thus, over time, the corridor would gradually lose its value to both the natural world and to the people in the community.

As has already been noted, the corridor offers a number of valuable environmental protections--to water quality, to diverse wildlife species and their habitats, to birds by providing sanctuaries, to fish and waterfowl, to botanical species that are either regionally rare or present in unusually great diversity and numbers in an urban area.

The corridor is also of great recreational value to Triangle residents and visitors. The corridor should never be a major active recreation area--it can be too wet and has too much value in maintaining environmental quality to be developed with ball fields and other active uses. However, it offers unlimited opportunity for walking, observing

birds and other wildlife, fishing, and other activities that offer relaxation in contrast to the stresses of urban life.

The most active recreational use of the corridor will be trail use. In order to reduce the effect of trails on natural habitats (effects cannot be avoided altogether), carefully designed trails can be located and scaled so as to have minimum effect. Most trails would be narrow and unpaved. Some parts of the corridor, particularly in the Mud Creek portion, can be the location of reasonably wide trails for more active use--bicycling, jogging, and distance hiking--as well as for casual strolls. Some portions of a trail connecting the Corps of Engineers land at NC 54 and the Eno River State Park also could be wide, and other parts of the trail should be narrow nature trails.

Finally, the corridor can provide experiences of visual beauty, a natural resource for education concerning the environment, and an open space cushion between the Durham and Chapel Hill urban areas. These uses are real and valuable, but they will be realized less and less if the corridor is abandoned to whatever may happen in the future.

B. Planning for the Protection and Use of the Corridor

In order to plan effectively both for the use of the corridor and the preservation of its benefits, it is necessary to establish criteria upon which to base the overall plan. The Advisory Committee agreed that the following items should be incorporated into the Master Plan.

General Type of Trail to be Used

All trail development must be very sensitive to environmental and topographical factors and the critical nature of floodplains. Different areas will require different types of trail surfaces for wetland and floodplain protection. Although this Plan recommends specific trail types in each area, the Plan recognizes that decisions concerning the particular type and design of trail for a specific location will need to be made during the planning process for each particular trail. To allow for ease of construction, to offer the greatest protection to adjacent habitat, and to permit ease of use, strips of land acquired for trails should be about 100 feet wide.

Wildlife Corridor Use

The goals and values of wildlife protection and encouragement are major components of the Master Plan. Under the Master Plan, wildlife corridors typically will be

reserved and maintained for wildlife enhancement and will be used only for passive recreational purposes.

Trails and Habitat in Portions of the Corridor That Should Not Be Built Upon

The floodplain and steep slope portions of the New Hope corridor should be kept essentially in a natural state, providing a place for vegetation to grow and offering a habitat and passage way for wildlife, as well as providing a natural environment for people to walk through and enjoy. In particular, the floodplains and steep slopes should become wildlife and bird sanctuaries. Any trails should be routed along the edges of the floodplain and at the base of steep slopes. Trail locations proposed for specific areas are indicated on maps provided in Section II, Master Plan: Details. General guidelines for trails are:

1. Trails for more active use

A continuous trail from Chapel Hill Road north to the vicinity of the Eno River State Park, including the following segments: 1) Along New Hope Creek from Chapel Hill Road to Chapel Hill-Durham Boulevard and under the Boulevard via the existing New Hope Creek bridge northwest to Erwin Road; 2) Along Mud Creek from Chapel Hill-Durham Boulevard to NC 751; 3) Along Sandy Creek from Chapel Hill-Durham Boulevard to NC 751; 4) Connectors between New Hope Creek Trail and Mud and Sandy Creek Trails; 5) Along NC 751 to NC 10 and continuing on in the future along the planned Eno Drive; 6) Along old NC 10 and Mount Herman Church Road to the Eno River State Park.

Other trails for more active use extend along Dry Creek west from New Hope Creek to Erwin Road with a temporary but long-time routing along the north side of Interstate 40 to be left in place until the Dry Creek box culvert under Interstate 40 can be enlarged to "people size"; along Dry Creek from Erwin Road east to Interstate 40, to be principally a Chapel Hill greenway system trail until Interstate 40 can be passed under.

2. Trails for less active use

From NC 54 north to Chapel Hill Road on Corps of Engineers land; along the west side of the New Hope Creek floodplain from Dry Creek north to Erwin Road.

3. Access Points for Trails

Selected access points, including parking areas, picnic areas, and in some locations interpretive centers should be offered at such locations as:

- Leigh Farm;
- NC 54;
- Sherwood Githens Middle School or the City of Durham Park;
- Erwin Road between Dry Creek and Interstate 40;
- Erwin Road near the Hollow Rock Store;
- Mt. Moriah Road;
- Erwin and Cornwallis Roads intersection;
- Sandy Creek sewage treatment plant site (abandoned);
- Mud Creek between Chapel Hill-Durham Boulevard and Pickett Road.

Parking only should be offered at NC 54. Should it become less significant for academic purposes in Duke University's Duke Forest plan, the Erwin and Cornwallis Roads intersection location, which is in Duke Forest and bisected by Mud Creek, could be a superb location for a natural area City park. The abandoned sewage treatment plant site at Sandy Creek is an excellent location for an active recreation facility. The Leigh Farm, north of NC 54, should be preserved and made the southern anchor of the corridor. Also, Erwin Road on the north side of Dry Creek is an excellent location for an open space anchor. Hollow Rock Store should be a significant community landmark.

Criteria for Developing Portions of the Corridor That Could Be Built Upon

This report is not a detailed plan for using portions of the corridor adjacent to the floodplains and steep slopes. However, the ways in which these areas are or are not developed will have a direct impact on the waterways, the floodplains, and the slopes--the portions of the corridor that should remain essentially undisturbed.

1. General Criteria

If the adjacent areas are developed, they should be developed with great sensitivity to the environment. Run-off and erosion must be kept at an absolute minimum. Ground disturbance should be kept as far distant as possible from the top of the slopes. Ravines should be recognized and retained in their natural state with as little disturbance as possible. Any manmade lakes should be located as far as possible upstream in the appropriate draw. Development on or near ridge lines should be designed so as to prevent visual disturbance of the appearance of the ridge line areas as seen from the corridor.

2. Development in Areas Suitable for Higher Density

There is disparity between the needs of development and the needs of natural areas, but that disparity can be ameliorated by careful and sensitive site planning. Although the lower the density, the easier it is to have less disturbing development, there are portions of the corridor which, by virtue of location, are appropriate for higher density development--such as residential, office, or other types of commercial development as appropriate for a particular location. In particular, such areas as the Chapel Hill-Durham Boulevard area and the area between the Boulevard and Chapel Hill Road could accommodate higher density. Any development of those areas immediately adjacent to floodplains and steep slopes will require taking the most care, giving the most thought, and fulfilling the highest responsibility.

3. Steep Slope Development

If development is planned to occur in the area of steep slopes, it is strongly recommended that such development meet stringent performance standards that would result in appropriate erosion control, prevention of washing, and sufficient pollutant removal through filtration. The amount of impervious surfaces should be limited. Vegetative cover should be re-established immediately following any construction. It is further recommended that engineering studies be provided in the site-specific plans to ensure that such standards are met.

Sewer and Utility Line Installation

The great and obvious disparity between the introduction of sewer and utility lines and the retention of undisturbed natural areas presents a troubling and very real problem. Yet, both uses are necessary to the public good. Of course, existing sewer and utility line locations should be utilized and, in some instances, there is room for both utilities and natural habitat. The Mud Creek sewer easement would be an excellent location for a paved trail, while the section of New Hope Creek which extends through the wide wildlife protection area from Dry Creek up to Erwin Road, is suitable only for a narrow, unpaved trail and should be kept free of additional sewer and utility lines.

Road Construction and Use

Road construction and use have a direct impact on areas that should remain natural. The Committee recommends the following related to plans for three existing or possible highway proposals that could affect the corridor.

1. NC 751 from Erwin Road north to the Railroad

The present treatment of this portion of NC 751 should be maintained. NC 751 serves as a limited access highway because of Duke University's policies concerning the Forest and, as such, has a high traffic-carrying capacity. This part of the road should not be widened. Allowing vegetation, particularly trees and shrubs, to grow close to the ditch line would help maintain and enhance the utility of the road as a parkway and, at the same time, not diminish its traffic capacity.

2. Erwin Road Between Weaver Dairy Road and NC 751

This portion of Erwin Road, the western boundary of much of the corridor, is used and increasingly will be used as an alternate route to the Chapel Hill-Durham Boulevard. Although such alternate use probably cannot be prevented, any temptation to make it easier to use this portion of Erwin Road as an alternate route should be resisted. Specifically, the road should not be widened along this area. Making it a high capacity, two-lane road would do great damage to its lovely, rural character, which makes it a significant asset to the corridor and the whole urban area.

3. Chapel Hill-Durham Boulevard Interchange

If a new Chapel Hill-Durham Boulevard interchange is included in the forthcoming thoroughfare plan, any proposed road between Chapel Hill Road and the Boulevard should be located away from the steep slopes that border the creek in that area. Further, any interchange with the Boulevard should be located and planned so as to avoid the steep slopes and accompanying ravines. Finally, the Boulevard interchange design should not include a direct connection to Mt. Moriah Church Road or Erwin Road.

C. Carrying Out the New Hope Corridor Open Space Master Plan

The New Hope Corridor Open Space Master Plan proposed in this report is ambitious. However, its successful fulfillment--which hinges on being able to guarantee the open space values of the corridor--will result in the creation of a major asset for the region.

Acquisition

There is one primary means through which the Open Space corridor values can be guaranteed--through acquiring either the land or the development rights to the land that makes up the corridor. Such acquisition should be conducted carefully and through means that are fair to all parties. The majority of the floodplain and steep slope portions of the corridor are privately owned. Various sized portions of the corridor are owned by Duke University, the City of Durham, the Durham County School Board, and the Corps of Engineers (which holds a sizable portion of the floodplain north of NC 54). It is inappropriate to accomplish the Master Plan by additional regulation. Moreover, such an approach really would not guarantee the open space values inherent in the concept of the Open Space corridor. Some form of compensation should be offered to secure the guarantees. The Committee recommends the following options for acquisition.

1. Trail Locations

Whenever possible, trail locations should be acquired outright by the appropriate City or County agency. It is preferable that this be done by purchase. These trail areas will be used by the public and should be acquired by the public. Perhaps trail use through Duke University land could be guaranteed through some mutually beneficial agreement between Duke University and a public agency.

2. Access Areas

Locations for parking areas, picnic areas, and in some locations interpretive centers also will be used by the public and, consequently, should be purchased by a public agency.

3. Wildlife Corridors

The New Hope corridor extending south from Erwin Road is a wonderful extension of the Duke Forest areas that, in themselves, have major wildlife

utility. Such utility would be enhanced further by using existing wildlife corridors in Orange County extending north from Duke Forest. Some of these corridors should be kept in private ownership.

4. Natural Area City Park

The possible park area at the Erwin and Cornwallis Roads intersection is owned by Duke University. In order to establish a natural area City park at that location, the City of Durham and Duke University should negotiate an agreement governing the location's use as a public park at some time in the future.

5. Sandy Creek Active Recreation Area

Ownership of the old waste treatment plant site on Sandy Creek should be retained by the City of Durham. The site should be developed as an active public recreation area.

6. Floodplains and Steep Slopes in Undeveloped Residentially Zoned Areas

The absence of use by the public does not mean that there is no public benefit to acquiring, maintaining, and protecting floodplains and steep slopes. Because of the usefulness of such natural resources for environmental protection, wildlife habitat, urban separation, and natural beauty, it is to the public benefit to acquire and protect them, although such areas should not be broadly open to the public. Therefore, private owners should be compensated by the public.

7. Floodplains and Steep Slopes in Commercially Zoned Areas

It must be recognized that the only equitable method of protecting environmentally sensitive lands in commercially zoned areas is probably through direct purchase by a public agency or by site design which preserves steep slopes and floodplains.

Forms of Compensation for Private Owners

Compensation to private owners may take the form of direct purchase or purchase of an interest less than full ownership by a public agency. It is also the case that some owners may wish to donate either all or part of their interest in pieces of land to a local jurisdiction.

1. Purchase of Rights

Outright purchase offers the fullest protection. However, purchase of partial interest, typically in the form of building/development rights may be as effective. Public acquisition of only the development rights may be less expensive than outright purchase, particularly in the case of development rights that pertain to areas that really should not be built upon in any event. The purchase of rights rather than full ownership of the land would provide the public benefit of keeping the land in its natural state and, at the same time, the private owner would retain ownership and the right of private enjoyment and no trespass.

2. Exchange of Rights (Clustering)

In some cases, it may be beneficial to permit the exchange of building rights. In the floodplain areas other than the Erwin Road and Chapel Hill-Durham Boulevard wildlife protection area and where the ownership pattern is appropriate, building rights for the floodplain portion of the tract could be transferred to a buildable portion. Such transfers should be permitted only with sensitivity for adjacent tracts.

3. Donation

For personal reasons, an owner may wish to give the land or an interest in the land to the public or a private nonprofit agency. Such a situation would be very desirable, but a public agency should not rely upon donation of the land as a primary method of guaranteeing appropriate open space values.

It should be noted that the most appropriate location for a trail in many situations will be directly at the edge of a floodplain or, stated differently, between the buildable portion of a tract and the floodplain. In such a situation, the owner may have no interest in retaining ownership of the floodplain. Should that be the case, the public agency should acquire complete interest.

Finally, the extensive wildlife protection area between the Boulevard and Erwin Road should be given added protection because of its wildlife value. In addition to preserving the floodplain and steep slopes by purchasing the fee simple interest or development rights, the adjacent buildable areas up to the nearest road should be kept at as low a density as possible by acquiring development rights so that the resulting density will be the same as that provided for in the Orange County rural buffer

provisions. In such areas, a public agency could acquire the development rights for the difference between the existing permitted densities and those permitted by the rural buffer standards.

Implementation and Cost

The New Hope Creek open space corridor will be an undertaking with major benefits, and implementing the Master Plan for the corridor will require much time and effort. This report does not include a detailed statement of implementation priorities nor would it have been appropriate for the Advisory Committee to do so. Rather, the guidelines and criteria for creating and preserving the corridor should be included by each affected city, county, and private agency in its program and work toward execution of the Master Plan as expeditiously as is reasonable.

In addition, as noted earlier in the report, the establishment by inter-local agreement of an Advisory Committee with the direct responsibility for the plan would be very helpful. Such an agency could serve as the catalyst for implementation--by working to insure that the several elements of the Master Plan are kept in the budgets and action plans of the appropriate jurisdictions and by providing guidance, direction, and coordination for the operating departments.

Actual expenditures for accomplishing the creation of the New Hope open space corridor should be budgeted as appropriate over a period of years by the respective jurisdictions.

Discussions with landowners concerning the transfer of building rights and/or sale of property need not and should not wait. Agreement to making such transfers does not require an immediate exchange of funds, whether public funds or not, only public willingness to act. Arranging now for such transfers, pending payment if payment is to be offered, or for donation would both signify the public agency's good faith to the landowner and do much to give reality to the open space objectives of this Master Plan. Discussions between landowners and private conservation groups concerning protection measures, including transfer of rights and donations, also need not and should not wait.

II. New Hope Corridor Open Space Master Plan: Details

II. New Hope Corridor Open Space Master Plan: Details

The New Hope corridor, which includes New Hope Creek, Mud Creek, Sandy Creek, and Dry Creek, is situated between Durham and Chapel Hill and encompasses portions of Durham County and Orange County. A large area of undeveloped land remains between the two cities and lies in the two counties. However, much of the remaining open land is in the hands of developers. A good portion of this land is in the form of floodplain and steep slopes. Existing development pressures dictate the need to preserve some of the open space that is left.

Some efforts have been made to identify and preserve open land areas. The Inventory of Natural Areas and Rare Species of Durham County (1987) has identified areas of regional importance within the New Hope Creek corridor. The Leigh Farm buildings are on the National Register of Historic Places. The New Hope corridor wetlands are included in the Regional Wetlands Concept Plan of the U.S. Fish and Wildlife Service (August 1990; draft); the wetlands have been identified and designated as warranting "priority consideration for acquisition with funds appropriated through the Land and Water Conservation Fund." In addition, Duke University owns thousands of acres in both counties and preserves them for teaching and research purposes by the School of Forestry and Environmental Studies. Duke Forest has remained a wooded open space that is enjoyed and appreciated by thousands. The southern end of the corridor is owned by the Corps of Engineers. The Eno River State Park is at the northern end of the corridor.

In spite of these efforts, residential subdivision and commercial land development have been occurring at an extremely rapid pace. The floodplains of New Hope Creek, Mud Creek, Sandy Creek, and Dry Creek, as well as Duke Forest, the Corps land, and Eno River State Park, are being crowded to their boundaries. There is an immediate need to create a means for preserving significant open space for wildlife preservation, plant habitat, protection of water quality, and enjoyment by the citizens of the region.

A. Value of the Master Plan

The New Hope Corridor Open Space Master Plan is intended to specify critical open land areas and to provide a comprehensive, cohesive plan for acquiring and using those lands in such a way as to preserve and protect them for both their natural and public benefit. Specifically, the Master Plan aids in the following processes:

- Culminating the many years of inventory, study, and discussion that have occurred concerning the New Hope corridor;
- Showing decision-makers, in a systematic and meaningful way, the options that are available and enabling the cities and counties to take action on available policy choices (including regulations, preservation, and acquisition) to preserve open space;
- Providing a forum for the many entities with interests in the future of the New Hope corridor, including local governments, conservation groups, developers, and landowners;
- Balancing the beneficial functions of corridor land left in its natural state with the need to develop land for human activities; and
- Helping the public visualize the landscapes and learn about the complex environments that comprise the corridor.

B. Development of the Master Plan

During the spring of 1989, the elected bodies of Chapel Hill, Durham, Orange County, and Durham County adopted a New Hope Corridor Resolution (Appendix B). The resolution supported the preservation of an open space corridor and directed staff to continue with more detailed planning for its creation. In May 1989, the four jurisdictions directed that funds be appropriated to hire a consultant, Coulter Associates, Landscape Architects and Land Planners, to prepare a Master Plan.

During the summer of 1989, the Durham County Inventory of Natural and Cultural Resources received funding through the Triangle Land Conservancy to conduct vegetation studies in the New Hope Corridor. Ed Harrison, Environmental Consultant, studied and reported concerning the vegetative communities in the New Hope corridor and Mud Creek floodplains and slopes. This field work resulted in a better understanding of the characteristics of vegetation in this vicinity. The complete report, *New Hope Creek Corridor Vegetation Inventory Site Descriptions*,

summarized in Appendix E, is available at the planning departments of the participating jurisdictions.

In October 1989, an Advisory Committee was appointed. Membership included representatives from each jurisdiction and four at-large members. At the first meeting of the Committee in November 1989, the Consultant presented maps and a written report describing the environmental and cultural makeup of the New Hope corridor.

In February 1990, the Committee held its first public meeting, to explain to interested citizens the Master Plan project and to receive comments and suggestions from the public. In March 1990, the Committee formalized its goals and the Consultant prepared the first draft of the Master Plan.

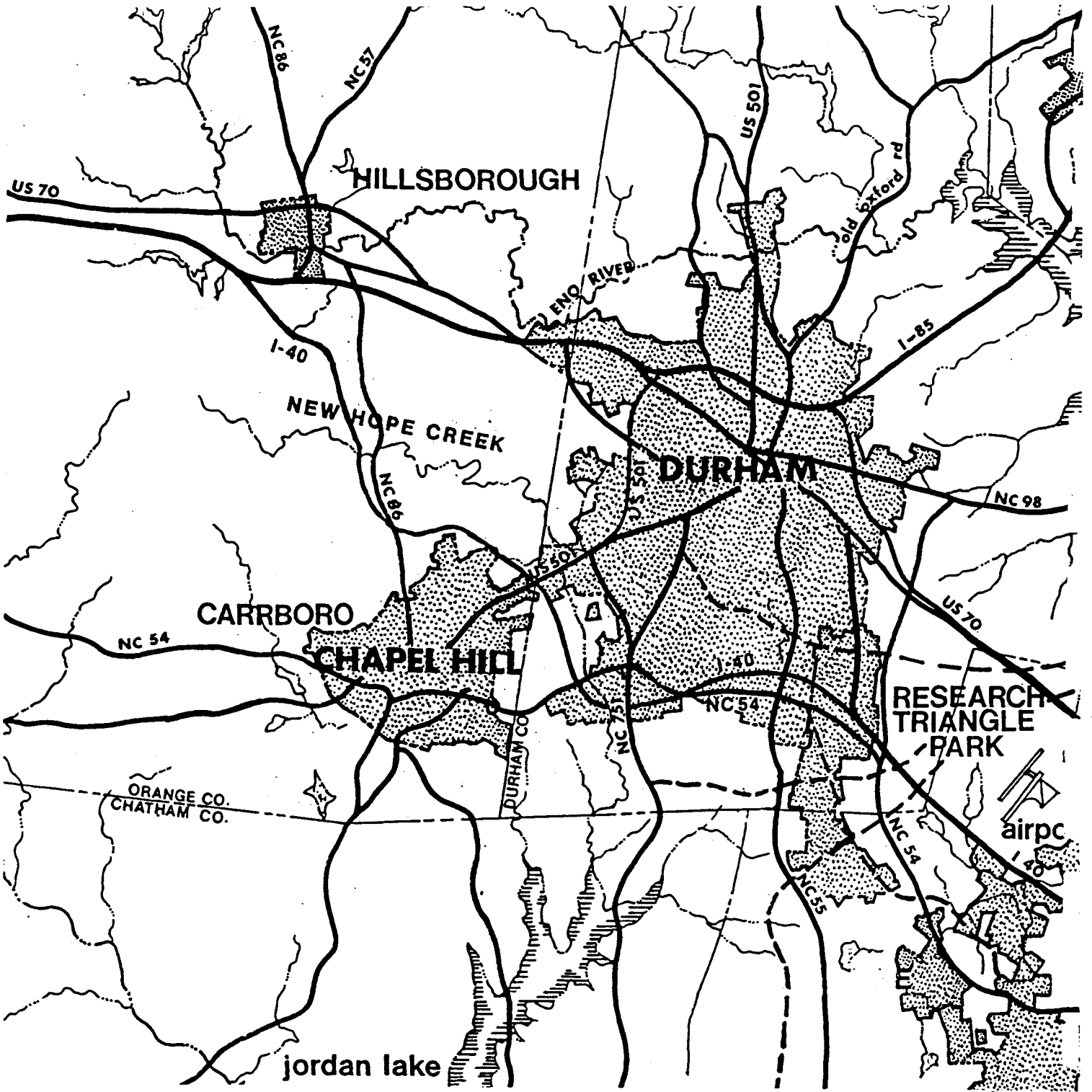
Extensive discussions of the draft Master Plan took place. Numerous modifications were made. A revised and refined plan was presented at a second public meeting in August 1990. Comments received at that time have been incorporated into this version of the Master Plan.

C. Location and Description of the New Hope Corridor

The New Hope Corridor Plan includes the course of New Hope Creek to Erwin Road and extends north to the Eno River State Park along other creeks and roads. The Vicinity Map (page 18) illustrates the area incorporated into the corridor. New Hope Creek is located centrally in the Research Triangle region. The cities of Durham, Raleigh, Chapel Hill, Burlington, and Greensboro, North Carolina, and Danville, Virginia, are located within a 50-mile radius of the corridor.

New Hope Creek rises in central Orange County, just west of Orange Grove Road. It flows eastward as a small stream through farmed and wooded lands, supplemented by tributaries and intermittent drainageways as it proceeds. It crosses under Interstate 40 about one mile south of the New Hope Church Road interchange. The Creek then flows under NC 86, into suburban land in the Chapel Hill-Orange County Joint Planning Area. By the time it enters the Korstian Division of Duke Forest, New Hope Creek has cut a valley between 60 and 80 feet deep through the hard Orange County rock.

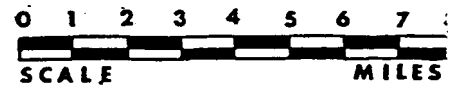
Just above its crossing of Erwin Road, New Hope Creek flows out of the narrow valley it carves through the Carolina Slate Belt, and into the broader floodplains formed in the softer sediments of the Triassic Basin in southwest Durham County. Mud Creek, which flows south from the Durham Division of Duke Forest, and Dry Creek, which flows from Chapel Hill, join the New Hope in the vicinity of US



- major bodies of water
- rivers and major streams
- city and town limits
- major roads

VICINITY MAP NEW HOPE CORRIDOR

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15-501, also called the Chapel Hill-Durham Boulevard. The Boulevard is a major commercial and public transport route. After flowing under the Boulevard and merging with Sandy Creek (which rises in the vicinity of Duke University's West Campus), New Hope Creek enters lands owned by the U.S. Army Corps of Engineers. These lands surround the impoundments of the B. Everett Jordan Reservoir. Normal levels of this reservoir do not extend north of the Chatham County and Durham County line, although extensive areas of Corps land in Durham County are seasonally or permanently wet. The New Hope Creek again crosses under Interstate 40 just south of the NC 54 interchange, near the Farrington Road sewage treatment plant.

The corridor is crossed by two interstate highways, two U.S. highways, and numerous State secondary roads. Local roads serving properties and subdivisions abut the floodplains and sections of Duke Forest in the corridor. Trails and fire roads exist in both divisions of Duke Forest and have long been used for walking by Duke personnel and the general public. Informal footpaths have developed from adjacent subdivisions through Duke Forest and some private properties. Old logging and farm lanes can be found in various states of regrowth, especially along the floodplain areas.

Further description of the corridor and its features are contained in Appendix A. Inventory and Analysis of Existing Conditions.

D. Goals of the Open Space Corridor

Jurisdictional Goals as Reflected in the 1989 Joint Resolution

The main goal stated in the Resolution (Appendix B) is to....

"....preserve an open space corridor linking the Eno River State Park, the New Hope Creek Corps lands and the growing communities of Durham, Chapel Hill, and Carrboro for aesthetic, environmental, educational, and recreational purposes, and as a means of shaping the urban form of the area."

The Resolution also contains the following specific, goal-oriented statements:

- Preservation of open space as an accompaniment to growth can mitigate the impacts of growth and help retain natural beauty;
- Preservation of open space provides environmental benefits such as protecting water quality and providing habitat for native plant species and wildlife;

- Open space could form an aesthetic link between Durham and Chapel Hill, while allowing the two communities to remain distinct.

Advisory Committee Goals

Using a questionnaire developed by staff (Appendix C), the Advisory Committee identified the following five goals:

- To preserve and enhance environmental quality;
- To provide opportunities for passive recreation;
- To preserve natural habitats for their aesthetic values;
- To provide for a pleasing urban form by creating a varied environment and a corridor of open space linking Chapel Hill and Durham; and
- To provide opportunities for environmental and cultural education.

E. Description of the Master Plan

The Committee identified five actions necessary to preserve the open space corridor, each of which accomplishes one or more of the goals:

1. Preservation of the 100-year floodplain and steep slopes (i.e., slopes of 20 percent and greater);
2. Creation of open space anchors and access areas;
3. Establishment of a scenic parkway;
4. Protection of wildlife; and
5. Development of regional trails for hiking, bicycling and nature walking.

The Plan indicates many locations for trails and may refer to trails as nature trails or as bicycle and pedestrian trails. These trails were considered to be desirable to provide access to the experience and observation of nature, to provide for recreational uses such as walking, fishing, bird-watching, and jogging, as well as for providing for alternative transportation modes such as walking and bicycling in the urban

environment. The Plan recognizes that when site analysis is undertaken at the time of implementation, it may be found that because of flooding conditions, wetlands, or other environmental factors, a particular trail in a particular location may not be advisable. The recreational and transportation value of trails needs to be balanced with the environmental values and impacts when determining trail locations and types. It is understood that the decisions about where trails should be built and what type at each location, can only be made at the time of implementation.

One of the important actions to achieve the goals is protection of steep slopes. In general, the steep slopes rise from the edge of the floodplain, but sometimes form an irregular pattern of slopes and ravines both near and somewhat distant from the floodplain. Although steep slopes of 20% or greater are usually considered unsuitable for building, strict protection of 20% slopes would result in a patchwork of isolated areas too small to serve as habitat or survive over time. Therefore, it was determined that in keeping with the environmental, recreational, and educational purposes of this Plan, a buffer 200' wide should be preserved adjacent to certain floodplains as indicated in the appropriate components. This buffer includes much of the steep slopes and will provide a protected natural system of floodplain and slopes, integrated and contiguous to provide optimum benefit for wildlife habitat, community integrity, and for scenic and aesthetic benefits.

To facilitate planning, the land area contained within the New Hope Corridor was divided into ten major geographic components (with two subcomponents). The following information is provided for each component:

1. Jurisdiction within which the component lies;
2. Existing land use and ownership;
3. Future land use as indicated in local government plans;
4. Significant resources within the component; and
5. Recommendations for protection and use.

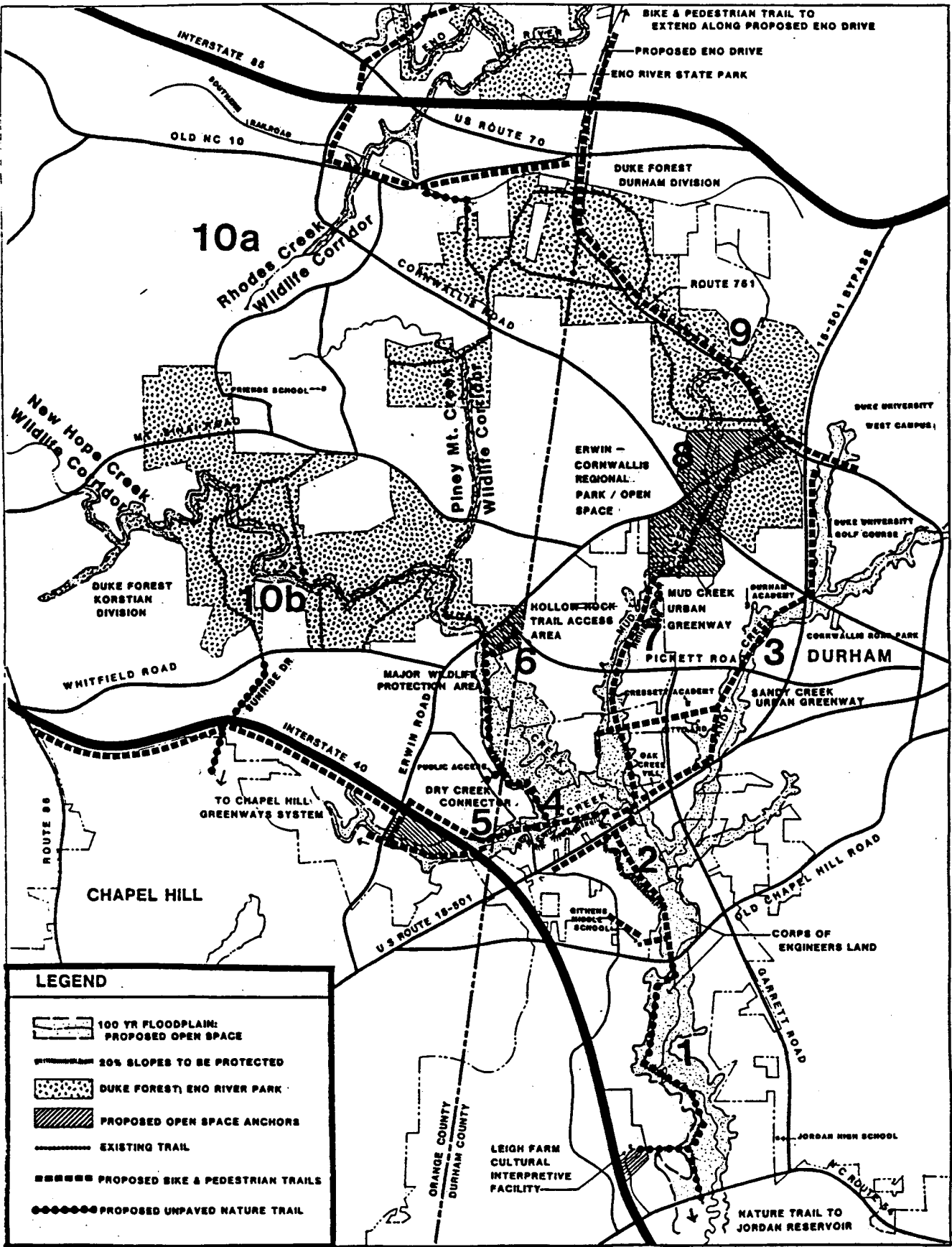
The ten geographic components are described in detail in the following section.

F. The Ten Geographic Components of the Master Plan

In this section, a map illustrating each geographic component appears with a written description. Each map provides the location of trails, boundary lines, pertinent natural features (e.g., creeks), and similar information of interest in the component.

The Map of the Ten Geographic Components illustrates the ten geographic components of the Master Plan. The components are:

Component	Description
1	New Hope Creek between NC 54 and Chapel Hill Road, including Army Corps of Engineers land and historic Leigh Farm plantation.
2	New Hope Creek between Chapel Hill Road and Chapel Hill-Durham Boulevard.
3	Sandy Creek between New Hope Creek and Duke University Golf Course.
4	Confluence area of New Hope Creek and Dry Creek, north to Erwin Road.
5	Dry Creek between Mt. Moriah Road and Erwin Road.
6	Area immediately south of Hollow Rock Store, south of Erwin Road at Pickett Road.
7	Mud Creek following the floodplain between US 15-501 and Cornwallis Road.
8	Cornwallis and Erwin Roads natural area, presently part of Duke Forest (Category 2, Research Project Land).
9	NC 751 Scenic Road, from US 70 to the US 15-501 Bypass, presently part of Duke Forest (mostly Category 1, Permanent Research Forest Land).
10	Future Orange County wildlife corridors.



LEGEND

- 100 YR FLOODPLAIN: PROPOSED OPEN SPACE
- 20% SLOPES TO BE PROTECTED
- DUKE FOREST, ENO RIVER PARK
- PROPOSED OPEN SPACE ANCHORS
- EXISTING TRAIL
- PROPOSED BIKE & PEDESTRIAN TRAILS
- PROPOSED UNPAVED NATURE TRAIL

**NEW HOPE CORRIDOR
OPEN SPACE MASTER PLAN**

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**Map of the
10 GEOGRAPHIC COMPONENTS**

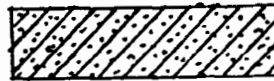
ONE MILE

MAP LEGEND FOR ALL COMPONENT MAPS

100-Year floodplain



Wildlife Protection Area



Anchor/Access Area



Bike/Pedestrian Trails



Nature Trails



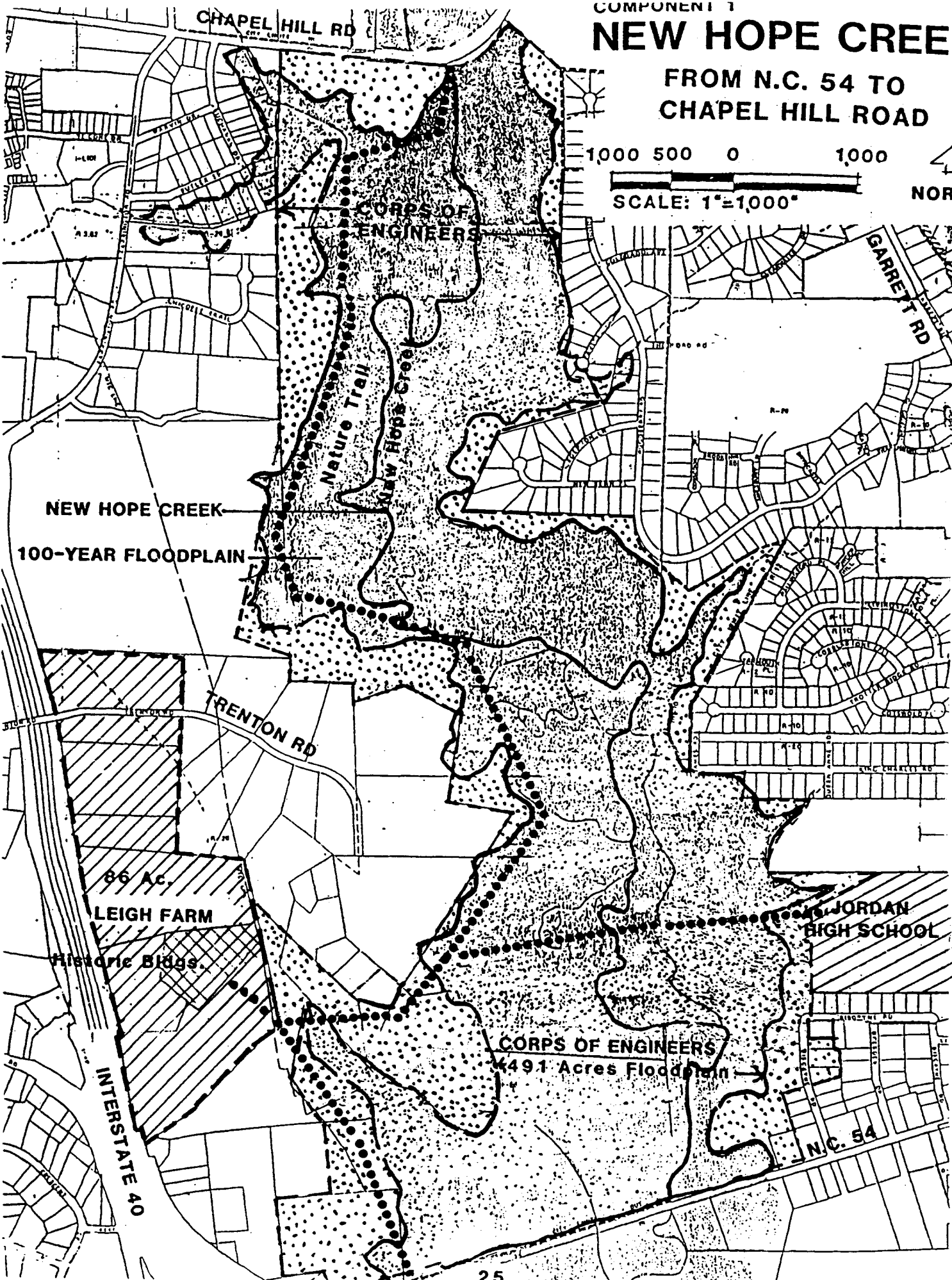
NEW HOPE CREEK

FROM N.C. 54 TO CHAPEL HILL ROAD

1000 500 0 1000

SCALE: 1"=1000'

NORTH



Component 1. New Hope Creek From NC 54 to Chapel Hill Road

Jurisdiction: Durham County and City of Durham

Existing Land Use and Ownership:

- Corps of Engineers flood and mitigation lands along the entire length of New Hope Creek;
- Low-density residential use between Farrington Road and Garrett Road on non-Corps land;
- Leigh Farm: former plantation with surviving buildings listed on the National Register of Historic Places; and
- Jordan High School (Durham County Schools).

Future Land Use:

Undeveloped privately owned lands will probably remain single-family residential. Future land use in this vicinity is shown in the Southwest Durham Plan as less than four units per acres.

Significant Resources:

The entire 100-year floodplain is owned by the Federal government and is subject to its protection measures; in particular, much of the land in this component lies within the Corps land for Jordan Lake. Eight vegetation sites were identified by Harrison (Appendix E) in this component, comprising the New Hope Bottomlands Forest and Tributary Wetlands, the New Hope Swamp Forest and Tributary Wetlands, and the Leigh Farm Area Upland. Additionally, two sites from the Inventory of Natural Areas and Rare Species of Durham County lie in this area, the New Hope Bottomland Forest and the New Hope Overcup Oak Forest.

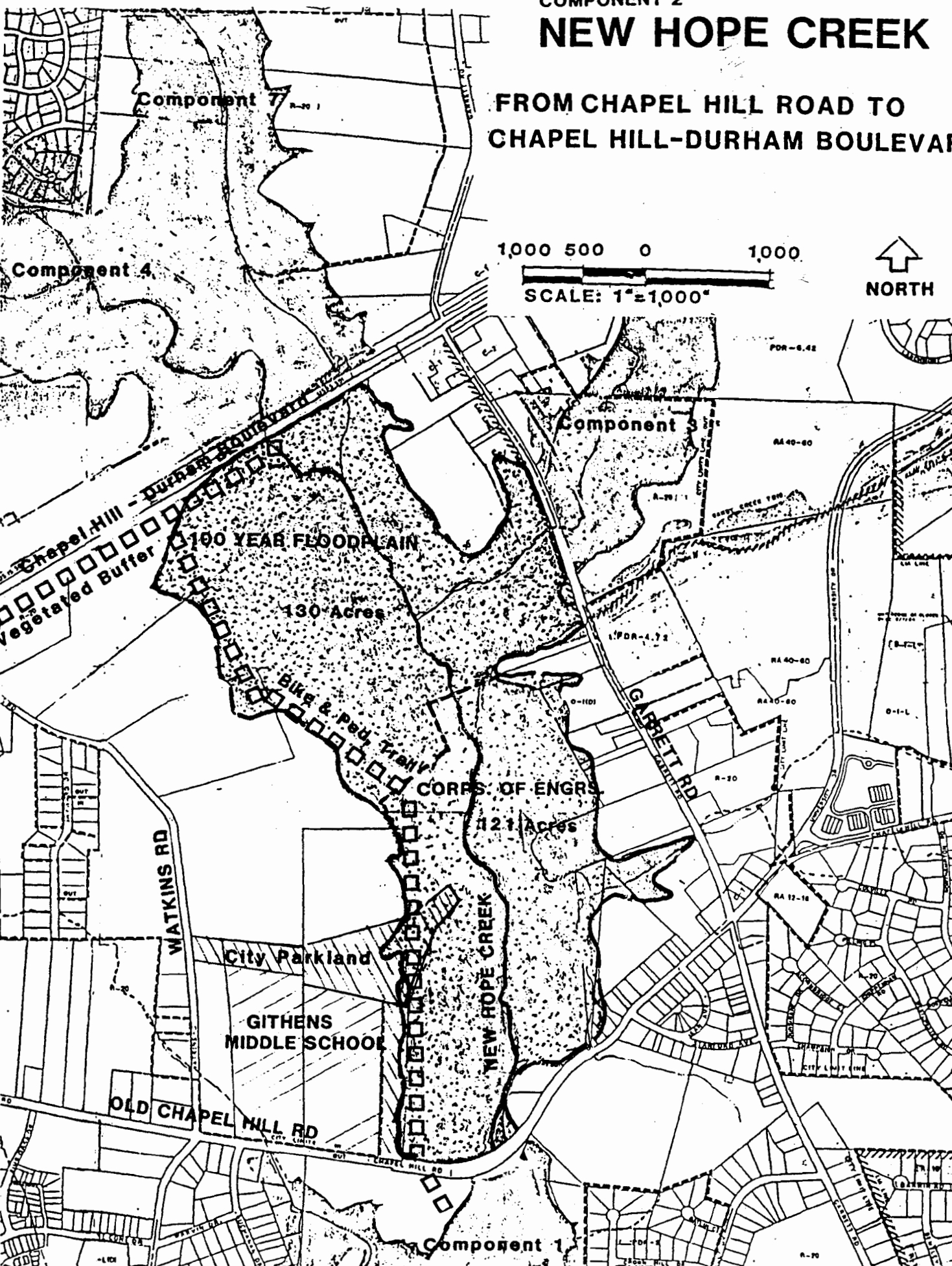
The Corps land is included in this component because the Master Plan provides an opportunity to develop the existing resources of the Corps land and other adjacent resources into an integrated system for educational and recreational use. The Corps land, significant Durham County Inventory sites, Jordan High School, and Leigh Farm offer possibility for development of a trail network and center for cultural history and environmental education.

Recommendations for the Protection and Use of Component 1:

- Develop cooperative relationships with the Corps of Engineers and the North Carolina Wildlife Resources Commission concerning this and other recommendations of the Master Plan.
- Establish an unpaved nature trail following the western edge of the floodplain, extending from Chapel Hill Road to NC 54. Establish lateral connections to Jordan High and Leigh Farm.
- Support the acquisition of the historic Leigh Farm for the establishment, with the continuing support of local jurisdictions and civic organizations, of a major open space center at the southern terminus of the corridor. The emphasis of the center would be cultural and historic interpretation, with accompanying incidental recreational activities, in a manner similar to the center at West Point on the Eno. The acquisition of the tract would help preserve the scenic value of the landscape along this stretch of Interstate 40 corridor.
- Establish a trail entrance and anchor at the portion of the Leigh Farm tract in the vicinity of the existing historic buildings. Corridor public funds should be used only for acquisition of the portion of the land suitable for the anchor use, not for purchase or restoration of historic buildings.

NEW HOPE CREEK

FROM CHAPEL HILL ROAD TO CHAPEL HILL-DURHAM BOULEVARD



SCALE: 1"=1000'



Component 2. New Hope Creek From Chapel Hill Road to Chapel Hill-Durham Boulevard

Jurisdiction: Durham County and City of Durham

Existing Land Use and Ownership:

- Corps of Engineers lands along about half of the New Hope Creek length;
- Sherwood Githens Middle School (Durham County Schools);
- Park land, Department of Parks and Recreation, City of Durham;
- Residential tracts, medium to low density, private ownership; and
- Commercial and industrial uses to the east along Garrett Road.

Future Land Use:

Potential for development between New Hope Creek and Interstate 40 to the west is very high. The Southwest Durham Plan (1989) shows Mixed Use near Interstate 40 and Office near New Hope Creek on the Chapel Hill-Durham Boulevard, and medium and high density residential in the remainder of this area between New Hope Creek and Interstate 40.

Significant Resources:

This component is directly adjacent to the Corps of Engineers mitigation lands. Nine vegetation sites have been identified in this component, comprising the Patterson Farm Lowlands and Slopes (Appendix E). Steep slopes exist, mainly along the west boundary of the floodplain.

Recommendations for the Protection and Use of Component 2:

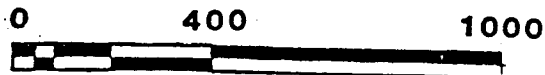
- Protect the entire 100-year floodplain north of the Corps land (130 acres).
- Protect the 200' steep slope buffer west of the floodplain.
- Provide trail access from Sherwood Githens Middle School to the future City park site and to areas of botanical interest along the floodplain and on the steep slopes.

- Establish a trail from Chapel Hill-Durham Boulevard to Chapel Hill Road along the west side of the floodplain. The Durham Urban Trails and Greenways Commission has recommended a greenway link in this area. Connection to trails north of the Boulevard is possible underneath the Boulevard at the bridge.
- Incorporate plans for an open space connector into development plans for the large tracts of land to the west (when they are developed). The connector would follow the unnamed drainageway that flows across Watkins Road, then toward New Hope Creek and Sherwood Githens Middle School.
- As the area south of Chapel Hill-Durham Boulevard develops, maintain a vegetated buffer of at least 50 feet along the Boulevard's edges and incorporate a bicycle/pedestrian trail leading westward toward Chapel Hill.

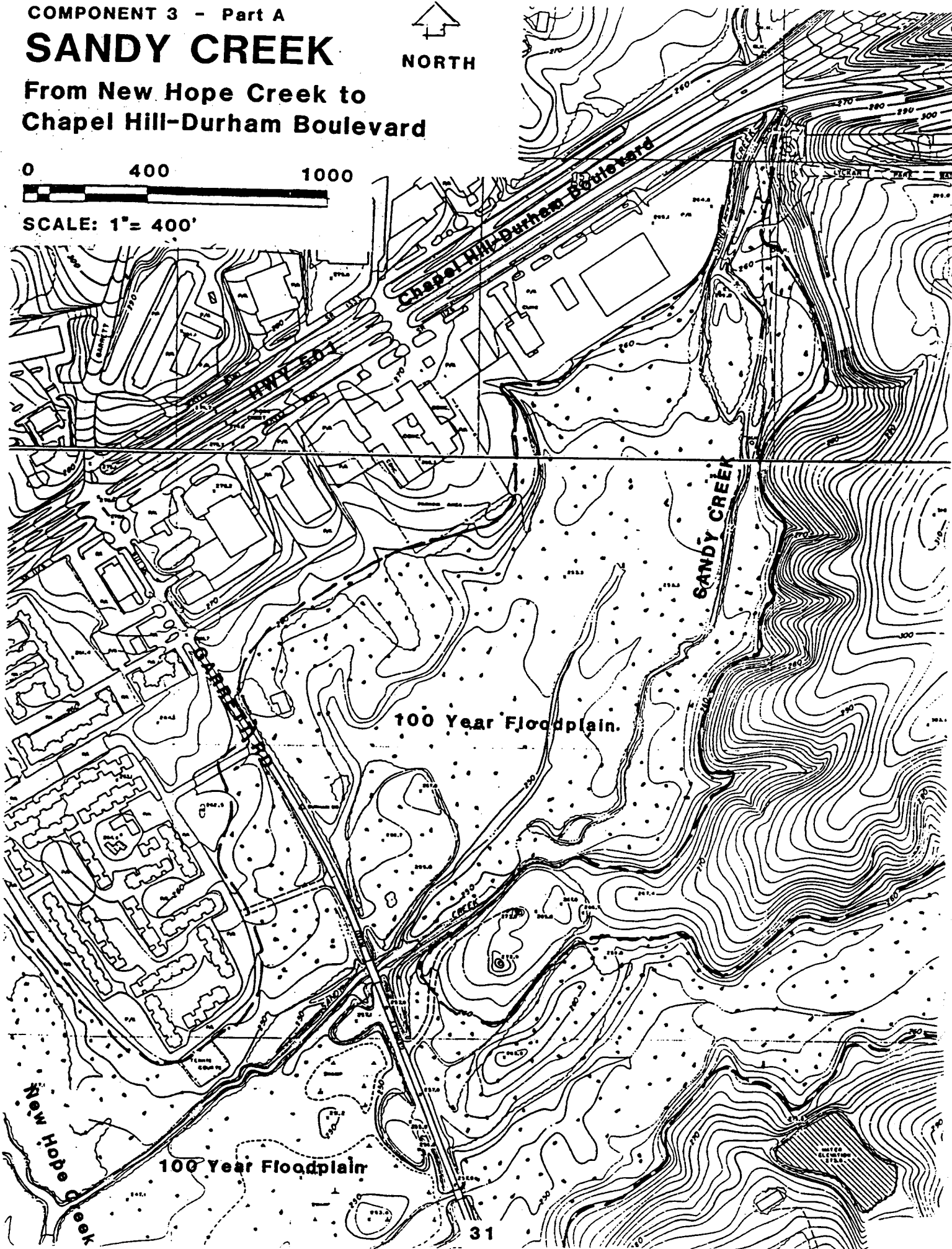
SANDY CREEK



From New Hope Creek to
Chapel Hill-Durham Boulevard



SCALE: 1" = 400'

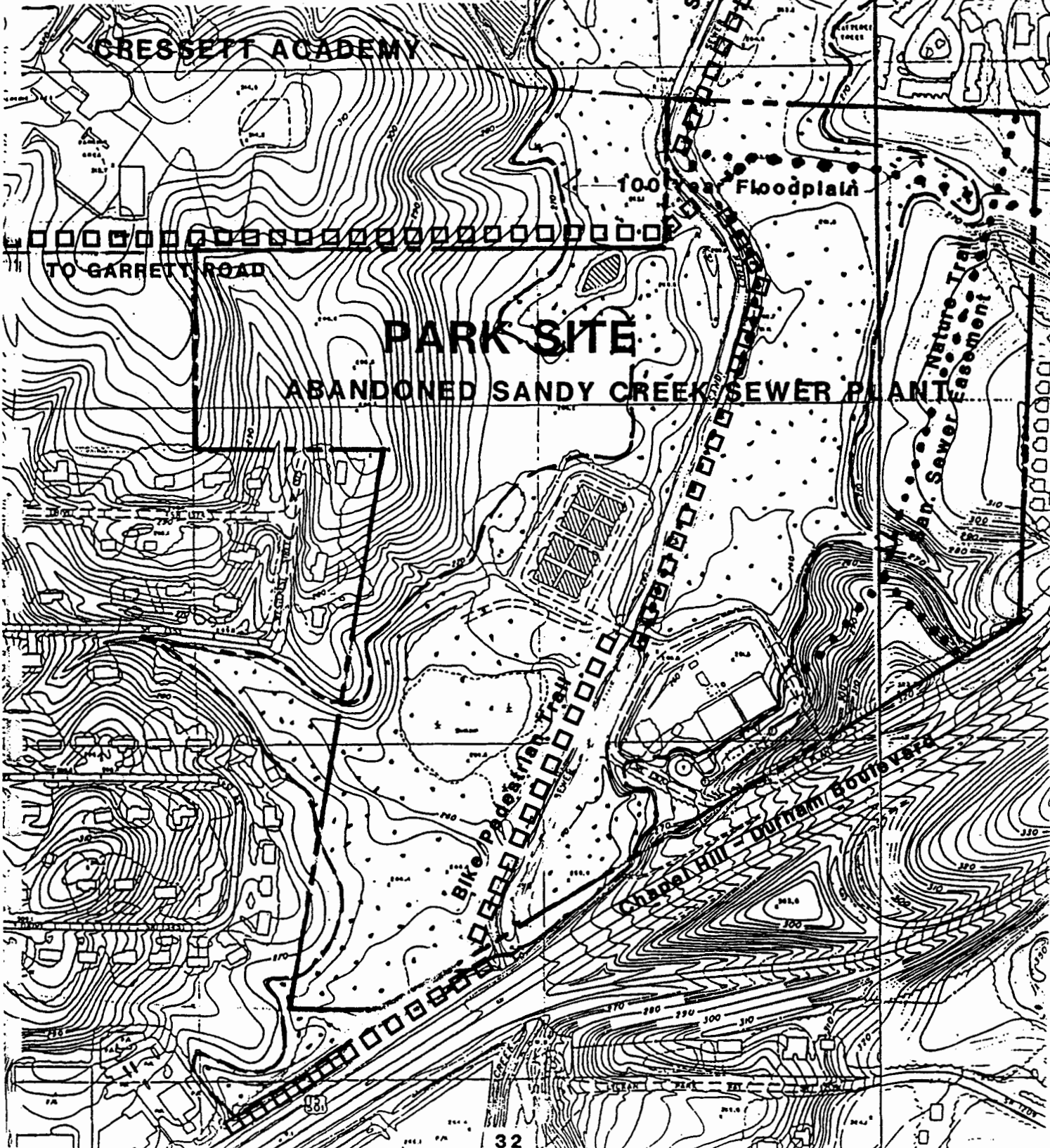


SANDY CREEK

From Chapel Hill - Boulevard
to Pickett Road

400 1000

SCALE: 1" = 400'



SANDY CREEK

From Pickett Road
to Duke University

NORTH

0 400 1000

SCALE: 1" = 400'

DUKE GOLF COURSE

CORNWALLIS RD.

COLONY WOODS

100 Year Floodplain

Currently Developed

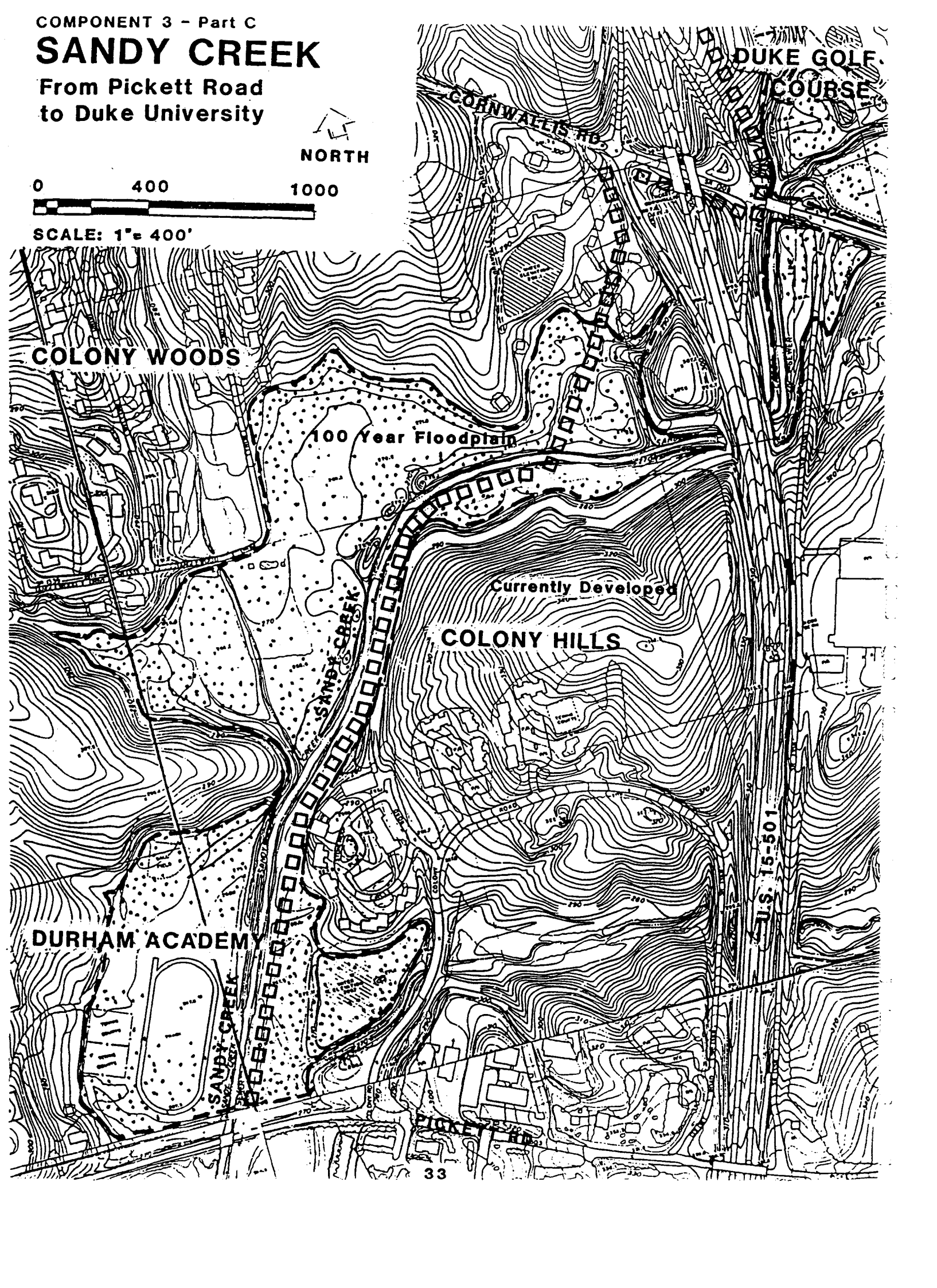
COLONY HILLS

DURHAM ACADEM

U.S. 15-501

SANDY CREEK

PICKETT RD.



Component 3. Sandy Creek Urban Greenway From New Hope Creek to Duke University

Jurisdiction: Durham County and City of Durham

Existing Land Use and Ownership:

- South of Chapel Hill-Durham Boulevard, privately owned multifamily units and commercial establishments;
- North of Chapel Hill-Durham Boulevard, privately owned single-family and multifamily residences; land owned by the City of Durham (former sewer plant) Cresset Academy; Durham Academy; and
- East of US 15-501 Bypass and north of Cornwallis, Duke University (golf course, West Campus).

Future Land Use:

The corridor along Sandy Creek, much like Mud Creek, appears to be developed to about its maximum potential, given existing land use controls. The largest pieces of open space land exist at the former City sewer plant site, the Duke University golf course, and the large parcel of City-owned land between the abandoned sewer plant and Garrett Road.

Significant Resources:

Sandy Creek is a small urban stream, arising in the Duke University Campus area, flowing along the Duke Golf Course. On the west side of the US 15-501 Bypass it passes through several residential areas and beside two school properties. Just north of the Chapel Hill-Durham Boulevard is an abandoned City-owned former treatment plant. The former treatment plant offers the opportunity for developing a major City Park which is needed in this area of the City. This park can provide both active recreation and trails linking schools, residential areas, a shopping center, and connecting to the main New Hope Creek trail. An existing nature trail along an abandoned sewer line is another attractive feature.

It is from the urban character of this stream that its best use is determined. Besides preserving the floodplain in natural vegetation, this is an ideal location for a trail serving for both recreation and alternative transportation. Together the Mud Creek corridor (Component 7) and the Sandy Creek corridor provide the opportunity for a

loop trail. Sandy Creek is indicated on the Durham Urban Trails and Greenways Master Plan as a Greenway Trail.

Recommendations for the Protection and Use of Component 3:

- Establish a bike and pedestrian trail from New Hope Creek to the vicinity of Duke University West Campus. This trail should begin just north of Chapel Hill-Durham Boulevard (see Component 4), follow an easement along the Boulevard property line of Oak Creek Village shopping center and across Garrett Road. It would proceed eastward along the service road to Sandy Creek, then across the City-owned land, which should be designated as open space and recreational land. (An alternative route for the trail would be from Mud Creek through Garrett Farms, across Garrett Road by Cresset School to City-owned land on Sandy Creek.) The trail then should proceed north across Pickett Road, behind residential areas of Colony Hill and Colony Park, and then to Cornwallis Road. Between US 15-501 Bypass and the golf course, the trail either could follow the edge of the highway right-of-way or could link into a pathway that has been established beside the golf course. At NC 751, the trail would arrive at the entrance to Duke University described under Component 9.
- Protect the entire 100-year floodplain.
- Improve the existing nature trail east of the main trail.

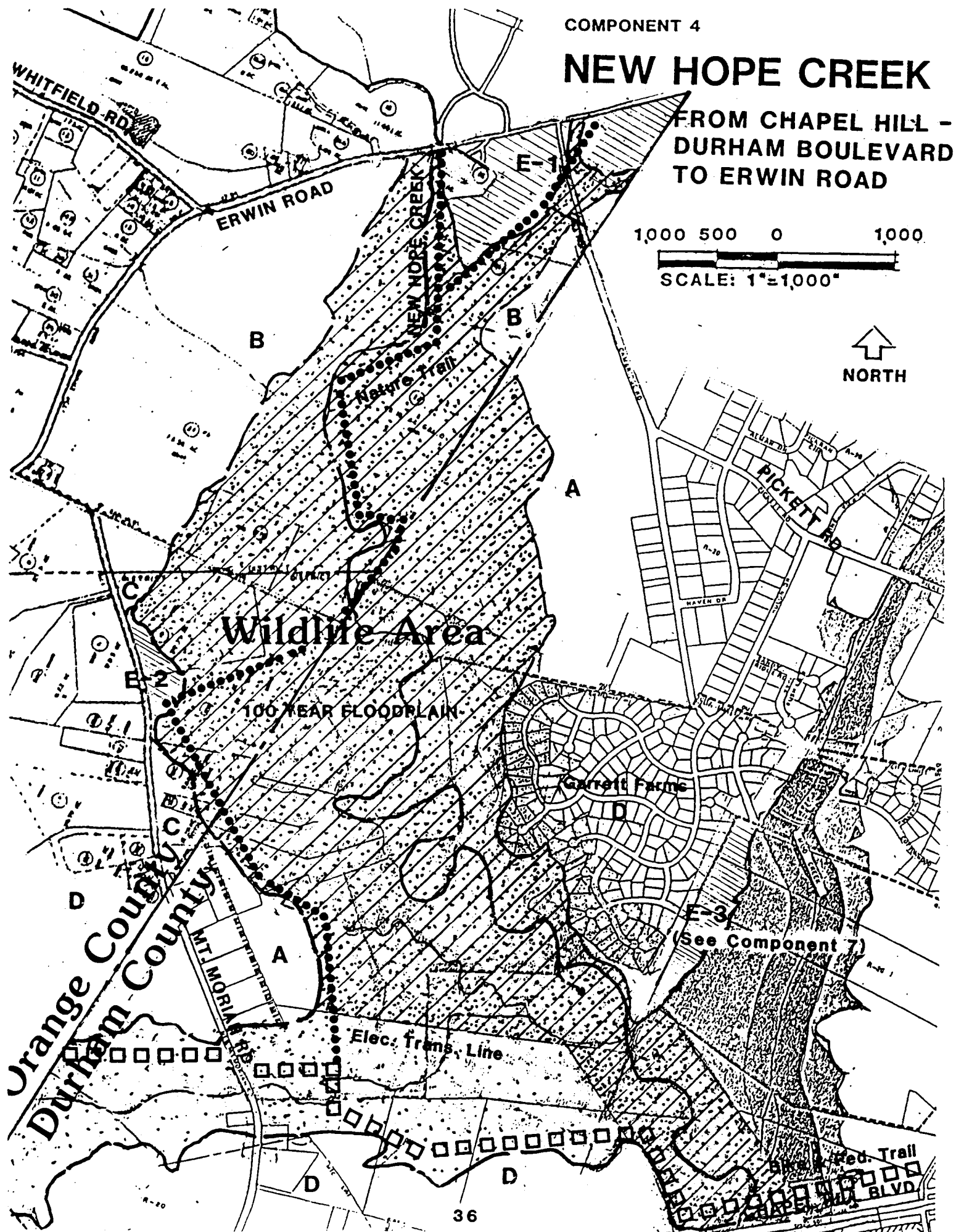
NEW HOPE CREEK

FROM CHAPEL HILL -
DURHAM BOULEVARD
TO ERWIN ROAD

1000 500 0 1000



SCALE: 1"=1000'



Component 4. New Hope Creek From Chapel Hill-Durham Boulevard to Erwin Road

Jurisdiction: Orange County, Chapel Hill, Durham County and City of Durham

Existing Land Use and Ownership:

- On the northern end, near Erwin Road, privately owned, large, undeveloped tracts, principally in agricultural and forestry use;
- Low-density residential use along Mt. Moriah and Cambridge Roads;
- Garrett Farms subdivision platted and being built as a medium-density residential development; and
- On the north side of Boulevard Ridge, both large and small privately owned parcels.

Future Land Use:

The potential for development along Chapel Hill-Durham Boulevard is extremely high. Rezoning on the north side was proposed in 1990 and later withdrawn. A proposed grade-separated interchange in the vicinity of Mt. Moriah Road would have an extremely high impact on the ridge uplands and north facing slopes. Lands along both Mt. Moriah and Cambridge Roads, because of their proximity to the Interstate 40/US 15-501 interchange, appear to be very valuable as developable land. Zoning is as follows: in Durham, R-20 single-family residential (1 dwelling unit per 1/2 acre), and commercial along Chapel Hill-Durham Boulevard; in Chapel Hill, rural transition (1 dwelling unit per 2.3 acres); and in Orange County, rural buffer (1 dwelling unit per 2 acres).

Proposed Connector Road: The regional Thoroughfare Plan includes a proposal for a connecting road that would permit traffic originating in the Chatham County and Chapel Hill vicinity to access Durham and US 15-501 more efficiently.

Significant Resources:

This component of the corridor is perhaps the hub of hydrological and biological systems occurring in the entire area. It is at this location that the Mud Creek, New Hope Creek, and Dry Creek floodplains meet. It is the furthest point upstream where the New Hope Creek flows into its wide Triassic Basin floodplain.

Nineteen vegetation sites have been identified in this section, comprising the following groupings: New Hope Creek-Dry Creek-Mud Creek Lowlands; Boulevard Ridge Uplands; and Garrett Farm Peninsula Uplands (see Appendix E). Unlike the Corps lands to the south, this area bears the marks of recent agricultural practices--open meadows, old farm roads, plowed fields, and managed woodlots. Preservation would include continuing these land uses as interpretive activity. The Boulevard Ridge Uplands includes sites on steep north-facing slopes. The Garrett Farms Peninsula Uplands sites, which were originally identified in the Harrison report, have been significantly compromised by the building of the Garrett Farms subdivision.

Component 4 includes several units determined by environmental considerations and potential land development. The portion of the 100-year floodplain from Erwin Road southward to Garrett Farms retains a greater degree of environmental integrity than do the portions closer to the Boulevard and on the lower reach of Mud Creek. This is due to the fact that adjacent land has not yet been developed as intensely. Also, sewer lines have not been extended northwest of Garrett Farms. This lower degree of disturbance on the adjacent uplands offers a continued potential for wildlife habitat preservation no longer possible south of Garrett Farms. Protection measures must be introduced before the adjacent lands undergo intense development.

Recommendations for the Protection and Use of Component 4:

- Protect the entire 100-year floodplain.
- Establish a protected wildlife area for plants and animals in the stretch of New Hope Creek as described above.
- Permit no extension of sewer lines in the wildlife protection area.
- Manage floodplain lands to maintain open fields and pastures.
- In Durham County (Component 4 Map, Area A), acquire development rights to lands zoned R-20 (1 dwelling unit per .5 acre) so that the resulting density is one dwelling per 2 acres (or utilize another method to preserve a 200' undisturbed buffer adjacent to the Wildlife Area/floodplain in Area A, Component 4 Map*).

*Text in parentheses added as an amendment by the Durham Board of County Commissioners.

- In the Orange County/Chapel Hill Joint Planning Area (Component 4 Map, Area B), maintain the existing rural buffer zone that requires a minimum 2-acre residential lot size, with no extension of public sewer lines.
- In the Chapel Hill Extraterritorial Jurisdiction (ETJ) (Component 4 Map, Area C), retain the existing RT zoning with a 2.3 acre minimum lot size.
- Retain the existing zoning and zone lines for Garrett Farms (Component 4 Map, Area D).
- Acquire a site along the east side of Mt. Moriah Road (Component 4 Map, Area E-2) for a public access site and trailhead.
- From the trail access site on Mr. Moriah Road, establish a nature trail along the west fringe of the New Hope Creek floodplain, through the Wildlife Protection Area described above, to link with the Hollow Rock Trail access area described in Component 6 (Component 4 Map, Area E-1).
- Establish a bicycle and pedestrian trail connecting from the south through the Boulevard underpass (Component 2) to connect the Sandy Creek trail (Component 3) and the Dry Creek connector (Component 5).
- Boulevard Interchange/Thoroughfare Plan:
 - A. It is strongly recommended that the proposed routing of traffic from the southwest, whether by constructing a new road or parkway or by modifying the existing road system, not be permitted to make the Mt. Moriah Road, Erwin Road and Whitfield Road route into effectively an outer loop for Chapel Hill traffic. This would have considerable effect on the rural character of the existing roads and on the environmental quality of New Hope Creek and Duke Forest.
 - B. Should an interchange be included in the forthcoming Thoroughfare Plan, it is recommended that the proposed location between Chapel Hill Road and the Boulevard be away from the steep slopes that border New Hope Creek in that area. Further, any interchange connecting with the Boulevard should be located and planned to avoid the steep slopes and accompanying ravines.
 - C. Any interchange at the Boulevard should avoid a direct connection or extension to Mt. Moriah Road or Erwin Road.

CHAPEL HILL

COMPONENT 5

DRY CREEK

FROM NEW HOPE CREEK TO ERWIN ROAD

NORTH



1000 500 0 1000

SCALE: 1"=1,000'

100-YEAR FLOODPLAIN

EASTOWNE

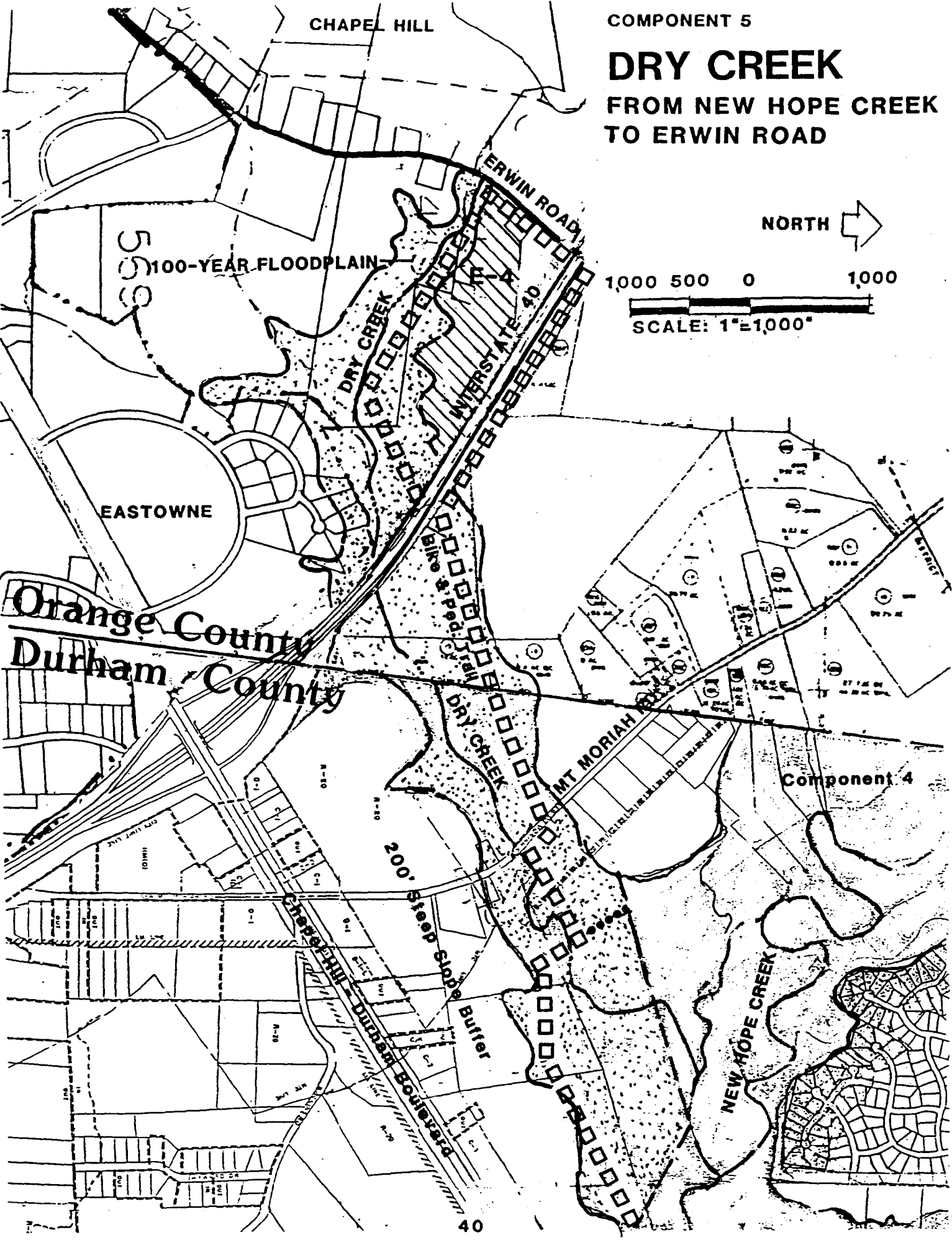
Orange County
Durham County

Component 4

200' Step Slope Buffer

NEW HOPE CREEK

40



Component 5. Dry Creek From New Hope Creek to Erwin Road

Jurisdiction: Durham County, City of Durham and Town of Chapel Hill

Existing Land Use and Ownership:

- Large, privately owned agricultural tracts between Mt. Moriah Road and Interstate 40;
- Eastowne Office Park; and
- Large, undeveloped, privately owned tracts east of Erwin Road.

Future Land Use:

The potential for development in the Mt. Moriah Road/Erwin Road vicinity is very high. Permitted development is controlled by the Chapel Hill zoning ordinance and the area is zoned R-1 and rural transition (RT). Major Transportation Corridor Restrictions on development apply along the north (Orange County) side of Interstate 40.

Significant Resources:

In this component, two vegetation sites were identified by Harrison (Appendix E), one of which also was described in the Orange County Inventory.

Presently, the large amount of fill on the Interstate 40 roadbed precludes creating a connection from east to west along Dry Creek, a condition that will continue until Interstate 40 is widened or modified in a way that offers the opportunity to build an acceptable pedestrian underpass.

At present, Interstate 40 can be crossed only at the bridge at Erwin Road. A trail and underpass as described in this component would provide a connecting link between the Chapel Hill and Durham greenway systems.

Recommendations for the Protection and Use of Component 5:

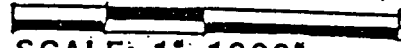
- Obtain a pedestrian easement within the 1250-foot wide Major Transportation Corridor Overlay Zone for a path along the northeast side of Interstate 40.

- Acquire the area of uplands immediately southwest of the Erwin Road/Interstate 40 overpass to use as an open space anchor (Area E-4).
- Acquire floodplain lands along both sides of Dry Creek to use as a wildlife habitat area.
- Develop a bicycle and pedestrian trail between the greenway trail systems of Durham and Chapel Hill utilizing the Erwin Road overpass and, in the event that future plans permit, employing a pedestrian underpass at Dry Creek (going under Interstate 40).

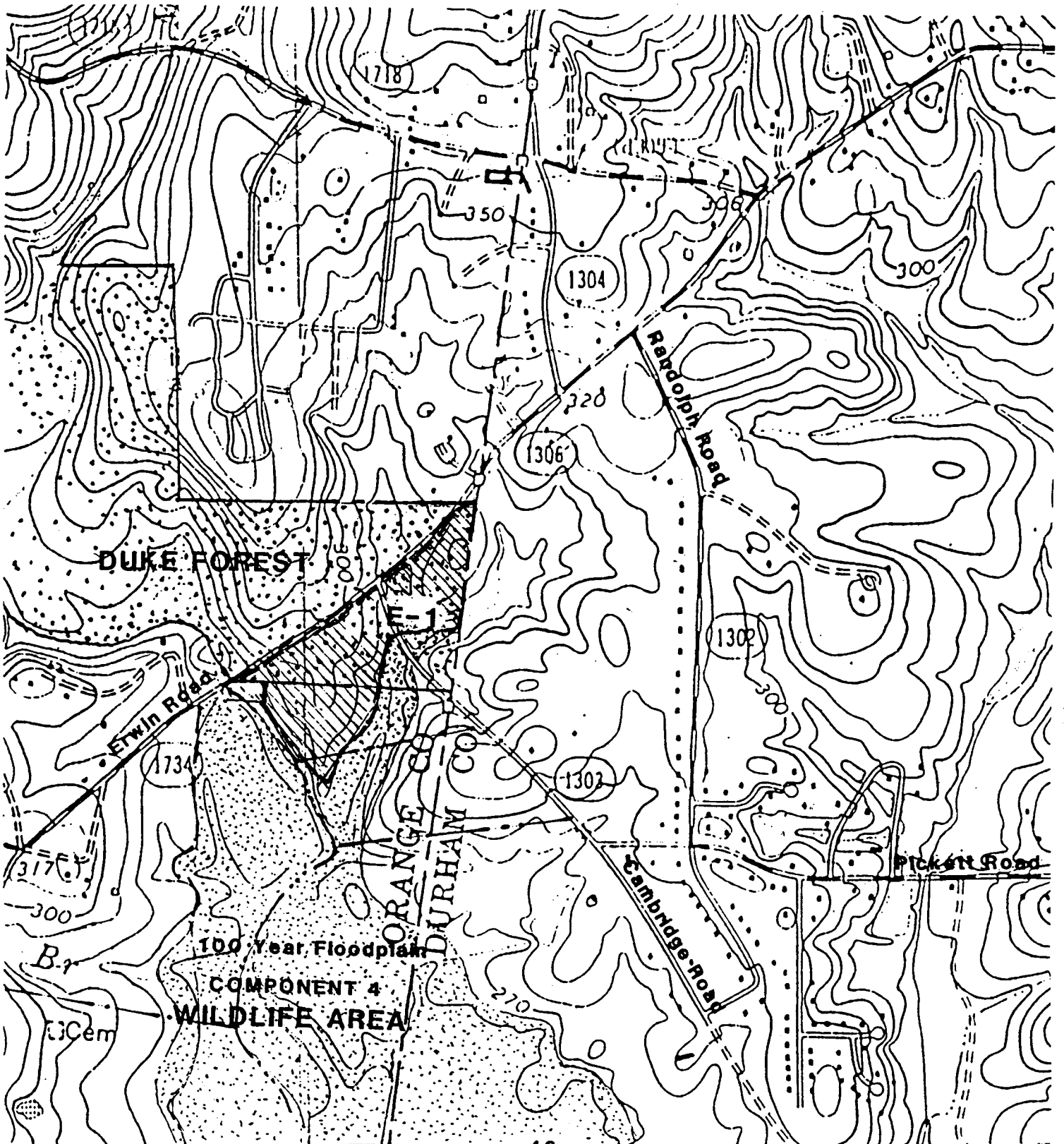
HOLLOW ROCK ACCESS AREA

Area E-1

1,000 500 0 1,000



SCALE: 1"=1,000'



Component 6. Hollow Rock Access Area

Jurisdiction: Orange County, Durham County and City of Durham

Existing Land Use and Ownership:

- Duke University; and
- One privately owned parcel immediately south of Duke Forest.

Future Land Use:

The Duke University land is part of the Korstian Division of Duke Forest. In the Duke Land Resource Committee's report (December, 1988), the area below Erwin Road is classified as Residual Endowment Lands (Class 4), which means that the area will "no longer be considered part of Duke Forest The priority use of [this] land will be to generate financial return or other benefits to . . . the University." Duke Forest immediately above Erwin Road is classified as Permanent Research Forest (Class 1) land, which is "most intensively used for academic and research purposes. These lands will be dedicated to academic purposes for a period of 50 years."

The lands in private ownership southwest of Erwin Road are zoned in Orange County as rural buffer (permitting 1 dwelling per 2 acres) and in Durham County as R-20 (1 dwelling per 1/2 acre).

Significant Resources:

North of Erwin Road, New Hope Creek flows east and south through the Carolina Slate Belt, creating narrow, deep, twisted valleys. A short distance southeast of Erwin Road, the Creek flows onto the Durham-Deep River Triassic Basin, characterized by broad floodplains. This portion of the floodplain, in which it is recommended that a natural area be established, is of considerable interest in that it displays the interactions that exist among geologic formations, the flow of water, plants and animals, and human activity.

Pickett Road has significant historical value because it is the path of the Old Stage Coach Road. The west end is gravel and retains the rural flavor of by-gone days. It crosses a tributary of New Hope Creek.

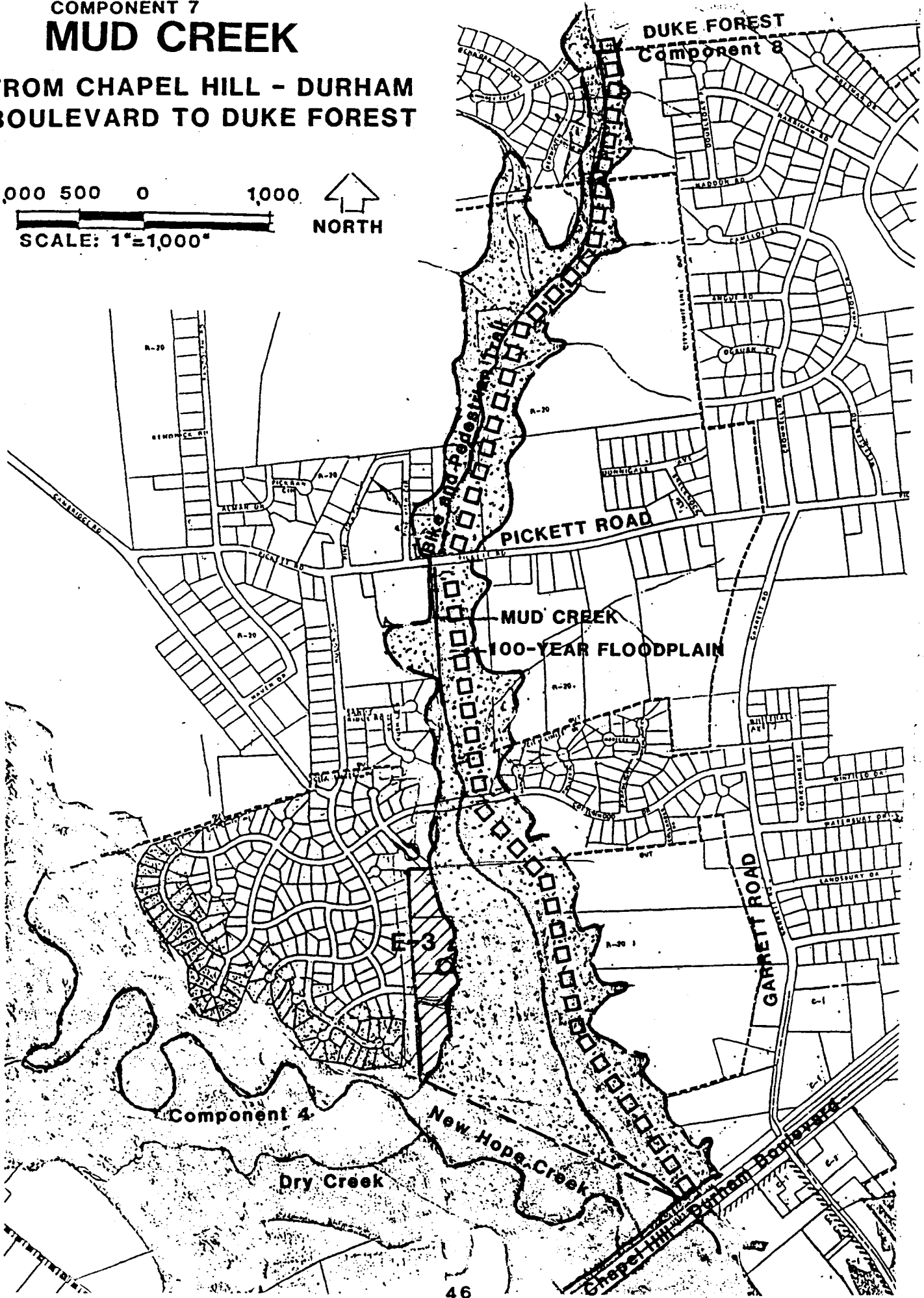
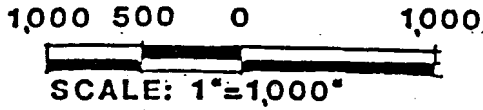
Recommendations for the Protection and Use of Component 6:

- Acquire the Class 4 property south of Erwin Road from Duke University as part of the Wildlife Protection Area.
- Acquire additional land adjacent to the Duke parcel south of Erwin Road to provide access to New Hope Creek south of the Hollow Rock Store as part of the Wildlife Protection Area.
- Develop a carefully planned and constructed access from Erwin Road, with a parking area, picnic area, interpretive facility, and trailheads leading into the footpath systems in the wildlife habitat area and recognize with care the existing trails in Duke Forest.
- Give careful attention to the alignment and use of Pickett Road where it intersects Erwin Road and assure safe and adequate access to the Hollow Rock access area.

COMPONENT 7

MUD CREEK

FROM CHAPEL HILL - DURHAM
BOULEVARD TO DUKE FOREST



Component 7. Mud Creek Urban Greenway from Chapel Hill-Durham Boulevard to Duke Forest

Jurisdiction: Durham County and City of Durham

Existing Land Use and Ownership:

- East side to Garrett Road: privately owned single-family residences;
- West side, south end: Garrett Farms subdivision;
- West side, midsection: privately owned single-family residences; and
- West side, north end: Loch N'ora subdivision.

Future Land Use:

Land use in this area is presently subdivisions, and the Future Land Use Map indicates residential uses for the future. No anticipated change.

Significant Resources:

The environment of this area of Mud Creek has been compromised somewhat by the installation of a sanitary sewer main, which at the same time has the effect of giving this area a more open feeling than that experienced in the heavily forested floodplains to the south. Some steep slopes exist along the eastern boundary of the floodplain. Four vegetation sites occur in this area including three large vegetation units, the New Hope Creek-Dry Creek-Mud Creek Lowlands, the Upper Mud Creek Triassic Lowlands, and the Eastern Mud Creek Hardwood Slopes (Appendix E).

The steep slopes on the east bank of Mud Creek are in private small-parcel ownership and will likely not be disturbed. Acquisition is not considered an absolute necessity. However, it would be desirable to obtain conservation easements to protect scenic values.

Recommendations for the Protection and Use of Component 7:

- Protect the entire 100-year floodplain.
- Obtain conservation easements to the steep slopes on the east bank of Mud Creek.

- Develop an urban bicycle and pedestrian trail along the sewer easement on the east side of Mud Creek and connect it to the New Hope Creek trail, which links to the Sandy Creek Greenway, and Chapel Hill Greenway. Trail implementation should take into account the occurrence of seasonal flooding along the creek.
- Establish an access area on the west side of Mud Creek (E-3).

COMPONENT 8
CORNWALLIS - ERWIN
NATURAL AREA / OPEN SPACE

1,000 500 0 1,000

SCALE: 1"=1,000'



DUKE FOREST

DUKE FOREST

DUKE FOREST

DUKE FOREST

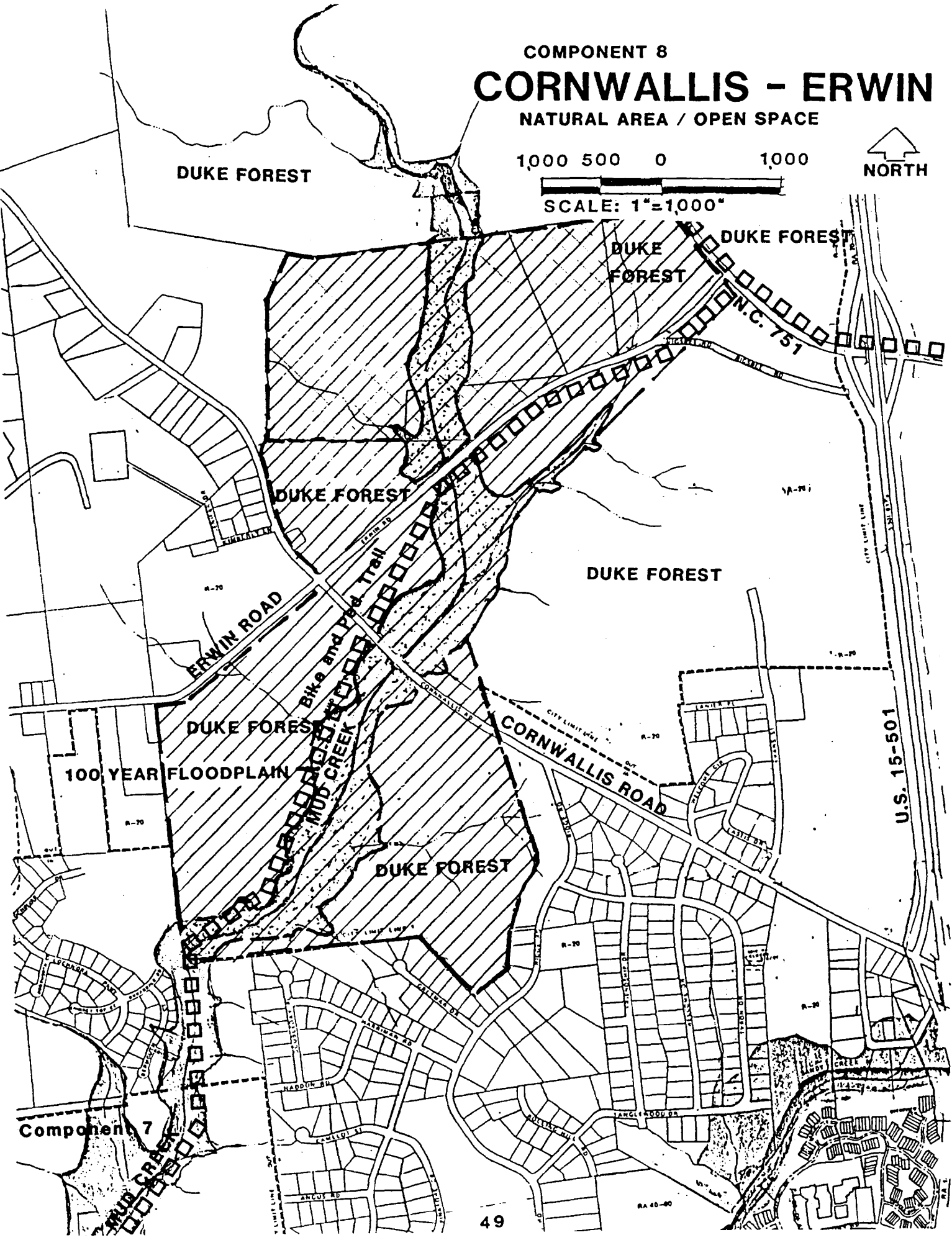
DUKE FOREST

DUKE FOREST

DUKE FOREST

100 YEAR FLOODPLAIN

Component 7



Component 8. Cornwallis-Erwin Natural Area/Open Space

Jurisdiction: Durham County and City of Durham

Existing Land Use and Ownership:

- Duke University; and
- Privately owned parcels along Mud Creek north of Erwin Road and east of Cornwallis Road.

Future Land Use:

Much of this Component is part of Duke Forest. The 1989 Duke University Land Resources Committee classified this area as Category 2, Research Project Land. This designation means that the land will continue to be used for current teaching and research activities. However, because these areas have less intensive academic usage at the present time, and research and teaching may or may not be their most appropriate use over the long term, the Land Resources Committee did not designate this category as valuable to Duke as Category 1 lands (i.e., to be kept for 50 years).

Significant Resources:

The Mud Creek floodplain remains relatively wide even this close to its point of origin. One vegetation site has been identified in this section, the Eastern Mud Creek Hardwood Slopes (Appendix E). Because the Cornwallis Road/Erwin Road intersection is prominently visible to travelers, it constitutes an important visual resource. As land continues to be developed in this vicinity (especially to the west), preserving the wooded quality of this major intersection will be extremely important.

Recommendations for the Protection and Use of Component 8:

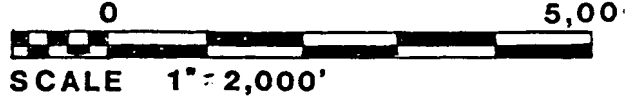
- Create a bicycle and pedestrian trail along Mud Creek through the floodplain to connect with the trail at NC 751.
- Negotiate with Duke University to preserve as open space Duke Forest land at the intersection of Cornwallis Road and Erwin Road. Negotiate an agreement with Duke University so that if Duke considers selling this land, the local governments will have the right of first refusal to purchase it for use as a natural area.

- Acquire privately owned land north of the Erwin-Cornwallis Road intersection that is not owned by Duke University, as indicated on Component 8 Map.
- In the event the land becomes available through acquisition of rights or through outright purchase, the City of Durham should consider building facilities to meet those active recreational needs already identified by the City as being present in this area.

NC 751 SCENIC ROAD

ENO STATE
PARK

Future Eno Dr.



U.S. 70

Interstate 85

DUKE FOREST

DUKE FOREST

Bike/Pedestrian Trail
N.C. 751

MUD CREEK

DUKE FOREST

U.S. 15-501

DUKE UNIVERSITY

Exist. Duke Forest Trails

Nature Trail

COMPONENT 8

DUKE FOREST

GOLF COURSE

SANDY CREEK

Bike/Ped. Trail

Orange County
Durham County

CORNWALLIS RD.

Erwin Rd.

E-7
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Component 9. NC 751 Scenic Road

Jurisdiction: Orange County, Durham County and City of Durham

Existing Land Use and Ownership:

- Duke University.

Future Land Use:

Component 9 is almost completely within Duke Forest. Most of this land was classified by the Duke Land Resources Committee as Category 1, Permanent Research Forest Land (i.e., not to be sold for a period of 50 years). One area, east of NC 751 in the vicinity of the US 15-501 Bypass, is classified as Category 2, Research Project Land, which means that the land is protected at least for the short term but use may change in the future.

Significant Resources:

Duke Forest in this vicinity is mostly uplands, since Mud Creek has reached its point-of-origin above Erwin Road. Some areas of biologic significance have been described in the Orange County Inventory. However, the main reason for the proposed NC 751 Scenic Road is the preservation of this stretch of public road in its present forested character. This is a valuable type of "open space", tied not directly to any specific natural value, but to the value of a pleasant driving experience in a rapidly urbanizing part of North Carolina. Extensive examples of the legacy of timely parkway planning exist in many of our large urban areas.

Recommendations for the Protection and Use of Component 9:

- Encourage Duke University to retain its Category 1 classification of Component 9 lands in Duke Forest, thereby providing sufficient protection of the forested lands along the NC 751 Scenic Road.
- Should Duke decide to sell all or part of this land, negotiate to obtain by purchase or easement a corridor 500 feet to 1000 feet wide on each side of NC 751 for a wide scenic and pedestrian corridor.
- As NC 751 is extended north of US 70 (the "Eno Drive" proposal), extend the scenic road concept in order to provide for scenic treatment and the creation of bicycle and pedestrian paths along the proposed Eno Drive.

- Extend the NC 751 Scenic Road corridor protection eastward to and beyond the US 15-501 Bypass interchange to meet the northern terminus of the Sandy Creek Urban Greenway and continue with an entrance to the Duke University West Campus.
- Because NC 751 can continue to be a scenic road and to serve high-volume traffic needs as a two-lane road, prohibit additional cross streets and driveway entrances.

Component 10. Orange County Wildlife Protection Areas
A. Piney Mountain Creek and Rhodes Creek

Jurisdiction: Orange County

Existing Land Use and Ownership:

- Various private owners.

Future Land Use and Ownership:

Low density residential and agricultural.

Significant Resources:

In Orange County north of the Korstian Division of Duke Forest, there are a few locations suitable for wildlife corridors. Piney Mountain Creek, and Rhodes Creek have excellent potential as protected wildlife corridors (see New Hope Corridor Open Space Master Plan Map, page 3). Wildlife is abundant and is accustomed to ranging over the areas and entering and leaving Duke Forest. In addition, several sites identified in the Orange County Inventory are located in these areas and should be preserved and protected.

Recommendations for the Protection and Use of Component 10-A:

- Take steps to preserve Orange County wildlife corridors and incorporate them into the Master Plan as an extension of the Duke Forest open areas. These corridors should remain in private ownership.
- Incorporate protection of the Orange County Inventory sites into the Master Plan and plan for specific wildlife corridors in Orange County.
- Sign a route from NC 751 to the Eno River State Park, following NC 10 to Pleasant Green Road, north on Pleasant Green Road across the Eno River, and entering the Park on the north side of the River. This route would be primarily along roads with off-street paths where feasible. The route could provide for both bicycle and pedestrian use.

**Component 10. Orange County Wildlife Protection Areas
B. Duke Forest and Upper New Hope Creek**

Jurisdiction: Orange County, and Chapel Hill

Existing Land Use and Ownership:

- Duke University and other private land owners.

Future Land Use:

Use of Duke Forest lands is subject to Duke land resource policy and, therefore, may change over time. Land adjacent to Duke Forest is now and will probably remain primarily in low density residential and agricultural use.

Significant Resources:

This component includes the Korstian Division of Duke Forest and the western, upstream corridors of New Hope Creek, as shown on the New Hope Corridor Open Space Master Plan Map (page 3).

A basic assumption in the creation of the Open Space corridor concept and this Master Plan has been that the inclusion of Duke Forest and its trails is a critical part of the Master Plan. As has been noted many times in this Master Plan, the trails in the forest are already used by hikers. Plant and animal life are plentiful and worthy of protection.

This Component of the Master Plan takes advantage of the splendid and immensely popular Alluvial Forest Trail along New Hope Creek in the Korstian Division of Duke Forest. This trail has been created by informal hiking activity and for the most part is on floodplain soils that are scoured during flood events. In several locations, the trail connects with fire roads constructed and maintained by Duke Forest crews. These roads lead out of the forest to locked gates opening onto State-maintained roads. One of the roads, Wooden Bridge Road, leads to Whitfield Road at Gate 24. Another unnamed fire road leads to Gate 25, also on Whitfield Road.

Recommendations for the Protection and Use of Component 10-B:

- Recognizing that Duke University has assumed the management, maintenance, and liability responsibilities for Duke Forest and its trails, the Committee recommends that the appropriate local governments consider sharing in these

responsibilities in order to support the continued natural use of Duke Forest and its trails as part of the Open Space corridor.

- In the future, consider taking advantage of the location of the Sunrise Drive overpass over Interstate 40 in order to connect the Duke Forest trails and roads into a northern Chapel Hill open space/greenway system.

III. Implementation Recommendations

III. Implementation Recommendations

A. Master Plan Approval

It is recommended that each of the jurisdictions that commissioned the Master Plan adopt the Master Plan as soon as reasonably possible.

B. Advisory Committee Formation and Operation

- An official, joint, permanent New Hope Corridor Open Space Advisory Committee should be established.
- The Committee would be charged with the oversight responsibility for the corridor's future; specifically, the Committee would have the following functions:
 1. To monitor and advise concerning progress that is made by the appropriate jurisdictions through their operating agencies in carrying out the recommendations of the New Hope Corridor Open Space Master Plan;
 2. To review and make recommendations concerning those portions of annual budgets of operating agencies that relate to the corridor;
 3. To review and make recommendations concerning any development or infrastructure proposals, both public and private, that affect the corridor;
 4. To meet at least quarterly;
 5. To report to the four governing bodies; and
 6. To nurture and foster citizen involvement in preservation and acquisition of the corridor.

- The Committee could be freestanding or could be a component of existing planning or open space agencies.
- Committee membership could be drawn from the membership of existing agency committee groups with additional representation by interested corridor property owners and other interested citizens.
- The Committee should be provided with staff support from appropriate operating agencies. It is expected that required support would be limited.
- The Committee would not have operating responsibilities associated with the corridor's development and preservation.

C. Master Plan Implementation Steps

It is recommended that the New Hope Corridor Open Space Master Plan be implemented over a maximum period of 20 years in three phases (Tables 1-4: Master Plan Action Summary). The overall cost of plan implementation is estimated to be between \$14.9 million and \$26.4 million, with costs to be borne by appropriate jurisdictions (Table 5: Master Plan Implementation Cost Summary). The wide range of estimated costs is due to the variety of options available for acquiring land, amount of land to acquire, types of trail construction, and other facility development.

The Committee recommends and expects that the public agencies involved in implementing the Master Plan will take advantage of particular opportunities, as such opportunities occur, to move the Master Plan implementation ahead. As a general principle, land acquisition and protection will precede construction and development. However, all or portions of construction and development actions should not be delayed pending acquisition of all land and development rights. For example, all trail installation should not be postponed until all land is acquired. Some development of trails and other facilities for public use should be carried out in conjunction with land acquisition; while preservation of the land is of primary importance, it is also important that the public be able to enjoy the benefits of the corridor. It is hoped that the area will be accessible to the public in order to develop awareness and appreciation of the corridor.

The phases of the plan are outlined below. Activities in Phases 1 through 3 may overlap, depending on the opportunities for funding, acquisition, and development that arise. Thus, for instance, Phase 2 might actually span year 2 to year 10 and Phase 3 might span year 2 through year 20.

Phase 1. Priority Corridor Acquisition (1 to 5 Years)

Estimated Cost: \$2.74 million to \$5.37 million (Table 1).

Objective: Utilization of land presently under control of the City of Durham, Duke University, and the Army Corps of Engineers, along with purchases of opportunity in the Wildlife Protection Area and any other acquisition that presents itself through zoning or negotiation.

Actions Required:

1. Designate the City-owned former Sandy Creek sewage treatment plant site as recreational land. The City of Durham Parks and Recreation Department staff should study program needs and site capabilities.
2. Negotiate agreements with Duke University, including liability agreements, concerning public use of trails, fire roads, NC 751 Parkway, the Cornwallis-Erwin Natural Area, and the Hollow Rock Access Area, which are located on Duke Forest land. Consideration should be given to usage requirements of both Duke University and the public to determine if land swaps are in order.
3. Negotiate with the Corps of Engineers concerning nature trails and bicycle/pedestrian trails along the edge of the floodplain.
4. Begin acquisition of land for Wildlife Protection Areas, purchasing in fee simple and/or through purchase of development rights.
5. Acquire any appropriate tracts made available through the development process and by willing landowners.
6. Involve Eno River State Park personnel and the Association for the Preservation of the Eno River Valley in planning for any trail connection to the Park.
7. Acquire floodplain land along Sandy Creek.
8. Acquire land for a 200-foot "steep slope buffer" along Dry Creek and New Hope Creek in the vicinity of US 15-501.

- 9.* Enlist the cooperation of community volunteers to construct 2-5 miles of nature trails, so that citizens can begin to enjoy the corridor.

Phase 2. Completion of Corridor Acquisition (5 to 10 Years)

Estimated Cost: \$5.73 million to \$11.15 million (Table 2).

Objective: Complete acquisition of land needed for Wildlife Protection Areas and for steep slope areas. Acquire necessary land for stream protection and for anchors and access areas. Construct trails as needed to connect schools, parks, and other destinations.

Actions Required:

1. Acquire development rights to land adjacent to the Wildlife Protection Area as shown in Component 4 of the Master Plan.
2. Acquire floodplain land along New Hope Creek, Mud Creek and Dry Creek.
3. Acquire land necessary for anchor and trail access at the intersection of Cornwallis and Erwin Roads, Garrett Farms, Erwin Road at Pickett, Erwin Road at Interstate 40, Mt. Moriah Road, and Leigh Farm.
4. Coordinate with Greenways Commissions of Durham and Chapel Hill to construct trails.

*Added as an amendment to the Plan adopted by the Durham Board of County Commissioners.

Phase 3. Completion of Trails and Access Areas (10 to 20 Years)

Estimated Cost: \$1.84 million to \$2.73 million (Tables 3 and 4).

Trail construction, \$358,000 to \$1.03 million.

Anchor/access development, \$1.48 million to \$1.7 million.

Objective: Prepare plans for, obtain financing for and complete the construction of trails and access areas.

Actions Required:

1. Establish priorities for trail construction.
2. Find funding.
3. Complete construction of trails and access areas as shown in the Master Plan.

The estimated cost of the project for Durham County and the City of Durham is from \$12,251,500 to \$21,260,950. The estimated cost for Chapel Hill is from \$1,164,500 to \$2,123,600 and for Orange County is from \$945,000 to \$1,861,400. The total estimated cost is from \$14,361,000 to \$25,245,950 over a 20 year period (Table 5).

Table 1: Master Plan Action Summary--Phase 1, Priority Corridor Actions (Year 1 to Year 5)

New Hope Corridor Open Space Master Plan

Location	Jurisdiction	Acquisition Method	Land Area	Cost		
				Durham	Chapel Hill	Orange
Sandy Creek Recreation Area, Component 3	Durham	City Owned	103 Acres	0	0	0
Duke land along NC 751, Component 9	Durham Orange	Easement	N/A	0	0	0
Duke land at Cornwallis Rd.-Erwin Rd. Natural Area, Component 8	Durham	Easement and/or Acquisition	255 Acres	Negotiate Payment	0	0
Duke land at Pickett R., Hollow Rock Anchor/Access Area, Component 6	Orange	Fee Simple	22 Acres	0	0	\$330,000 to \$550,000
Corps of Engineers Floodplain NC 54 to US 15-501, Components 1 and 2	Durham	Easement for Trail	N/A	0	0	0
"Wildlife Protection" Area Floodplain (1/2), Component 4	Durham Chapel Hill Orange	Fee Simple	128 Acres 23 Acres 58 Acres	\$512,000 to \$1,024,000	\$92,000 to \$184,000	\$232,000 to \$464,000
Purchase of Opportunity, All Components	All	Methods and costs are included in all components.				
Duke Forest Trails and connection to Eno River State Park	Durham Orange	Trail Use Agreement	N/A	0	0	0

Acquire Floodplain of Sandy Creek, Component 3	Durham	Fee Simple	172 Acres	\$688,000 to \$1,376,000	0	0
Trail Construction*	Durham			\$5,000 to \$50,000		
Steep Slopes along Dry Creek and New Hope Creek near US 15-501	Durham Chapel Hill	Fee Simple	41 Acres 4 Acres	\$812,000 to \$1,624,000	\$74,000 to \$148,000	0
Totals				\$2,017,000 to \$4,074,000	\$166,000 to \$332,000	\$562,000 to \$1,014,000

*Added to Phase 1 as an amendment to the Plan adopted by the Durham Board of County Commissioners

Table 2: Master Plan Action Summary--Phase 2, Land Acquisition (Year 5 to Year 10)

New Hope Corridor Open Space Master Plan

Location	Jurisdiction	Acquisition Method	Land Area	Cost		
				Durham	Chapel Hill	Orange
Complete acquisition of floodplain in Wildlife Protection Area, Component 4	Durham Chapel Hill Orange	Fee Simple	128 Acres 23 Acres 58 Acres	\$512,000 to \$1,024,000	\$92,000 to \$184,000	\$232,000 to \$550,000
Wildlife Protection Area--Development rights on adjacent lands	Durham Orange	Purchase	64 Acres 9 Acres	\$320,000 to \$960,000	0	\$45,000 to \$135,000
Acquire floodplain--Mud Creek, Component 7	Durham	Fee Simple	165 Acres	\$660,000 to \$1,320,000	0	0
Acquire floodplain--Dry Creek, Component 5	Durham Chapel Hill	Fee Simple	138 Acres 60 Acres	\$552,000 to \$1,104,000	\$240,000 to \$480,000	0
Acquire floodplain--New Hope Creek Corps land to Chapel Hill-Durham Boulevard, Component 2	Durham	Fee Simple	130 Acres	\$520,000 to \$1,040,000	0	0
Trail Access--Cornwallis-Erwin Natural Area (does not include Duke land), Component 8	Durham	Fee Simple	95 Acres	\$1,425,000 to \$2,375,000	0	0

Trail Access--Garrett Farms, Component 7	Durham	Fee Simple	28 Acres	\$420,000 to \$700,000	0	0
Trail Access--Erwin Rd.-Pickett Rd. (does not include Duke land), Component 4	Durham	Fee Simple	See Phase 1			
Trail Access--Erwin Rd.-Interstate 40, Component 5	Chapel Hill	Fee Simple	24 Acres	0	\$360,000 to \$600,000	0
Trail Access--Mt Moriah Rd., Component 4	Chapel Hill	Fee Simple	7 Acres	0	\$105,000 to \$175,000	0
Trail Access--Leigh Farm (rest of tract to be acquired by non-profit preservation group)	Durham	Fee Simple	20 Acres	\$300,000 to \$500,000	0	0
Totals				\$4,709,000 to \$9,023,000	\$797,000 to \$1,439,000	\$227,000 to \$685,000

Table 3: Master Plan Action Summary--Phase 3A, Trail Construction (Year 10 to Year 20)

Location	Jurisdiction	Trail Type	Length (L.F.)	Cost		
				Durham	Chapel Hill	Orange
New Hope Creek--NC 54 to Chapel Hill Rd. and from New Hope Creek to Jordan High School, Component 1	Durham	Nature	17,000	0 to \$85,000	0	0
New Hope Creek--Chapel Hill Rd. to Durham-Chapel Hill Blvd., Component 2	Durham	Bike\Ped.	9,000	\$45,000 to \$108,000	0	0
Sandy Creek--Chapel Hill Blvd. to Duke Golf Course, Component 3	Durham	Nature, Bike/Ped.	3,000 13,000	0 to \$15,000, \$65,000 to \$156,000	0	0
New Hope Creek--Dry Creek Trail to Erwin Rd and Pickett Rd., Component 4	Durham	Nature	1,400	0 to \$7,000	0 to \$53,000	0
	Chapel Hill	Nature	10,600			
Dry Creek, Component 5	Durham	Nature	150	0 to \$750		0
	Durham	Bike/Ped.	5,200	\$26,000 to \$62,400		
	Chapel Hill	Bike/Ped.	8,300		\$41,500 to \$99,600	
Mud Creek--Chapel Hill Blvd. to Duke Forest, Component 74	Durham	Bike/Ped.	10,000	\$50,000 to \$120,000	0	0
Cornwallis-Erwin Natural Area, Component 8	Durham	Nature	1,800	0 to \$9,000	0	0
		Bike/Ped.	7,500	\$37,500 to \$90,000		
NC 751 Parkway, Component 9	Durham	Bike/Ped.	13,400	\$67,000 to \$160,800	0	\$26,000 to
	Orange		5,200			\$62,400
Total				\$290,500 to \$813,950	\$41,500 to \$152,600	\$26,000 to \$62,400

Location		Jurisdiction	Cost		
Sandy Creek Recreation Area (3 softball fields, 1 baseball field, 1 soccer field, large shelter with restrooms, picnic area, parking), Component 3		Durham	\$1,000,000 to \$1,100,000	0	0
Mt. Moriah Anchor/Access Area (small shelter with restrooms, picnic area, parking), Component 4		Chapel Hill	0	\$80,000 to \$100,000	0
Erwin-Cornwallis Anchor/Access Area (small shelter with restrooms, picnic area, parking), Component 8		Durham	\$80,000 to \$100,000	0	0
Garrett Rd., Component 7		Durham	\$80,000 to \$100,000	0	0
Erwin Rd.-Interstate 40, Component 4		Chapel Hill	0	\$80,000 to \$100,000	0
Erwin Rd.-Pickett Rd., Component 4		Orange	0	0	\$80,000 to \$100,000
Leigh Farm, Component 1		Durham	\$80,000 to \$100,000	0	0
Total			\$1,240,000 to \$1,400,000	\$160,000 to \$200,000	\$80,000 to \$100,000

Table 4: Master Plan Action Summary—Phase 3B,
Anchor/Access Development (Year 10 to Year 20)

New Hope Corridor Open Space Master Plan

Table 5: Master Plan Implementation Cost Summary

New Hope Corridor Open Space Master Plan

	Durham City and County	Chapel Hill	Orange County	Total
Phase 1, Priority Corridor Actions (1 year to 5 years)	\$2,012,000 to \$4,024,000	\$166,000 to \$332,000	\$562,000 to \$1,014,000	\$2,740,000 to \$5,370,000
Phase 2, Land Acquisition (5 years to 10 years)	\$4,709,000 to \$9,023,000	\$797,000 to \$1,439,000	\$277,000 to \$685,000	\$5,783,000 to \$11,147,000
Cornwallis-Erwin Natural Area/Open Space (Duke Forest--if opportunity occurs)	\$4,000,000 to \$6,000,000	0	0	\$4,000,000 to \$6,000,000
Land Acquisition Subtotal	\$10,721,000 to \$19,047,000	\$963,000 to \$1,771,000	\$839,000 to \$1,699,000	\$12,523,000 to \$22,517,000
Phase 3A, Trail Construction (10 years to 20 years)	\$290,500 to \$813,950	\$41,500 to \$152,600	\$26,000 to \$62,400	\$358,000 to \$1,029,100
Phase 3B, Anchor/Access Development	\$1,240,000 to \$1,400,000	\$160,000 to \$200,000	\$80,000 to \$100,000	\$1,480,000 to \$1,700,000
Construction and Development Subtotal	\$1,530,500 to \$2,213,50	\$201,500 to \$352,600	\$106,000 to \$162,400	\$1,838,000 to \$2,728,950
Total	\$12,251,500 to \$21,260,950	\$1,164,500 to \$2,123,600	\$945,000 to \$1,861,400	\$14,361,000 to \$25,245,950