The Greenprint Process

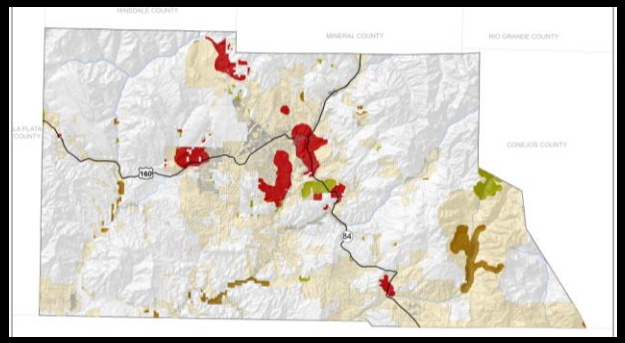
Presentation Outline

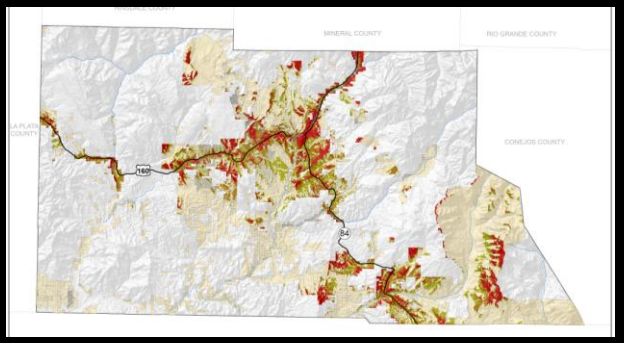
1) What is a Greenprint and Why Should I Care?
2) The Greenprint Process (w/ 3 Case Studies)
3) Greenprinting in Davidson



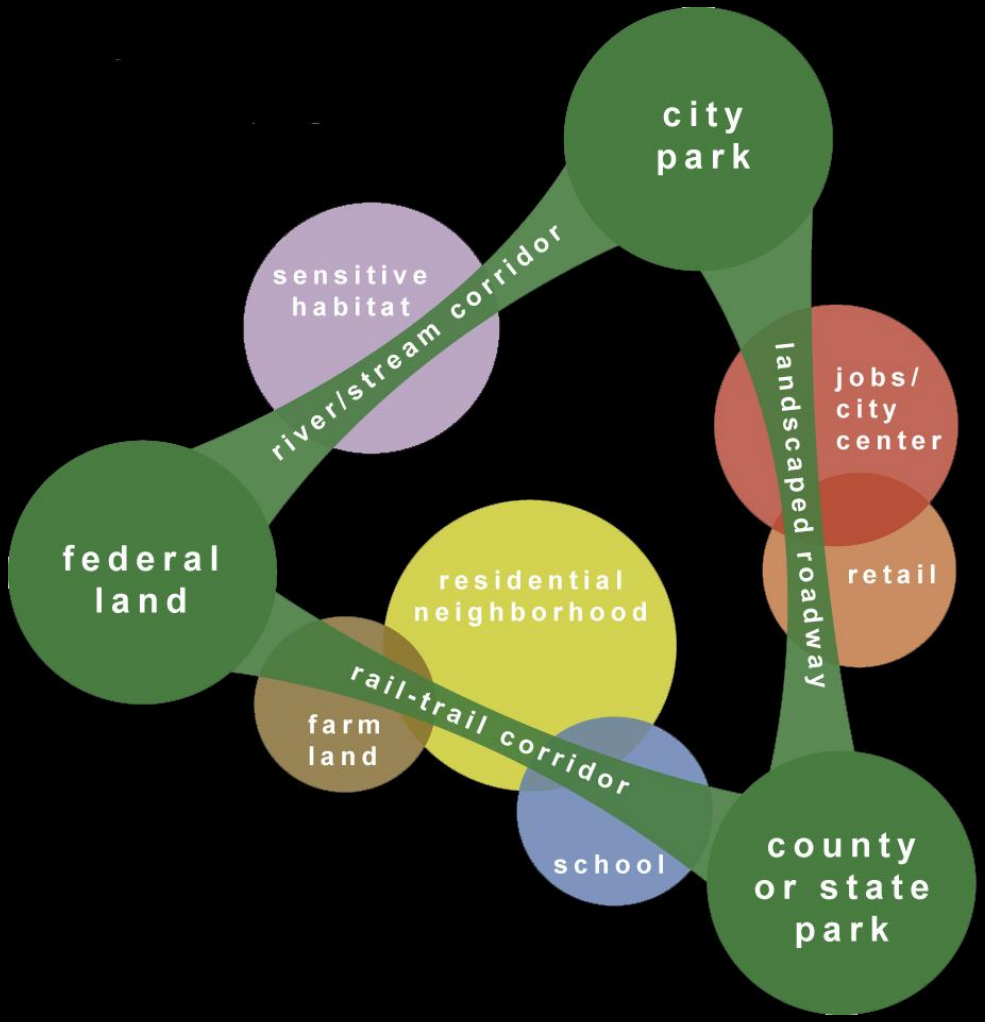
What is a Greenprint?

- A Greenprint is a bound document containing text and maps that guide communities to grow in a way that balances the need for conservation with the forces of growth and development.





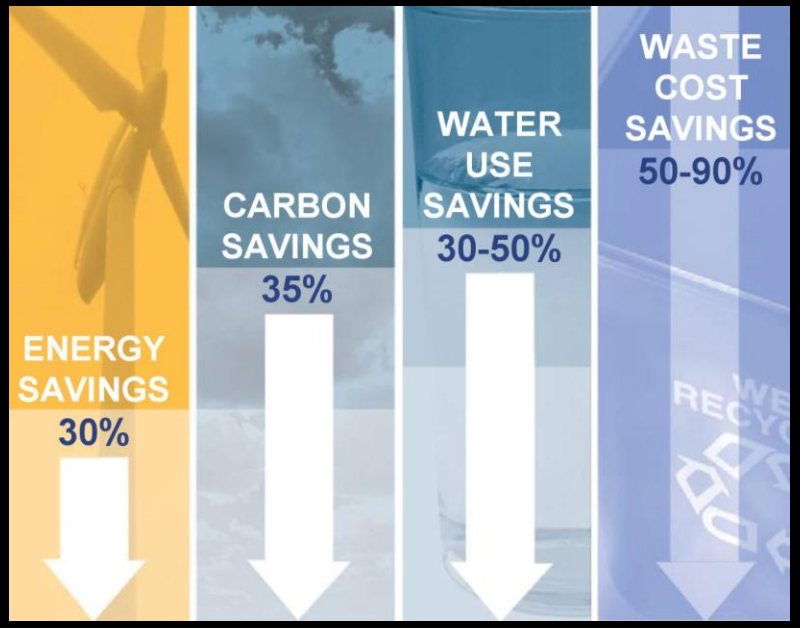
What is a Greenprint?



Why is Greenprinting Important?

Why is Greenprinting Important?

- Goals range from purely land conservation, to complex strategies and detailed goals for urban sustainability.



Why is Greenprinting Important?

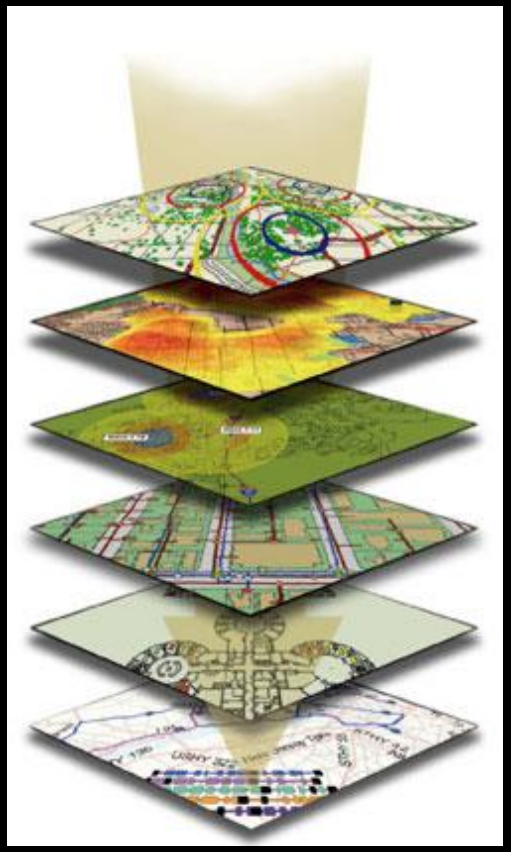
- Growth is *not* the problem
- The type an location of typical growth and development *is* the problem

A Community Must Find Out…

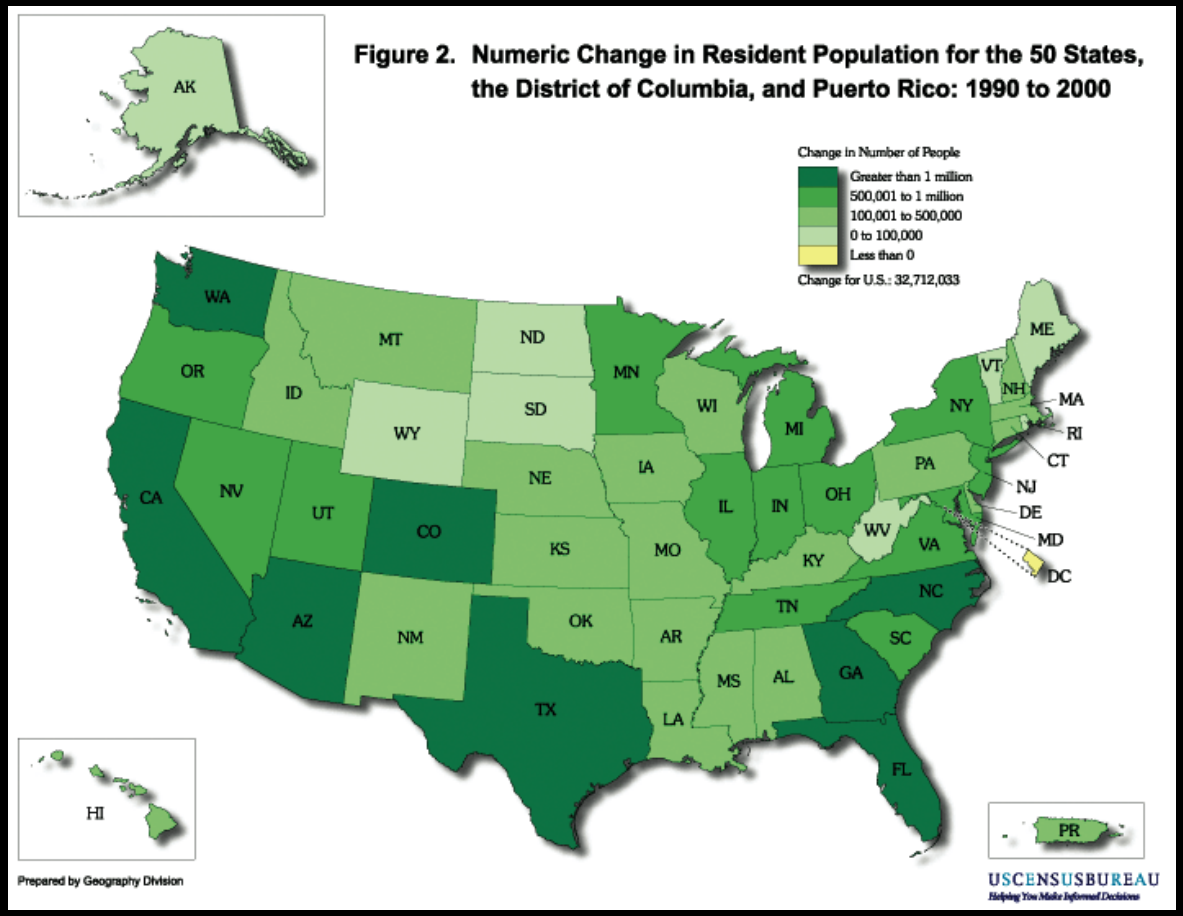
…in terms of growth and conservation…

1) Where they are…
2) Where they want to be…and…
3) How to get there.

The Greenprint Process: Inventory & Analysis

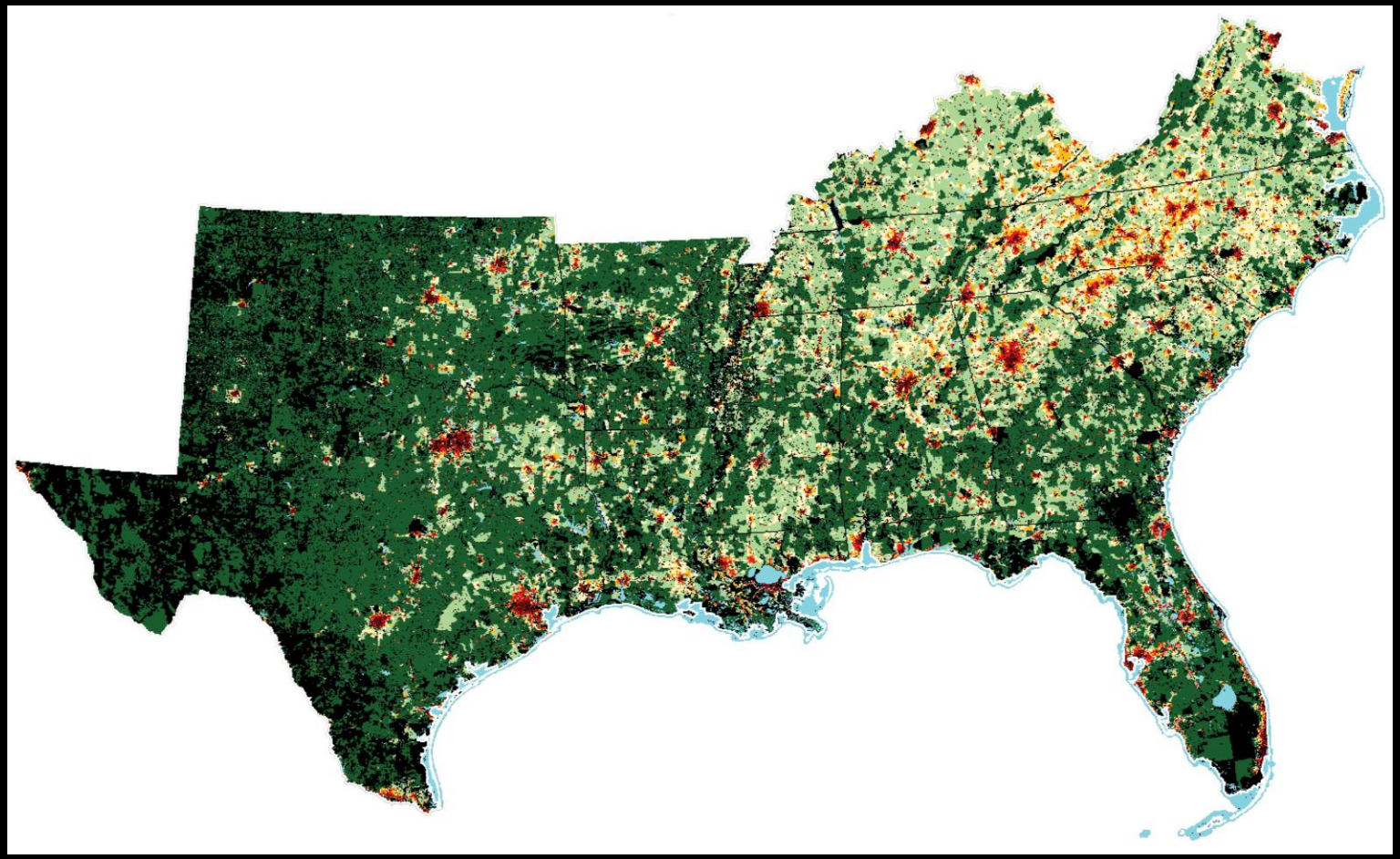


The Greenprint Process: Current Patterns of Growth



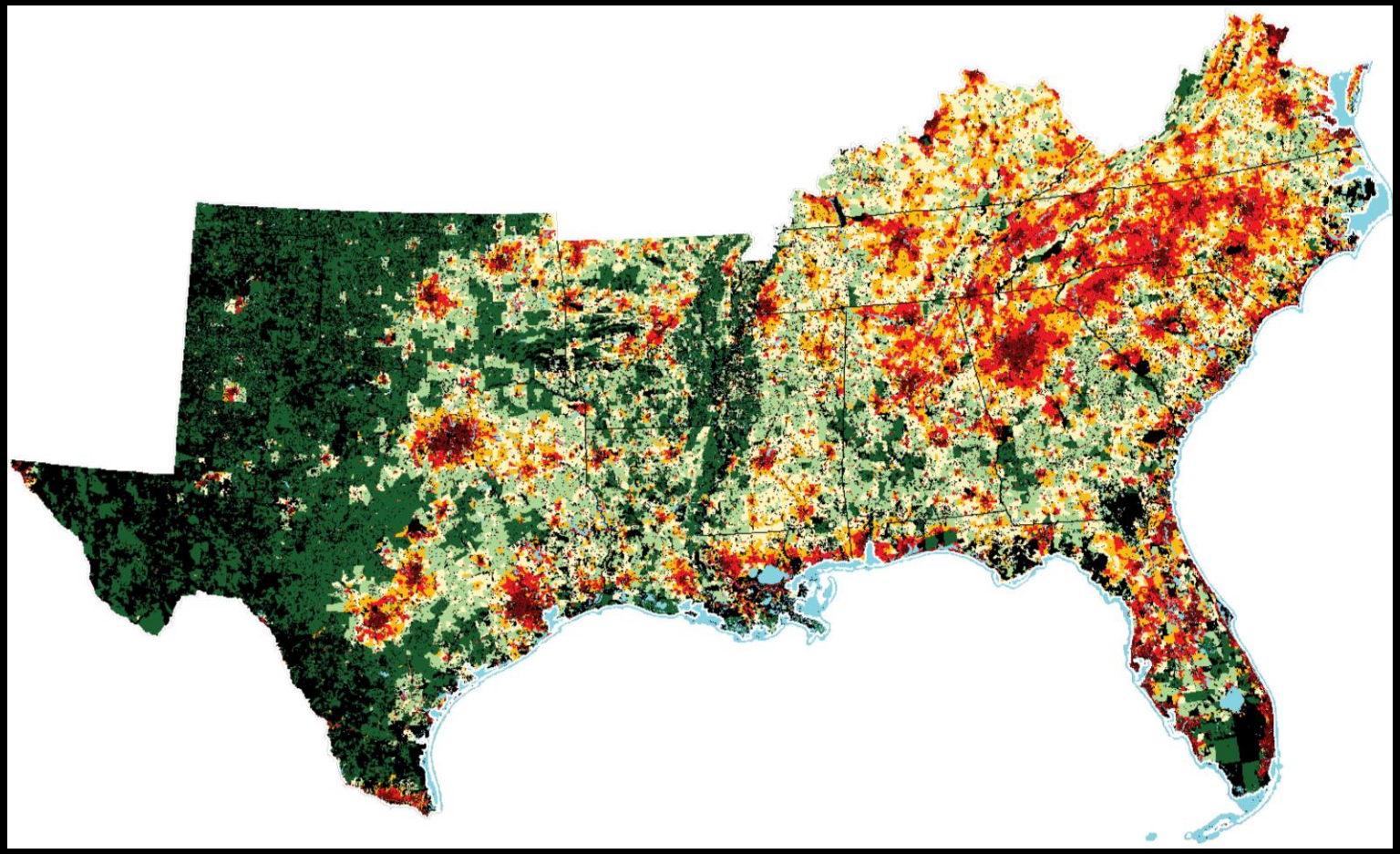
Source: Decennial Census Data

The Greenprint Process: Current Patterns of Growth



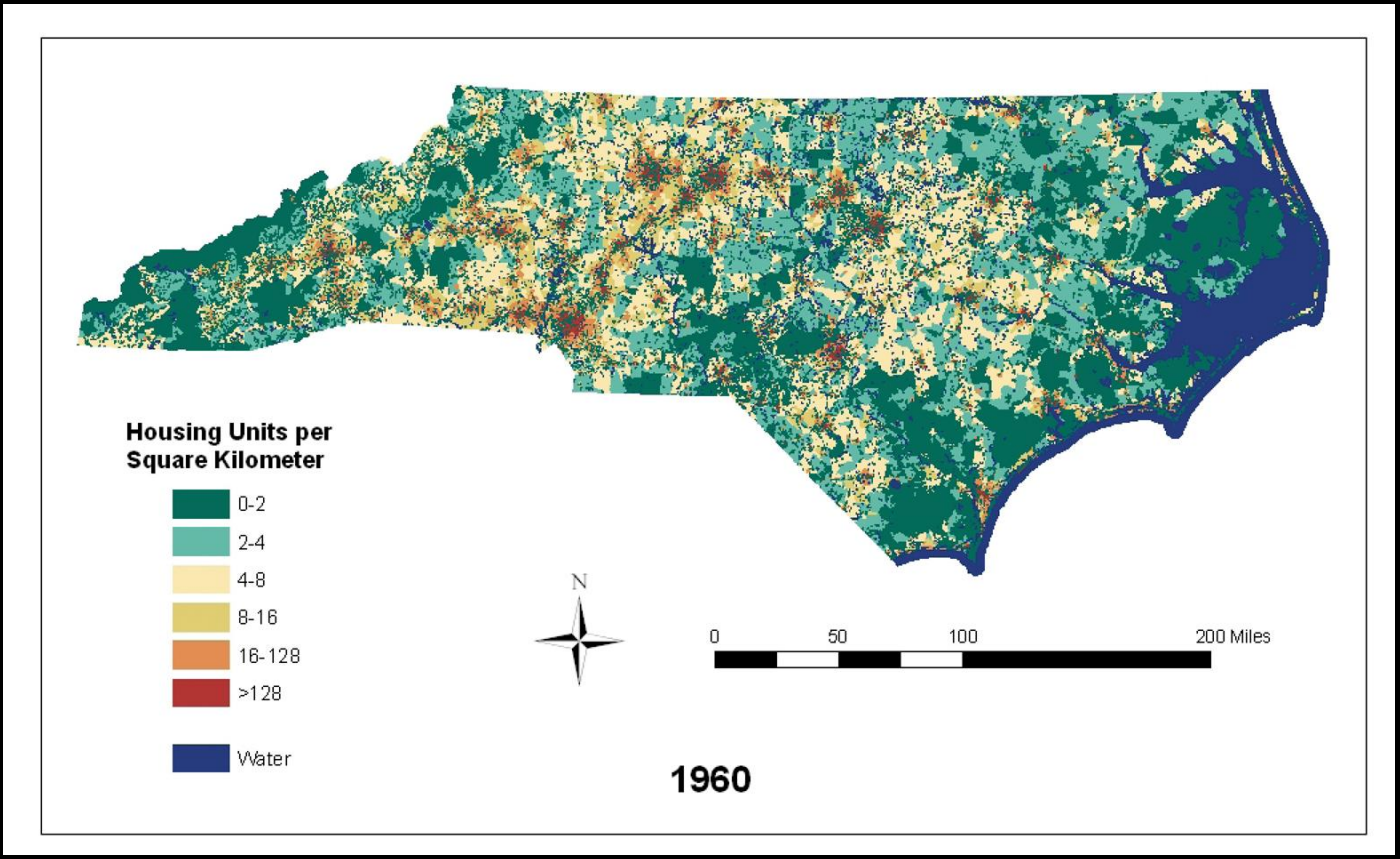
Source: USDA Forest Service; Volker Radeloff (University of Wisconsin) and Ann Ingerson (The Wilderness Society). More info available at the Catawba Lands Conservancy website, www.catawbalands.org)

The Greenprint Process: Current Patterns of Growth



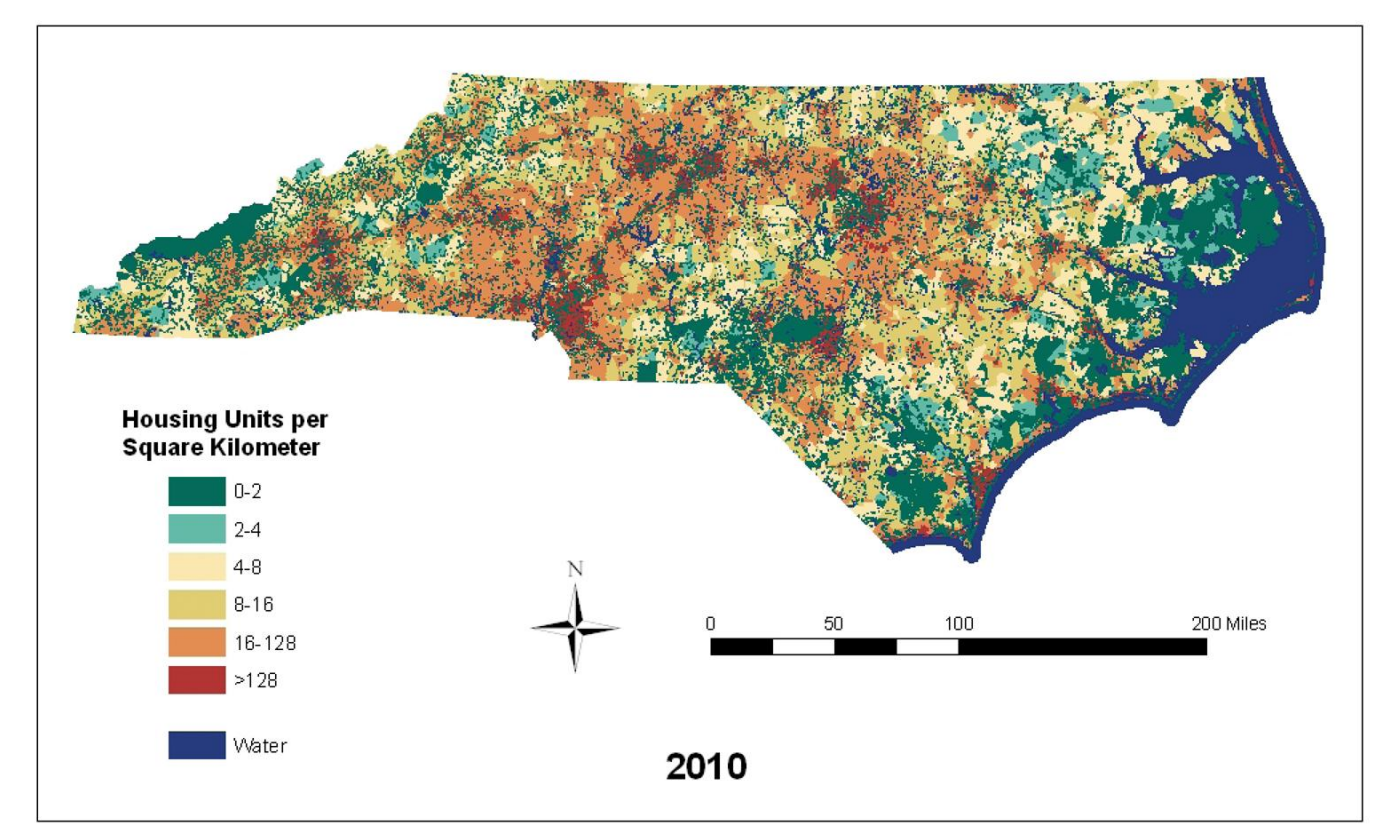
Source: USDA Forest Service; Volker Radeloff (University of Wisconsin) and Ann Ingerson (The Wilderness Society). More info available at the Catawba Lands Conservancy website, www.catawbalands.org)

The Greenprint Process: Current Patterns of Growth



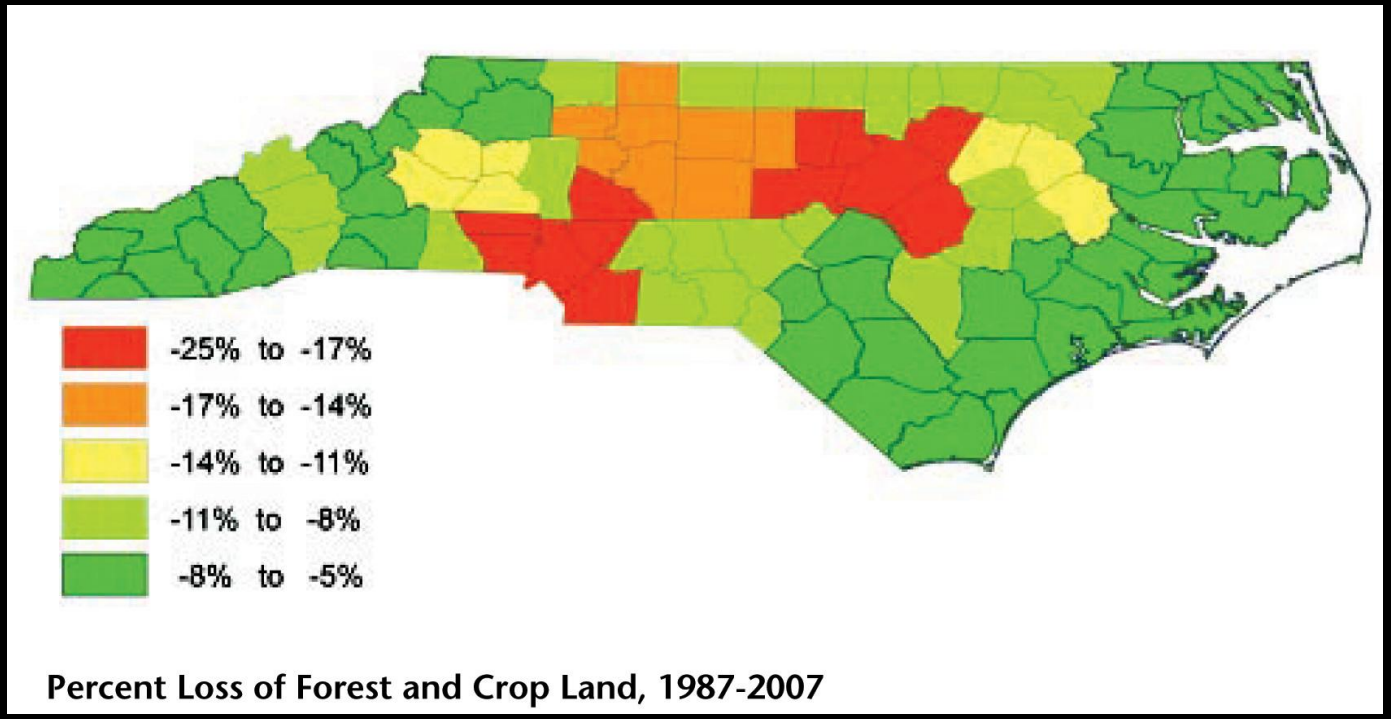
Source: USDA Forest Service; Volker Radeloff (University of Wisconsin) and Ann Ingerson (The Wilderness Society). More info available at the Catawba Lands Conservancy website, www.catawbalands.org)

The Greenprint Process: Current Patterns of Growth



Source: USDA Forest Service; Volker Radeloff (University of Wisconsin) and Ann Ingerson (The Wilderness Society). More info available at the Catawba Lands Conservancy website, www.catawbalands.org)

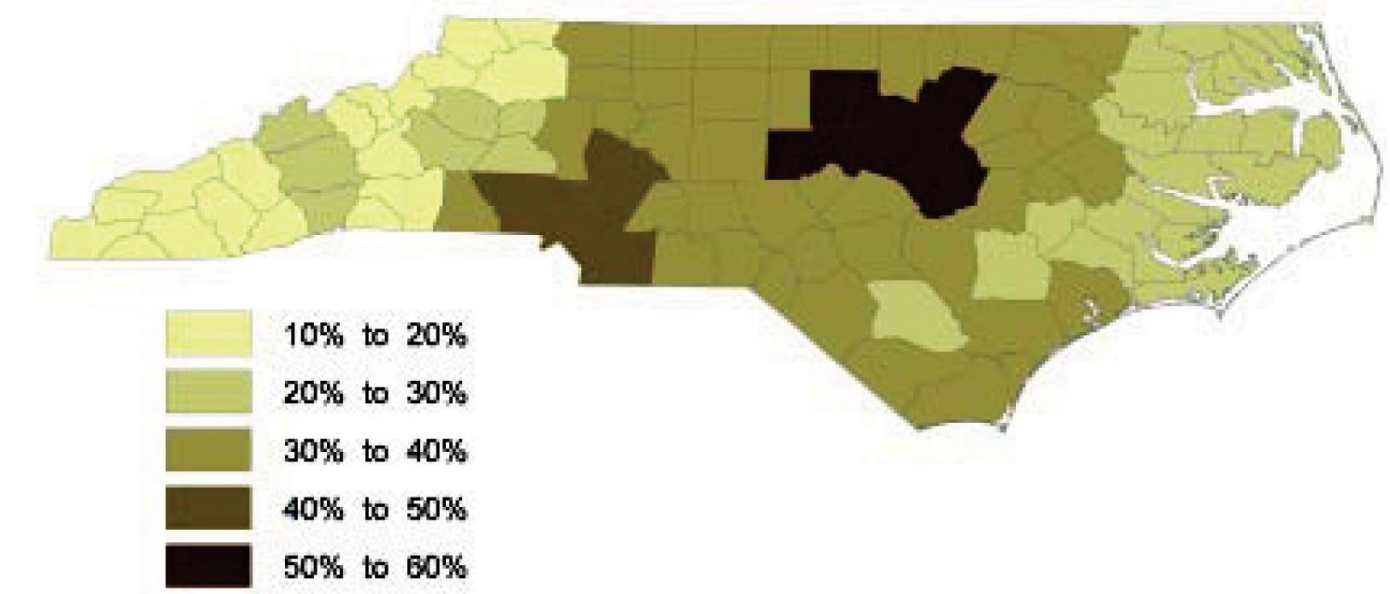
The Greenprint Process: Current Patterns of Growth



Percent Loss of Forest and Crop Land, 1987-2007

Source: Environment North Carolina Research & Policy Center (April 2007)

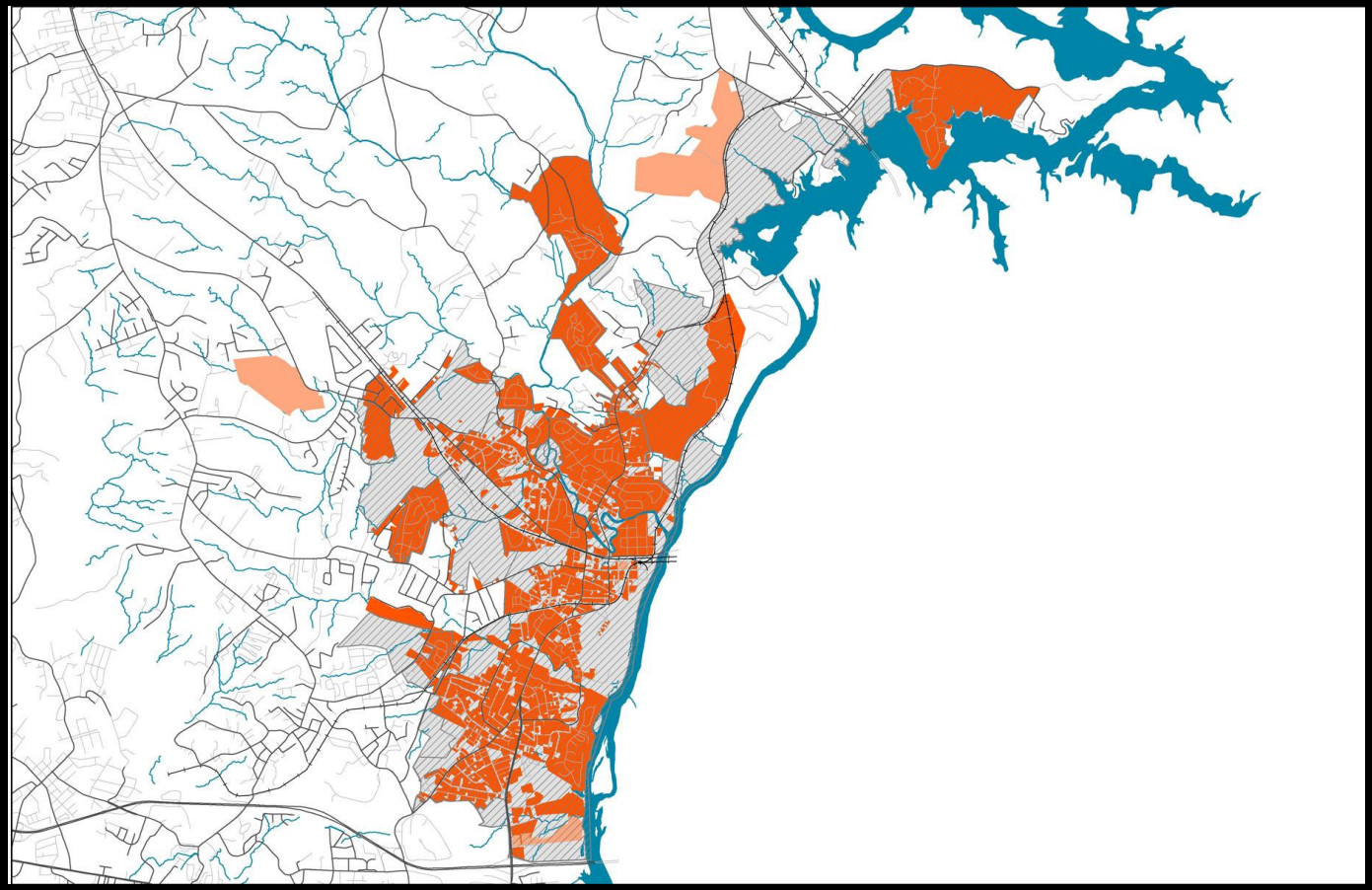
The Greenprint Process: Current Patterns of Growth



Projected Increase in Developed Land, 2007-2027

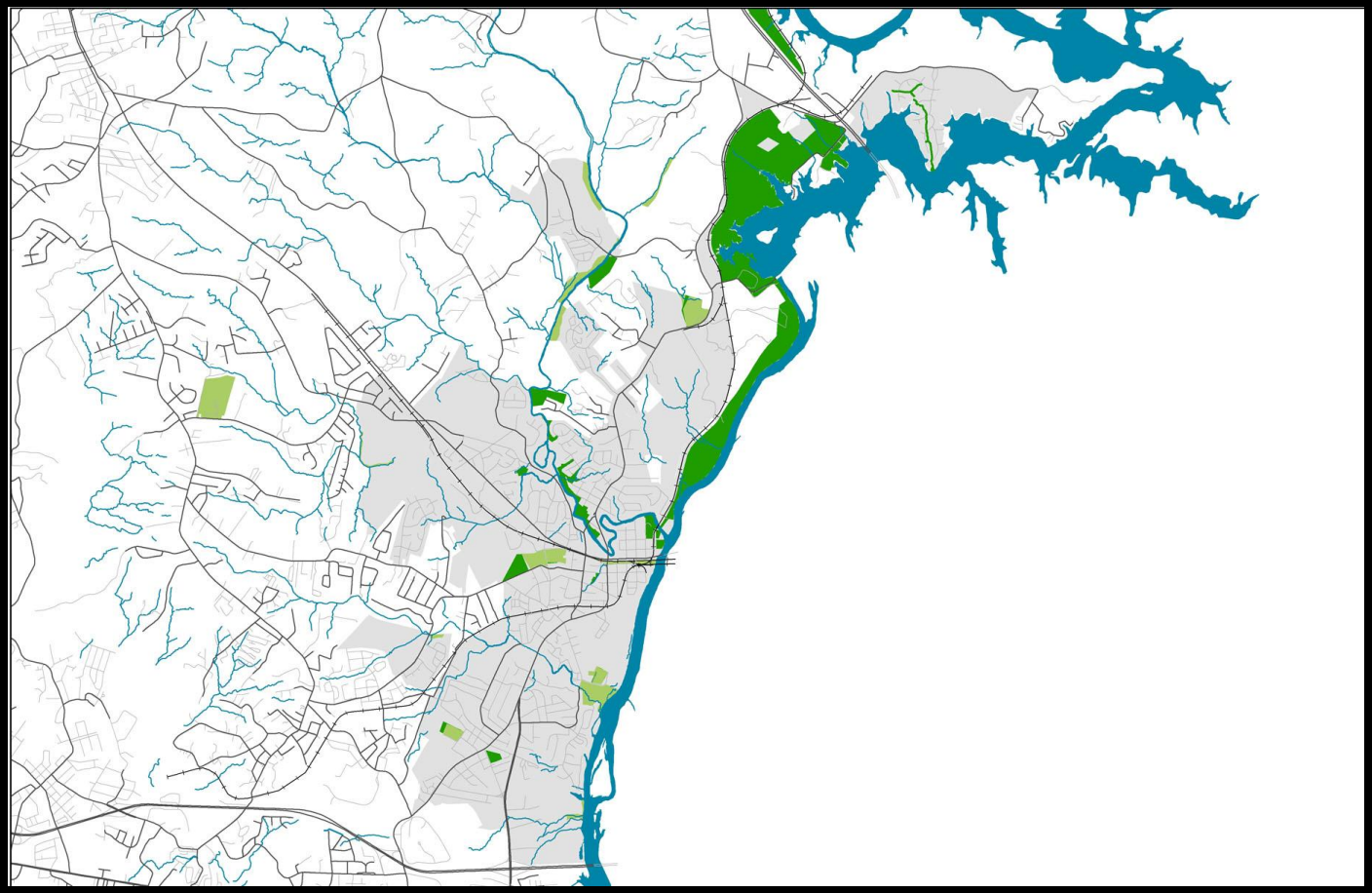
Source: Environment North Carolina Research & Policy Center (April 2007)

The Greenprint Process: Inventory Case Studies



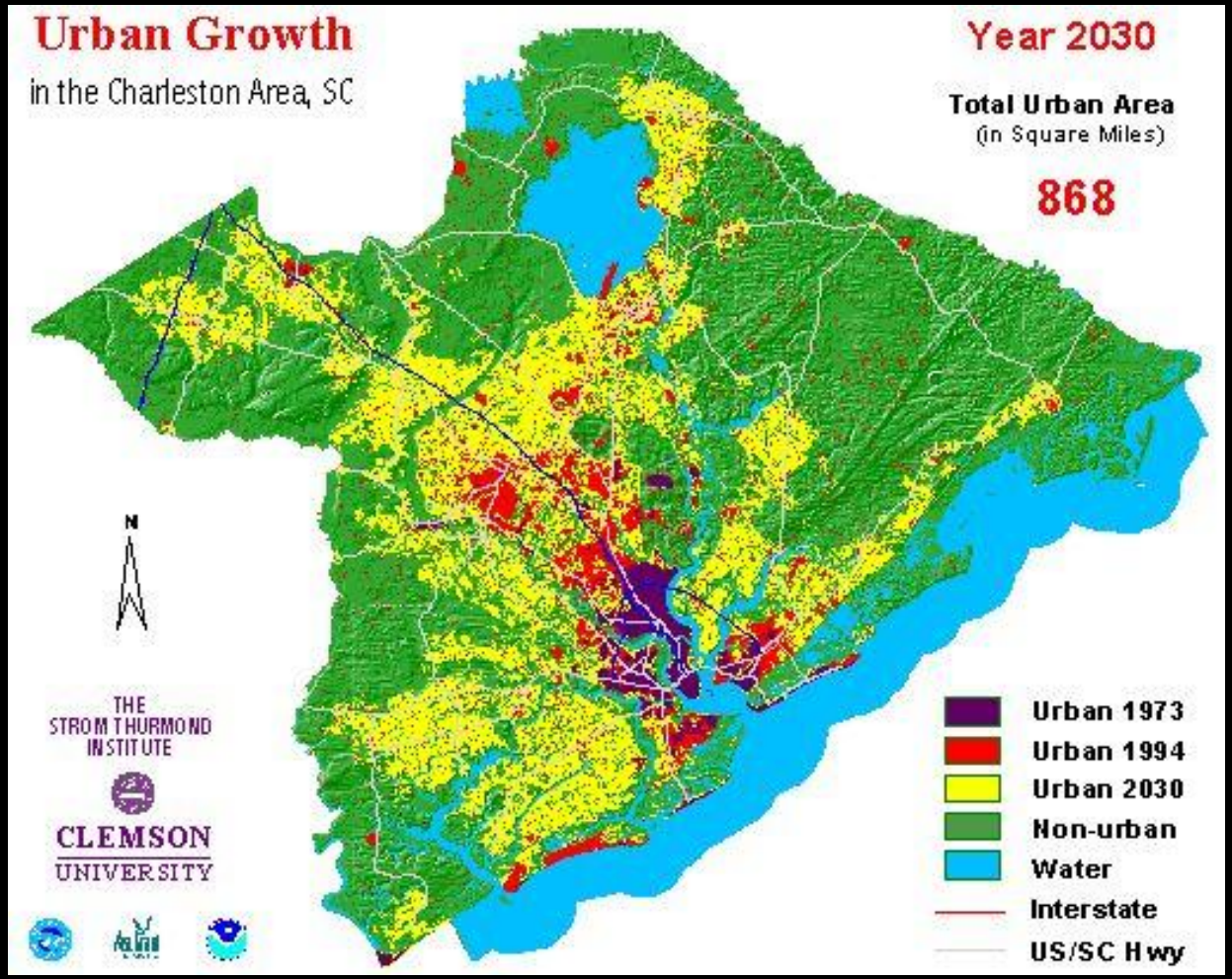
Source: GIS data provided by the City of Mount Holly; Map prepared by Greenways Incorporated (2007)

The Greenprint Process: Inventory Case Studies

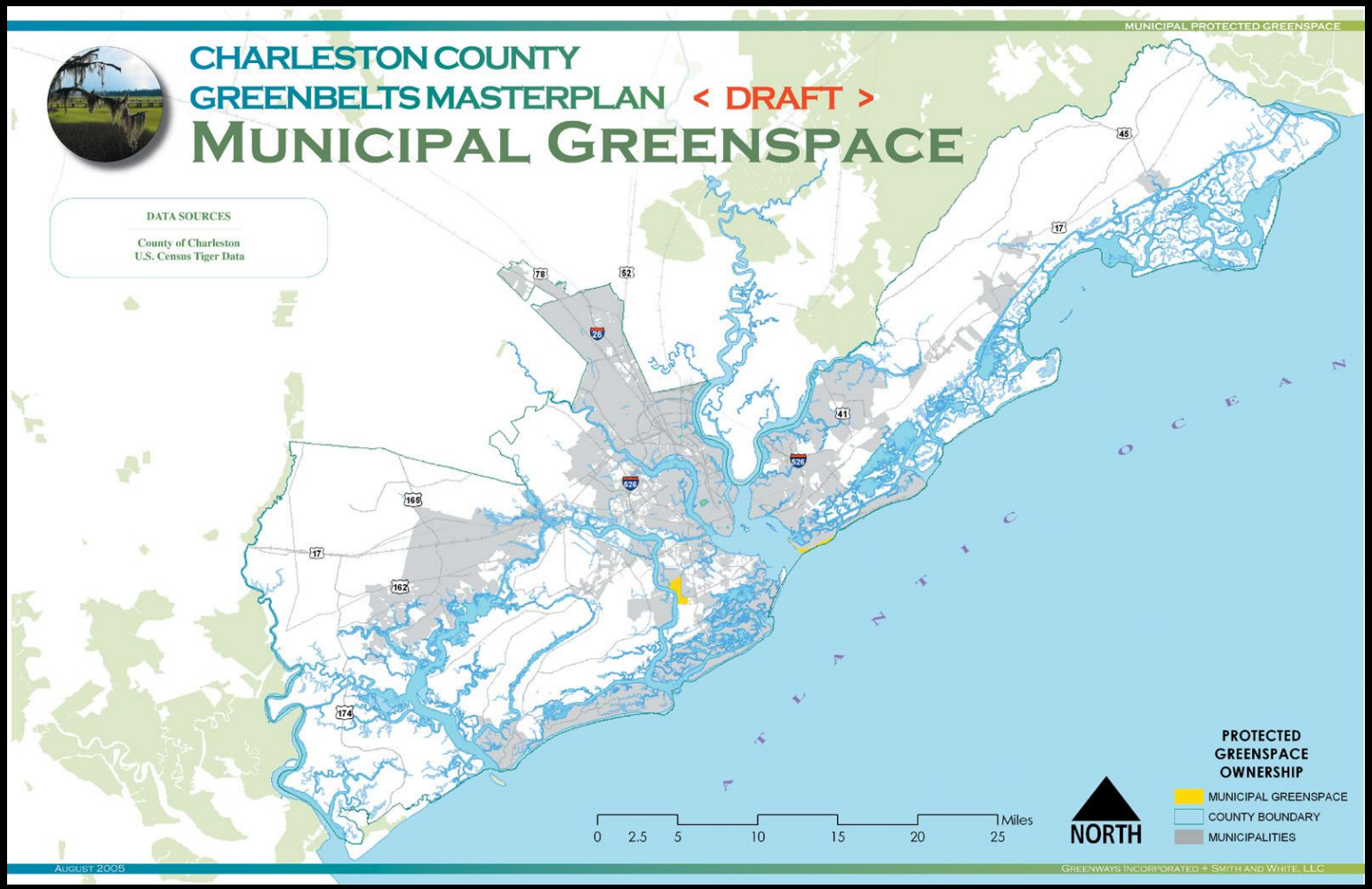


Source: GIS data provided by the City of Mount Holly; Map prepared by Greenways Incorporated (2007)

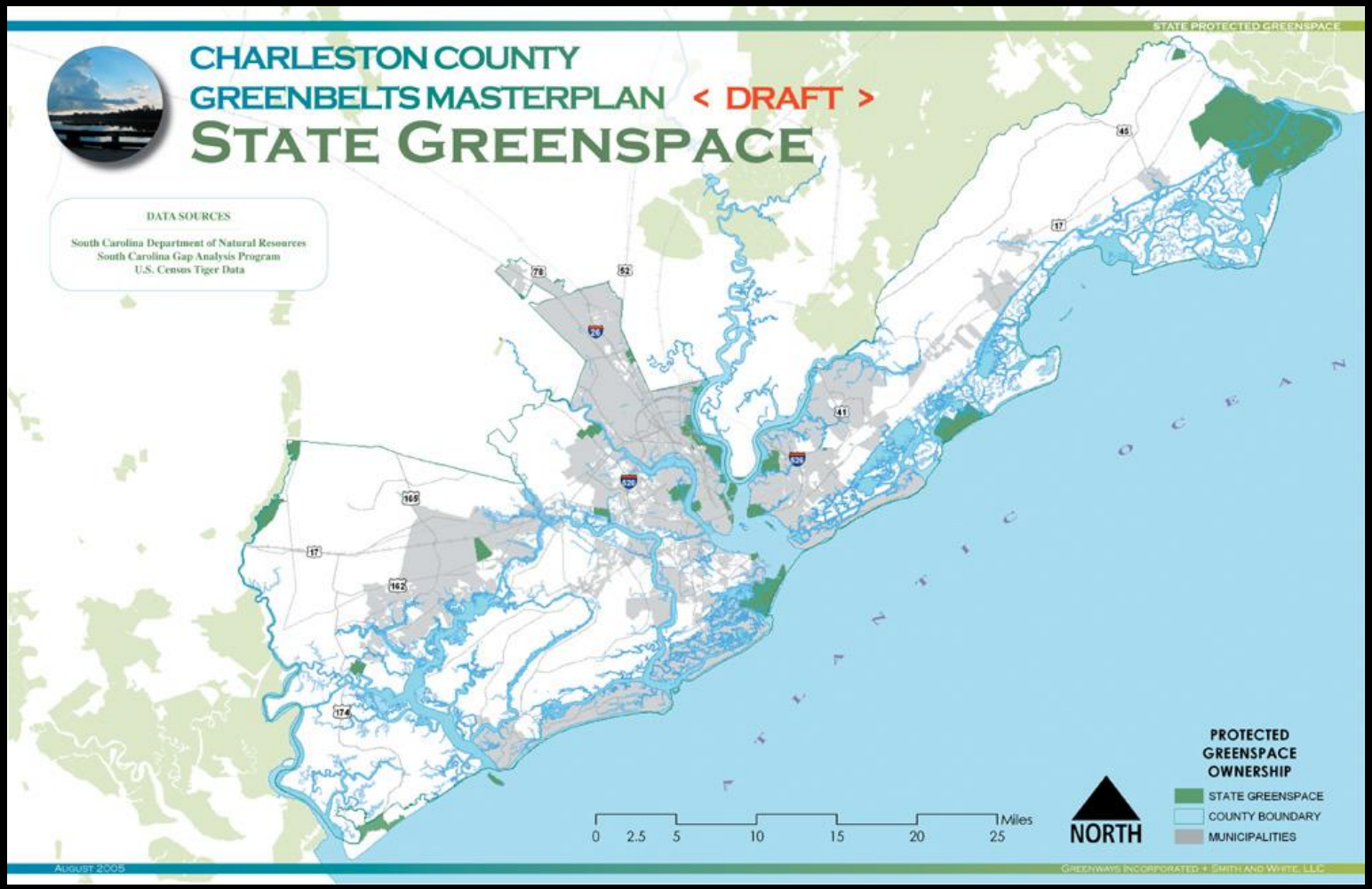
The Greenprint Process: Inventory Case Studies



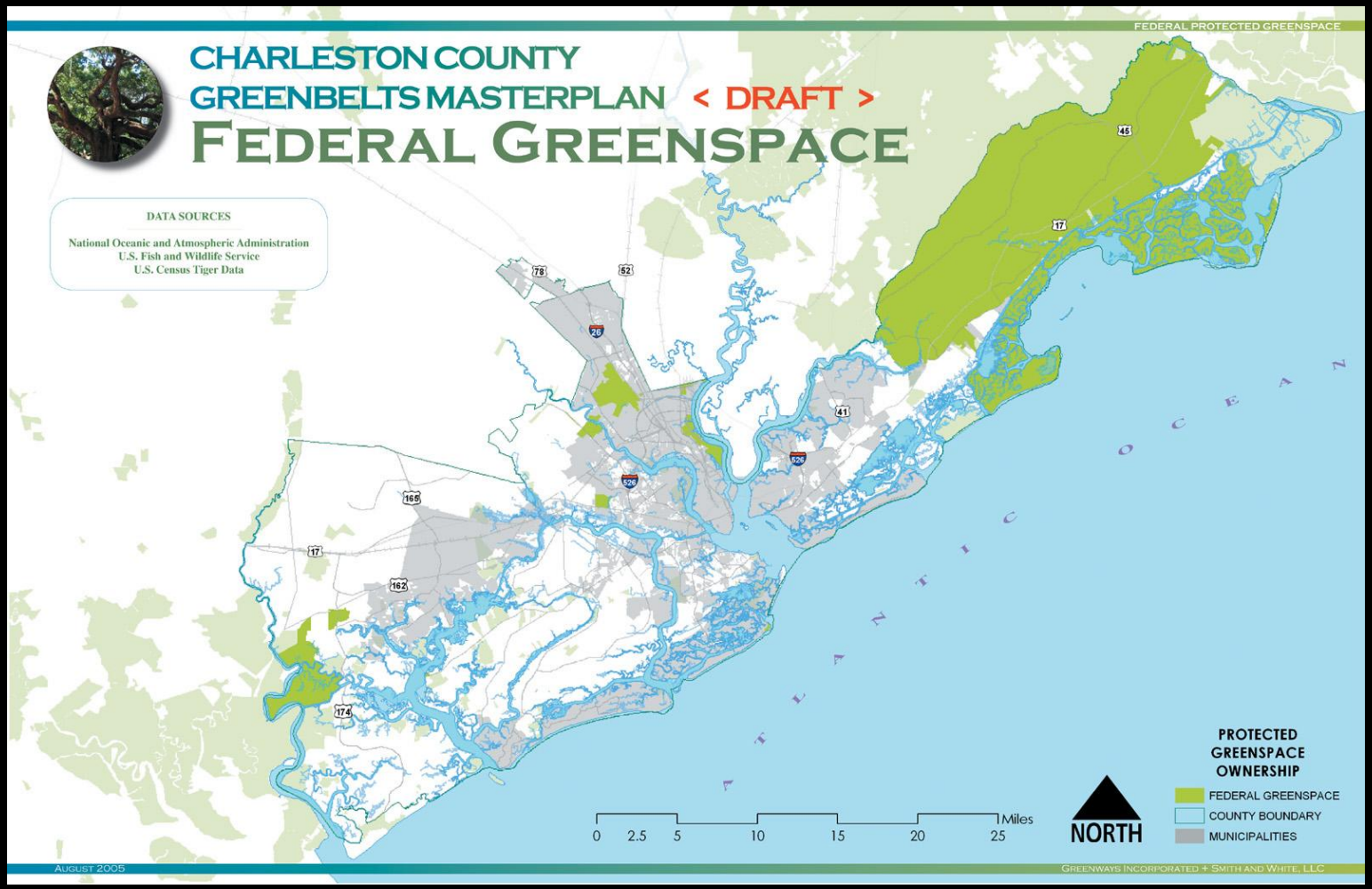
The Greenprint Process: Inventory Case Studies



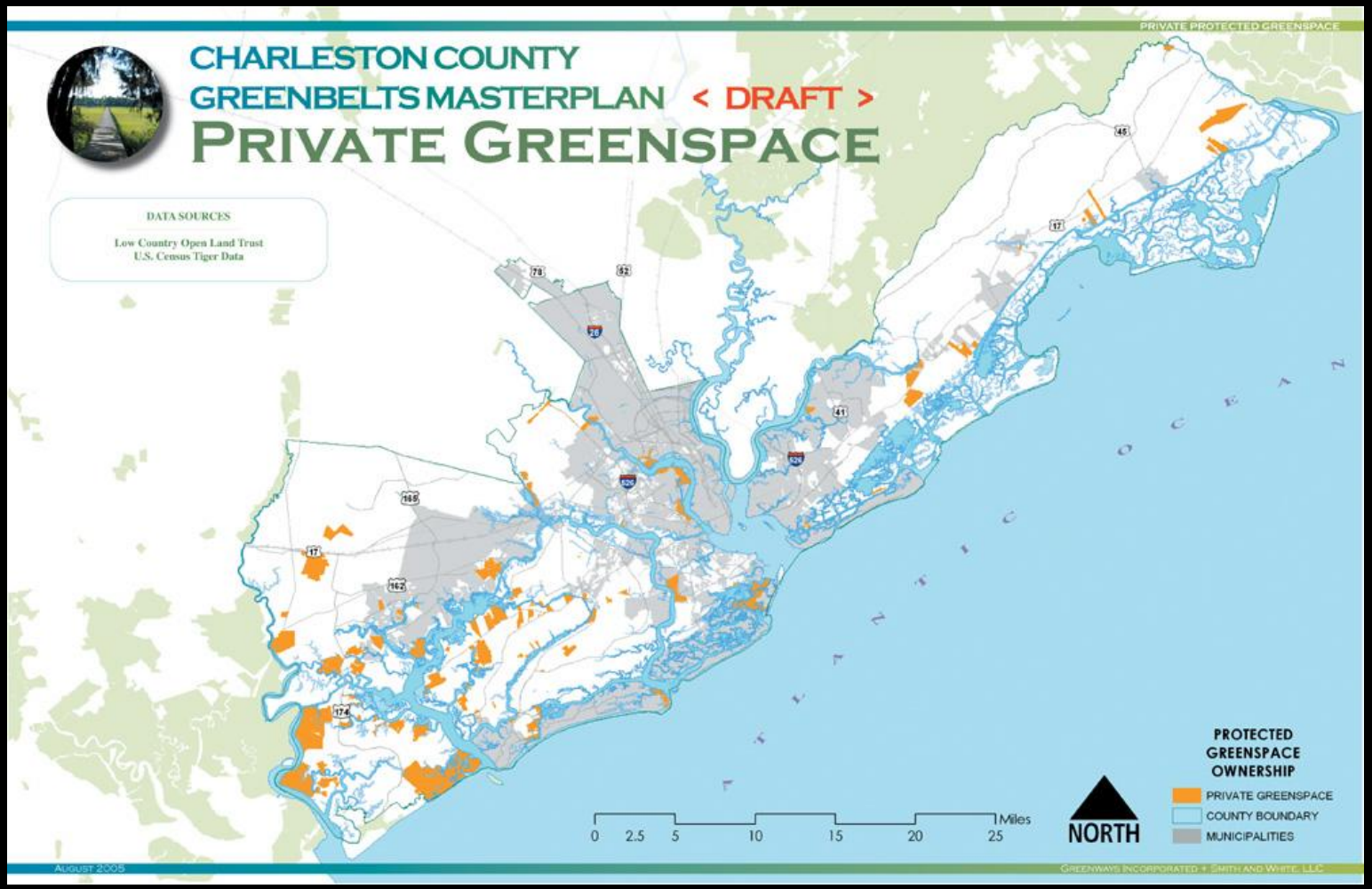
The Greenprint Process: Inventory Case Studies



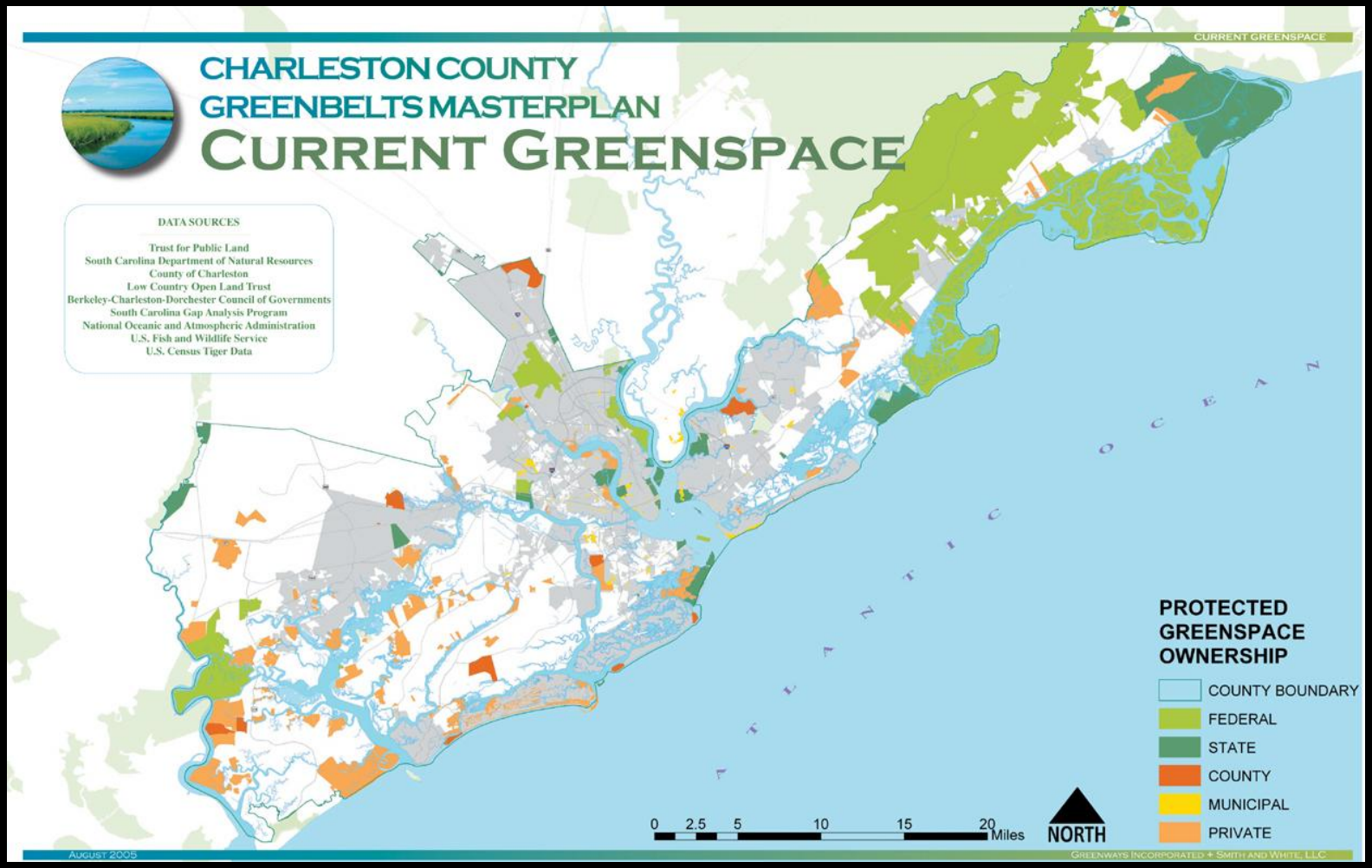
The Greenprint Process: Inventory Case Studies



The Greenprint Process: Inventory Case Studies



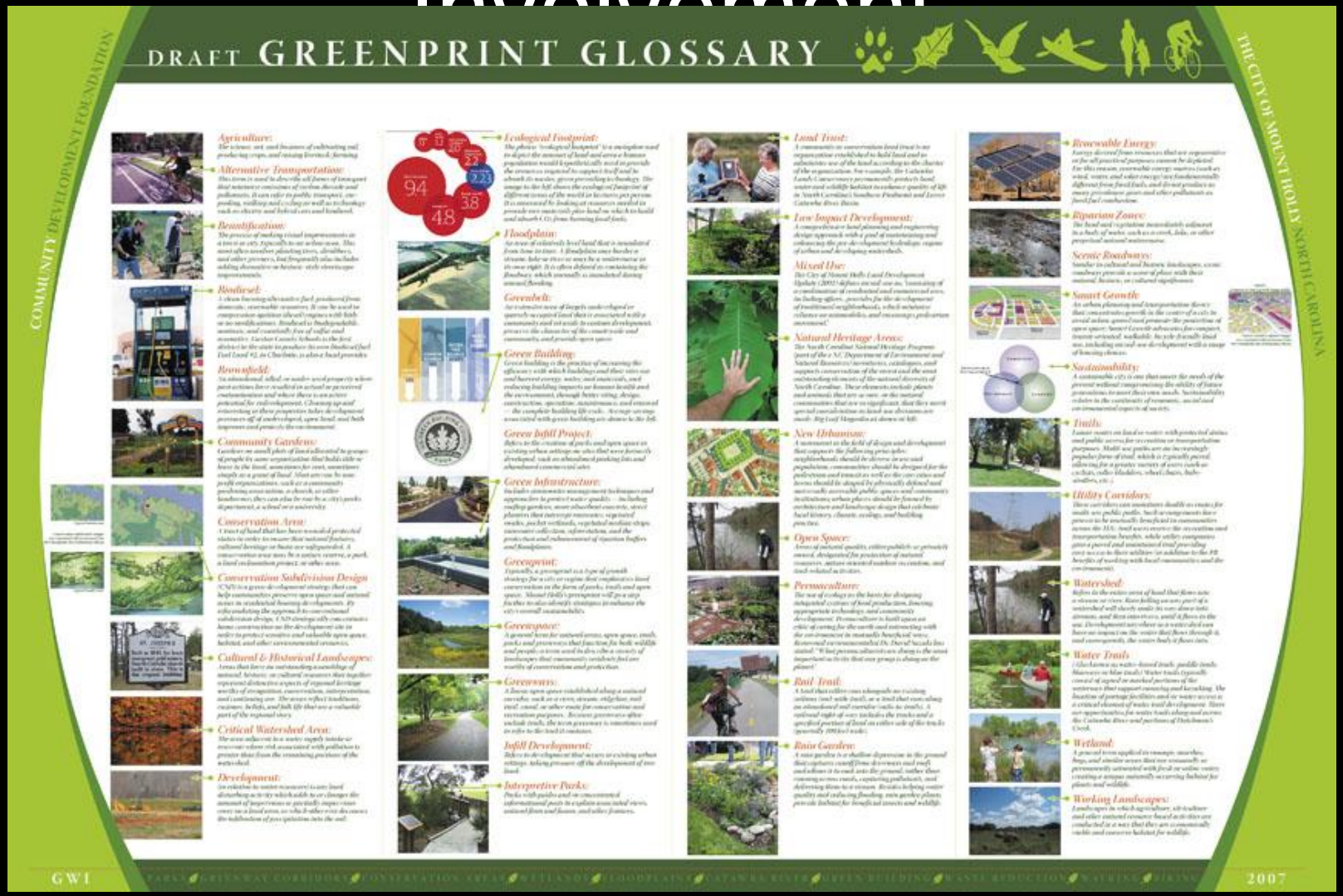
The Greenprint Process: Inventory Case Studies



From Inventory to Visioning

Visioning Process: Public Education & Involvement

Visioning Process: Public Education & Involvement



Visioning Process: Public Education & Involvement

CHARLESTON COUNTY GREENBELTS PLAN

GREENSPACE GLOSSARY

PASSIVE GREENSPACE

Passive Recreation: Emphasizes the open-space aspect of a park, involving a low level of development, including picnic areas and trails.

Trails: Linear routes on land or water with protected status and public access for recreation or transportation purposes.

Greenways: A linear open space established along a natural corridor, such as a river, stream, ridge line, rail-trail, canal, or other route for conservation and recreation purposes.

Interpretive Parks: Parks with guides and/or concentrated informational posts to explain associated views, natural flora and fauna, and other features.

Water Access Points: Areas allowing access to water for activities such as fishing, crabbing, boating, etc.

ACTIVE GREENSPACE

Active Recreation: Requires more intense development and often involves cooperative or team activity, including playgrounds and ball fields.

Play Fields and Parks with Low Environmental Impact: These include ball fields, parks, and golf courses that minimize impervious surface cover, provide setbacks from manicured areas to adjacent creeks and wetlands, and utilize buffers and selective clearing[1].

[1] Golf courses in this category are fully certified members of the Audubon Cooperative Sanctuary Program for golf courses, an environmental program sponsored by Audubon International and the United States Golf Association. There are currently four certified courses in Charleston County, including the Club at Seabrook Island, the Country Club of Charleston, and the Kiawah Island Ocean Course and River Course. Retrieved from www.audubon

Audubon International. Audubon Cooperative Sanctuary Program (2003).

PRODUCTIVE LANDSCAPES

Working Landscapes: Landscapes in which agriculture, silviculture and other natural resource based activities are conducted in a way that they are economically viable and conserve habitat for wildlife.

Agriculture: The science, art, and business of cultivating soil, producing crops, and raising livestock; farming.

Silviculture: The care and cultivation of forest trees; forestry.

Mariculture: Cultivation of marine organisms in their natural habitats, usually for commercial purposes.

HERITAGE LANDSCAPES

Cultural and Historical Landscapes: Areas that have an outstanding assemblage of natural, historic, or cultural resources that together represent distinctive aspects of regional heritage worthy of recognition, conservation, interpretation, and continuing use. The areas reflect traditions, customs, beliefs, and folk life that are a valuable part of the regional story[1].

[1] Defined as adapted from the National Park Service's criteria for a "National Heritage Area", as designated by the United States Congress. Retrieved from www.cr.nps.gov/heritageareas/ National Park Service: Critical Steps and Criteria for becoming a National Heritage Area (2006).

CORRIDORS

Scenic Roadways: Similar to heritage landscapes, scenic roadways provide a sense of place with their natural, historic, or cultural significance. Many roads, including Ashley River Road, Botony Bay Road, Eddingsville Beach Road, Steamboat Landing Road, Manse Road, and Pine Landing Road are listed in the National Register of Historic Places.[1] Canopy roads through the county could fall under this category.

Abandoned Rail Lines: Inactive rail corridors can serve as multipurpose public paths (paved or natural). A railroad right-of-way includes the tracks and a specified tract of land on either side of the tracks (generally 100 feet wide).

Utility Corridors: These corridors can also serve as multipurpose public paths (paved or natural).

Scenic Waterways: Designated areas at key locations that will afford users an opportunity to view significant waterways, water features, and wildlife habitat. The Ashley River Corridor is a State Scenic River, designated by the South Carolina General Assembly in 1998[2].

[1] Charleston County Comprehensive Plan, Existing Conditions (2004).

[2] Charleston County Comprehensive Plan, Zoning Conditions (2004).

NATURAL INFRASTRUCTURE

Floodplain: An area of relatively level land that is inundated from time to time. A floodplain may border a stream, lake or river or may be a watercourse in its own right. It is often defined as containing the floodway, which normally is inundated during annual flooding

Riparian Zones: The land and vegetation immediately adjacent to a body of water, such as a creek, lake, or other perpetual natural watercourse.

RECLAIMED GREENSPACE

Brownfield: An abandoned, idled, or under-used property where past actions have resulted in actual or perceived contamination and where there is an active potential for redevelopment. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment.

Green Infill Projects: An *infill* project refers to development that occurs in existing urban settings, taking pressure off the development of raw land. *Green infill* projects refer to the creation of parks and open space in existing urban settings on sites that were formerly developed, such as abandoned parking lots and abandoned commercial sites.

LOW COUNTRY NATURAL RESOURCES

Upland Forest: Upland forests occur where drainage is sufficient so that soils do not become saturated for extended periods of time. Water can either run off or percolate through the soil. The upper canopy is 80% to 100% closed, and sub-canopies of younger trees and shrubs typically exist.

Wetland: A general term applied to swamps, marshes, bogs, and similar areas which are seasonally or permanently saturated with fresh or saline water, creating a unique naturally occurring habitat for plants and wildlife.

Swamp: A seasonally flooded bottomland with more woody plants than a marsh and better drainage than a bog.

Marsh: A type of wetland, featuring grasses, rushes, reeds, typhas, sedges, and other herbaceous plants (possibly with low-growing woody plants) in a context of shallow water. A marsh is different from a swamp, which is dominated by trees rather than grasses and low herbs. The water of a marsh can be fresh, brackish, or saline. Coastal marshes may be associated with estuaries and along waterways between coastal barrier islands and the inner coast.

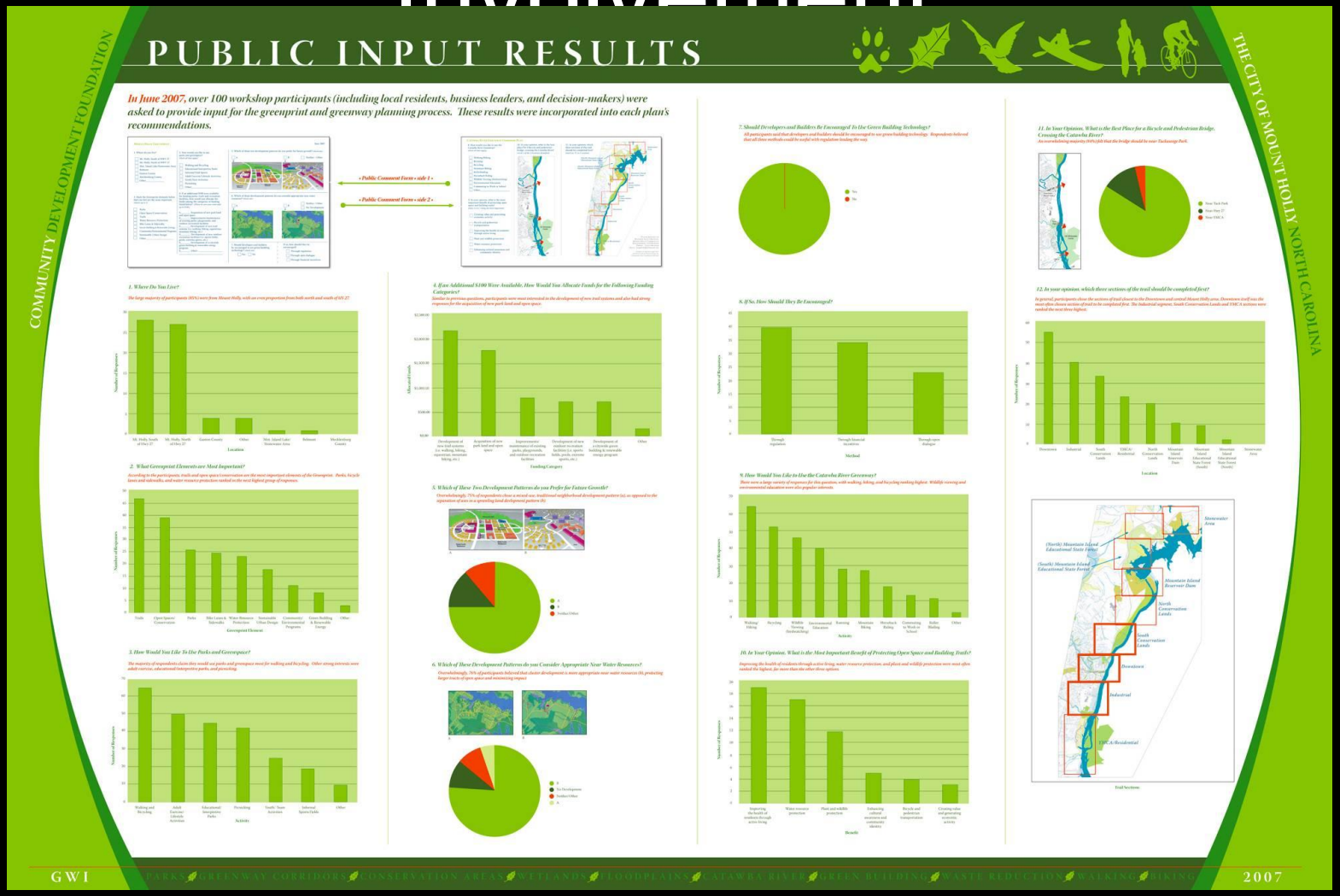
Bog: An area having a wet, spongy, acidic substrate composed chiefly of moss and peat in which characteristic shrubs and herbs and sometimes trees usually grow. An area of soft, naturally waterlogged ground.

Carolina Bay: An isolated wetland in natural shallow depressions that is largely fed by rain and shallow groundwater. These bays have an elliptical shape and generally a northwest to southwest orientation.

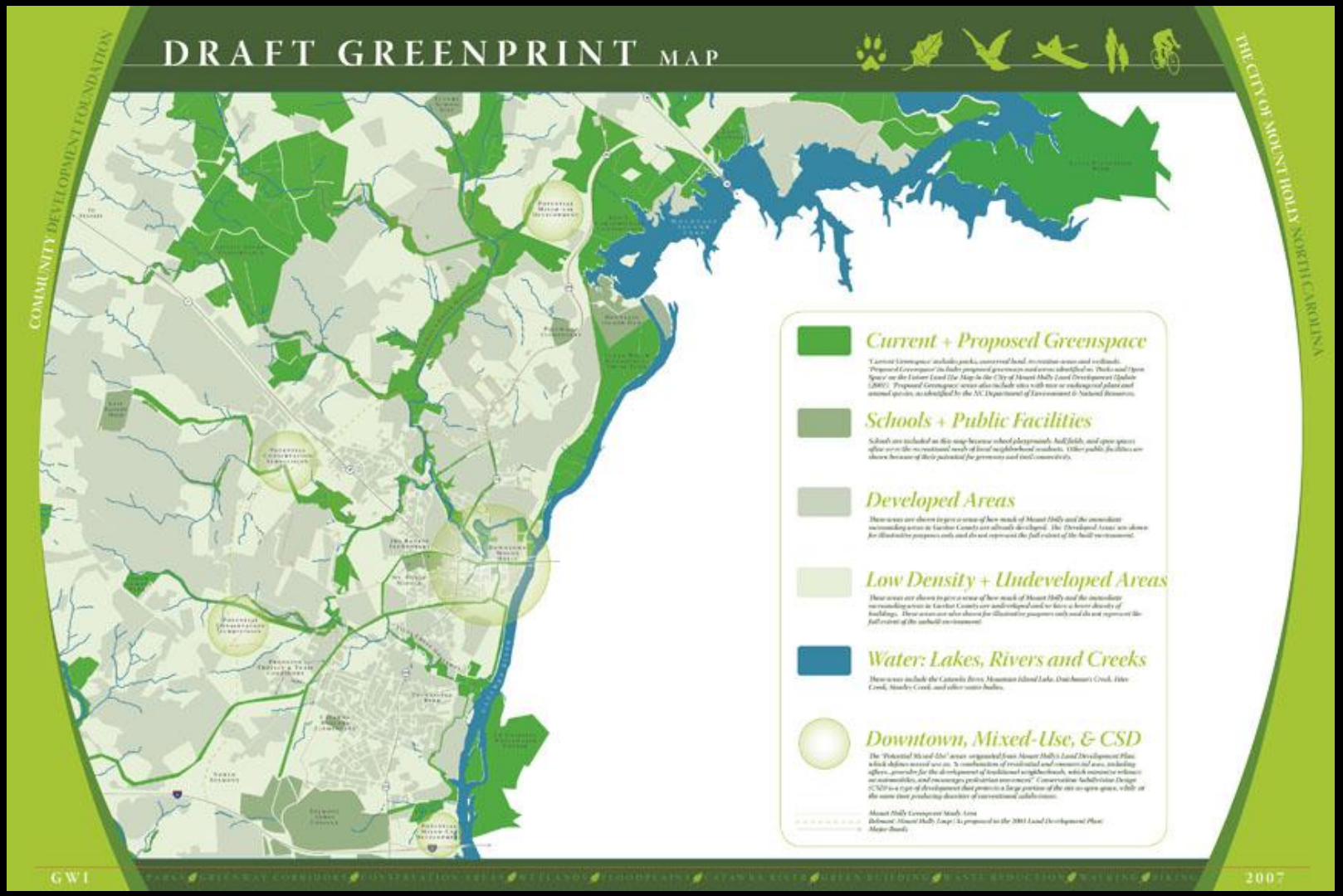
Marsh Islands: Relatively small islands that lie behind barrier islands and around Sea Islands. There are over 3000 delineated marsh islands along South Carolina's coast.

Retrieved from www.scdhec.gov/ South Carolina Department of Health and Environmental Control Aug. 17th News Release (2005).

Visioning Process: Public Education & Involvement



Visioning Process: Developing a Concept Map



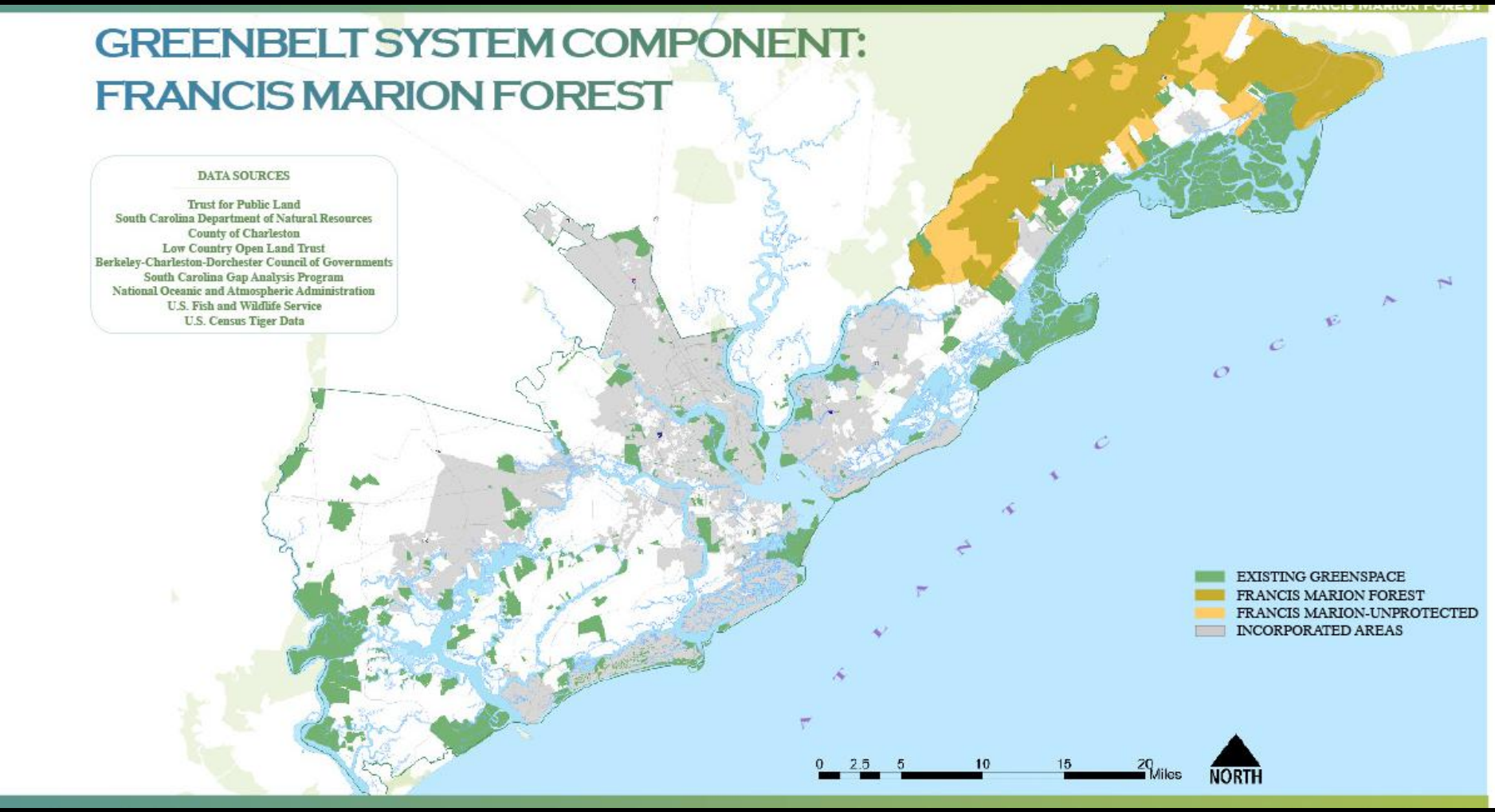
Visioning Process: Developing a Concept Map

From a Broad Vision to Specific Recommendations

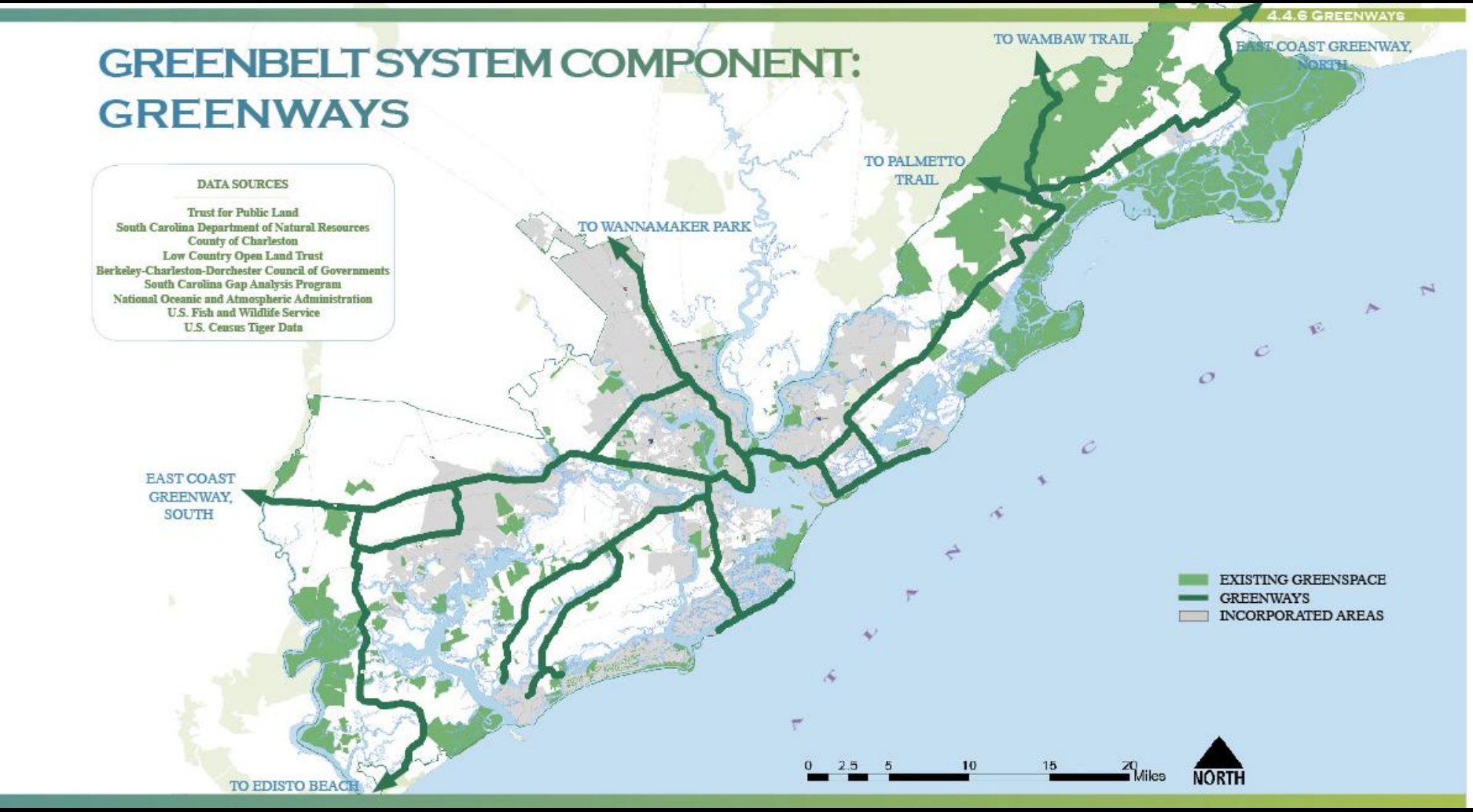
Developing Recommendations: Case Studies

Developing Recommendations: Case Study: *Charleston County, SC*

Developing Recommendations: Case Studies

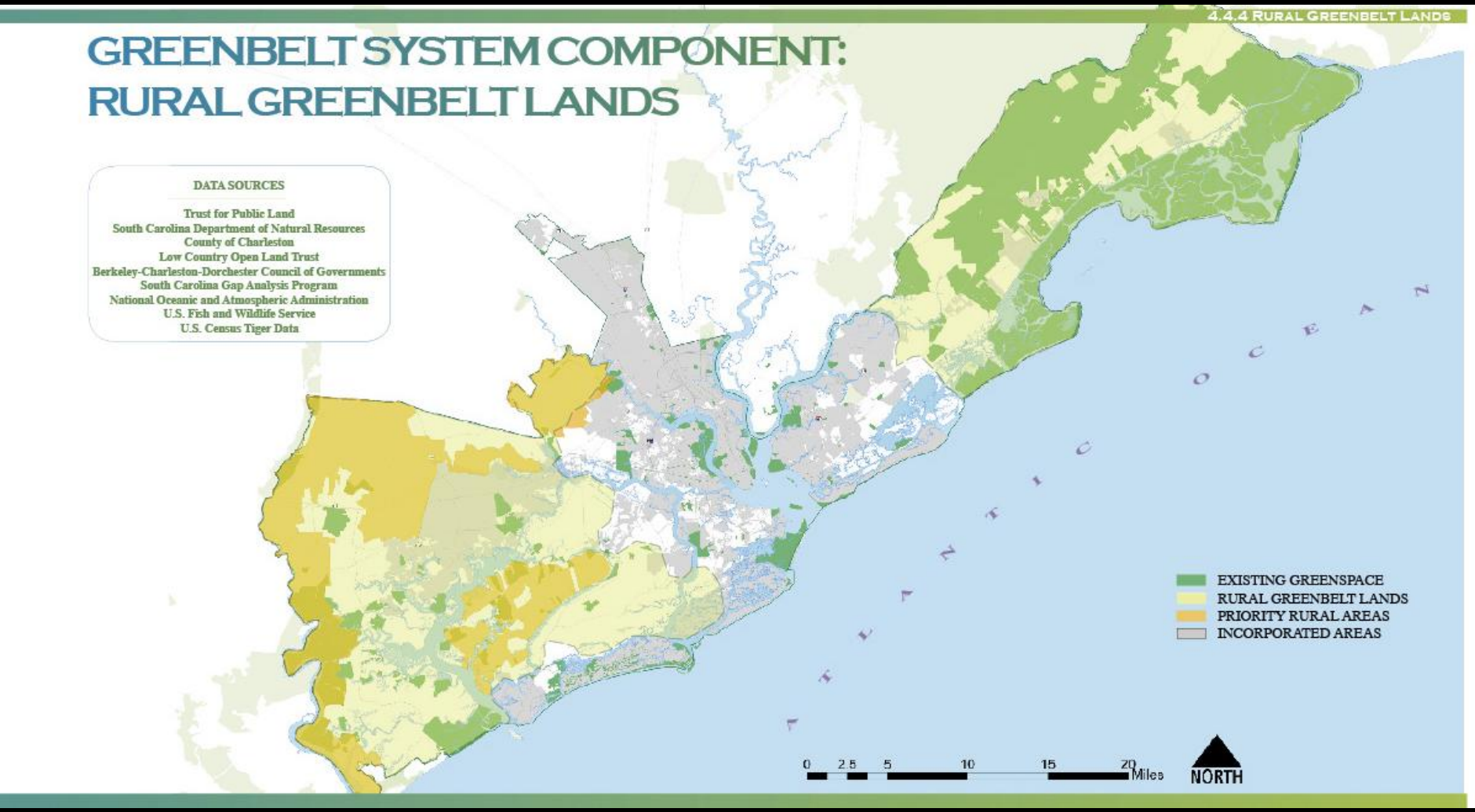


Developing Recommendations: Case Studies

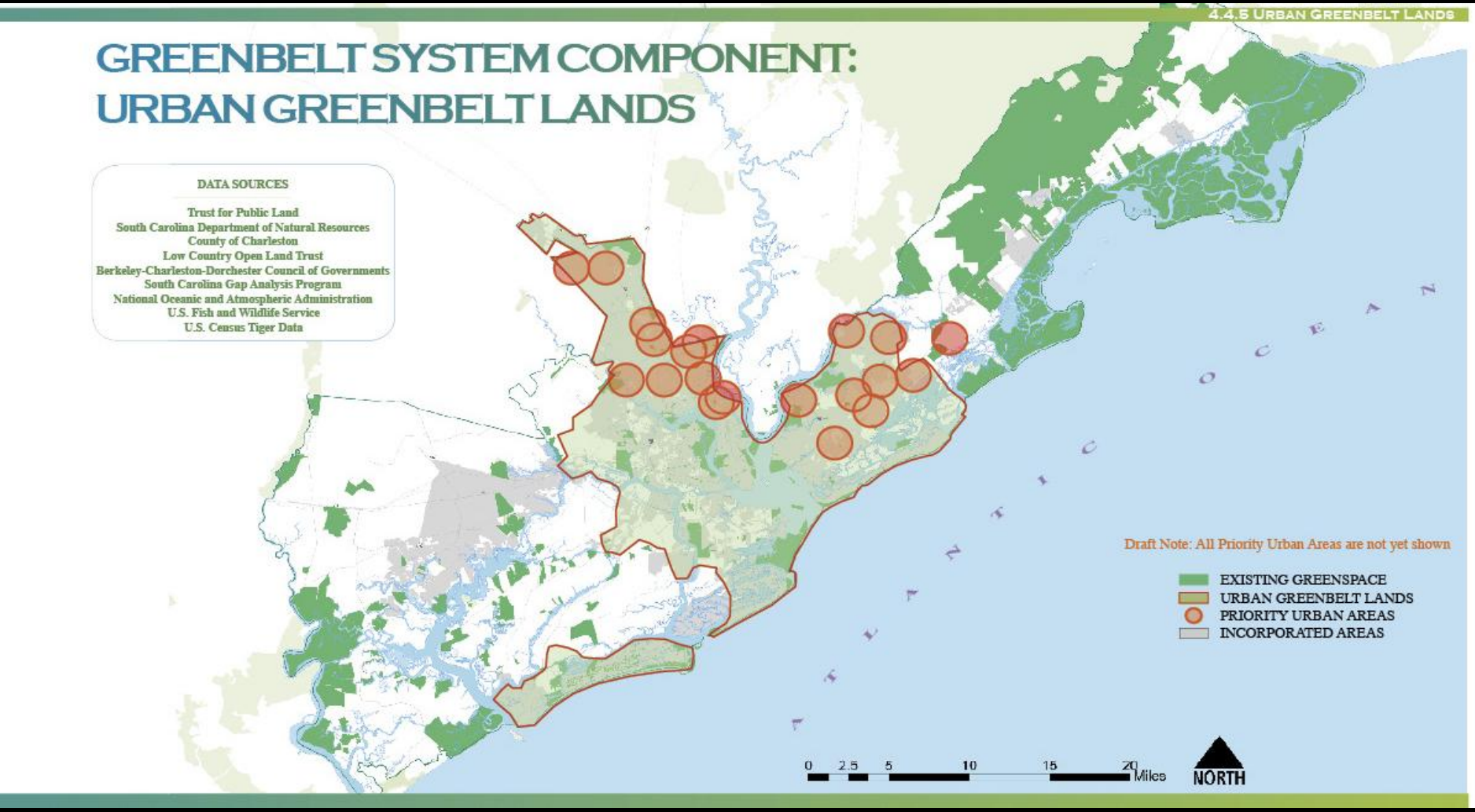


Developing Recommendations: Case Studies

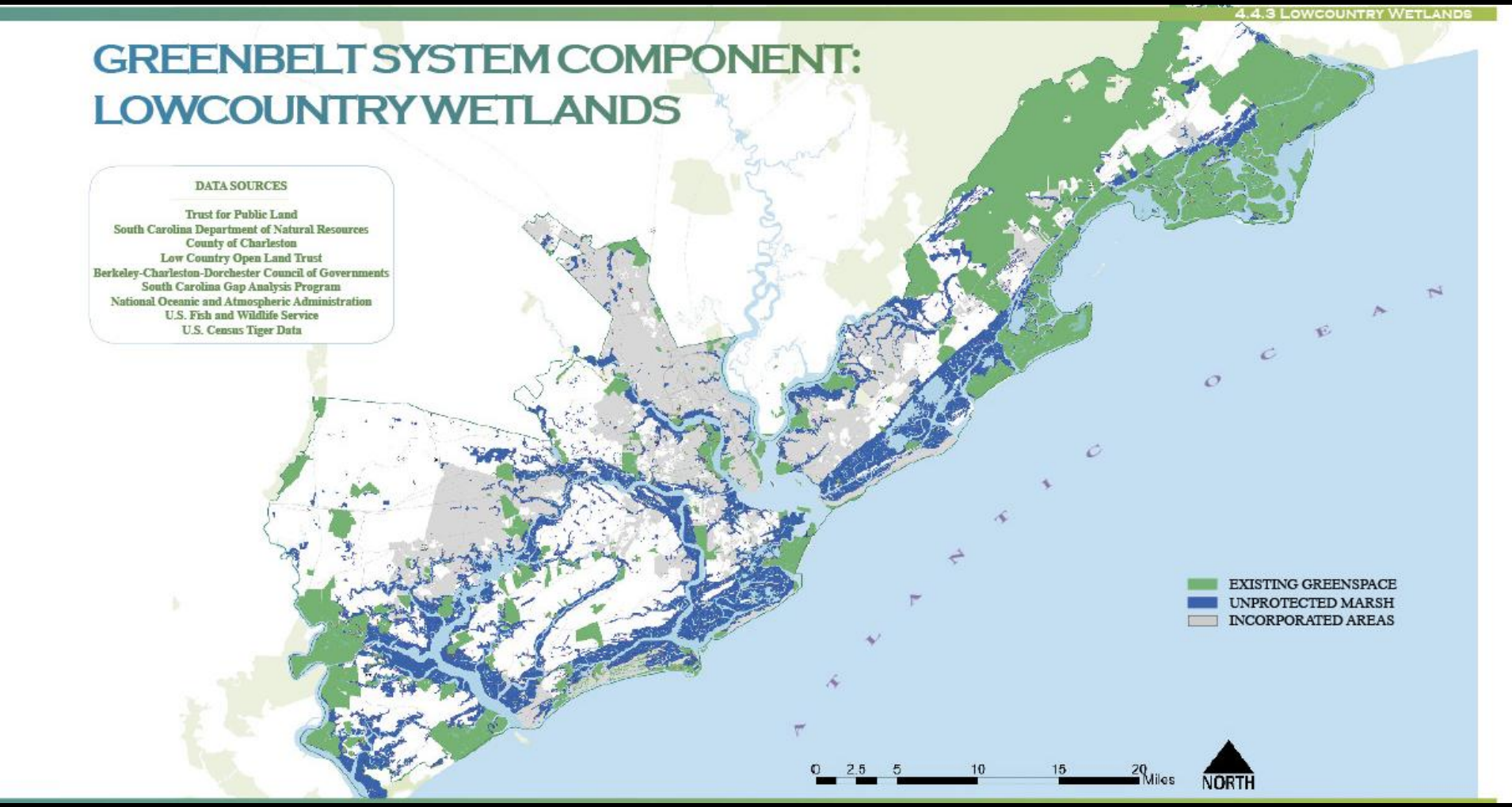
Developing Recommendations: Case Studies



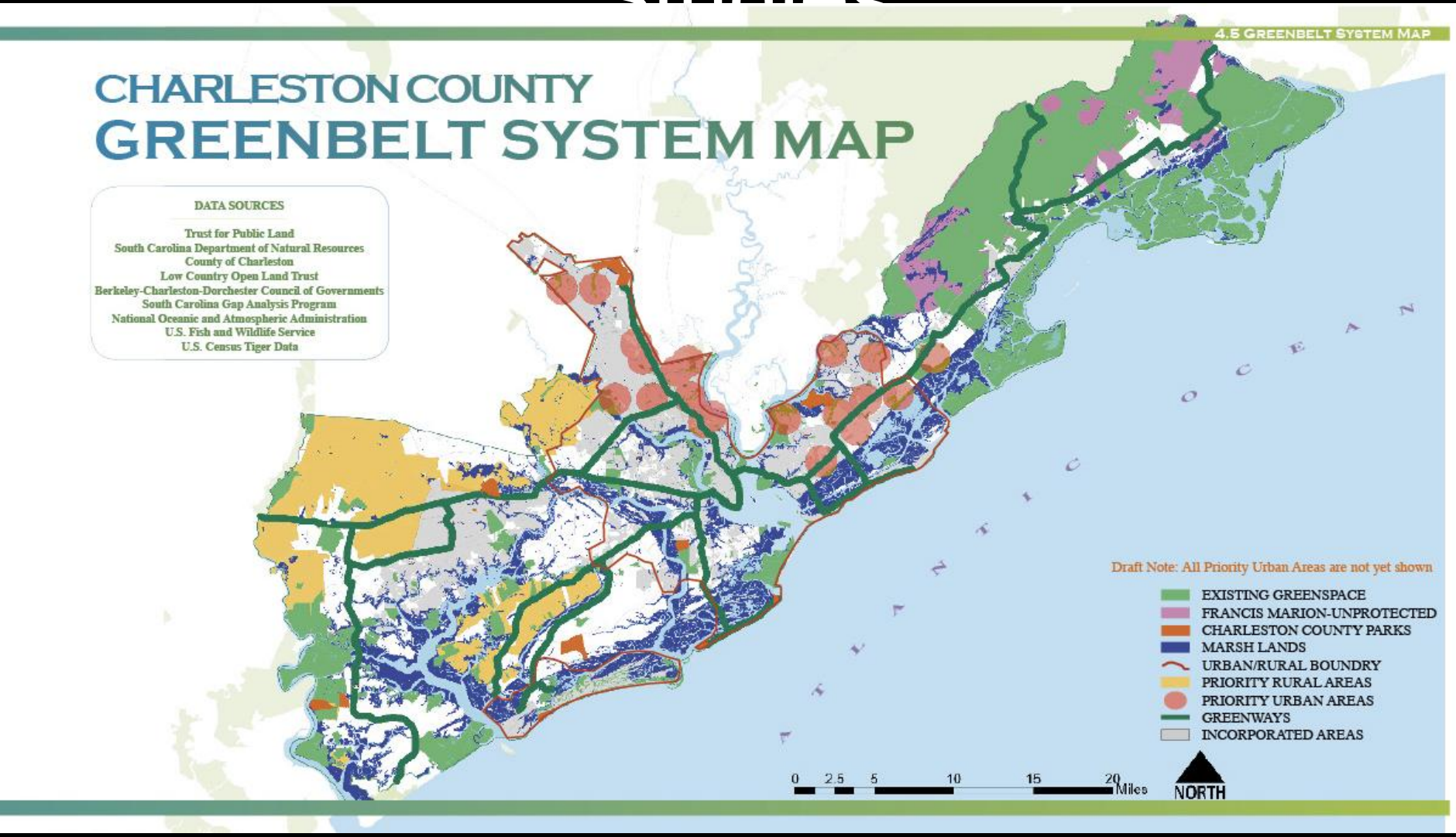
Developing Recommendations: Case Studies



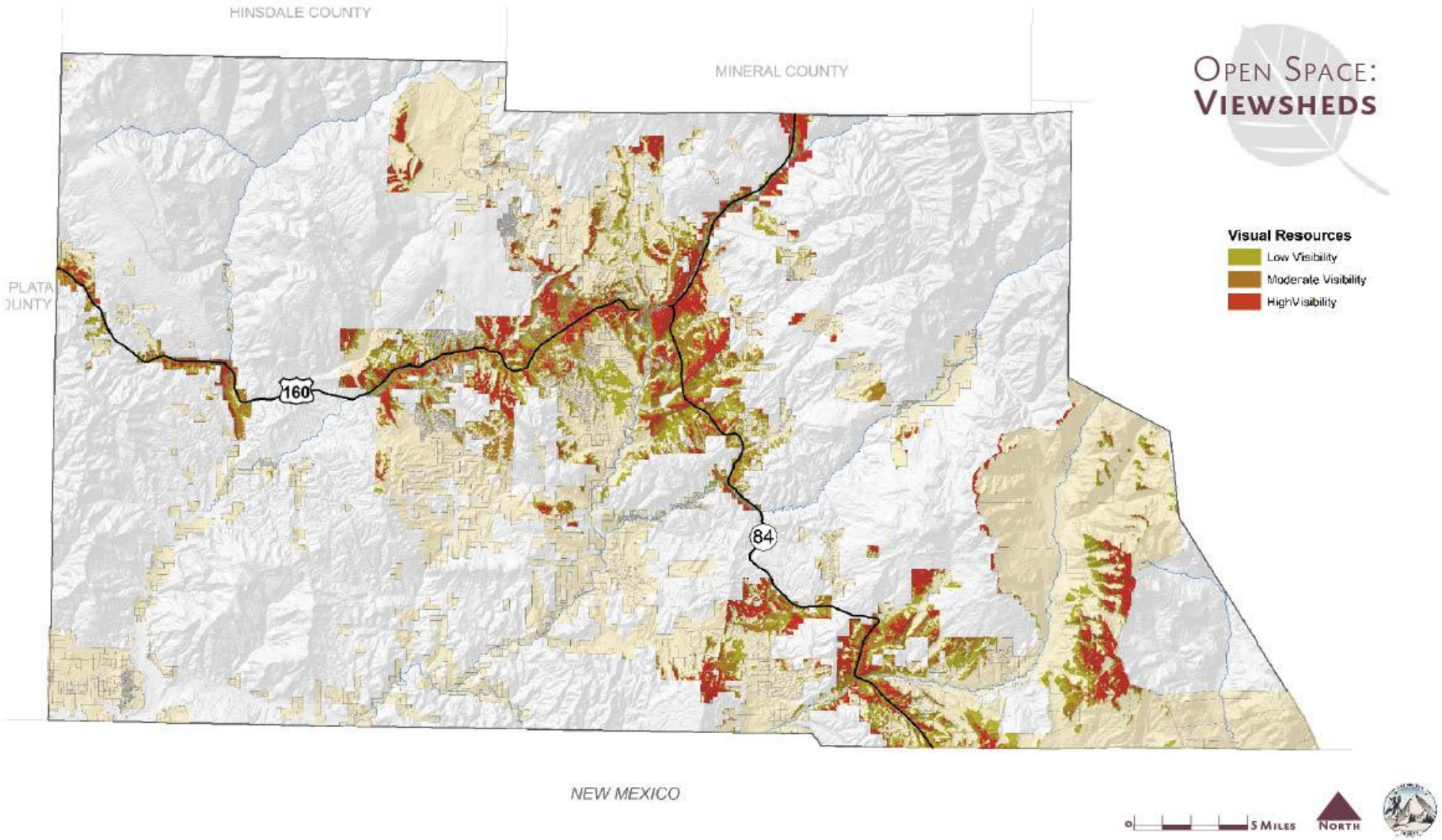
Developing Recommendations: Case Studies



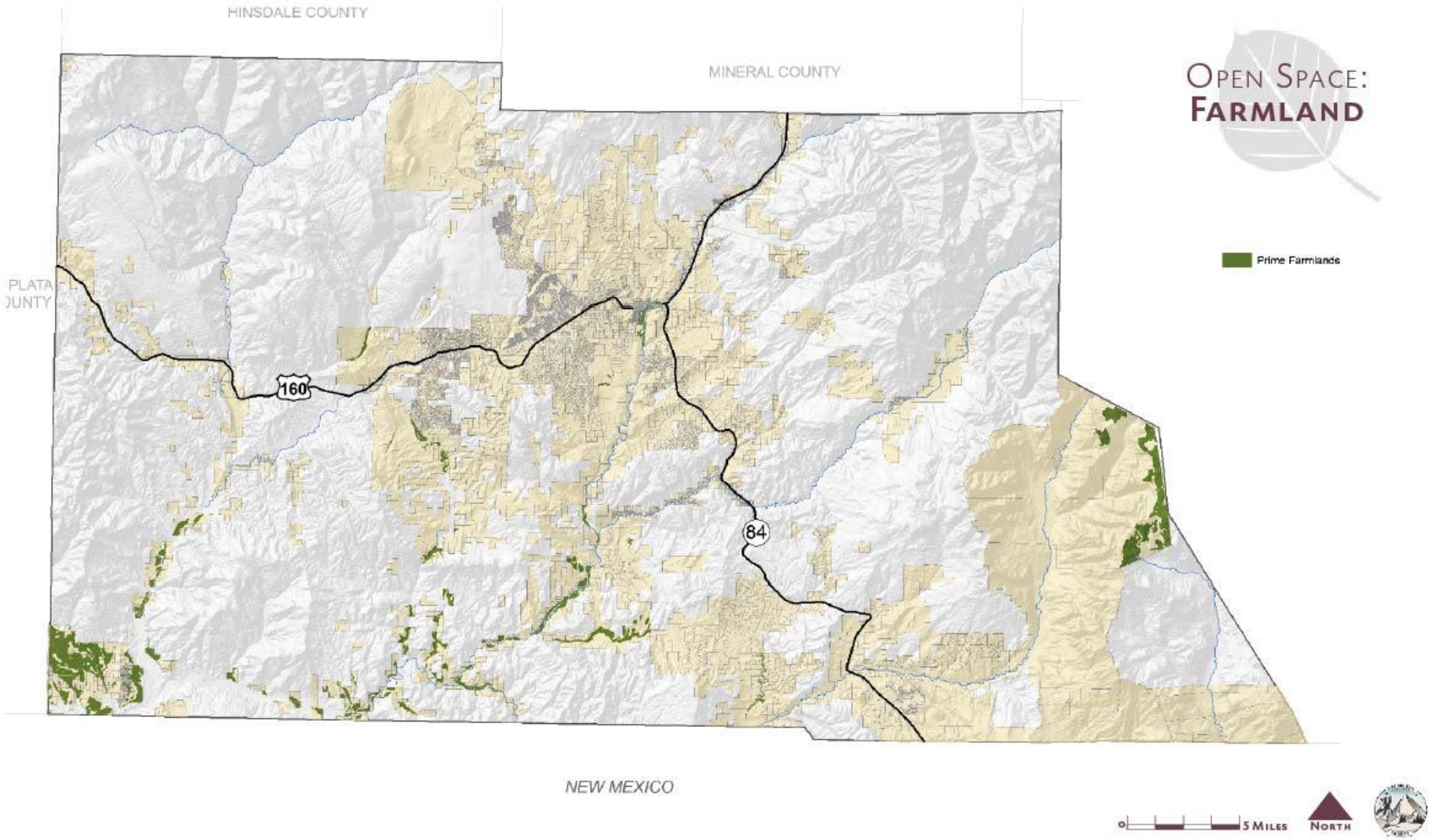
Developing Recommendations: Case Studies

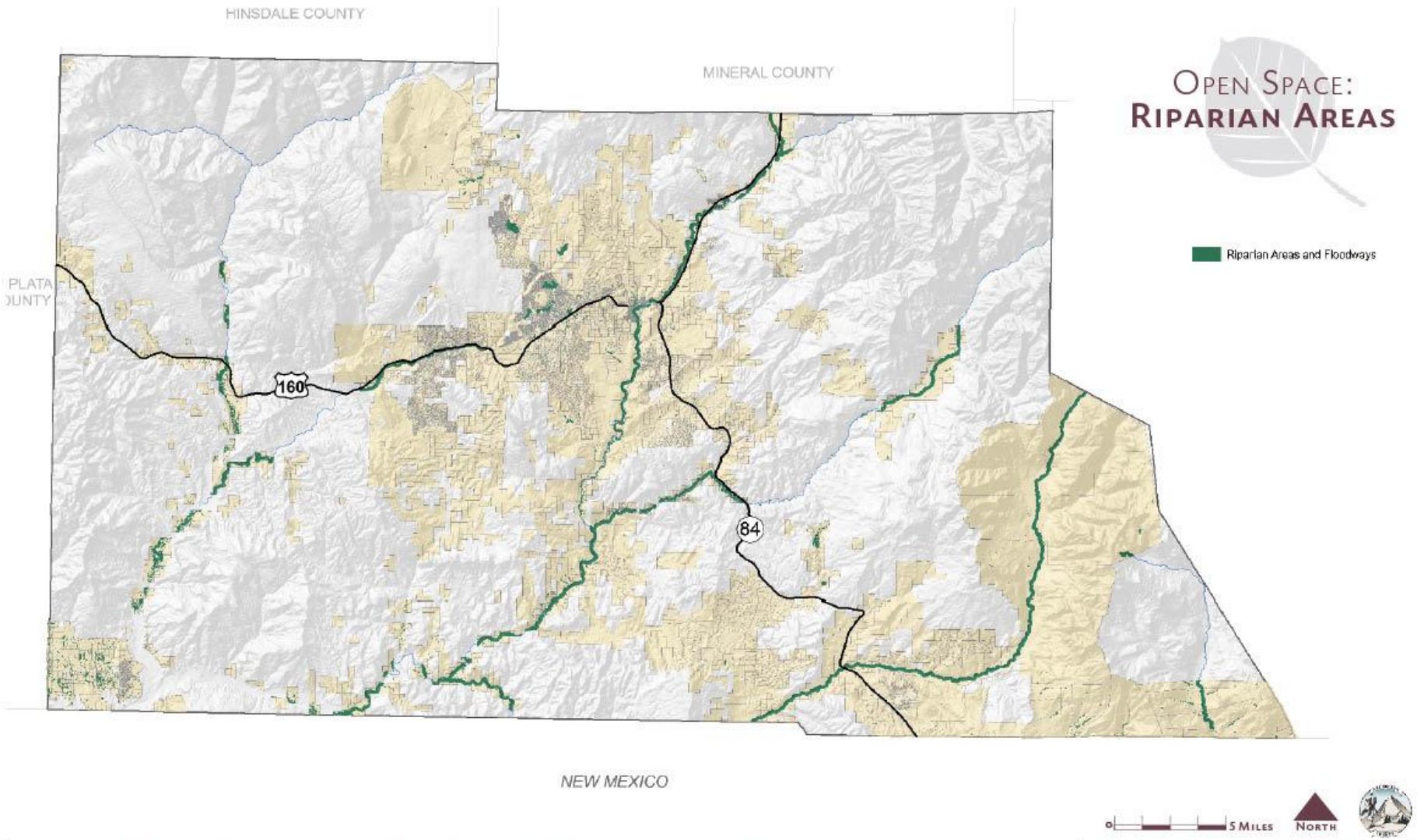


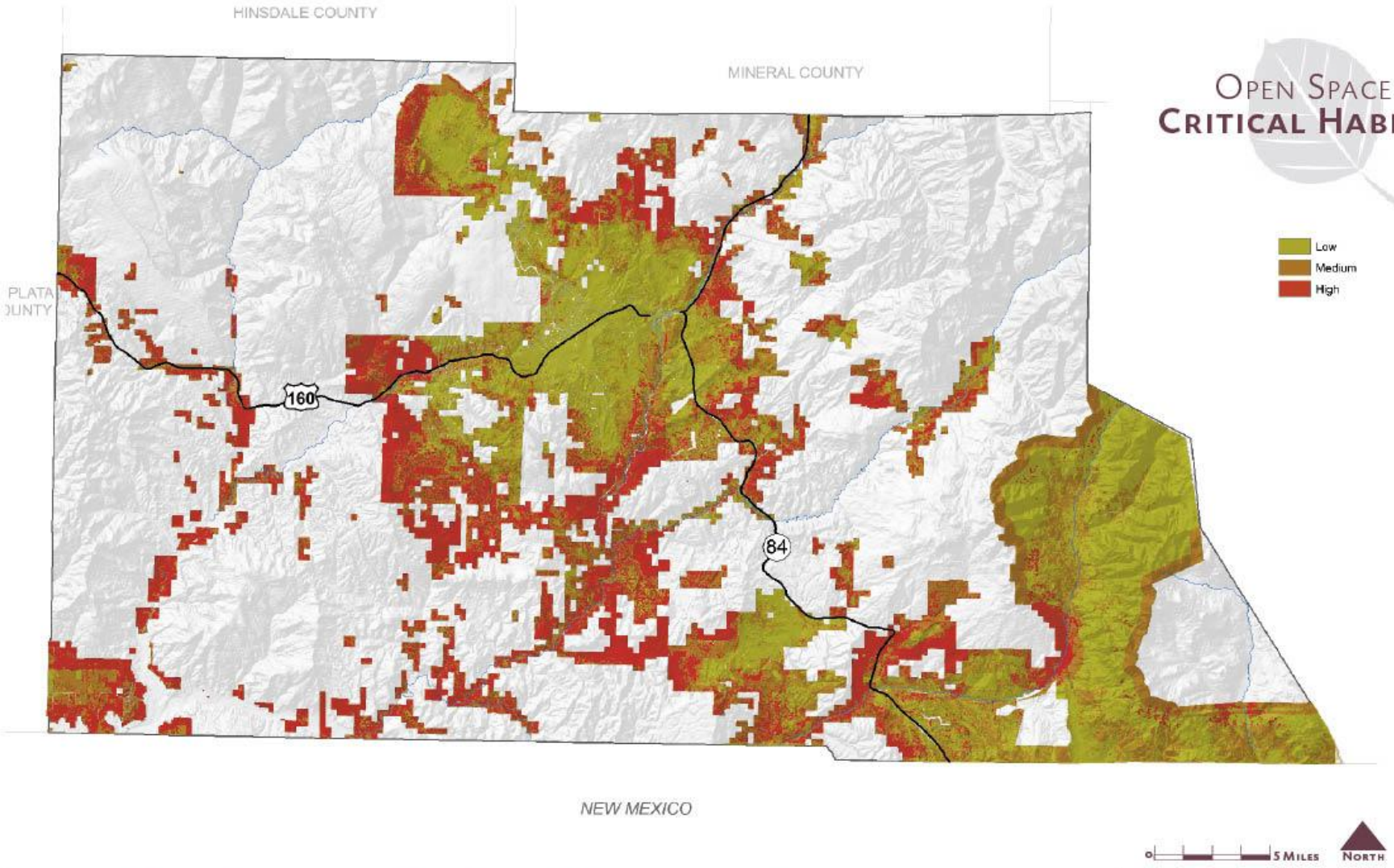
Developing Recommendations: Case Study:
Archuleta County, Colorado



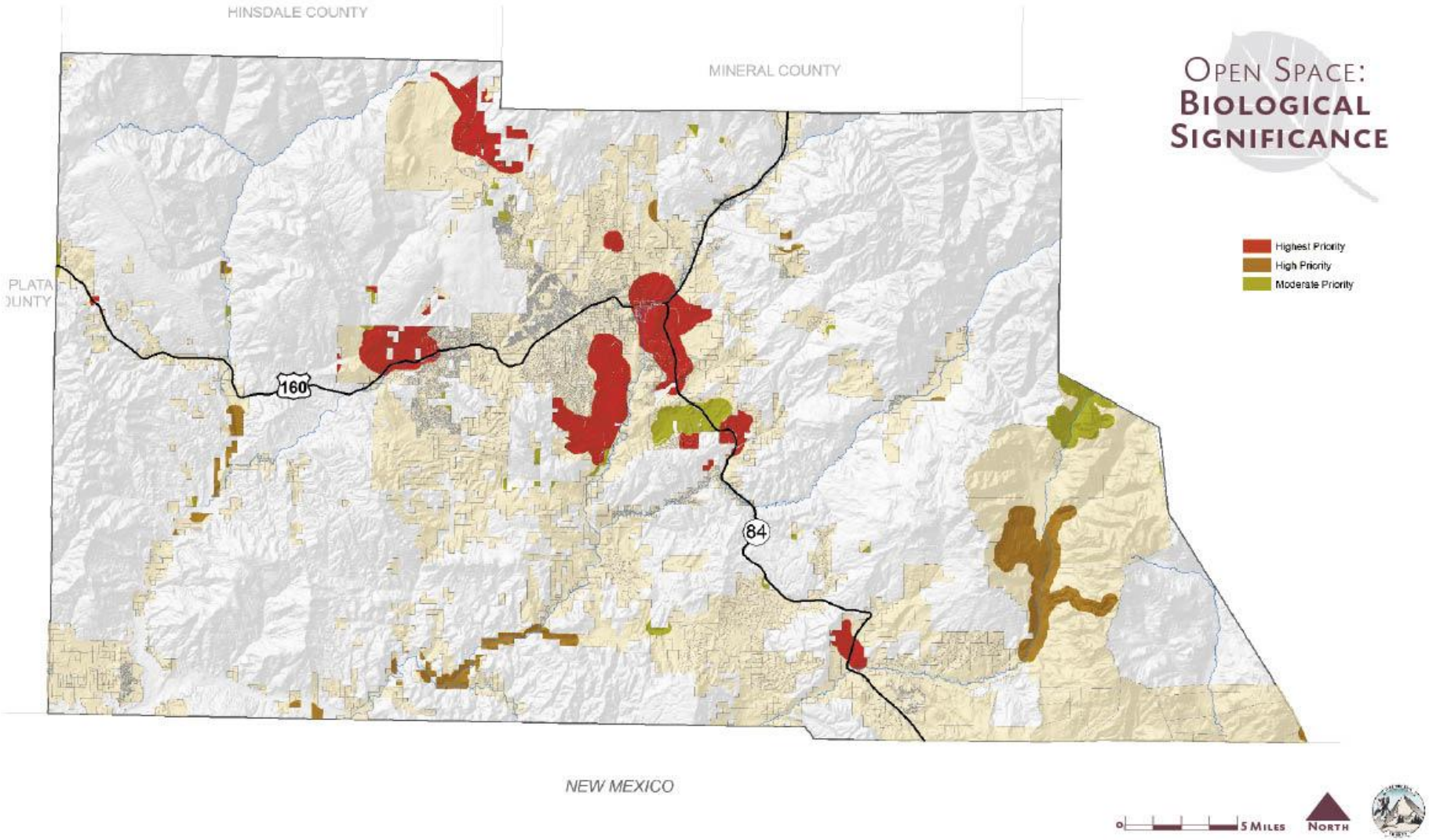
OPEN SPACE: VIEWSHEDS

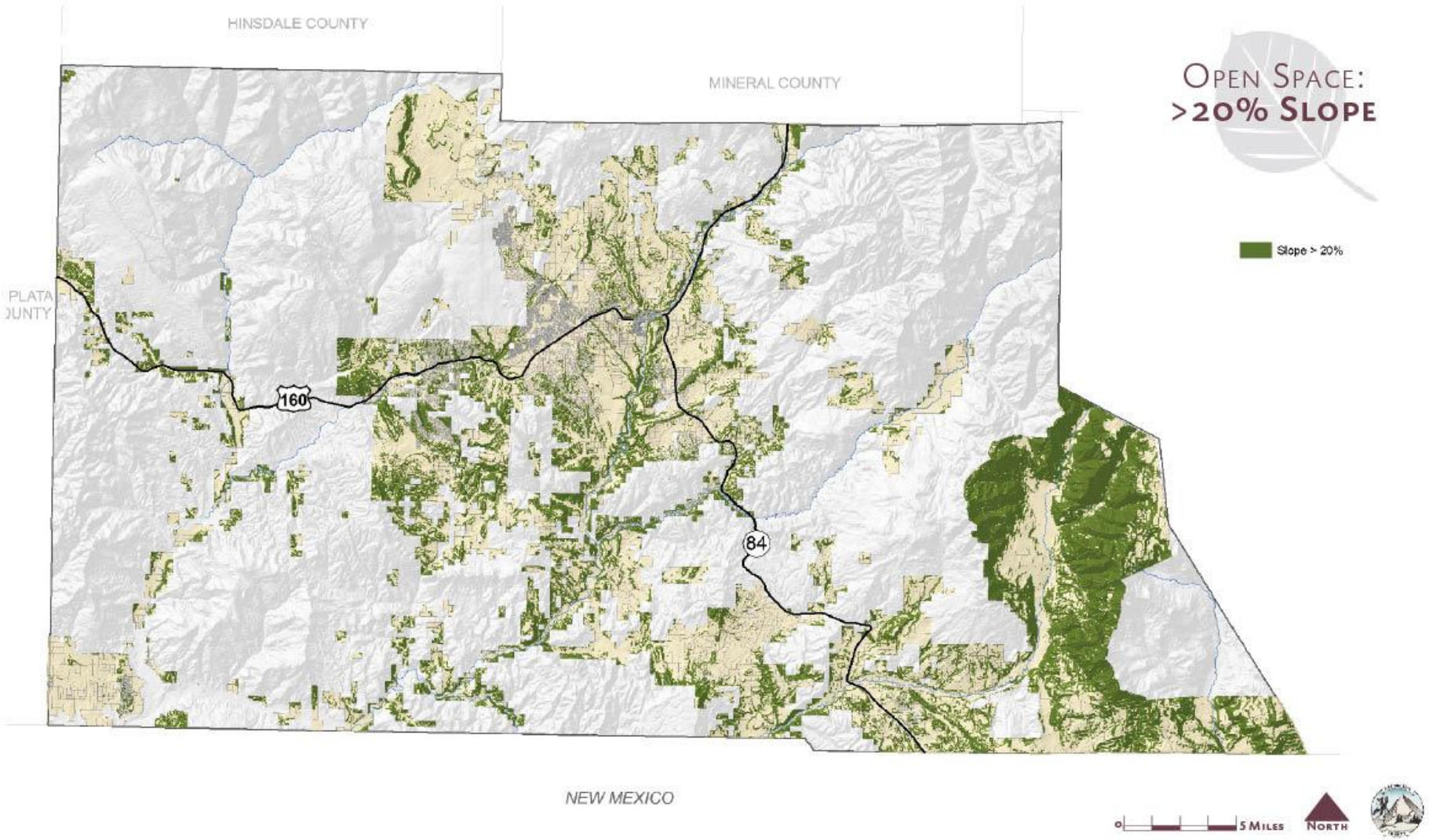

HINSDALE COUNTY
MINERAL COUNTY
PLATA
UNTY
160
84
NEW MEXICO
OPEN SPACE:
FARMLAND
Prime Farmlands
0
5 MILES
NORTH

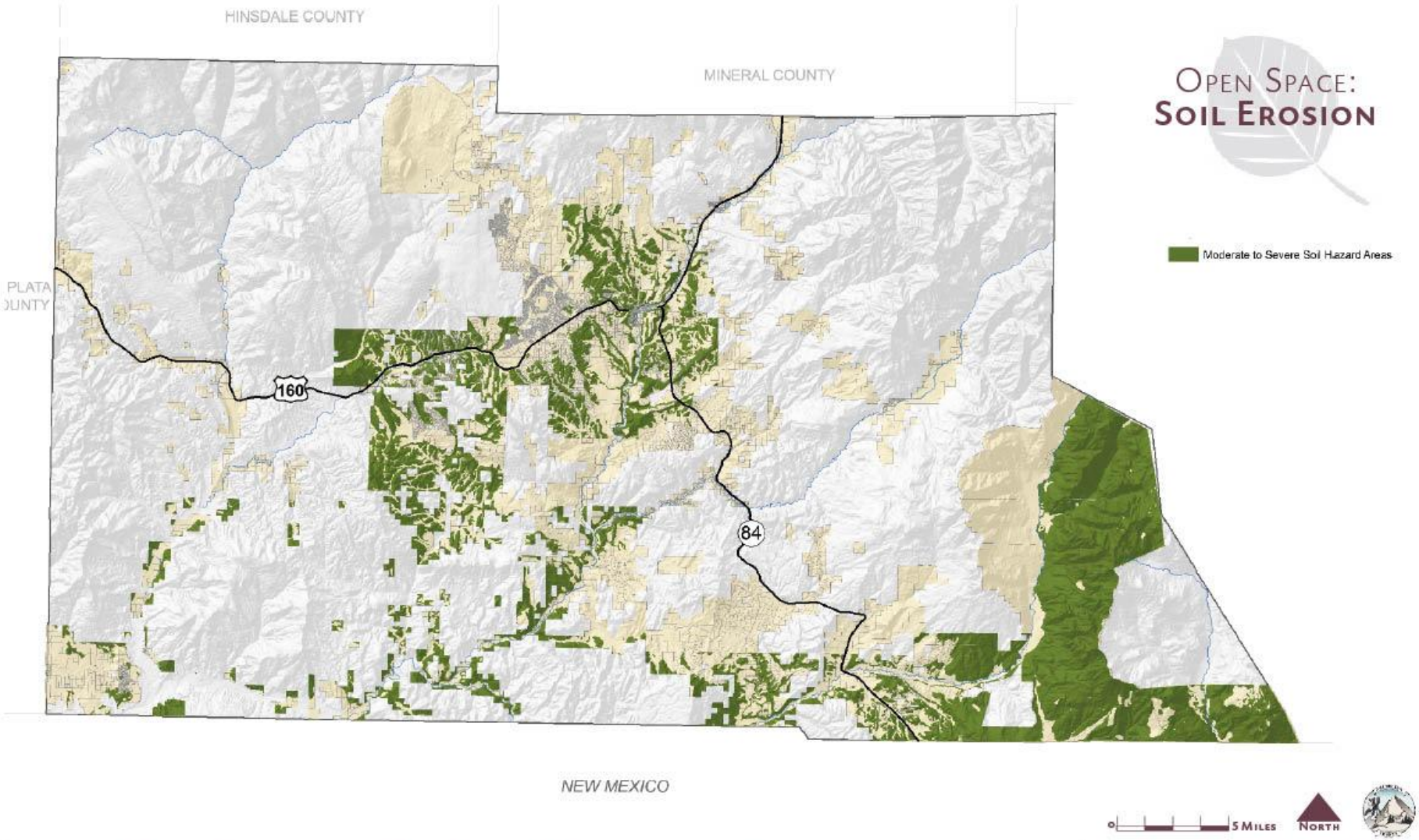

HINSDALE COUNTY
MINERAL COUNTY
PLATA
UNTY
160
84
NEW MEXICO
OPEN SPACE:
RIPARIAN AREAS
Riparian Areas and Floodways
0
5 MILES
NORTH

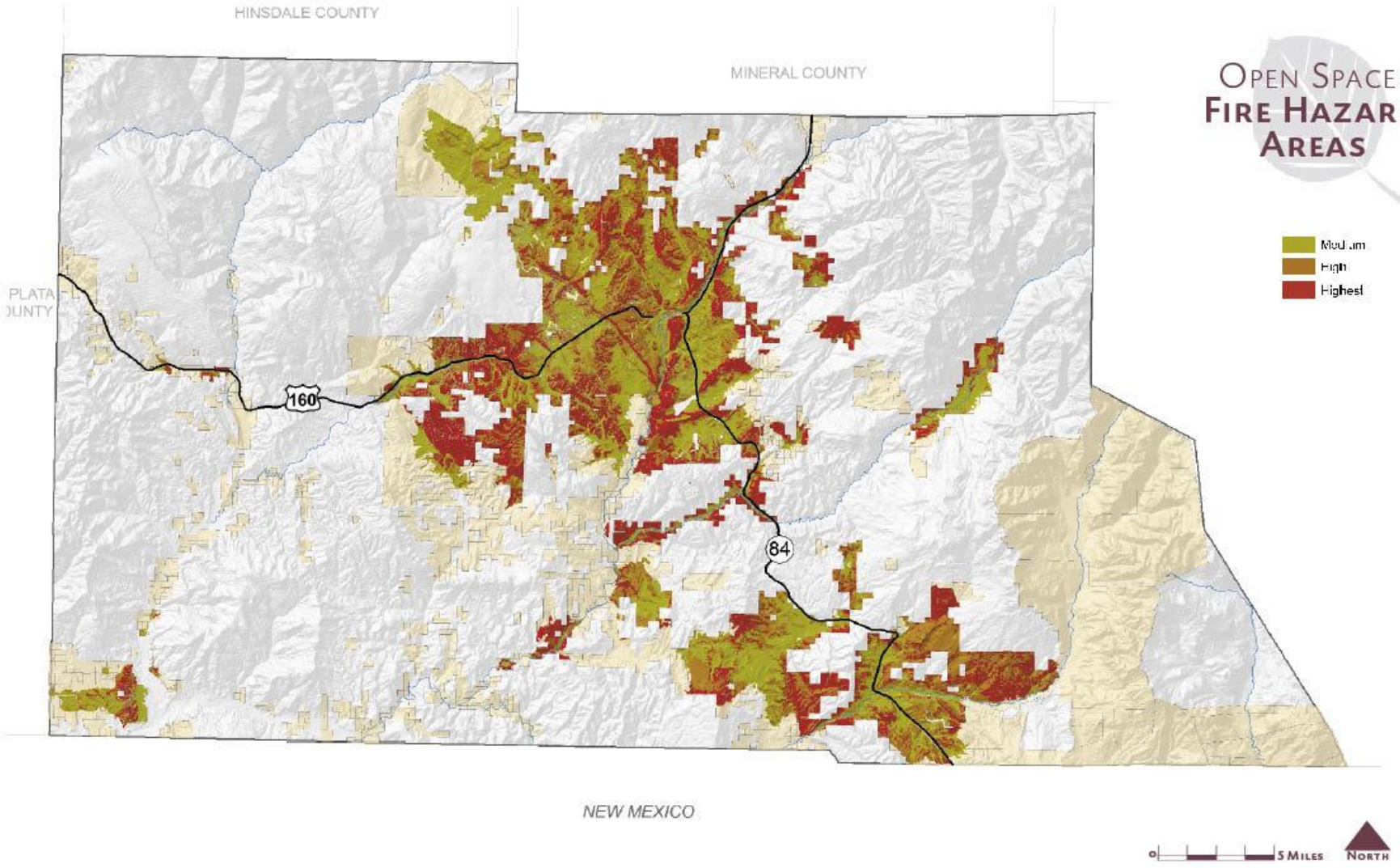


OPEN SPACE: CRITICAL HABITAT

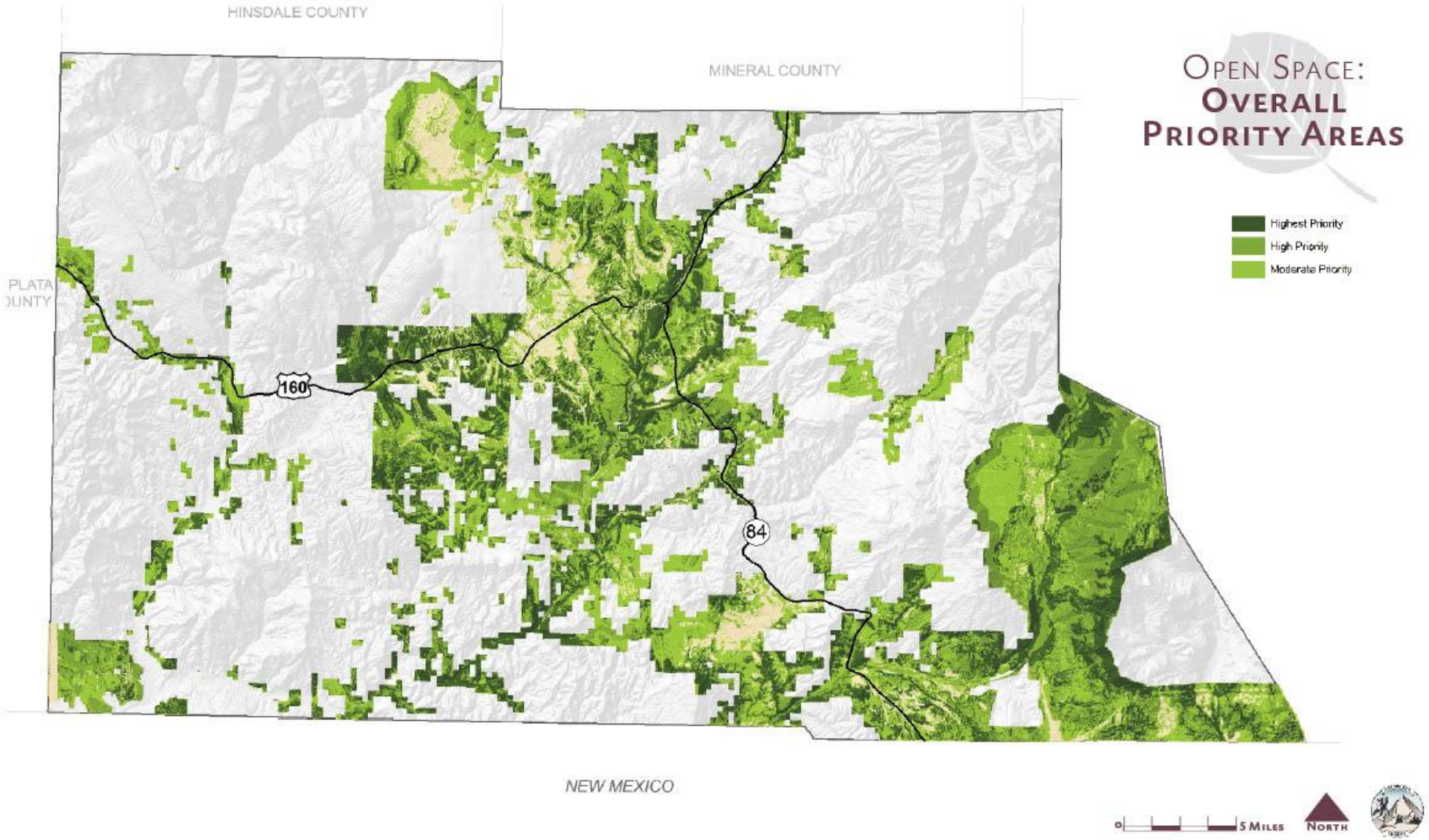

HINSDALE COUNTY
MINERAL COUNTY
PLATA
UNTY
160
84
NEW MEXICO
OPEN SPACE:
BIOLOGICAL
SIGNIFICANCE
Highest Priority
High Priority
Moderate Priority
0
5 MILES
NORTH


HINSDALE COUNTY
MINERAL COUNTY
PLATA
UNTY
160
84
NEW MEXICO
OPEN SPACE:
>20% SLOPE
Slope > 20%
0
5 MILES
NORTH


HINSDALE COUNTY
MINERAL COUNTY
PLATA
OUNTY
160
84
NEW MEXICO
OPEN SPACE:
SOIL EROSION
Moderate to Severe Soil Hazard Areas
0
5 MILES
NORTH

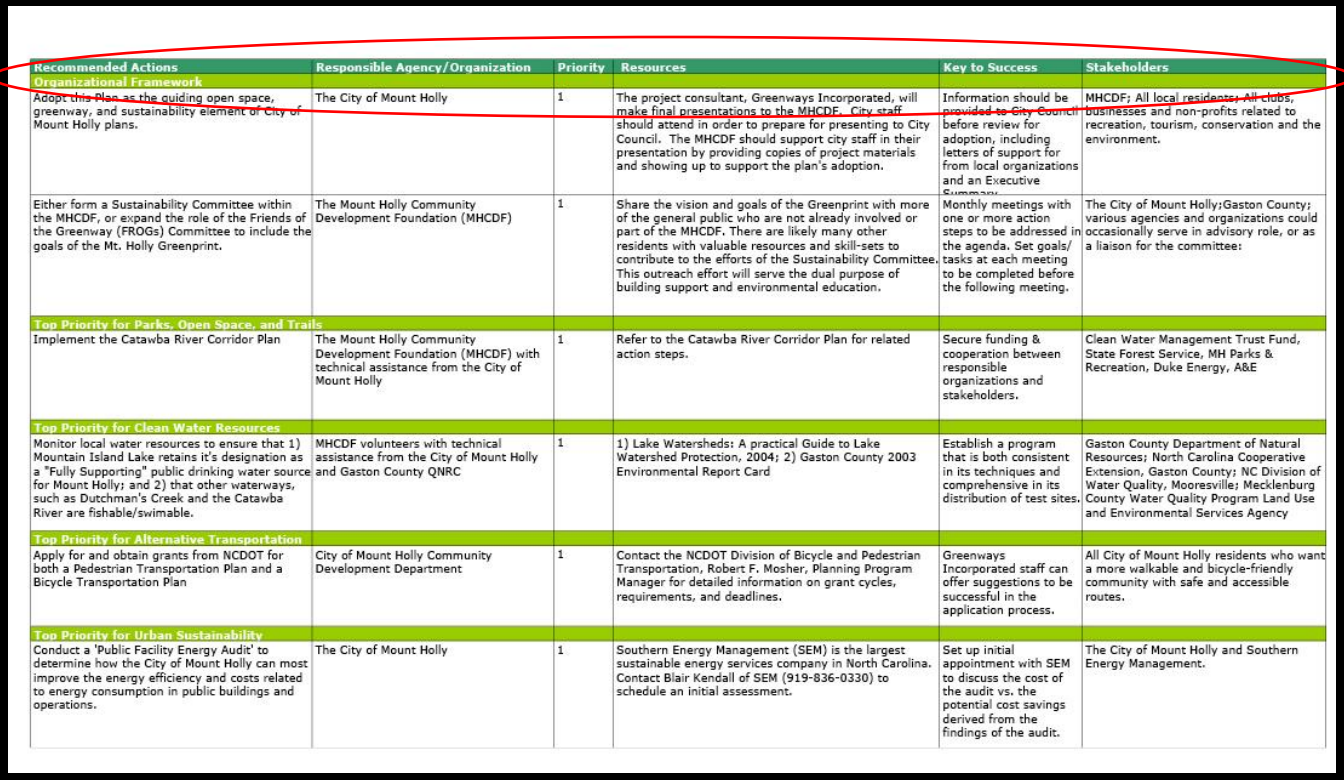


OPEN SPACE: FIRE HAZARD AREAS


HINSDALE COUNTY
MINERAL COUNTY
PLATA
UNTY
160
84
NEW MEXICO
OPEN SPACE:
OVERALL
PRIORITY AREAS
Highest Priority
High Priority
Moderate Priority
0
5 MILES
NORTH

From Recommendations to Implementation

Greenprint Action Steps



Recommended Actions	Responsible Agency/Organization	Priority	Resources	Key to Success	Stakeholders
Organizational Framework					
Adopt this Plan as the guiding open space, greenway, and sustainability element of City of Mount Holly plans.	The City of Mount Holly	1	The project consultant, Greenways Incorporated, will make final presentations to the MHCDF. City staff should attend in order to prepare for presenting to City Council. The MHCDF should support city staff in their presentation by providing copies of project materials and showing up to support the plan's adoption.	Information should be provided to City Council before review for adoption, including letters of support for from local organizations and an Executive Summary.	MHCDF; All local residents; All clubs, businesses and non-profits related to recreation, tourism, conservation and the environment.
Either form a Sustainability Committee within the MHCDF, or expand the role of the Friends of the Greenway (FROGs) Committee to include the goals of the Mt. Holly Greenprint.	The Mount Holly Community Development Foundation (MHCDF)	1	Share the vision and goals of the Greenprint with more of the general public who are not already involved or part of the MHCDF. There are likely many other residents with valuable resources and skill-sets to contribute to the efforts of the Sustainability Committee. This outreach effort will serve the dual purpose of building support and environmental education.	Monthly meetings with one or more action steps to be addressed in the agenda. Set goals/ tasks at each meeting to be completed before the following meeting.	The City of Mount Holly;Gaston County; various agencies and organizations could occasionally serve in advisory role, or as a liaison for the committee:
Top Priority for Parks, Open Space, and Trails					
Implement the Catawba River Corridor Plan	The Mount Holly Community Development Foundation (MHCDF) with technical assistance from the City of Mount Holly	1	Refer to the Catawba River Corridor Plan for related action steps.	Secure funding & cooperation between responsible organizations and stakeholders.	Clean Water Management Trust Fund, State Forest Service, MH Parks & Recreation, Duke Energy, A&E
Top Priority for Clean Water Resources					
Monitor local water resources to ensure that 1) Mountain Island Lake retains it's designation as a "Fully Supporting" public drinking water source for Mount Holly; and 2) that other waterways, such as Dutchman's Creek and the Catawba River are fishable/swimable.	MHCDF volunteers with technical assistance from the City of Mount Holly and Gaston County QNRC	1	1) Lake Watersheds: A practical Guide to Lake Watershed Protection, 2004; 2) Gaston County 2003 Environmental Report Card	Establish a program that is both consistent in its techniques and comprehensive in its distribution of test sites.	Gaston County Department of Natural Resources; North Carolina Cooperative Extension, Gaston County; NC Division of Water Quality, Mooresville; Mecklenburg County Water Quality Program Land Use and Environmental Services Agency
Top Priority for Alternative Transportation					
Apply for and obtain grants from NCDOT for both a Pedestrian Transportation Plan and a Bicycle Transportation Plan	City of Mount Holly Community Development Department	1	Contact the NCDOT Division of Bicycle and Pedestrian Transportation, Robert F. Mosher, Planning Program Manager for detailed information on grant cycles, requirements, and deadlines.	Greenways Incorporated staff can offer suggestions to be successful in the application process.	All City of Mount Holly residents who want a more walkable and bicycle-friendly community with safe and accessible routes.
Top Priority for Urban Sustainability					
Conduct a 'Public Facility Energy Audit' to determine how the City of Mount Holly can most improve the energy efficiency and costs related to energy consumption in public buildings and operations.	The City of Mount Holly	1	Southern Energy Management (SEM) is the largest sustainable energy services company in North Carolina. Contact Blair Kendall of SEM (919-836-0330) to schedule an initial assessment.	Set up initial appointment with SEM to discuss the cost of the audit vs. the potential cost savings derived from the findings of the audit.	The City of Mount Holly and Southern Energy Management.

Columns:

- ***Recommended Action***
- ***Responsible Agency***
- ***Priority Ranking***
- ***Resources***
- ***Stakeholders***
- ***Key to Success***

The Conservation Toolbox

APPENDIX C: TOOLBOX

This toolbox has been created to provide Archuleta County and the Town of Pagosa Springs with a quick reference of land conservation strategies. Many of the tools defined can be used in combination, or separately to conserve greenspace throughout the County. This toolbox is divided into several distinct sections: regulatory, acquisition, land donation and management strategies. For each strategy, advantages and disadvantages of each is listed to help define the most appropriate strategy for a given opportunity.

REGULATORY MECHANISMS

There are inherent disadvantages to preserving greenspace through regulatory mechanisms. First, regulations normally apply when the land development process begins. The adverse impacts of land clearing, road building and other development activities (including fragmenting of habitat) often result in resource loss, essentially making greenspace 'protection through regulation' an after the fact exercise. Another disadvantage is that regulations are subject to change. Just as a governing body can adopt stricter regulations, a future governing body could relax or not enforce those rules. The following is a listing of regulatory strategies that have been used throughout the United States to conserve greenspace.

DESCRIPTION OF STRATEGY	BENEFITS	DRAWBACKS
Development Impact Fee: Impact fees are also known as exactions. In its simplest form, the developer is charged an easy to calculate fee. A formula may be created to decide the cost that development will impose on the community. The formula can account for the area of land affected, the number of units built, the expected market value of those units, the distance from the fire and police stations, costs of building roads, and the expected population growth resulting from the construction. The exaction can come in forms other than money. The developer can be required to provide streets, sewers, street lights, parks, or other infrastructure or amenities. The developer might also be required not to develop some portion of the land. In some cases, builders of expensive homes have been required to build some proportional number of low cost homes. The town or county can develop a comprehensive system or formula or exactions can be formulated on a case by case basis from more general criteria.	A "pay-as-you-grow" program that really has been proven to help cities keep pace with rapid land development. A particularly useful tool for Archuleta County, due to its fast pace of growth and rate of change.	Can be difficult to implement, as it must meet Supreme Court rulings on "essential nexus," fair and equitable implementation. Politically challenging because impact fees are generally not favored by the development community.
Transfer of Development Rights: In some cases, a local government may want to steer development toward areas where it is more appropriate and easier to serve. Generally, the intent is to steer development away from rural areas, agricultural preservation zones, and environmentally sensitive areas and guide it towards existing cities and towns. Transferable Development Rights (TDR) programs are one way to do that. In a voluntary TDR program, the county would designate certain parts of its territory as "sending zones" and other areas as "receiving zones." " Landowners in the sending zones can sell their rights to develop houses or commercial uses to other landowners in the receiving zones, or to a third party who will eventually buy land in the receiving zone. Or, landowners in the receiving zone can buy additional development rights from someone in the selling zone.	Potentially an effective growth management tool. Resources can be protected without huge capital expenditures. Large tracts of protected land can be created in "sending" areas. Model programs: Montgomery County, Maryland and City of Austin, TX. Local Example: Boulder County, Colorado; Boulder County Land Use Department	Complicated program to establish and administer. High administrative overhead; requires professional staff assigned to program. Landowner resistance to downzoning in "sending" or higher densities in "receiving" areas. An unproven technique. Requires state enabling legislation.
Right To Farm: Since the 1970s, all fifty states have enacted "Right to Farm" laws to help protect existing agricultural operations from suits brought by people who move nearby, then claim the neighboring farm is a nuisance. Common complaints revolve around odor, noise, dust, flies, application of agricultural chemicals and slow moving machinery. Most statutes have exemptions that do not protect farms and ranches that 1) begin operation after other neighboring land uses already exist; and/or 2) are out of compliance with local, state or federal regulations. Most statutes have not been challenged in court.	Good program for protecting farm land in rapidly growing communities. Encourages farmers to continue their operations and offers legal protection for these land uses.	Depends on farmers to continue their operations, so it is not a method for long term protection of this greenspace resource.

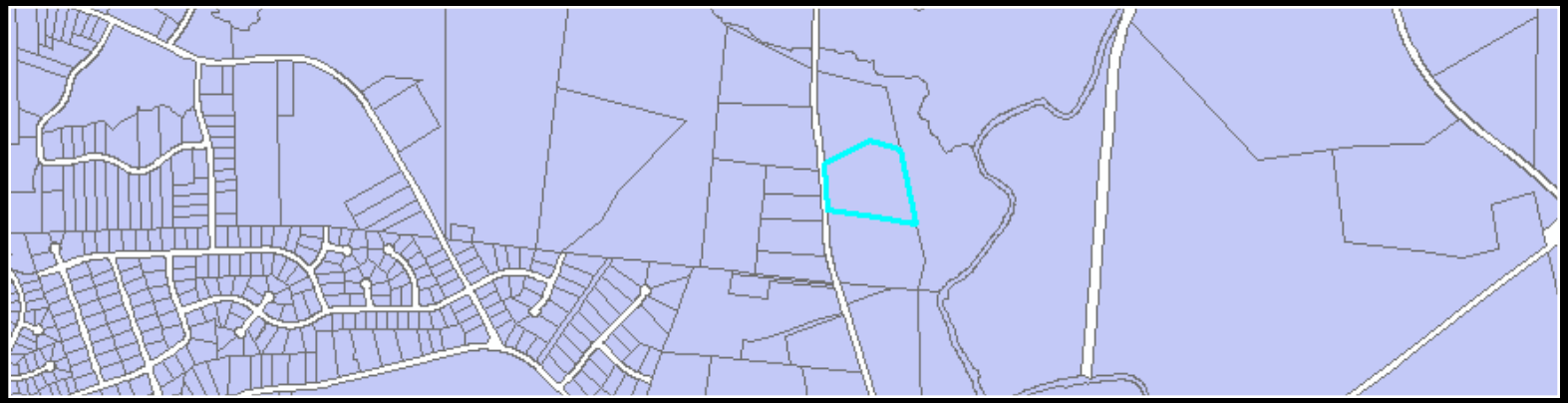
Strong Committees to Champion the Plan

Greenprinting in Davidson, NC

Greenprinting in Davidson, NC

- Early stages of inventory and analysis
- Collecting and analyzing GIS data
- Preparing to expand the depth of current data and metadata

Parcel Number	Developed	Ownership	Size (acres)	Slope > 20%	Natural Heritage Area	Forest Community	Riparian	Soil Erodiblity
0000000000001	N	John Smith	3.445	N	N	Bottomland Hardwoods	Y	High
0000000000002	N	James Turner	0.345	N	N	Mixed Hardwood/Pine	Y	Medium
0000000000003	Y	Developer LLC	0.29	N	N	Open Field	N	High
0000000000004	Y	Developer LLC	0.98	N	Y	Developed	N	Low
0000000000005	Y	Jim Hayes	2.1	N	Y	Pine	N	Low
0000000000006	N	Sarah Watts	12.56	N	N	Mixed Hardwood/Pine	N	Medium
0000000000007	Y	Matt Roland	1.22	N	N	Wetland Vegetation	N	High
0000000000008	N	Developer LLC	7.89	Y	N	Open Field	Y	High
0000000000009	N	Town of Davidson	9.91	N	N	Bottomland Hardwoods	N	Medium
0000000000010	N	Mecklenburg Co.	35.67	N	Y	Pine	Y	High
0000000000011	N	Developer LLC	0.12	N	Y	Water	Y	Medium
0000000000012	N	Susan Mays	0.68	N	Y	Mixed Hardwood/Pine	N	Low
0000000000013	Y	Robert Smith	1.87	N	Y	Developed	N	Medium



Greenprinting in Davidson, NC

- Working with a steering committee that is developing their own open space criteria
- Preparing to start to ‘groundtruthing’ the data

Greenprinting in Davidson, NC

- Adding integrity to environmental analysis of proposed developments
- Looking at the parcel level to better understand what areas need to be protected, using predetermined criteria

Questions and Comments