OPEN SPACE

FOR THE CENTRAL CAROLINAS

The Framework Plan

NATURAL HABITAT

WETLANDS & FLOODPLAINS

FARMLAND & TIMBERLANDS

RURAL HERITAGE & SCENIC AREAS

URBAN GREENSPACE

PARKS & RECREATION



VOICES & CHOICES
of the Central Carolinas





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Open Space
for the Central Carolinas

The Framework Plan

For more information on the Open Space for the Central Carolinas Framework Plan
and ongoing implementation initiatives, contact

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We are citizens of central North and South Carolina who care about the place in which we live, and we have a shared vision of our region's future in which economic and environmental interests are balanced.

We see a region where the Broad, Catawba and Yadkin/Pee Dee River basins and their tributaries are clean, where the air is pollution-free, and wise use is made of the land across county and state lines. We envision a growing, thoughtfully planned 14-county area with abundant open space and parks, where you can still leave Mecklenburg urban bustle to wind through rolling Stanly County farmland.

We see a comprehensive transportation system integrated with land use that gets people to where they want to go, whether they bicycle to school in Rock Hill or ride a train to work from Spencer. We see a place where recycling is a part of everyday life in cities such as Albemarle and Hickory, reusing resources and reducing waste.

We see a Central Carolinas in which future quality of life is a higher priority than short term gain, and where active citizens in Monroe and Cherryville get involved in making community decisions. While our larger cities like Charlotte are our economic engines, our small towns retain unique identities – from Shelby to Wadesboro, from Harmony to Lancaster.

We look at a region full of opportunity, where choices have to be made about our future, and we invite others to let their voices be heard – help us make the vision real.

-- Our Environment, Our Future (Voices & Choices, 1999)



Foreword

Over a two-year period, hundreds of business leaders, developers, environmentalists, elected officials, farmers, students, and concerned citizens from across a two-state, 14-county region were convened to develop a regional vision on key environmental issues. After months of deliberations, the participants developed the Vision Statement.

One idea emerged as the most important — the idea of a single, integrated land use, transportation, and open space plan for the entire region that begins with open space and then proceeds to integrate land use and transportation. As a regional convener, Voices & Choices brought diverse stakeholder groups from around the region to develop the first component of the plan, the Open Space Framework (hereafter referred to as "Framework"), as a way to coordinate and implement open space conservation across the region.

The Framework is a conceptual plan that is intended to act as a reference and guide for preserving land for a wide range of open space benefits.

We are proud to distribute the final product of that work, the Open Space Framework for the Central Carolinas. The Framework is a conceptual plan that is intended to act as a reference and guide for preserving land for a wide range of open space benefits. It is the first initiative of its kind, and will be an important resource for everyone in our community.

Acknowledgements

The Open Space Framework for the Central Carolinas was initiated by Voices & Choices of the Central Carolinas. To help manage the project, Voices and Choices contracted with LandDesign, Inc. and the Open Space Institute for the Carolinas at UNC Charlotte Urban Institute. This document represents the efforts of hundreds of open space professionals in the region who should be recognized not only for the effort expended, but also for their continued commitment to the Central Carolinas' open space assets.

Many groups contributed to the design and development of the Open Space Framework process and final results. Planners and park and recreation staffs from around the region's 14 counties acted as Governmental Partners. A Stakeholder Committee represented the open space, business, and development communities, as did a subcommittee, the Non-Profit Advisory Group. Planners, open space professionals, key business and community leaders, and concerned citizens participated in a series of workshops, which were facilitated by Denis Hayes. Open space experts from around the Unites States evaluated the consultant team's work.

These groups and individuals are gratefully acknowledged for their invaluable contributions through their participation, their energy, and their passion. Complete lists of committee members, workshop attendees, and other project participants can be found in Appendix I.



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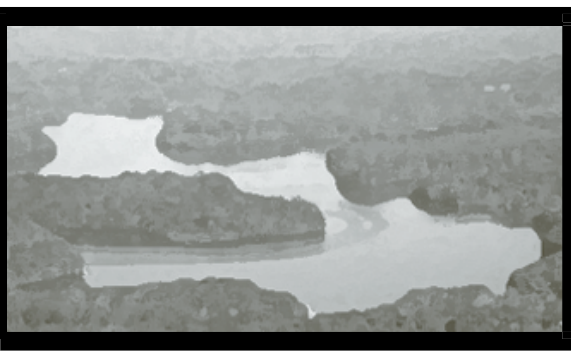
OPEN SPACE

FOR THE CENTRAL CAROLINAS

SECTION 1

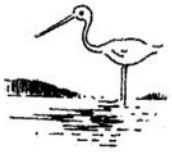
THE IMPORTANCE OF THE OPEN SPACE FRAMEWORK







The Importance of the Open Space Framework



What is open space?

The definition of open space is elusive, which has undoubtedly contributed to the lack of comprehensive planning for it. Open space includes undeveloped areas, such as fields and forests, but it also includes areas where the natural environment has been specifically utilized for agricultural, recreational, and scenic purposes. Open space can be privately or publicly owned, and may or may not be permanently protected. Open space can exist in disconnected, single-purpose fragments or as part of a functioning system replete with natural linkages and multiple uses. The vision for this region is to create an interconnected, multi-faceted open space system by 2020.



Why is it important?

As the Vision Statement makes clear, open space is a vitally important part of a region's quality of life. Open space provides both tangible and intangible benefits. It provides citizens with opportunities to participate in recreational activities and to enjoy the scenic value and natural quality of the environment. Parks, athletic fields, and greenway trails provide places for sport and relaxation, and offer the space we require to reach our personal fitness goals. Public parks are also used as hands-on laboratories, teaching students about science and the environment, as well as about stewardship, cooperation, and community values.



Open space is recognized for its economic benefits. It attracts investment, increases land value, can spark revitalization, and builds the tourism economy. Open space in the form of privately-owned farms and timberland also makes a substantial contribution to our regional economy. Many of our historic sites that form part of our tourism economy are preserved in their original open space setting, reminding us of our cultural heritage and reaffirming our sense of community.



However, beyond the recreational, aesthetic, and economic aspects is the most vital rationale for open space: health of the environment. We are dependent on the healthy ecosystems that exist within open space. Our beautiful tree canopies clean our air and provide welcome shade that regulates our long, hot Carolina summers. Wetlands filter and store water, maintaining or improving the quality of the water we drink, the water in which we swim and boat, and the water that supports aquatic habitats.



In pursuit of these benefits, six types of open space were identified for a comprehensive approach to meeting our region's future needs for open space:

Natural Habitat	Rural Heritage and Scenic Areas
Wetlands and Floodplains	Urban Greenspace
Farmland and Timberlands	Parks and Recreation



How do we preserve open space and create an open space system?

Preserving open space is one of the most challenging environmental issues facing our region, especially since the Charlotte region loses an estimated 1.7 acres to development every hour; that is 41 acres, the equivalent of 30 football fields, every day. Without planning, this kind of development can bring random changes in land use, dramatically altering the appearance of a community, the quality of life of its residents, and the value of its natural resources. Open space can quickly become fragmented or disappear altogether if such random changes continue. To prevent this, open space should be considered part of the public infrastructure, as important as roads, schools, and utilities, and should be planned for just as carefully.

Open space protection must become an integral part of planning for our future growth, not an afterthought. An interconnected, multi-faceted open space system such as that envisioned for this region requires a strategic

regional plan that is collaboratively developed and implemented by the region's open space agencies and organizations in concert with land use and transportation planning activities. Beginning the planning process with open space and then proceeding to integrate land use and transportation gives the best opportunity to protect irreplaceable regional open space resources and reinvent our approach to development. Determining how to grow and develop is easier if the community first decides where it will not grow.

Many local governments and private land trusts in this region are actively acquiring and protecting open space. But without a common open space planning framework, regionally significant open space may be fragmented or lost forever.

What is the Framework and how will it play a role in preserving open space?

The Open Space Framework is a conceptual plan that

- is regional in scale, strategic in intent, and collaboratively developed;
- relies on local plans and efforts for detailed scale and implementation;
- comprehensively addresses six types of open space;
- articulates shared regional values in the form of principles and criteria for open space protection;
- illustrates these principles in a Vision Map;
- provides guidelines for inter-local application and adaptation; and
- can be used to leverage funding resources.

The Framework is intended to act as a reference and guide for planners, parks and recreation staffs, land trusts, developers, urban designers, and other open space professionals as they work toward preserving land for the wide range of open space benefits reflected by the six types of open space.

Based upon the community's values, the Framework illustrates the region's open space vision and establishes a a set of criteria to guide the way. Having a common vision and a common set of criteria will help the region develop an open space network that is consistent and connected, not fragmented. Together, the Framework components (the Vision Map, the Principles and Criteria, and the Guidelines for Implementation) are a significant resource to which regional users can refer as they

- update or develop local land use, transportation, or open space plans,
- identify potential pilot projects,
- undertake site-specific open space projects,
- explore regional collaborative open space projects, or
- seek funding from public or private grant sources.

The Open Space Framework for the Central Carolinas was developed through a process initiated by Voices & Choices of the Central Carolinas and managed by the consultant team of LandDesign, Inc. and the Open Space Institute for the Carolinas at UNC Charlotte Urban Institute.

Volume One: The Framework Plan documents the process used to develop the Framework, describes the components of the Framework itself, and presents recommendations related to the implementation of the Framework and the next steps toward developing the Implementation and the Stewardship Plans.

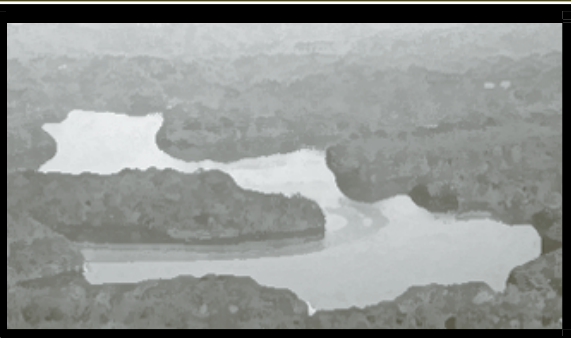
OPEN SPACE

FOR THE CENTRAL CAROLINAS

SECTION 2

THE FRAMEWORK DEVELOPMENT PROCESS







The Framework Development Process

Designing the Process

The process for developing the Framework was designed to meet these key objectives:

- engage regional open space professionals, the business community, and environmental and citizen groups in defining a common open space framework for the region,
- comprehensively address all six types of open space, including how they overlap and either complement or conflict with each other, and
- provide a sound foundation upon which to build the Framework, utilizing proven approaches and accepted practices from elsewhere in the US.





The process was divided into two phases: Laying the Groundwork (Phase I) and Constructing the Framework (Phase II). In the initial stages of the project, the consultant team provided an opportunity for the process to be critiqued by the Governmental Partners. Four Governmental Partner Meetings with staff from planning departments, parks and recreation departments, and other land protection government agencies were held around the region in Kannapolis, Lincolnton, Rock Hill, and Albemarle, on April 11th, 12th, 18th, and 19th of 2001. These four meetings introduced the Open Space Framework project and the proposed process, solicited suggestions and input from the participants, and enlisted the Partners' ongoing involvement and support in the process.

A Stakeholder Committee was formed later with approximately 50 members representing a broad cross-section of the open space, business, and development communities. The Stakeholder Committee's primary role was one of oversight and review, complementing the role of Voices & Choices. More specifically, the Stakeholder Committee was responsible for reviewing progress of the consultant team, providing feedback on process products, and building regional support for the Framework. The Stakeholder Committee ensured consistency between the end product and the needs of the 14-county region as well as the goals established by the Action Team. A subcommittee of the Stakeholder Committee, the Non-Profit Advisory Group gave advice throughout the process to supplement the comments and suggestions provided by the experts interviewed. The Group also helped identify specific criteria included in the Framework.

Phase One: Laying the Groundwork
- *Documenting prior open space planning work*
- *Conducting the research*

Phase Two: Constructing the Framework
- *Critique of Principles and Criteria by national experts*
- *Topic-specific workshops*
- *Synthesis Workshop*
- *Creation of final Principles and Criteria, Criteria Application Maps, Synthesis Map, and Vision Map*

Laying the Groundwork

This phase of the project provided the opportunity to build on prior open space planning work in the region and to conduct extensive background research on open space planning across the US.

Documenting Prior Open Space Planning Work

The consultant team began by documenting and updating two prior open space planning efforts from this region: The Green Assets Inventory and the Piedmont Green Plan Urban Growth Model.

- *Green Assets Inventory*
  The Open Space Institute of the

Carolinas has for several years maintained a GIS database of all publicly protected lands of 100 acres or greater, and produces a map called "Central Carolinas Green Assets." In the fall of 2000, the Green Assets database was expanded to include privately protected lands and smaller parcels of protected public lands (five acres or more). Included in this definition of protected open space are not only private conservation easements, but public school playing fields, and, where GIS data was available, public cemeteries and golf courses. Not included are subdivision homeowner associations' common open space areas recorded with deed restrictions, or land regulated to restrict development, such as watershed critical areas or stream buffers.

The revised Inventory shows that approximately 106,000 acres of land are protected in our 4.4 million-acre region. Although still imperfect, this updated Inventory provides a more accurate picture of protected open space in the region and is a valuable resource to the overall regional open space planning process.

- *Piedmont Green Plan Urban Growth Model*
  The Piedmont Green Plan is a GIS-based urban growth model developed collaboratively in 1998 by six regional partner organizations working with an outside consultant. (The partners were the Open Space Institute, Voices & Choices, the UNC Charlotte Urban Institute, and three regional Councils of Government: Western Piedmont, Centralina, and Catawba Regional). The model predicts patterns of growth through the year 2020 and shows the location and spatial distribution of the conversion of open space to urban uses. Using 1998 land use plans and 2020 population estimates, the model predicted that 41 acres of open space are developed every day across the region—the equivalent of 30 football fields.

  By incorporating the updated future land use plans of communities around the region as of 2000, it was hoped the model could provide the Framework process with an updated view of open space conversion. Land use plans were gathered from each county or municipality to update the data input into the model. The model was tested with the updated land use data, but was not available for use in the Framework development process due to "portability bugs" (related to transferring the model from the consultant's computers to the partners.) As those issues with the model are resolved, the model may be released for use in Framework implementation efforts.

Conducting the Research

In this part of the first phase, the consultant team examined open space planning across the US, including

- indicators, which are quantifiable measures of open space,
- models, which are theoretical approaches to open space planning, and
- precedents, which are real-world examples demonstrating the application of these models.

From this research, a preliminary set of Fundamental Principles and Open Space Criteria (Principles and Criteria) were derived as the first component of the Framework to help guide the region in the protection of open space. The Principles reflect the values we hold about open space, and underscore why each type of open space is important to the region and to the overall system as it is envisioned. The Criteria are the scientific bases for identifying valuable open space for potential inclusion in the overall system.

Constructing the Framework

The second phase of the process involved evaluating the draft Principles and Criteria through expert interviews and developing regional consensus through six topic-specific workshops. Interviews were conducted with key individuals with expertise in open space protection and planning to gather independent input on these Principles and Criteria through a critical review. These experts at the national, state, and local levels provided input that the consultant team incorporated prior to the workshops.

For each category of open space, workshop participants tested the Principles and Criteria through hands-on application to GIS-based Test Cases, or selected areas within the region. Test Cases were chosen to reflect the diversity of topographical features and land use patterns found in the region. These hands-on exercises provided the basis for in-depth discussion and refinement of the Principles and Criteria. The result of the

workshops was a regional consensus on a set of Principles and Criteria for each of the six types of open space.

This series of workshops culminated in a Synthesis Workshop that brought together the results of the six topic-specific workshops. It was designed to address potential conflicts among the six types of open space, prioritize open space opportunities, and obtain consensus on the final form of the Framework. It was also designed to initiate dialogue on adoption and implementation of the Framework. Criteria Application Maps displayed each of the six sets of Criteria as applied to our region. A Synthesis Map showed an overlay of all six sets of Criteria, presenting the universe of potential open space in the region and illustrating potential conflicts and prioritization opportunities by documenting where the six sets of Criteria overlap. A draft Vision Map 2020 displayed a subset of the Synthesis Map lands that served to illustrate how implementation of the Principles and Criteria over time could yield the system of inter-connected, multi-faceted open spaces. Participants reviewed and critiqued the Vision Map, and engaged in a focused discussion of the issues of conflicts and prioritization, producing a consensus on these three final elements of the Framework.



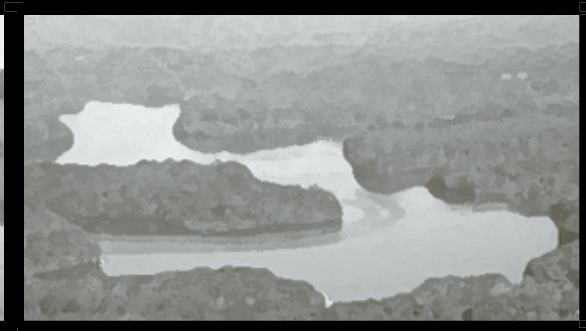
OPEN SPACE

FOR THE CENTRAL CAROLINAS

SECTION 3

THE FRAMEWORK







The Framework: Vision Map

Vision Map Overview

The Vision Map illustrates a network of open space across the region's 14 counties, providing a visual representation of how the region might reach its goal of an interconnected open space system by 2020. While the Synthesis and Criteria Application Maps display the universe of potential open space, the Vision Map shows a selected subset of that universe that represents a realistic balance between protected open space and developable land. It depicts a system comprised of all six types of open space: natural habitat, wetlands and floodplains, farmland and timberland, rural heritage and scenic areas, parks and recreation, and urban greenspace.

The Vision Map illustrates a network of open space across the region's 14 counties, providing a visual representation of how the region might reach its goal of an interconnected open space system by 2020.

The Vision Map shows only the components that can be illustrated at the regional scale, and should therefore be used for inspiration, not as a strict template. The open space network that is ultimately established will differ from the network illustrated in the Vision Map as adaptation at the local level produces a more intricate system. This is why using the Green Assets Inventory, the Principles and Criteria, the Criteria Application Maps, the Synthesis Map, and the Guidelines for Implementation – and not simply applying the Vision Map – is critical. In addition, as the Framework is used in open space planning at the local level, variations may result from factors influencing local adaptation, such as the availability of land and local decisions regarding open space protection priorities.

To develop the Vision Map in draft form, the consultant team used the Guidelines for Implementation to interpret the information conveyed in the Synthesis Map and its underlying Criteria Application Maps. The map was then refined using feedback received at the Synthesis Workshop (see Appendix II for the Synthesis Workshop Technical Report). The elements of the final version are described below, as are the factors used to prepare the Map.

Open Space System Elements

The Vision Map uses different colors and symbols to display several potential elements of the open space system, including

- existing green assets as of 2000—protected open spaces of five acres or more, both public and private
- proposed habitat, wetlands/floodplains, rural heritage, and waterfront-access park areas— a major feature of the interconnected system, these areas often naturally overlap and are represented together as one element in the system
- primary agricultural areas—areas where the highest concentrations of sustainable farming and timbering are envisioned
- urban greenspace—all municipal areas within which an urban greenspace network exists or will exist that could connect to other open space system elements.
- proposed new regional parks—parks that would bring the average travel time to a regional park to under 30 minutes for all areas of the region
- water supply watershed critical areas—areas in which development is allowed and most land is privately held, but intensity of development and impervious surface area is regulated to protect water quality
- linkages connecting the other elements—connections that could include public access trails as well as wildlife or water quality corridors that are not accessible to the public

In addition to these open space system elements, the map locates municipal areas with red dots. White areas represent unincorporated areas of the counties where open space will connect to the larger network but will not rise to the level of regional significance.

Factors Used in Creating the Vision Map

The Vision Map was created by examining the Synthesis Map and the patterns of overlap and distribution of potential open space that it identifies, and then selecting a subset of that potential open space. Several factors were considered in choosing where and how to represent the open space network on the Vision Map. To select appropriate subsets of the lands identified in the Synthesis Map, a mix of objective and subjective factors were employed.

Objective factors used to select areas for inclusion:

- Water-supply watershed regulated critical areas identified via the wetlands/floodplains criteria
- Stream banks of the major tributaries to the region's three rivers as identified via the wetlands/floodplains criteria
- Sites identified through the Natural Heritage Inventory in the natural habitat criteria
- Rural heritage and urban greenspace locations identified through those respective criteria

Subjective factors used to select areas for inclusion:

- Large blocks of undeveloped land identified through the natural habitat criteria that help provide linkage to other open space system elements or balance the distribution of open space across the region
- Proposed new regional park locations meeting the parks/recreation criteria that improved the drive time to a regional park from 60 minutes or less to 30 minutes or less for all regional residents
- Potential waterfront-access park locations meeting the parks/recreation criteria, based on distance from existing parks and potential linkages
- Primary agricultural areas meeting the farmland/timberland criteria where both good soils and good concentrations of farming or timbering activity currently occur. In the absence of necessary GIS data on locations of good soil or activity concentrations, local agricultural and silvicultural experts were asked to define these areas

  (Note: Agricultural and silvicultural areas depicted for Anson County are based on the level of connectivity to adjoining counties' primary agricultural/silvicultural areas.)

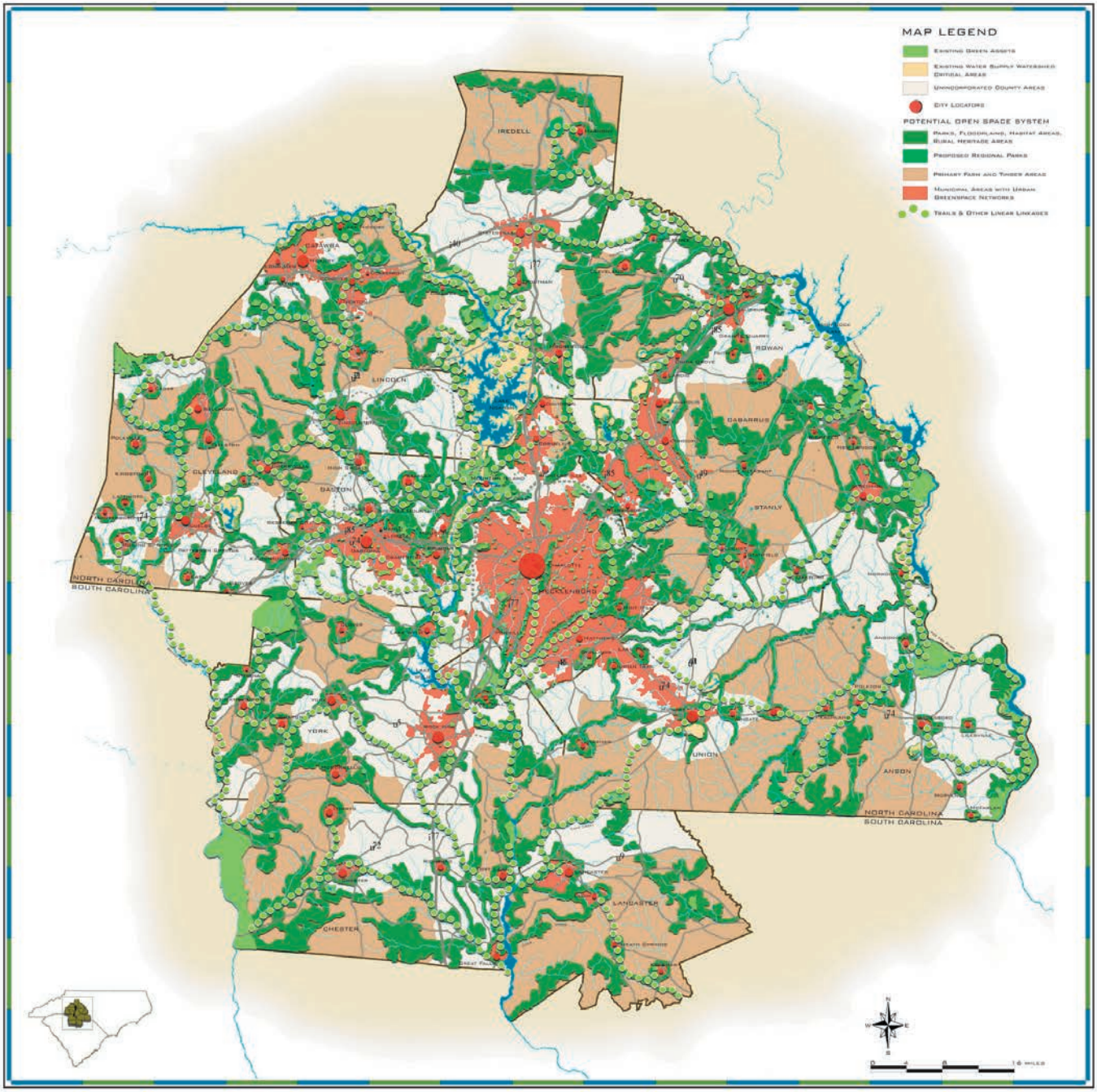
Overriding subjective factors kept in mind throughout the process:

- Land that represents compatible co-location or adjacency of more than one type of open space
- Land that enhances the total system's connectivity and regional balance
- Land that fits the regional scale required of a vision map

VISION MAP 2020

Strategic Regional Open Space Framework

for the Central Carolinas



The Vision Map illustrates the region's goal of realizing an interconnected open space system by 2020, as envisioned at the 1998 Regional Environmental Summit.

The Vision Map is conceptual and is based on the Strategic Regional Open Space Framework, which includes principles and criteria for open space, established at region-wide collaborative workshops in 2001. The Framework encompasses the six types of open space articulated by the 1999-2000 Open Space Action Team:

Wetlands and Floodplains	Rural Heritage and Scenic Areas	Farmland and Timberlands
Parks and Recreation	Natural Habitat	Urban Greenspace

Each of these are represented on separate "criteria application maps" and combined to create a "synthesis map" reflecting areas of overlap among them.

Note: The Criteria Application, Synthesis, and Vision Maps have been developed using Geographic Information Systems (GIS) technology. Not all areas of the region have available all the digitized map files needed for GIS application of the criteria (see data sources for detailed information).

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The Framework: Principles & Criteria

Principles and Criteria Overview

Building the Framework requires reaching consensus on a regional level by identifying values held in common across the region. As a first step in developing a regional open space system, Fundamental Principles and Open Space Criteria provide a means to articulate and apply those shared values in identifying open space that is worth protecting.

Fundamental Principles are statements that reflect the region's values pertaining to open space protection. They are conceptual so they can be applied regionally while allowing for flexibility based on local conditions.

Open Space Criteria help identify specific land areas that should be included in a regional open space system. The Criteria represent a scientific basis for identifying lands of interest to open space planning and can help ensure a comprehensive approach, whether focused on one type of open space in depth or integrating all six types of open space. Some are designed to be regionally applicable, while others should be applied flexibly at the local level. They help identify open space that might become part of the region's interconnected open space system. They are also a tool for examining existing local open space plans and for choosing among varying options within those local plans.

The Principles and Criteria presented on the following pages are the product of research, expert review, and collaborative input from regional workshop participants. A literature survey was conducted of best practices, quantitative indicators, theoretical models, and case studies of successful projects in regional planning and open space planning (both general and type-specific open space planning). From that survey and analysis, common principles and criteria were developed for each type of open space. National and regional experts in fields related to the six types of open space were asked to review and critique the draft principles and criteria. The revised draft principles and criteria were then further evaluated and refined by regional open space professionals, planners, developers, urban designers (landscape architects and architects), civic leaders, and citizens at a series of workshops designed to develop consensus on a final set of principles and criteria.

Six Sets of Principles and Criteria with Criteria Application Maps

This section presents each of the six types of open space separately. For each type, it includes

- a brief definition,
- a description of the Criteria Application Map,
- the Criteria Application Map itself, and
- the full text of the Principles and Criteria.

The Framework data sets on CD in Appendix III include the GIS data used to create the Criteria Application and Synthesis Maps, as well as TIFF images of the maps themselves.

The Criteria Application Maps were created using Geographic Information Systems (GIS) technology to show lands meeting the Criteria. When viewed together, the Criteria Application Maps form the Synthesis Map, which is the basis for the Vision Map.

Not all areas of the region have available all the digitized map files needed for GIS application of the Criteria, so some Criteria could not be applied across all 14 counties. For example, the data displayed is noticeably less dense for counties that do not have available digitized map files for tax parcels or soil surveys, which form the basis for several Criteria. Also, the need for local determination of some types of open space (e.g. scenic viewsheds and urban greenspaces associated with civic and institutional buildings) means that some Criteria could not be illustrated at the regional level. Within each Criteria Application Map, each Criterion is given a different color and pattern to illustrate how the individual Criteria within a given type of open space overlap or complement one another. The Criteria Application and Synthesis Maps are also included in the Framework Data Sets provided on CD (see Appendix III).

Natural Habitat



Lands that provide food, water, shelter, and breeding areas for native species.
These lands provide enough protected area for the natural community of native species to thrive. This open space must include room for breeding, as well as sustainable sources of food, water, and shelter for native species.

The Natural Habitat Criteria Application Map displays

- Natural Heritage Inventory Sites or GAP Biodiversity Sites,
- large blocks of undeveloped land with high diversity of habitat type (100+ acres, adjacent to streams),
- undeveloped land adjacent to protected habitat areas, and
- undeveloped land acting as wildlife corridors (contiguous parcels along streams).

The following GIS data sets were not available at the time the criteria analyses were conducted:

- GAP biodiversity sites for SC counties



Photograph courtesy of TPL

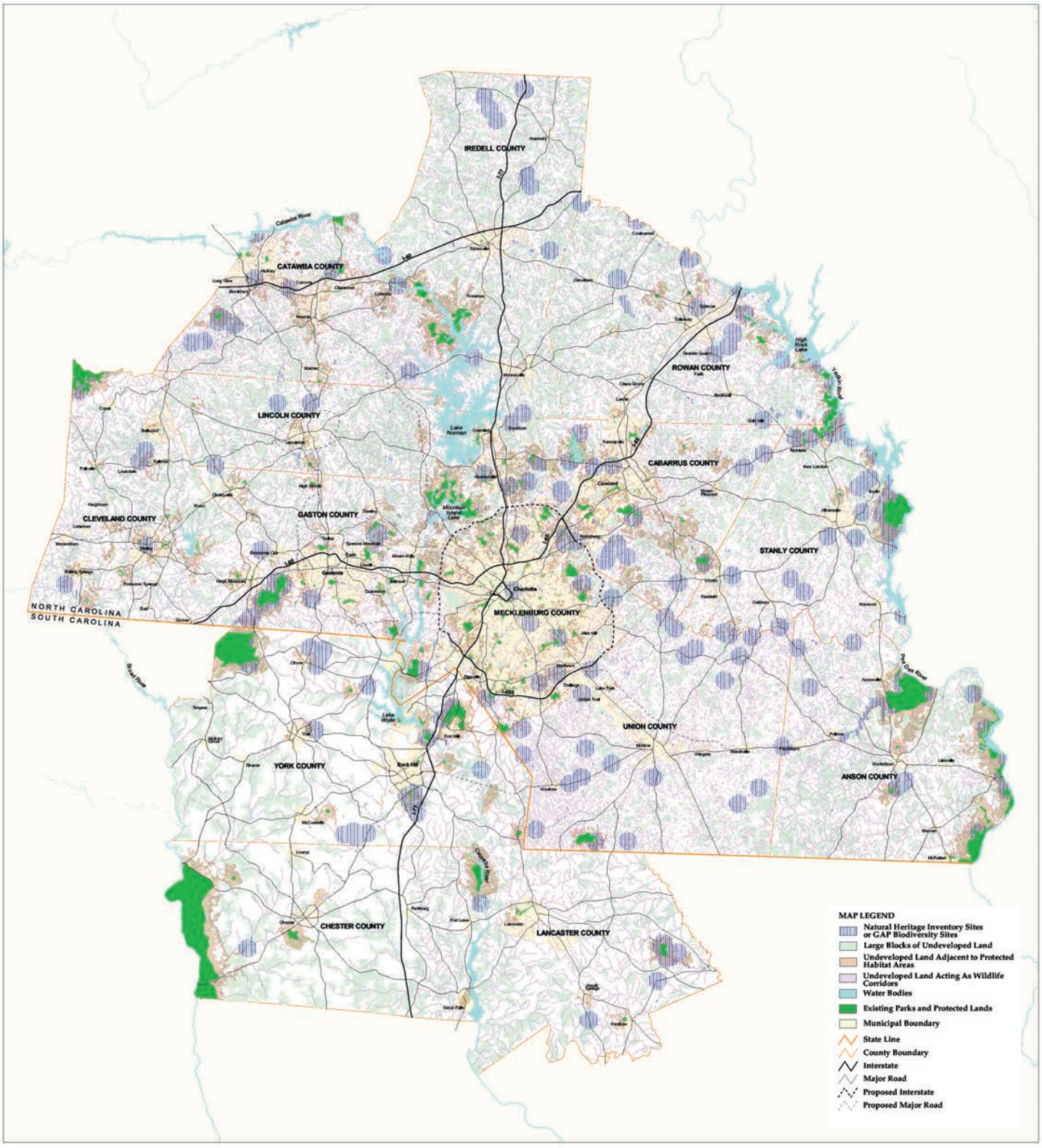






Photographs courtesy of TPL

Natural Habitat
Criteria Application Map



Principles

A. Significant natural habitat areas are a critical part of our regional ecosystem and should be preserved.

Habitat areas that are large in size, of high quality, of a rare type (or containing rare species), or are critical to the long-term viability of an ecosystem, are "significant." They provide food, water, shelter, and breeding grounds for native plant and animal species, preserve the biodiversity of our region, and teach us about the physical environment we depend upon.

B. The lands that contribute to the long-term viability of those significant natural habitat areas should be protected.

The long-term viability of habitat areas refers to the ability of the area to sustain the plant and animal populations in it over the long-term without experiencing local extinctions of those species within the habitat area. Factors contributing to the long-term viability of habitat areas include

- *Quality (degree of food, shelter, and breeding grounds provided),*
- *Size (population size of the species supported by the area),*
- *Buffering (the degree of protection provided from intrusion or human disturbance around the edges of the core habitat area), and*
- *Connectivity (the degree to which it is connected to other areas of the same habitat type).*

Criteria

Place a high priority on lands meeting one or more of these criteria:

A. Natural Heritage Inventory sites, GAP priority sites, or sites identified through other inventories developed through an equally scientific process. [1, 2]

B. Large blocks of undeveloped land, especially those containing intact, viable ecosystems with high diversity of animal and plant populations. [3]

C. Undeveloped lands adjacent to protected natural habitat areas (particularly those habitat areas that by themselves may lack long-term eco-system viability), specifically adjacent land that can:
   - Enlarge the protected habitat area, or
   - Buffer the protected habitat area with transitional uses. [4]

D. Undeveloped lands that serve as important wildlife corridors connecting protected habitats and providing access to water (i.e. continuous stream corridors). [5]

E. Small habitat areas or wildlife refuges within development that can act as "stepping stones" to habitat corridors or between protected habitat areas. [6]

NOTES

1. Natural Heritage Inventories use a scientific process to identify habitat areas that –
    a. are unique in the county, region, state, nation;
    b. are among the top five examples in the county, region, state, nation for their type; or
    c. provide habitat for endangered, rare, or threatened species.

    Typically, a county is evaluated based on topographic maps, aerial photographs, and other data, to locate the areas most likely to meet the specifications above, and then a series of field surveys is conducted to observe and document plant and animal species present and habitat types across a two-year time period, to capture the full range of seasons.
2. GAP stands for Gap Analysis Program, a national- and state-level program sponsored and coordinated by the U.S. Geological Survey and executed through state-run projects. Gap Analysis provides a systematic approach for evaluating the protection afforded biodiversity in given areas. It uses geographic information systems (GIS) to identify "gaps" in biodiversity protection that may be filled by the establishment of new preserves or changes in land use practices. Data are first gathered from local sources, such as soil and vegetation surveys, aerial photography, scientific literature, field guides, and museum collections, and then used to identify sites for further field inventory by qualified biologists and ecologists.
3. Large blocks of land are contiguous areas of 100 acres or more in size. High diversity refers to the number of plant and animal species present in a habitat area. High diversity areas are typically found near water, and in "edge" environments, where two different types of vegetative cover meet, such as where woods meet meadows. North-facing slopes are also typically higher in species diversity.
4. Natural habitat areas that have high-intensity land uses placed next to them will decline in habitat function and quality near that edge of the habitat area, as the animal species avoid using the edge of the habitat area near the high-intensity land use. (For example, a shopping mall adjacent to a natural habitat area introduces noise and other human disturbances to the habitat area that are not tolerated well by some animal species, and a corner of a habitat area that becomes a local cut-through path between the shopping center or school and nearby homes may see damage to plant colonies.) Low-intensity developed uses, such as farming or low-density rural residential uses can effectively buffer the natural habitat area from disturbance.
5. Appropriate corridor widths depend on species' needs. For example,
    - 250-350' for woodland bird species' nesting and feeding
    - 300' or more for breeding habitat of water-dependent species
    - 325' or more for species associated with marshes (bottomland wetlands)
    - 550-750' for species associated with forested wetlands
6. Stepping stones are small patches of a particular habitat type that are near larger patches of the same habitat type that are used by animal species to move between larger patches. Several small patches in a row serve as an interrupted corridor between the larger patches. The size of the stepping stones and the size of the gap between them are variable depending on the species. For example, birds and squirrels will use suburban trees as "stepping stones" to get to a nearby park, but smaller rodents may not be able to successfully negotiate suburban streets to get to the same park.

Wetlands and Floodplains



Lands the soak up floodwaters and filter pollutants before they reach streams.
Wetlands are frequently identified by the presence of standing water, but also by the presence of hydric soils (formed in wet conditions), or by the presence of wetlands-dependent plants or animal species. Floodplains are the flat or nearly flat areas along a river or stream that are covered by water during a flood, and are often measured in terms of the size of rainstorm producing the flooding (e.g. the 100-year floodplain is defined by flood levels produced by a 100-year storm). Buffers are naturally vegetated stream banks.

The Wetlands & Floodplains Criteria Application Map displays

- floodplains derived from existing county floodplain coverages or by identifying hydric soils adjoining streams and rivers,
- wetlands as identified by combining National Wetlands Inventory, county-supplied wetlands, and hydric soils,
- naturally vegetated stream buffers as identified using natural land cover within a minimum distance of 25' of streams,
- erodible soils (soils that are highly susceptible to erosion due to their chemical and physical composition and slope, as classified by the Soil and Water Conservation Service) within 300' of water bodies, and
- water supply watershed critical areas.



Photograph courtesy of TPL

The following GIS data sets were not available at the time the criteria analyses were conducted:

- National Wetlands Inventory for Chester and York counties, and portions of Lancaster County
- hydric soils for Anson, Chester, Cleveland, Iredell, Lancaster, and Rowan counties (used to augment National Wetlands Inventory and the Floodplains criteria assessment)
- erodible soils for Anson, Chester, Cleveland, Iredell, Lancaster, and Rowan counties
- floodplains for Anson, Chester, Gaston, Iredell, Lancaster, Lincoln, and Rowan counties (for these counties with hydric soils GIS data sets available, floodplains were conservatively approximated by identifying hydric soils adjoining streams and rivers)
- water supply watershed designated critical areas for SC counties

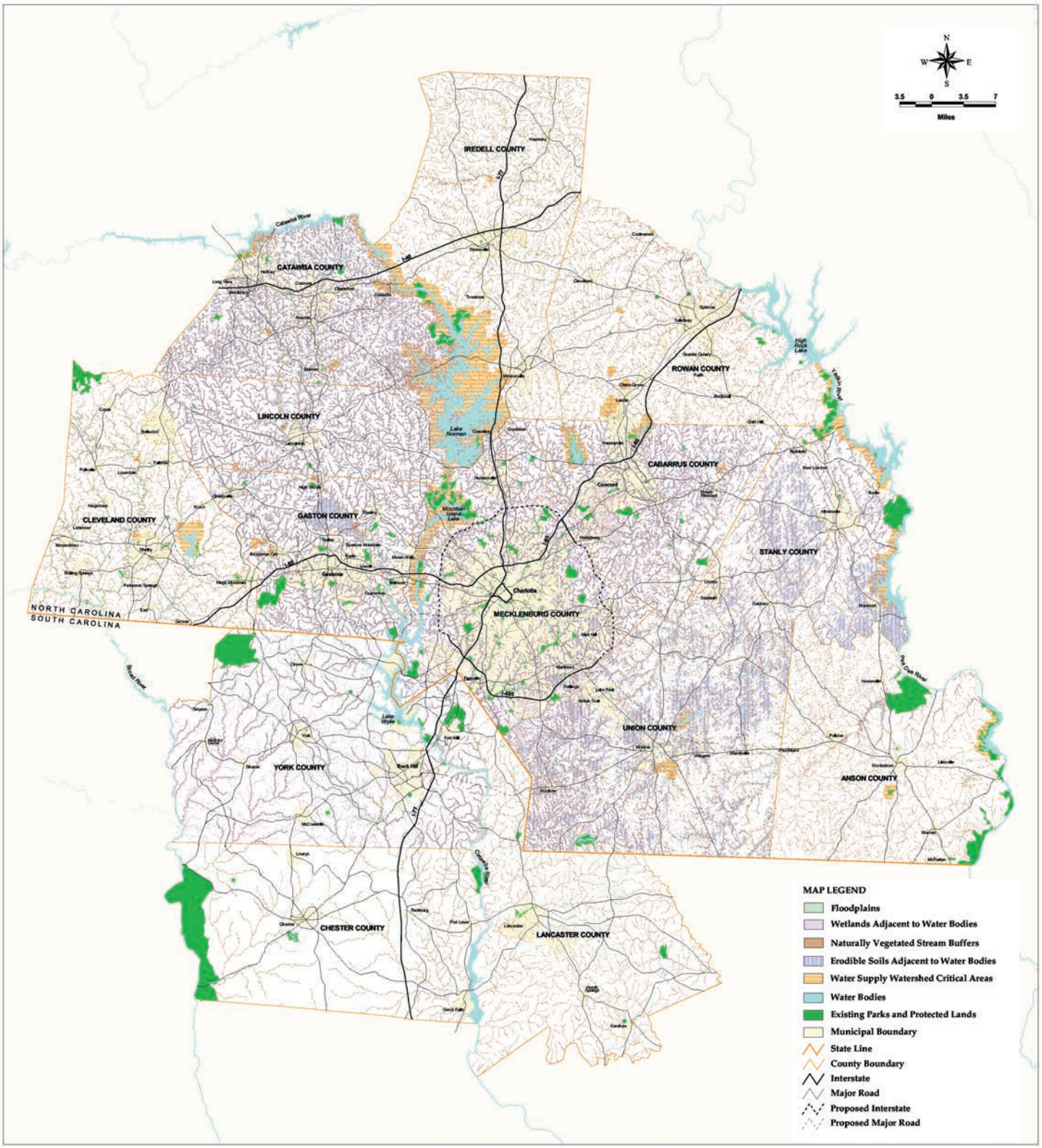






Photographs courtesy of TPL

Wetlands and Floodplains
Criteria Application Map



Principle

A. Wetlands and floodplains that contribute to flood management and water quality protection should be preserved.

Wetlands and floodplains are highly efficient at absorbing rainfall runoff, acting like a sponge to capture the storm's peak volume and hold it for slow re-release after the storm has passed, which minimizes downstream flooding. They also perform a natural pollutant filtering function, slowing the runoff as it passes over and through them, trapping sediment and absorbing runoff chemicals before they reach the stream or lake.

Criteria

Place a high priority on land meeting one or more of these criteria:

A. Land adjacent to streams, rivers, ponds, or lakes that is:
- Within the 100-year floodplain; [1]
- A wetland, particularly if it is subject to federal regulation under the Clean Water Act; [2]
- A naturally vegetated stream buffer, particularly those in forested cover, in at least a minimum width: [3]
  - necessary to absorb, slow and filter runoff, determined by slope, soil type, and type of vegetative cover; [4] or,
  - determined by state and local stream buffer regulations;
- Steeply sloped and/or composed of highly erodible soil types; [5] or,
- Undeveloped but subject to a high degree of impervious surface if fully developed under current land use regulations. [6]

B. Land close to, and draining to, public water supply intakes, including:
- State-regulated water supply "critical areas" (e.g., ½ mile upstream or upland of the intake, or to the ridgeline); and especially,
- Wetlands, floodplains, and potential stream buffer areas within the "critical areas."

C. Headwater streams and other small streams with natural streambeds providing pollutant filtering in the streambed. [7]

D. Ponds, wetlands, floodplains, natural depressions in the land and other stormwater detention and filtering areas, or opportunities for creating such facilities, especially:
- Near fast-developing areas; or
- Lying between water bodies and fast-developing or developed areas and draining to the water bodies.

E. Land that presents opportunities for restoration or reclamation to reduce flood hazard or to improve water quality, such as:
- Land adjacent to or containing state-designated impaired streams (EPA 303(d) listed streams) where the primary pollutant identified is from non-point-sources. [8]
- Channelized or culverted streams; [9] or,
- Non-functioning wetlands. [10]

NOTES

1. The 100-year floodplain is the area that is covered when a river or stream floods following a 100-year storm event (defined as a volume of rainfall within a given period of time high enough to only have a 1-in-100 probability of occurring in any given year.)
2. Section 404 of the Clean Water Act provides for regulation by the US Environmental Protection Agency and the US Army Corps of Engineers of activities that would adversely affect wetlands. The new proposed regulations for Nationwide Permits (NPWs) for certain activities that may damage or destroy wetland areas allow some exemptions in cases of wetlands under a certain size (depending on the activity, the largest size exempted is one-half acre). Additionally, most NPWs will require notification to the Corps if the activity will impact more than one-tenth of an acre. (Federal Register, March 9, 2000)
3. Forest or woods is the most efficient form of natural vegetative cover for absorbing and slowing rainfall runoff and filtering runoff and other non-point-source pollutants before they reach streams or groundwater. (Society for the Protection of NH Forests, "Recommendations for Water Supply Land Conservation Program")
4. The higher the slope, the wider the natural vegetative buffer needed to filter runoff pollutants before they reach the stream. Similarly, the lower the absorption capacity of the soil type, the wider the buffer needed. The less extensive the root system and leaf canopy provided in the vegetative buffer, the wider the buffer needed. (Technical Advisory Committee, "Mountain Island Lake Watershed Study")
5. Sedimentation of streams causes turbidity of the water and increases drinking water purification costs. The steeper the slope and the more erodible the soil type, the greater the vulnerability of a stream to sedimentation from disturbance to its stream buffer. The Soil and Water Conservation Service rates soil types in each county and assesses slope and erosion hazard.
6. Impervious surface area associated with urban or suburban development prevents rainfall from being absorbed into the ground and sends higher volumes of runoff, often containing pollutants, into streams and rivers.
7. Headwaters and other small streams (average width of less than 10 meters and an average depth of less than 0.25 meters with natural streambeds), through interactions between the water and the streambed, remove "important amounts of inorganic N [nitrogen], frequently more than 50% of the inputs from their watersheds … within minutes to hours and within a few tens to hundreds of meters. In larger streams, the times and distances increase in proportion to depth. … The small-size streams may be the most important in regulating water chemistry in large drainages because of their large surface-to-volume ratios favor rapid N uptake and processing. … Yet small streams are endangered because they are the most vulnerable to human disturbance …" (Peterson, et al, "Control of Nitrogen Export from Watersheds by Headwater Streams", Science, v. 292, April 2002)
8. Non-point source pollution: pollution originating from many diffuse sources, that is caused by runoff from rainfall or snowmelt. It is contrasted with point source pollution which is from a single point source such as the waste discharge pipe of an industrial plant. As the runoff moves downhill towards streams and lakes, it picks up and carries along natural and human-made pollutants, and deposits them in streams and lakes. Examples of runoff pollutants include:
   - Excess fertilizers, herbicides, and insecticides from agricultural and residential areas;
   - Oil, grease, and toxic chemicals from urban runoff and energy production;
   - Sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks;
   - Salt from irrigation practices and acid drainage from abandoned mines;
   - Bacteria and nutrients from livestock, pet wastes, and faulty septic systems. (US Environmental Protection Agency)
9. Channelized or culverted streams concentrate rather than filter runoff pollutants, and they concentrate stormwater flows to streams, resulting in higher volume of stormwater delivered over a shorter period of time.
10. Non-functioning wetlands: previously a wetland that because of diversion of its water source or other disturbance shows evidence of loss of wetlands function, either by decrease in runoff actually absorbed, or by loss of plant and animal species associated with wetlands and hydric soils. Hydric soils are an indicator of the presence of wetlands. Floodplains contain a high proportion of hydric soils. (NC Cooperative Extension Service)

Farmland & Timberlands



Fields and forests that produce income from livestock, crops, and sustainable forestry. *Farmland is land whose primary use is in actively managed agricultural production, including crops and livestock. It may also include land developed for support of agricultural production. Timberland is land whose primary use is in actively managed timber production. Farming and timbering are culturally and historically important open space uses that help our region maintain its sense of community, sense of place, and connection to the land.*



This Criteria Application Map displays

- active farms participating in recognized programs (i.e. Present Use Value Taxation Program, or Voluntary Agricultural Districts),
- prime and state important farm soils (from county soil surveys by the Soil and Water Conservation Service),
- timber production soils (soils rated acceptable for timber by the Soil and Water Conservation Service), and clusters of active farms.

The following GIS data sets were not available at the time the criteria analyses were conducted:

- tax parcels of active farms participating in the present-use tax valuation program for Anson, Chester, Gaston, Iredell, Lincoln, Lancaster, Rowan, and Union counties (tax parcels available for Anson, Gaston, Lincoln, and Union counties, but without present-use tax valuation participation)
- tax parcels of active farms participating in Voluntary Agricultural District programs for any of the region's 14 counties, EXCEPT Cleveland and Rowan counties (Voluntary Agricultural Districts have been enacted in Iredell, Cleveland, and Rowan counties.)
- tax parcels of properties under a state forestry-approved management plan for any of the region's 14 counties
- clusters of agricultural operations could not be derived from counties lacking active farm data for participation in both present-use and Voluntary Agricultural District programs
- soil survey showing prime, state important, and timber production soils for Anson, Chester, Cleveland, Iredell, Lancaster, and Rowan counties

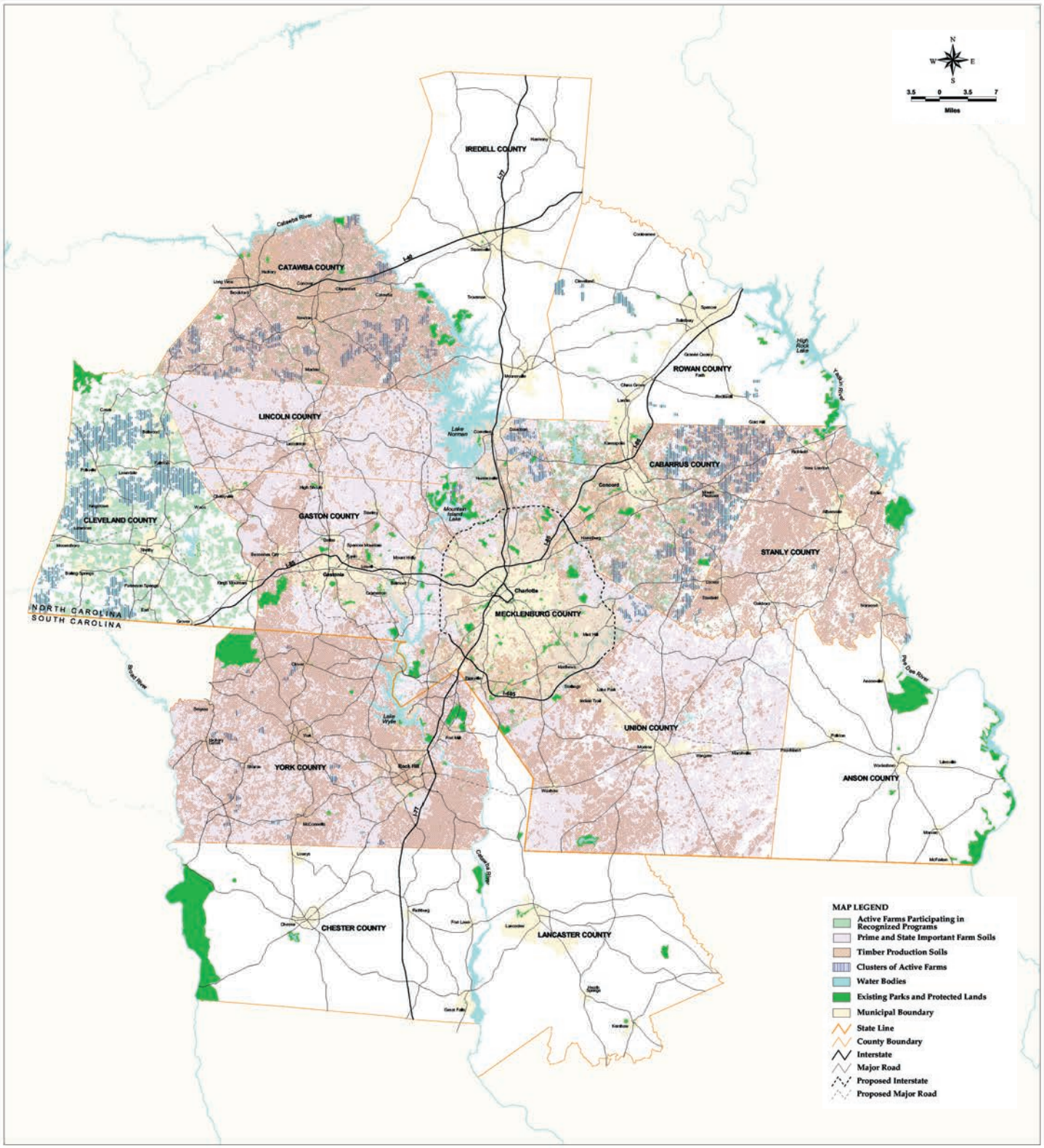


Photograph courtesy of TPL





Farmland and Timberlands
Criteria Application Map



Principles

A. Farmlands and timberlands make significant contributions to our regional economy, ecology, culture, and quality of life, and preservation of them should be promoted.

Farming and timbering remain an important source of income, jobs and locally-produced goods in our region, despite rising land values due to increasing urbanization. They also require far less in public services per property tax dollar than residential land uses. Equally important, a decline in farming and timbering would mean a decline in our quality of life, in our sense of place and connection to the land. Prime soils for farming and timbering are limited in supply. If those lands revert to nature, they can become working farms and forests again, but those that are developed cannot.

B. The long-term viability of farming and timber production in our region should be sustained over the long-term.

We need to protect both the option for current farms and timber operations to remain in business and the option for creation of future farms and timber operations. Preserving farming or timbering for our future requires more than just protecting land. It means working to make farming or timbering operations profitable enough both now and into the future to compete with development for the landowner's return on investment. Agri-tourism and other recreational and educational opportunities linked to working farms and forests can also enhance the long-term viability of farming and timbering. We must work to preserve the sense of community identity with farming and timbering so that working the land for a living remains an attractive option for the next generation.

Criteria

Place a high priority on lands meeting one or more of these criteria:

A. Land in active agricultural or silvicultural production, especially those participating in recognized programs. [1-5]

B. Undeveloped farmed or timbered land containing soils rated by the Natural Resources Conservation Service as

- Prime farm soils, and to a lesser degree, state important soils;[6] or
- Timber production soils. [6]

C. Clusters of agricultural and silvicultural operations that are contiguous or in close proximity to each other that can: [7,8]

- Form a center of long-term viable farming or timbering activity; and
- Provide a focus for cooperative ventures' investment in value-added agriculture or

silviculture products processing.

D. Agricultural lands near growth areas that can effectively transition to high value agricultural products or operations. [8]

NOTES

1. Present-use-value taxation programs allow land that is being farmed or timbered to be assessed for property tax purposes at the value of its current use (e.g., farming or timbering), rather than at full market value. In areas where urbanization is causing rising land prices, the full market value reflects the potential of the land to produce income from residential or commercial development, while the current use value only reflects the land's income production potential from farming or timbering. Timbered or farmed land's current use value is often much less than its full market value, so this program reduces the landowner's taxes, providing an incentive to keep the land in farming or timbering.
2. The NC Farmland Preservation Enabling Act (NC G.S. 106.735-744) allows counties to set up Voluntary Agricultural District programs, under which "qualifying farms" may apply to form a Voluntary Agricultural District and receive protection from water and sewer improvements assessments, among other benefits. The Act defines "qualifying farms" as those that are participating in the present-use-value taxation program, have been certified by the Soil and Water Conservation District as a viable farm (criteria include presence of prime farm soil, in active agricultural production for the past 5 years, etc.), are managed under soil erosion control practices, and have been placed under an agricultural conservation easement of not less than 10 years' duration.
3. Purchase of Agricultural Conservation Easement (PACE) programs are typically voluntary programs created by state or local governments to purchase the development rights from farmland in exchange for placing a conservation easement on the land that prohibits most residential or commercial development on the land, but allows farming and farm operations on the land. The assessed value of farmland that has been placed under a conservation easement is reduced, lowering the landowner's property taxes. Private land trusts may also enter into agricultural conservation easement agreements with farm or timberland owners, with the same property tax benefits to the landowner. If the private easement is donated to the land trust rather than sold (as in a PACE program), then both NC and SC, as well as the federal government, offer income tax relief in recognition of the donated value of the easement, although the amounts allowed vary.
4. Both North and South Carolina provide incentives for owners of forest lands to manage their timberlands under defined best practices, under a forest management plan approved by the state Forest Service.
5. The U.S.D.A.'s Bicentennial Farm program recognizes farms that have been in continuous operation for over 200 years.
6. The Natural Resources Conservation Service (NRCS) has conducted a soil survey of all soils in each county, and ranked the soils for agricultural capability. "Prime" is the highest ranking, for the most productive agricultural soils in the state, followed by "State Important." "Urban" soils are those that have already been extensively developed and disturbed, including grading and filling with mixes of soil types. All remaining soils are grouped as "Other." In a separate soil rating, the NRCS identifies soils that provide good growing conditions for timber production.
7. Farms isolated from other farming operations and vulnerable to being surrounded by suburban development have less long-term viability than concentrated clusters of farms and farm-related businesses. The same is true of timber operations. However, individual farms or timber operations that are models for long-term viability due to other factors (e.g., introduction of sustainable practices and products) may also be included.
8. High-value agricultural land uses produce higher profit margins in areas where market demand is high enough to support them. These agricultural products can successfully compete with commercial or residential development near growth areas for landowners' return on investment. They include specialty products and niche market products such as wine, goat cheese, or organic produce for high-end restaurants, and horticultural operations. They also include equestrian breeding and training centers. Preserving farm operations requires technical and other business assistance to help them adapt to changing market demands and transition to new products.
9. Nationally, over 56% of the food products sold in metropolitan area grocery stores are locally produced, that is, produced in the counties immediately surrounding the metro area. (American Farmland Trust)

Rural Heritage and Scenic Areas



Small towns and rural landscapes that characterize our Piedmont heritage.
Our rural heritage includes rural open space, sometimes dotted with buildings and other manmade structures, that is reflective of historically rural lifestyles and occupations. It also includes the small towns closely linked to their surrounding farming communities and supported by a thriving manufacturing industry; this has been the Piedmont's uniquely characteristic development pattern for generations. Scenic areas are aesthetically pleasing areas that can be seen from a designated linear pathway, such as a road or trail, or from a designated point like a hilltop.

The Rural Heritage/Scenic Areas and Urban Greenspace Criteria Maps are combined in one map because they have no overlap and are complementary. This map appears in the following section.

Principle

A. The rural landscape includes the natural beauty of our region and the cultural heritage reflected in our small towns, crossroad communities, and historic sites, and its protection and preservation should be promoted.

> *Our regional sense of place comes from the rolling terrain of the Piedmont, criss-crossed by creeks, dotted with farms, small towns and crossroad communities, and traversed by rural roads named for creeks, early settlers, and historic churches. Heritage- and eco-tourism are a growing part of our region's economy, providing a connection to our roots, and an increased appreciation of our natural heritage. We seek connection with these special places as sources of spiritual or psychological rejuvenation.*

Criteria

Place a high priority on lands meeting one or more of these criteria:

A. Public access areas such as rural roads and highways and the views from them that contribute to the scenic appeal of the rural landscape, especially: [1]
   - Along designated or nominated Scenic Byways; [2]
   - Long views (to ridgelines and from ridgetop roads); [3]

B. Sites and features, both natural and cultural, that are important to rural character, sense of place, and tourism economy:
   - Historic sites, structures, and districts of local, state, and national importance [4]
   - Cultural landmarks [5]
   - Physical landmarks [6]
   - Agricultural features [7]
   - Archeological features [8] and
   - Other unique or unusual characteristics [9]

C. The rural land surrounding small towns and compact villages that defines a clear edge between town and country. [10]

D. Visual buffers between scenic areas and development. [11]





Photograph courtesy of TPL

NOTES

1. Public access areas include not only roads, but rivers, trails, parks, and other public sites. The factors contributing to the "scenic" quality of views vary depending on whether the view is long or short. Views with relatively short depth-of-field are characterized as "scenic" when the foreground consists of managed vegetative cover (lawns, pastures, crops, orchards) with few small-scale structures in the characteristic vernacular style of the region (cabins or farm houses, barns or sheds) and the background provides a clear contrast with a distinct edge (as with a backdrop of woods,) or, when a dynamic view (as experienced in a moving vehicle) changes from open to closed or vice versa (as in emerging from a wooded section of road to section with open meadows, or entering a "tunnel" of trees from an area of open fields.) Another factor contributing to scenic qualities of rural roads are their curves, rises and dips, providing continuously changing views.



2. The Scenic Byways program allows communities to nominate rural roads for participation in this program in order to recognize rural roads and highways that have scenic appeal. No legal protection is provided with Byway designation, but state-supplied signage along the designated Byway raises awareness of the value of the scenic asset and reinforces community pride in it.
3. Depending on the height and density of vegetation or structures along the roadside, rural roads can provide views with long depth-of-field, a characteristic strongly associated with "scenic," particularly when the view is across land with natural vegetation, agriculture, or low-density rural residential uses. The scenic qualities of long views also depend on changes in elevation across the view, as in a view of a ridgetop on the horizon, or a view down into a valley from a ridgetop.
4. Historic sites, structures, or districts can be as "young" as 50 years old, or can date from pre-Revolutionary War times. Historic rural sites are often set in open space that is an integral part of the historic setting for the structures. The pattern of development associated with small town districts of historic value may incorporate open space in the form of sidewalk tree plantings, landscaped squares and roundabouts, and connection to public parks and gardens. Sites or structures of national importance may be qualified to be placed on the National Historic Register, which conveys protection of architectural features and appearance of the property. Due to these restrictions, owners of some qualified historic properties choose not to place them on the Register, but they may instead be in a designated National Historic District. Both Historic Register sites and sites nominated but not yet awarded Registry status, as well as Historic District sites may be identified for inclusion in the rural heritage portion of the Framework. Some states and localities maintain their own historic registers and districts as well.
5. Cultural landmarks include places and structures that are important to the local sense of place regardless of whether they are "historic," such as churches and cemeteries, school buildings, train depots, other civic buildings, local museums, community centers, grist mills, bridges, general stores and craftsmen's and artisans' shops. These structures are often built in the regional vernacular architectural style and exhibit a high degree of architectural integration with their site and surrounding buildings.
6. Physical landmarks include locally well-known natural features such as mountains, prominent hills, bluffs, large "signature" trees, creeks and natural fords, swimming holes, lakes, quarries, and can also include areas made distinctive by their type of vegetation or ecosystem characteristics (such as a swamp or patch of forest dominated by one species, as in a beech grove).
7. Agricultural features are both man-made and natural. Farm houses, barns, silos, and fences are examples of man-made agricultural features, particularly those constructed in the regional vernacular architectural style. Natural agricultural features represent the agricultural use of natural resources, such as pastures, orchards, or fields growing crops.
8. Archaeological features can include excavated or unexcavated sites known or suspected to contain artifacts from settlements or battlefields predating the industrial era, whether attributable to Native American or early European settlers.
9. Other unique or unusual characteristics are locally-determined sites or places not captured in the above categories that have local or regional significance and are rare or not replicated elsewhere. For example, "The Tree that Owns Itself" in Athens, GA is a tree that is not contained in any land parcel owned by an individual, corporation, or government entity – the parcels adjoining it come up to it but do not include it. Thus, it owns itself, and even the city road detours around it.
10. Greenbelts are the relatively undeveloped land, public or private, protected or not, that surrounds most small towns and villages, giving a distinct sense of passing suddenly rather than gradually from "town" to "country" when leaving the town limits. The "clear edge" is the result of relatively high intensity "town" land uses immediately adjoining relatively low intensity "country" land uses, with no "suburban" area of intermediate land use intensity between the two. A classic example is the farmstead and fields whose hedgerows immediately adjoin the houses and shops that mark the edge of town. In our region, it may be more common for the edge between town and country to be marked by a creek with densely wooded slopes, forming a natural transition and distinctive "gateway" between the two. The width of this green area needed to preserve the sense of clear edge and transition will vary depending on local conditions, such as topography and pace of growth.
11. Visual buffers between scenic areas and development protect the value of the scenic area and its views by preventing the developed area from being visible from the scenic area. Natural topography can provide a visual buffer, as can a densely wooded area. Thoughtful design and planning of development can preserve and take advantage of those natural features to hide the development from view along a scenic road or byway. (Randall Arendt, Conservation Design for Subdivisions)

Urban Greenspace



Parks, gardens, and tree canopies that make our cities beautiful and healthy.
Landscaped space in urban and community settings that enhances the built environment by beautifying, shading, and providing places for residents and workers to gather and enjoy being outdoors. These spaces can be predominantly "green," as in city parks, or "gray," as in urban plazas, as long as there is sufficient vegetation to provide aesthetic relief, and to provide air quality and runoff absorption benefits.



This Criteria Application Map displays lands fitting the criteria for two types of open space, Rural Heritage and Scenic Areas, and Urban Greenspace, as the criteria are similar and do not overlap. It displays

- areas along designated scenic byways;
- historic sites, structures, and districts of national importance, and cultural landmarks; and
- clear town/country edge.

The following GIS data sets were not available at the time the criteria analyses were conducted:

- complete inventories of cultural landmarks for any of the region's 14 counties (partial inventories were digitized from printed maps supplied by chambers of commerce for all 14 counties)
- undesignated or potential historic sites, structures, or districts for any of the region's 14 counties (designated historic sites, structures and districts were obtained for all 14 counties)

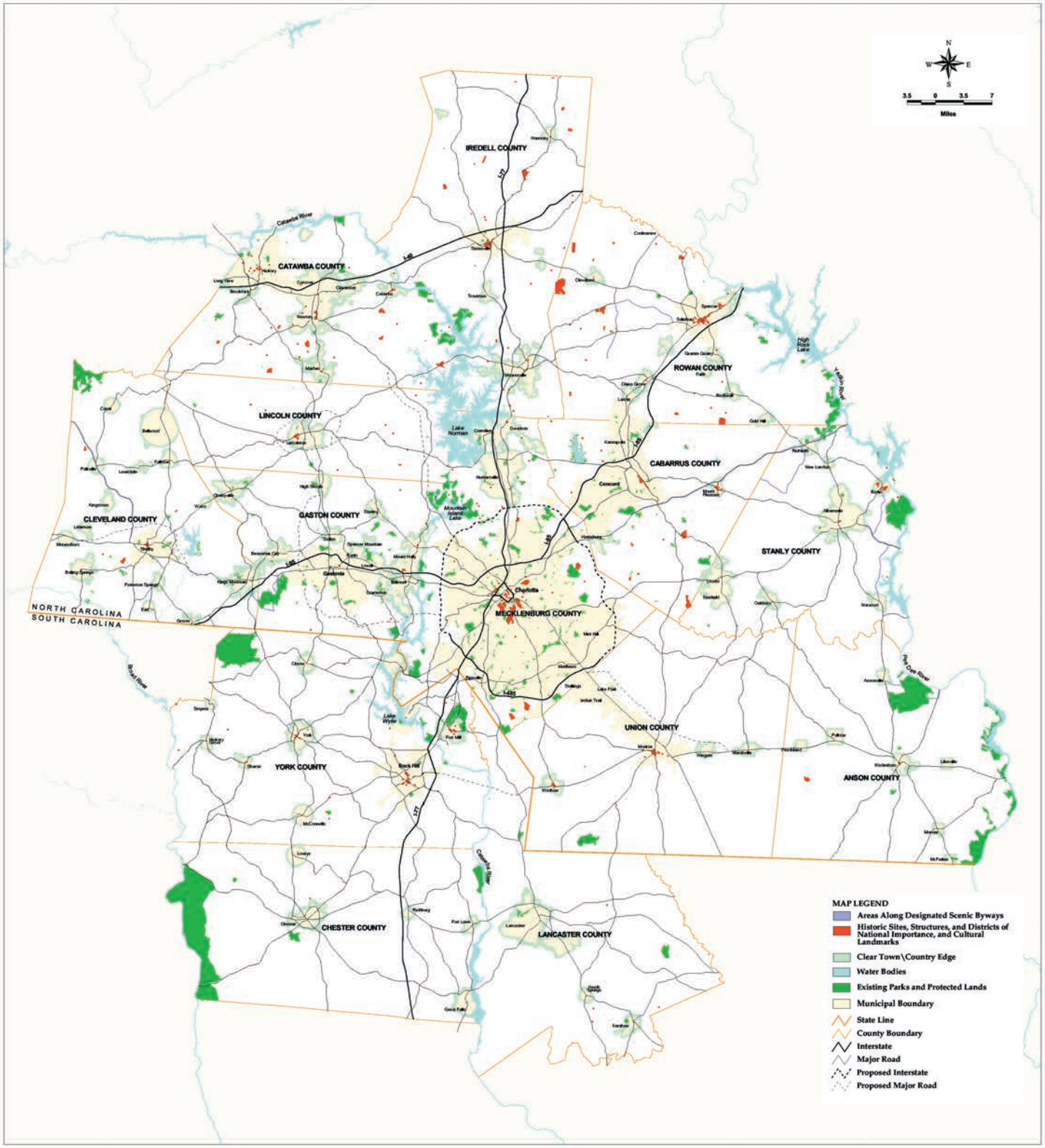








Rural Heritage/Urban Greenspace
Criteria Application Map



Principles

A. Greenspace is an essential element in creating successful urban environments and should be provided and organized so as to create an interconnected network of urban open spaces of varying sizes.

Like a street network, open spaces within urban areas are elements around which buildings are organized and they become identifiable landmarks that help with orientation. The spaces vary in size, allowing a variety of activities to be accommodated. Each space becomes an amenity, stabilizing and, in some instances, increasing property values.

B. Greenspace contributes to the quality of the human experience in the built environment while connecting a variety of uses, and should therefore be integrated into the urban environment.

Open spaces and the landscaping within them visually enhance the built environment by balancing the hard edges of buildings and paved areas with the softer, more organic forms of trees, shrubs, and other plants. Trees provide a buffer from wind, rain, and sun. Just as open spaces provide a transition between places in the built environment, they also transition the large-scale elements of the built environment down to a human scale. Finally, they contribute to improvements in air and water quality and mitigate the negative effects of urban heat islands. [1,2]

Criteria

Place a high priority on urban lands that meet one or more of the following criteria:

A. Land associated with sites and features that can serve as an integral part of the community [3]:
- Historic sites, structures, or districts, or cultural landmarks
- Community open spaces
- Land associated with civic buildings and institutional uses
- Physical or environmental landmarks

B. Land that can act as transitional space between differing uses [4].

C. Land, particularly corridors, that can link to other greenspaces within the urban area, other destinations within the urban area, or other elements of the regional open space system. [5]

D. Parcels in areas currently lacking open space opportunities, and parcels within areas of greater urban density. [6]





NOTES

1. By incorporating features or components that are visually and physically accessible to the pedestrian, urban greenspaces bring human scaled elements into the urban fabric that is otherwise dominated by larger-scale structures.
2. Urban heat island is the term given to the portion of an urban area that becomes measurably hotter than the surrounding area due to absorption and retention of the sun's heat by the dense concentration of buildings and pavement. This effect causes higher cooling costs and can cause increased frequency and magnitude of rainstorms immediately downwind of the heat island with resulting increased potential for soil erosion and runoff.
3. **Historic sites, structures, or districts** are those places recognized on either the national, state, or local level as having historic significance. These and all fragile cultural resources should be carefully incorporated to ensure the protection of each.
   Cultural Landmarks can include bridges, historic establishments, cemeteries, old trees, and place markers.
   Community open spaces can include plazas, pocket parks, public greens or squares, neighborhood parks, and community parks.
   i. Green, Square, or Plaza – open space located within or near the central part of the community. It is to generally be surrounded by building lots and defined by streets.
   ii. Neighborhood Park – provide areas for active and passive recreation for neighborhoods within walking distance of homes. These parks are intended to serve as a unifying element for neighborhoods and to provide large tracts of centrally located open space rather than scattered small tracts.
   iii. Community Park – should contain active and passive recreation facilities to serve recreation needs of the wider community, rather than individual neighborhoods.
   iv. Pocket Park – a very small outdoor area for public leisure such as a small playground or a courtyard with benches and fountains.
   Land associated with civic buildings and institutional uses includes open space located on the grounds of such places as college campuses, courthouses, churches, and schools.
   Physical or Environmental Landmarks can include hilltops with views, or land containing geological/geographic features such as creek valleys, natural springs, etc.
4. There are two types of transitional spaces: separators, such as those that use vegetation to buffer incompatible uses from each other, and connectors, such as pocket parks or courtyards, that are typically pedestrian areas toward which different but compatible uses face. Sidewalk tree plantings are an example of transition space as separator, buffering the pedestrians and building fronts from traffic in the road. Plazas can be connector transitional spaces, drawing pedestrians in from the sidewalk to the building entrance, or providing outdoor leisure space for the occupants of the buildings sharing the space.
5. Linkages can include greenways, tree-lined sidewalks, abandoned railroad right-of-ways, utility corridors, etc. Amenities such as greenways can connect community parks to regional parks, a regional greenway, neighborhoods, schools, hospitals, offices, etc.
6. Areas that are underserved can be identified according to a set standard (i.e. usable open space available within six blocks of every dwelling). Areas of greater urban density can include areas such as those around transit stations and highway interchanges, or other areas that by definition are where concentrated development is found or encouraged. Parcels to be considered may include brownfield sites that can be converted to greenspace.

Parks and Recreation



Land providing places to enjoy nature and outdoor exercise and sports.
Land designed and maintained for active or passive recreation. Active recreational land use provides facilities for activities such as baseball, tennis, and swimming, and typically involves moderate disturbances to the land. Passive recreational land use provides opportunities for activities like nature walks and bird watching, and involves minor disturbances to the land.



The Parks & Recreation Criteria Application Map displays

- undeveloped, non-farmed land of 1,000+ contiguous acres 15 miles or more from existing 1,000+ -acre parks and protected lands,
- stream corridors, abandoned rail corridors, and utility corridors, and
- 100+ acres of undeveloped lake or river access parcels.

The following GIS data sets were not available at the time the criteria analyses were conducted:

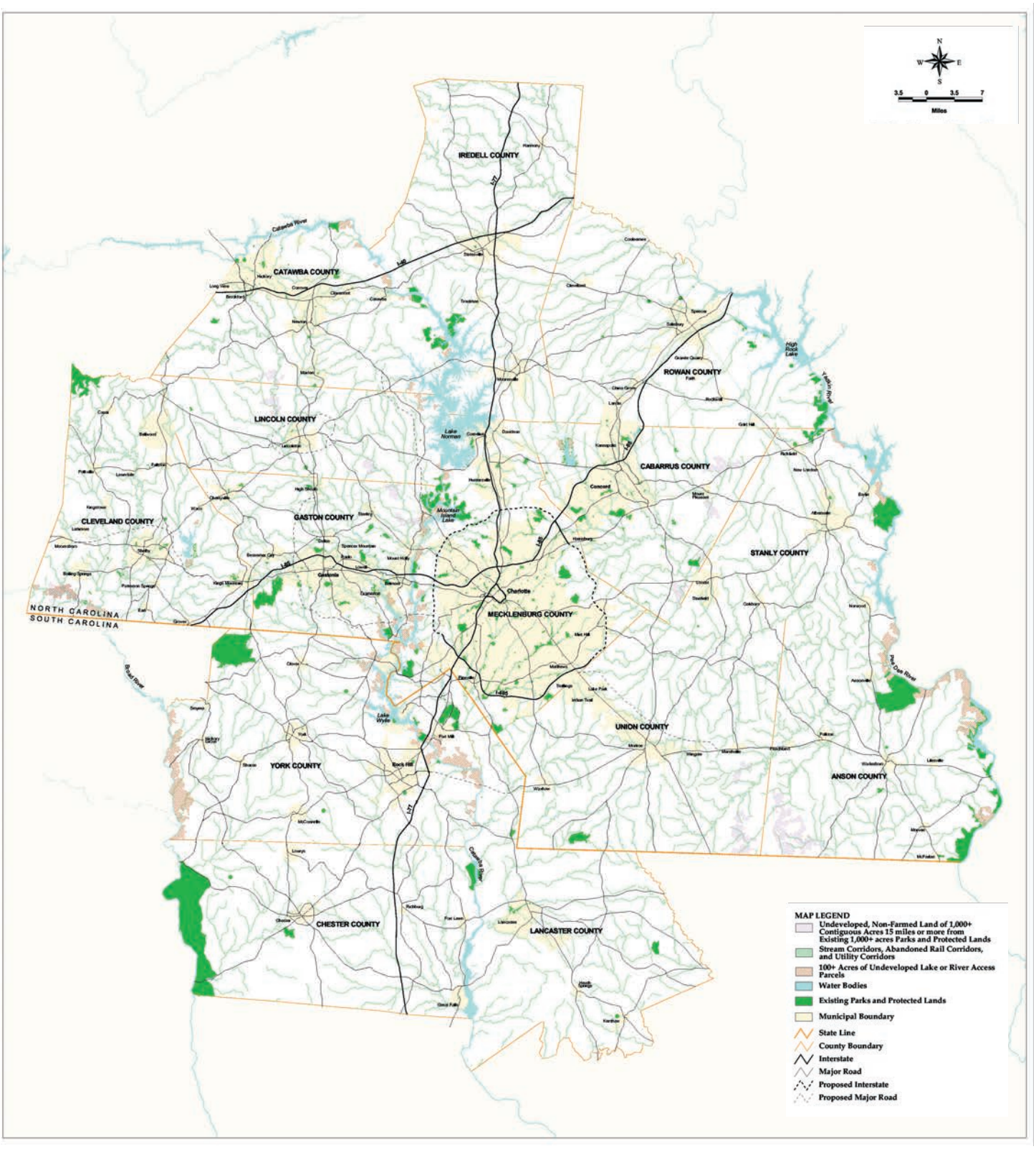
- tax parcel data for Chester, Iredell, Lancaster, and Rowan counties (used to identify undeveloped lake or river access parcels and undeveloped 1,000+ acre parcels; land cover data and roads data were used instead of parcel data to identify a block of land in Iredell county as a potential regional park location)
- complete inventories of abandoned rail corridors or utility corridors for Cabarrus, Gaston, Lincoln, Mecklenburg, and Rowan counties (partial inventories were available)
- abandoned rail corridors or utility corridors for Anson, Catawba, Chester, Cleveland, Iredell, Lancaster, Stanly, Union, and York counties







Parks and Recreation
Criteria Application Map



Principles

A. The benefits provided by a wide range of park and recreational opportunities should be realized through an interconnected network of parks and recreation facilities varying in size and function. [1]

> *Meeting the region's diverse park and recreation needs depends on provision of a variety of facilities, from local to regional in scale, and from active to passive in function. These facilities provide opportunities for sports, outdoor exercise, camping, boating, relaxation, respite from urban "hardscapes," environmental education, connecting with nature, and psychological or spiritual rejuvenation. Recreation spaces of all types and sizes can act as gathering places, building community and sense of place. Larger facilities, especially those that draw participation from outside the region, can make an important economic contribution to the region.* [2, 3]

B. Parks and outdoor recreation facilities should be provided to equitably serve the diverse local and regional populations. [4, 5]

> *Focusing on where people live and work is essential to designing a parks system that serves all citizens equitably. Densely populated urban areas will need more neighborhood parks and pocket parks than suburban or rural areas.*

Criteria

Place a high priority on lands meeting one or more of these criteria:

A. At the regional level, undeveloped parcels, or assemblages of undeveloped parcels, that could serve as large regional hubs in the region's parks system (greater than 1,000 acres), and whose location improves state or regional parks access now and in the future. Consider -
   - Land with natural features of regional or state significance suitable for nature preserve designation,
   - Land with topography conducive to development as active and passive recreational facilities, or
   - Land near planned major transportation routes, particularly roads. [6]

B. At the local level, undeveloped parcels, or assemblages of undeveloped parcels that could serve as hubs in the local parks system at the community, neighborhood, or pocket park level, meeting defined active or passive recreation needs, and whose location would enhance the equitable access to parks within the local system. [7]

C. Stream corridors, abandoned rail corridors, utility corridors, and transportation corridors that can enhance the region's trails system, especially by linking with existing or planned parks or recreation facilities. [8]

D. Lake- or river-access parcels that can provide
   - Convenient point-to-point canoe-trail put-ins, take-outs, and portages [9],
   - Access points and linear public shores for other recreational activities such as swimming or boating, particularly those that are compatible with each other, or
   - Access for waterfront passive recreation, such as picnicking, hiking, and enjoying scenic water views.

NOTES

1. The analogy of a network is an apt one for thinking conceptually about the design of a parks and recreation system over time. Parks themselves act as hubs or centers of activity, and can be large regional or state parks, or small neighborhood or pocket parks. Greenways, equestrian trails, bike paths, and even canoe trails, are examples of "linear parks" that can serve as connectors completing the network. In practice, as a system is being developed, not all nodes will be connected to other nodes (or to other community facilities or types of open space), and some linear parks will not connect to any nodes. The park and recreation facilities that make up the network can be public or privately owned, and offer varying degrees of public access. Local communities will need to determine which of these types will comprise their portion of the network.
2. Passive recreation is defined as recreation such as bird-watching, picnicking, walking or hiking, that is relatively quiet, with a relatively low degree of activity, and requiring facilities that involve only minor disturbance to the land or surrounding natural habitat. Examples of passive recreation facilities could include greenways, nature preserves, and ponds. Active recreation, on the other hand, is characterized by a higher degree of activity with relatively more noise and other disturbances to the land or surrounding habitats and requiring turf maintenance or the building of playing courts or structures. Examples of active recreation facilities include ballparks, playgrounds, golf courses, and athletic fields. Active and passive recreation activities are not always compatible with each other and careful site planning is required to determine whether they can both be provided within the same park property.
3. Sites or facilities that draw participation from outside the region include those suitable for state, national, or international athletic tournaments or for rock-climbing or other adventure recreation.
4. "Equitably serving" implies a goal of providing equal access to parks and recreation facilities to all segments of society and meeting all residents' recreational needs (or providing benefits) equally well, while recognizing differing needs. (Equal access means that for all residents, potential barriers such as distance from home or work, available modes of transportation, or affordability of user fees are not impediments to their enjoyment of the full range of sizes and types of parks in the system. Non-vehicular connections, including pedestrian, bike and transit routes, etc., are an essential component of providing equitable access.) For example, are there areas of the region that are under-served regarding state or regional parks? Guidelines for determining what is "under-served" must take geographic distribution of both parks and people into account. More populated areas will need more parks acreage than less populated areas, and rapidly-growing areas or areas targeted for major transportation improvement projects may represent the greatest future demand for large regional or community parks. A hierarchical system design can maximize service coverage across the region, providing the largest portion of the regional population with access to the greatest variety of recreational offerings. A hierarchical system is made up of few large-scale regional parks, a greater number of medium-sized parks serving local communities, and an even greater number of smaller neighborhood and pocket parks, connected to each other through greenway trails, bike paths and other linkages. Regional and state parks serving multiple counties within the region can be dedicated solely to passive recreation or can offer a mix of active and passive recreational facilities, and should be sized to serve residents within 30-60 minutes' driving time. Mid-sized community parks can serve a population of urban and suburban residents and workers within 15-30 minutes' driving time and must provide for a wider range of recreational needs than neighborhood parks can typically accommodate. Neighborhood parks are typically designed to meet the needs of the urban residents and workers within a ¼-mile walking distance.
5. The goal of equitable access must be pursued with the flexibility to take advantage of "not-to-be missed" opportunities to acquire land for parks even if its location is not ideal in terms of improving equitable access.
6. Future growth areas and the planned major transportation routes that will serve – and encourage – such growth should be taken into consideration to avoid loss of large tracts of land that meet criteria. Proactive planning is an important step in setting such lands aside.
7. Local planning for parks systems must determine what the balance of active versus passive recreation needs is within each community, and what level of service will be provided. Each community must determine its own standards for the service areas of neighborhood parks versus those of community parks, and targets for percent of population served by those defined service areas. Larger communities may decide to define three or four levels of park size and service areas, instead of just two (neighborhood and community-wide). Similarly with targets for miles of recreational trails per population, as one way to define needs for trails and other connectors in the local parks system. Furthermore, planning decisions must be based on sound assessments of future demand.
8. Corridors of various types provide the foundation for planning trail systems as part of parks systems. Obvious examples are stream corridors, utility corridors, and abandoned rail corridors, but transportation improvement corridors are increasingly recognized as an opportunity to plan for and integrate linear park features into the land-use plans accompanying new or re-designed roads projects.
9. Point-to-point canoe trails are those that allow paddlers to follow a linear trail, embarking at one spot and taking out at another location, often downstream. Parking requirements can be higher than for loop boating trips in which the put-in and take-out are the same spot, because of the vehicle shuttling the point-to-point trip requires. If the canoe trail includes unnavigable falls or dams, then portages must be provided.

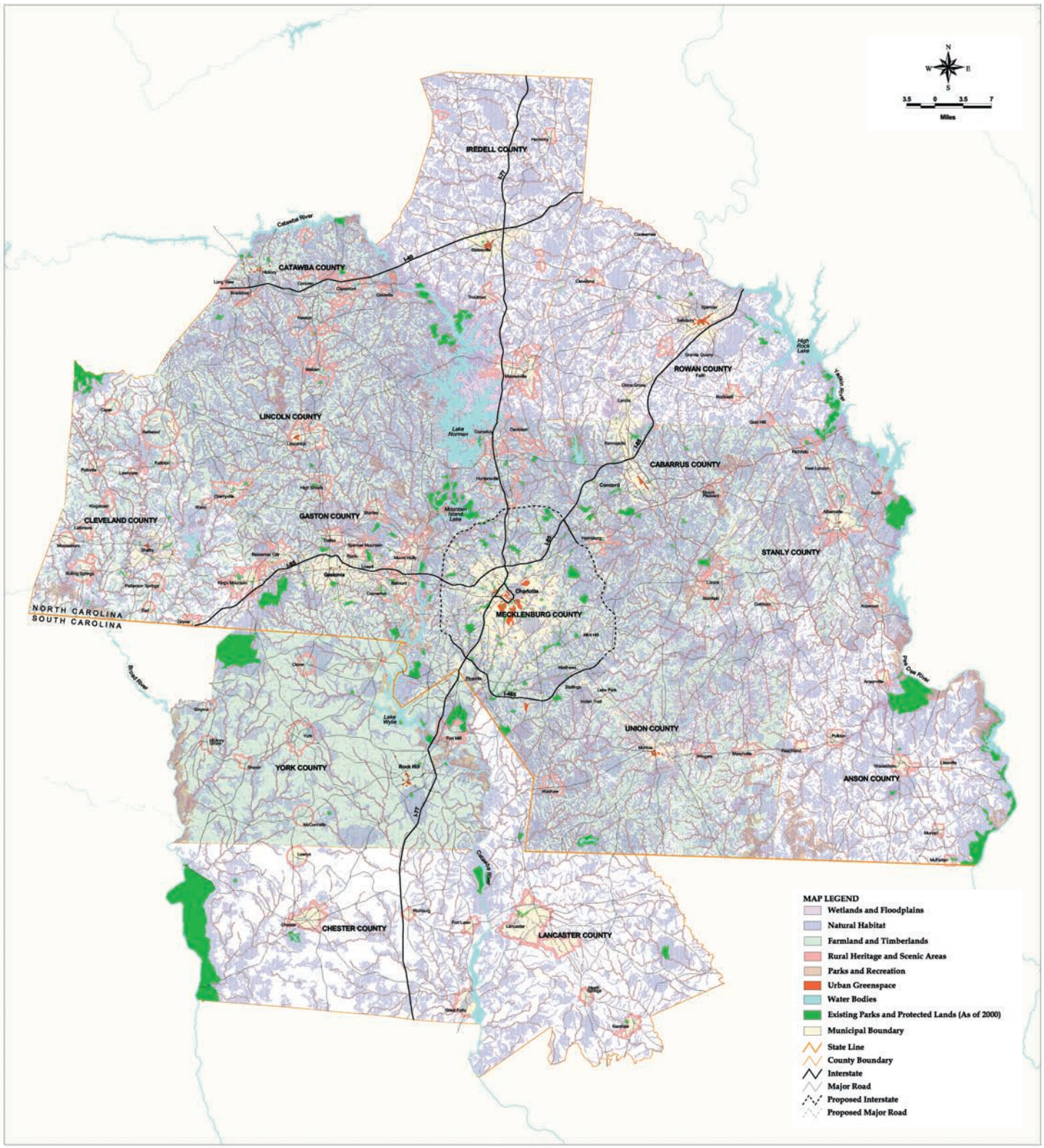
Synthesis Map

Synthesis Map Overview

Like the Criteria Application Maps, the Synthesis Map is a hands-on tool that regional open space professionals will need to create an interconnected open space system. By showing land identified through all six sets of Open Space Criteria, it illustrates the *universe* of potential open space that *could* be included in a Regional Open Space System, rather than providing a prescription for which open space *should* be included.

The Synthesis data set covers all 14 counties and includes land that meets one or more of the many criteria across the six types of open space. GIS users can analyze the Synthesis dataset to create a subset for each type of open space, for an individual criteria, or for any of the 14 counties. Regional open space planners can enhance the Criteria and Synthesis Maps by adding GIS data for those criteria that can only be applied locally. They can then explore overlaps and interactions between pairs and other combinations of the six open space types, and develop adaptations and more locally-detailed strategy implementation maps as part of the process of implementing the Framework. All of the data displayed in the Synthesis Map (and its underlying Criteria Application Maps) is described in detail in Appendix III and included in the Framework Data Sets provided on CD.

Synthesis Map



Guidelines for Implementation

About Local Adaptation & Implementation

The efforts of local governments, land trusts, and others are the primary means through which the Framework will be implemented. This section provides a guide to a two-step process for local use and adaptation of the Framework: first, application of the Principles and Criteria to the local area, and then use of the Prioritization Factors and the Complements and Constraints matrix.

Regional users of the Framework who have access to GIS (geographic information systems) capabilities will be able to make even greater use of the Framework tools by incorporating the Framework Data Sets into their analyses and planning (see Appendix III). With the GIS data sets, regional users can

1. explore co-location and adjacency of lands that meet multiple criteria,
2. test "what if" scenarios by varying the weight given to relevant prioritization factors,
3. compare Framework-identified lands with local plans,
4. integrate Framework-identified lands into local plans, and vice versa,
5. identify potential cross-jurisdictional or other collaborative projects,
6. create custom versions of criteria application maps based on integration of local plans or local priorities, and
7. create local strategy implementation maps based on the regional Vision Map, and update them to reflect local and collaborative projects as they are implemented.

Suggested Two-step Process

Step 1. Apply the Principles and Criteria to the local area, and develop an inventory of potential open space projects. As regional users of the Framework examine how the Principles and Criteria apply to their local areas, they will want to explore questions such as:

- What criteria that could not be applied at the regional level can be applied at the local level, and what does that new information add to the composite picture of open space opportunities in our area?
- What are the dominant patterns of potential open space in our area identified by the Principles and Criteria, and how do these fit with existing local open space plans and with other local land use, transportation, and economic development plans and policies?
- What new perspective on our local plans does the regional picture provide? Is there a major feature adjoining our boundaries that our plans could dovetail with? Is there a way to connect one of our major planning efforts with that of our neighbors to increase funding leverage?
- Where do we have the greatest areas of overlap between the six types of potential open space? Is our area stronger in some of the types of open space than in others? How does that compare with other parts of the region, and does this suggest a particular focus for us?

This type of analysis then leads logically to the creation of a list of potential open space projects, both short-term and long-term, local and collaborative.

Step 2. The next step is to use the Prioritization Factors and the Complements and Constraints matrix to prioritize and refine the projects inventory, and to develop local adaptations of the Vision Map that can function as strategy implementation maps.

The Prioritization Factors and the Complements and Constraints matrix provide "structured flexibility" in making local and collaborative decisions about open space projects that are identified through application of the Principles and Criteria. They provide a common language and comprehensive list of the factors to be considered in determining how to allocate scarce dollars and manpower to competing projects, while allowing local situations to determine the relative weights to be given to the various factors. This will allow our region to build the pieces of a multi-faceted, interconnected open space system with local flexibility while ensuring that the pieces fit into a cohesive overall design.

The key questions for this step in the process are:

- Which prioritization factors are most relevant for this local area, or for a particular project? Are they equally important, or do some outweigh others?
- How much complementarity do the overlapping types of open space exhibit and will there be more "bang for the buck" as a result? Are there significant constraints that would have to be mitigated or avoided?

Prioritization Factors

The application of the Principles and Criteria to the region as displayed in Criteria Application Maps demonstrates that the region has a wealth of potential open space, and that there is significant overlap among the six types of open space studied throughout this process.

This suggests that important choices remain to be made about which land can and should be protected, and for which of the six types of open space it should be preserved. What are the factors that will govern such choices? How, in effect, will the region prioritize potential open space projects? This topic was addressed by participants at the Synthesis Workshop.

Three overarching factors emerged as competing factors to be weighed in prioritizing potential Framework projects:

- **Feasibility** – What kind of financial and political support (or opposition) does this project have? Are the conditions and resources required to accomplish it available?
- **Importance** – How does this opportunity compare with others? What do we lose if this project is not undertaken?
- **Urgency** – Are there time constraints for this project? Is it facing development pressure, or is funding for it time-limited?

Each of these can be examined or measured in a number of different ways, as the more detailed table of results on the following page shows. Please note that there is no defined ranking of these prioritization factors, and that some factors may apply to all projects, while others may only apply to some projects. Specific project conditions will dictate which factors are given more weight as local groups work to determine which projects to undertake and when to undertake them.

The intent of this list is to identify the range of factors that are typically considered, and to provide a common language about prioritization factors as groups begin to work cooperatively and cross-jurisdictionally. The prioritization factors will be useful in selecting projects that make the best use of available resources and offer significant contributions to the region's overall open space system.

Prioritization Factors

Primary Factor	Sub-Factor	As measured by answers to critical questions:
Feasibility	**Acceptability**	From which groups is support needed– community, political, business, project partners? Will that support be readily obtained or will there be opposition? Are the project's benefits to each group obvious and readily demonstrable?
	Availability	Is there a willing landowner involved? Are there multiple landowners with different degrees of willingness?
	Financial	What are the project's costs, both direct and indirect, immediate and long-term? What sources of funding or incentives are available? Are its costs in line with its benefits? Does it meet specific funders' criteria?
	Method of protection	Is the proposed method of protection the most practical, or best fit for the situation? (methods generally include acquisition, easement, regulatory, best practices)
	Scope/scale	Is it a large or complex project or a relatively small or straightforward one? Does it require long-term commitments to see it through to completion? Does it require a high degree of regional coordination?
Importance	**Fit with regional/ local goals and plans**	How well does it fit the Framework Principles and Criteria? How well does it fit with other plans (e.g. land use, zoning, transportation, open space, etc.)? Does it enhance regional connectivity and linkages? Does it enhance distribution of regional open space? Does it provide multi-jurisdictional opportunities?
	Impact	Overall: What are the benefits to the region of preserving this open space? What are the adverse impacts of not protecting it? How will it contribute to sustaining our quality of life? Co-location or adjacency: Does it meet criteria for more than one co-locatable type of open space, or provide good-neighbor adjacency? What conditions must apply to allow co-location or adjacency? Indicators: How much closer to regional indicator targets will this open space get us? Should we invest instead in another type of open space that is farther from its target? Accessibility: Is it in good proximity to the intended user population? If appropriate to the proposed type of open space use, does it enhance public access to open space? Water Quality: Does it enhance water quality protection, especially in drinking water supply areas? Economic Development: Does it provide an economic development opportunity, such as eco- or agri-tourism? Education: Does it provide for enhanced environmental education or increased public awareness of open space benefits? Restoration: Does it represent an opportunity to restore damaged land, such as a brownfield, wetlands or stream bank?
	Quality, scarcity, sensitivity	For its type, how good an example is it? How rare is it? How many more examples like it exist in the region, or this part of the region? How sensitive is it to adjacent or co-located land uses?
	Size	How large an area is encompassed? How does its size fit with the proposed open space use or uses?
	Sustainability	How sustainable is(are) the proposed open space use(s)? What level of ongoing management is needed to maintain its viability?
Urgency		Are there time constraints for this project, either of funding or of competing uses for the land? Are the competing uses compatible with its proposed open space uses, or not? What is the window of opportunity to protect this land from incompatible land uses?

Complements and Constraints Matrix

Critical to the successful implementation of the Framework is an understanding of how the six types of open space interact with each other. This understanding will help guide future decisions related to land acquisition and conservation, or policies pertaining to the same. In fact, the degree to which multiple open space uses can be served by a single piece of land was one of the prioritization factors that emerged in the Synthesis Workshop discussions.

In looking at the interactions between pairs of the open space types, some pairs, such as Natural Habitat and Wetlands & Floodplains, clearly exhibit compatible characteristics and therefore would complement each other if overlapped or located adjacent to each other. Other pairs do not, and are either incompatible or require sensitive design considerations to allow them to work well together. The interactions between any two pairs of open space types can be categorized in one of three ways:

- "Complements" describes two types of open space that are very compatible with each other, either when located on the same spot ("co-location") or adjacent to each other ("adjacency"); they are "good co-locators" or "good neighbors" in almost every situation.
- "Constraints" describes two types of open space that are not very compatible with each other, either as co-locators or as neighbors. In other cases, the two are good neighbors but not good co-locators.
- "Conditional" describes two types of open space that fall somewhere between completely complementary and completely constrained, and are referred to as conditional because they can co-locate well or be adjacent to each other only under certain conditions, or only by careful design to minimize their constraints on each other.

In the table on the following pages, all 15 pairs of the open space types are listed with short-hand symbols to indicate whether they are complementary, constrained, or conditional when co-located or adjacent. For each pair, explanations under the headings of "complements" and "constraints" support the assessments and identify any conditions that must be satisfied for successful co-location or adjacency. This matrix reflects the discussion and input provided by Synthesis Workshop participants on the draft Complements and Constraints matrix prepared by the consultant team.

These shorthand symbols are as follows:


Can co-locate


Can be adjacent


Can co-locate under certain conditions


Can be adjacent under certain conditions


Cannot co-locate


Cannot be adjacent

First Open Space Type	Second Open Space Type	Co-location / Adjacency Status	Complements	Constraints
Natural Habitat	Wetlands & Floodplains		• Most wetlands/ floodplains and natural habitats overlap • When in their natural, undisturbed state, wetlands/floodplains are a water source for natural habitats.	
	Farmland & Timberlands		• Farms can provide high diversity "edge" habitats. • "Best management" forestry practices can sustain ecosystems and encourage habitat diversity. • Farmland, at its margins, should ideally provide a wildlife food source. • Farms can act as a transitional use buffers. • Farms can provide "stepping stones" for some animal species.	• In general, cultivated areas or areas used for livestock are not compatible with most diverse habitats. • Clearing of vegetation and/or use of herbicides can destroy habitat. • Noise of farming equipment can disturb or drive away animals. • When an agricultural cluster predominates and fragments the landscape, the remaining small habitat fragments may not be viable. • Wildlife feed on crops. • Clear cutting and/or monoculture tree plantings can destroy habitat for at least two years or alter habitat for 20+ years.
			Co-location is possible with sensitive farming and forestry practices. **Adjacency is possible if sufficient margins are left intact to provide the food source and minimize crop interference.**	
	Rural Heritage & Scenic Areas		• Unfarmed, untimbered rural lands and natural habitat naturally overlap. • Small towns can provide "stepping stone" habitat linkages.	• Small towns can represent a disturbance that drives away less adaptable species. • Tree clearing to enhance view can disrupt habitat.
			Co-location is possible if town design provides "stepping stones" and high diversity "edge" habitats.	

Natural Habitat (cont'd)	Parks & Recreation		• Passive recreation and natural habitat can be compatible. • Parks adjacent to natural habitat can be good transitional use buffer.	• Passive recreation facilities can dominate the habitat area, providing the potential for overuse and/or disrupting wildlife corridors. • Clearing of vegetation and/or heavy use of fertilizers for active recreation areas (e.g. ballfields) can destroy habitats.
			Co-location is possible if recreation is passive and is designed, phased, and managed to prevent overuse and interference with habitat. **Adjacency is possible depending on type of recreation or type of habitat being protected.**	
	Urban Greenspace		• Certain types of urban landscaping can support habitats and provide "stepping stones" for some animal species. • Urban trail systems can be wildlife corridors.	• Certain types of intensely managed urban landscape can diminish habitat value. • Human activity in urban greenspace can disturb or drive away animals.
			Adjacency and co-location are possible if the urban greenspace is designed and managed to minimize overuse and interference with habitat.	
Wetlands & Floodplains	Farmland & Timberlands		• Forested riparian buffers provide exceptional floodwater retention and filtering. • Floodplains provide rich, productive soils for agriculture and silviculture.	• Water quality can be degraded by agricultural and timbering activities in the floodplain (i.e. agricultural chemicals, livestock waste, and sediment in run-off).
			Co-location and adjacency are possible if "best management" farming or timbering practices are used (e.g. no till/low herbicide farming, maintenance of undisturbed riparian buffers, selective cutting of trees).	
	Rural Heritage & Scenic Areas		• Unfarmed, untimbered rural lands and wetlands and floodplains naturally overlap. • Wetlands and floodplains can be scenic.	• Small town development can represent a disturbance that interferes with the protection of wetlands/floodplains and their capacity or ability to function properly. • Tree clearing to enhance view can alter wetland or floodplain function
			Co-location is possible if small towns remain largely outside wetlands and floodplains; remaining rural areas can be within wetlands and floodplains.	

Wetlands & Floodplains (cont'd)	Parks & Recreation		• Recreation and wetlands/floodplains can be compatible. • Parks adjacent to wetlands and floodplains can be a good transitional buffer.	• Active recreation can cause soil compaction with increased run-off, containing high loads of fertilizer. • Passive recreation could reduce the capacity of wetlands to function properly. • Construction of recreation facilities can fill wetlands or floodplains or impair their function.
			Adjacency with active recreation is possible if impacts are minimized (e.h. low fertilizer use, reduced run-off.) **Co-location and adjacency with passive recreation are possible through sensitive design.** **Co-location is possible if wetland/floodplain function is maintained through low-impact design.**	
	Urban Greenspace		• Urban greenspace and wetlands/floodplains can be compatible. • Urban greenspace adjacent to wetlands and floodplains can be a good transitional use buffer.	• Active use of urban greenspace can cause soil compaction with increased run-off containing high loads of fertilizer. • Some greenspace features could reduce capacity of wetlands/floodplains or impair their function. • Construction of greenspace can fill wetlands or impair their function.
			Adjacency is possible if impacts are minimized (e.g. low fertilizer use, reduced run-off.) **Co-location is possible if wetland/floodplain function is maintained through low-impact design.**	
Farmland & Timberland	Rural Heritage & Scenic Areas		• Farming and timbering are agricultural features important to rural character. • Farming and timbering can contribute to scenic quality of views.	• Timber clear-cutting can destroy scenic quality. • Certain farming operations can be aesthetically unappealling and detract from scenic quality.
	Parks & Recreation		• Passive recreation can be a good adjacent use.	• Odors and noise from farms can decrease enjoyment of park facilites.
			Adjacency is possible through careful design of recreation facilities and maintenance of a buffer between parkland and farmland.	

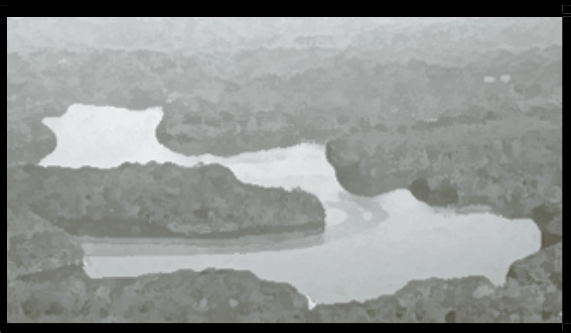
Farmland & Timberlands (cont'd)	Urban Greenspace		• Urban farming operations (e.g. small-scale plant nurseries) and urban greenspace, such as a park or schoolyard, can be good adjacent uses. **Adjacency is possible if the farming is of a scale and type that does not reduce enjoyment of adjoining greenspace.**	• Ordinances often prohibit livestock raising within city limits due to sanitation, noise, and odor constraints.
Rural Heritage & Scenic Areas	Parks & Recreation		• Regional parks can preserve scenic areas. • Local parks within small town settings are part of local character and sense of place. • Parks associated with historic features can preserve rural heritage. **Co-location and adjacency are possible if facilities are carefully sited and designed.**	• Active recreation facilities can interfere with scenic view or historic setting.
	Urban Greenspace		• Urban greenspace can be part of preserving local character and historic and scenic sites in a small town setting. **Co-location is possible through sensitive design and siting of urban greenspace features.**	• Urban greenspace can detract from scenic quality, local character, or historic preservation.
Parks & Recreation	Urban Greenspace		• Urban greenspace includes urban parks of all shapes and sizes.	



OPEN SPACE
FOR THE CENTRAL CAROLINAS

SECTION 4

RECOMMENDATIONS


Recommendations

The recommendations and next steps in this section have been developed based on information gathered throughout the process of creating the Framework. They vary in scope from local adoption to the development of implementation and stewardship plans. This wide range of recommended steps suggests that an equally broad range of groups and individuals should play active roles in carrying them out.

The Framework

These recommendations mark the completion of Framework development and signal the transition into Framework implementation.

- Local Adoption – Local entities should adopt the Open Space Framework:
  - Begin local implementation by integrating it into open space planning efforts as outlined in the Guidelines to Implementation.
  - Collaborate not only with other local open space planners, but with groups and organizations that are not typically involved in open space planning decisions but whose insight would introduce creative, innovative approaches to open space protection, such as historic preservation groups.

- Education & Awareness – Initiate an education and awareness campaign to broaden understanding and acceptance of the Framework and build support for its implementation.

- Implementers' Coalition – Establish a coalition of Framework implementers to carry out these recommendations. The coalition should
  - consist of representative members from local government (planners, planning commissions, parks departments), local land trusts, and the development community;
  - collaborate with other community open space stakeholder groups (e.g. councils of government, chambers of commerce, environmental non-profits); and
  - convene annually with regional open space stakeholders to assess implementation progress and update short-term implementation goals through
    - A "State of the Region's Open Space" report, celebrating regional success in reaching indicator targets, and
    - A "State of the Region's Open Space" conference, setting the regional agenda for further Framework implementation.

Implementation

As the region moves from adopting the Framework to implementing it and preparing for its long-term sustainability, these steps are key:

- Pilot Project(s) – Consider launching at least one pilot project that is of regional significance, undertaken collaboratively as a demonstration of Framework implementation.

- Implementation Plan – Prepare a Framework Implementation Plan that addresses the following:
  - *Toolbox* Create an implementation "toolbox," building on the Stakeholder Committee's work identifying available and needed implementation tools. This toolbox should cover the following categories: regulatory, funding, incentives, and voluntary.
  - *Indicators* Develop a regional consensus on a manageable and practical set of indicators to establish quantitative targets for each type of open space and measure progress toward

Implementers

Local Government
- Parks Departments
- Planners and Planning Commissions

Local Land Trusts
- Catawba Lands Conservancy
- Foothills Land Conservancy
- Katawba Valley Land Trust
- LandTrust for Central North Carolina
- Nation Ford Land Trust

Agriculture & Development Communities
- Farm Bureau
- Real Estate and Building Industries Coalition

those targets.

- *GIS Data* Make available to all regional open space planners and GIS users all of the GIS data needed to apply the Criteria to each of the 14 counties, including completing the task of digitizing data and developing a central "clearinghouse," a distributed network, or other organized method of GIS data distribution.
- *Agenda-setting* Develop a list of additional initiatives or other action steps that are critical to Framework implementation.
- *Evaluation* Define a method for conducting regular evaluations of progress, adjusting direction of implementation efforts as needed, and setting an agenda for the next time period.

Stewardship

Once the Implementation Plan is developed and implementation pilot projects are underway, the focus should shift to assuring the long-term sustainability of the open space system:

- Stewardship Plan – Prepare a plan for the long-term management of the open space system as implemented, addressing:
  - operations and maintenance of publicly-owned open space,
  - monitoring and enforcement of open space easements on privately-held land, and
  - regulatory monitoring and enforcement for regulated open space.

Community Groups & Open Space Stakeholders

Government Agencies

- Cooperative Extension Service (State staff at county level)
- NC DENR (Parks & Recreation Dept., Million Acres Initiative, Wetlands Restoration Program, Wildlife Resources Commission)
- NRCS (USDA staff at county level)
- SC DNR (Land and Water Stewardship Program, Heritage Trust Program)
- SC Parks, Recreation & Tourism
- Soil & Water Conservation Districts (State staff at county level)
- US Fish & Wildlife Service (Federal staff at regional level)
- Councils of Government (Catawba Regional, Centralina, Isothermal, Western Piedmont)

Land Stewards and Land Conservation Organizations

- Allison Woods Foundation
- Anne Springs Close Greenway
- Broad River Greenway
- Daniel Stowe Botanical Garden
- Historic Brattonsville
- Schiele Museum of Natural History
- The Open Space Institute
- The Trust for Public Land

Open Space Professionals and Business Groups

- Landscape Architects
- Urban Designers
- Attorneys in Land Conservation Practice
- Chambers of Commerce, Open Space Committees

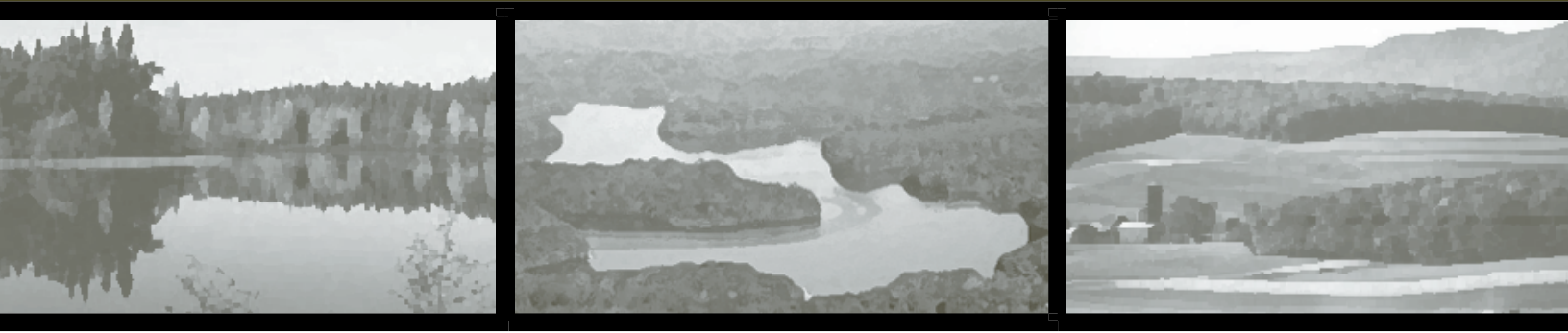
Community Groups

- Audubon Society
- Central Piedmont Group, NC Chapter, Sierra Club
- Historic Preservation associations …
- Voices & Choices' Land Use, Transportation, and Open Space Committee (LUTrOS)

OPEN SPACE
FOR THE CENTRAL CAROLINAS

SECTION 5

APPENDICES



Appendix I: Project Participants

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Sherry Ashley, Planning & Zoning Coordinator, Town of Mint Hill Planning
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Elson Baldwin, Director, City of Belmont Planning
Chris Bartleson, Director, Bessemer City Planning Department
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John Bullard, Director, City of Statesville Recreation & Parks
Warren Burgess, Director, Town of Davidson Planning
William Burns, Superintendent, Duke Power State Park
Dean Canty, Environmental Planning Specialist, Catawba Indian Nation
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Larry Chilton, Director, City of Salisbury Land Management & Development
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Ben Clary, Administrator, Cherokee County Administrator
Rusty Cockman, Planning and Zoning, Town of Clover Planning
Robert Corley, Park Manager, Chester State Park
Andrea Cornell, Director, Town of Indian Trail Planning
Kathy Cornett, Charlotte-Mecklenburg Planning Commission
Frank Couch, Superintendent, Kings Mountain State Park
Mike Courtney, Director, City of Monroe Parks & Recreation
Martin Cramton, Jr., Director, Charlotte-Mecklenburg Planning Commission
Michael Criss, AICP, President, SC Chapter of the American Planning Association
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David Currier, Director, City of Statesville Planning
Brian Dalton, Director, City of Cherryville Planning
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Cheryl Dean, City of Rock Hill
Marc deBree, DENR-NC Million Acre Initiative
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Mike Dombeck, Chief, USDA Forest Service
Norma Drake, Zoning Administrator, Town of Cleveland Planning
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Lance Hudson, Director, City of Cherryville Parks & Recreation
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Larry Love, Director, Cherokee County Parks & Recreation
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Randolph S. Williams, Planning Director, City of Conover
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Robert Woody, Director, Iredell County Recreation Department
William Wooten, Recreation Director, Chester County Parks & Recreation
David Wright, County Ranger, NC Div. Forest Resources, Dist 12 Mt. Holly-Catawba
Jeff Young, Director, City of Concord Planning and Community Development Department

Open Space Experts Interviewed
Randall Arendt, author of *Rural by Design*, *Growing Greener*, and *Conservation Design for Subdivisions*
Timothy Beatley, PhD of the University of Virginia School of Architecture
Caryn Ernst of The Trust for Public Land
Chuck Flink of Greenways, Inc.
Owen Furusuth of the UNC Charlotte Department of Geography and Earth Sciences
Ike Heard of the UNC Charlotte Department of Geography and Earth Sciences
Dr. Phil Rea of North Carolina State University's Department of Parks, Recreation, and Tourism Management
Jesse Robertson of American Farmland Trust
Chuck Roe of the Conservation Trust for North Carolina
David Walters of UNC Charlotte College of Architecture

Stakeholder Committee
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Henry Atkins, Cousins Properties
Philip Blumenthal, Blumenthal Foundation
Jim Burbank, Saussey Burbank
Mike Bush, Daniel Stowe Botanical Garden
Frank Carpenter, State Utility Contractors, Inc
Edna Chirico, Bi-State Catawba River Task Force
David Clark, Clark Properties
Bob Clay, Pharr Yarns / Real Estate
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Haywood Rankin, Gaston County Quality of Natural Resources Commission
Dennis Rash, Voices & Choices LUTrOS Co-Chair
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Tom Scott, Arvida – Mid-Atlantic Homes
Stan Senn, Rock Hill Recreation & Tourism
Harold Shapiro, Catawba Regional COG
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Bridgett Thompson, Trust for Public Land *
James Traynor, Clear Springs Development Co LLC
Anne Udall, Lee Institute
Jason Walser, LandTrust for Central NC *
Chris Wease, County Manager, Anson County
Wayne Weston, Mecklenburg County Parks & Recreation Department *
Murray White, Nation Ford Land Trust *
David Wright of Newland Communities

* Non-Profit Advisory Group

Voices & Choices Staff
Lisa Renstrom, Executive Director (2001-2002)
Betty Chafin Rash, Executive Director (1999-2001)
Bobbi Hapgood
Kay Clark
Susan Yarborough

The Open Space Institute at UNC Charlotte Urban Institute
Vicki Bowman
Ginny Fish
Kristen Ausanka
Charlynn Burd
Katrina Lee
Charlie Grier
Jeremy Soika
Bryan Townsend
Kim Wallis

LandDesign, Inc.
Brad Davis
Meg Connolly
Bridget Hanifin
Kourtnie Vincent
Michael Abate
Ari Daman
Matthew Gygax
Beth Creswell

Workshop participants
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Jane Alexander, ColeJenest & Stone
Roy Alexander, Former Mecklenburg County Park & Recreation Commissioner
Michael Almond, Charlotte Regional Partnership
Ron Altmann, Catawba Lands Conservancy
Karen Arrigo, Bank of America
Sherry Ashley, Mint Hill Planning

Chad Askew, FMK Architects
Leigh Baggs, Matthews Parks & Rec
Alan Barnhardt, Carolina Raptor Center
Chris Bartleson, City of Bessemer City Planning
Greg Beal, Mt. Holly Planning
Sarah Belk Gambrell, Belk Department Stores
Tom Bell, City of Rock Hill Parks & Rec
Nadine Bennett, Centralina COG
Budd Berro, Quantum Leap Strategies, Inc.
Charles Blair, Friends of Crowders Mountain
Philip Blumenthal, Blumenthal Foundation
Ron Bost, Lincoln County
Richard Bowers, City of Lancaster
Emery Bremer, Cabarrus County (Concerned Citizens of Lake Norman)
Erin Broadbent, National Park Service
David Brose, Schiele Museum
Dave Brown, Trust for Public Land
Shirley Brutko, Cleveland County Chamber/Gateway Project
Nancy Bryant
Ron Bryant, Catawba River Foundation
James Bull, Lancaster Parks & Recreation
John Bullard, City of Statesville
Warren Burgess, Town of Davidson Planning
Martha Burris, NC Cooperative Extension in Gaston
Mike Bush, Daniel Stowe Botanical Gardens
Alice Campbell, County Extension Director
Kenneth Carlson, Mecklenburg Parks & Recreation Horticulture
Jim Carpenter, Union County Chamber of Commerce
Joe Carpenter
Nancy Carter, City of Charlotte
Denise Cavin, Landscape Architecture
Betty Chafin Rash
Saxby Chaplin, Trust for Public Land
Gardner Chappell, York County Culture & Heritage Commission
Duane Christopher, York Conservation District
Carole Clark, Projects for NonProfits
Will Close, Springs Foundation
Jerry Cochrane, Lincoln County Commissioners
Ashley Conine, Catawba Lands Conservancy
Mike Courtney, Monroe Parks & Recreation
Brian Cox, Mecklenburg Parks & Recreation
William Craig, Gaston Co Soil & Water
Mark Cramer, Real Estate & Building Industry Coalition
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David DeFehr, Palliser Furniture
Kirstie Dixon, Iredell County
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Kim Duren, Broad River Greenway
Richard Duren
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Tom Howard, Lincoln Historic Properties Commission
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Jane Hunter, Cleveland Lumber Company
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Garlen Johnson, Cleveland Lumber Company
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Reid Jolly, Broad River Greenway
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Gail Thomas, UNC Charlotte
Bridgett Thompson, Trust for Public Land
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James Traynor, Clear Springs Development Co.
Skip Tuttle, Tuttle Company

Mark Ullmer, Allen Tate Company
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Tim Waters, Gateway Project
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Kerry Welch, Mecklenburg Soil & Water
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Appendix II: Synthesis Workshop Technical Report

Introduction

The Synthesis Workshop, held on March 13, 2002, brought together over 120 planners, elected officials, open space professionals and stakeholders, and interested citizens from around the 14-county region.

As the culmination of a year's worth of research, analysis, and regional efforts , the Workshop provided an opportunity for participants to see and evaluate the Open Space Vision Map and Framework, which are the products of the process to which many of those in attendance contributed. Participants also had the opportunity to engage in small- and large-group discussions related to Framework implementation. Implementation is the next step toward achieving an interconnected system of open space in the region.

The primary purposes of the Workshop were

- To unveil the draft Vision Map and receive feedback
- To build consensus around prioritization factors to be used in guiding the implementation of the Framework.
- To heighten understanding of how and if the six types of open space complement each other, which will be an important consideration in implementing the Framework.
- To initiate discussions between key leaders in each county regarding the roles that such people can – and should – play in implementation, the logical next steps, and the opportunities presented by coordination among local governments, businesses, and non-profits.

The following sections summarize the four key elements of the Workshop: Vision Map Review; Prioritization Factors; Guidelines Review: Complements & Constraints; and Implementation: Roles, Next Steps, & Opportunities. In addition, each section describes the input obtained through related exercises that took place during the Workshop, and the resulting modifications to the Framework components.

More detailed discussion of the Vision Map preparation, and the complete set of Implementation Guidelines will be included in the final Framework Plan document, anticipated to be available in May 2002 from Voices & Choices.

The upcoming Community Forums will provide the next venue for moving into the implementation phase of this regional collaborative project.

Vision Map Presentation & Participant Review

Vision Map Overview

Following the workshop welcome and opening comments, the Consultant Team presented the draft Vision Map and the Green Assets, Criteria Application and Synthesis Maps on which the Vision Map is based.

The Green Assets Map shows the region's approximately 106,000 acres of open space of 5 acres or more in size protected by private easement or public ownership as of 2000. These existing protected areas are the building blocks for creating an interconnected open space system by 2020.

The Synthesis Map combines six GIS-based application coverages, one for each type of open space across the region where data was available. The Synthesis Map combines all six sets of criteria in one map, so that overlaps between the six types of open space can be readily identified. The Criteria Application and Synthesis Maps demonstrate the wealth of potential open space and significant overlap between the six types of open space.

The Synthesis Map illustrates the universe of potential open space that could be included in a Regional Open Space Framework, rather than providing a prescription for which open space should be included. It and its accompanying Criteria Application Maps are the hands-on tools that regional open space professionals will need to actually create an interconnected open space system.

The draft Vision Map displays several elements of the Open Space Framework:

- Existing Green Assets as of 2000 (protected open space of 5 acres or greater, both public and private),
- Primary Agricultural Areas (areas where the highest concentrations of sustainable farming and timbering are envisioned),
- Proposed new Regional Parks,
- Proposed Habitat, Wetlands/Floodplains, Rural Heritage and waterfront-access Park areas,
- Urban Greenspace symbols (at each municipality indicating the desire for a network of urban greenspace throughout the municipal district that is also connected to Framework elements outside the municipality,) and
- Connecting linkages between the other elements (some could be public access trails, some wildlife or water quality corridors without public access.)

Participant Review of the Vision Map

Following the Vision Map presentation, participants were given time to view poster-sized copies of the map displayed around the room and record their reactions to the map on individual worksheets. Participants then had an opportunity to share their responses verbally with the entire group. The Consultant Team staff noted these comments for inclusion in this report. In addition, participants' individual worksheets were collected at the end of the workshop for summarizing here. From the combined set of comments, the Consultant Team identified comments pertaining to map content that reflected either entire group discussion consensus, or multiple individual worksheet comments, and used them to edit the draft Vision Map and produce the final Vision Map. Comments pertaining to implementation of the vision reflected in the map provided important starting points for the implementation discussions held later in the workshop.

The tables below summarize participants' verbal and written comments in response to the Vision Map review.

Vision Map Refinements

The Consultant Team has incorporated much of the feedback recorded in the accompanying tables in the final version of the Vision Map produced after the workshop. Highlights of modifications to the Vision Map include:

- Existing Green Assets given a more prominent color so they are more readily visible;
- Primary Farm/Timber Areas for counties lacking GIS data for criteria application were adjusted based on input from those counties' farm/timber and planning agencies;
- Primary Farm/Timber Areas name clarified to more clearly include forestry;
- Water Supply Watershed Critical Areas given a distinctive color to identify them as lands that may already be developed, but with regulated limits that allow them to provide water quality open space functions;
- Map title amended to include "2020" so that vision timeframe is readily apparent;
- Features added to help orient viewers within the map:
    - Major river tributary creeks shown on top of Framework creek corridors;
    - More highway and creek labels added;
    - Municipal areas given a more prominent color to enhance distinction from Primary Farm/ Timber Areas.

Participant Comments on Vision Map Contents

What excites you the most?	What concerns you the most?
• Interconnectedness, linkages – plentiful linkages, with opportunity for more -- lets us really see what an "interconnected system" might look like • Floodplains, waterways emphasized – shows water resources are a critical regional asset • Farmland, timberland for our future is identified, and a large amount of it • Potential regional parks identified we really need more regional parks • "Clear town/country edge" for small rural towns - it can grow outwards as towns grow compactly instead of sprawling • Inclusion of urban greenspace networks – essential to make urban density livable • Large amount of potential open space – surprisingly so • Regional perspective, & balance achieved across the region • De-emphasized jurisdictional boundaries, allowing Framework elements and natural features to stand out – emphasizes that ecosystems don't follow man-made boundaries, nor should our protection efforts • Thoroughness of it – incredible amount of data behind this, a lot of work • That it exists! - now we can set about using and interpreting it	• Show more potential connections, show some loop connections • Show transportation connections to Framework elements; show water/sewer lines • Some local parks, planned greenway trails not shown • Show more potential regional parks, & a more centrally located regional park • Agriculture areas in Lancaster, Union, Anson, Chester counties need adjustment (no criteria data) • Clarify agricultural areas are farming and forestry areas, not just farming • Show more agricultural area • Show key habitat areas more distinctly • Vision Map timeline not clear • Roads, boundaries not easily visible for orienting oneself within the map • Unclear why some areas left white, hard to tell municipal areas from agriculture areas • Can't tell different types of open space apart • Can't tell which Criteria or Synthesis layers were used to create Vision Map • Some designated open space areas on Vision Map are actually already developed • Show context outside regional boundaries

Participant Comments on Vision Map Implementation

What excites you the most?	What concerns you the most?
• Clear, compelling image to work towards – a flexible tool that can be adapted locally over time • A visual tool to generate public interest, political will • Presents an opportunity to "think big picture", be pro-active instead of reactive, leave a legacy for future generations • Can help cultivate more regional cooperation, possibility of a regional planning group • Ground-breaking work, opportunity to be a national model, set example others can follow by integrating six types of open space • Can help us get ahead of the curve -- identify future water-supply watersheds and act pro-actively to protect them	• Is it too ambitious? It is enough? • Is it affordable? What are available sources of funding, or incentives for open space protection? • How to educate, influence, impact landowners, the public, political leaders, to get buy-in? • How do we coordinate to achieve this vision? Can we overcome jurisdictional boundaries and differences in economic resources? Is a regional planning body feasible? • Can we move quickly enough to achieve this vision, especially in areas rapidly developing? • Are there effective methods for preserving that much farmland in an increasingly metropolitan region? Do we have effective efforts underway? • How do we integrate this with other planning? (ie, local planning, and regional land-use/transportation?)

Prioritization Factors

The principles and criteria developed through research and participative workshops are designed to help identify land that provides valuable open space benefits and that is worth protecting as open space. Their application to the region as displayed in Criteria Application Maps demonstrates that the region has a wealth of potential open space, and that there is significant overlap between the six types of open space studied throughout this process.

This suggests that important choices remain to be made about which land can and should be protected, and for which of the six types of open space it should be preserved. What are the factors that will govern such choices? How, in effect, will the region prioritize potential open space projects? Discussion of this topic was the subject of the second exercise workshop attendees participated in.

Workshop participants were asked to take about 10 minutes to brainstorm at their tables on their responses to the question, "What factors would you consider in prioritizing projects?" A spokesperson from each table then reported to the entire group the brainstorming results while a Consultant Team staff member recorded them on a flip chart. Notes taken by table facilitators were collected at the end of the workshop and used to refine the flip chart notes.

Three overarching factors emerged from the results of this exercise as competing factors to be weighed in prioritizing potential Framework projects:

- Feasibility – what kind of financial and political support (or opposition) does this project have? Are the conditions and resources required to accomplish it available?
- Importance – how does this opportunity compare with others? What do we lose if this project is not undertaken?
- Urgency – are there time constraints for this project? Is it facing development pressure, or is funding for it time-limited?

Each of these can be examined or measured in a number of different ways, as the more detailed table of results below shows.

Please note that there is no defined ranking of these prioritization factors, and that some factors may apply to all projects, while others may only apply to some projects. Specific project conditions will dictate which factors are given more weight as local groups work to determine which projects to undertake and when to undertake them.

The intent of this list is to identify the range of factors that are typically considered, and to provide a common language about prioritization factors as groups begin to work cooperatively and cross-jurisdictionally.

[The final version of the prioritization factors table may be found in the Guidelines for Implementation in Section 3: The Framework.]

Guidelines Review: Complements & Constraints

Critical to the successful implementation of the Framework is an understanding of how the six types of open space interact with each other. This understanding will help guide future decisions related to land acquisition and conservation, or policies pertaining to the same. In fact, the degree to which multiple open space uses can be served by a single piece of land was one of the prioritization factors that emerged in the workshop discussions preceding this section of the workshop.

As part of the process, the consultant team paired the open space types (a total of 15 pairs) and examined each pair to determine that ways in which they interact with each other. The team identified the complements and constraints each type presented when paired with another. Some pairs, such as Natural Habitat and Wetlands & Floodplains, clearly exhibit compatible characteristics and therefore would complement each other if overlapped or located adjacent to each other. Other pairs do not. The following definitions were developed to categorize each pair's interactions:

- "Complements" describes two types of open space that are very compatible with each other, either when located on the same spot ("co-location") or when adjacent to each other ("adjacency"): they are "good co-locators" or "good neighbors" in almost every situation
- "Constraints" describes two types of open space that are not very compatible with each other, either as co-locators or as neighbors; in other cases, the two are good neighbors but not good co-locators
- Some topic pairs fall somewhere between completely Complementary and completely Constrained, and are referred to as "Conditional" meaning that they can co-locate well or be adjacent to each other only under certain conditions, or only by careful design to minimize their constraints on each other.

In preparation for the workshop, the team examined the 15 pairs' interactions. Using the definitions above, the team determined the following about each pair:

- They are complementary and can co-locate, or
- They can co-locate under certain conditions, or
- They are constrained and cannot co-locate.

The team also determined the following about each pair:

- They are complementary and can be adjacent, or
- They can be adjacent under certain conditions, or
- They are constrained and cannot be adjacent.

Furthermore, the team provided written explanations under the headings of "complements" and "constraints" to support the assessments as defined above.

Of the 15 pairs, six of them were selected as the subject of the exercise because the issues of co-location and adjacency are especially sensitive and/or complex, and thus feedback from the workshop participants was needed. Each table was assigned one topic pair to review and discuss, and then report back to the group. Specifically, they were to determine for their topic pair whether they agreed with or had proposed changes to:

- The co-location and adjacency assessments (symbols)
- The major points of the written explanations of complements and constraints

Each table recorded their comments and came to consensus on additions/modifications prior to reporting back to the whole group.

The following summarizes the comments recorded on each of the six selected topic pairs:

Natural Habitat paired with Farmland & Timberlands

- Change category assessment/symbol: "Cannot co-locate" symbol should be changed to "can co-locate under certain conditions" for reasons that include the following:
  - BMPs for forestry can also encourage habitat diversity
  - Co-location depends on degree of overlap, intensity of farming/timber activity, and sensitivity of the habitat (or adaptability of the plant/animal species)
- Additional explanatory comment or note: Not all small habitat fragments are not viable.

Natural Habitat paired with Parks & Recreation

- Additions to conditions: The type of habitat being protected, the type(s) of recreation, and the phasing and management of recreational facilities.

Natural Habitat paired with Urban Greenspace

- Additions to conditions: Limiting the types of recreational facilities and/or focusing activities in less critical areas are two examples of design-related actions that further explain how to minimize overuse and interference with habitat.

Wetlands & Floodplains paired with Farmland & Timberlands

- Additional explanatory comment or note: Education and incentives for saving land are important.
- Additions to conditions: To effectively co-locate or have adjacent to each other these two types of open space, requirements to maintain buffers and use BMPs must be enforced.

Wetlands & Floodplains paired with Parks & Recreation

- Additions to conditions: Minimizing the amount of impervious surface and maintaining stream buffers are critical for successful adjacency and co-location.

Wetlands & Floodplains paired with Urban Greenspace

- Additional explanatory comment or note: Delineating wetlands are an important step in accomplishing sensitive design.
- Additional explanatory comment or note: Urban greenspace is a good transitional use buffer if the function of wetlands and floodplain are actually protected.

Implementation: Roles, Opportunities, Next Steps

The final challenge posed to the workshop participants was to engage in discussion at their tables on three questions related to implementation of the Framework:

1. What are the roles of the people at the table?
2. What are the opportunities to implement locally and cross-jurisdictionally?
3. What are the next steps towards the region's overall goal?

Participants were seated at tables based on their county affiliation, with most tables containing a mix of people from two or three adjoining counties. The intent was to allow for real collaborative possibilities across municipal and county lines to emerge from the discussions. A facilitator at each table recorded the main points raised in response to each question, which are summarized below.

Roles

Some tables addressed this question in concrete terms, describing their occupational or avocational interest in pursuing open space planning, while others gave more conceptual responses, describing the type of action they could take. In the case of the latter, where a specific action was identified with a specific occupational role, the occupation or organization is noted in parentheses after the action.

Occupational or avocational roles represented by participants:

- City elected official
- City or County Administrator, Land Use Planning, or GIS staff
- City or County Parks & Recreation (staff, Commissions)
- City or County Natural Resource Commissions or Task Forces
- City or County Historic Properties Commissions
- State Forest Service
- State Park & Rec. Trust Fund
- State/County Soil & Water Conservation Service
- USDA Natural Resources Conservation Service
- Land Trusts
- Greenway organizations
- Botanical Garden, Botanical Forest
- Chamber of Commerce
- Business, civic leaders
- Real Estate, Construction & Development, Corporate Landowners
- University Recycling Coordinator
- Certified Environmental Educator – environmental sustainability
- Individual Landowners
- Volunteer Cove- or River-keeper
- Volunteer with B.I.K.E.S. (non-profit)

Actions:

- Awareness Raising & Advocacy:
    - Advocating legislatively (activist organization)
    - Recommend planning tools, educate public officials (planners)
    - Work to pass resolution, get strategically-needed politicians to attend Plan presentations, educate elected officials about trade-offs and sacrifices this may require (elected official)
    - Education & involving the public (grass-roots activists, Natural Resource professionals)
    - Communicate urgency (state/regional gov't, Business/civic leaders)
    - Host forums, symposium on open space planning (Chamber, local gov't)
    - Publicizing, marketing, getting the word out (Chamber)
    - Newsletter articles (Botanical Forest)
    - Partner in public education – use existing network of a public interest group
    - Promote Smart Growth and Downtown Revitalization
- Implementation Planning:
    - Prioritize our conservation efforts
    - Apply Framework thinking to all projects – integrate it into all open space planning and comprehensive land use plans
    - Communicate with each other about activities, roles, participation, projects
- Provide funding (NC Park & Rec. Trust Fund)
- Acquire land or easements (land trusts, botanical forest, local gov't)
    - Develop public/private partnerships, with both business and land trusts
    - Coordinate, finance, implement
- Implement planning regulations, e.g. water quality, open space, walkability (planners)
- Apply Best Management Practices:
    - Including contacting landowners, educating about land management incentives (Forest Service, Coop. Ext., NRCS)

Opportunities for Local Implementation

Responses to this question varied from listings of geographically-specific projects to broader types of activities.

Specific projects:

- Lincoln Co. Land Use Plan for Lake Norman
- Lincolnton Rails-to-Trails
- Kings Mtn to Shelby connection
- Crowders-Kings connector
- Broad River Greenway to Cowpens connector
- Little Sugar Creek Greenway - Headwaters to Lake Wylie
- Union/Anson/Stanly RPO - rural planning organization (Centralina COG)
- Anson Co. Land Use Plan
- Stanly Co. Land Use Plan
- Rocky River Greenway
- Piedmont Green Tree Canopy Analysis project
- Erosion Sediment Control Authority back to County from state (Gaston)

Examples to extend to other areas:

- Gaston Co. watershed model for South Fork River
- Adopt Davidson-style land use regulations
- York County Forever (farm preservation, 1:1 acres developed:preserved)

General project ideas:

- Develop Regional "Signature" Trails – like the Virginia Creeper, Palmetto, or Mountains-to-the-Sea trails
- Connect all the state and national parks in the region with a trails system
- Bicycle and Greenway Master Plans – city/county coordination
- Fund aggressively the greenway/stream buffer program
- Establish farmland preservation program immediately

Broad conceptual ideas or activities:

- Commit to and complete one or two high-visibility/low-risk "model" projects to get some tangible results to gain buy-in for the Vision
- Build the Open Space Framework into other local planning activities and ordinances, from Parks & Rec plans to land use, zoning/subdivision, infrastructure plans, and policies; push for update of all comprehensive land use plans
- Establish cross-jurisdictional shared standards/guidelines
- Suspend road improvements/expansion until Framework implementation is assured
- Inventory land uses contributing to Air Quality Non-Attainment status, both inside and outside those areas
- Enlist elected officials' support:
    - Provide a non-political/non-media opportunity to gather together to view the Vision Map & learn about the Framework – obtain their early involvement
    - Recognize pro-active leadership where it occurs (Rowan County Commission Chair, Stanly's Preservation Group, Mecklenburg's Parks Helms & Darryl Williams)
    - Advocate - Message: natural environment is our future economy & quality of life – sustainable economy requires open space and limited growth
    - Seek assistance with alternative revenue sources to fund Framework projects
- Include businesses, development community
    - Evaluate current incentives/disincentives for developers to incorporate open space or work with the Framework
- Educate the public
    - Promote early successes heavily
    - Promote benefits and possibilities of open space
    - Advocate - Message: legacy for future generations
    - Emphasize water resources relationships to open space
    - Show impacts of growth

    - Provide opportunities for grass-roots action & communication with elected officials
    - Make use of the rural Internet initiative
    - Utilize Community College system (e.g. South Piedmont CC)
- Coordinate:
    - Ensure that our own organizations are educated on the Framework and Vision Map – spread the word internally
    - Communicate across boundaries and across municipal/county/state agencies.
    - Work with the land trusts on priority areas, on implementation of easements, to educate landowners & to preserve integrity of conserved areas
    - Include state senators and representatives
    - Meet with other preservation groups & county commissioners
    - At the state level, inter-agency - push to develop statewide strategic open space plan
    - Share information, resources, experiences, expertise
    - Ensure county managers are aware of Coop Ext district meetings and activities re open space
    - Actively seek out collaborative joint projects, and opportunities to assist each other in making things happen
    - Draw on organizations that already work cross-jurisdictionally - V&C, UNC Charlotte/ Open Space Institute, COGs, Trust for Public Land, Conservation Trust for NC and Palmetto Foundation (SC), Catawba River Task Force, state park systems, Natural Resources Conservation Service, land trusts

Next Steps toward the Regional Goal

Again, the range in responses to this question went from specific sub-goals to more generalized actions.

Specific sub-goals:

- Develop and adopt standards - quantitative indicators that can serve as benchmarks and targets to measure progress
- All counties to have Natural Heritage Inventories completed and digitized for GIS use
- All counties to have up-to-date Land Use Plans (updated or inaugural)
- Establish a regional Open Space/Parks & Rec planning body
- Establish a regional air & water agency
- Work for adoption of Lincoln Co's Farmland Preservation Ordinance

General steps:

- Each participant take the message of the Framework and Vision Map back to their organization
- Enlist elected leaders' support and advocacy for the plan in each county
- Compare county plans with regional plans, the Framework & Vision Map
- Establish priorities, focus on core action items and define deliverables
- Identify inter-county Memorandum-Of-Understanding opportunities for counties to partner on specific projects
- Encourage development of sub-regional/multi-county open space plans – linking region-wide vision with local plans
- Develop more/better communication between counties and municipalities
- Try out new tools, encourage more use of private conservation easements and public Purchase of Development Rights programs
- Funding will be key:
    - Seek leverage opportunities for funding of projects, reorder/balance priorities that are responsive to state fiscal crisis, sprawl
    - State-level and federal-level – enlist Congresspeople and support e.g. NC Sen. Odom's open space funding plan
    - Stimulate public/private partnerships
- Public education/community outreach/media engagement will be key
    - Community Forums in each county for the public, planners and elected leaders – get all the right people there, present plan, educate about plan benefits, enlist support, encourage grass roots political action, include case studies of development without open space and with open space

    - On V&C's website establish a what's being done/by whom running list
    - Use Vision Map and accompanying Criteria/Synthesis data to visually dramatize "crisis of sprawl", develop sense of urgency
    - Prepare photographic examples to accompany Vision Map
    - Develop a "traveling show" to present, promote the plan
    - Involve the public schools
    - Topics must include water quality, wetlands, water table, other environmental issues
- Articulate how plan ties in with economic development
- Link transit corridors with green space
- Point to federal mandates re Air Quality Non-Attainment areas to push land conservation solutions
- Involve developers as part of the solution, include ULI, establish partnerships
- Involve higher education institutions to partner and/or promote, through land donations or dual use projects
- Think Outside the Box

Appendix III: Framework Data Sets

This set of CDs contains the following GIS data sets (each of which is described in more detail below):

- Framework Synthesis Data Set
- Central Carolinas Green Assets 2000 data sets (one polygon data set and one point location data set)
- Piedmont Green Plan (release date tbd, pending resolution of portability issues.)

Each data set is provided in ArcView shapefile format, with a projection file and metadata file. Also included on the CDs are image files of the Vision Map, the Criteria Synthesis Map, and the individual Criteria Application Maps for the six types of open space, which may be used in planning documents and publications.

Regional GIS users will also want to incorporate other "Base" GIS data sets in their Framework analysis. These are the map layers that provide context and background for the Framework data sets, and in some cases, will be the basis for re-application and re-interpretation of the criteria. Most local government and other GIS users already have, or are in the process of creating these data layers; therefore, they are not included with this package. In some cases the data is available from state- and national-level government agencies.

Framework Synthesis Data Set

The Framework Synthesis data set covers all 14 counties and includes land that meets one or more of the many criteria across the six types of open space (that is, all land shown in the Synthesis Map image.) Attributes for every criteria and for state and county are included in the data set and can be used to derive separate layers for the six types of open space, the criteria, or each of the fourteen counties. Additionally, combination scores have been calculated to indicate lands that meet multiple criteria within each type of open space (for example, land that meets two of the four natural habitat criteria will have a score of "2", while one that meets all four will have a score of "4".)

The Synthesis data set is very large, and even simple operations in ArcView are likely to take a long time. For convenience, subsets by county of the Synthesis data set have also been provided, in the same format and with the same attributes.

Note: Some of the land included in the data set represents complete tax parcels, while others represent portions of tax parcels or land that crosses multiple tax parcel lines. This reflects the fact that some of the criteria are tax parcel based and others are not.

Central Carolinas Green Assets 2000 Data Set

The Central Carolinas Green Assets 2000 data set represents an inventory completed in September 2000 of protected open space across the fourteen-county region. Included in the inventory are lands greater than five acres that are either publicly-owned parks, nature preserves, and recreational lands (including golf courses), or privately-owned lands permanently protected by conservation easements or other methods. Where data was available, other public open space, such as school playgrounds and athletic fields, or cemeteries, are also included. Not included is open space in the form of common areas held by neighborhood associations, or open space protected only by regulations such as stream buffer or watershed protection ordinances.

The data set contains two layers of protected open space sites, based upon the type of data provided by the sources during the compilation of the inventory. In the first layer, digital boundaries of the open space sites are provided, giving a literal representation of their shape and size. In the second layer, only point locations were provided. Each protected open space site is represented in only one of the two layers, so there is no duplication or overlap between them.

The data tables for both layers contain identifying information including the site's county and state, and the

name of the site where provided by the sources. The size of the sites in acres is given for all of the sites in the polygons layer and for those in the points layer where it was provided by the sources. An additional attribute is included in the points data table to indicate whether the site is greater than 100 acres in size. This was determined by identifying those point locations that were present in the prior (1998) inventory which only included sites greater than 100 acres.

Of the region's 4.4 million acres of land, approximately 106,000 acres were protected by private easement or public ownership as of 2000. These existing protected areas are the building blocks for creating an interconnected open space system by 2020. The Green Assets 2000 inventory also provides a useful benchmark to measure 5-, 10-, 15-, and 20-year progress towards that goal.

Piedmont Green Plan

The Piedmont Green Plan data set provides regional users with mapable data on the projected status of regional land in 2020, based on the output of a regional urban growth model developed in 1998 and updated in 2001. The model was originally developed through a partnership of the UNC Charlotte Urban Institute, Carolinas Land Conservation Network (now the Open Space Institute of the Carolinas), Western Piedmont Council of Government, Centralina Council of Government, Catawba Regional Planning Council (now Catawba Regional Council of Government), and Central Carolinas Choices (now Voices & Choices.) It was updated in 2001 as part of the process of building the Strategic Regional Open Space Framework.

The data set contains attributes for each piece of land for its 1980 land use, its 2020 projected use, and its "conversion status," indicating whether or not the change from 1980 to 2020 represents a conversion of undeveloped land to developed uses.

This information can help regional users assess the "Urgency" prioritization factor, by helping determine how likely the open space is to be needed for development by 2020.

The model uses data on 1980 land cover (from satellite imagery), adopted future land use plans, and projected population and households for 2020, to project what level of residential development is likely to occur by 2020 on each piece of land in the region. Projections of commercial and industrial expansion from the Metropolitan Planning Organizations round out the model's view of the region in 2020.

Using GIS analysis, the model identifies lands that were in agricultural or forested uses in 1980 that are projected as of 2020 to be in business uses or in residential uses at densitites greater than 0.1 units per acre. These lands are identified as converted from undeveloped to developed uses by 2020, and labeled "converted."

Base Data Sets

The table below lists the suggested Base data layers for inclusion in Framework applications. Included in the table are layers showing jurisdictional and infrastructure, environmental, and cultural data, all of which provide important contextual information for the creation of an interconnected open space system. Each layer is marked with an "X" in the relevant column to indicate its suggested use in setting context in map display or in applying the criteria for the six types of open space.

Table Legend

NH = Natural Habitat
WF = Wetlands & Floodplains
FT = Farmland & Timberlands
RH = Rural Heritage & Scenic Areas
PR = Parks & Recreation
UG = Urban Greenspace

		CRITERIA APPLICATION					
Base Data Layer	CONTEXT	NH	WF	FT	RH	PR	UG
Municipal boundaries							
Land Cover							
Land Use							
Zoning							
Jurisdictional boundaries	X		X	X	X		X
Roads/Highways	X				X	X	
Railways	X						
Hydro (Lakes, rivers, streams)	X	X	X			X	
Land Cover (from satellite imagery)		X	X	X	X	X	X
Tax Parcels				X		X	X
Building footprints							X
Roads/highway TIP						X	
Natural Heritage Inventory element occurrence sites		X					
GAP Biodiversity sites		X					
Floodplain (FEMA or other)			X				
Water Supply Watershed Critical Areas			X				
National Wetlands Inventory			X				
Soils			X	X			
Slope/elevation			X				
Farm Parcels in Present-Use Tax Value program				X			
Farm Parcels in Voluntary Ag. District				X			
Timber Parcels Under Forestry Management program				X			
Abandoned Rail Corridors						X	
Utility ROW						X	
Designated scenic byways					X		
Designated scenic areas					X		
Designated National Historic sites, structures, districts					X		X
Designated Local or State Historic sites, structures, districts					X		X
Potential Local Historic Sites					X		X
Cultural Landmark Inventories					X		X