

Appendix 10-A
Northern Beaufort County
Greenway and Blueway Master Plan

October 2002



Introduction

PROJECT GOALS

In its Comprehensive Plan, Beaufort County recognizes the need to protect historic resources, provide public recreational facilities and parkland, provide alternative transportation, and preserve open space. The proposed Northern Beaufort County Greenway and Blueway System will help Beaufort County in its quest to achieve all of these goals.

The Comprehensive Plan defines greenways as natural areas that often follow linear landscape features such as rivers, streams, highlands, and even abandoned railroads. Greenways can be publicly or privately owned, and may be open or closed to public use ... Greenways are usually linear strips running through urban, suburban, and rural areas that protect water quality, floodplains, wetlands, wildlife habitat, scenic vistas, historic and cultural resources, and recreational uses ... Greenways can link communities, parks, and other large natural areas. Some greenways have trails which are protected pathways for recreation and transportation. Trails within greenways may enable people to be within walking distance of pleasant natural areas; to walk, bicycle, or ride a horse away from noisy, dangerous roads; and to travel without cars to schools, community centers, shopping centers, stores and parks."

Beaufort County has begun taking steps towards establishing a greenway network through preservation of historical and natural areas. Hundreds of acres of sensitive land have been protected through the Rural and Critical Land Preservation Ordinance, the Wetland Buffer standards, conservation easements on private lands, and through the Beaufort County Open Land Trust. Bluffton, in southern Beaufort County, has begun working with the South Carolina Department of Natural Resources to develop wildlife corridors and open space greenways. There is a proposal to add River Protection Overlay Districts to the Zoning and Development Standards Ordinance, which would place an additional level of protection on these sensitive lands.

The Northern Beaufort Greenway and Blueway Master Plan focuses on the recreation and alternative transportation components of a greenway system. The goals of the plan are to:

- Provide a safe alternative to traveling with motor vehicles, thus reducing traffic congestion on roadways and reducing air pollution
- Provide connections to cultural and natural resources for residents, tourists and visitors
- Link communities with commercial areas and community resources, such as schools and shopping centers.
- Provide access to open space and recreational opportunities.

Additionally, through the Comprehensive Plan and public workshops numerous historically relevant sites in Northern Beaufort County have been identified. The greenway and blueway system helps to preserve and protect these historic resources by:

- Identifying these resources as sites that should be prioritized for protection because of their historical significance.
- Raising the community's awareness of the significance of these resources by linking them to the Greenway and Blueway system.

Northern Beaufort County is a region endowed with cultural richness and natural beauty. The Northern Beaufort Greenway and Blueway Master Plan is an important step towards protecting these assets, and minimizing the impacts of increased development and tourism, while providing safe routes for alternative transportation and recreation.

PROCESS AND APPROACH

To achieve the goals listed above required extensive public input, data collection, site visits and examination of existing master plans in the various communities. Following is a summary of the Northern Beaufort County Greenway Master Plan process.

Phase I: Pre-Planning

- Task 1 - Kick Off Meeting December 6, 2001
A meeting was held with the Beaufort County Planning Department to establish the goals and objectives for the project.
- Task 2 - Data Collection Throughout Master Plan Process
Various sources of information were compiled to use in the planning of the Northern Beaufort County Greenway and Blueway Master Plan. These sources include: GIS information consisting of county boundaries, city boundaries, roadways, zoning areas, parcel information, wetland and waterways, aerial photography. Existing greenway and bike plans for the Lowcountry region, City of Beaufort, Town of Port Royal, Lady's Island, and St. Helena Island have also been collected. Other sources include the County, Comprehensive Plan, the County Manual for Stormwater Best Management Practices, and information about historic locations and other points of interest. Information regarding boat landings, fishing piers and bridges, canoe and kayak throw-ins were supplied by the Coastal Expeditions Map. Supplemental information on blueway routes were gathered through the owners of The Kayak Farm. Appendix A contains the complete list of data collected.
- Task 3 - Site Survey December 2001-March 2002
A site survey was completed which included site visits and an inventory and analysis of physical and environmental features, recreational amenities, historical and archeological resources, transportation access, existing bikeways and trails, wildlife habitat, aesthetics/viewsheds, adjacent land use and neighborhood character. The site inventory included the following locations: City of Beaufort, Town of Port Royal, Town of Yemassee, St. Helena Island, Hunting Island, Fripp Island, Lady's Island, Harbor Island, the Shell Point neighborhood, the Habersham development and surrounding area, Burton Wells Park, and the upper Ace Basin. Information concerning roadways, existing bike routes, boat launches, points of interest, and existing viewsheds were documented on existing GIS base maps and overlays.

- Task 4 - Base Map Throughout Master Plan Process
 Information from the site visits, public meetings, stakeholder inter-views and Beaufort County's most recent GIS data were used to create base maps for each of four areas in Northern Beaufort County:

 - North of Whale Branch
 - Port Royal Island
 - St. Helena Island
 - Ladys Island, the City of Beaufort, and the Town of Port Royal.

The base maps include streets, waterways, wetlands, county and city boundaries, resource conservation areas, parks, open space and preserved lands, and existing trails.

- Task 5: Planning Commission Meeting February 5, 2002
 A meeting with the Beaufort County Planning Commission was held to gather input from the Planning Commission on the proposed Northern Beaufort County Greenway and Blueway Master Plan. Refer to Appendix A for a summary of the meeting.

- Task 6: Public Workshop #1 February 6, 2002
 An all-day public Workshop was held in the City of Beaufort at the main branch of the Beaufort County Library to receive input from the public and various government agency representatives regarding their desires, concerns, and visions for the project. A summary of the comments received and a list of attendees can be found in Appendix A.

- Task 7: Meetings with Community Groups, Agencies and Individuals March 4-7, 2002
 The Beaufort County Planning Department identified the need for additional community meetings. A series of meetings was held with the following Community Preservation areas:

 - North of the Whale Branch & Seabrook
 - Shell Point
 - St. Helena
 - Burton

The minutes from these meetings were then distributed to the County. Several meetings were held with the following agencies and individuals on St. Helena Island:

 - York Glover, County Extension Agent, Clemson University Extension Program.
 - Sandra Jones, Director of Land Use Programs, Penn Center.
 - Liz Santigati, S.C. Community Development Center.
 - Marqueta Goodwine
 - Jessie Gant, Owner, Ultimate Eating Restaurant.
 - Kitty Green, Gullah & Geechie Mahn Tours, Gullah Island Welcome Center.

Following each community meeting, further Site Inventory of each Community Preservation zone was conducted to document the information gathered during the community meetings. The Site Inventory included mapping, field notes, and photo documentation.

Phase II: Planning Response

- Task 8: Planning Response April-July 2002
 Using all of the gathered data, a draft plan identifying potential greenway routes that meet the goals of the project was developed for review by the Beaufort County Planning Department. The mapped routes were accompanied by a written description

explaining the intent of the route. The draft plan was circulated amongst the Advisory Group and Beaufort County staff for comments.

- Task 9: Final Master Plan Fall 2002
The Final Master Plan was completed, incorporating the comments from the draft mapped routes and text.
- Task 10: Presentation to the Beaufort County Planning Commission and Beaufort County Council (To be arranged and conducted by Beaufort County Planning Department) Fall 2002
- Task 11: Public Presentation (To be arranged and conducted by Beaufort County Planning Department) Fall 2002

HISTORY AND DEMOGRAPHICS

People have inhabited the islands of Northern Beaufort County for at least 3800 years. The peoples that lived on these islands came from many places for many reasons. The stories of their arrival and the stories they created once settled form one of the more interesting and varied histories of any region in the Southeast.

Remains of a hunting and gathering civilization have been found dating to 1800 B.C. These people lived in impermanent huts, eating hickory nuts, fish, shellfish and game. Numerous sites remain in Northern Beaufort County. Examples include Indian Hill on St. Helena Island, thought to be a regional ceremonial center and was inhabited from 900 to 1400 AD. A smaller religious temple from the same period, known as The Little Barnwell Site, is located on Whale Branch. US Route 21 is thought to follow an ancient traveling route that may have been used by these people. From 1680 to 1715, a tribe known as the Yemassee migrated to the region from Florida and Central Georgia. Pocosabo Town was one of their settlements, found near present-day Sheldon.

Beginning in the 1500's, Europeans periodically attempted to explore and settle the Northern Beaufort region. In 1526, the Spanish Captain Pedro Quexos gave St. Helena its name, "Santa Elena Island" during an exploration of the coast. In 1562, the French Huguenot Captain Jean Ribaut named Porte Royall. The Charles Forte, established by the Huguenots on Parris Island, was the first Protestant settlement in North America. The Forte only existed for a few months. From 1577 to 1588, the Spanish returned and built a settlement named San Marcos (also known as Santa Elena) on Parris Island. At its height, it boasted 60 houses with men, women and children residents.

For almost 100 years after the dissolution of San Marcos, Northern Beaufort County had no permanent European settlements, although the Port Royal Sound provided refuge for pirates and warships. Finally in 1710, Beaufort Town was established by the Lord Proprietors of Carolina. Soon after, a brutal massacre emptied the town and surrounding plantations during the Yemassee War. The conflict lasted from 1715-17, and resulted in the Yemassee being driven from the region. Beaufort made a slow recovery, with indigo and shipbuilding being the primary livelihoods.

- The legacy of the 1700's is found throughout Northern Beaufort County. Today's routes 21, 278 and 170 are all built upon the routes of colonial era roads. In 1734, Fort Frederick, was constructed of tabby on the Beaufort River. Other historic structures from this era include:

- St. Helena's Episcopal Church (1724)
- Hepworth-Pringle House (1720), the oldest house in Beaufort
- Ruins of Prince William's Parish Church (1745-55), the first attempt in America to imitate a Greek temple
- St. Helena Parish Chapel of Ease (1740), which served planters on St. Helena

From the 1800's to the Civil War, Northern Beaufort County enjoyed its wealthiest era. Large plantations harvested Sea Island cotton, considered the finest in the world, which was shipped from Port Royal to English mills overseas. Acres of land were cleared and drained for production. The African slave population grew tremendously to provide the labor, soon representing over 80% of the population in Beaufort District. The Gullah, descendants of this original slave population, have managed to preserve much of their roots and traditions to this day.

The majority of structures in the City of Beaufort National Historic District were built during in the early to mid- 1800's including:

- Beaufort College Building (1852)
- First Baptist Church (1844)
- Tabernacle Baptist Church (1840)
- Beaufort Arsenal (1852)
- Retreat Plantation (Jean de la Gaye House) on Battery Creek near Beaufort (1740), the oldest existing plantation in the county
- Brick Baptist Church (1855) on St. Helena
- Praise Houses, Gullah houses of worship that first appeared in 1840. Only four 20th century praise houses remain on St. Helena

On November 7, 1861, the Union defeated the Confederacy at Hilton Head, one of the earliest Union victories in the Civil War. By December, Union forces had forced the evacuation of the entire Beaufort area. Confederates managed to hold the railroad. Confederate earthworks can still be seen at Stoney Creek Battery near Sheldon on Route 17.

On January 1, 1863, the slaves were freed by the Union. The Emancipation Proclamation was read on The Green on St. Helena Island. By 1870, many islands were owned by the society of free black farmers. During Reconstruction, the Penn School was established by the Port Royal Relief Committee of Philadelphia to educate the former slaves. In the 1960's, it became the Penn Community Center. During the Civil Rights Movement, Martin Luther King Jr. used the center as retreat and for planning. The Penn Center is recognized as a National Historic Landmark District.

Reconstruction was mainly an era of poverty for both blacks and whites, and they were forced to focus on self-sufficiency. It was during this time that the Hunting Island Lighthouse & Keeper's Dwelling (1875) was constructed. Reconstruction was also the beginning of a 50-year period during which wealthy Northerners purchased large estates for hunting retreats and winter vacation homes.

Phosphate mining was attempted during the late 19th century, resulting in the Port Royal railroad line and the Town of Port Royal. About this time, Pam's Island (1883) was established as a Navy coaling station. The dry dock on the island is a National Register Historic District. Ft.

Fremont, a 3-gun concrete fortification to protect the Navy Yard at Parris Island, was built in Lands End, St. Helena in the 1890's. In 1915, the Marine Corps established Parris Island as a training depot. The Marine Corps Air Station (MCAS) and the military housing complex at Laurel Bay were constructed in the 1950's.

Transportation was a major factor in the pace of development in Northern Beaufort County throughout its history. Before bridges connected the islands, ferries ran between mainland, Port Royal Island, the City of Beaufort, Lady's Island, Hilton Head and Daufuskie Island. In the 1920's, a bridge was constructed to connect Port Royal Island and the mainland. In the 1930's, a bridge was completed from Port Royal to Lady's Island. These bridges allowed for greater access within and to the County.

The connection to the mainland began the decline in the Gullah culture. Although still threatened by development pressures, there is presently a revival in Gullah culture. African-Americans make up a growing segment of the Beaufort County tourism industry. They come to Northern Beaufort County to visit the Penn Center and experience the Gullah Culture.

Silviculture began to take over agriculture in the 1950's, and these lands are now being developed at a rapid pace. A few large agribusiness firms are still established on St. Helena, producing mainly tomatoes. Currently, Mexicans and Central Americans provide the main work force on these farms.

Tourism, the military bases, and the retirement community industry are the predominant segments of the economy in Northern Beaufort County today. It is the combination of beaches, a mild climate, and the rich history of the region that creates such a desirable place to visit and retire.

Demographics of Beaufort County and Northern Beaufort County

As the 21st century begins, Northern Beaufort County finds itself growing and changing at a tremendous pace. The number of tourists to the County has doubled in a decade, and its population has increased by more than 20%. The tables below illustrate this growth. The development of a greenway/blueway system is critical as infrastructure is upgraded to accommodate growth and while the land is still available and affordable. Significant lands must be protected and public recreation areas established before the land is developed. An increase in residents and tourists also means an increase in vehicular traffic, if other alternatives of transportation are not provided.

Table 1: Population Change in Beaufort County*

Year	Population
1930	21,815
1940	22,037
1950	26,993
1960	44,187
1970	51,136
1980	63,364
1990	86,425
2000	120,937
2010 (projection)	155,447

*1994 SC Statistical Abstract and 1997 Beaufort County Comprehensive Plan

Table 2: Population Change in Northern Beaufort County*

Year	Population
1990	55,529
2000	67,486

*1994 SC Statistical Abstract and 1997 Beaufort County Comprehensive Plan

Table 3: Percentage of Population By Age in 2000*

Age	Beaufort County	Northern Beaufort County
<18 years	23.3%	27.2%
18-24 years	12.0%	16.4%
25-44 years	27.2%	28.7%
45-64 years	22.1%	17.9%
>64 years	15.5%	9.9%

*US Census Bureau

Table 4: Percentage of Rural vs. Urban Residents in Northern Beaufort County in 2002*

Year	Population
Rural Population	30%
Urban Population	70%

*Beaufort County Planning Department

Table 5: Employment in Beaufort County*

Year	Population
1990	55,529
2000	67,486

*SC Employment Commission

Table 6: Number of Registered Tourists* in Beaufort County**

Year	Population
1990	52,354
2000	123,670

*"Registered Tourists" are those tourists which registered with the Chamber of Commerce Visitors' Center

**Greater Beaufort Area Chamber of Commerce

Northern Beaufort County Greenway and Blueway Master Plan

OVERVIEW

Northern Beaufort County includes the portion of Beaufort County north of the Broad and Pocotaligo Rivers. The Overall Map in Section 3 shows the entire network throughout Northern Beaufort County. Various types of trails are shown on the plans, as listed on each legend. Below is a brief definition for each:

- Existing SCDNR Port Royal Sound Paddle Trails - are water trails for paddle craft that have been designated and mapped by the South Carolina Department of Natural Resources.
- Proposed Blueways - are water trails for paddle craft that are being proposed based upon input gathered during the public information meetings and agency interviews. They include water trails that link into the existing greenway system at water access points and links that provide access to the adjacent ACE Basin in Colleton County.
- Existing Greenways - include designated trails and greenway trails that have been constructed.
- Greenways Currently Planned - include trails and greenway trails which have been preliminarily routed by Community Preservation Areas, municipalities, the Lowcountry Council of Governments or other governmental entities. They include trails being proposed in both the short and long-term.
- Proposed Greenways - are trails that are being proposed based upon input received during the public information meetings and agency interview process completed during the study.
- Proposed Ferry Connections - are proposed ferry services routes that will accommodate trail users.
- Proposed Rails to Trails - include trails and greenway trails that are along existing and/or abandoned rail lines.
- Proposed Trail in Water Line Easement - is a greenway trail that follows an existing water line easement.

As the greenway/blueway system is described in the following pages, the routes and trails are referred to as one of three categories of trails:

- Greenway Spine Trails - are the major trail and greenway trail corridors that tie Northern Beaufort County together. It is envisioned that both residents and tourists will use these facilities.
- Greenway Spur Trails - are trails that connect Spine Trails to neighborhoods, parks, community facilities, shopping districts, vistas, historic and natural features, and boat landings. It is envisioned that these that these trails will be predominantly used by residents.
- Blueway Trails - are trails for use by canoes, kayaks and other paddle craft. It is envisioned that both residences and tourists will use these trails.

Greenway Spine Trails: There are four trails in the Northern Beaufort County greenway and blueway system defined as "Greenway Spine Trails":

- The Route 21 Spine Trail: Runs east-west from the Town of Yemassee to the entrance to Fripp Island. In most areas, the trail will be configured as 4'-0" to 5'-0" wide bike lanes along both sides of the road. The actual width of the bike lane will be determined based upon the existing roadway conditions and prevailing AASHTO standards. A segment of the Route 21 Spine Trail has been completed on Lady's Island.
- The Route 280/802/Brickyard Point Trail: Forms a partial loop through Lady's Island and Port Royal Island, beginning at Brickyard Point and crossing the Route 21 Trail and commercial district on Lady's Island. The trail crosses the Beaufort River into the Town of Port Royal, connecting to their existing trail system. It then crosses Battery Creek into Shell Point, following Route 280 up to Burton and the commercial district surrounding the intersection of 280 and Route 21.
- The Port Royal Rail Trail: Will share the existing right-of-way with the CSX railroad. The ultimate goal for this area is the conversion of the rail line to a greenway park system. This proposed off-road greenway is envisioned as a linear park that would provide a major recreational thoroughfare for residents and tourists from the Town of Port Royal to the Town of Yemassee.
- The Route 17 Spine Trail: Will provide a connection between the communities of Garden Corners, Sheldon, and Pocatolgio through the use of bike lanes. The Route 17 Spine Trail joins up with the Route 21 Spine Trail as it passes through Sheldon. This trail would also connect users to Charleston, SC and Savannah, GA and serve as a segment of the East Coast Greenway.
- The Route 170 Spine Trail: Will provide a critical connection from Southern Beaufort County into Northern Beaufort County. A series of alternate greenway solutions have been developed to accommodate the crossing of the Route 170 Spine trail over the Broad River. These options include providing bike lanes along the new Route 170 bridge, a ferry crossing, and/or a linear greenway corridor park located on the existing Route 170 bridge. The Route 170 Spine trail will ultimately tie into spur trails serving the communities of Burton and Shell Point, and will eventually provide a vital segment along the East Coast Greenway.
- The Water Line Park: Is a potential major greenway linear park route that has been identified along an existing water line easement. The easement is currently owned by the U.S. Navy and maintained by the Beaufort Jasper Water and Sewer Authority. This linear park would provide opportunities for both recreational and alternative transportation users. Additionally, the greenway corridor would increase and enhance the preservation of greenspace within Northern Beaufort County. The greenway spine trail would allow access for users from the Marine Corps Air Station through Burton Wells Park to the Shell Point Community.

Spur Trails: To define the spur trails and explore the network in more detail, the Greenway and Blueway Master Plan divides Northern Beaufort County into four sections:

- 1) St. Helena and surrounding islands
- 2) Ladys Island, the City of Beaufort, and the Town of Port Royal
- 3) Port Royal Island (excluding the City of Beaufort and the Town of Port Royal)
- 4) North of the Whale Branch

The greenway/blueway system is shown at an enlarged scale in each of the four study areas to effectively address the specific needs of each area as defined during the public meetings and interview process. The proposed greenway and blueway routings, which are shown on these maps, were developed based upon actual input received from Northern Beaufort County citizens and business people during a series of meetings.

In each of the following four sections, a short description of the region is given, along with the specific goals defined during the community participation process. Because the goals and characteristics of each area within Northern Beaufort County are unique, the users and uses of the greenway/blueway system will vary. The goals, characteristics and users will determine how each area's greenway/blueway network is designed and planned.

PRIORITIES

The Northern Beaufort County Greenway and Blueway Master Plan depicts routes for the Development of the greenway and blueway trails network. Priorities must be established to develop the plan in a logical and effective manner.

The first priority should be the establishment of the Port Royal Rail Trail and Water Line Easement spine trails and greenways. In order to secure conservation easements with public access and implement these facilities, discussions between Northern Beaufort County and CSX and Port Royal rail lines should begin immediately. Northern Beaufort County should also begin similar discussions with the United States Navy and Beaufort Jasper Water & Sewer Authority in reference to the area located within the water line easement. Although these target areas currently contain active rail and water service lines, properly designed trails could be established within the existing right-of-ways that would not effect the operations of the existing services. In the future, if these services were relocated and/or discontinued, additional trails and greenway features could be incorporated.

The implementation of the Route 21, Route 17, Route 170 and Route 280/802/Brickyard Point spine trails should be the next highest priority. The establishment of these trails will complete the regional routes to which the spur trail network will connect. Roadway improvements are currently under construction for both Route 170 and Route 280. Due to the nature and timeline associated with the completion of these projects, it is imperative that representatives from Northern Beaufort County begin discussions with the South Carolina Department of Transportation in order to facilitate the inclusion of bike lanes. At the time of these discussions, the County should present the concept of developing bike lanes along Route 21, Route 17 and Route 280/802 to the SCDOT in order to insure the future programming and funding of these routes.

The implementation of the proposed ferry crossing on the Broad River at the Route 170 Bridge is a logical next step after the spine trails throughout the county have been established. The

LISTING OF CONSERVATION EASEMENTS & PRESERVED LANDS			
1. Jolner Bank Heritage Preserve	9. Tomotley Plantation Conservation Easement	17. Bay Point Shoals Heritage Preserve	26. Pritchards Island (University of South Carolina) Conservation Easement
2. Bullpoint LP Conservation Easement	10. Charlotta Island (Beaufort County)	18. Huspah/ H.C. Jones Conservation Easement	27. St. Philips Island Conservation Easement
3. D. Duwane Conservation Easement	11. Coosaw LP Conservation Easement	19. Nemours Plantation Wildlife Foundation	
4. Rose Hill Plantation	12. Pratt Family Conservation Easement	20. Old Island Heritage Preserve	
5. National Wildlife Refuge	13. Murdaugh, Lgare & Palms Islands (Beaufort County Rural & Critical Lands Program)	21. Victoria Bluff (SCDNR)	
6. R. Taylor Conservation Easement	14. Daws Island Heritage Preserve	22. Chapman Family/ Oak Forest Island	
7. Auld Brass Conservation Easement	15. Lemon Island (Beaufort County)	23. J.W. Johnson Trust	
8. Oak Grove/ W. C. Campbell Conservation Easement	16. Pickney Island National Wildlife Refuge	24. SCDNR Conservation Easement	
		25. Williman Islands (SCDNR)	

LEGEND :	
	COUNTY BOUNDARIES
	WATERWAYS
	WETLANDS/ MARSHES
	MAJOR ROADS
	ROADS
	RAILROAD
	MILITARY BASES
	CONSERVATION EASEMENTS & PRESERVED LANDS
	COUNTY & STATE PARKS
	AIRPORTS
	WESTERN BORDER OF THE ACE BASIN PROJECT



SCALE: NTS

OCTOBER 2002
 BASE MAP
 NORTHERN BEAUFORT COUNTY
 GREENWAY AND BLUEWAY MASTER PLAN

PREPARED FOR: BEAUFORT COUNTY
 PLANNING DEPARTMENT
 PREPARED BY: JORDAN, JONES & GOULDING

Northern Beaufort County Trails and Blueway Master Plan

Spine Trails are the major corridors that tie Beaufort County together.

Spur Trails connect Spine Trails to neighborhoods, parks, community facilities, shopping districts, vistas, historic and natural features and boat landings.

Blueway Trails are waterways for use by canoes, kayaks and other paddle craft.



Legend

- County Boundaries
- County Parks
- Schools
- Boat Landings
- Existing Trails**
 - Spine
 - Spur
- Proposed Trails**
 - Spine
 - Spur
- Existing Blueways**
 - Existing Blueways
 - Proposed Blueways
- Wetlands/Marsh Area
- Roads
- Active Rail Lines

creation of the ferry line service will provide a vital link to the Southern Beaufort County Greenway System. The linking of the County's Northern and Southern greenway networks will provide both residents and tourists with a series of unique opportunities to enjoy the environs of the County through alternative transportation and recreation activities.

The final stages of implementation should focus on the development of the various spur trails, which have been identified in the four major study areas. Special attention should be placed upon the implementation of the spur routes that connect directly to the spine trails. The creation of these routes will provide a vital link from the spine trails to the adjacent residential neighborhoods and community centers. Establishing these initial connections into the core of each community will provide each community with regional alternative transportation and recreational opportunities. This approach will also allow each community to experience and examine the various types of trails that have been implemented. This opportunity will allow the community to further refine the trail locations and types that have been proposed for their neighborhoods.

PROPOSED NORTH OF THE WHALE BRANCH GREENWAY/BLUEWAY NETWORK

The area designated as north of the Whale Branch includes the communities of Dale, Garden Corners, Sheldon, and a portion of Yemassee. In this part of the County, significant land use protection measures have been established to preserve both the visual character and natural resources found throughout the area. Conservation easements, which have been placed on existing plantations and the preservation of the ACE Basin, are working examples of how progressive land use measures can insure proper long-term management of the region's natural resources. Although these measures are in place, potential development currently threatens the surrounding lands. There is much concern that the cultural landscape unique to this area will be lost through the conversion of farmlands to residential communities and supporting infrastructure. As a result, the communities that comprise the area designated as north of the Whale Branch have taken a proactive stance in order to establish proper long-term management of their community's resources.

Goals: The following goals for the programming of the proposed North of the Whale Branch greenway and blueway network were identified from information gathered during a series of community workshops and interviews:

- Provide alternative transportation connections from residential areas to community service areas to help mitigate traffic congestion and negative environmental impacts.
- Provide access to protected historic and natural resources found within the ACE Basin.
- Utilize existing rail line corridors for future greenway routing opportunities.
- Develop a regional greenway network that includes connections to Savannah, Georgia and Charleston, South Carolina.
- Provide a greenway connection to the Amtrak Station located in Yemassee.
- Identify historic and natural lands for future protection.
- Limit the areas for greenway/blueway development to main traffic routes and existing public facilities.

Users/Uses: Both residents and tourists will take advantage of the greenway and blueway network north of the Whale Branch. Greenway tourists can embark from the Amtrak Station on a tour of the natural and cultural landscape in this area, cycle to Savannah or Charleston on the future East Coast Greenway, or explore the islands and communities south of the Whale

Branch. Residents will be the main beneficiaries of the network, using it not only for recreation, but also for commuting to community resources.

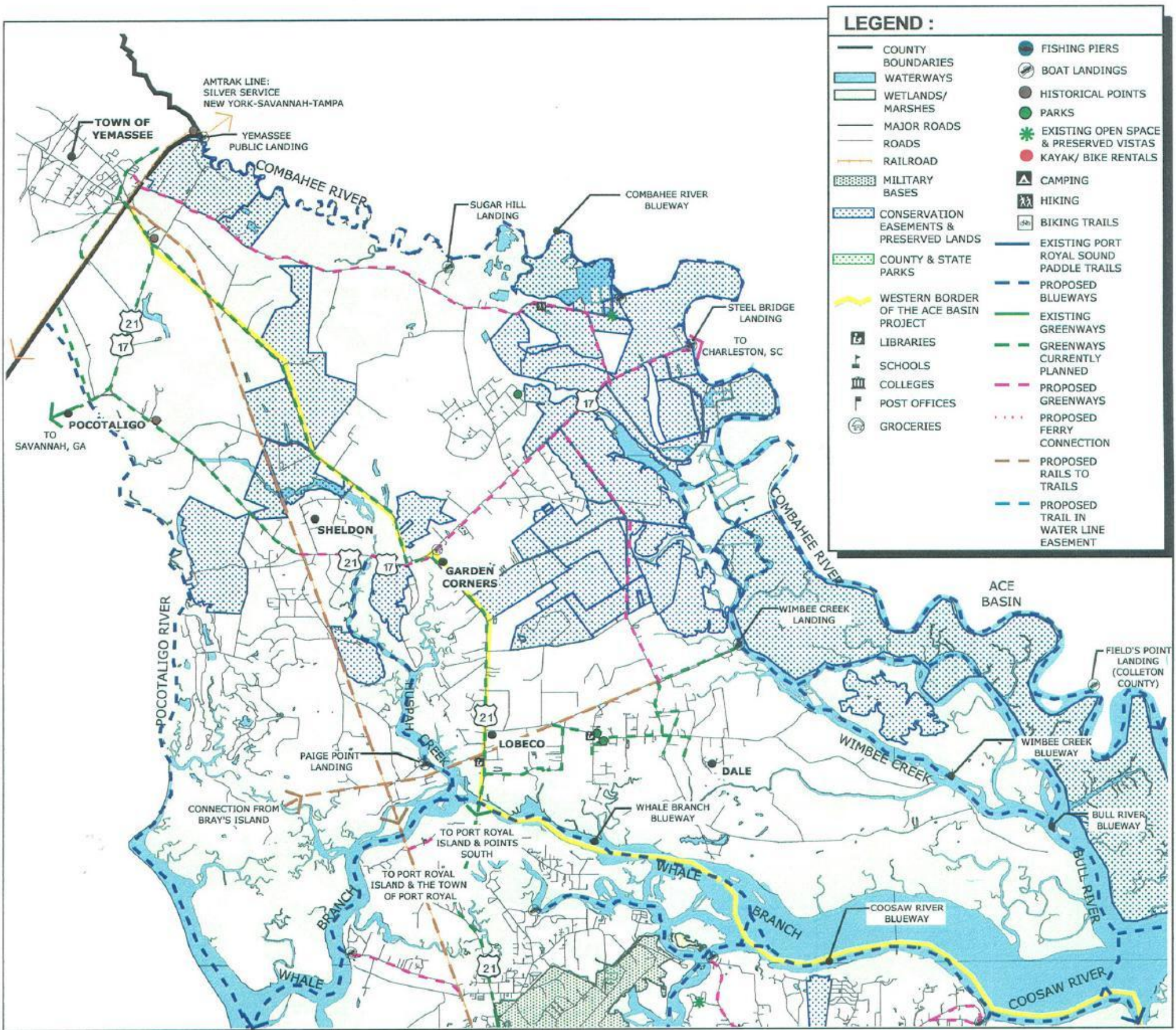
Greenway/Blueway Network: The Town of Yemassee is a primary gateway to the proposed Northern Beaufort County greenway and blueway network. Existing resources in this town, such as the Amtrak Rail Line, would provide greenway users from other regions access to various tours of Northern Beaufort County. Two main spine trails originate at this point, an off-road rail trail and an on-road bike lane. A third spine trail north of the Whale Branch runs east and west, bisecting these two trails. Spur trails connect the communities to the spine trails and provide scenic routes throughout the area north of the Whale Branch. The network will connect into the Low Country Trails Network proposed by the Low Country Council of Governments and the proposed Revolutionary Trails Network. It may also include an on-road segment designated by the East Coast Greenway.

Greenway Spine Trails: Three major spine trails are planned or proposed north of the Whale Branch:

- **Port Royal Rail Trail:** This greenway involves the sharing of the right-of-way with the railroad, or preferably, the conversion of the Port Royal rail line to a linear greenway park system. This proposed off-road greenway is envisioned as a linear park that would connect residents along its path from the Town of Yemassee to the Town of Port Royal. The width of the existing rail corridor would also accommodate the addition of passive park facilities. The segment of the trail in this area will provide access to the historic Old Sheldon Church Ruins.
- **Route 21 Spine Trail:** Bike lanes planned along Route 21 would provide commuters with alternative modes of transportation to the southern island communities of the City of Beaufort, Port Royal, Lady's, St. Helena, Hunting and Fripp Islands. The Route 21 route near Pocolaligo will be part of the proposed Revolutionary Trails Network, accessing an historically significant Revolutionary War site and cemetery. The Route 21 Spine Trail also accesses the Garden Corners shopping center and the Lobeco library.
- **Route 17 Spine Trail:** Bike lanes along Route 17 would provide a vital connection between the Gardens Corner, Sheldon and Pocolaligo communities. The Route 17 Spine Trail joins the Route 21 Spine Trail as it passes through Sheldon. This trail would also connect users to Charleston, SC and Savannah, GA and serve as a segment of the proposed East Coast Greenway.

Greenway Spur Trails: The North of the Whale Branch Greenway/Blueway system includes a series of proposed spur trails, predominantly bike lane routes identified along existing road rights-of-way. The bike lane routes would serve two main purposes. First it will connect residents with the spine trails for the purpose of commuting and second it will provide access to the cultural and natural resources located throughout the area.

- **Brays Island/Wimbee Creek Rail Trail Spur:** The rail line corridor, which runs from Brays Island to Wimbee Creek Landing, has an existing right-of-way which is wide enough to accommodate an off-road greenway spur trail. (The County will first need to research which, if any, parts of this easement have reverted back into private ownership.) This spur trail would connect to the Port Royal Rail Trail just west of Paige Point Landing, providing links to existing publicly held lands such as fishing piers and boat launch facilities. The creation of this spur trail would facilitate the conversion of the existing fishing piers and boat launches into destination spots serving as public parks. A multi-use trail and a soft-surface equestrian trail within the rail right-of-way would accommodate walkers, joggers, cyclists and equestrians along the greenway. Several smaller spur trails will link residential




 SCALE: NTS

OCTOBER 2002
 NORTH OF THE WHALE BRANCH
 NORTHERN BEAUFORT COUNTY
 GREENWAY AND BLUEWAY MASTER PLAN

PREPARED FOR: BEAUFORT COUNTY
 PLANNING DEPARTMENT
 PREPARED BY: BY JORDAN, JONES & GOULDING

neighborhoods to the Brays Island/Wimbee Creek Rail Trail Spur. These spur trails will also connect residents to community services such as libraries and neighborhood parks.

- The River Road Spur Trail: Will provide users with an opportunity to explore the area's natural resources. Bike lanes along this road will allow users to visit portions of the ACE Basin and enjoy the protected vistas of the various plantations found along this route.
- The Kinloch Spur Trail: Will link the Route 17 Spur Trail with the Brays Island/Wimbee Creek Rail Trail. It could provide access to the Nemours Plantation, a protected area that periodically provides environmental education and outreach seminars. Bike lanes and off road trails would serve this route.

Blueway Trails: The proposed blueway network will connect the existing boat launch facilities found along Whale Branch, the Coosaw River, the Combahee River, Bull River and Wimbee Creek. It will also provide users with connections to the Colleton County side of the ACE Basin. The proposed blueway will offer users an opportunity to explore the biodiversity found throughout the islands and marshes in the ACE Basin, including the publicly owned Williman Island. The existing boat launch facilities could eventually be transformed into trailheads and community based parks.

PROPOSED PORT ROYAL ISLAND GREENWAY/BLUEWAY NETWORK

The area of Port Royal Island located east of the City of Beaufort and the Town of Port Royal, is comprised of many established and developing residential communities. Unlike the other areas found within Northern Beaufort County, the development, of this residential community resulted from the need to provide housing opportunities for military personnel assigned to the three major installations located on the island. Originally planned as a bedroom community to serve the needs of military families, the residential composition of this rapidly growing area is changing. Recently, Port Royal Island has become a mixture of non-military first-time homeowners in combination with retirees and military families. This changing demographic requires that community services that address the needs of this dynamic and diverse community be provided.

Goals: The following goals for the programming of the proposed Port Royal Island greenway and blueway network were identified from information gathered during a series of community information meetings and interviews:

- Provide alternative transportation connections from residential areas to community service areas to help mitigate traffic congestion and negative environmental impacts.
- Provide access to protected historic and natural resources.
- Create passive parks for recreational enjoyment.
- Utilize existing rail line corridors for future greenway routing opportunities.
- Identify historic and natural lands for future protection.
- Create greenway connections to Parris Island Marine Corps Recruit Depot, Laurel Bay military housing and the Marine Corps Air Station.
- Provide greenway access to Burton Wells Park.
- Provide greenway connections from existing PUD's to existing community facilities.

Users/Uses: Residents will be the main beneficiaries of the Port Royal Island greenway and blueway network. The network will provide links between the residential neighborhoods and vital connections to community services, including shopping districts, schools and parks. Additionally, these links will provide residents with alternative transportation connections to

their work places found throughout the island, including Parris Island and the Marine Corps Air Station. Potential trail routes have also been proposed to provide residents with walking and riding opportunities within their own neighborhoods.

The spine trails running through Port Royal will be used by resident cyclists to access other communities and resources within Northern Beaufort County. The spine trails will also be used by surrounding communities to access Port Royal.

Greenway/Blueway Network: The Port Royal Island greenway and blueway network consists of spine trails linking the communities and military facilities within the network to adjacent island communities. Spur trails provide connections to interior neighborhoods within the network. The blueway trail encircles Port Royal Island, with access at existing boat launches that tie directly into the greenway network.

Greenway Spine Trails: Three major spine trails are planned or proposed for Port Royal. Route 21 Spine Trail: Bike lanes and sidewalks planned to run along Route 21, where feasible, would allow commuters alternative transportation to the adjacent communities to the northern and southern island communities of the City of Beaufort, and Ladys, St. Helena, Hunting and Fripp Islands, and the area designated as North of the Whale Branch. Beyond the Marine Corps Air Station, bike lanes could be constructed. The construction of sidewalks adjacent to the Corps Base would connect residents into the trail network. In order to provide the required space necessary for the construction of bike lanes, two center traffic lanes could be converted into a single center turning lane.

- **Route 170 Spine Trail:** Route 170 and the Broad River Bridge, which serve as the primary connection to Bluffton and Hilton Head Island, are currently undergoing construction improvements. The master plan study identified this area as a primary gateway to the Northern Beaufort County greenway and blueway network. With the widening of Route 170, the master plan identified an opportunity to place 10' wide multi-use trailways along each side of the roadway. This system should include a safety buffer zone to separate the roadway from the multi-use trailway. This safety buffer zone was identified as an opportunity to provide a landscape enhancement area, which could include the addition of native grasses and tree cover. The construction of the new Broad River Bridge includes a proposal to convert of the existing bridge structure to a fishing pier on the Northern Beaufort County side of the river. Access to the pier would be provided at the Broad River Landing boat launch.

The County and SCDOT should also consider leaving the existing bridge structure standing and modifying it into a pedestrian/bicycle crossing. The central section of the existing bridge could be removed and replaced with a drawbridge structure to allow passage of tall watercrafts. The bridge could be used as fishing pier, scenic area and linear park space. Leaving this existing bridge in place would not only create a safe crossing for greenway users, but would provide the addition of a unique park facility for the County.

It is envisioned that the Broad River Landing boat launch adjacent to the existing bridge would serve as a trailhead and community park. The renovation of this facility should include the installation of traditional park services including restrooms, concessions and parking. Additional site amenities including landscaping, educational signage and seating areas should also be installed. The Route 170 Spine Trail may share the 170 Bridge and Park with the East Coast Greenway.

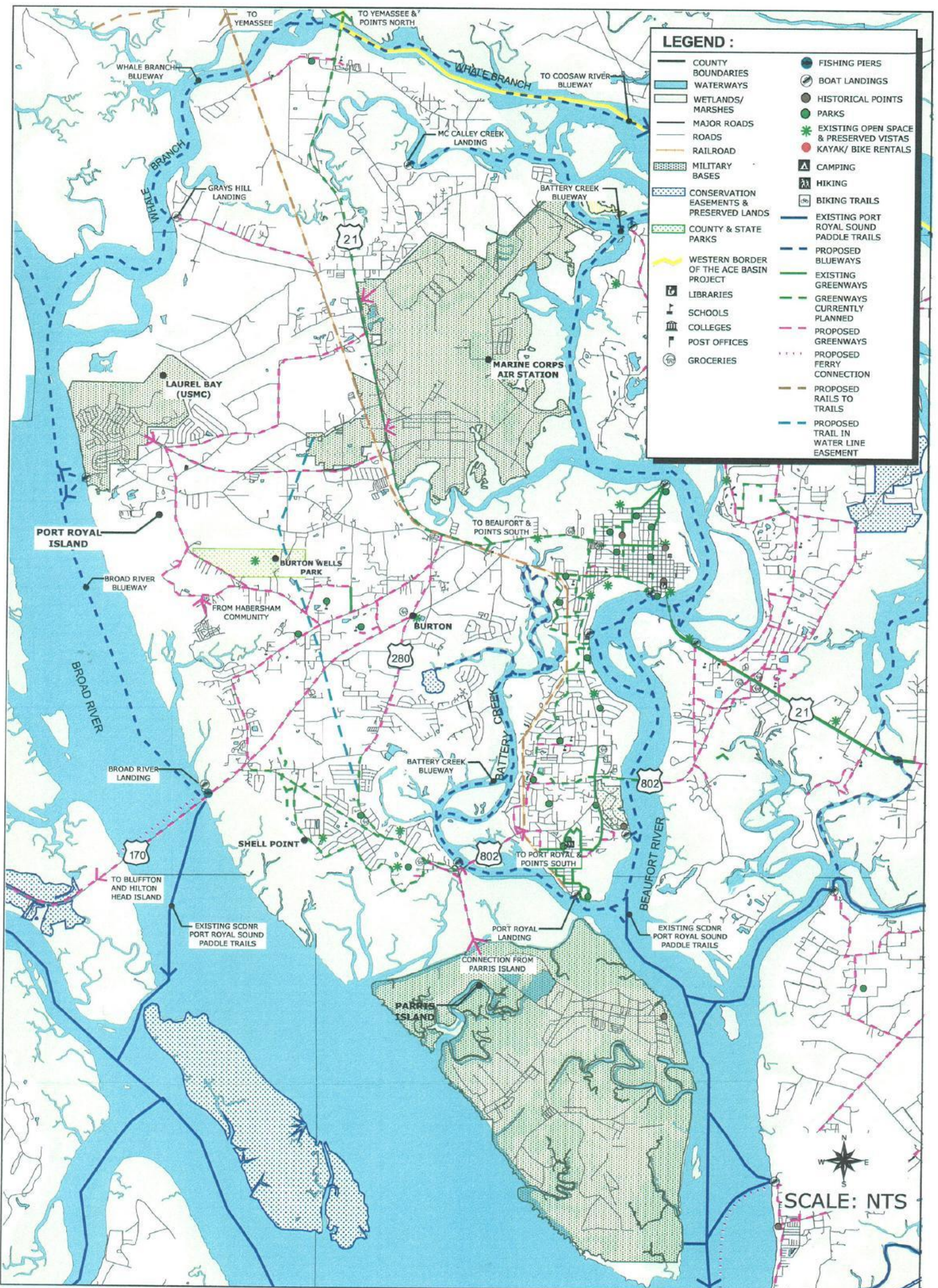
- **Port Royal Rail Trail:** This greenway will share the existing right-of-way with the CSX railroad, with the ultimate goal of converting the rail line to a greenway linear park system. This proposed off-road greenway is envisioned as a linear park that would provide a major recreational and environmental preservation zone thoroughfare for residents and tourists from the Town of Port Royal to the Town of Yemassee.
- **Route 280/802 Spine Trail:** This route, consisting of bike lanes and sidewalks in designated areas, will connect the proposed Port Royal Rail Trail/Route 21 Spine Trail, Shell Point Community, Burton, Port Royal, and Ladys Islands. Within Shell Point, this route connects a number of community shopping areas and neighborhood parks including Jericho Park.
- **Water Line Park:** A waterline easement, “Water Line Park”, owned by the Navy has been identified as a potential greenway/linear park system between Marine Corps Air Station and Parris Island, running through Burton Wells Park. This greenway/linear park system would offer recreational opportunities to adjacent residents as well as providing military personnel with alternative transportation to and from the two military installations.

Greenway Spur Trails: Within the island, a series of spur trails, (primarily bike lanes and sidewalks along existing road right-of-ways), have been identified to provide linkages between the residential neighborhoods. Multi-use trails should be placed where the road right-of-way is of sufficient width. These routes would also provide vital connections to community services, including shopping districts, schools and parks. The routing of the bike lanes includes the following:

- Two spur trails will connect the Marine Corps Air Station, Laurel Bay and the residential neighborhoods in between. One route is proposed along Laurel Bay Road, and the other will follow Parker Drive to Mroz Lane.
- A spur trail is proposed to connect Parris Island to the Route 280/802 Spur Trail. This route will provide access to shopping within the Shell Point Community.
- Spur trails connecting to the Route 170 and Route 280/802 spine trails will provide access for residents to shopping areas in Burton and Shell Point, neighborhood schools, and parks, including Burton Wells Park.
- Shell Point’s planned trail system will connect to the “Water Line Park” spine trail and the Route 280/802 Spine Trail. These routes will provide vital links to existing parks, schools, shopping areas, and vistas.
- A spur trail in Seabrook will connect the Route 21 Spine Trail to the Port Royal Rail Trail via a neighborhood park.

A number of potential trail routes are also proposed to provide residents with walking and cycling opportunities within their own neighborhoods. These trails are routed as loops, connecting into the overall Port Royal Island greenway network.

Blueway Trails: The blueway trail component of the Port Royal Island master plan links existing public and residential boat launch facilities. It would provide users with an opportunity to experience the diverse environs and historic resources found along Battery Creek, the Broad River and Beaufort River. The Broad River Blueway continues north from the Broad River Landing Fishing Pier to Gray's Hill Landing on the Whale Branch. The master plan study also identified the opportunity to renovate the existing boat launch facilities into community parks. During the public information meetings the community identified the need for increased public park lands and the desire to renovate the public boat launch areas into facilities that included restrooms and picnic and seating areas. Finally, in order to facilitate safe passage between the



OCTOBER 2002
 PORT ROYAL ISLAND
 NORTHERN BEAUFORT COUNTY
 GREENWAY AND BLUEWAY MASTER PLAN

PREPARED FOR: BEAUFORT COUNTY
 PLANNING DEPARTMENT
 PREPARED BY: JORDAN, JONES & GOULDING

Northern Beaufort County greenway and blueway network and the existing greenway systems located on Bluffton and Hilton Head Island, the master plan study recommends a scheduled ferry system be instituted to shuttle greenway/blueway users across the Broad River. The ferry could also serve travelers on the East Coast Greenway. If successful, the ferry system could eventually link to other destination spots throughout the county.

PROPOSED LADY'S ISLAND, CITY OF BEAUFORT & TOWN OF PORT ROYAL GREENWAY/BUEWAY NETWORK

The communities of Lady's Island, the City of Beaufort and the Town of Port Royal recognize the value of establishing a greenway/blueway network and have begun planning and implementing these systems. Although each area is unique in character, they are all bound together by increased growth and urbanization. Recognizing the need to offer residents and visitors access to alternative transportation and passive recreational facilities, each community has taken an aggressive approach to identify and incorporate quality of life measures and insure proper growth patterns. By working together, community leaders have not only identified greenway corridors within their own communities, but have also established plans to connect to surrounding communities. The integration of these existing Plans will provide community members and visitors with safe and enjoyable transit and recreational opportunities throughout these areas.

Goals: The following goals for the programming of the proposed Lady's Island, City of Beaufort and Town of Port Royal greenway and blueway network were identified from information gathered during a series of community workshops and interviews:

- Provide alternative transportation connections from residential areas to community service areas to help mitigate traffic congestion and negative environmental impacts.
- Provide access to protected historic and natural resources.
- Create passive parks for recreational enjoyment.
- Utilize existing rail line corridors for future greenway routing opportunities.
- Identify historic and natural lands for future protection.
- Limit the areas for greenway/blueway development to main traffic routes and existing public facilities.

Users/Uses: The greenway system in this area of Beaufort County will be used by both residents and tourists. The system will allow residents of the City of Beaufort and the Town of Port Royal to walk or cycle to work, shopping areas, schools, civic buildings and parks. The greenway system will also provide access for the residents living in communities on Lady's Island. Residents and tourists will use the greenway system for walking and cycling tours within historic City of Beaufort and Town of Port Royal. Additionally, the network will provide users with the opportunity to experience Lady's Island's natural beauty and outlying communities.

Greenway/Blueway Network: The Lady's Island, City of Beaufort and Town of Port Royal greenway and blueway network consists of spine trails linking communities within the network to adjacent island communities. Spur trails provide further connections to interior communities within the network. The blueway system has been routed along the intercoastal rivers which surround the islands. This blueway route will be accessed via existing boat launches and will connect into the greenway network in designated locations.

Greenway Spine Trails: Three main spine trails will link Lady’s Island, the City of Beaufort and the Town of Port Royal to each other and surrounding communities.

- The Route 21 Spine Trail: A segment of which is completed as it runs through Lady’s Island, will be configured as bike lanes along both sides of the road. The Route 21 spine trail will provide an alternative transportation system for commuters between these communities and allow safe passage to existing commercial and cultural areas found along Route 21, such as the City of Beaufort Historic District. Eventually, it is envisioned that this trail would extend north to the Town of Yemassee and south towards Fripp Island. The Route 21 spine trail will be the main alternative transportation link between the communities of Northern Beaufort County and will provide access to many of the regions’ cultural and natural resources in the region.
- The Route 802/Brickyard Point Spine Trail: Begins at Brickyard Point, crosses Route 21, runs through the Town of Port Royal and Shell Point community, and connects back to Route 21 on Port Royal Island. This trail links the northern and southern communities of Lady’s Island to businesses located along Route 21. It directly to Shell Point and Lady’s Island.
- The Route 802/Brickyard Point Spine Trail: Links Brickyard Point Landing and Broomfield Park to the Route 21 Spine Trail. Route 802 connects into the Town of Port Royal’s existing trail and park system and provides access to the Naval Hospital, the YMCA nature trail and rookery, Port Royal Landing and the Sands’ boardwalk and overlook facility.
- The Port Royal Rail Trail: Will share the existing right-of-way with the CSX railroad, with the ultimate goal of converting the rail line to a greenway linear park system. This proposed off-road greenway is envisioned as a linear park that would connect residents along its path from the Town of Port Royal to the Town of Yemassee. It will be an important off-road link between the City of Beaufort and the Town of Port Royal and will provide the addition of needed park land.

Greenway Spur Trails: On Lady’s Island, a series of spur trails are proposed that will link residential communities throughout the island to the Route 21 and Route 802/Brickyard Point spine trails. These spur trails will be located within the existing road right-of-ways, and will consist of bike lanes and walking trails. These trails will connect residential neighborhoods with schools, parks, protected open spaces and boat launch facilities. The southern-most proposed spur trail connecting to Route 802 will link to the communities on Gibbs, Cane and Cat Island into the greenway and blueway system.

The City of Beaufort has an existing and planned walking trail network that effectively connects neighborhoods to community resources. The City’s trail network will connect to both the Route 21 Spine Trail and the Port Royal Rail Trail. The conversion of the Port Royal rail line to a greenway system would not only provide a regional trail and park network, but also link to numerous residential communities located adjacent to the corridor. The proposed Southside Park facility, between Beaufort and Port Royal, will also provide much needed passive recreational opportunities for residents. A number of schools located in the surrounding community will be linked to the Port Royal Rail Trail and Southside Park with walking trails.

The revitalization of the Town of Port Royal has led to the programming and establishment of a series of parks and protected green spaces that are interconnected by walking and biking trails. Additionally, the town has established trail connections from residential areas to community facilities. The conversion of the Yemassee - Port Royal rail line to a greenway would provide the community with an off-road alternative connection to existing park and community facilities



OCTOBER 2002
 LADYS ISLAND, CITY OF BEAUFORT,
 & THE TOWN OF PORT ROYAL
 NORTHERN BEAUFORT COUNTY
 GREENWAY AND BLUEWAY MASTER PLAN

PREPARED FOR: BEAUFORT COUNTY
 PLANNING DEPARTMENT
 PREPARED BY: JORDAN, JONES & GOULDING

located within the town. The creation of this greenway would also provide the addition of a passive park to this community.

In addition to the Port Royal Rail Trail, several spur trails run between the City of Beaufort and the Town of Port Royal. These trails link neighborhoods to Bob Jones Park, several schools, and the Technical College of the Low Country.

Blueway Trails: The proposed blueway system extends the existing Port Royal Sound Paddle Trails north along the Beaufort River. This route will connect the existing boat launch facilities identified as Beaufort, Freedom Mall, Lady's Island, Pigeon Point, and Brickyard Point. A spur water trail, the "Battery Creek Blueway," travels up Battery Creek, with proposed connections to the Port Royal Rail Trail. The Beaufort River Blueway connects to the Coosaw River Blueway and Sam's Point Landing, where ACE Basin Tours are based. Each of the above landings is directly connected into the greenway system. Additionally the master plan identified the need to convert the existing boat launch facilities into community parks. The renovation of these existing boat launches into parks that provide passive park opportunities, such as picnicking areas will increase visitorship and provide the community with needed park lands.

PROPOSED ST. HELENA GREENWAY/BUEWAY NETWORK

The historical, cultural and natural resources found throughout St. Helena Island offer a unique opportunity in which a greenway/blueway network can serve as a catalyst for protection and education, while serving the needs of recreation, tourism and alternative transportation. Currently, there is concern that constant development pressure will lead to the loss of the traditional ways of the St. Helena community. There is also concern that a greenway system could accelerate development patterns. The best way to control undesirable changes on the island is to proactively plan for the protection of these treasured resources. The objective of the greenway/blueway routing plan is to promote amongst residents and visitors an understanding and respect for the true history and current need to protect the environs of St. Helena.

Goals: The following goals for the programming of the St. Helena greenway and blueway network were identified from information gathered during a series of community information meetings and interviews:

- Connect historic resources through a greenway system for the purpose of education and preservation.
- Design elements of the greenway network to address the rural character of the Corners Community.
- Identify historic and natural lands for future protection.
- Limit the areas for greenway/blueway development to main traffic routes and existing public facilities so as not to negatively affect the daily lives of island residents.
- Provide alternative transportation opportunities to the communities found on the surrounding islands to help mitigate traffic congestion and negative environmental impacts.

Users/Uses: Both residents and tourists will use the greenway/blueway network on St. Helena. Tourists and Beaufort County residents can bike along loop routes that connect historic and natural resources or cycle through St. Helena to Hunting Island. Residents of Fripp Island and Harbor Island, a private beach community on the north end of Hunting Island will be able to safely cycle to Hunting Island and St. Helena. All residents will be provided with safer routes to cycle and walk to community facilities and schools. Residents and visitors may also use the

network to travel to areas to the north of St. Helena, including Lady's Island, the City of Beaufort and the Town of Port Royal. A ferry is also proposed to connect St. Helena to Hilton Head at Lands End. The ferry would provide a scenic and functional passage for tourists, and for residents working in Hilton Head.

Greenway/Blueway Network: Given the sensitive nature of the environs found throughout St. Helena, it was determined that the greenway/blueway network should provide access to historic and natural resources, without infringing on the rights of residents. The result is a greenway network that is routed within the existing roadway right-of-ways and ties together points of interest that are currently held as public lands. Additionally, the blueway network has been identified to allow access to the surrounding island waterways. This network will allow users to experience and gain an appreciation for the sensitive environs which comprise the islands' shoreline. It will also facilitate alternative transportation through the implementation of a ferry line, which will provide service connections to the surrounding islands.

Greenway Spine Trail: One major spine trail is proposed for St. Helena.

- The Route 21 Spine Trail: Is the main trail in the St. Helena greenway route, beginning at the Lady's Island Bridge and terminating at the entrance to Fripp Island. It allows the only public access to the Barrier Islands in Northern Beaufort County. This greenway trail will be configured as 4'0" to 5'-0" bike lanes running east and west along the existing roadway. The greenway will connect existing community facilities, historical and cultural sites, preserved open space areas, businesses and residential communities found along Route 21.

The greenway along Route 21 will also provide a vital link to Hunting Island State Park. This Park is one of the few publicly held lands that allow Northern Beaufort County visitors and residents access to the natural resources found in this region. Hunting Island State Park has been programmed to include educational and recreational features that focus on allowing users to enjoy the barrier islands while developing to an understanding of how fragile and critical these environmental resources are to our way of life. Hunting Island has public beach access, camping, mountain bike trails, and an historic lighthouse and museum. The Route 21 Spine Trail also accesses a small public beach on the private gated community of Harbor Island.

During the community input process, it was determined that the point at which the Route 21 Spine trail passes through the historic Comers Community required special attention in order to address the needs and wishes of the community. This area is comprised of a number of cultural and historic resources that the community would like to have connected through a soft surface walking trail network. It is the community's belief that a soft surface walking trail network is historically in keeping with the traditions of the Corners Community. The result of this input lead to the proposed soft surface walking trail loop system which will connect the historic commercial area to the Penn Center and the ruins of the Chapel of Ease. This soft surface walking trail should include interpretive signage and other installations to promote an understanding of how the historic and cultural landscape represents the Gullah way of life.

Greenway Spur Trails: Several greenway spur trails are proposed throughout St. Helena that will link to the Route 21 Spine Trail.

- These spur trails will provide access from established residential communities found throughout St. Helena, including Lands End, Eddings Point, Dataw and Polawana Islands, to the Route 21 Spine Trail.
- The Lands End/Seaside Spur Trail: Links historic sites such as the Penn Center, the Chapel of Ease, Fort Fremont (currently private), and the Coffin Point Praise House, Station Creek Landing, and several neighborhood parks.

The St. Helena greenway network allows users to access pre-established public boat launches from which they can enjoy the vistas and various habitats that are found along the inner waterways separating each island. The master plan study also identified these areas as potential community parks and trailhead facilities. The renovation of these areas should include the programming of traditional park amenities such as restrooms, picnic shelters and seating areas. The conversion of the public boat launch facilities into community parks will provide the St. Helena Community with additional park lands that were requested during the community information meetings.

In the future, designated boat launches determined through community input will serve as stops along a ferry route. It is envisioned that a ferry system will eventually tie to a bus shuttle service, providing tourists and residents with an alternative transportation option to the islands located along the Port Royal Sound.

Blueway Trails: A blueway network for paddle craft also connects these existing boat launches via the waterways, exposing recreational users to the diverse coastline and habitats that are found within each interior coastal waterway. The proposed blueway network will expand upon the existing South Carolina Department of Natural Resources (SCDNR) Port Royal Sound Paddle Trails on the northeast side of the island. The proposed blueway trails will connect to the Coosaw River, Bull River in the ACE Basin, and eventually to the City of Beaufort and the Town of Port Royal. Via the blueway network, paddle craft users will be able to access the SCDNR Old Island Heritage Preserve trail system and the Bay Point Shoals Heritage Preserve.

LEGEND :

- COUNTY BOUNDARIES
- WATERWAYS
- WETLANDS/MARSHES
- MAJOR ROADS
- ROADS
- RAILROAD
- MILITARY BASES
- CONSERVATION EASEMENTS & PRESERVED LANDS
- COUNTY & STATE PARKS
- WESTERN BORDER OF THE ACE BASIN PROJECT
- LIBRARIES
- SCHOOLS
- COLLEGES
- POST OFFICES
- GROCERIES
- FISHING PIERS
- BOAT LANDINGS
- HISTORICAL POINTS
- PARKS
- ★ EXISTING OPEN SPACE & PRESERVED VISTAS
- KAYAK/BIKE RENTALS
- ▲ CAMPING
- ▲ HIKING
- BIKING TRAILS
- EXISTING PORT ROYAL SOUND PADDLE TRAILS
- PROPOSED BLUEWAYS
- EXISTING GREENWAYS
- GREENWAYS CURRENTLY PLANNED
- PROPOSED GREENWAYS
- PROPOSED FERRY CONNECTION
- PROPOSED RAILS TO TRAILS
- PROPOSED TRAIL IN WATER LINE EASEMENT



OCTOBER 2002
 ST. HELENA & SURROUNDING ISLANDS
 NORTHERN BEAUFORT COUNTY
 GREENWAY AND BLUEWAY MASTER PLAN

PREPARED FOR: BEAUFORT COUNTY
 PLANNING DEPARTMENT
 PREPARED BY: JORDAN, JONES & GOULDING

DESIGN GUIDELINES

This section gives an overview of the various considerations necessary when designing and constructing trails within the greenway. Refer to the AASHTO 1999 Guide for the Development of Bicycle Facilities for more detailed information on trail design and signage usage.

TRAIL USERS

The first step in designing and constructing a trail is to identify the types of uses that the trail will need to accommodate. Various types of trail users include: bicyclists, walkers, runners, scooters (non-motorized), in-line skaters and equestrians. It is important to note that some jurisdictions and certain types of funding may require that trails are designed to meet the American Disabilities Act (ADA) guidelines for accessibility. Motorized vehicles, with the exceptions of those vehicles for emergency and maintenance purposes, are typically prohibited from using trails.

TRAIL TYPES

The uses anticipated and the site conditions will determine the appropriate type of trail. In some areas, a combination of trail types may be appropriate, such as sidewalks in addition to bike lanes along an existing road. This allows for separation of uses. Here are examples of the various types of trails and their users:

- Multi-Use Trails: Bicyclists, walkers, runners, scooters (non-motorized), in-line skaters.
- Boardwalks: Walkers, and where permitted, bicyclists.
- Walking Trails/Sidewalks: Walkers, runners, hikers, and where permitted, scooters and in-line skaters.
- Bicycle Lanes: Bicyclists.
- Equestrian Trails: Equestrians.

TRAIL DESIGN

It is recommended that the County and municipalities set a range of standard slopes and widths for each trail type to create consistency throughout the Greenway network. Multi-use trails and shared use trails should be designed to keep grades to a minimum. Where feasible, grades should not exceed 5 percent. Shared use paths with soft surfaces may require grades less than 3 percent to minimize erosion and ensure user safety. In all cases, cross-slope grades should not exceed 2 percent. The selection of each trail's width depends upon several factors:

- Environmental site conditions
- Available right of way and/or easement width

- Types of trail users
- **Multi-Use Trails:** A 10-foot width is recommended for multi-use trails in suburban and rural areas, narrowing to an 8-foot width if the trail is on steeper slopes, in sensitive areas, or if other conditions such as available right of way, make construction difficult. The width of the trail may increase to 12 feet in urban areas where trail use is expected to be high and the greenway can handle the impact. In all cases, a 2-foot soft shoulder should be included on either side for user safety, and to preserve the integrity of the pavement edge. The shoulder can be mulched, planted with native grasses, or in high-use conditions, covered with a layer of gravel. Refer to the AASHTO guidelines for further information.
- **Walking trails:** Hard surface walking paths should be a minimum of 4 feet wide and should be handicap accessible (see ADA standards). Soft surface walking trails, for use of walking or hiking only, should be a minimum of 20 inches for single file use, or as wide as 4 feet, which allows for two people walking side by side.
- **Equestrian Trails:** Equestrian trails should be designed to be 4 feet wide for single file riding and 8 feet wide for riding two side by side.
- **Bike Lanes:** Bike lanes aid in separating vehicular traffic flow from bicycle traffic, increasing the level of safety for both types of users. Lanes should allow bike traffic to flow in the same direction as the vehicular traffic. Two-way bicycle lanes adjacent to one side of the roadway are greatly discouraged for reasons of safety. Bike lanes should be a minimum of:
 - 4 feet wide.
 - 5 feet wide where adjacent to curb and gutter.
 - 5 feet wide where adjacent to parking stalls.

Drainage structures and other roadway structures within the bike lanes should be minimized. Bike lane width may be increased in areas where such structures may interfere with bicycle traffic.

TRAIL SURFACES

There are several types of surfaces that can be used for trails. Selection of a surface for a particular trail depends upon the type of use and the conditions specific to the site. When choosing a trail surface consider the following:

- Site environmental conditions
- Types of trail users
- Site character

Once these factors are taken into consideration, it will become more clear which trail surface is appropriate for a site. Here is a listing and description of various types of trail surfaces:

- **Asphalt:** Many multi-use trail users, such as bicyclists and in-line skaters prefer asphalt because it is softer and does not contain the "bumps" created by concrete construction joints (Peterson, 1998). Asphalt is appropriate in dry, upland areas outside the 100-year floodplain. Cold-pressed recycled asphalt is suitable for pedestrian and handicap accessible uses, but the rough surface is not appropriate for bicyclists or in-line skaters.

Estimated Costs for Asphalt Trails*

Type	Cost
Trail with no drainage	\$2.00 per square foot
8' wide trail with drainage	\$18.50 per linear foot
10' wide trail with drainage	\$23.00 per linear foot

Estimated Costs for Recycled Asphalt Trails*

Type	Cost
Trail with metal edging	\$2.00 per square foot

- Concrete:** Concrete paving is used within the 100-year floodplain, because it is less likely to be damaged by flood events. The concrete should contain a fiber mesh material, which makes the paving more resistant to heaving and cracking.

Estimated Costs for Concrete Trails*

Type	Cost
Trail with no drainage	\$3.50 per square foot
5' wide trail with drainage	\$21.00 per linear foot
8' wide trail with drainage	\$33.60 per linear foot
10' wide trail with drainage	\$42.00 per linear foot

- Permeable Concrete:** Both concrete and asphalt are impermeable surfaces, which means that water cannot infiltrate through them into the ground. Permeable concrete paving allows a certain amount of infiltration. Over time, however, the pores in the paving can become clogged with sediment. The material should be located in areas where a minimal amount of water drains onto the pavement. Permeable concrete is most effective on well-drained soils outside of the 100-year floodplain or tidal zone. It can be used for multi-use trails, sidewalks and walking trails.

Estimated Costs for Permeable (Porous) Concrete Trails*

Type	Cost
Without Drainage	\$2.00 - \$6.50 per square foot

- Soil Cement:** Soil cement, another paving material, is created on site by mixing the native soil with concrete. Although soil cement is a hard impermeable surface, it has the look of a natural footpath. It is best suited for walking trails. Soil cement is most successful on well-drained soils.

Estimated Costs for Soil Cement (Soil Stabilizers) Trails*

Type	Cost
6' wide	\$18.00 per linear foot
8' wide	\$24.00 per linear foot
10' wide	\$30.00 per linear foot

- Boardwalks:** Boardwalks are used in areas with saturated soils, wetland areas, and other sensitive areas where it is undesirable or prohibited to install a trail on the ground surface. Boardwalks may be used when it is necessary to cross non-tidal wetlands, where the trail has an educational purpose, for beach dune crossings, or for access to the water across river buffers (Refer to Beaufort County Zoning & Development Standards Ordinance, Sec.106-1911). The boardwalks in these areas should be designed to have a minimal impact on the vegetation below and surrounding them.

Estimated Cost for Boardwalk with Railing*

Type	Cost
6' wide	\$220.00 per linear foot
8' wide	\$260.00 per linear foot
10' wide	\$300.00 per linear foot

- Gravel or Sand Surface with Geoweb Substructure:** Geoweb material used with 57 stone and an M10 or sand surface may be used as a soft surface trail. It provides a stable trail surface that blends in with the surrounding environment.

Estimated Cost for Gravel or Sand Surface with Geoweb Substructure*

Type	Cost
Trail with drainage	\$3.50 per square foot

- Equestrian Trails:** Surfaces for equestrian trails should be soft, but firm, with native soil being the best surface.

Equestrian and Other Soft Surface (Native Soil) Trails*

Type	Cost
Trail	\$2.50 per square foot

* These estimates are for information purposes only. Actual prices are subject to vary. Prices do not include land acquisition costs, staking, grading, erosion control, landscaping or final clean up.

SIGNAGE

Signage is not only a necessary safety component of an effective trail or greenway system, but can also be used to enhance the user's experience. A signage package is recommended to establish standards for the various types of signage within the greenway. A graphic designer can create such a package. To establish the trail logo and raise awareness of the trail system, a county-wide contest could be held to create a logo for the signage. The Northern Beaufort County Greenway & Blueway system should also incorporate any future East Coast Greenway, Revolutionary Trails Network, or Palmetto Greenway Initiative signage that is developed along shared routes.

In either case, both the American Association of State Highway and Transportation Officials (AASHTO) and the Manual on Uniform Traffic Control Devices (MUTCD) guidelines must be followed for the directional and safety signage. A signage package should consist of the following elements:

Greenway Signage:

- Logo: Creates a sense of place and provides consistency of the signage along the Northern Beaufort Greenway and Blueway network. The logo should be incorporated into all the signage in the same location. It can be imprinted on the sign frame or post, or included on the sign itself.
- Map: Provides site specific and overall location information to greenway users. Map signage should be placed at trailheads, parks and any other site where locational information is appropriate.
- Directional Signage: Alerts greenway users to anticipate changes in the course of the greenway. Refer Signage to Figure 1 for examples of directional signage.
- Safety Signage: Alerts greenway users of potential hazards and site conditions they will encounter.
- Traffic Control Devices: May be necessary in addition to safety signage where greenway routes intersect roadways or railroad crossings. Additional pavement markings and traffic calming measures can greatly increase trail safety in these areas. Refer to Figure 2 for examples of safety signage.
- Educational Signage: Provides additional interpretive information about a site's environmental, cultural, or historical features. Refer to Figure 3 for examples of educational signage.
- Mileage Markers: These markers are appropriate for extended-range greenways. They provide users with information about their location along a route.

Blueway Signage:

- Logo: Creates a sense of place and provide consistency to the signage along the Northern Beaufort Greenway & Blueway network.
- Map: Provides site specific and overall location information to blueway users. Map signage should be placed at all water access points.
- Information: A small kiosk where information on safety, as well as blueway map brochures
- Station will provide useful information to users.

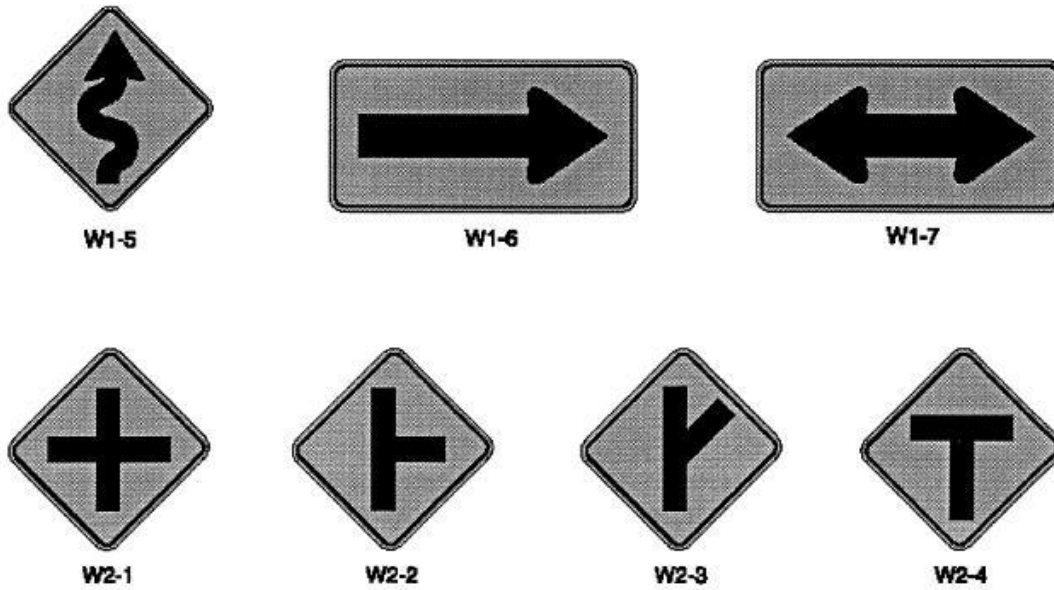


Figure 1: Examples of Directional Signage

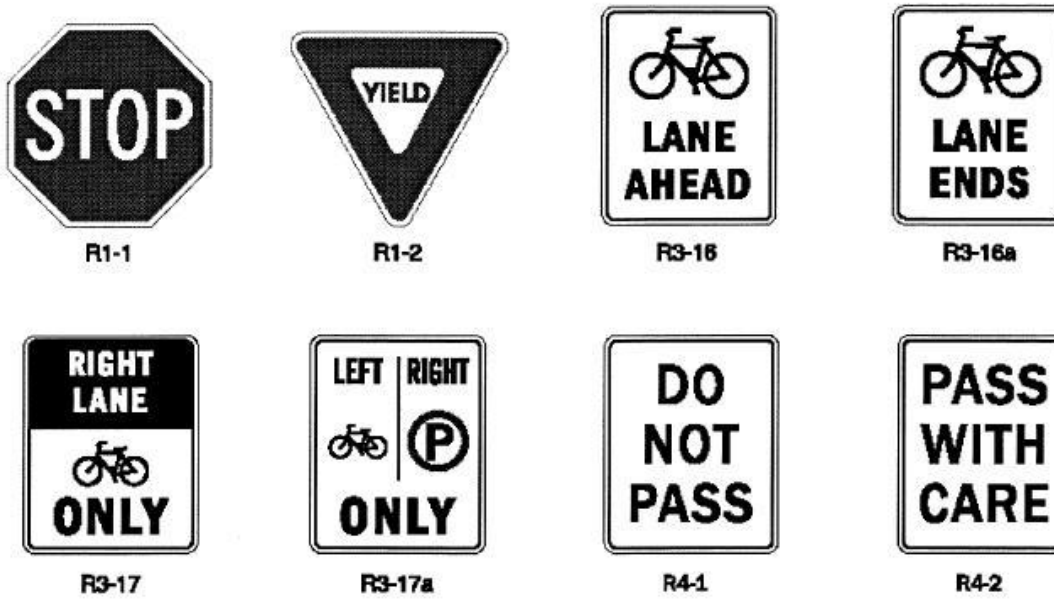


Figure 2: Examples of Safety Signage

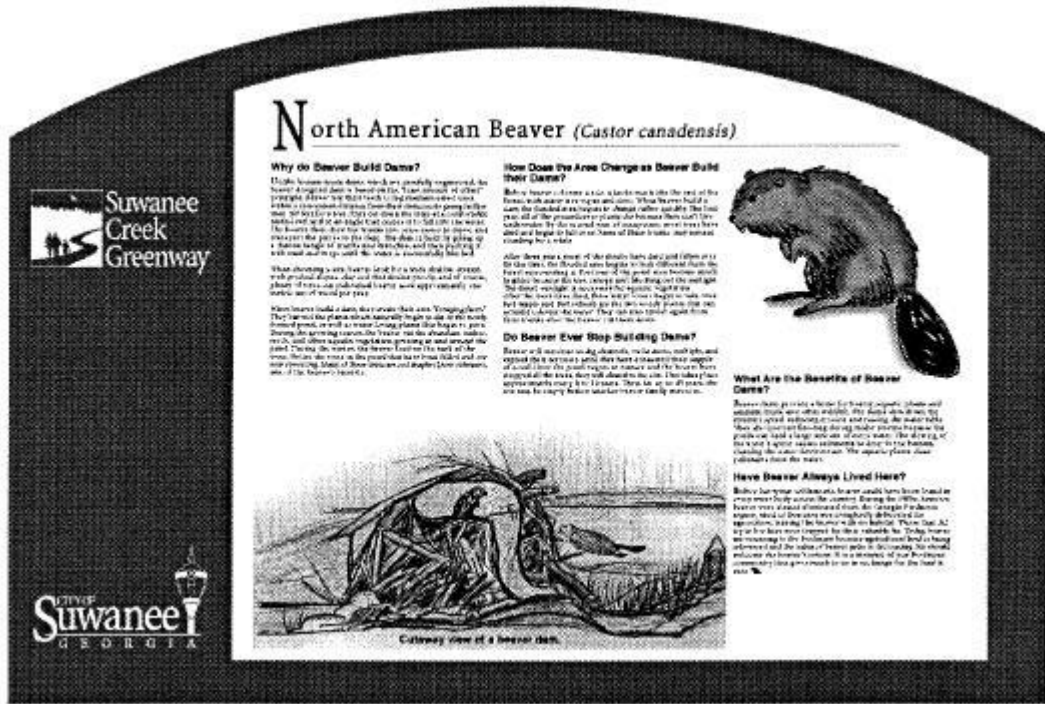


Figure 3: Example of Educational Signage

DESIGNING TRAILS ALONG RAILROAD CORRIDORS

Railroad corridors provide exciting opportunities for siting long distance greenway trails. In order to use existing or abandoned railroad corridors as greenway routes, the County will need to investigate the status of land within the corridor. This will require coordination with the rail line company as well as property owners. The rail line corridor will need to be mapped by a surveyor to determine updated ownership information and the exact location of property lines. If the land is still owned by the rail company, the County will need to negotiate permanent ownership of the corridor or an easement with permanent public access. In the case that the land has reverted back to the adjacent property owners, the County will need to negotiate public access on a permanent easement from the individual property owners.

DESIGNING TRAILS ALONG UTILITY CORRIDORS

Utility corridors can also offer great opportunities for locating greenways trails. In order to successfully site a greenway along a utility corridor, the agency which manages the greenway will need to work closely with the utility company to establish and balance the needs of the utility with those of the greenway. The following items will need to be addressed when planning to develop a greenway along a utility corridor:

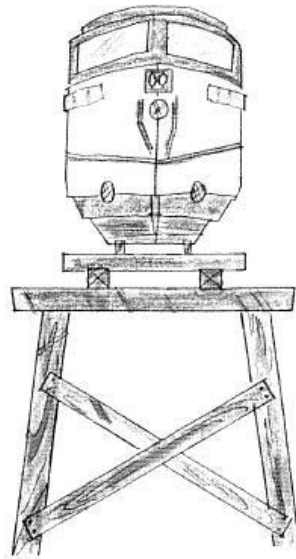
- What are the anticipated uses of the greenway?
- How will the greenway be maintained?
- What are the responsibilities associated with planning and managing the greenway?
- How will those responsibilities be delegated?

In general, the alignment of a trail facility should provide access to the active utility and minimize any impacts. Maintenance of the utility needs to be coordinated with the Owner for reasons of

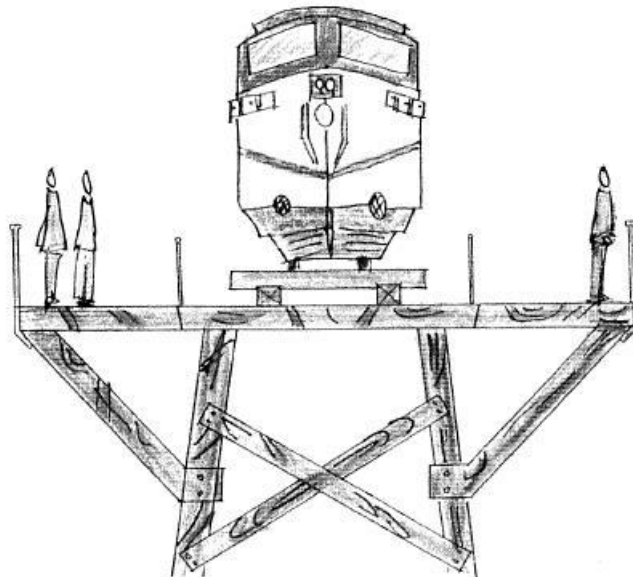
public safety. Any impact to the utility due to the trail placement becomes the responsibility of the Owner. Use of utility corridors for greenways may create new opportunities for funding sources to the Greenway system. In the past, utility companies have offered their support and funding to greenway projects. Additionally, some underground utilities may possess casements for maintenance, but not for public access. In these cases the County will need to change the easement type to include permanent public access.

TYPICAL SECTIONS

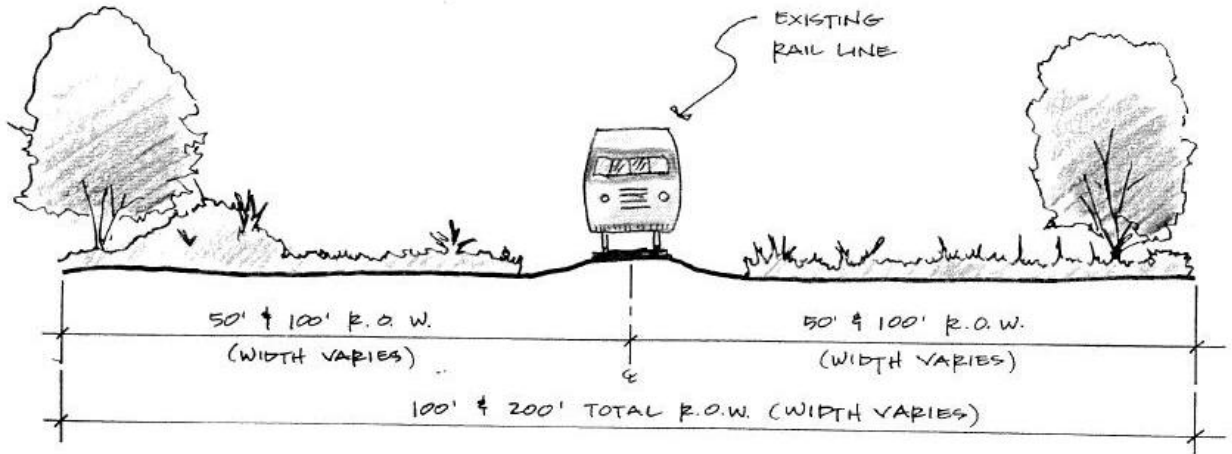
Sections 1 through 12 show typical sections of existing conditions and examples of proposed conditions of greenways and trails in Northern Beaufort County. Actual conditions will vary for each specific trail. The following are descriptions of the sections which have been provided.



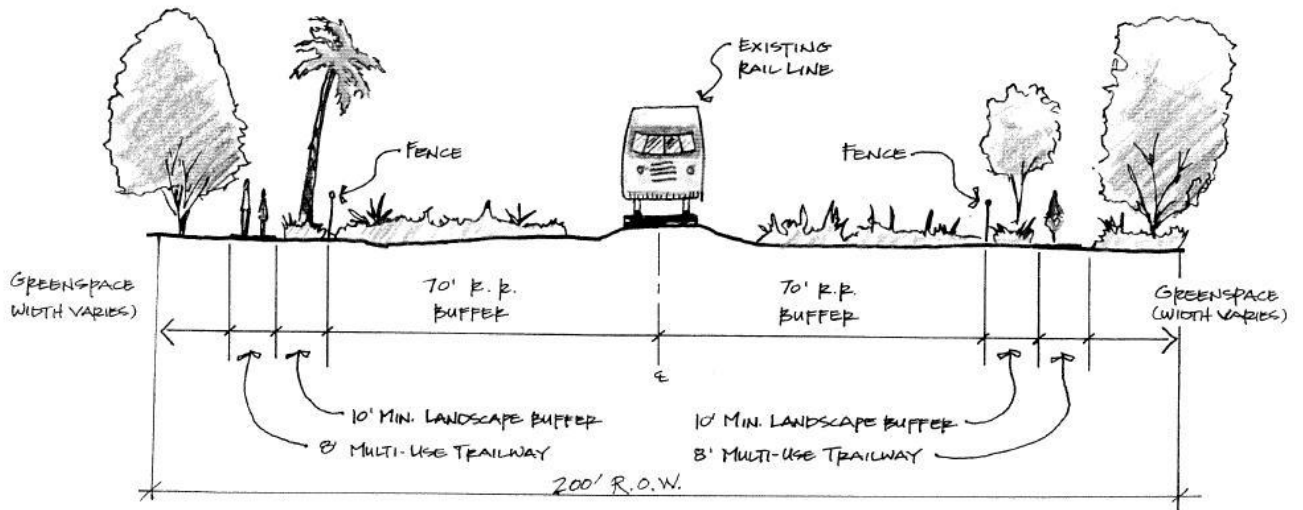
Section 1: A section through the existing Yemassee-Port Royal Rail Line Train Trestle



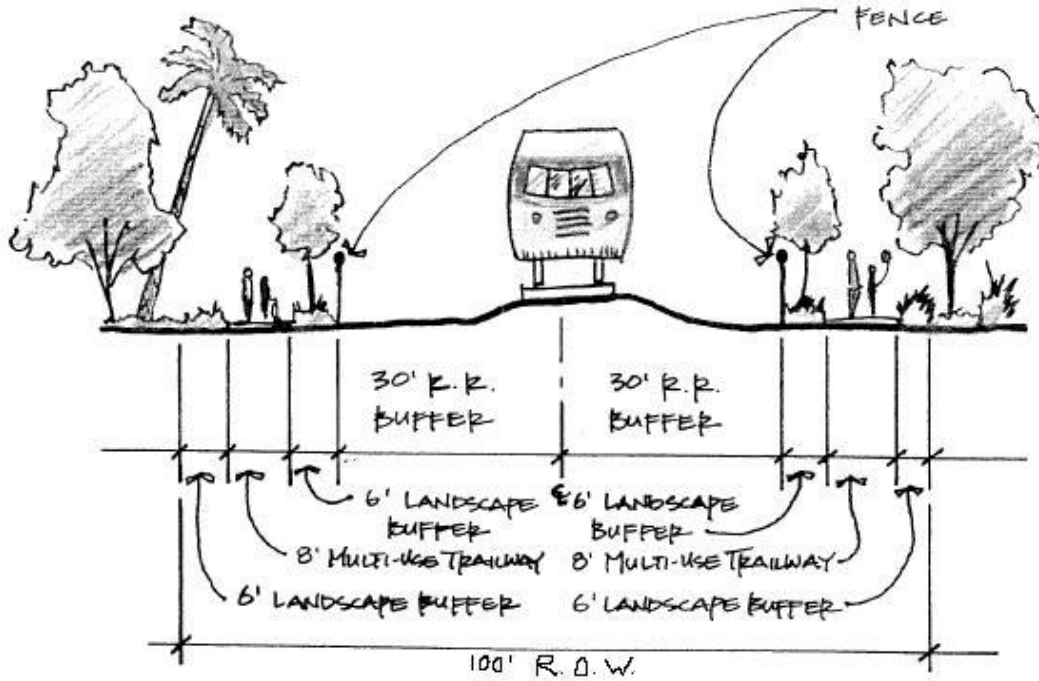
Section 2: This section shows how the trestle could be adapted for pedestrian use along the Port Royal Rail Trail, while the train line is still active.



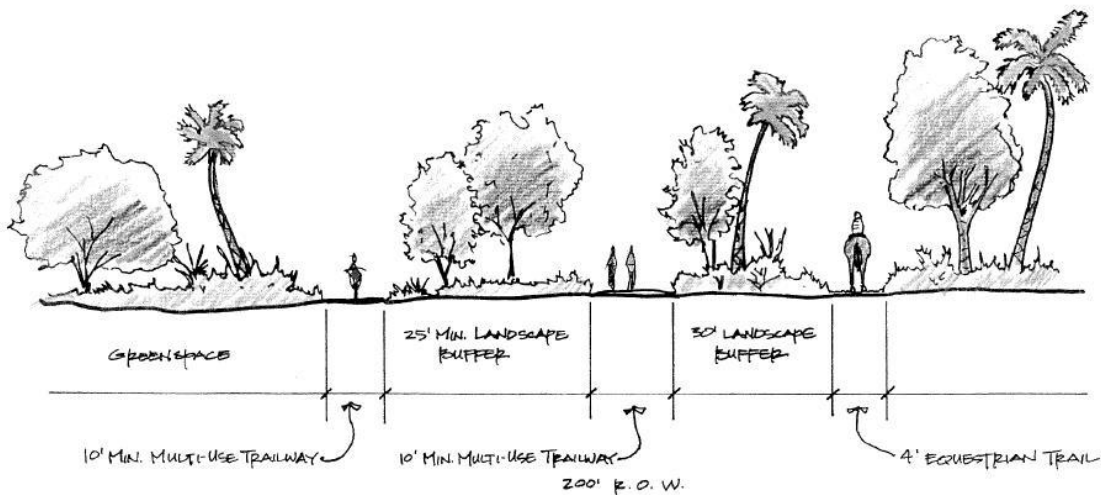
Section 3: A section through the existing 100' or 200' right of way along the Yemassee-Port Royal Rail Line.



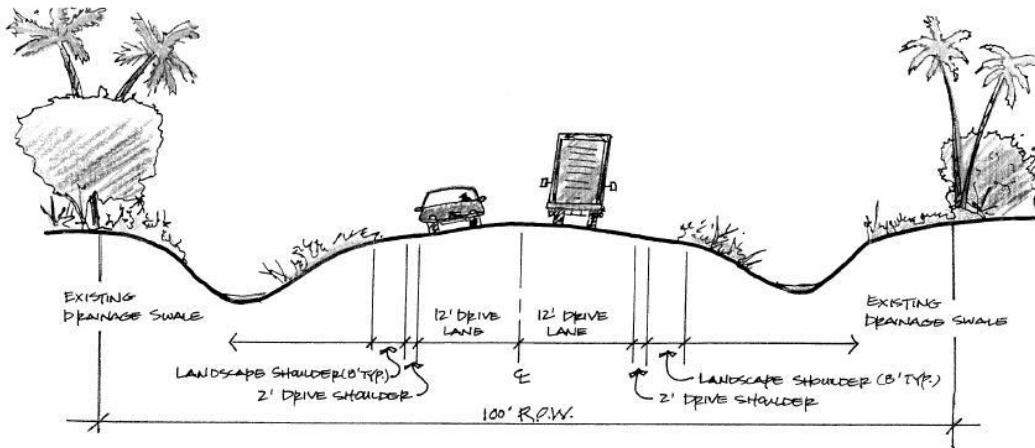
Section 4: This section shows how the proposed Port Royal Rail Trail and greenspace could be incorporated alongside the active rail line within the 200' right of way.



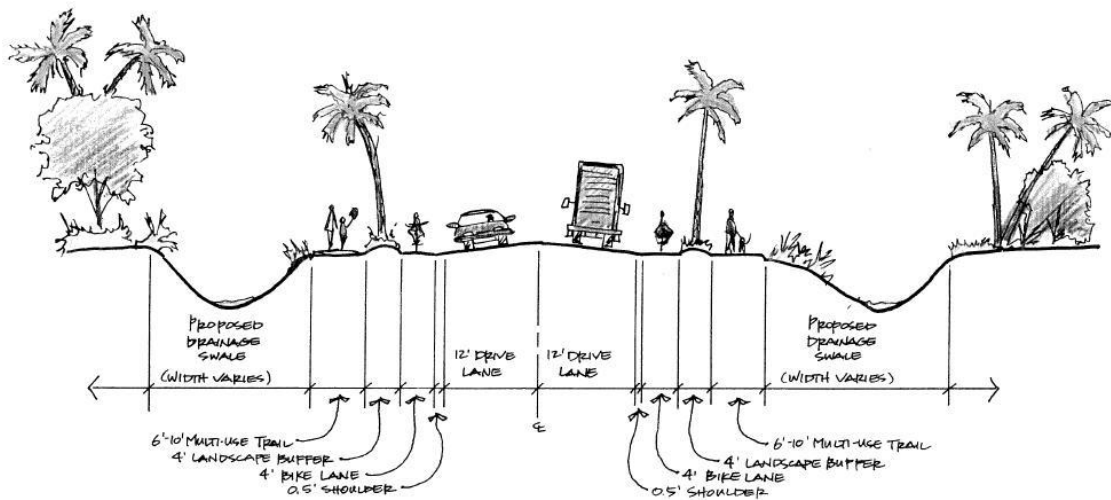
Section 5: This section shows how the proposed Port Royal Rail Trail and greenspace could be incorporated along the active rail line within the 100' right of way.



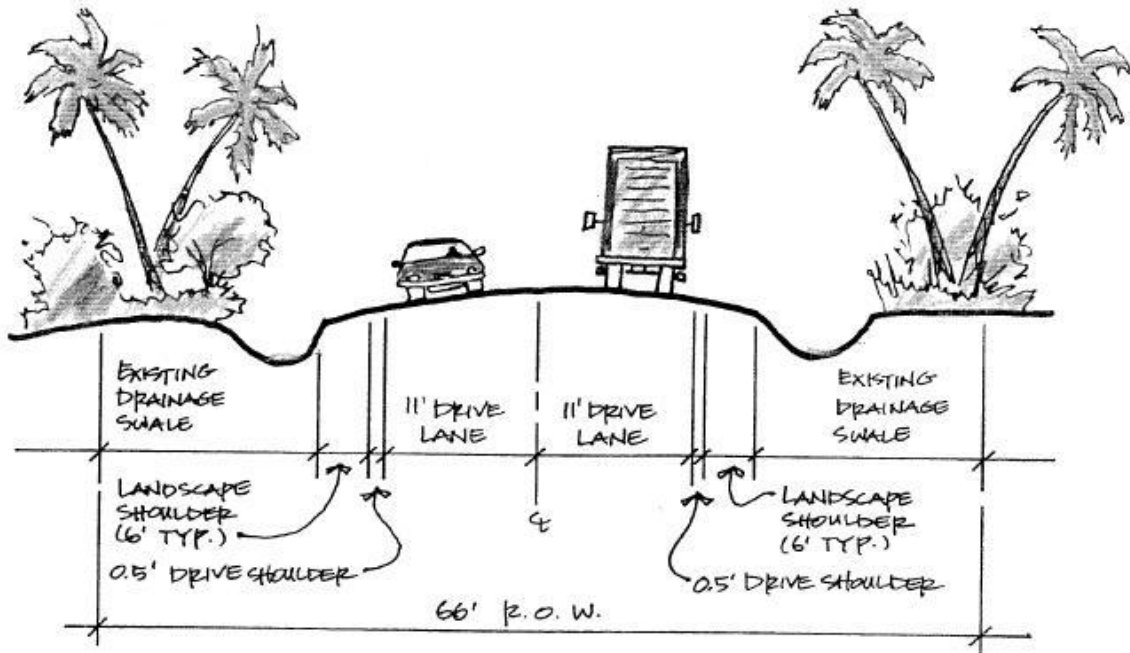
Section 6: This section shows the proposed Port Royal Rail Trail and greenspace in the case that the Yemassee-Port Royal Rail Line is abandoned. The greenspace would form a linear park extending through the County.



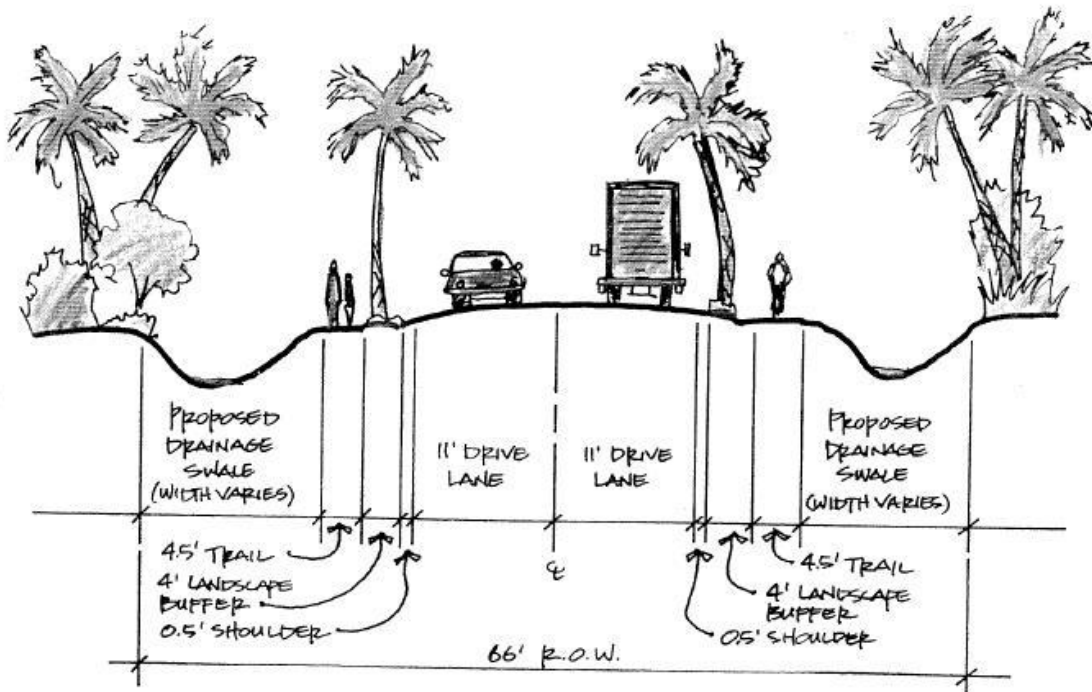
Section 7: A section through a typical existing 100' right of way along a roadway.



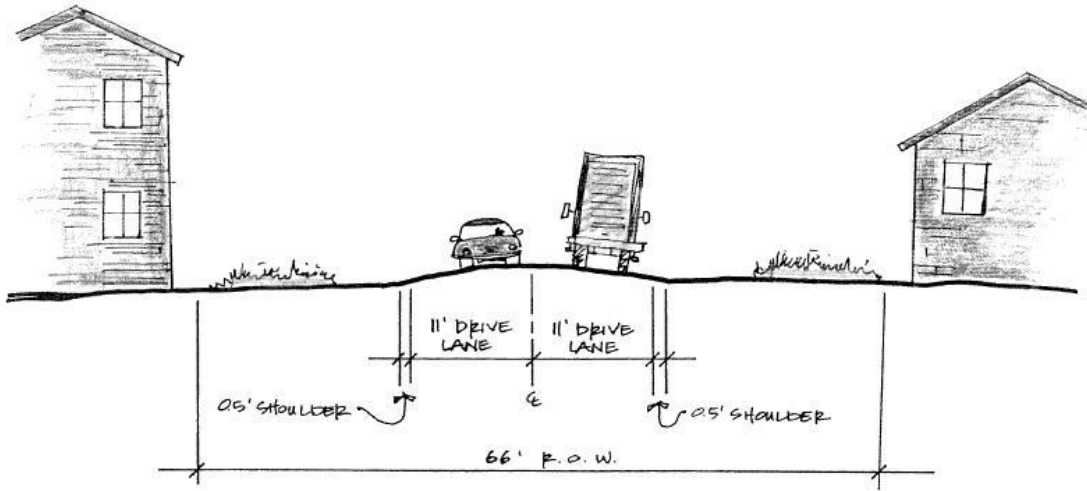
Section 8: This section shows multi-use trails or sidewalks and bike lanes along the existing roadway within an existing 100' right of way.



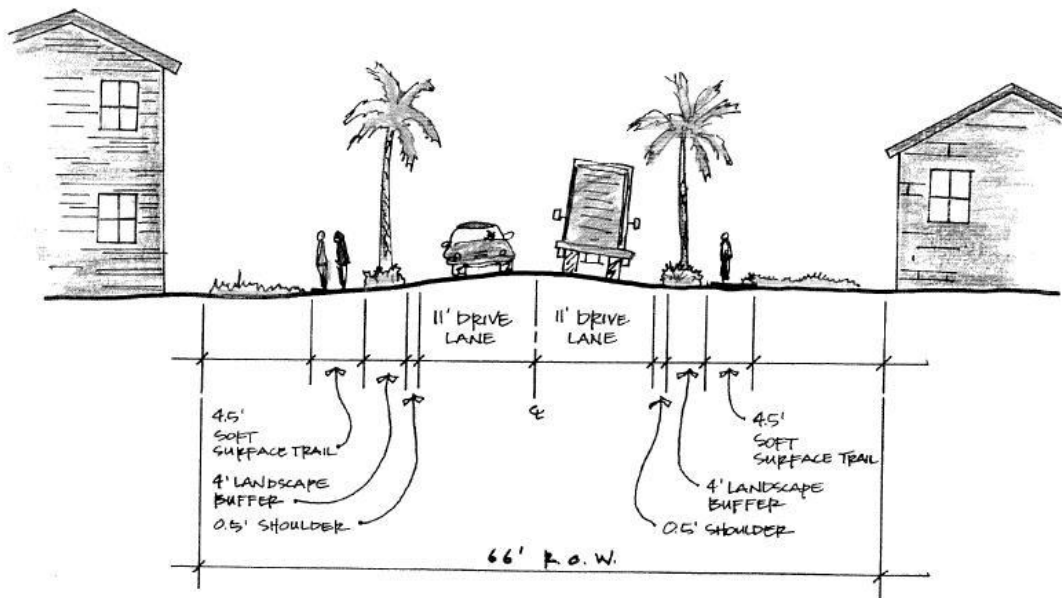
Section 9: A section through a typical existing 66' right of way along a roadway.



Section 10: This section shows trails or sidewalks placed along the existing roadway within the existing 66' right of way.



Section 11: A section through a typical existing 66' right of way along a roadway in the Corners Community.



Section 12: This section shows soft surface trails through the existing 66' right of way along a roadway through the Corners Community.

MAINTENANCE MANAGEMENT GUIDELINES

This section provides an overview of the issues involved in maintaining a greenway/blueway system.

MAINTENANCE MANAGEMENT SYSTEM

An appropriate maintenance system is critical for the success and longevity of a greenway/blueway system. A maintenance management system will assist the entity responsible for managing the greenway/blueway with a clear work plan from which to operate. The entity managing the greenway/blueway system will need to:

- Determine the maintenance goals and levels of service.
- Generate maintenance programs which afford those levels of service.
- Provide an efficient execution of the maintenance programs.
- Monitor and assess each maintenance program to determine if the programs are meeting the service needs.
- Accurately budget the maintenance programs¹.

When a maintenance system is being developed, each greenway/blueway will need to be specifically examined in order to accurately address its maintenance needs. The type of trail surface, types of users, quantity of users and location of the trail will have a direct effect on determining the type and frequency of maintenance required. The section on maintenance from the Denver Bicycle Master Plan provides a general checklist for maintenance of trails. In this section, author Jed Wagner of the Denver Parks and Recreation department presents a checklist as follows:

Maintenance to be Performed on a Continuous, Scheduled Basis

- ✓ **Trail user safety:** Safety is central to all maintenance operations, and is the single most important trail maintenance concern. Items for consideration include scheduling and documentation of inspections, the condition of railings, bridges, and trail surfaces, proper and adequate signage, removal of debris, and coordination with other agencies associated with trail maintenance.
- ✓ **Trails inspection:** Trails inspections are integral to all trail maintenance operations. Inspections will occur on a regularly scheduled basis, the frequency of which will

¹ Bachensky, L.. Maintenance Management Systems for Trails. Article from American Trails Organization website, www.americantrails.org, website accessed October 1, 2003.

depend on the amount of trail use, location, age, and the type of construction.

- ✓ **Trail sweeping:** Trail sweeping is one of the most important aspects of trail maintenance, helping ensure trail user safety. The type of sweeping to be performed depends on trail design and location. Trails that require sweeping of the whole system will be swept by machine. Trails that require only spot sweeping of bad areas will be swept by hand or with blowers.
- ✓ **Trash Removal:** Trash removal from trail corridors is important from both a safety and aesthetic viewpoint and includes removing ground debris and emptying trash containers. Trash removal will take place on a regularly scheduled basis, the frequency of which will be fairly low.
- ✓ **Tree and shrub pruning:** Tree and shrub pruning will be performed for the safety of trail users. Pruning will be performed to established specifications on a scheduled and as needed basis, the frequency of which will be fairly low.
- ✓ **Moving of vegetation:** Trails maintenance personnel will mow vegetation along trail corridors on a scheduled basis only where moving is not performed by other agencies or park districts.
- ✓ **Scheduled maintenance tasks:** Inspections, maintenance and repair of trail-related concerns will be scheduled. Inspection and repair priorities should be dictated by trail use, location, and design. Scheduled maintenance tasks is a key item towards the goal of consistently clean and safe trails.

Maintenance to be Performed on an Irregular or As-needed Basis

- ✓ **Trail Repair:** Repair of asphalt or concrete trails will be closely tied to the inspection schedule. Prioritization of repairs is part of the process. The time between observation and repair of a trail will depend on whether the needed repair is deemed a hazard, to what degree the needed repair will affect the safety of the trail user, and whether the needed repair can be performed by the trails maintenance crew or if it is so extensive that it needs to be repaired by outside entities.
- ✓ **Trail Replacement:** The decision to replace a trail and the type of replacement depends on many factors. These factors include the age of the trail, and the money available for the replacement. Replacement involves either completely overlaying an asphalt trail with a new asphalt surface, or replacement of an asphalt trail with a concrete trail. In general, replacing asphalt trails with concrete is desirable.
- ✓ **Weed control:** Weed control along trails will be limited to areas in which certain weeds create a hazard to users (such as “goathead” thorns along trail edges). Environmentally safe weed removal methods should be used, especially along waterways.
- ✓ **Trail edging:** Trail edging maintains trail width and improves drainage. Problem areas include trail edges where berms tend to build up, and where uphill slopes erode onto the trails.

Removal of this material will allow proper draining of the trail surface, allow the flowing action of the water to clean the trail, and limit standing water on trail surfaces. Proper drainage of trail surfaces will also limit ice build-up during winter months.
- ✓ **Trail drainage control:** In places where low spots on the trail catch water, trail surfaces should be raised or drains built to carry away water. Some trail drainage control can be achieved through the proper edging of trails. If trail drainage is corrected near steep slopes, and the possibility of erosion must be considered.

- ✓ **Trail Signage:** Trail signs fall into two categories, trail safety and information. Trail users should be informed where they are, where they are going, and how to use trails safely. Signs related to safety area most important and should be considered first. Information signage can enhance the trail users' experience. A citywide system of trail information signage should be a goal.
- ✓ **Revegetation:** Areas adjacent to trails that have been disturbed for any reason should be revegetated to minimize erosion.
- ✓ **Habitat enhancement and control:** Habitat enhancement is achieved by planting vegetation along trails, mainly trees and shrubs. This can improve the aesthetics of the trail, help prevent erosion, and provide for wildlife habitat. Habitat control involves mitigation of damage caused by wildlife. An example is the protection of trees along waterways from damage caused by beavers.
- ✓ **Public awareness:** Creating an understanding among trail users of the purpose of trails and their proper use is a goal of public awareness. Basic concepts of trail use include resolution of user conflicts, and speed limitations. The representatives should be easily accessible to field questions and concerns.
- ✓ **Trail program budget development:** A detailed budget should be created for the trails program, and revised on an annual basis.
- ✓ **Volunteer coordination:** The use of volunteers can help increase public awareness of trails, and provide a good source of labor for the program. Sources of volunteers include Boy Scouts, school groups, church groups, trail users, or court workers. Understanding volunteers' concerns is important, as are possible incentives or recognition of work performed. Implementation of an "Adopt-a-Trail" program should be considered.
- ✓ **Records:** Good record-keeping techniques are essential to an organized program. Accurate logs should be kept on items such as daily activities, hazards found and action taken, maintenance needed and performed, etc. Records can also include surveys of the types and frequency of use of certain trail sections. This information can be used to prioritize trail management needs.
- ✓ **Graffiti control:** The key to graffiti control is prompt observation and removal. During scheduled trail inspections any graffiti should be noted and the graffiti removal crew promptly notified.
- ✓ **Mapping:** Several maps are privately marketed and available for trail users. From a maintenance standpoint, an accurate detailed map of the trail system is important for internal park use.
- ✓ **Coordination with other agencies:** Maintenance of trails located within more than one jurisdiction, like the Platte River Trail and the High Line Canal Trail, is provided by other agencies, in addition to Denver Parks Department. A clear understanding of maintenance responsibilities needs to be established to avoid duplicating efforts or missing maintenance on sections of the trails.
- ✓ **Education and Interpretation:** Many segments of the trail system contain a wealth of opportunities for education and interpretation. A successful example is Denver Public Schools' Greenway Experience, operated for many years. Trails along waterways provide good opportunities to teach and study concepts about urban wildlife and ecology. Educational opportunities range from interpretive signage to educational tours.
- ✓ **Law enforcement:** A greater law-enforcement effort might be made toward the goal of safer trail system. Law enforcement agencies should be aware about the location of trails, and the types and levels of use they receive. Sections of trail corridors being used by transients is an ongoing problem that is not easily solved. Increased law

enforcement will be addressed on an as needed basis.



Proper training of employees: Proper training maintenance employees is essential to the efficient operation of the trails maintenance program. All employees should be thoroughly trained to understand and be aware of all of the above mentioned aspects of a good training program. Employees must also be aware of the need for positive public contact. Proper positive attitude towards public questions and concerns is important, as is the conveyance of this information to trail supervisors.

MAINTENANCE RESPONSIBILITIES

The Northern Beaufort County Greenway/Blueway Master Plan encompasses cross-jurisdictional boundaries that must be considered when defining levels of maintenance responsibilities. As each segment of the greenway/blueway network is implemented as outlined in the Implementation Strategies section of this document, it is imperative that a comprehensive management plan be established prior to the completion of the design process. The management plan should address issues concerning funding, scheduling and responsibility for providing greenway/blueway maintenance. Depending upon land ownership and jurisdictional boundary delineation, a memorandum of understanding between all parties involved may be needed in order to insure that proper management of the greenway/blueway system is addressed.

ADDITIONAL RESOURCES

More specific technical information on trail maintenance be found in the following resources:

- American Trails Organization Website: www.americantrails.org
- Parker, T. S. 1994. Trail Design & Management Handbook, Revision 1.1. Open Space and Trails Program, Pitkin County Colorado. Available from the Pitkin County Open Space and Trails Program, 530 E. Main Street, Aspen, CO 81611, phone 970-920-5232, fax 970-920-5198.
- USDA Forest Service, 1996. Trail Construction and Maintenance Notebook Revised February 1999. USDA Forest Service-Technology & Development Program.

IMPLEMENTATION STRATEGIES

STAGES OF THE PROCESS

The implementation of the Northern Beaufort County greenway/blueway system involves four stages of development: the regional plan, the greenway/blueway segment master plan, the design and construction phase, and the management plan. The following is a brief description of each of the four stages:

- **Regional Plan:** The Northern Beaufort County Greenway and Blueway Master Plan is a regional plan created to ensure that an individual community's master plans work with and compliment the master plans of adjacent communities. These master plans can include transportation, greenspace, land use, or watershed plans. Depending on the goals of each regional plan, the region may be defined by a watershed, a political boundary, or a geographic or ecological region. The Northern Beaufort County Greenway and Blueway Master Plan has been divided into four geographical areas separated by water. The Ladys Island, City of Beaufort and Town of Port Royal area has been defined by geography and political boundaries.

The critical step in implementing the greenway/blueway network is for Beaufort County, the three military facilities, and each community preservation district to officially adopt the Northern Beaufort County Greenway and Blueway Master Plan. From there, the individual greenway/blueway segments should be master planned and implemented by the County, with input and assistance from the community preservation districts through which the trails are located. Segments within other municipalities, in gated communities or on military bases will be implemented by those entities, coordinating with the County to ensure that their systems tie into the overall network. The proposed ferry system should be developed and managed through a public/ private partnership. Road paving and drainage projects, undertaken by the South Carolina Department of Transportation, could supplement the greenway/blueway system by thoughtful planning to include multi-use trails, bike lanes and sidewalks, and access to boat launch facilities within the scope of their projects. South Carolina D.O.T. and the East Coast Greenway Alliance have already begun preparation of a trail plan which would link South Carolina in with the East Coast Greenway.

- **Greenway/Blueway Segment Master Plan:** The greenway/blueway segment master plan focuses on a particular greenway/blueway section and its relationship to the surrounding region. The master plan identifies areas for preservation, restoration, water quality improvements, education, alternative transportation and recreation. Although it describes elements and facilities to be included within the greenway, the master plan is conceptual and does not show specific locations for any element. Instead, it examines relationships between

the elements. The greenway/ blueway master plan defines the project's goals and issues. It also addresses implementation costs and funding sources, and proposes a timeline for completion of the greenway/blueway segment. The greenway/blueway segment master plan is developed with input from the surrounding community, and the process usually takes from six to twelve months to complete.

- **Design and Construction Phase:** The design and construction phase involves the detailed design of site elements, development of construction documents, and construction of elements within the greenway/blueway segment based on the greenway/blueway Segment Master Plan. Construction documents consist of technical drawings and specifications produced based on the master plan, applicable regulations, funding source requirements, design of site elements, and in-depth examination of the site conditions. They include the specific location and design of all the greenway/blueway elements.

Construction documents are used to guide the construction process. Successful construction within the greenway/blueway segment is achieved through the use of these documents and the cooperative effort of the project partners, design team, and contractor during construction. Refer to Section 4, Design Guidelines and Typical Sections for further information.

- **Management Plan:** This step is often overlooked in the greenway/blueway development process. The management plan for a greenway/blueway segment should be developed concurrently with the master planning and construction documents. A decision about the greenway/blueway management approach may affect design decisions. Management plans identify who will manage the greenway/blueway, where the funding will come from, and what expertise, equipment, and supplies are needed. For these reasons, management plans are beneficial in making more accurate long-term cost predictions for the greenway/blueway segment. Well-written management plans are crucial to the success of the greenway/blueway system. Refer to Section 5, Maintenance Management Guidelines for further information.

THE CAST

Greenway/blueway implementation involves various groups including the project partners, planning team, design team, stakeholders, and agencies. Following are some general definitions for these groups based on their roles in the project:

- **Project Partners:** The project partners include the project owner(s) or someone appointed by the owner(s), such as a project manager or a committee. Other partners may include nonprofits or governmental agencies that provide funding or other project assistance. In Northern Beaufort County, examples of project partners include County officials and departmental staff, Pathways Connect, Open Land Trust, and representatives from each municipality, community, and military base involved in a particular greenway/blueway segment.
- **Planning Team and Design Team:** The planning team and design team are the groups of professionals hired to complete the greenway/blueway project. The planning team is formed to create the greenway/blueway master plan. The design team is assembled to complete the design and construction phase of the project.

Hiring professionals for assistance is important because of the sensitive nature of greenway/blueway design. It is critical to accurately identify sensitive natural and cultural areas within the greenway/blueway segment. It is also essential to design and construct the elements of the greenway/blueway system in an environmentally sensitive manner. Professionals with experience in greenway/blueway projects or environmentally sensitive design should be selected for the project.

The teams may include the following professionals:

Profession	Expertise
Landscape Architect	Project coordination and greenway/blueway master planning, design and construction oversight.
Civil Engineer	Topographic and hydrological issues.
Biological/Ecologist	Identification of wetlands and significant natural areas.
Urban Planner	Regional planning and economic studies.
Environmental Planner	Watershed, preservation, and restoration planning.
Architect	Design of site structures (e.g. pavilion, restroom facilities).
Surveyor	Locate and record existing site conditions. Record plat for right-of-way, easements, and land acquisition.
Archaeologist	Identification of cultural resources.
Environmental Engineer	Water resources management.
Recreational Planner	Programming and master planning of recreational amenities and recreational needs assessment.
Structural Engineer	Design of bridge abutments and assessment of site structures (e.g. observation tower, boardwalk).
Geotechnical Engineer	Soil testing and subsequent design recommendations based on test results.
Real Estate Attorney/ Land Trust	Land, easement, and right-of-way acquisition.

- **Stakeholders:** Stakeholders are people who are in some way affected by activity in the greenway/ blueway corridor. Stakeholders should be identified and consulted during the regional planning and greenway/blueway segment master planning stages. The stakeholders will vary depending on the location and goals of the project.
- **Agencies:** Agencies are the federal, state, county, or local governmental bodies involved in the greenway/blueway project, such as the Office of Ocean and Coastal Resource Management (OCRM). They may be involved in funding and therefore have certain project requirements that must be met. They may also participate in a regulatory capacity and require permits based on federal, state, or local law.

COUNTY COORDINATION

The relationship of the different entities for the execution of the Northern Beaufort County Greenway and Blueway Master Plan are defined in Chart I: "Flow of Coordination for County Greenway/Blueway Implementation." Their roles are described below:

- Beaufort County Council: Will be responsible for approving the Northern Beaufort County Greenway and Blueway Master Plan, greenway/blueway segment master plans, and potential greenway/blueway projects within the County. They will receive input on these greenway/blueway projects from the Planning Commission as well as from City, County and Community Representatives.
- The Beaufort County Planning Commission: Will be responsible for the review and recommendation to the County Council of the greenway/blueway segment master plans and construction projects that are in support of the goals of the Comprehensive Plan and the Northern Beaufort County Greenways and Blueways Master Plan. They will instruct the Beaufort County Planning Department when to proceed with implementation, and receive input from the Planning Department about possible greenway/blueway projects.
- The Beaufort County Planning Department: Will supervise the master planning and implementation of greenway/blueway segment master plans. They will coordinate with Parks and Recreation and the Transportation Department to develop management plans for the greenway/blueway system. They will coordinate implementation of the Northern Beaufort County Greenway and Blueway Master Plan with municipalities and the military bases in the area, as well as with organizations planning larger networks such as the East Coast Greenway and the Revolutionary Trails Network. The Planning Department will also coordinate funding of the projects with Pathways Connect and the County Grants Writer. As the greenway segment master plans are developed, the County Planning Department will receive input from the individual community planning representatives concerning each community's needs and desires. The Planning Department will coordinate their planning efforts with the Advisory Committee. Finally, the Planning Department will issue the request for proposals for the design and construction of projects within the County.
- The County Grants Writer: Will be utilized to help obtain funds for the greenway/blueway networks. They will coordinate with Beaufort County Planning Department and Pathways Connect when applying for funding.
- The Municipalities within Beaufort County: Will be responsible for the planning and development of local greenway and blueway systems within their domain. They will collaborate with the Beaufort County Planning Department to incorporate their systems into the larger network of greenways and blueways within Northern Beaufort County.
- The Local Military Bases: Will be responsible for the development of the local greenway and blueway system within their domain. While their interior systems may be limited to military personnel, they will need to coordinate with the Beaufort County Planning Department to incorporate their systems into the larger network of greenways and blueways with Northern Beaufort County.
- Pathways Connect: Will be responsible for assisting with grant writing, and securing and endowing funding for the construction and maintenance of greenway/blueway projects. They will also inform the Beaufort County Planning Department on the funding status of project and assist with the planning process. Pathways Connect will also help to raise public awareness about greenways and blueways within the County.
- The Advisory Committee: Will provide input and feedback concerning the greenway/blueway segment master plans. They will share their information with Pathways Connect and the Community Planning Representatives. The following is a suggested list of

representatives from agencies and organizations that should be included in the advisory committee*:

S.C. Department Of Transportation	Area Business Associations
S.C. Department of Natural Resources	Rural & Critical Lands Board
Beaufort County Parks & Recreation	Local School Representatives
Low Country Council of Governments	Office of Ocean & Coastal Resources
Neighborhood Associations	Management
Open Land Trust	Pathways Connect

*This is only a suggested list. Other agencies, organizations and stakeholders specific to each greenway and trail project should be included in the process.

- Citizen Representative: A citizen representative from each individual Community Preservation Committee is responsible for coordinating projects with the local communities and advising the Planning Department, Advisory Committee and Pathways Connect about the community's concerns and needs.
- The Community Preservation Areas: Advise their Community Preservation Planner about the community's concerns and needs regarding potential and existing greenway/blueway projects. They will also inform the County Council of the community's needs.

SUMMARY

The process for planning and implementing greenway/blueway networks outlined in this section has been successfully undertaken by numerous municipalities. In order to achieve the implementation of the greenway/blueway network, it is critical that all parties which have a stake in the development and use of these facilities be involved through each stage of planning, construction and management process.

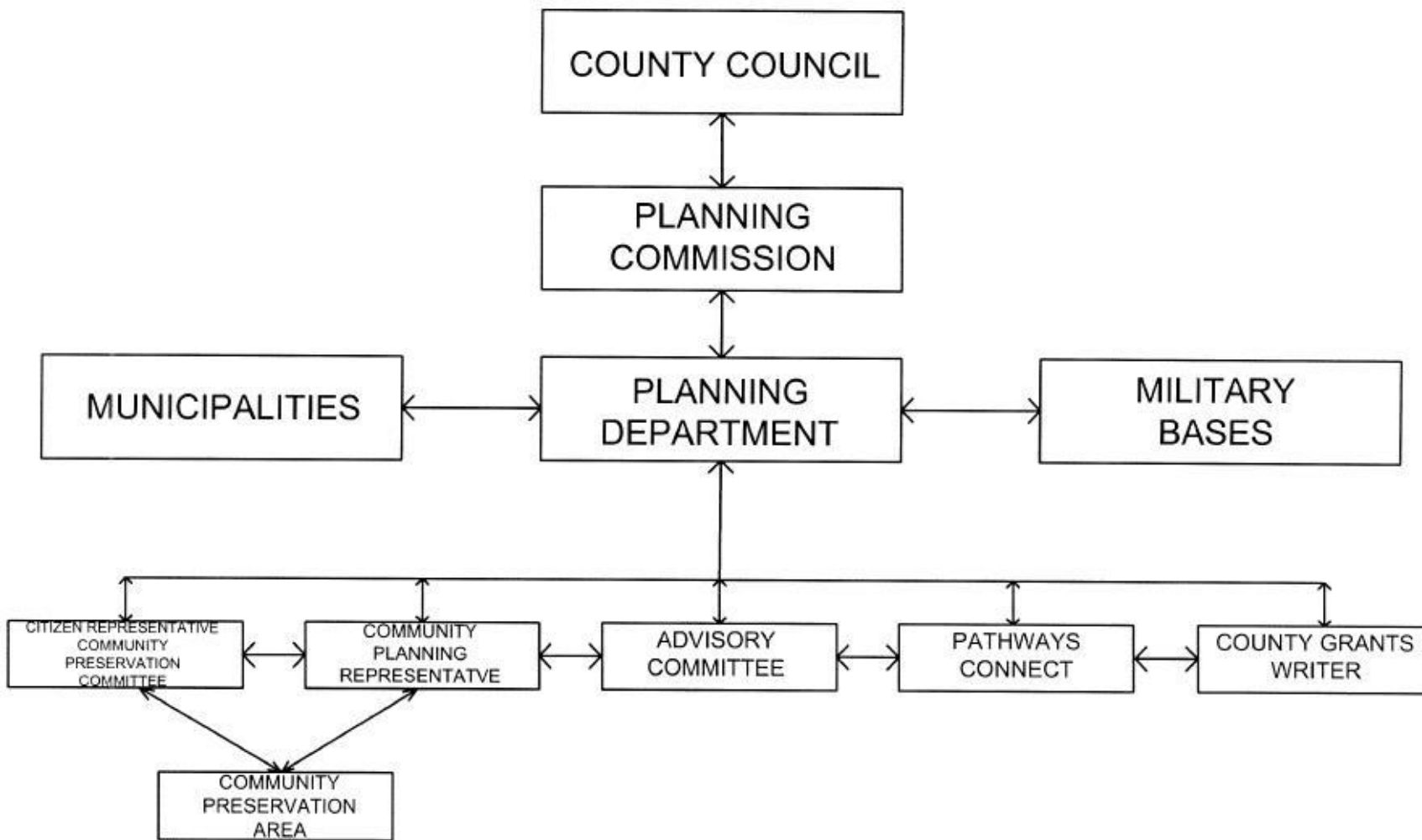


Chart I: Flow of Coordination for County Greenway/Blueway Implementation

Grant Funding Sources

Northern Beaufort County Greenway and Blueway Master Plan

Grant Type	Grant Program	Grant Source
Planning Technical Assistance Implementation	Grants, Public Workshops, Technical Assistance Promotes the Coastal Zone Management Act (CZMA), which encourages sustainable development by balancing ecological, cultural, historic, and aesthetic values with economic development, restoring deteriorating waterfronts and ports, enhancing public access to the coast, mitigating the effects of natural hazards, giving priority to water dependent uses, including ports and shipping, marinas and commercial and recreational fishing, funding Special Area Management Plans (SAMPS) that protect significant natural resources and allow reasonable economic growth.	The Office of Ocean and Coastal Resource Management (OCRM)
Planning Design	Rivers, Trails, and Conservation Assistance Aids in helping state, local and citizen groups undertake conservation projects such as protecting rivers, developing trails, and providing outdoor recreational opportunities. National Park Service helps provide tools to local governments to complete projects independently.	Department of the Interior, National Park Service
Acquisition Planning Design Implementation	Land & Water Conservation Fund 50% matching grants for acquisition of real property and development of facilities for general-purpose outdoor recreation.	SC Dept. of Parks, Recreation, and Tourism (PRT)
Acquisition Design Implementation	Recreational Trails Program Acquisition and/or development grant (80% federal/20% local) for recreational trails including new trail construction.	SC Dept. of Parks, Recreation, and Tourism (PRT)
Acquisition Design Implementation	National Trails Endowment Grants for grassroots efforts to secure trail lands, and build and maintain footpaths.	American Hiking Association
Acquisition Land Preservation Implementation Maintenance	Local Sales Tax Initiatives Use a Special Option Sales Tax to fund the acquisition of land for greenways and open space, construction, improvements, and/or maintenance of trail facilities.	Beaufort County & Municipalities within Beaufort County
Acquisition Land Preservation Implementation Maintenance	Local Bond Referendums Designate funds to the acquisition of land for greenways and open space, construction, improvements, and or maintenance of trail facilities.	Beaufort County
Acquisition	Recreation Land Trust Fund (RELT) State grants to be used for the acquisition of land for the purpose of public recreation. This is a 50-50 match program.	SC Dept. of Parks, Recreation, and Tourism (PRT)
Implementation Maintenance	Local Capitol Improvements Program (C.I.P) Designate funds from the County Capitol Improvements Program towards construction and improvements to greenways.	Beaufort County

Grant Type	Grant Program	Grant Source
Implementation	Transportation Funding Assistance Use transportation funding sources towards greenways as methods of alternative transportation.	Beaufort County Transportation Advisory Groups, Beaufort County Transportation Committee
Planning	Financing Assistance Provides assistance to communities with planning for financing parks, greenway and open space projects, as well as right-of-way and easement acquisitions.	Trust for Public Land
Planning	Innovative Community Partnership Grant: To catalyze community based redevelopment and revitalization, encourage integrated community planning and build partnerships that increase a community's capacity to restore and protect community watersheds and airsheds.	EPA Regional Office
Planning Design Implementation	Parks and Recreation Development Fund (PARD) Grants for the development of new public recreation facilities or enhancement/renovations to existing facilities. Projects need endorsement of majority weighted vote factor of County Legislative Delegation Members. This is an 80-20 match program.	SC Dept. of Parks, Recreation, and Tourism (PRT)
Planning Design Implementation	American Greenways Kodak Awards Program Grants of \$500-2500 to local greenway projects. Grants can be used for almost any activity that serves as a catalyst for local greenway planning, design or development.	The Conservation Fund
Design Implementation	Cottonwood Foundation Grants Grants for projects that protect the environment, promote cultural diversity, empower people to meet their basic needs, and rely on volunteer efforts.	Cottonwood Foundation
Design Implementation	D.I.R.T. Grants from \$2,000-5,000 in support of efforts to protect, preserve, and restore recreational lands and waterways	Powerfood, Inc.
Planning	Watershed Assistance Grants Grants up to \$30,000 to local watershed partnerships to support their organizational development and long-term effectiveness to conserve and restore watersheds.	River Network
Implementation	Global Relief Heritage Forest Program Funding for planting tree seedlings on public lands. Emphasis is placed on diversifying species, regenerating the optimal ecosystem for the site and implementing the best forest management practices.	American Forestry Association
Implementation	Traffic Impact Fees (TIFS) Traffic Impact Fees can be used to fund alternative forms of transportation such as greenways. This funding originates from a fee developers pay the County to mitigate the impacts of growth and development on the roadway systems.	Beaufort County
Implementation	Accommodations Tax County funds generated from by motel and hotel revenues can be directed towards development of greenway trails.	Beaufort County
Planning Operations	Rivers and Trails Conservation Assistance Long term assistance with conservation projects.	National Park Service
Stewardship	Fish America Foundation Provides funding for projects that enhance or conserve water and fisheries resources, including community efforts, up to \$10,000.	Fish America Foundation
Stewardship	R.E.L. Seed Grant Program Seed grants of \$200 to \$2,000 for projects that enhance river protection.	National Rivers Coalition American Rivers, Inc.

Grant Type	Grant Program	Grant Source
Recreation	Transportation Enhancement Program Federal grant (80% w/20% match) with \$1 million cap per project. Funding shall be approved for preliminary engineering, utility relocation, or property acquisition only when the applicant can demonstrate that the Transportation Enhancement funds, combined with other existing resources, will result in a completed and fully funded project. Funding can be provided, however, for feasibility studies.	SC Department of Transportation (SCDOT)
Stewardship	Wetland Development Grants Grants to assist state, tribal, and local agencies in their wetland protection, management and restoration efforts.	United States Department of Environmental Protection (USEPA)
Stewardship	National Natural Landmarks Program To identify and recognize nationally significant natural areas throughout the USA and to encourage their continued preservation	Natural Landmarks Program, National Parks Service
Preservation	Federal Survey & Planning Grants Federal Survey and Planning Grants can be used for a variety of historic preservation projects under the following categories: Identifying, Recording, and Recognizing Historic Properties, surveys to record historic properties with historical or architectural importance in a town or county, Studies that identify potential locations of archaeological sites, Archaeological surveys of multiple sites, National Register nominations for historic districts or multiple properties	South Carolina Department of Archives and History (SCDAH)
Acquisition- Stewardship	North American Wetlands Conservation Fund Provides grant funds for wetlands conservation projects in the U.S.	U.S. Fish and wildlife service, Department of the Interior
Planning Stewardship	Sustainable Development Grant Grants for projects that help communities ensure long term environmental protection through the application of sustainable development strategies.	EPA Regional Office
Stewardship	Wetlands Protection: Development Grants: Assist states and local governments in developing new and enhancing existing wetlands protection and restoration programs.	EPA Regional Office
Stewardship	Soil and Water Conservation Plan and carry out a national natural resource conservation program and to provide leadership in conservation, development, and productive use of the nation's soil, water, and related natural resources	Natural Resource Conservation Service
Water Quality Management	Nonpoint Source Implementation Grants Assist states, local governments and nonprofit organizations in implementing EPA approved section 319 nonpoint source management programs.	EPA Regional Office
Education	Riversmart Offers "Grassroots toolkits" to organizations to assist in their quest to educate the public about the health of rivers watersheds and communities.	River Network