



Johns Island Community Greenways Plan

Preserving green spaces, providing opportunities for alternative modes of transportation, and connecting people with natural, historic and scenic resources



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Downtown Charleston

West Ashley

Study Area

James Island

Johns Island

Chapter 1 : Introduction

This chapter describes the project purpose, vision and goals, and benefits of the Johns Island Community Greenways Plan

1.1 Project Purpose

City of Charleston Planning and Zoning staff, with a grant provided by South Carolina Forestry Commission, has been engaged in an urban forestry master plan project. The project focuses on the area inside of the Urban Growth Boundary (UGB) on Johns Island. The project is aligned with the Johns Island Community Plan, the Charleston Green Plan, the Preservation Plan, and the proposed Tree and Site Conservation Ordinance. The purpose of the Johns Island Community Greenways Plan is to contribute to the preservation of the urban forest by identifying ways to interconnect green corridors throughout Johns Island using trails and tree conservation areas.

Greenways are linear open spaces established along natural corridors, such as rivers, streams, ridge lines, old railways, drainage canals, or other routes for conservation and recreation purposes.¹ Tree conservation areas are areas of land adjacent to or in close proximity to greenway trails that are recommended for protection. This greenways plan utilizes greenways and tree conservation areas to preserve green spaces, provide alternative modes of transportation, and connect people with natural, historic and scenic resources.

Part of Johns Island is rapidly developing. County and City planning efforts recognize this. Accommodating this change means planning for enhancements and infrastructure improvements as development continues. Parks and roadways are common improvements. Less common but equally important are greenway improvements. This greenways plan is intended to be used as a planning tool for the City of Charleston to guide future development and make connectivity of green spaces an important part of the land planning process.

1.2 Vision and Goals

Johns Island is a special place for those who live and visit the sea island. The quality of life that exists can be maintained, in part, by ensuring that people continue to enjoy the very physical attributes that make up Johns Island including: forested lands, tree lined roads, wetlands, and marsh views. A visionary planning tool to accomplish this is to provide easy access to a network of greenways. The goals of the Johns Island Community Greenways Plan are to connect:

- **People with historic and scenic resources.** Green corridors will wind through civic spaces, plantation homes, agricultural areas, waterfronts, and natural landscapes.
- **Neighborhoods with shopping areas.** Residents will have alternatives to vehicular travel by walking or cycling to existing and planned commercial centers within the Johns Island community.
- **Neighborhoods with parks.** Greenways will connect residents with other green spaces such as the City's Johns Island and Angel Oak Parks, Trophy Lakes, and Whitney Lake.
- **People with other people.** Greenways create opportunities for interaction between people and provide meeting spaces in a natural setting .
- **Habitats for wildlife.** Greenways help preserve threatened wildlife habitat and corridors. Wildlife viewing opportunities for birders and other recreational activities are enhanced by the preservation of green corridors.

Other important goals of the Greenways Plan include:

- **Economic development of the area.** The Johns Island Greenway will enhance local and tourist activities, thereby stimulating the local economy. Local businesses can benefit through promotion of the greenway.
- **Preservation of the character of Johns Island.** The Johns Island Greenway will ensure that people have opportunities to experience the unique physical characteristics of the sea island.
- **Increased opportunities to use alternative modes of transportation.** The Greenways Plan connects neighborhoods, shopping districts, transit centers, historic places, and scenic resources, providing opportunities to move about the island without the use of a car to get to desirable places.
- **Preservation of ecological resources for future generations.** As the urban growth area of Johns Island is developed, it is important that future generations have places to connect with nature. Outdoor activity has been shown to enhance quality of life, decrease incidents of depression and help individuals resist the onset of certain diseases.
- **Reinforce the continuing planning efforts for the island.** The Greenways Plan is intended to actualize specific goals within the Johns Island Community Plan, the Charleston Green Plan, and the proposed Tree and Site Conservation Ordinance.



St. Johns Parish on Maybank Highway

1.3 Benefits of Greenways

The benefits of interconnected greenways include:

- Contribute to the character of the area
- Stimulate economic activity
- Increase awareness of scenic and historical sites
- Protect clean air and water
- Preserve wildlife habitat
- Promote healthy lifestyles
- Support alternative modes of transportation

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Contribute to the character of the area

The Johns Island Community Plan describes the physical character of Johns Island as a rural sea island with tree canopy covered roadways, numerous marsh views, natural waterways and historic places. Concerns exist about changes to the character of Johns Island as the island is developed and the population grows.

Development on the island threatens the images associated with Johns Island such as the canopy covered rural roadways, unobstructed views of marsh and their affiliated maritime forests, and the agricultural heritage of the island.¹ The population in the City on Johns Island is expected to grow one-hundred ninety percent (190%) between the years 2000 and 2010, from 1,676 to 4,869.² As a result, traffic on Johns Island has steadily increased.³

The Greenways Plan is a natural evolution of existing planning efforts. It addresses citizen concerns about the character of the island. Johns Island citizens value “the concept of princi-

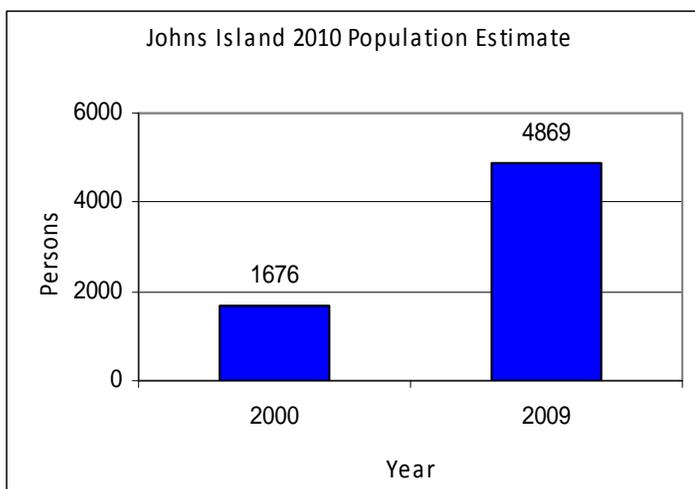
ples of wildlife corridors and connected spaces.”⁴ The Johns Island Community Plan recommends connecting green corridors and recognizes that green corridors can be used for connecting neighborhoods, preserving wildlife habitat and connecting neighborhoods with other points of interest.⁵

The Johns Island Community Greenways Plan will contribute to the character of the island by preserving access to waterways and marsh views, preserving canopy covered trails, and identifying open green spaces for multiple uses. The community identity will be enhanced because of the shared sensory experiences gained through the proposed greenways. Everyone will have access to experience the island’s natural amenities and agricultural heritage.

Stimulate economic activity

There are two components to the economic contributions of the Johns Island Community Greenways Plan: 1) Johns Island as a destination place for outdoor recreation users and 2) increased property values.

1. The Johns Island Community Plan identifies appropriate economic opportunities that utilize agricultural, natural, scenic, and historic resources. It recognizes that Johns Island provides an environment for more ecotourism and outdoor recreation businesses.⁶ The Johns Island Community Greenways Plan can act as a venue for cyclists, hikers, kayakers, bird watchers, campers, boaters and fishermen effectively increasing business in the three planned mixed-use centers along Maybank Highway.
2. It is well documented that property values adjacent to designated greenways are higher than those not adjacent to greenways. The implementation of public greenways increases sales tax revenue, private investments and property tax revenue.⁷



City of Charleston’s Johns Island 2010 Population Estimate

Increase awareness of scenic and historical sites

The Johns Island Community Greenways Plan has the potential to bring people in contact with the City's Johns Island and Angel Oak Parks, Trophy Lakes, Fenwick Hall Plantation, Fort Trenholm, Johns Island Park, and the Stono River. These resources can reinforce the community identity and protect the heritage of the sea island.

Protect clean air and water

Preserving natural resources and green infrastructure for future generations has numerous environmental benefits including: removing pollution from the air, filtering storm water runoff, providing shade and carbon sequestration. "One acre of trees can absorb approximately 2.6 tons of carbon dioxide" in one year which is about the same amount of carbon dioxide each American generates in a year.⁸ Preserving large areas of plants and trees ensures the creation of oxygen while simultaneously filtering out air pollutants.



Tomato Shed along Brownswood Road

Runoff pollution from impervious surfaces is a major concern on Johns Island due to increasing urbanization. This greenways plan can provide filtration of storm water pollution as well as storm water retention areas. Vegetative and wetland buffers have been shown to control erosion and prevent pollution from entering waterways.⁹

Preserve Wildlife Habitat

A greenway plan can enhance the ability for wildlife to move safely throughout the area and preserve critical habitat. One of the greatest threats to wildlife and biodiversity is habitat loss which is directly related to sprawl and urbanization.¹⁰ Protecting green corridors minimizes fragmentation and degradation of wildlife habitat.

Promote healthy lifestyles

According to the Center for Disease Control and Prevention (CDC), obesity is an epidemic in the United States. Being obese can increase risk of heart disease, type 2 diabetes, cancer and stroke. "Reversing the U.S. obesity epidemic requires a comprehensive and coordinated approach that uses policy and environmental change to transform communities into places that support and promote healthy lifestyle choices..." Communities that provide safe places for outdoor exercise are encouraging physical activity and limiting stationary activities such as video gaming. A July 2009 report from the CDC recommends communities improve access to outdoor recreational facilities, enhance infrastructure for bicycling and enhance infrastructure for walking in an effort to reverse the obesity epidemic.¹¹

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Exposure to nature may reduce children’s symptoms of ADHD and depression. Author Richard Louv has coined the term *nature deficit disorder* to describe the effect of urbanization on children. He suggests nature therapy as an alternative to psychotropic drugs or as a preventive therapy. Studies show that at the very least, children and adults can reduce stress levels by spending time outdoors.¹² Louv refers to the CDC’s recommendations that environmental health research “be done in collaboration with architects, urban planners, park designers, landscape architects” and others and suggests that environmental health guide the way neighborhoods are built.

The Johns Island Community Greenways Plan can guide development to provide safe, accessible places to play and exercise in the outdoors. Access to outdoor recreation facilities will be improved and infrastructure for bicycling and walking will be enhanced. Individuals within the community will have enhanced opportunities to connect with one another in an outdoor setting. The Johns Island Community Greenways Plan can make it easier for residents to choose to exercise, contributing to a community identity that has an emphasis on healthy lifestyles.

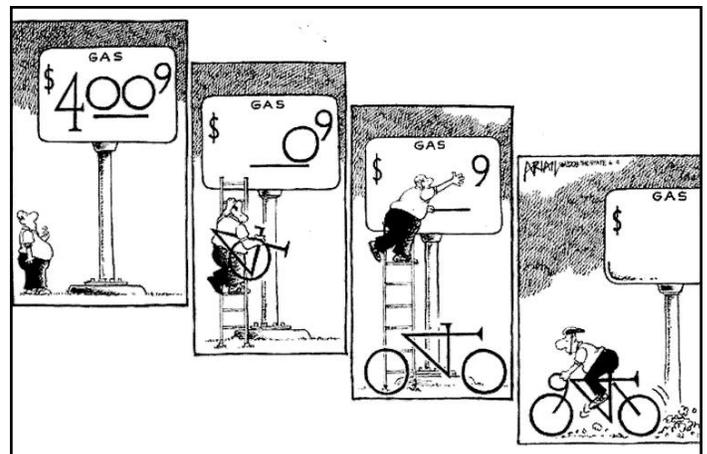


Allee of live oaks on Fenwick Hall property

Support Alternative Modes of Transportation

In 2009 the City of Charleston completed a Comprehensive Plan Community Survey by polling residents to guide City planning efforts. Over 90% of respondents agreed that City streets need to emphasize more connectivity to accommodate pedestrians and bicyclists including more bikeways and greenways. The Century V Plan Update in 2010 identifies the need to do more to offer alternatives to the traditional passenger vehicle including more bike lanes and sidewalks, more public transportation options, and land use recommendations that support development patterns that encourage walking and transit.

The Johns Island Community Greenways Plan can provide a connected network of trails and paths that will make transit easier and quicker. The plan addresses citizens’ requests for more bikeways and greenways and encourages walking and transit.



Commentary on gasoline prices in 2008

Chapter 1 Footnotes

1. *Johns Island Community Plan*. Adopted by City of Charleston City Council November 2007.
2. *City of Charleston Population Estimates*. Department of Planning, Preservation, and Sustainability, January 2010.
3. *SCDOT Average Annual Daily Traffic Data*. <http://www.dot.state.sc.us/getting/aadt.asp>. Accessed May 2010.
4. *Johns Island Community Plan* at p.8
5. *Johns Island Community Plan* at p.28
6. *Johns Island Community Plan* at p.18
7. *Benefits of Trails and Greenways and Economic Benefits of Trails and Greenways*, The Clearinghouse 1100 17th Street NW Washington, DC 20036; *Community Trails: A Benefit to All*, Rails to Trails Conservancy www.railstrails.org; *How Cities Use Parks For... Economic Development and How Cities Use Park to... Promote Tourism*, American Planning Association 2002, 2005; *Comprehensive Greenway Plan*. Greenways Inc. and Arbor Engineering. Prepared for Greenville County, South Carolina, Fall 2009; *Property Values Recreation Values and Urban Greenways*, Journal of Park and Recreation Administration: Lindsey Volume 22 #3 p.69 2004.
8. *Shade*. Georgia Urban Forest Council 2005 (citing an American Forests statistic).
9. Halfacre-Hitchcock et al. *Critical Line Buffer Ordinances: Guidance For Coastal Communities*. Office of Ocean and Coastal Resource Management 2002.
10. Benedict, Mark and Edward McMahon. *Green Infrastructure: Linking Landscapes and Communities*. Island Press, Washington. 2006.
11. Khan, Laura *Recommended Community Strategies and Measurements to Prevent Obesity in the United States*, Center for Disease Control and Prevention, MMWR July 24, 2009.
12. Louv, Richard *Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder*; Algonquin Books of Chapel Hill, 2008 p.35, 49-54.

Chapter 2 : Existing Environment

This chapter describes current planning efforts, existing and potential destinations, and existing conditions on Johns Island

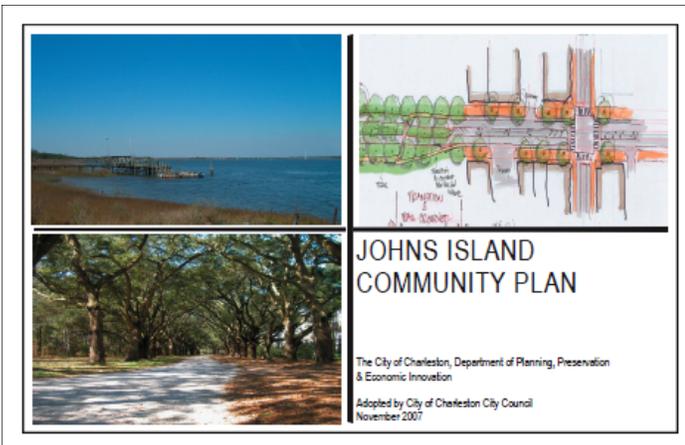
2.1 Existing Planning Efforts

2.1.1 Johns Island Community Plan

The Charleston City Council approved the final version of the Johns Island Community Plan in November of 2007. The plan is an effort by the City of Charleston intended to protect the quality of both rural and suburban areas of Johns Island from adverse development. The plan focuses on the 10,469 acres of land within the Urban Growth Boundary on Johns Island.

Recommendations from the Johns Island Community Plan which support the Johns Island Community Greenways Plan include:

- The City of Charleston should seek to acquire land within a one-mile radius of the Maybank/River Road intersection for use as an additional neighborhood park (p.19)
- The potential for larger green spaces/parks at the Urban Growth Boundary or just beyond should be analyzed (p. 19)
- Ensure an island-wide transportation plan is established to guide new developments and designs (p.24)
- Build a Network of Bike and Pedestrian Paths throughout the Entire Study Area (p.24)
- Consider environmental factors such as elevation and habitats when making planning decisions and development recommendations for Johns Island (p.25)
- The City should adopt a tailored River Protection Overlay District Ordinance along the Stono River in order to protect and preserve the environment along the river’s length (p.25)
- Invest in and protect tree canopies (p.26)
- Preserve the “Place” known as Johns Island (p.27)
- Research development of a utility corridor plan that enhances wildlife, pedestrian, and/or recreational corridors (p.28)

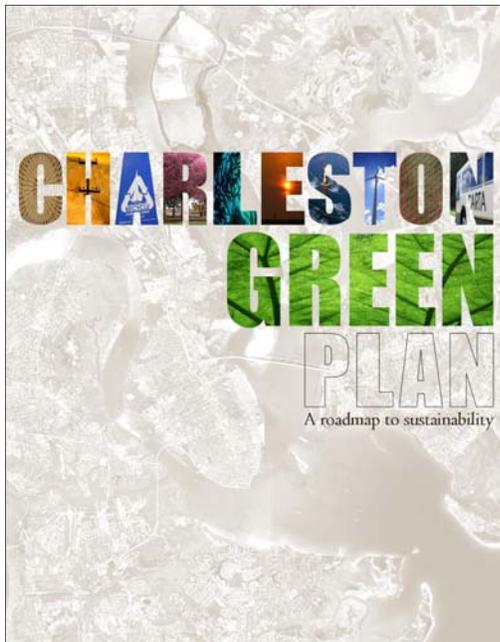


2.1.2 Charleston Green Plan

In 2007, Charleston City Council approved the formation of the Charleston Green Committee tasked with the creation of a local action plan for climate protection and sustainability. In February of 2010, City Council received the Charleston Green Plan and approved the formation of an ad hoc committee to support the development of ordinances.

Recommendations from the Charleston Green Plan which support the Johns Island Community Greenways Plan include:

- Create a regional public transit plan and a citywide “multimodal” transportation plan, then encourage transit-oriented development (p.76)
- Remove roadblocks to sustainable development through amending codes and development review and providing incentives to developers of sustainable communities (p.80)
- Adopt and implement a Complete Streets Ordinance to consider pedestrians, bicyclists, transit users, transit vehicles, and other non-automobile users (p.93)
- Adopt and implement a City bicycle and pedestrian plan that specifies how to develop convenient access and ensure safety within an integrated, connected network of streets, trails and other transit corridors (p.97)



2.1.3 Preservation Plan

A *Preservation Plan for Charleston, South Carolina*, adopted by Charleston City Council in 2008, promotes historic preservation but also environmental and cultural sustainability including the preservation of natural landscapes through planning and conservation.

Recommendations from the Preservation Plan which support the Johns Island Community Greenways Plan include:

- Evaluate transportation issues
- Work with the Charleston County Greenbelt Advisory Board
- Protect buffers along scenic corridors
- Lobby South Carolina Department of Transportation to develop standards for scenic roads



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2.2 Existing and Potential Destinations

A number of cultural and natural resources exist on Johns Island that could be incorporated as destinations for the Johns Island Community Greenways Plan, but only a few were selected. The six existing and potential destinations identified in this Greenways Plan are historic and recreational points of interest along the proposed greenway that visitors and residents would be interested in visiting. The City would approach and work with the owners of some of the privately held destinations with the goal of having them agree to allow visitors to gain limited access. The destinations include:

2.2.1 Angel Oak Park

The Angel Oak Park is a publicly owned park that features the awe inspiring Angel Oak tree, a live oak estimated to be over 400 years old with massive draping limbs and a wide spreading canopy. Several picnic tables, a gift shop, and restrooms are located in the park that is owned and operated by the City of Charleston and free to the public.



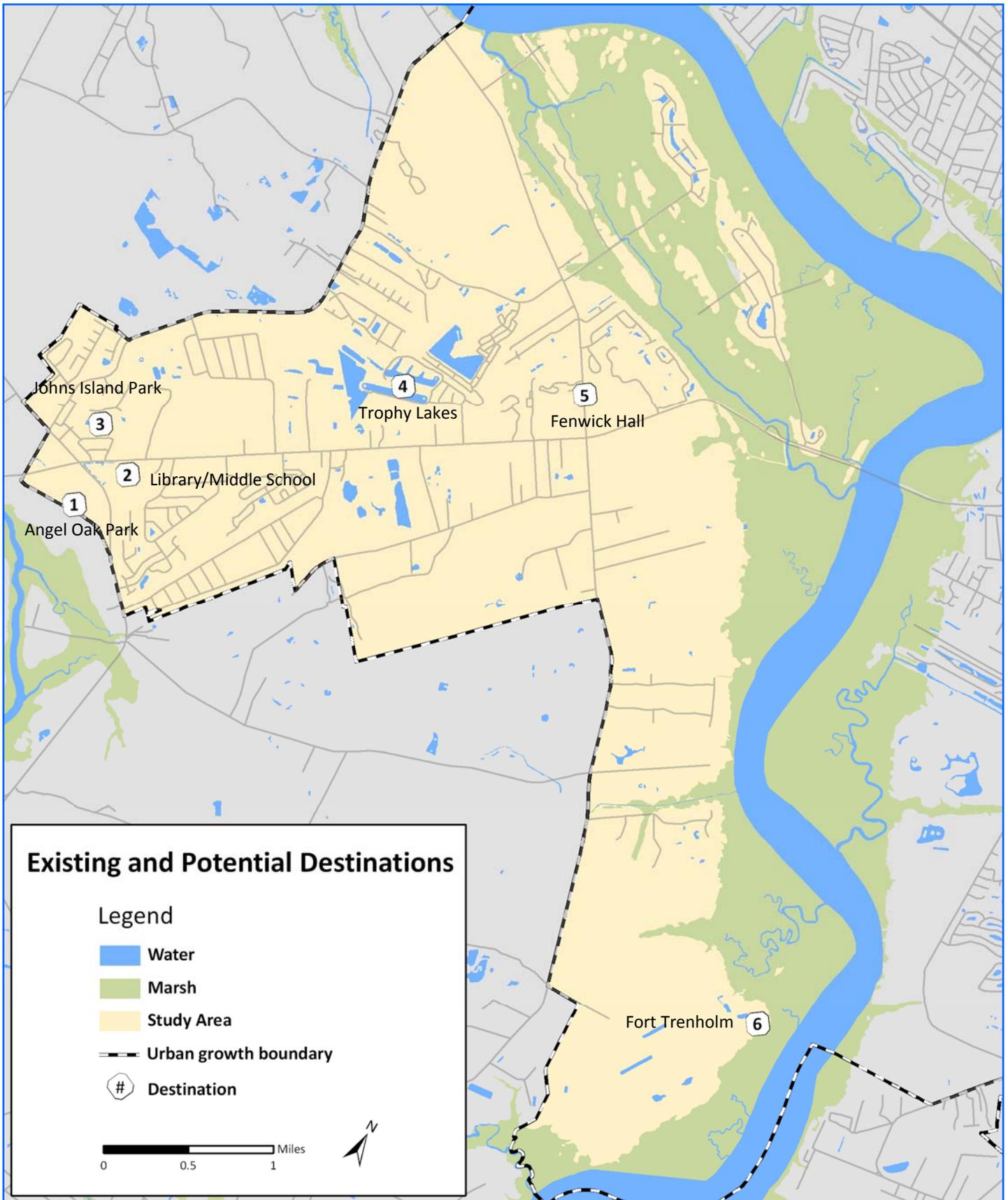
Angel Oak



Library Entrance

2.2.2 Johns Island Branch Library/ Haut Gap Middle School

Since 2004, the 16,000 square foot Charleston County John's Island Branch Library has provided access to collections comprised of nearly 92,000 volumes, DVD's, videos, books on cassette, books on CD, music on CD as well as 40 computers, an auditorium, a smaller conference room and a children's story hour room. The library located on Maybank highway is a public gathering place for the communities of John's Island, Kiawah, Seabrook, and Wadmalaw.¹ Haut Gap Middle School is located adjacent to the Library property. The 450 student middle school for grades 6-8 was completed in the summer of 2010.



Existing Environment

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“Trails consolidate and connect communities, rather than encourage them to expand and fragment.”
—DAVID BURWELL, President, Rails-to-Trails Conservancy, 1997



Entrance to Johns Island Park

2.2.3 Johns Island Park

Johns Island Park is a neighborhood recreation area owned and operated by the City of Charleston that provides access to sports facilities for baseball, softball, soccer, tennis, and volleyball. Grassy areas with picnic tables and shelters surround a small pond.²

2.2.4 Trophy Lakes

Trophy Lakes is a privately owned water ski complex that hosts water ski competitions and has been in operation since 1988. The grounds host two lakes, a water ski school and an 18 hole disc golf course available to the public.



Entrance to Trophy Lakes



Entrance to Fenwick Hall Plantation

2.2.5 Fenwick Hall Plantation

The privately owned Fenwick Hall Plantation was established in 1730. The house on the plantation was used as headquarters by the commanding officers of invading armies during both the Revolution and the Civil War, and thus survived both conflicts without serious damage. An allee of live oaks leading to the plantation house can be observed from the gated entrance along River road. The site has been listed in the National Register of Historic Places since 1972.³

2.2.6 Fort Trenholm

Fort Trenholm was a Confederate military battery built in 1864 and named for George A. Trenholm, head of the largest shipping company in Charleston before the Civil War who became a successful blockade runner and Secretary of the Treasury for the Confederacy. The fort was designed to strengthen the batteries controlling the Stono River during the Civil War. The site has been listed in the National Register of Historic Places since 1982 and is located on private property.⁴ The fort is located within the Charleston Executive Airport property owned by the Charleston County Aviation Authority.



From South Carolina Department of Archives and History

Fort Trenholm earthen mound

2.3 Existing Conditions

A survey of the study area was conducted over multiple day trips to document the study area, identify potential trail locations and routes, assess conditions along roadways, and various easements. Multiple data sources were also used to assess existing conditions on Johns Island including; landscape buffers, utility and drainage easements, planned developments and roadways, tree canopy road survey, NWI wetlands data, urban nodes/gathering places, SCDNR Rare and Endangered Species GIS data, and Johns Island Historical Survey. All data sources were integrated for the purpose of a holistic assessment of the study area.

2.3.1 Roadside Buffers

The City of Charleston’s Landscape Buffer Ordinance states that landscaped areas are required on parcels abutting major roadways on Johns Island. The buffers are intended to separate and screen incompatible land uses and provide green areas.

- A 75-foot landscape buffer is required for properties that abut Maybank Highway, River Road, Bohicket Road, and Main Road.⁵
- A 50-foot buffer is required for properties that abut Brownswood Road and Murraywood Road.

2.3.2 Easements

A 75-foot Berkeley Electric Cooperative utility easement traverses the western portion of the study area. The easement is maintained with an access road.

A 170-foot South Carolina Electric and Gas (SCE&G) utility easement in the eastern portion of the study area runs south-east from Maybank Highway to the Stono River.

Many smaller City of Charleston and Charleston Water System drainage easements exist throughout the study area, but some larger easements include access paths that parallel culverts and ditches.

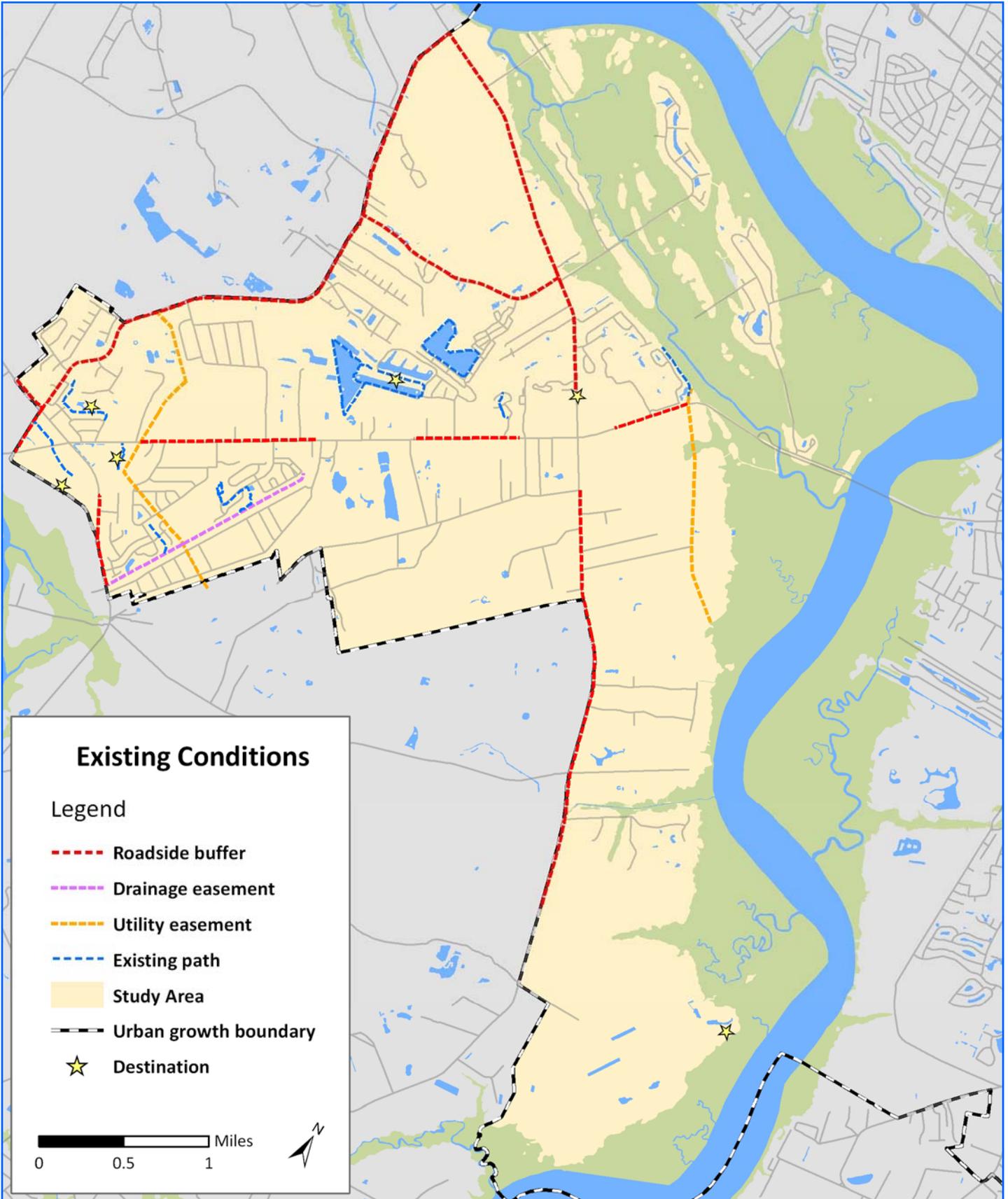
Private property owners and utility companies will have to be consulted to provide approval for access to easements.



Landscape Buffer along Bohicket Road



Drainage Easement adjacent to St. Johns Woods

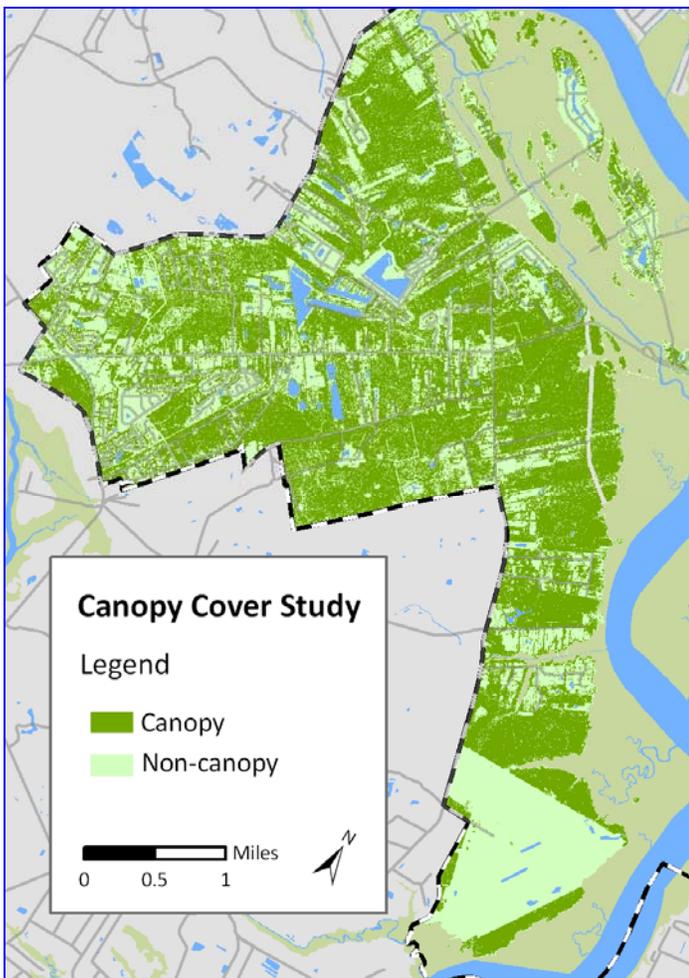


Existing Environment

2.3.3 Tree Canopy Study

American Forests recommends healthy cities retain a minimum canopy coverage of 40%.⁶ City staff used Geographic Information Systems (GIS) data, 2007 Light Detection and Ranging (LiDAR) data, and 2009 Pictometry Aerial Photography to make an accurate estimate of the existing tree canopy coverage on Johns Island inside the UGB. The tree canopy study showed that the study area, excluding critical area, currently has 4133 acres of 7380 acres canopied. This equates to 56% canopy cover.

Future proposed development may jeopardize the area’s ability to maintain the recommended 40% canopy coverage. Therefore, future developments should work in alignment with the Johns Island Community Greenways Plan to protect existing canopied corridors.



2.3.4 Planned Future Developments

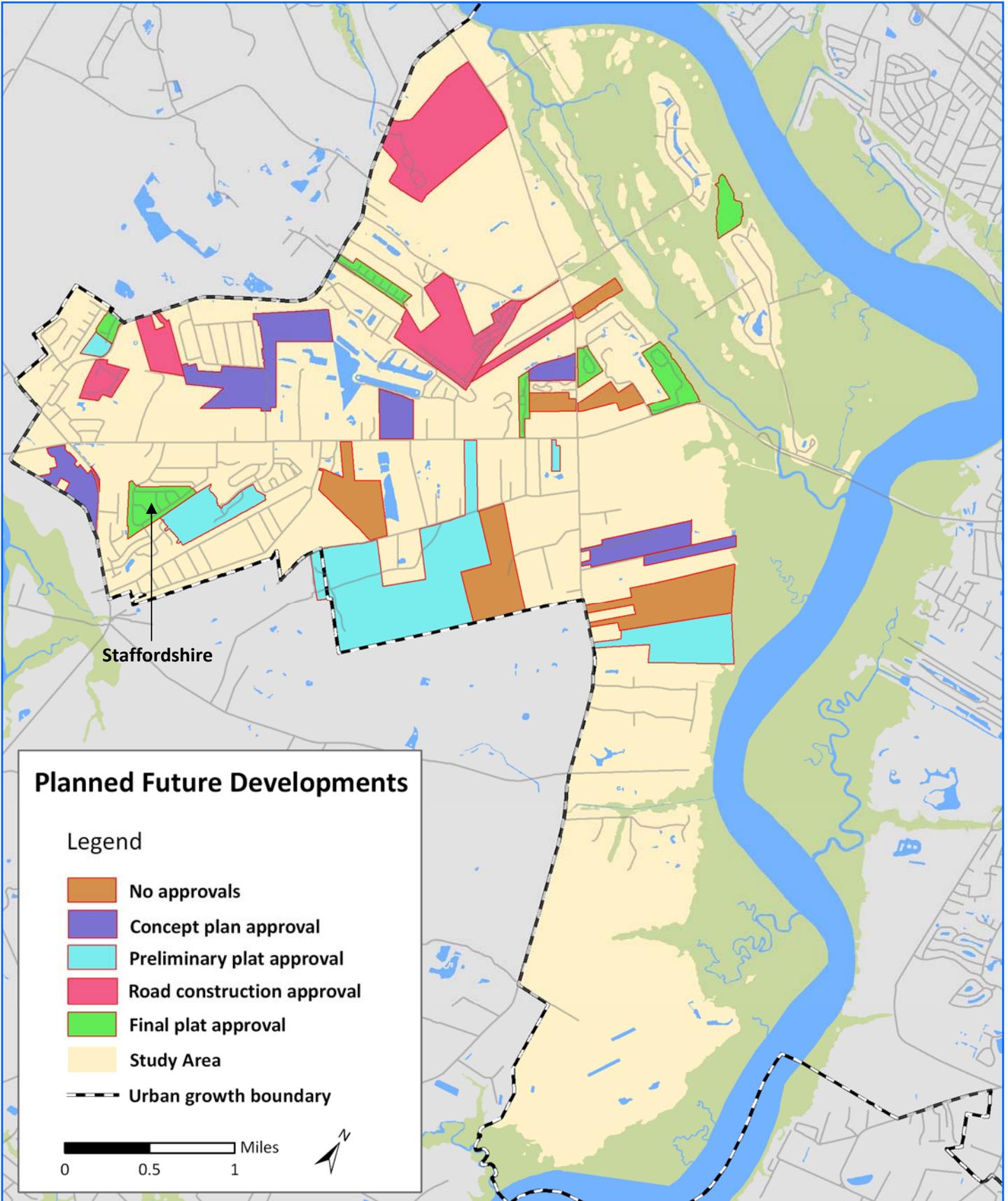
Planned future developments, that have received some level of City approval, on Johns Island account for 1780 of 7380 acres within the study area. 24% of the study area is slated for development in the near future. A significant amount of canopy loss can be expected under existing zoning regulations. The Johns Island Community Greenways Plan provides guidance for developments to preserve significant canopy cover and greenway connections. Based on the Tree Canopy Study, planned future developments are covered by 75% tree canopy. With a conservative estimate of retaining 30% canopy cover of the original 1780 acres, 800 acres of canopy loss can be expected for the planned developments. This would reduce the canopy cover on Johns Island within the UGB from 4133 to 3333 acres, or from 56% canopy cover down to 45%.

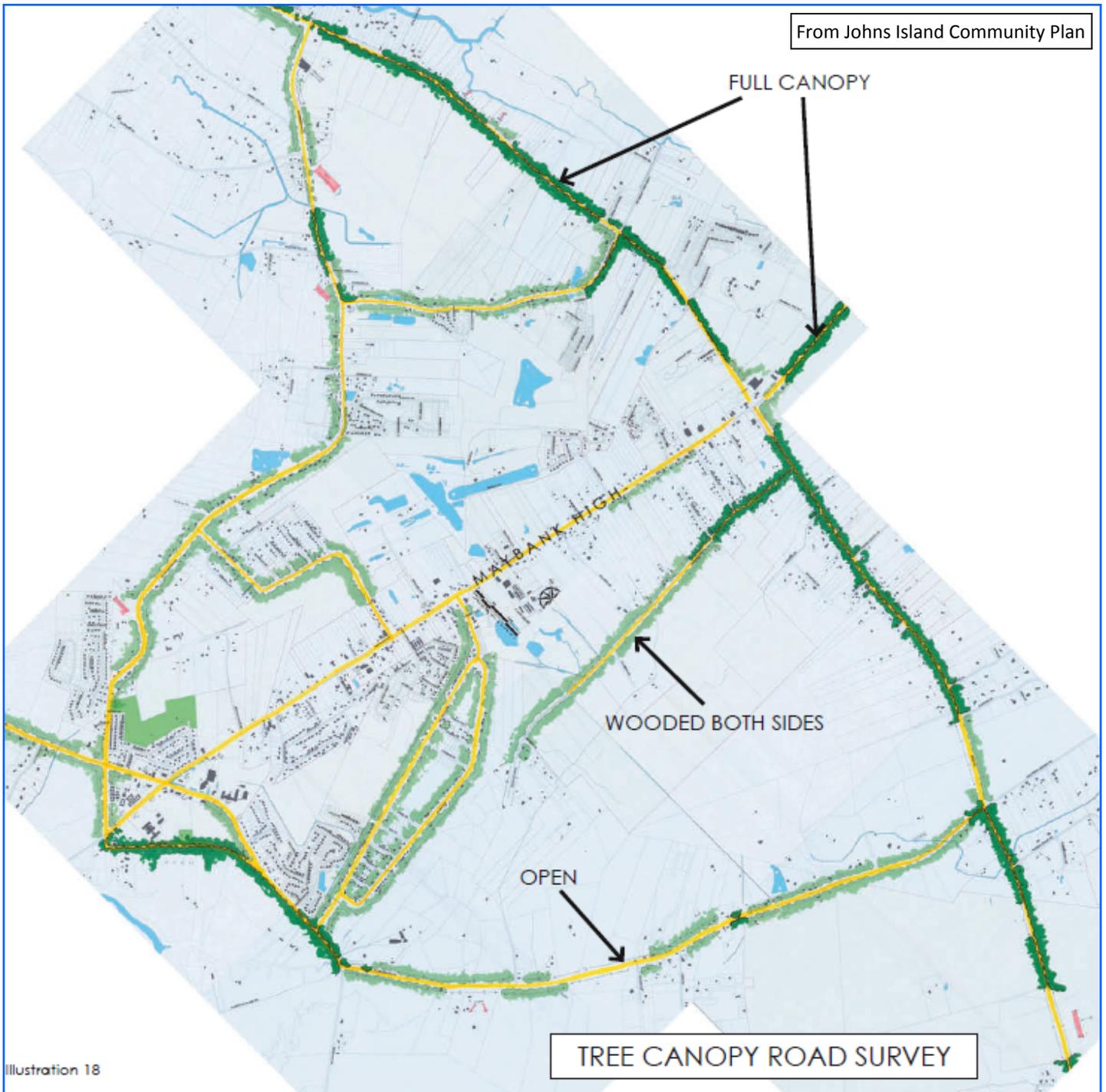


Staffordshire Development, 2001



Staffordshire Development, 2009





2.3.5 Tree Canopy Road Survey

This study from the Johns Island Community Plan shows relative tree canopy along major roadways on Johns Island within the UGB. The canopied roads are important to preserve and highlight, as they embody the “place” known as Johns Island.

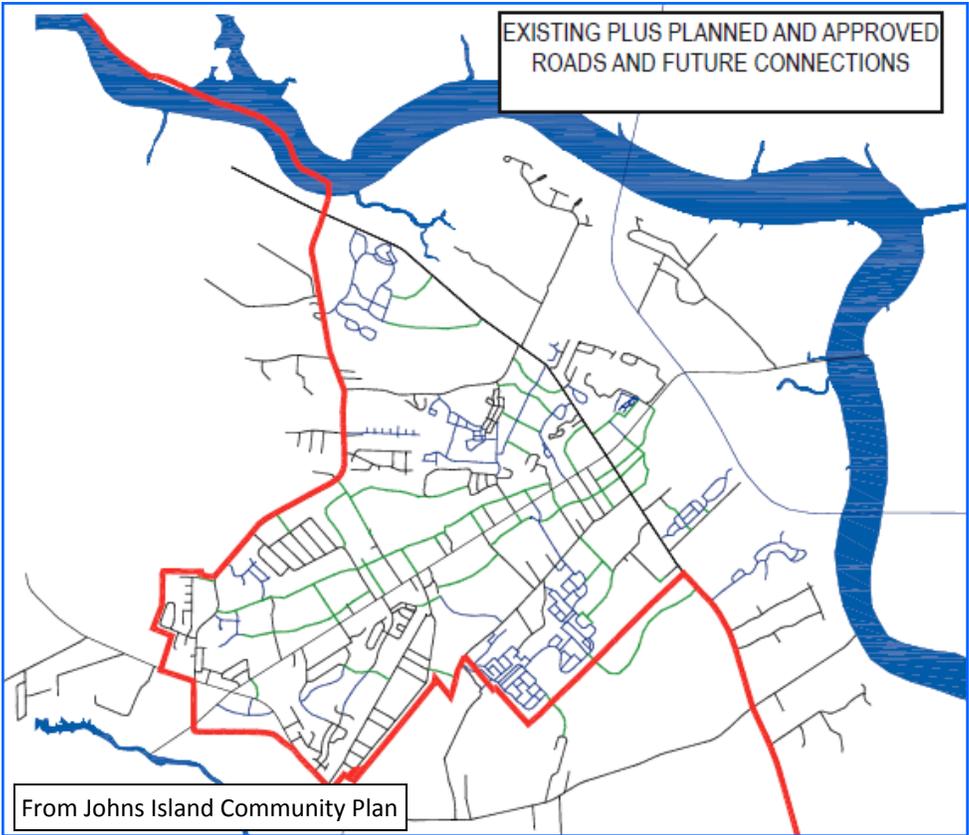
These canopies contribute significantly to the urban forest and should be retained and utilized for connectivity in the Johns Island Community Greenways Plan.



2.3.6 Wetlands

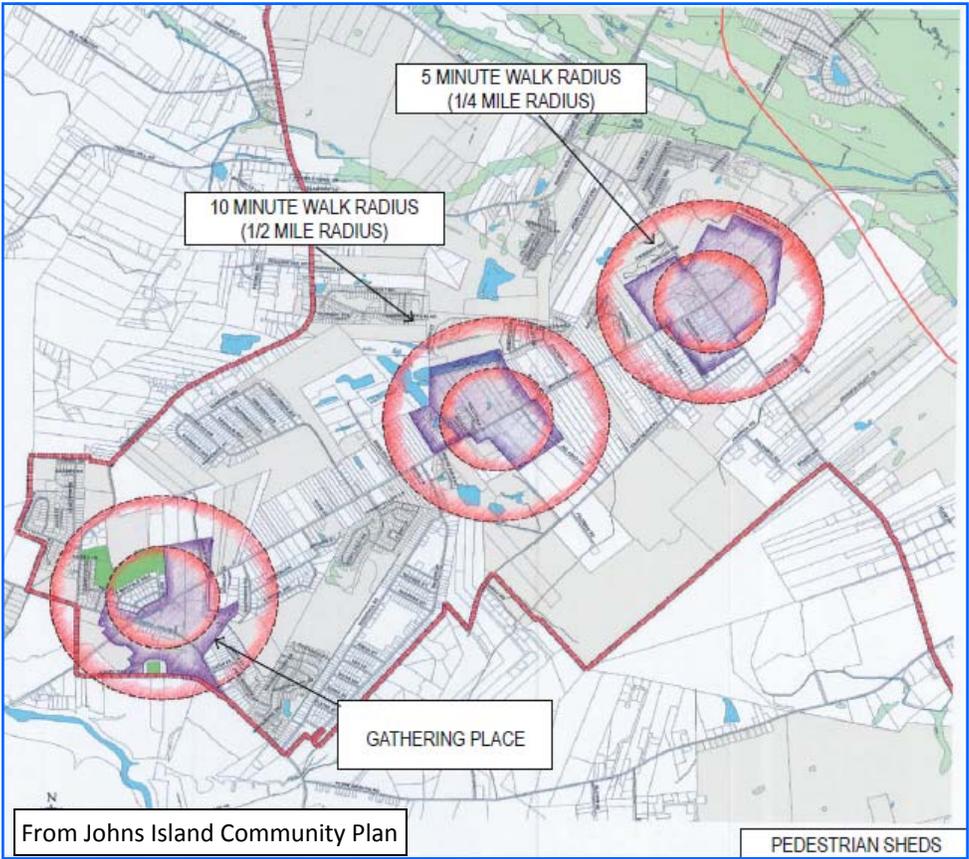
This map shows the location of National Wetlands Inventory wetlands within the Johns Island UGB. This data is informative to identify areas where development is less likely to occur and where important habitat exists. These wetlands were

evaluated closely for the potential to provide valuable natural greenway corridors.



2.3.7 Road Development

This map shows where planned and approved roads occur within the UGB. Planned and approved roads are shown in green, and existing roads are shown in black. This data is informative to aid in the siting of greenways along the future network of streets and roadways.



2.3.8 Gathering Places

This map identifies the three planned urban nodes/gathering places to become centers for commerce and mixed use development and shows the walking radii from the center of those nodes. This information identifies where connectivity should be enhanced in order to link neighborhoods to urban nodes.

2.3.9 SCDNR Rare and Endangered Species GIS data

SCDNR Rare and Endangered Species GIS data was collected and reviewed to identify potential locations where critical habitat occurs. The purpose is to ensure no rare or endangered species are adversely impacted by the development of a greenway. The data showed no records within the UGB, and only a few historic records of rare and endangered species in more remote areas of Johns Island.

2.3.10 Johns Island Historical Survey

A review of the Johns Island Historic Preservation Survey of 1989 was conducted to identify historic sites on Johns Island within the UGB that could be potential destinations along the greenway.⁷ Two privately owned sites, Fenwick Hall Plantation and Fort Trenholm, were identified as candidates for destinations along the Johns Island Greenway. Both of these sites are listed in the National Register of Historic Places.

Chapter 2 Footnotes

1. Charleston County Public Library. <http://www.ccpl.org/>
2. SCIway.net LLC. <http://www.scgreatoutdoors.com/park-johnsislandpark.html>
3. South Carolina Department of Archives and History. <http://www.nationalregister.sc.gov/charleston/S10817710045/index.htm>
4. South Carolina Department of Archives and History. <http://www.nationalregister.sc.gov/charleston/S10817710125/index.htm>
5. Buffer requirements within the urban nodes along Maybank Highway and River Road are likely to be eliminated per the proposed Johns Island Regulating Plan.
6. American Forests. <http://www.americanforests.org/resources/urbanforests/treedeficit.php>
7. *James Island and Johns Island Historical Survey*, Preservation Consultants, Inc. For South Carolina Department of Archives and History, The City of Charleston, and Charleston County. 1989

Chapter 3 : Proposed Network

This chapter describes the proposed trail network, the proposed greenway, individual trail maps, and regional trail connectivity.

3.1 Proposed Trail Network

The existing planning efforts, identified destinations, and data sources for existing conditions for Johns Island described in Chapter 2 were integral to the design and location of the proposed Johns Island Greenway trail network and tree conservation areas.

The proposed greenway trail network is shown in dotted lines on the Proposed Trail Network map on the following page. The trail network lines are meant to represent the ideal location for improved or new trails and open space and are subject to further study, acquisition and permission from owners. Over 47 miles of potential trails were identified. The network links destinations, easements, neighborhoods, parks, and centers of commerce into a singular interconnected web of trails. The green dotted lines on the following page indicate locations where new infrastructure is needed.

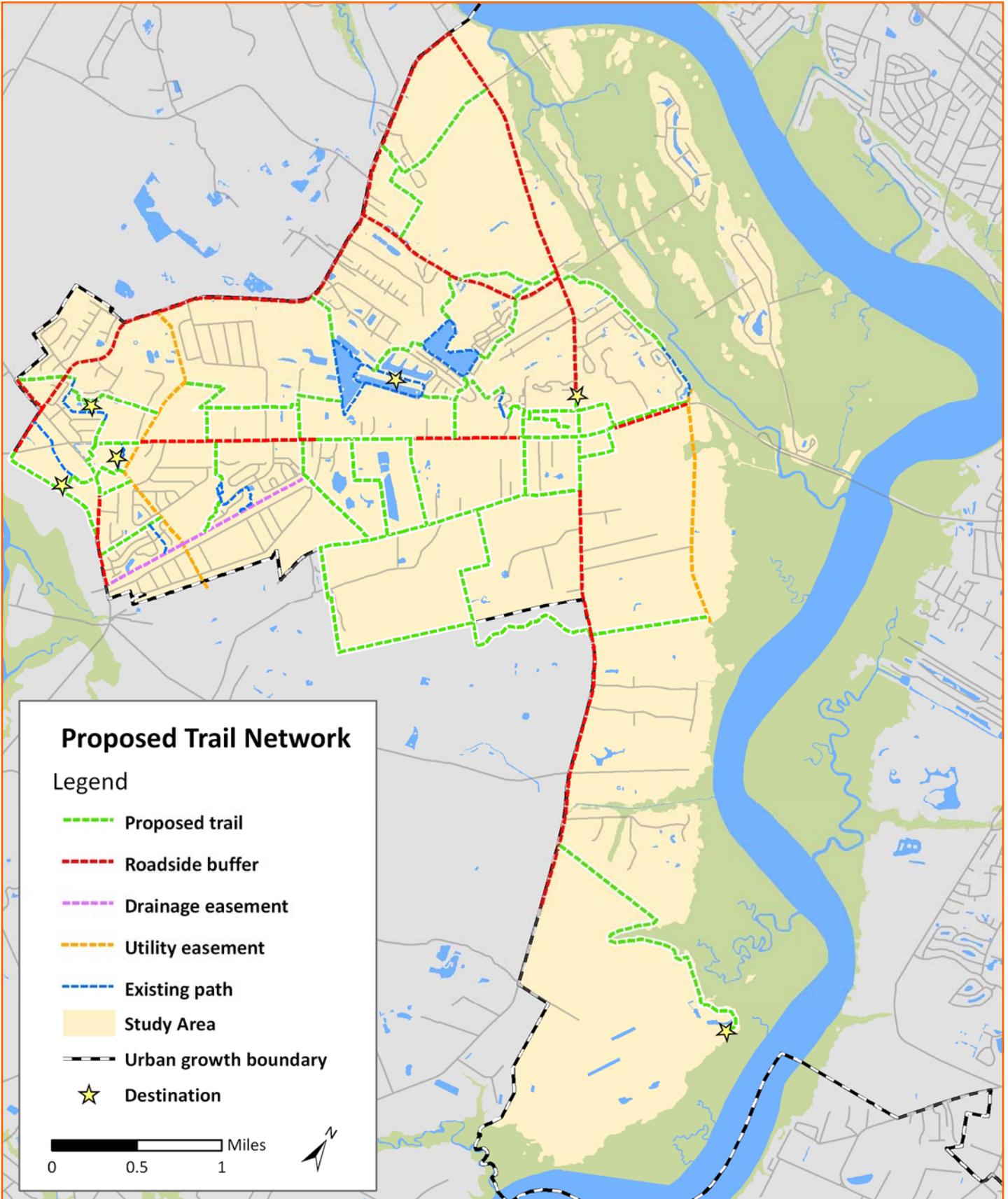
Six Individual trail maps are provided in this Chapter to describe in detail the purpose and plans for each trail. The trail maps show the location of the trails and proposed tree conservation areas. High resolution Pictometry aerial photography is used for these maps to accurately visualize the future trails.



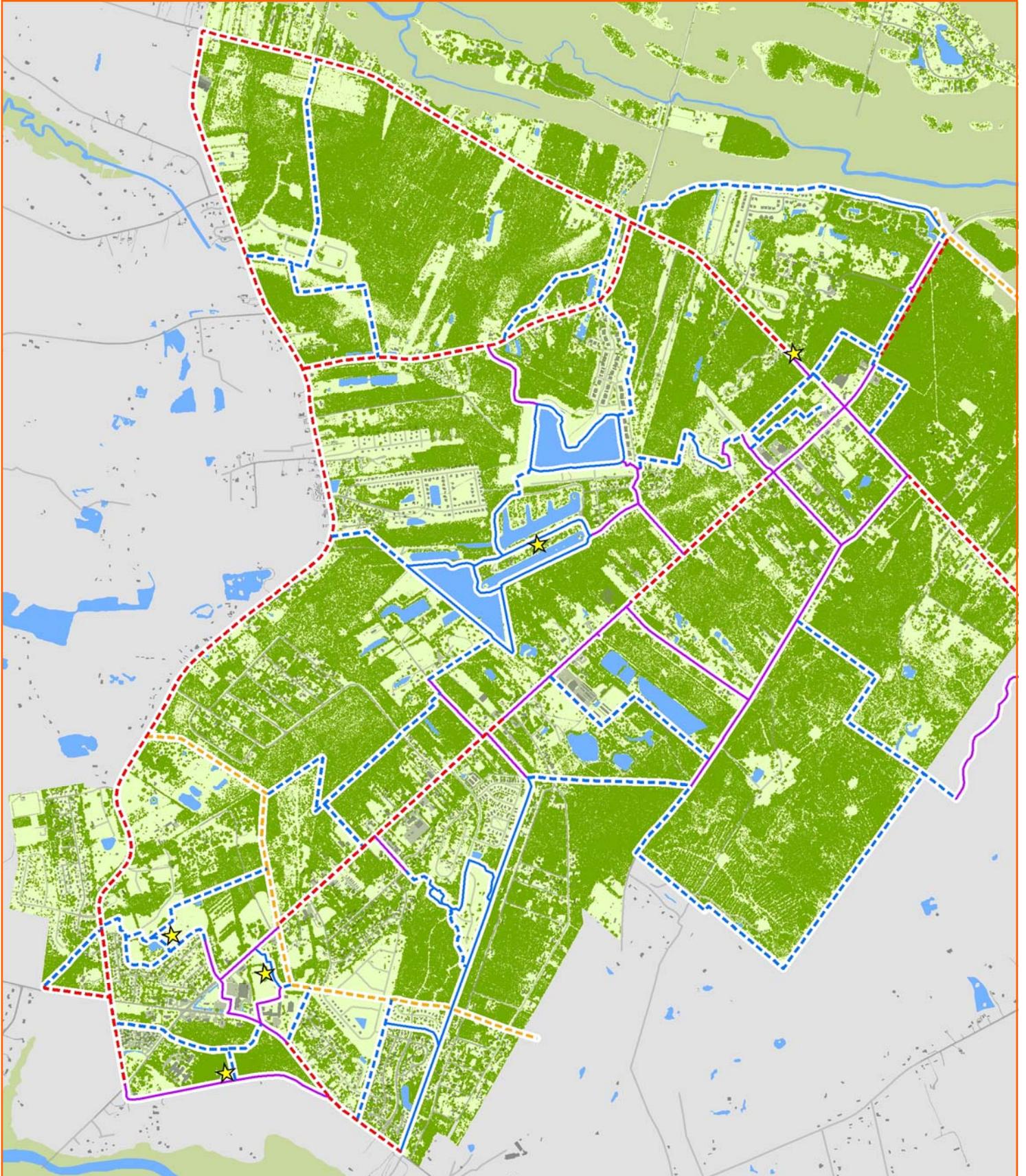
Potential roadside trail along Cane Slash Road



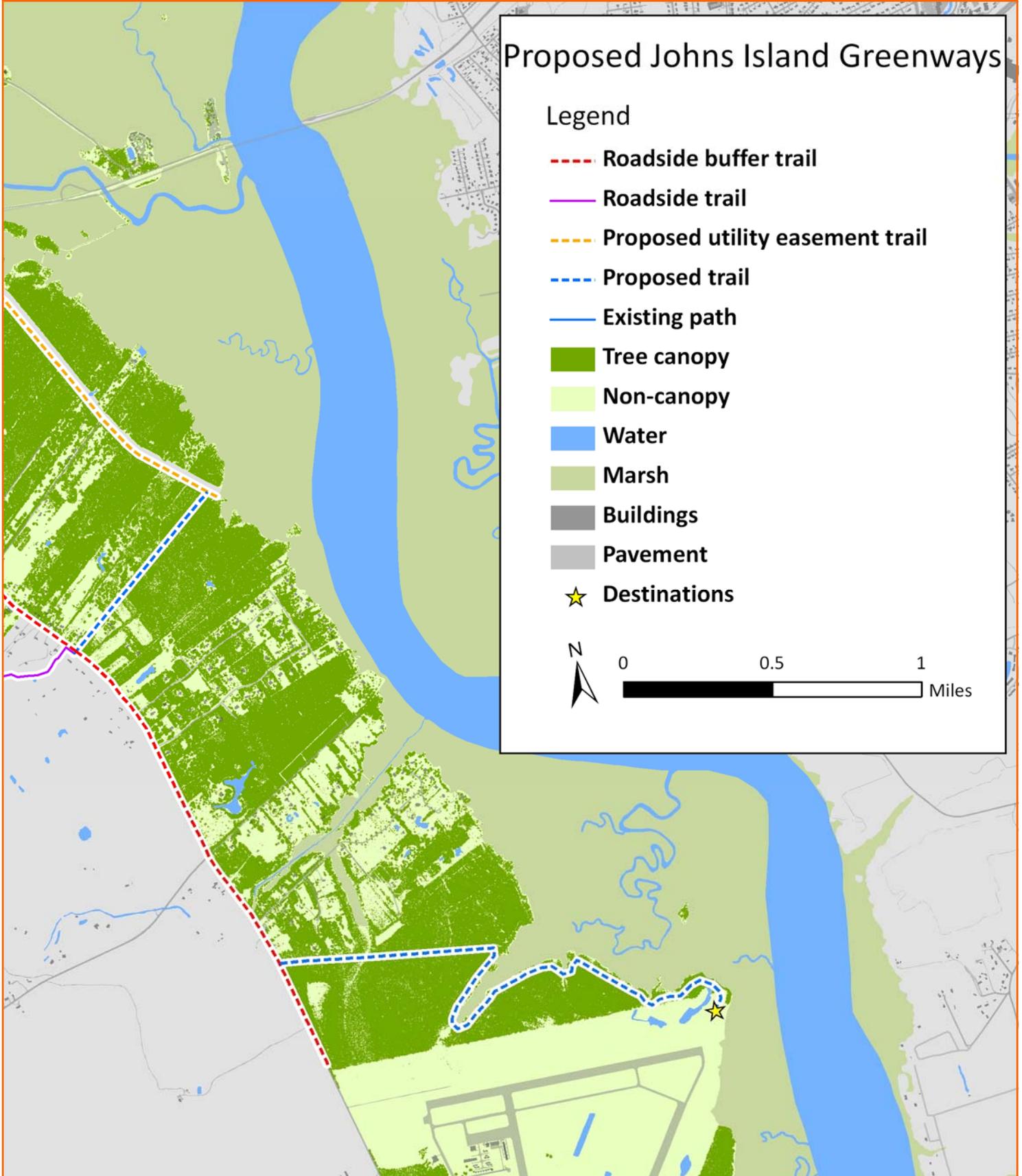
Unimproved road conditions on Zelasko road are a great location for new greenway infrastructure.



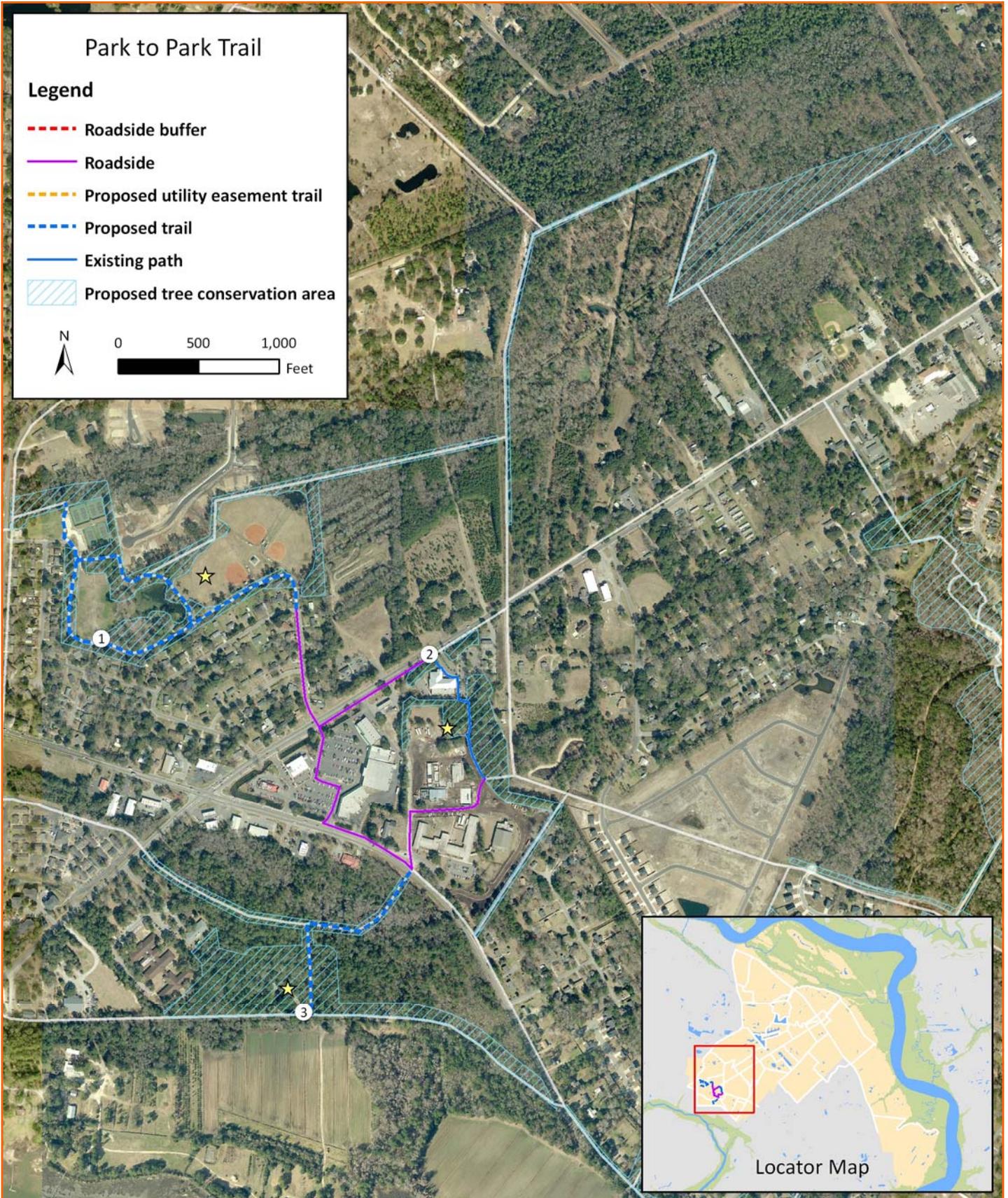
Proposed Network



Proposed Network



Proposed Network



Proposed Network

3.3.1 Park to Park Trail

The 1.9 mile long Park to Park Trail is a trail that connects the Johns Island Park to the Angel Oak Park. The trail traverses from Johns Island Park, down Hay Road, across Maybank highway, alongside Charleston County’s Johns Island Branch Library and Haut Gap Middle School, and across Bohicket Road to the Angel Oak. The trail exposes users to paved trails, sidewalks, and forested areas. This trail anticipates intersection improvements on Maybank Highway and Bohicket Road for safe crossing. This trail includes a recommended connection along property lines of two undeveloped parcels adjacent to the Angel Oak.



1

1. Johns Island Park

This trail will lead you towards Maybank highway where crossing improvements are recommended. The canopied sections of this park are recommended for tree conservation.

2. Johns Island Branch Library

This picture shows an existing path alongside Maybank highway traveling toward Bohicket intersection and Johns Island Park.

There is a potential trail connection through the forested area south of the library towards Haut Gap Middle School. The forested area is recommended for a tree conservation.



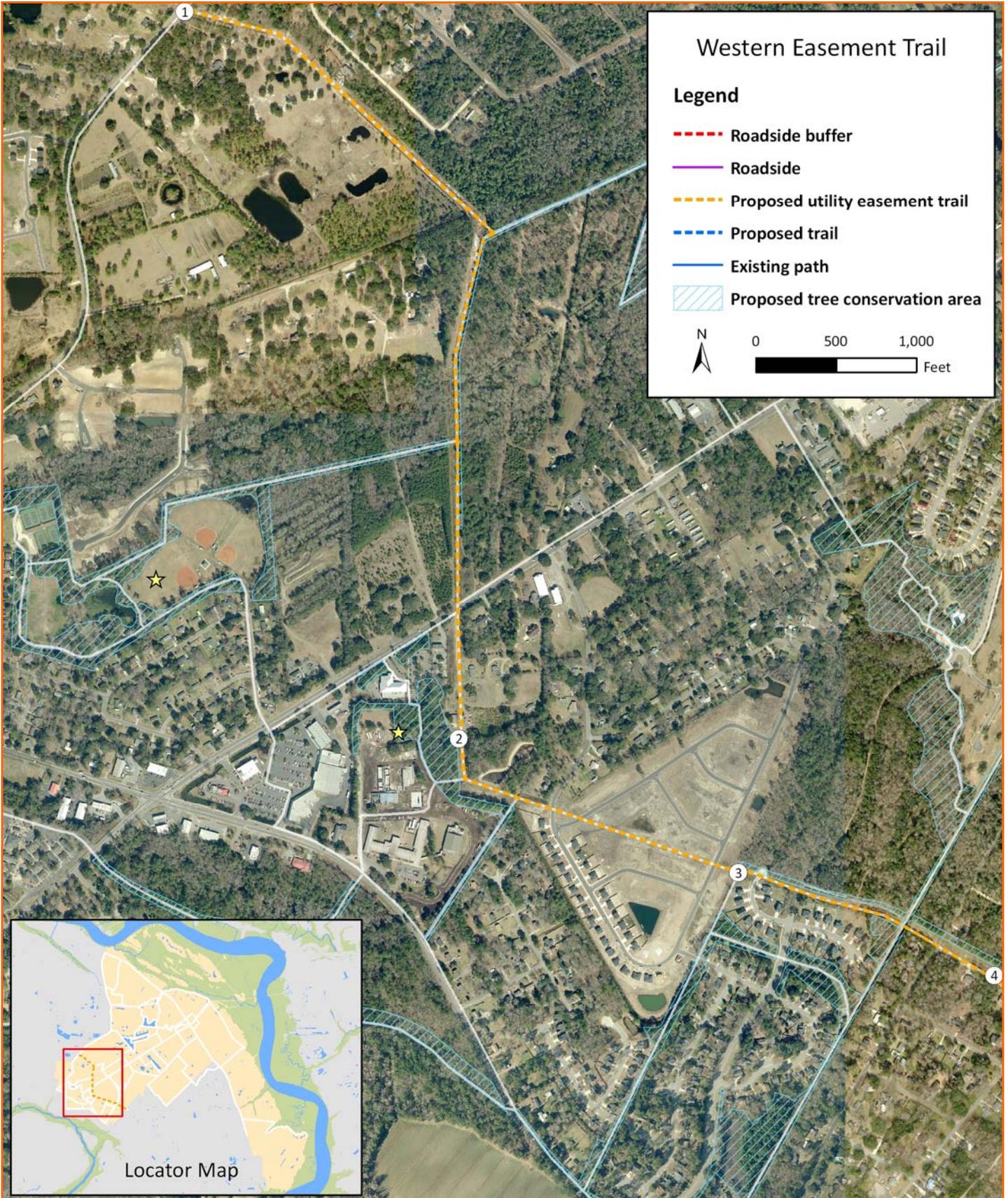
2



3

3. Angel Oak Park

The park is connected by a proposed trail along the property lines of the two parcels just north of the park. A tree canopy conservation buffer of 50 feet on either side is recommended for this trail.



Proposed Network

3.3.2 Western Easement Trail

The 2.0 mile long Western Easement Trail runs across the entire western portion of the study area within the urban growth boundary of Johns Island. The trail is designed to connect residents to nodes of commerce, Haut Gap Middle School, and the Johns Island Branch Library. This multi-modal trail is envisioned to be accessible to pedestrians, bikers, and also equestrian riders. The trail will require cooperation with private property owners and the Berkeley Electric Coop for maintenance and access to the 75-foot utility easement.



1

1. Brownswood Road Trailhead

This section of trail starts where the Berkeley Electric Coop utility easement crosses Brownswood Road on the northern boundary of the Johns Island study area.



2

2. Park to Park Trail Connection

This section of trail is currently used as a road linking residential properties to Maybank Highway. The easement is adjacent to the forested woods south of the library and can be used as a connection to the Park to Park Trail.



3

3. Staffordshire Connection

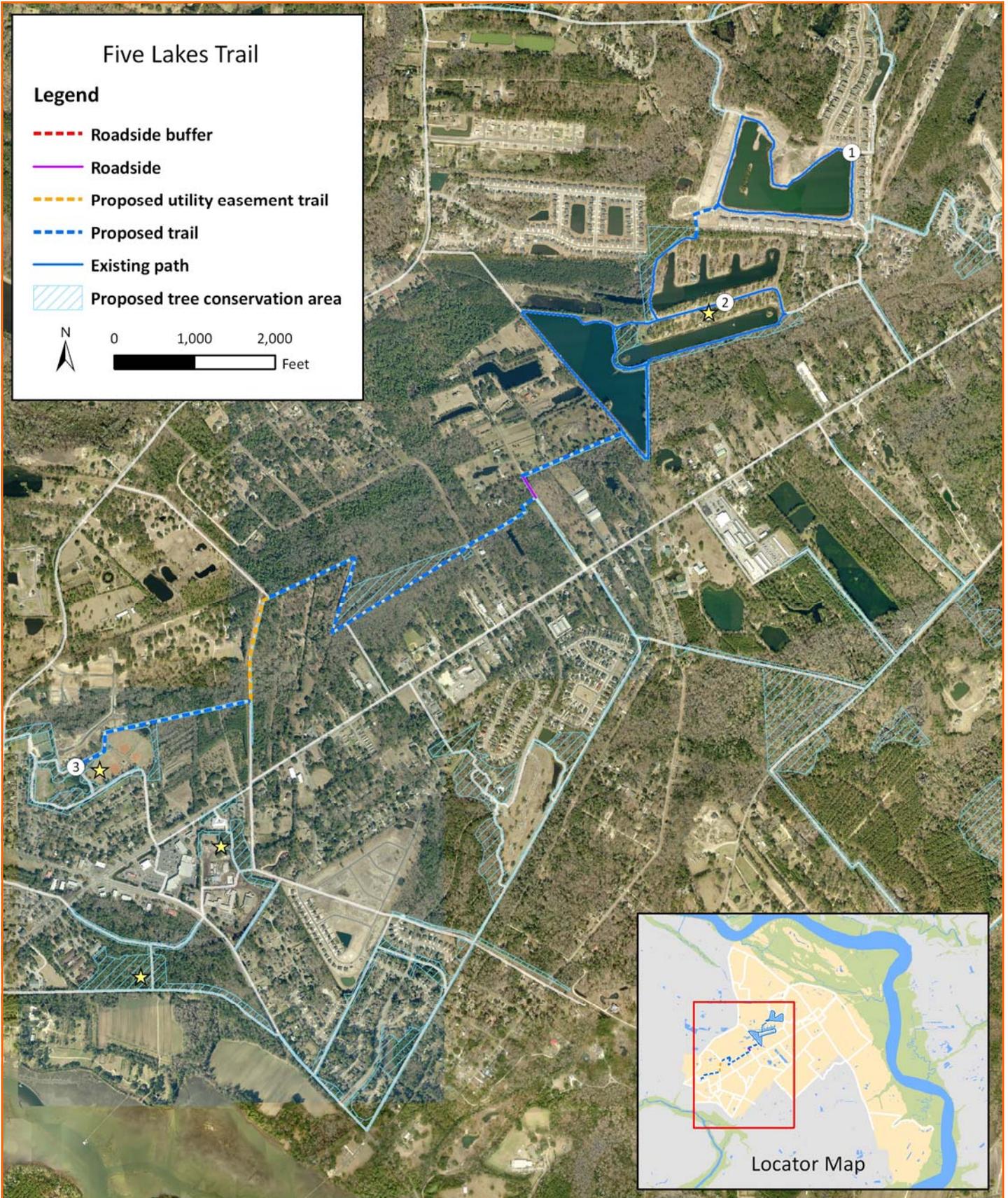
This section of trail is currently maintained with an access road for utility vehicles and could potentially be enhanced through a partnership with Berkeley Electric.



4

4. Berryhill Road Access

This trailhead is the southern extent of the Western Easement Trail.



Proposed Network

3.3.3 Five Lakes Trail

The 5.5 mile long Five Lakes Trail connects the Whitney Lake subdivision with Johns Island Park. The multi-purpose bike/pedestrian trail generally runs parallel with Maybank Highway and links the park to park and western easement trails. The trail will be heavily forested for a majority of the extent and will require infrastructure creation along the backside of many canopied parcels fronting Maybank Highway. The forested areas along this stretch are recommended for a large tree conservation area. Much of the infrastructure is already in place to wrap around the three major scenic lakes along the route. This trail will require cooperation with private property owners along Maybank Highway as well as Trophy Lakes.



1

1. Whitney Lake

Whitney Lakes lies on the northeastern extent of the Five Lakes Trail and is bounded by a walking path.

2. Trophy Lakes

Trophy Lakes is a privately owned property with two competition ski lakes. The property has unpaved roads that surround the lakes, which lends to potential greenway infrastructure that has already been created.



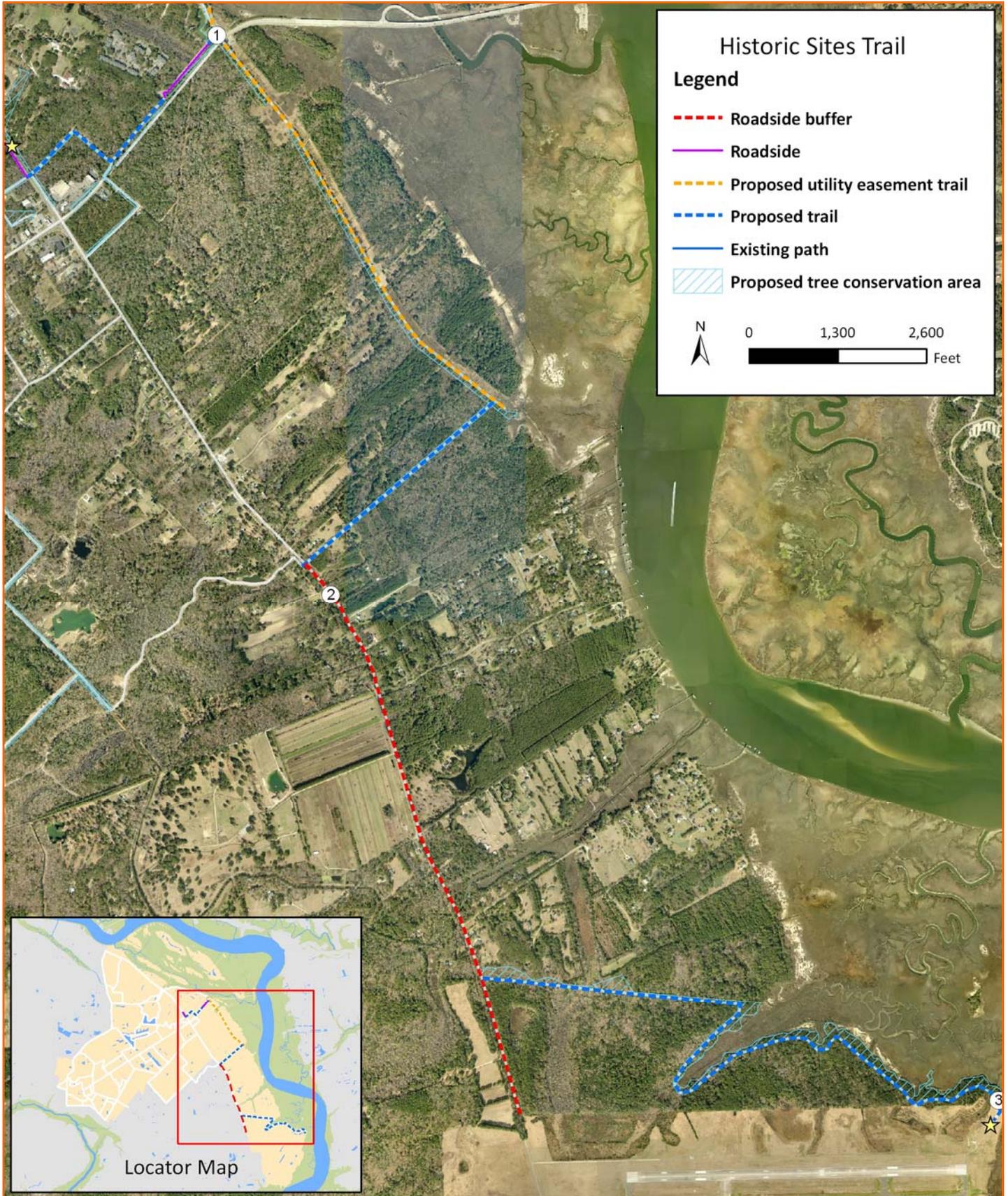
2



3

3. Johns Island Park

The northern boundary line of the Johns Island Park is a potential connection to the Park to Park Trail



Proposed Network

3.3.4 Historic Sites Trail

The 6.5 mile long Historic Sites Trail is a diverse pathway taking users from the historic Fenwick Hall Plantation south to the foundations of Fort Trenholm, a civil war battery. The trail includes areas along major corridors including Maybank Highway and along the live oak shaded River Road, a multimodal path along the 170 foot wide SCE&G utility easement, forested wetland hiking trails, marsh views, and two historic sites. The trail creation will require cooperation with SCE&G, private property owners, and the Charleston Aviation Authority..

1. SCE&G Utility Easement Connection

The beginning of the SCE&G utility easement is a potential trailhead and link to the intersection of Maybank Highway and River Road. A tree conservation area is recommended along the entirety of this easement.



2. River Road

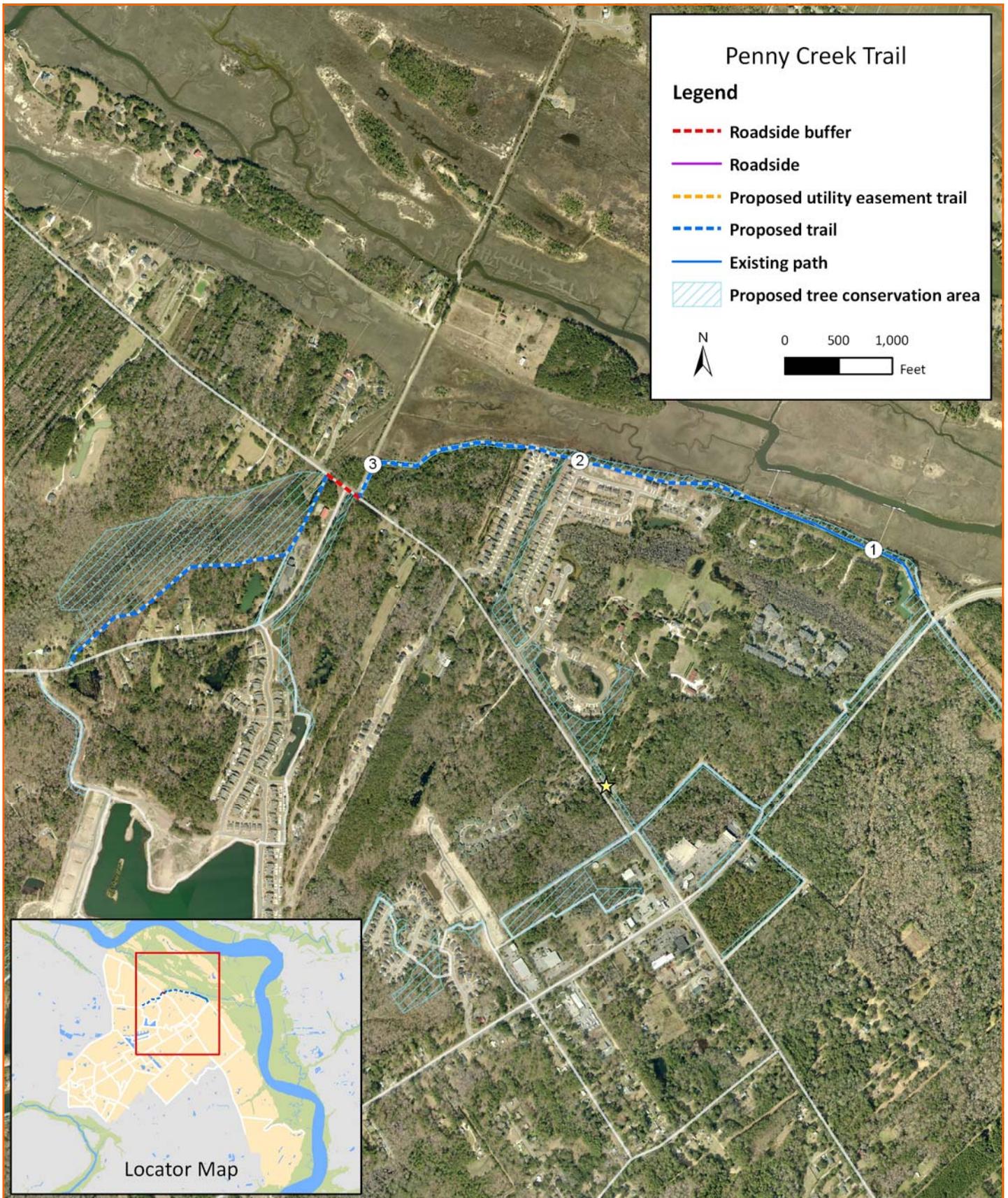
The zoned 75-foot River Road landscape buffer provides an opportunity to create a trail within the buffer south to Fort Trenholm.



3. Fort Trenholm

The southeastern extent of the Johns Island Greenway is the remnants of a Civil War era battery. A large tree conservation area is recommended for the future trail from River Road to the battery.





Proposed Network

3.3.5 Penny Creek Trail

The 1.8 mile long Penny Creek Trail takes users from east to west through multiple neighborhoods along the marsh edge, crosses River Road and then skirts along the forested Penny Creek watershed. The trail traverses a Charleston Water System’s sewer easement for the entirety of the marsh portion of the trail. This trail links to an existing path that is part of The Preserve at Fenwick neighborhood. The creation of this trail will require cooperation with property owners within the developments along the marsh edge. Proposed tree conservation areas occur along the entirety of the trail with a major section of the Penny Creek watershed protected west of River Road.

1. Existing Path

This path within the privately owned subdivision, The Preserve at Fenwick, overlooks the marsh and Penny Creek. Implementation along the marsh will require cooperation with multiple neighborhoods and private property owners.



1



2

2. Charleston Water System Easement

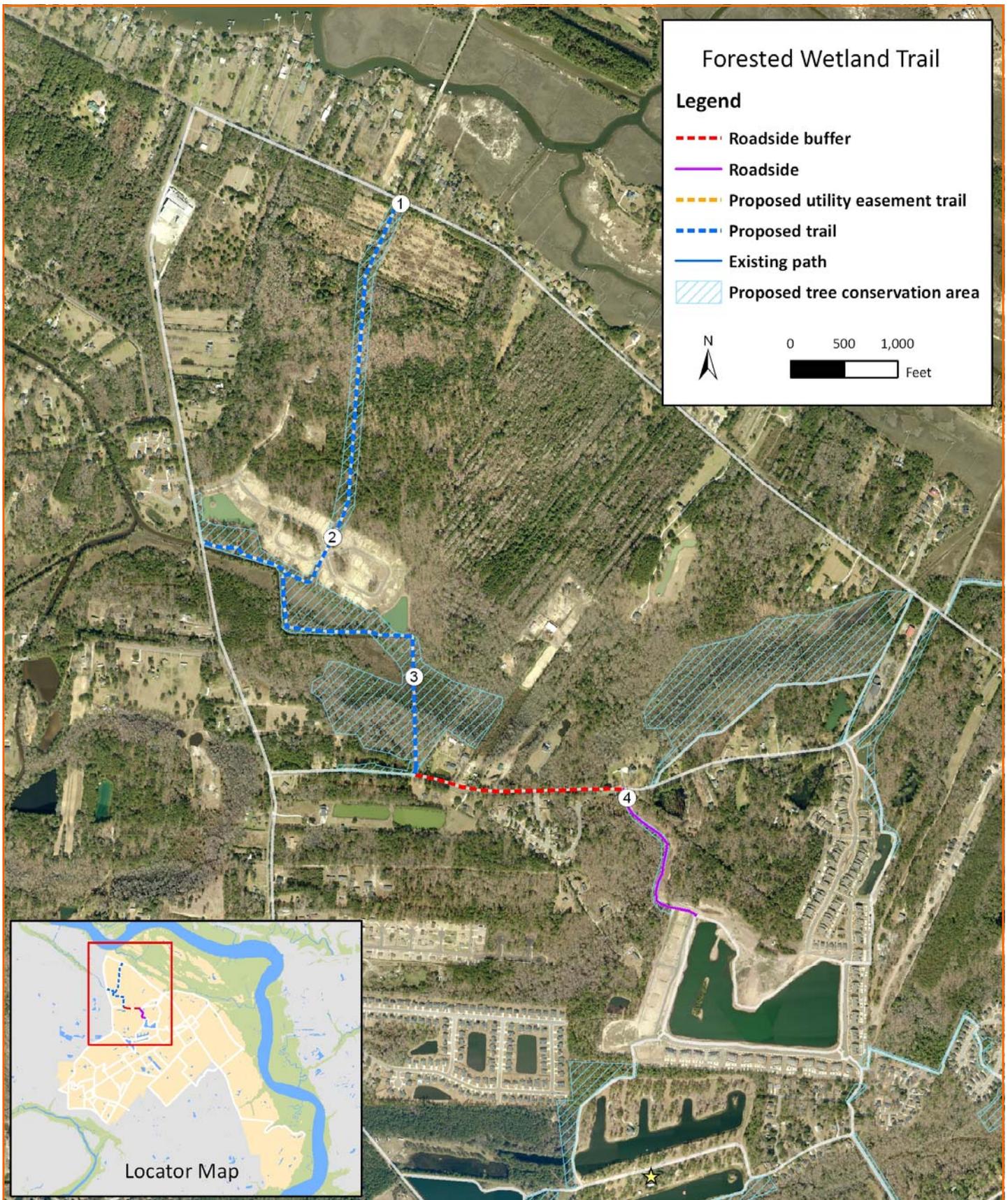
The Charleston Water System sanitary sewer easement provides an opportunity to create a trail along the marsh border.

3. Rushland Landing Road Access

This section of road could provide a central location for access to the Penny Creek Trail.



3



Proposed Network

3.3.6 Forested Wetland Trail

The 2.2 mile long Forested Wetland Trail traverses from near the northern most extent of the UGB south to Whitney Lake. The trail's name is derived from the middle third of the trail traversing a freshwater forested wetland. The trail meets up with the end of the Penny Creek Trail at Brownswood Road and also ends at Whitney Lake, on the Five Lakes Trail. Cooperation with the Swygert's Landing development and other private landowners, and new infrastructure through forested wetlands is needed to implement this trail.



1

1. Future Swygerts Landing Entrance
 A probable location of the future Swygerts Landing Entrance along River Road could designate the beginning of the Forested Wetland Trail and provide trail access facilities.



2

2. Planned Trail within Swygerts Landing
 A pedestrian trail already links current development with future planned development. This path could become a part of the greenway with cooperation from Swygert's Landing.



3

3. Forested Wetland
 A major portion of this trail is proposed to be within a tree conservation area, protecting adjacent wetland and forested habitats.



4

4. Future Road Connecting Whitney Lake and Murraywood.
 This new road currently under construction will connect the Forested Wetland Trail to the Five Lakes Trail at Whitney Lakes.

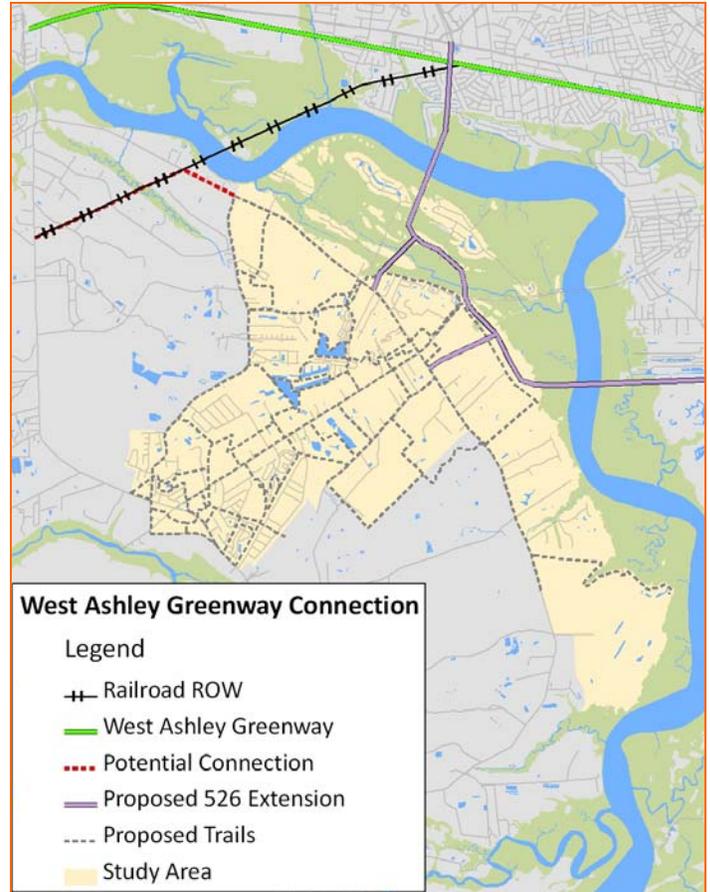
3.4 Regional Trail Connectivity

Regional networks and local segments of greenways exist throughout the Charleston metro area. The City’s greenways, the East Coast Greenway, and others are constantly being planned, improved, and used in the area.¹ Due to the geographic location of Johns Island, few options for regional trail connectivity exist. A Rail to Trail project could connect the Johns Island Greenway with the West Ashley Greenway. The trail would utilize an old rail line that crosses the Stono River north of the Johns Island study area. The rail line intersects River Road north of Brownswood Road and travels northeast over the Stono into the heart of West Ashley and right onto the West Ashley Greenway.

The West Ashley Greenway is an over ten mile long Rails to Trails project that traverses the West Ashley community south of highway 17. The path has planned connections to downtown Charleston and other locations in Charleston County.

Potential connection also exist in the south to Seabrook and Kiawah Island. Possible paths include following Bohicket Road or River Road.

The proposed Mark Clark Expressway (I-526) Extension would travel from West Ashley south onto Johns Island and then west to James Island. A bike/pedestrian path as part of the elevated expressway would connect Johns Island to James Island County Park.

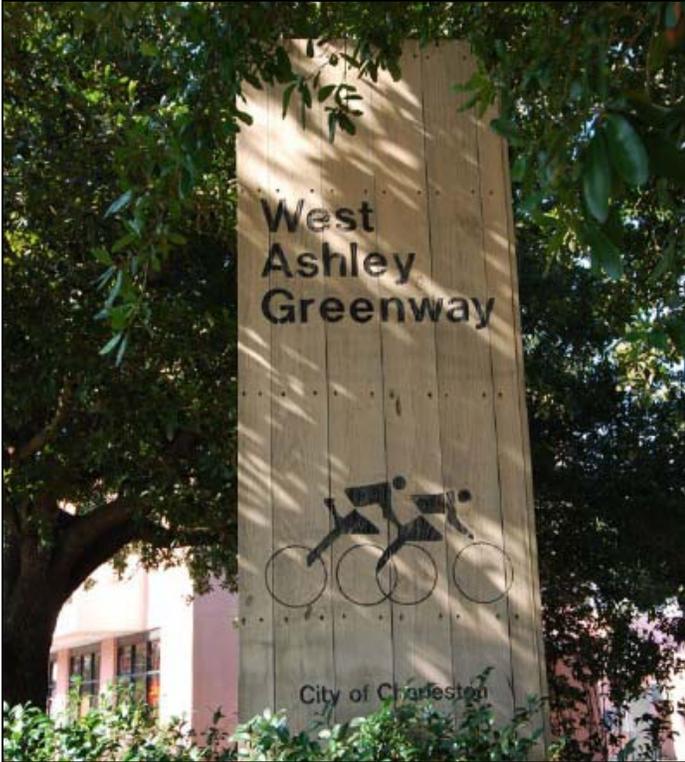


Map of potential West Ashley Greenway connection

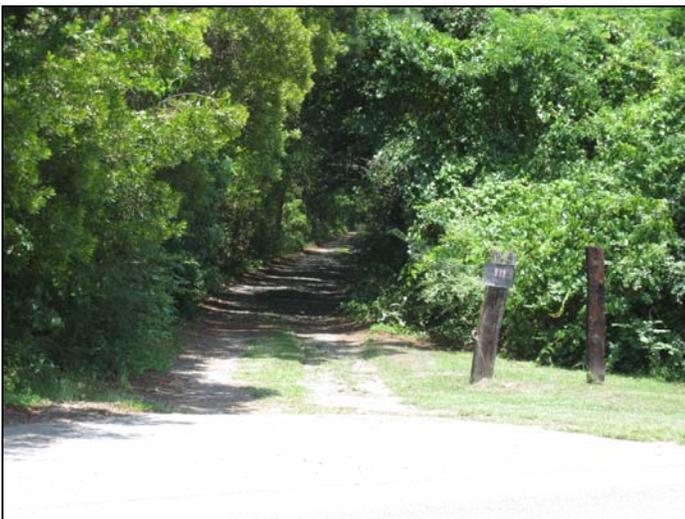
“To make a greenway... is to make a community. And that, above all else, is what the movement is all about.” - CHARLES LITTLE, *Greenways for America*, 1990

Chapter 3 Footnotes

1. *Charleston County Comprehensive Greenbelt Plan*. Adopted by Charleston County Council June 6, 2006.



West Ashley Greenway Sign on Folly Road



Location of old railroad site at intersection of River Road

Chapter 4 : Tree Conservation Areas

This chapter describes the objective of tree conservation areas, priority tree conservation area identification, and individual priority tree conservation areas.

4.1 Objective of Tree Conservation Areas

Tree conservation areas (TCAs) are canopied areas distributed across the Johns Island study area. TCAs contribute to the city-wide 40% canopy cover goal and provide the benefits discussed in Chapter 1, section 1.3.

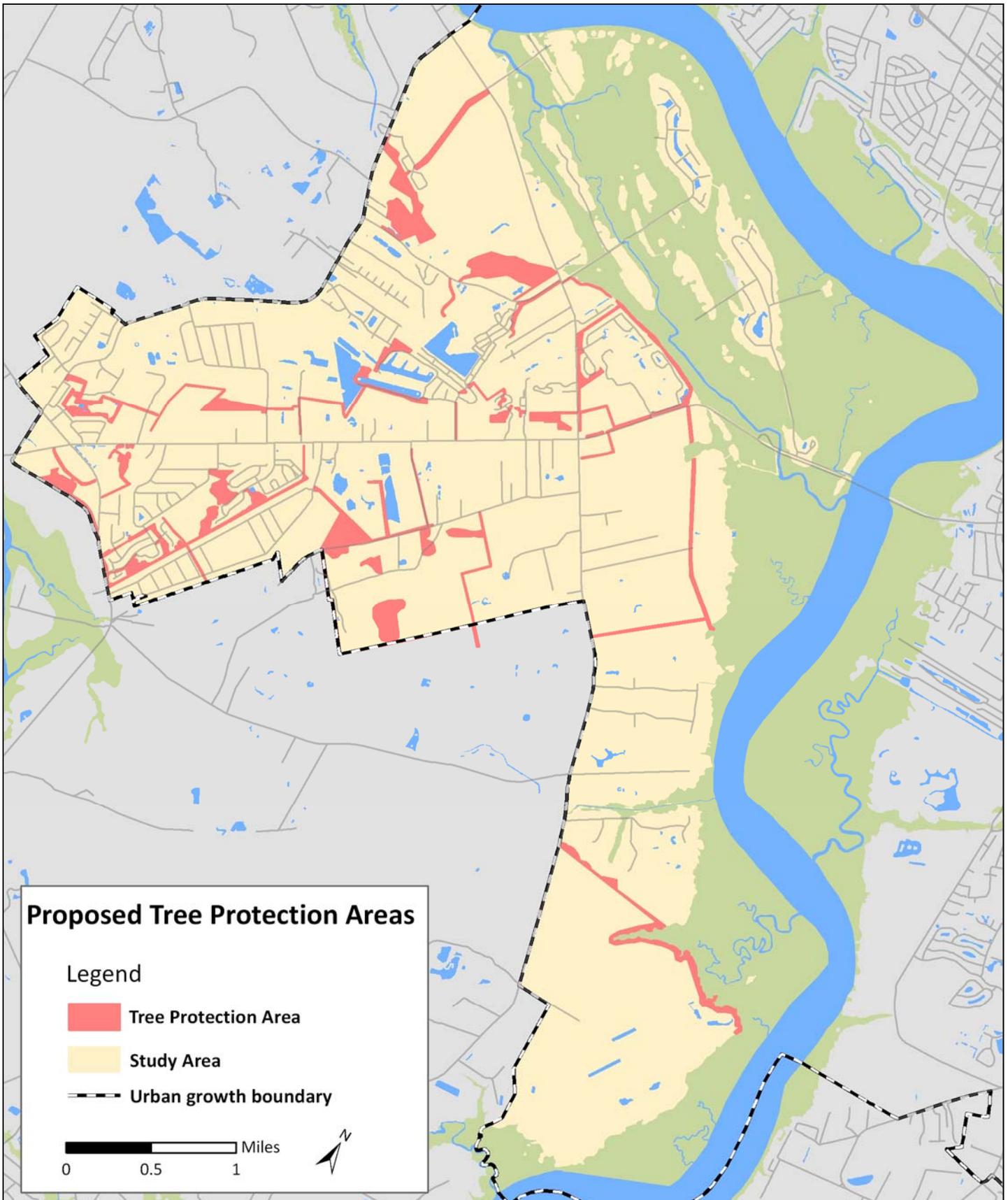
These areas were identified because of their location near or adjacent to the proposed greenway trails. Additionally, forested wetlands were identified as potential TCAs because they are less desirable for development making them practical for conservation. These tree conservation areas provide canopied buffers along much of the proposed greenway which contribute to the environmental benefits and enhance the greenway experience to patrons.

The tree conservation areas are designed to be incorporated with the proposed Tree and Site Conservation Ordinance. When new development occurs on Johns Island, the tree conservation areas should be considered and planning efforts should be made to accommodate these areas.

4.2 Priority Tree Conservation Area Identification

This section highlights tree canopy areas within the UGB and along the proposed greenway that are of conservation concern and have been identified for protection. Eight priority tree conservation areas were identified based on the following criteria:

- Location
- Proximity to proposed Greenway
- Condition of existing canopy
- Potential connectivity
- Stand size
- Purpose of conservation area
- Likelihood of Development



Priority Tree Conservation Areas

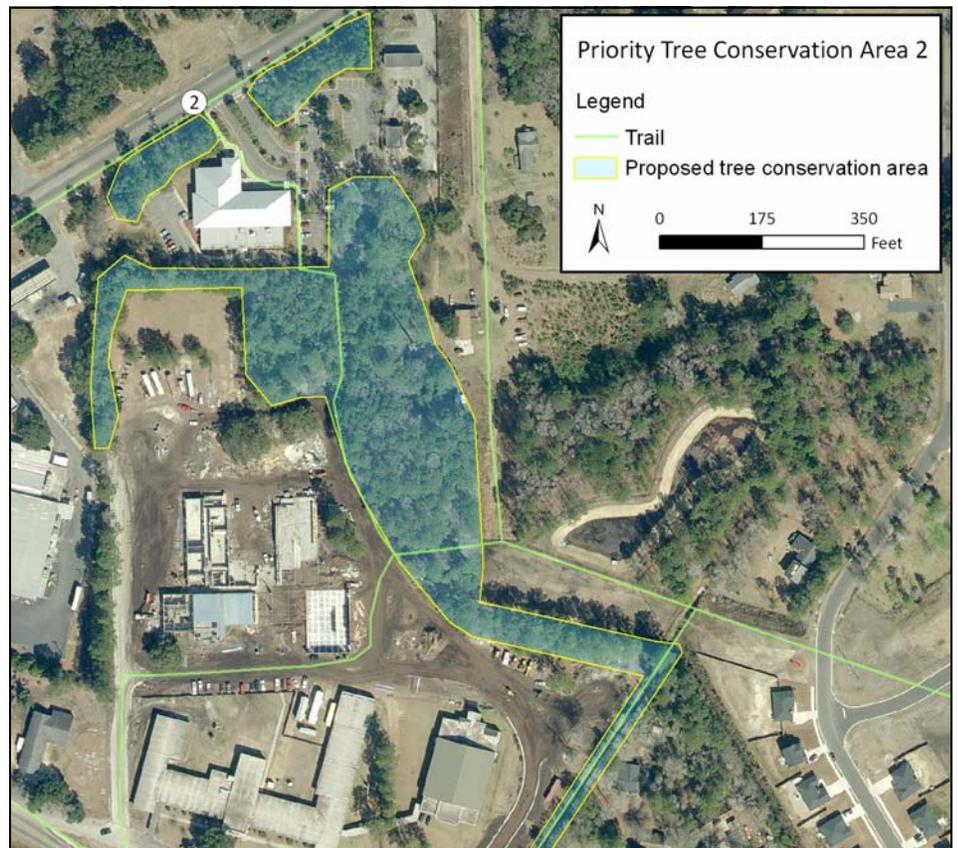


4.3.1 Priority Area 1

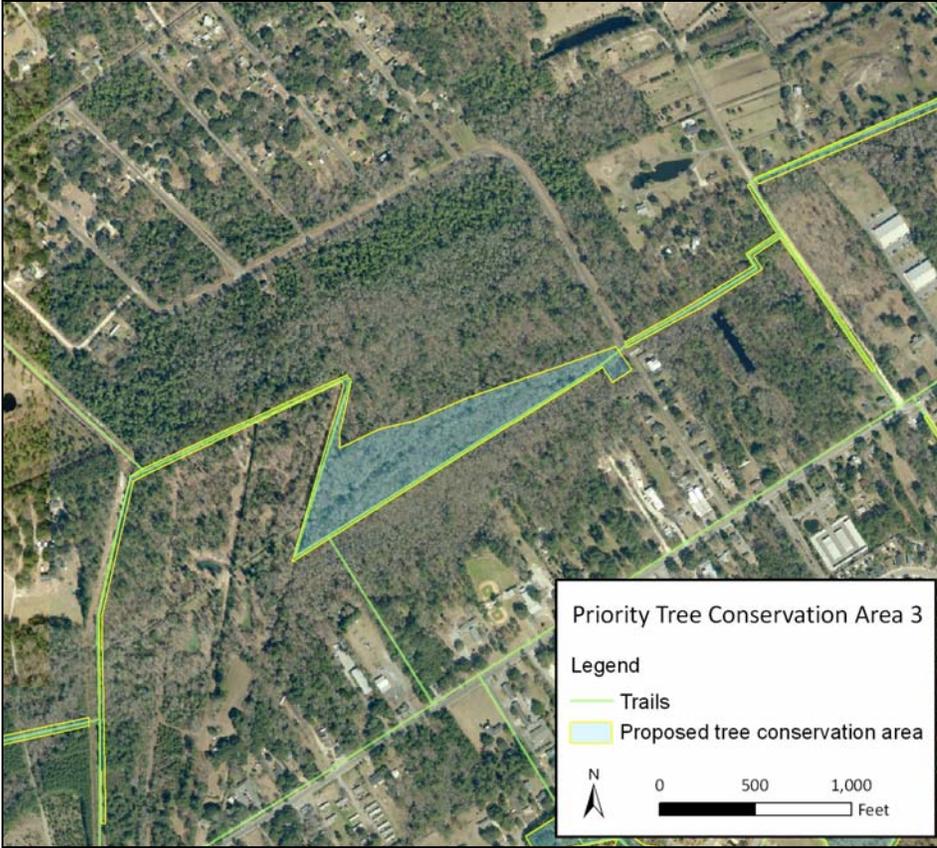
Tree Conservation Area 1 consists of the fifty foot wide buffer along the trail that travels south from Bohicket to and including Angel Oak Park. The conservation area also is comprised of the tree canopy along Angel Oak Road

4.3.2 Priority Area 2

This map shows the tree conservation area adjacent to Haut Gap Middle School and the Johns Island Branch Library.



Priority Tree Conservation Areas

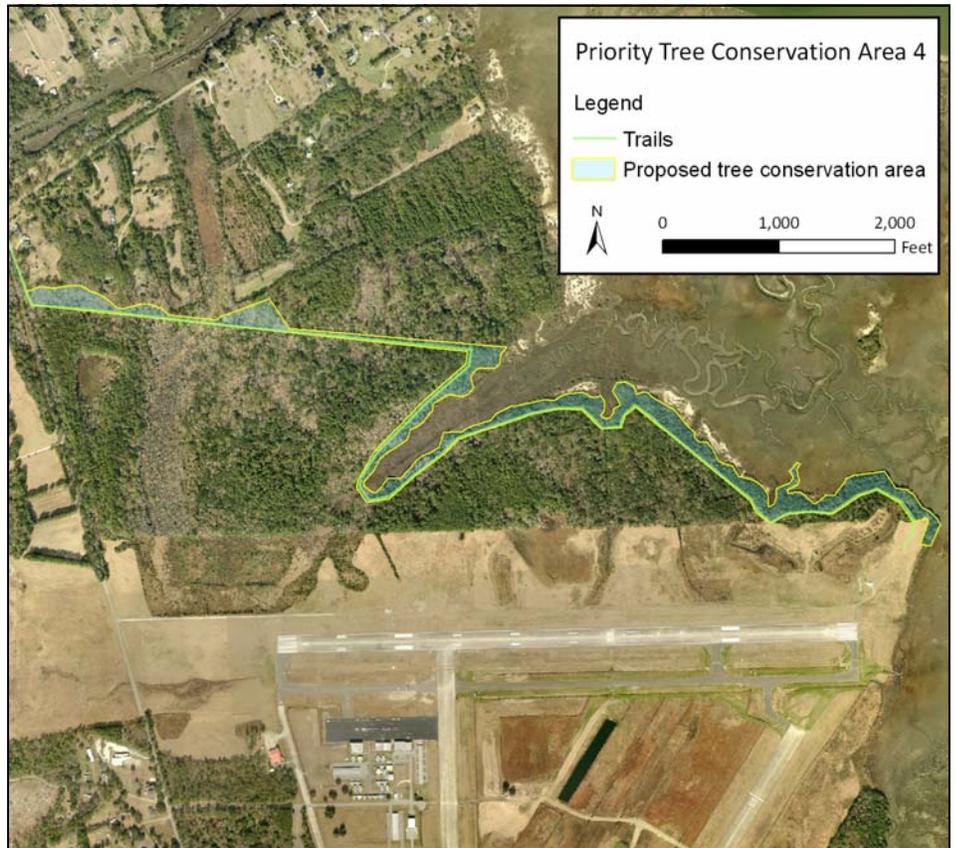


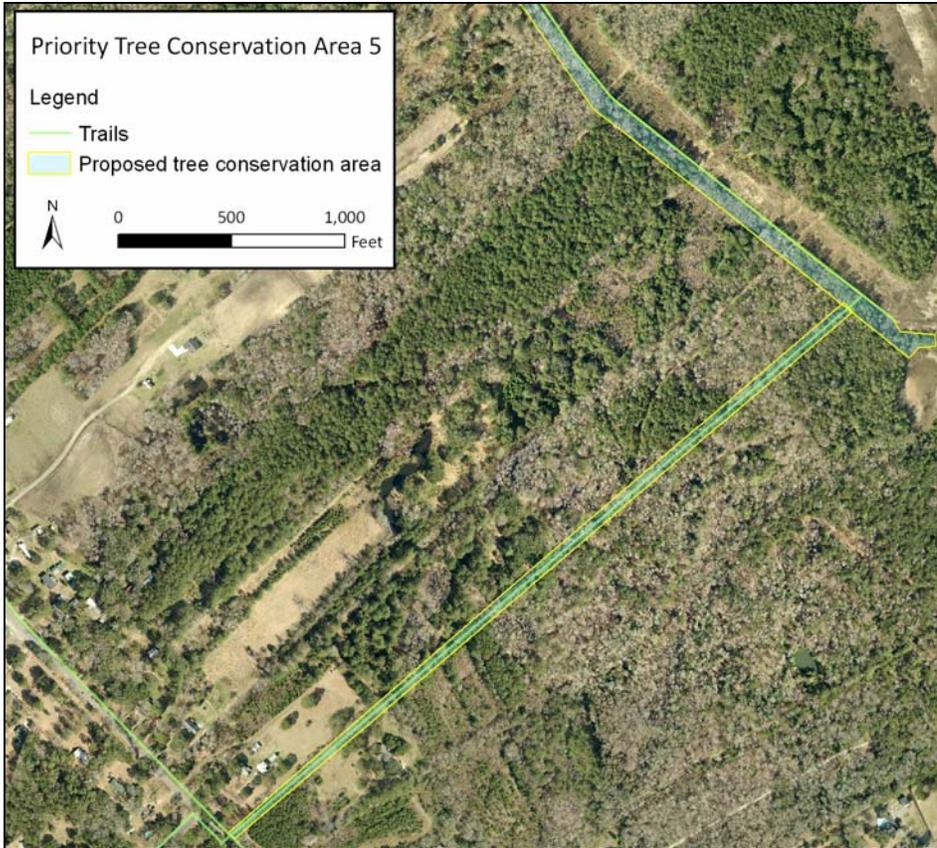
4.3.3 Priority Area 3

Conservation area 3 is made up of forested buffers along the Five Lakes and Western Easement trail. This conservation area is part of a large forested tract bounded by development within the UGB.

4.3.4 Priority Area 4

Conservation Area 4 consists of the southern portion of the Historic Sites Trail. The area travels along and protects forested wetlands and marsh edge.



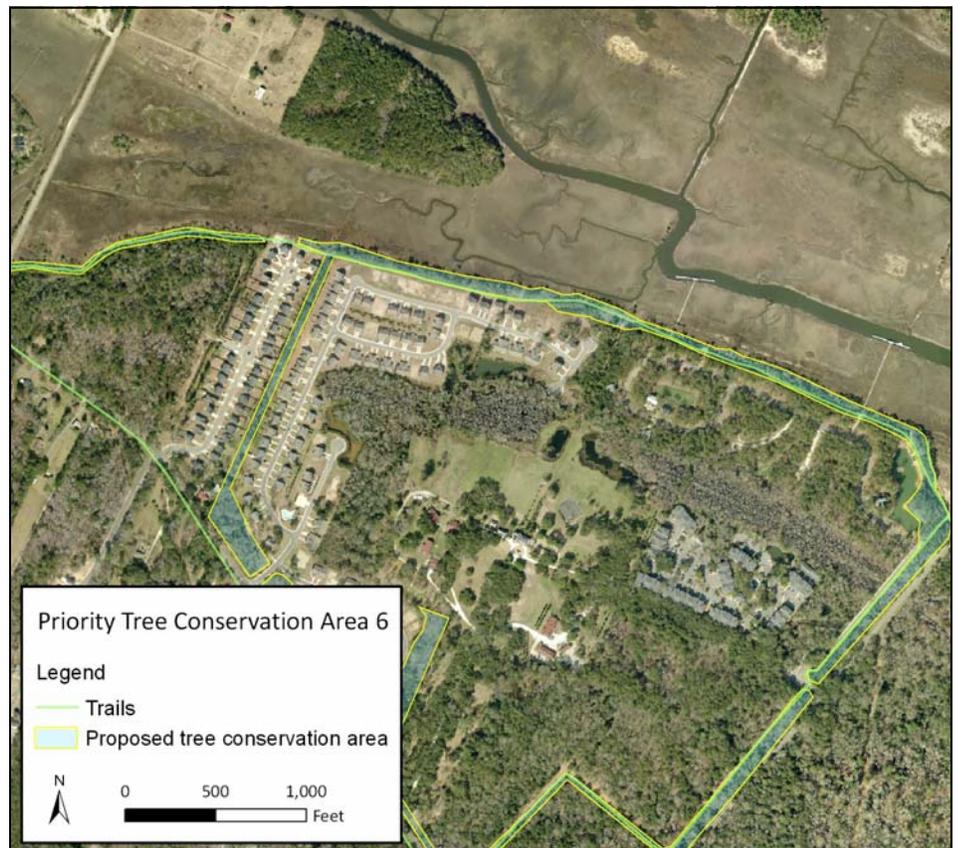


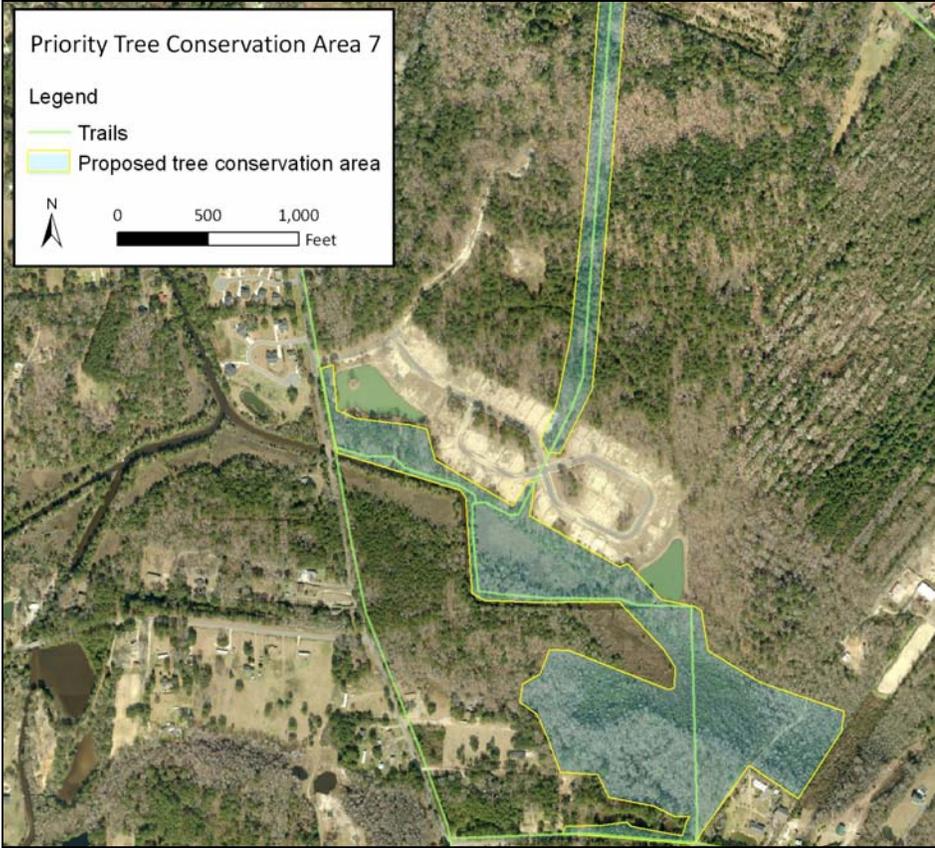
4.3.5 Priority Area 5

Conservation area five is a fifty foot buffer along the access trail from River Road to the SCE&G utility easement.

4.3.6 Priority Area 6

Conservation area 6 runs along the canopied marsh edge along Penny Creek.



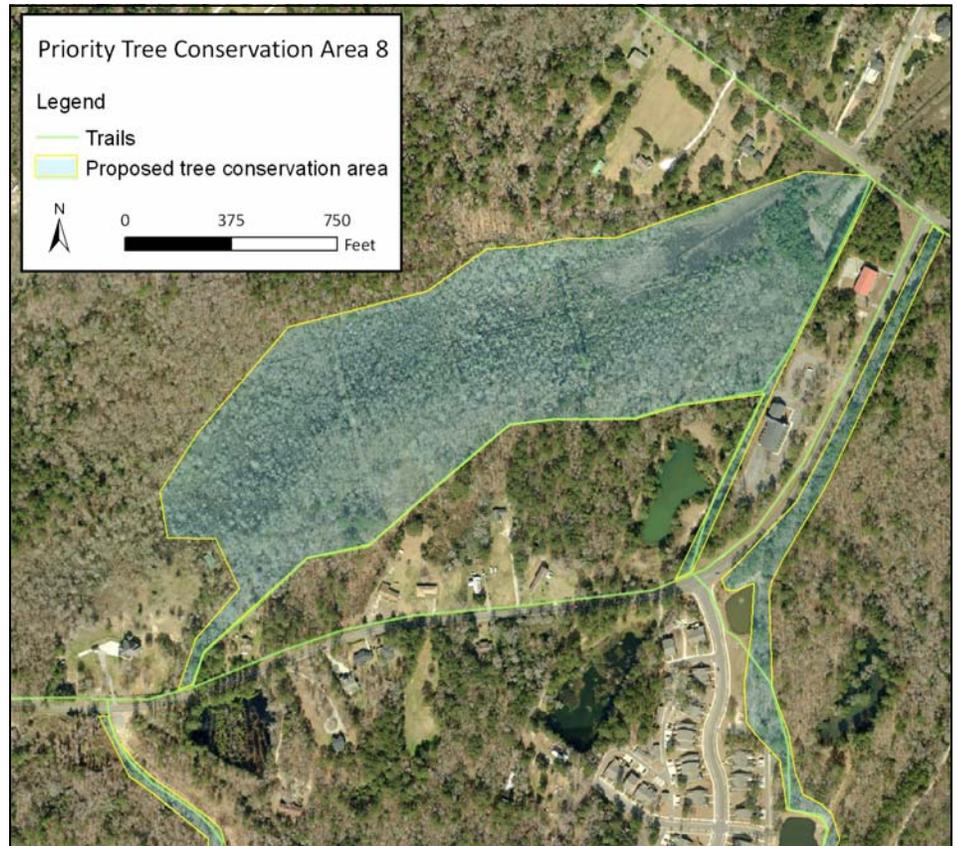


4.3.7 Priority Area 7

Conservation area 7 consists of the section of the Forested Wetlands Trail north of Murraywood Road. The area includes a large portion of the forested wetland south of the Swygerts Landing development as well as a forested buffer along the River Road access.

4.3.8 Priority Area 8

Conservation area 8 is made up of the forested wetland portion of the Penny Creek Trail southeast of River Road and north of Murraywood.



Chapter 5 : Implementation

This chapter describes the implementation, administrative structure, priority segment identification, trail types, and the proposed tree and site conservation ordinance.

5.1 Implementation

Overview

Implementing the recommendations within this Greenways Plan will require leadership on the part of the City of Charleston, a dedication to trail development, a recurring source of revenue, partnership between the public and private sector, and intergovernmental coordination. The City of Charleston will need to work closely with its partners to define an appropriate structure for managing the emerging trails program. It will also be necessary for the City to work in collaboration with state and federal agencies and non-governmental organizations to implement this program. The City and its partners will need to establish a stable and recurring source of funding for trails. Success will be realized through the partnership efforts already begun with private sector land conservation organizations, landowners and businesses.

Priorities and Key Steps

This Plan is a vision and a guide to the future. The Johns Island Community Greenways Plan seeks to forecast what the City of Charleston should do, in partnership with other agencies, private landowners and residents to conserve corridors and make trails available for use and enjoyment on Johns Island. An interconnected network of trails is important to preserve the unique character of Johns Island. The following text defines a vision and framework for implementing a greenway for Johns Island.

Step 1: Adopt the plan

The Planning Commission should review and recommend the plan to City Council, which in turn must officially incorporate the trail into its land use plans. It is also recommended that as developments are planned and reviewed, adequate open space and greenway corridors identified in this plan are protected. This would entail having a development incorporate the recommended greenway corridor connections whenever a development proposal overlaps with the proposed routes. Future developments will be subject to minimum tree and landscaping requirements and should use the recommended greenway corridor connections to meet those minimum requirements where ever possible.



Envisioned trail along River Road

Step 2: Form Trail Advisory Committee or Sub-committee

Leadership from individuals on Johns Island during the adoption and implementation campaign is essential to move the trail system from concept to reality. These individuals will help advocate for the trail, and in their professional and personal capacity will seek out opportunities to utilize synergies with other projects, individuals and organizations to keep the trail system as a priority in the ever-present competition for resources.

The Trail Advisory Committee should be a forum for leaders to convene periodically to discuss progress, share resources/tools, and otherwise coordinate trail planning and development activities. The committee should be made up of members of the Johns Island community as well as city staff. Benchmarks for completion should be identified, revisited, and revised periodically. The committee should coordinate a public information campaign to assist in celebrating successes and raise awareness of the trail system and its benefits.

The role of the committee would be as follows:

- Champion for implementing trails program
- Advise the City on development of program
- Define and recommend sources of funding
- Implement uniform standards for greenway facilities
- Advocate for city resources for implementation and maintenance
- Create partnerships with organizations that can assist in trail acquisition, development, and programming

Step 3: Complete Priority Greenway Segments

This plan has identified a methodology for identifying top greenway corridors and projects that should be prioritized for development (see Section 5.3). The evaluation and prioritization of projects will need to be updated on a regular basis by the City of Charleston and the advisory committee.



Conditions along Maybank Highway



Intersection along proposed greenway

5.2 Administrative Structure

The Greenways Plan is envisioned as a shared program. Therefore, the City of Charleston, Charleston County Parks and Recreation, Berkeley Coop, SCE&G, Charleston Water Systems, Charleston Aviation Authority, landowners, and neighborhood associations would participate in the operation, improvement and maintenance of the greenways. This Plan offers a vision and options for consideration. The administrative structure for the program is defined in the following text.

Role of the Department of Planning, Preservation, and Sustainability (PP&S)

As the lead agency in greenway development, PP&S will have multiple roles. Ensuring that greenways are a priority is the most critical task. PP&S should seek greenway development where there is need and work to provide connectivity throughout the study area. PP&S will need to work with the Parks and Recreation Department to develop a strong operations and maintenance plan to achieve trail safety. Operations and maintenance need to be supported by an adequate funding stream and staff levels. PP&S should monitor closely the implementation of this Plan, and maintain trail priority projects on an annual basis. PP&S should also work to ensure that when future development occurs on Johns Island along a proposed greenway corridor, that developers are required to build that greenway. PP&S should also appoint a greenway and trails coordinator. This coordinator would be responsible for implementing this plan, working with local agencies and municipalities, and seeking funding.

Role of City of Charleston

Charleston’s City Council should adopt annually and prior to the beginning of each fiscal year a budget for expenditures of funding that supports the trails program. In the preparation of the annual budget, the Council may require any reports, estimates, and statistics from any department as may be necessary to perform its duties as the responsible fiscal body of the City. The City will create a Johns Island Trails Advisory Committee as mentioned.

Role of Non-Profits

Non-profit organizations can serve a variety of purposes on Johns Island. Non-profits and others can be important allies for greenways on Johns Island. Specific tasks for non-profits include:

- Raise interest and awareness in trails
- Advocate, promote, encourage development of greenways
- Educate citizens as to benefits of greenways
- Assist in raising money for implementation
- Help to organize volunteers to assist with implementation and management
- Sponsor or co-sponsor greenway events
- Accept easements from private land owners

5.3 Priority Segment Identification

This greenways plan has identified a network of greenway corridors that should be developed by the City of Charleston. In order to develop the future Johns Island Greenway in an orderly and systematic manner, the entire network needs to be further evaluated and prioritized for development. The following criteria should be used to select segments for future development.

- 1) **Maximum Utility:** priority segments of greenway should provide maximum utility to the greatest number of residents. These priority segments should provide benefits to residents in the form of health and wellness activities, recreation and transportation.
- 2) **Ease of Development:** An assessment should be made for each greenway corridor to determine where land or right-of-way is capable of supporting future trail development. Candidate segments should be studied to better understand obstacles to future facility development.
- 3) **Functional Segment:** Priority greenways should have a destination on each end, such as a park, neighborhood, school, shopping area, or other popular destination.
- 4) **Available Funding:** An assessment should be made as to how each individual segment will be funded. For example, if a project presents a strong case for transportation funding, SCDOT would be the logical choice for a matching grant.
- 5) **Development activity:** Where proposed developments occur, plans should be assessed for potential to meet goals and objectives of greenway connections.



Farm entrance along River Road

This evaluation and prioritization of projects will need to be completed on an annual basis by the City, the Trails Advisory Committee, and non-profit partners. With all of this in mind, a flexible and pragmatic approach is needed that focuses on opportunities throughout the study area, occurring on an annual basis, where greenway development can most likely occur.

5.4 Trail Types

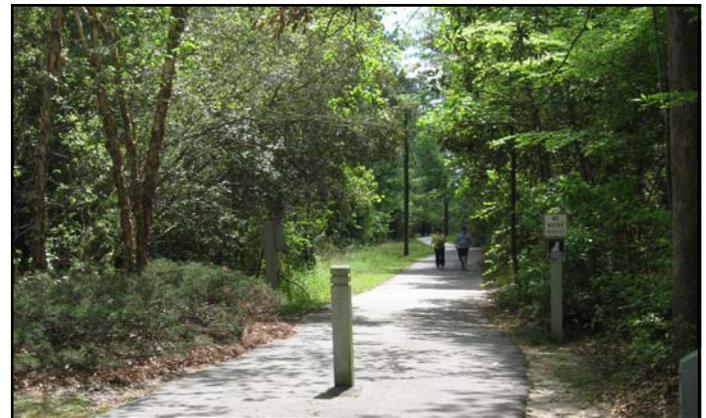
Few trails currently exist on Johns Island, but good examples of various trail types exist throughout the City of Charleston (see below). The Johns Island Greenway should feature many trail types including: multi-modal paved paths along roadsides, unpaved multimodal paths, paved pedestrian paths, and unpaved pedestrian paths. The options for trail types depend on the purpose and placement of each individual trail section.



Unpaved roadway



Paved Trail along roadside



Paved bicycle/pedestrian path



Unpaved trail through forest



Elevated unpaved trail through forested wetland

5.5 Proposed Tree and Site Conservation Ordinance

The city should seek to align the proposed Tree and Site Conservation Ordinance with the Johns Island Community Greenways Plan. New developments that include areas for planned greenways should be encouraged by the City to protect canopy and / or provide infrastructure for the greenway.

The Tree and Site Conservation Ordinance of the City of Charleston Zoning Ordinance provides a primary vehicle for attaining the City goal of being environmentally sustainable, especially as it relates to the urban forest and associated ecosystems.¹ The ordinance establishes administrative standards and best management practices for conserving, removing, maintaining and planting of trees in order to protect the environment and the local, low country character, primarily through conservation of existing groups, stands, and corridors of trees along with their associated shrub and herbaceous understory layers.

The ordinance focuses on the measurement of tree canopy coverage. This is an important step in ensuring that the City's valuable green infrastructure is maintained at minimum thresholds, as communities continue to develop. To achieve this, the city will strive to meet and exceed the recommended goal by American Forests to maintain an average 40% tree canopy coverage. Therefore, new developments will be required to meet a set percent canopy coverage based on different land uses. This goal supports the City goal of achieving environmental sustainability by conserving natural tree cover in order to retain the environmental benefits associated with the urban forest.

Chapter 5 Footnotes

1. *Tree and Site Conservation Ordinance*. City of Charleston Department of Planning, Preservation, and Sustainability, Draft. 2009. <http://www.charleston-sc.gov/dept/content.aspx?nid=1786&cid=12486>.