– Palmetto Trail –
STATEWIDE MASTER PLAN

PALMETTO CONSERVATION FOUNDATION

Celebrating 20 Years

The PALMETTO TRAIL

• A PROJECT OF PALMETTO CONSERVATION •

Est. 1994

PALMETTO CONSERVATION

ACKNOWLEDGEMENTS

The Palmetto Conservation Foundation commissioned the Palmetto Trail Statewide Master Plan with funding provided in part by Boeing Company and South Carolina Parks, Recreation and Tourism. The project was led and managed by Alta Planning + Design with support from Palmetto Conservation Foundation staff. A special thank you is extended to the project advisory committee, as well as the members of public and stakeholders that provided valuable feedback throughout the master planning process.

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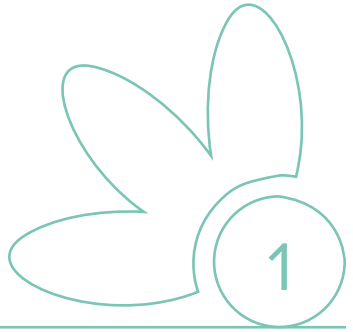


CHAPTER 1
Introduction & Vision

"Regionally and **nationally recognized** as a safe, scenic, and visitor-friendly attraction, the Palmetto Trail supports **outdoor recreation and active transportation** and contributes to the **health, economic vitality, and quality of life** of South Carolina residents and local communities."

PROJECT PURPOSE

The Palmetto Trail Statewide Master Plan establishes a ten-year vision for completing and expanding the Palmetto Trail from South Carolina's mountains to its coast. More than two decades ago, the Palmetto Trail was conceived as a cross-state trail that would serve as a spine for a network of bikeways and trails in South Carolina. Since its inception in 1994, the Palmetto Trail has been spearheaded by the Palmetto Conservation Foundation (PCF), a statewide nonprofit organization. Through the work of PCF and its volunteers and partners, 25 passages of the trail are complete and are enjoyed by South Carolina residents and visitors. This represents approximately 350 miles of the 425-mile route originally envisioned. In the Upstate of South Carolina, the Oconee Passage at Oconee Station State Historic Site serves as the trail's northern terminus. In the Low Country, the trail terminates at the Awendaw Passage in the Buck Hall National Recreation Area at Francis Marion National Forest.

PCF's work is defined by three major program areas: conversation of natural areas, preservation of Revolutionary War battlefields, and development of the Palmetto Trail and other greenways in South Carolina. PCF complements these programs with organized activities for outdoor education and recreation and with a small publishing arm. In the last twenty five years, as the Palmetto Trail has developed and PCF has evolved, the organizational needs and focus have changed.

This Master Plan is a guide book to be used by PCF and its partners to guide the completion of the Palmetto Trail within the next ten years. The Plan additionally serves as a resource for marketing, managing, and maintaining the trail at the statewide level and also at the local level.

Inherent in the Palmetto Trail's purpose is a commitment to trail users of all ages. Conserving these areas will result in natural recreation throughout multiple generations.

VISION AND GOALS

At the kick-off meeting of the Palmetto Trail Statewide Master Plan, the Project Steering Committee (PSC) discussed overarching goals for the Palmetto Trail and described desired outcomes of the Plan. Input from the PSC as well as public comments received during May and June of 2013 were combined into the following overall vision statement for this Plan:

Specific goals for the Palmetto Trail that will guide implementation efforts for the Master Plan are categorized on the next page.

The Saluda Mountains Passage of the Palmetto Trail follows the Saluda Mountains and challenges hikers with a variety of elevation changes.

Vision for the Palmetto Trail

The Palmetto Trail is a **well-maintained, continuous, off-road trail** that stretches from the mountains to the coast of South Carolina. It is accessible to a variety of trail users and **serves as a spine for a regional bicycle, pedestrian, and trail network that links South Carolina communities** to the trail and to one another. Regionally and nationally recognized as a **safe, scenic, and visitor-friendly** attraction, the Palmetto Trail supports outdoor recreation and active transportation and contributes to the **health, economic vitality, and quality of life** of South Carolina residents and local communities.

PALMETTO TRAIL GOALS

TRAIL PLANNING

- Facilitate **planning for and the development of spur trails** across the state
- **Engage rural communities and the leadership of small municipalities** in long-term trail planning opportunities
- **Plan off-road trail routes** for the entirety of the Palmetto Trail spine

CONNECT TO STATE PARKS

- Integrate the Palmetto Trail spine and potential spur trails **within local and regional trail plans**
- Plan **loop trail**s along the Palmetto Trail spine to **encourage short, local trips**
- Link the Palmetto Trail to blueways and waterway access points

TRAIL DEVELOPMENT

- **Close the gaps** in trail development along the Palmetto Trail spine
- Improve **ADA accessibility** where possible and promote ADA accessible trail segments as such
- Improve access to the trail for **all user types** through the development of **more trailheads**, increasing the **visibility of trailheads**, and other means
- Establish consistent, user-friendly, and informative **wayfinding** along the entire Palmetto Trail
- Secure easements with landowners along new and existing trail easements to **create permanent trail rights of way**
- **Improve the trail alignment of existing trail segments** that are limited in appeal and accessibility
- Link off-road Palmetto Trail segments with local **on-road bicycle facilities and sidewalks**

TRAIL USAGE, BRANDING, & PROMOTION

- Facilitate **overnight trips**
- Establish programs that increase usage of the Palmetto Trail and **attract a broad range of ages and trail users**
- Promote the Palmetto Trail as a **unique opportunity to walk across South Carolina**
- Promote the **stories of South Carolina's small towns** along the Palmetto Trail
- Establish the Palmetto Trail as an **economic development strategy** for rural communities
- Establish the Palmetto Trail as the **conduit connecting communities**, local and state destinations, geographies, health, quality of life, and economic vitality in South Carolina
- Promote the Palmetto Trail as a **complement and linkage** to other long-distance trails such as the Carolina Thread Trail and Foothills Trail
- Establish a **reliable, well-known, online source** for up-to-date information about the Palmetto Trail
- Proactively **share up-to-date information with partners in promotion** (such as www.SCTrails.net and the South Carolina Heritage Corridor)
- Establish support for and recognition of the Palmetto Trail as **"South Carolina's Trail"** at the state level

TRAIL MAINTENANCE & MANAGEMENT

- Establish the Palmetto Trail as a **destination for alternative spring breaks** and a long-term partner for school community service programs and similar volunteer outlets
- **Evaluate Palmetto Trail usage** with accurate user counts conducted regularly
- **Encourage small businesses along t**he Palmetto Trail and **evaluate the trail's impact** on their success and growth
- Establish a **maintenance strategy** that is institutionalized and sustainable over time
- Cultivate, maintain, and nurture partnerships and sponsorships that s**upport long-term maintenance and management goals,** including South Carolina colleges, universities, and corporations
- Create a s**ustainable strategy for encouraging events** along the Palmetto Trail that are revenue-generating either through donations or usage fees
- **Establish corridor protections** against prescribed burns, logging, and other disruptions that also **support conservation of plants, soil, and wildlife**

BENEFITS OF TRAILS

Given the hard work and investment involved in the planning, design, and development of the existing Palmetto Trail and the demand for future connections, it is important to understand the benefits that result from trail development. Communities across the U.S. and throughout the world are investing in trails as a way to improve their quality of life. They do this to improve recreation opportunities as well as capture the health, safety, social, economic and environmental benefits.

In South Carolina, the Palmetto Trail is an important amenity within the tourism industry and a popular asset for residents and visitors seeking opportunities for outdoor recreation and active transportation. According to the Outdoor Industry Association, 54% of South Carolina residents participate in outdoor recreation each year. [1] The South Carolina Department of Parks, Recreation and Tourism states that visiting historic sites, rural sightseeing, state and national parks, eco touring and camping account for 42% of the leisure activities of in-state travel parties.[2]

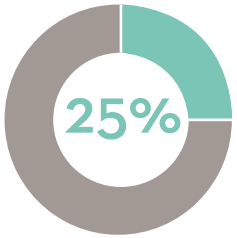
This section provides a summary of trail benefits and potential impacts of trail development, as well as three case studies of the positive impacts of trails.

Sun-dappled trails, tall trees, and birdsong give visitors a quiet space to relax and leave their worries behind. These are just a few of the benefits of natural recreation spaces.

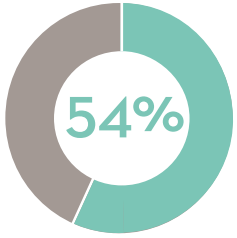
ECONOMIC & TOURISM BENEFITS

According to the Outdoor Industry Association, outdoor recreation generates nationally more annual consumer spending than motor vehicles and parts, pharmaceuticals, and household utilities, and creates more jobs than the construction industry.

The charts on this page, illustrate year 2013 figures from the South Carolina Department of Parks, Recreation and Tourism. The variety of trail types, contexts, and attractions along the Palmetto Trail ensure a broad range of user groups. Beyond mountain bikers, hikers, and similar active users, heritage tourism and eco-tourism add to the Palmetto Trail's visitor base.



25% of in-state leisure trips by South Carolina residents were for **outdoor recreation.**



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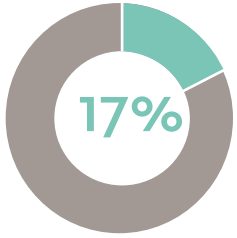
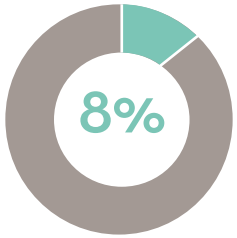


17% of all domestic leisure trips from out-of-state to South Carolina were for **outdoor recreation.**



8% of all domestic trips to South Carolina were for **outdoor recreation.**

RESIDENT & VISITOR SPENDING

Both in-state and out-of-state visitors to the Palmetto Trail have a **direct economic impact.** A 2008 study of state trails in Minnesota found that **expenditures of in-state residents resulted into some $1.1 billion in consumer spending and out-of-state visitors added $315.4 million** in spending.[4] In 2010, mountain bike trails at Raystown Lake, PA attracted more than **25,000 visitors** and brought **$1.2 million in spending to the region.**[5]

HOW MUCH MONEY DOES SOUTH CAROLINA'S OUTDOOR RECREATION GENERATE? [3]

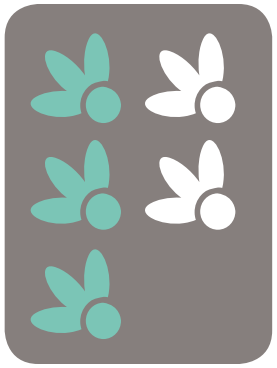
- **$18 billion** in consumer spending
- **201,000** in direct South Carolina jobs
- **$4.7 billion** in wages and salaries
- **$1.0 billion** in state and local tax revenue

Continued development of, improvements to, and promotion of the Palmetto Trail **will only add to these figures.**

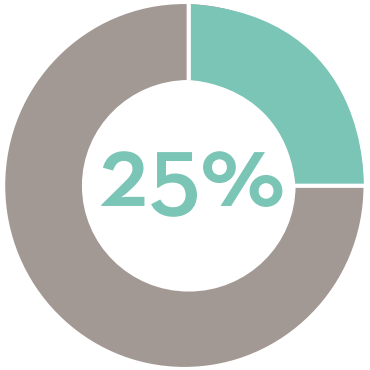
HEALTH BENEFITS

According to the Centers for Disease Control and Prevention (CDC), "Physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year, and contributes to the obesity epidemic".

In identifying a solution to obesity problems, the Center for Disease Control (CDC) determined that by creating and improving places in our communities to be physically active, there could be a 25 percent increase in the percentage of people who exercise at least three times a week.[8] This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits.[9]



In South Carolina, **three out of every five adults** and nearly 30 percent of South Carolina high school students are **overweight or obese.**[7]



Creating access to attractive, safe, and accessible places – such as the Palmetto Trail – could **encourage a 25% increase in the percentage of those exercising regularly** throughout the week.[8]

Active living initiatives, such as this plan, South Carolina can lower the dire effects of inactivity and obesity that currently effect the state's residents.

TRAIL IMPACT CASE STUDIES

Greenville Health System Swamp Rabbit Trail, Greenville, SC[10]

The Greenville Health System Swamp Rabbit Trail (GHS SRT) is an approximately 17 mile multi-use trail system located along the Reedy River in Greenville, SC, providing residents and tourists with opportunities to actively commute and recreate to schools, parks, and local businesses. The development of the GHS SRT was a conscious strategy by Greenville County and City of Greenville officials to stem rising levels of physical inactivity and obesity and offer additional transportation options, while promoting economic development.

The trail is popular, with its success evidenced by increased local physical activity levels and tourism dollars. In its first year, an estimated 359,314 users used GHS SRT (based on daily observation estimates), and in its second year, this number increased to 403,323 estimated users.

In the trail's first two years, businesses directly abutting and/or within close proximity to the GHS SRT reported increases in sales/revenue as high as 100% (avg. = 47%). Five new businesses opened as a result of the trail being built and/or changing location(s) because of their desire to be closer to the trail.

Businesses that relocated observed a 30% to 90% increase in sales in the second year that the trail was open. Annual revenue from trail users ranged from $50,000 to $400,000 (avg. = $111,250) during the trail's second year.

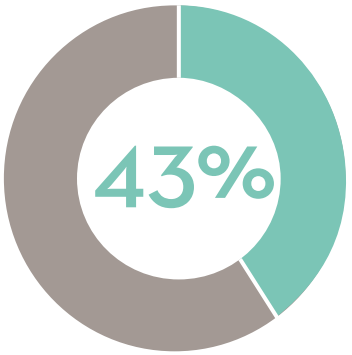
Virginia Creeper Trail, Abingdon to Whitetop Station, VA[11]

The Virginia Creeper Trail (VCT), a 34-mile long rail-to-trail from Abingdon to Whitetop Station (and passing through Damascus), is an outstanding success story demonstrating the benefits that trail tourism can provide to small communities. The VCT opened in 1984, and it follows the Whitetop Laurel River, with trailheads located in Abingdon and Whitetop Station, and ending at the North Carolina state line. The trail is located entirely within Washington and Grayson Counties.

The economic impact of the VCT on nearby communities has been significant. Damascus, a town of fewer than 1,000 residents, has numerous bike rental and shuttle services, lodging facilities and restaurants. These services exist to meet the demand of users who come to ride the VCT and to stay overnight in the area, which generates the largest expenditures because overnight tourists spend more on lodging, food and other trip expenses. VCT tourists spend about $1.2 million directly in the two-county community around the trail. This tourist spending in the local economy generates about US$1.6 million in total economic activity and more than 27 jobs in the local community (additional detail is depicted in Table 1-1).

BUILDING HEALTH & BUILDING TRAILS

This connection between health and trails is increasingly becoming common knowledge. The Rails-to-Trails Conservancy puts it simply: **"Individuals must choose to exercise, but communities can make that choice easier."**



43% of visitors to Outer Banks, NC say that **bicycling was an important factor in their decision**. As these case studies show, enhancing **bicycle tourism** options help **stimulate local, regional, and national economies.**

The economic impacts of the VCT indicate that the trail is a highly valuable asset both to users of the trail and to people in the local community who benefit economically from tourist expenditures.

Outer Banks, NC[12]

North Carolina coastal areas are attractive to bicycle tourists due to the area's level terrain, year-round temperate climate and variety of attractions accessible by bicycle.

Bicycling is one of the important factors in the vacation decisions of many people, with 43 percent of visitors reporting that bicycling was an important factor in their decision to come to the area and 53 percent reporting that bicycling was a strong influence in their decision to return in the future. And this bicycle tourism translates into real dollars: in the Outer Banks bicycling is estimated to have an annual economic impact of $60 million. Over 1,400 jobs are supported by the 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area.

The annual return on bicycle facility development in the Outer Banks is approximately nine times higher than the one-time expenditure of $6.7 million of public funds to construct bicycle facilities in the region.

TRAIL BENEFITS TO SURROUNDING ECONOMIES

Greenville Health System Swamp Rabbit Trail, SC - **Average sales increased 47%** among businesses next to/near the trail within its first two years. Some reported increases as high as 100%1

Virginia Creeper Trail, VA - **generates $1.2 million** throughout two counties.

Outer Banks, NC - bicycle tourism's impact on the local economy is **$60 million per year.**

Outer Banks, North Carolina's monetary return on bicycle facility development grew **9 times the size of the initial public expenditure.**

ENDNOTES

1) http://www.outdoorindustry.org/advocacy/recreation/economy.html, retrieved January 2014.

2) http://www.scprt.com/our-partners/tourismstatistics/researchreports.aspx, retrieved January 2014.

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12) NCDOT and ITRE. (2006). Bikeways to Prosperity: Assessing the Economic Impact of Bicycle Facilities; NCDOT and ITRE. (2004). Pathways to Prosperity: Assessing the Economic Impact of Bicycle Facilities.

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Sumter
National Forest
Emergency
911
If You Get Lost
Welcome!
The Enoree Passage
of the Palmetto Trail
Notice:
Primitive camping is allowed in the
general forest area with
a visitor use permit (it's free).
The Palmetto Trail
Safety Tips
Leave No Trace
Care, Share & Protect

CHAPTER 2
Needs Analysis

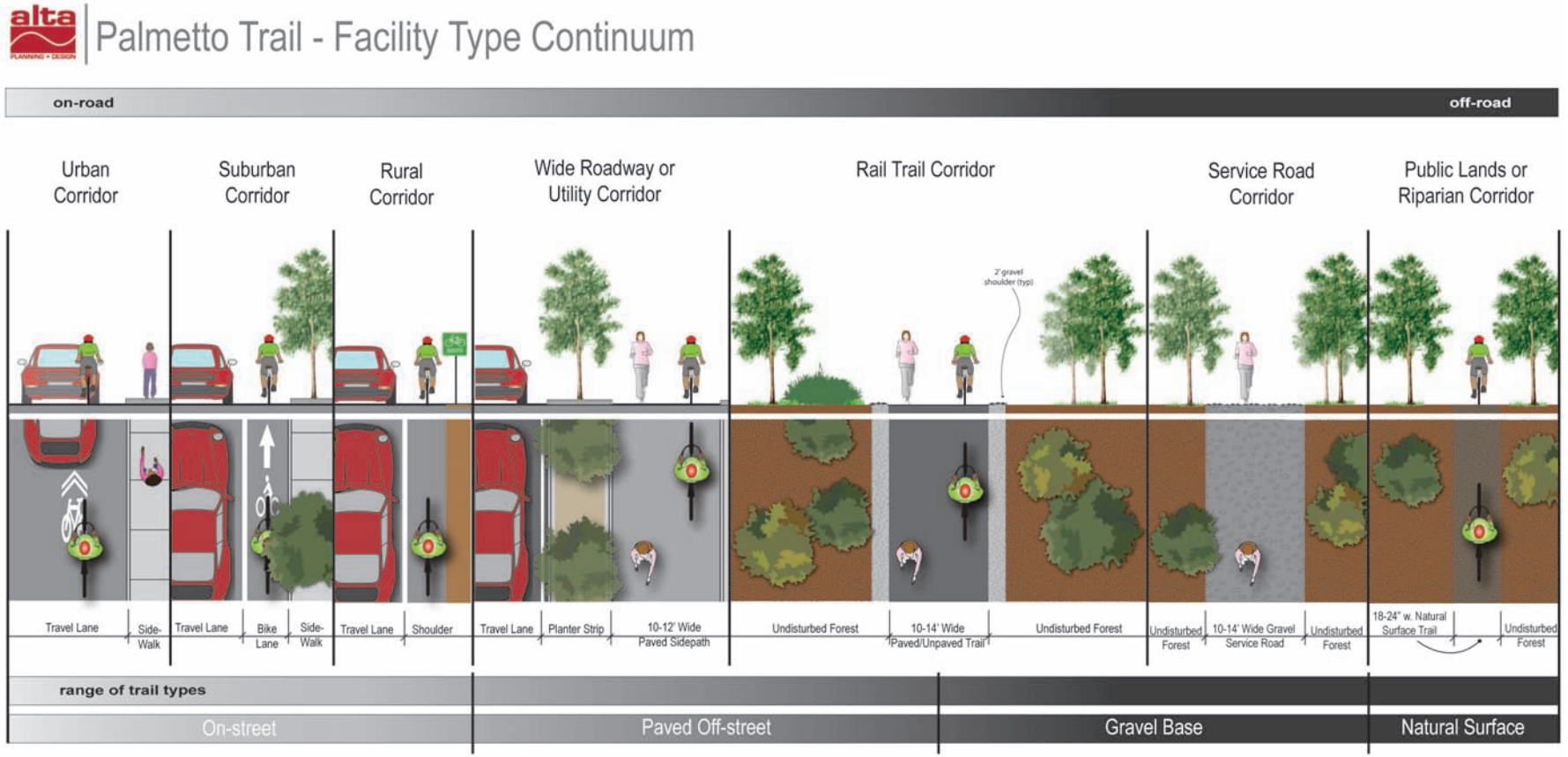
"**Community members envision** the Palmetto Trail as a **tool for bridging gaps** through and between many **small towns and cities** across the state."

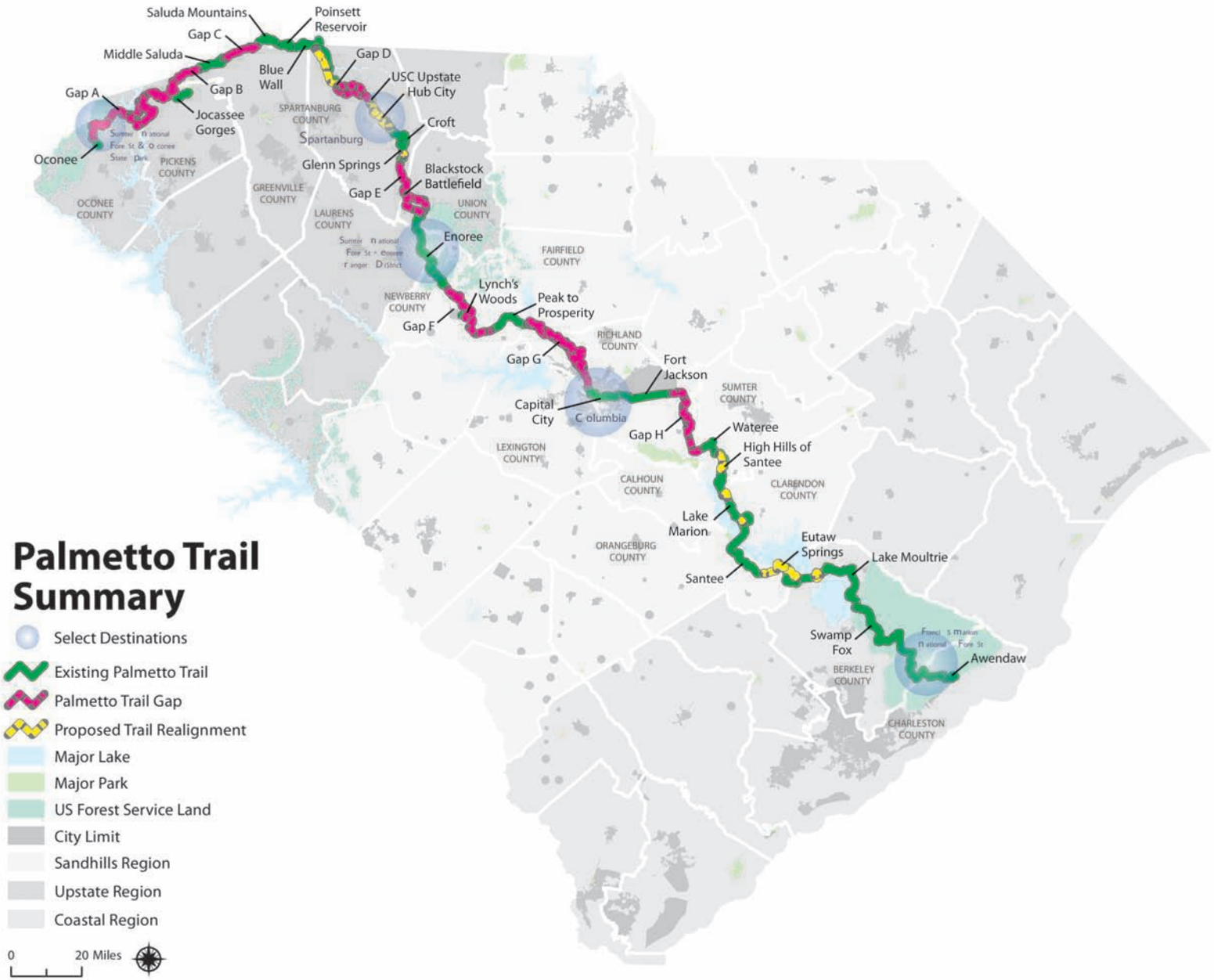
PALMETTO TRAIL TYPOLOGIES

When completed, the Palmetto Trail **will pass through remote natural areas, rural communities, cities and main streets.** The trail design through each of these areas will be determined by a variety of factors and must be **context-sensitive**. To guide planning efforts, a **Palmetto Trail Continuum** was developed to provide a **high-level summary of the trail typologies** found along the existing and proposed passages of the Palmetto Trail. This continuum is referenced throughout the recommendations of this master plan to ensure that trail design, development, management, maintenance strategies reflect the specific needs and characteristics of each trail type.

OVERVIEW

The development of the Palmetto Trail Master Plan was a collaborative process that included mapping analysis, field work, stakeholder interviews, and public meetings across the state. The information gathered through the **Needs Analysis** provided an understanding of trail user needs and preferences and relevant data related to existing conditions. **This chapter highlights key findings related to trail user and planning needs for the Palmetto Trail** along with a summary of the public involvement process and data collection methods used to gather information. The results of the Needs Analysis inform the recommendations for this master plan.





Palmetto Trail Summary

- Select Destinations
- Existing Palmetto Trail
- Palmetto Trail Gap
- Proposed Trail Realignment
- Major Lake
- Major Park
- US Forest Service Land
- City Limit
- Sandhills Region
- Upstate Region
- Coastal Region

0 20 Miles

KEY FINDINGS

Trail Gaps and Realignments

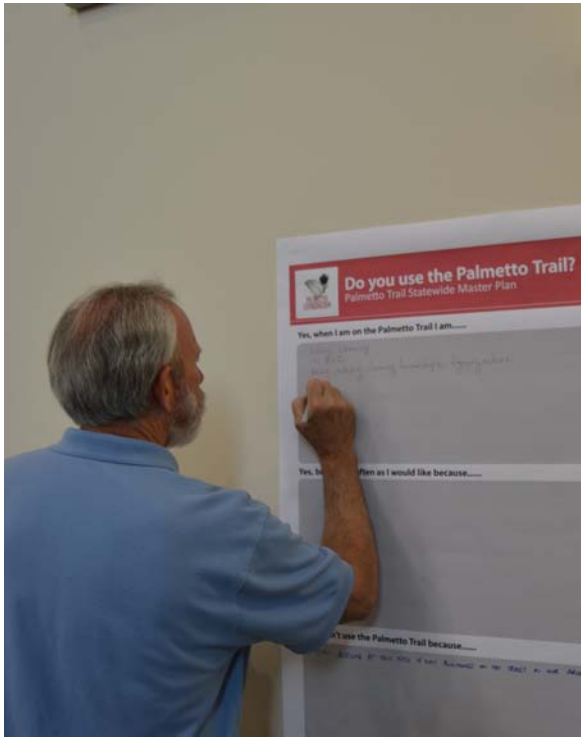
A process of data collection and mapping analysis allowed the project team to develop a base map of existing and proposed routes of the Palmetto Trail. Currently, the Palmetto Trail is a collection of 25 completed passages that extend approximately 350 miles across South Carolina. In the low country of the state, the Palmetto Trail offers eight contiguous, existing passages. The remaining 17 passages of the trail are largely disconnected from one another.

The team identified eight gaps in the mountains-to-sea route and six existing trail segments that warrant realignment, as shown on the facing page. The aerial imagery review and field work described in this chapter focus on these fourteen corridors.

Community Identified Needs

The public involvement component of the master plan provided further insight into trail user preferences and trail planning needs. Public outreach participants showed excitement for creating broader connectivity of the Palmetto Trail and identified opportunities to integrate the trail with local and regional infrastructure. Community members envision the Palmetto Trail as a tool for bridging gaps through and between many small towns and cities across the state. Major themes that arose from public and stakeholder comments are summarized in the box on the next page.

The images below show community members in action during public meetings.



DATA COLLECTION AND FIELD INVESTIGATION

The project team used Geographic Information Systems (GIS) and Google Earth map data to document current trail alignment extents and identify alternatives for new trail alignments. To supplement this data, PCF staff provided prior planning documents and background related to trail segments requiring realignment. Field investigation included aerial imagery review and on-the-ground fieldwork by the consultant team with assistance from PCF staff.

Aerial Imagery Review

The purpose of aerial imagery review was to gain familiarity with existing conditions and to develop a strategy for on-the-ground fieldwork. Using Google Earth maps, the planning team tracked corridor observations related to opportunities and constraints and potential trail alignments. The annotated maps were used to prioritize areas for on-the-ground fieldwork. Following fieldwork, the team conducted an additional review of aerial imagery to verify findings.

MAJOR THEMES IDENTIFIED BY THE PUBLIC AND BY KEY STAKEHOLDERS

- **There is tremendous value in completing the Palmetto Trail.**

In addition to bridging gaps within and between South Carolina communities, **overall completion of the mountains to sea spine of the Palmetto Trail is a central desire across the state.** Trail users and community members recognize the value of establishing a **fully-connected cross-state trail** in terms of **long-distance trail usage, leveraging existing trail development and capitalizing on the promotional value** of a completed statewide trail. Completing the spine from the Upstate region to the Coastal region provides an opportunity to **encourage and celebrate individuals who walk or bike the entire trail.**

- **Need for greater awareness and promotion of the Palmetto Trail.**

The public involvement process revealed that **general awareness of the Palmetto Trail must be increased** (within the state and beyond South Carolina's borders) and that **promotion of the trail** must be improved. Community members and trail users recognize the **need for improved signage** throughout the trail, with particular attention given to trail segments that pass through the state's major population centers.

- **Trail safety, management and environmental preservation need renewed focus.**

The majority of comments received through the public involvement process were **supportive of trail development and trail usage**. Concerns voiced by community members were related to trash, disruption of the natural environment, and crime in their area.

- **Strong local support.**

Several **local communities** around the state **enthusiastically support trail development** and are willing to **play a leading role in completing or expanding the Palmetto Trail** within their local area. This included communities within the current alignment of the Palmetto Trail (such as **Columbia, Inman, and Awendaw**) as well as communities hoping to link to it through spur trails (such as **Lockhart, Pacolet, and Dorchester County**). These will be key places where momentum for trail development will build and eventually lead to a thoroughly connected and dynamic trail system.

Fieldwork and Photo Inventory

The project team used fieldwork to ground truth opportunities and constraints. Fieldwork also allowed the consultant team to evaluate trail alignment alternatives identified in previous planning efforts and through aerial imagery review. Where feasible, fieldwork was coordinated in conjunction with a regional public workshop in order to capitalize on local knowledge and insights. Notes and corridor observations were tracked using Google Earth maps. Key findings from the fieldwork include:

- **Trail wayfinding and signage varies significantly** in quantity and quality and differs based on the jurisdiction
- **Rural, low-traffic and scenic dirt roads** can serve as important **trail connections**
- **Utility, rail, right-of-way**, and, in some cases, **riparian corridors** present off-road trail **connection opportunities**
- **Public landholdings serve as opportunities** for trail connections
- **Land use patterns** have a significant effect on **trail routing options**
- **Scenic landscapes are key components** of the existing and potential segments of the Palmetto Trail

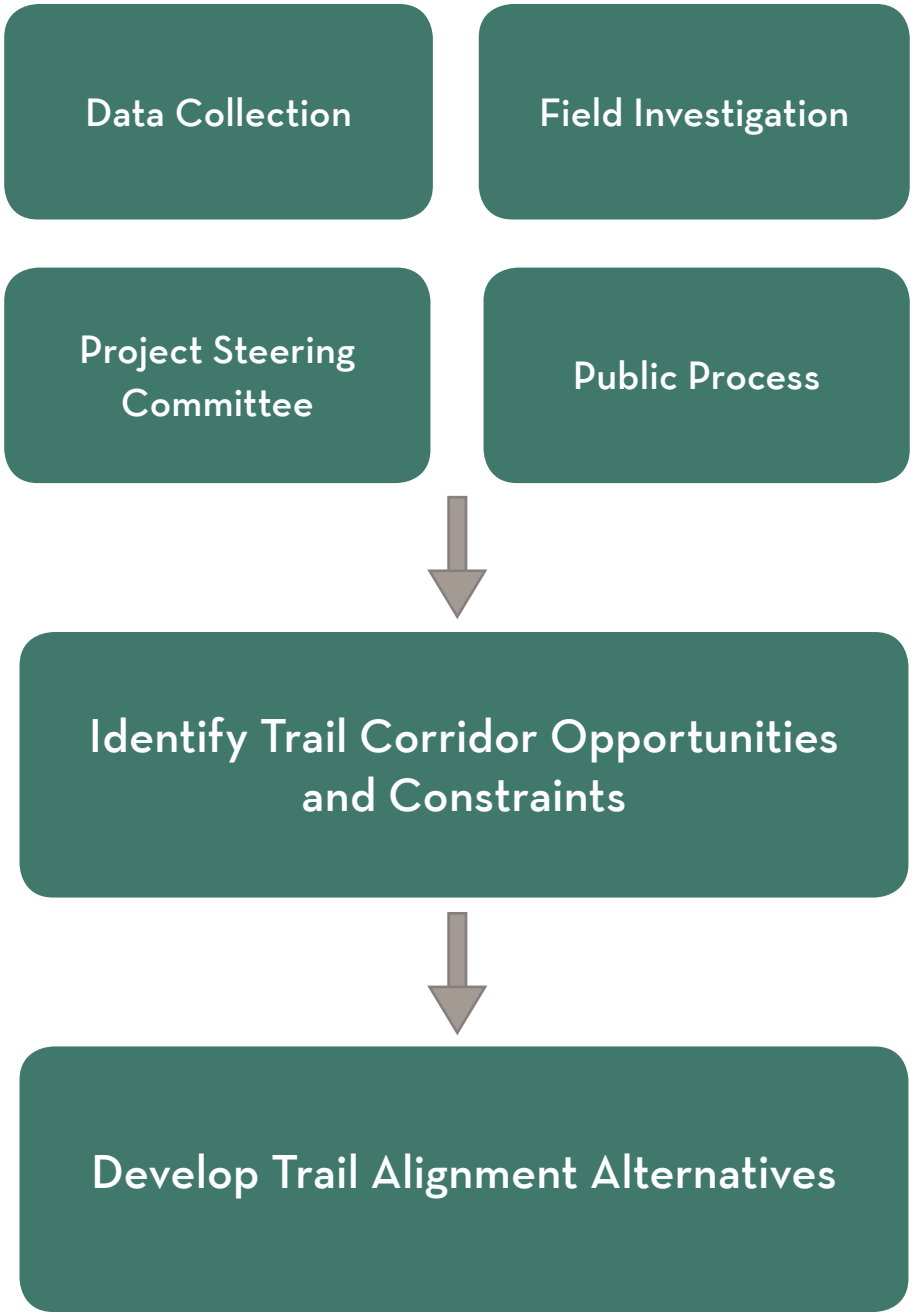
The incredible range of trail typologies necessitated careful field work studies to ensure the team was well-versed in the various trail types and conditions.

Trail Alignment Alternatives

Based on the information garnered through data collection, field investigation, the PSC, and the public involvement process, the consultant team identified key opportunities and constraints for each corridor. This included specific design elements such as areas of steep grades, flood plains, viewsheds, and traffic speeds and volumes on adjacent road corridors. The analysis also addressed corridor elements that impact project feasibility, such as land ownership, local preferences, or cost-prohibitive structural requirements.

Working within the given opportunities and constraints, additional considerations for identifying trail alignment alternatives included:

- Taking the trail off-road where possible
- Identifying spur trails and loop routes
- Connecting to state parks
- Connecting through small towns
- Linking to trails and greenways proposed in local and regional plans
- Linking the Palmetto Trail to blueways and waterway access points



PUBLIC INVOLVEMENT PROCESS

The public involvement strategy for the Palmetto Trail Statewide Master Plan includes three primary components:

- Project website
- Focus group
- Regional public workshops

Project Website

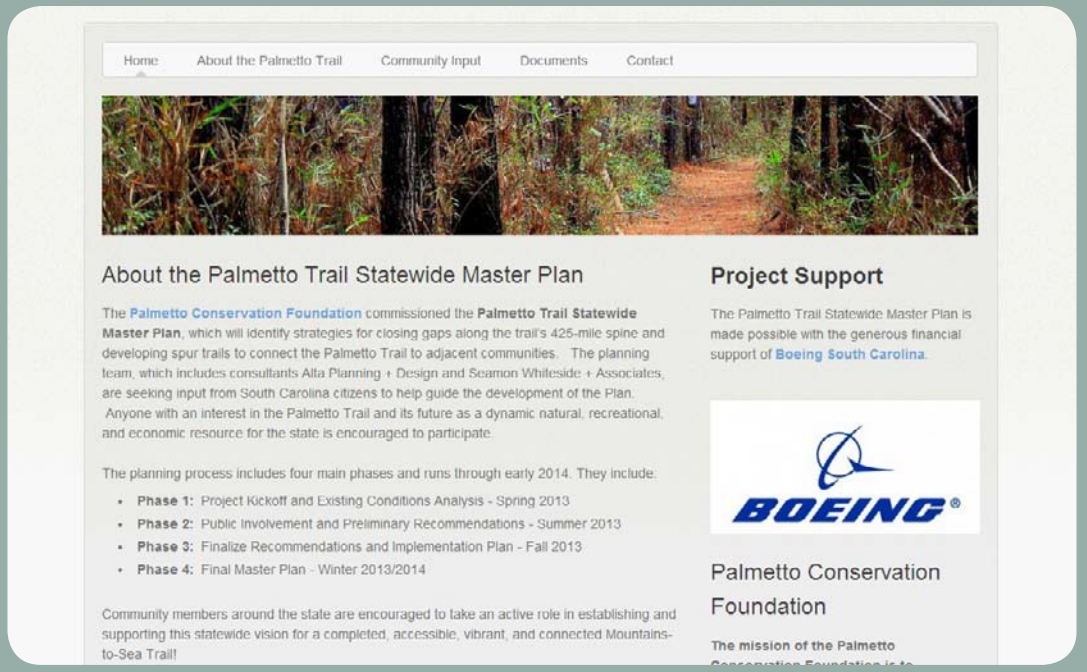
The website **www.FinishthePalmettoTrail.org** became public in early May of 2013. In addition to general information about the Plan, the **website offered specific information** about how interested persons can share their opinions about the Palmetto Trail and provides a **"contact form"** for submitting comments directly to the project team. As they are developed, **draft documents were posted to the website for public review**.

Focus Groups

Focus group sessions were conducted in July 2013. A total of three sessions were held; in the area of Oconee and Pickens Counties, in Spartanburg County, and in the Midlands region. The sessions focused on **using local knowledge to refine trail alignments** within each of these three priority areas for gaps in the Palmetto Trail.

Stakeholder interviews complement each of the other three components of public outreach.

PROJECT WEBSITE

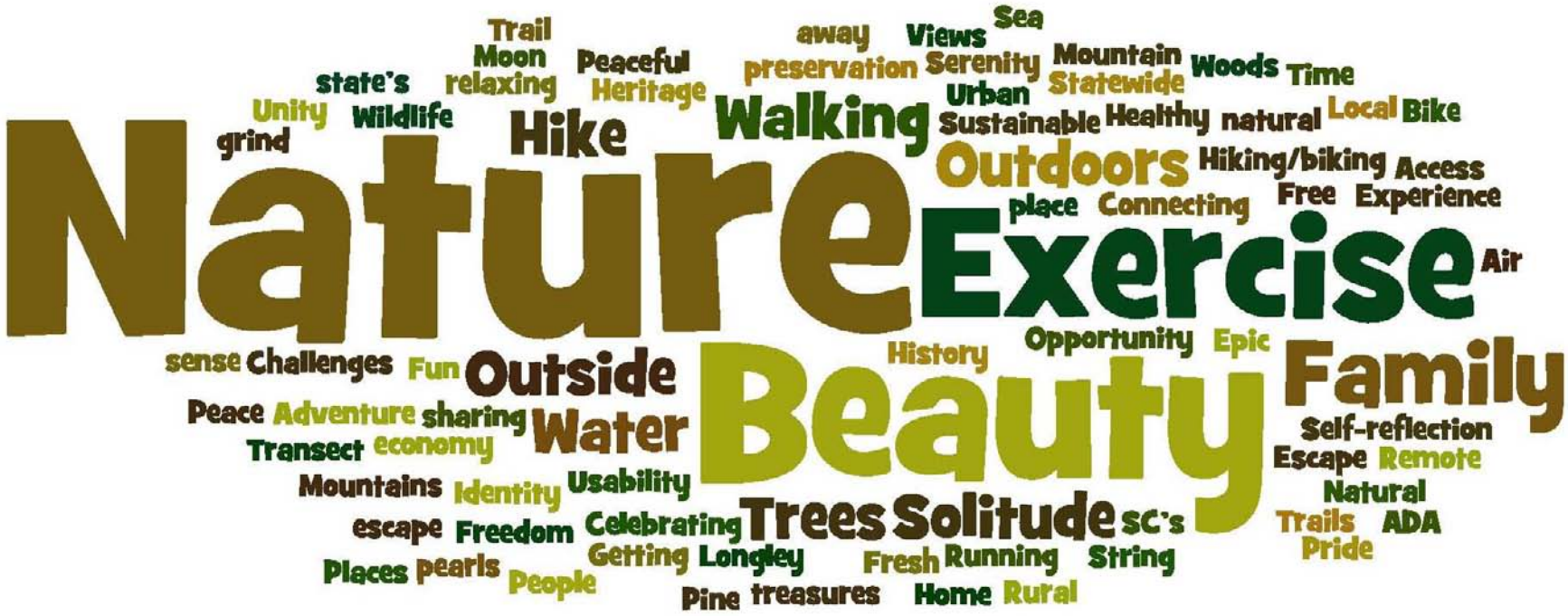


A screenshot of the Palmetto Trail Statewide Master Plan home page.

Meetings by phone and in-person were held with key stakeholders to further ground-truth information learned through public workshops, aerial imagery review, and field work.

During May and June of 2013, six regional **workshops were held across South Carolina**. The meetings were open to the public and advertised through the media, the Palmetto Conservation Foundation's network of contacts across the state, and through the networks of Palmetto Trail stakeholders.

The meetings, focused on the development of the Palmetto Trail Statewide Master Plan, included a presentation on the Plan by the consultant team, and provided multiple avenues for attendees to share insights and information.



Perceptions of the Palmetto Trail

This "word cloud" depicts words that participants used to describe the Palmetto Trail. The larger the word, the more frequently the word was used.

SUMMARY OF PUBLIC INPUT

Attendees had the ability to **provide feedback through several avenues.** This included casual conversation and question/answer with PCF staff and the consultant team as well as written responses/notes on poster boards and maps. General questions and prompts to which attendees specifically responded on the poster boards included their vision for the Palmetto Trail in ten years, their impression of the Palmetto Trail (in three words), as well as their current use of the Palmetto Trail (both frequency and type of use).

General Comments

The project team received general comments during conversations with meeting attendees and through written comments on large format maps of the Palmetto Trail across the state. **The following is a summary of noteworthy comments** provided by meeting attendees.

Disabled Veterans – South Carolina has a high percentage of disabled vets, and trail development should also incorporate and consider their needs. The Palmetto Trail can be an excellent place to strengthen physical and mental health. Veteran-related programs and resources could be incorporated as appropriate.

ADA accessibility – Each section has opportunities for ADA accessibility and others likely will not. This will be an important consideration come design time. 36" minimum is not enough space between bollards at access points. 42" minimum would be more appropriate.

Loop connections – Sometimes it is difficult to coordinate non-loop trail excursions with parking and pick-up and drop-off. Connecting the Palmetto Trail to other local trails that can make loop connections is an important consideration.

Economic impact study – Conducting an economic impact study will be essential in detailing the benefits of the Palmetto Trail.

Rail trail opportunities – Rail trail opportunities will be important in some locations such as Prosperity and east of Prosperity (Newberry County).

Attendees stressed their desire and vision for a completed trail network that was thoroughly signed and well-marked.

Trail maintenance volunteers – While it was generally agreed that local trail volunteers and groups would be key in maintenance efforts, one unique idea was mentioned with respect to the Awendaw Passage. Because this is an area utilized by many trail runners including trail running races, trail runners could enlist as maintenance volunteers as part of race training and preparation.

Fruit trees and gardens – One comment mentioned growing fruit trees alongside the Trail where feasible.

Public workshop participants mingle after a Peak to Prosperity Passage presentation to submit comments, discuss ideas, and meet one another.

General map notes – Each map had general routing suggestions and ideas marked along the Trail network and gap areas. As appropriate, these ideas were incorporated into trail routing and design.

Visioning

Attendees generally envisioned the Palmetto Trail as **not just a single line across South Carolina**, but a **highly connected route** that spurs into downtown areas, places with services/amenities, and links to destinations (**the Prosperity Depot is a good example of connecting to a historic community gathering space**). It can be a trail used both for recreational and utilitarian purposes; providing alternative means of transportation through the population centers (**including connections to downtowns such as Newberry**) and connecting outdoor adventurers to unique natural places.

The vision for the Palmetto Trail suggests a **dynamic trail system providing multi-use, off-road opportunities as well as blueway trails and paddling access.** Comments emphasized a desire to locate as much of the trail as possible off-road or on quiet dirt roads. Hiking and biking were cited as the most common types of usage of the Palmetto Trail, but many other types of use were mentioned including mountain biking, equestrian, bird watching, skating, ADA accommodating, and others. More mountain biking opportunities were cited as a needed additional component, especially in the Upstate region.

A distinct identity and branding scheme were noted as important components of trail development. Tying these considerations into regional and local planning and tourism efforts would also strengthen the Trail's identity and overall connectivity. **QR Codes** on signage could serve as one tool for improving wayfinding information. **Effectively utilizing local volunteers and trail groups for trail maintenance** is an important strategy for the Palmetto Trail, according to meeting attendees. These volunteers and groups come in many forms; such as trail runners through the Awendaw Passage.

Public Workshop Dates and Locations

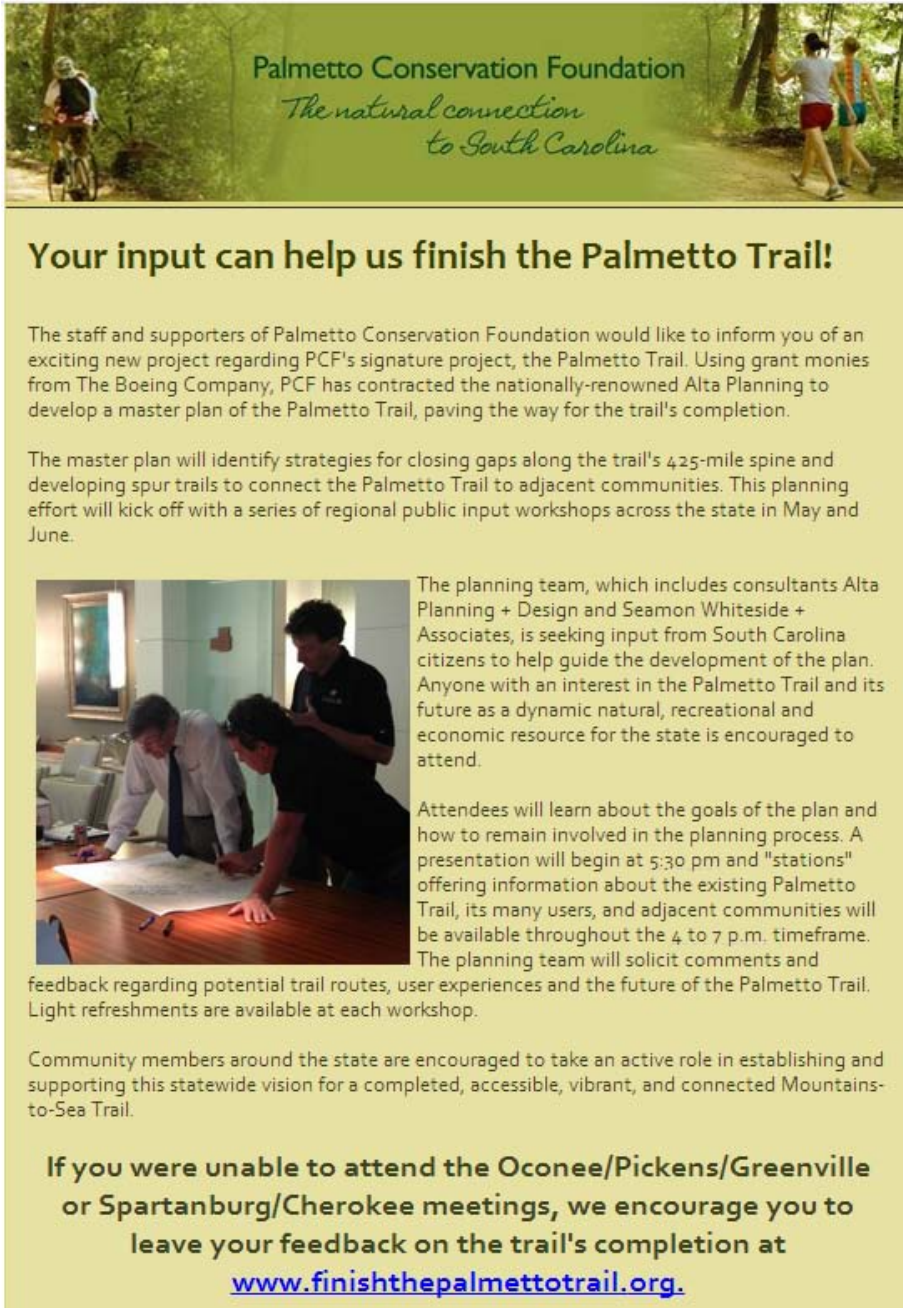
COUNTIES & DATE	LOCATION	NUMBER IN ATTENDANCE
Oconee, Pickens & Greenville Counties - Wednesday, May 22	Upcountry History Museum, 540 Buncombe Street in Greenville, SC	13
Spartanburg & Cherokee Counties - Thursday, May 23	GOLS, 270 Wheeling Circle in Glendale, SC	20
Richland & Fairfield Counties - Monday, June 10	4927 Quail Lane in Columbia, SC	26
Newberry, Laurens & Union Counties - Tuesday, June 11	Train Depot at 201 Grace Street in Prosperity, SC	20
Sumter, Clarendon & Orangeburg Counties - Thursday, June 13	City of Sumter City Center Conference Center, 25 N Main Street in Sumter, SC	8
Charleston & Berkeley Counties - Tuesday, June 18	Sewee Visitor and Environmental Education Center, 5821 Highway 17 North in Awendaw, SC	16

Perceptions

The project team invited attendees to **share three words** that came to mind when describing the Palmetto Trail. These words show the general impression of the Palmetto Trail is that of outdoor adventure, exercise, and relaxation in connecting communities and economies in new ways. **The figure on page 27 graphically represents all words used to describe the Palmetto Trail** and increases the size of the word based on the frequency with which a word was used. **Attendees most commonly cited "nature," "beauty," "exercise," and "family."**

Use of the Palmetto Trail

Comments regarding general use of the Palmetto Trail includes hiking, biking, running, bird watching, horseback riding, skating, camping, and enjoying nature and fresh air. Hiking and biking were most commonly mentioned. General limitations to use of the Palmetto Trail include ADA accessibility, general accessibility (trail location information, signage, parking, distance, etc.), and limited mountain biking opportunities (especially in the Upstate region). One person also made the point that **they use the Palmetto Trail in comprehensive planning and in considering South Carolina's tourism economy**. Not only can the Palmetto Trail be used in the physical sense, but the idea of its use and further implementation is also important in local/regional planning and economic development.



The public meeting announcement showed upcoming meetings, updates, and how to leave feedback, among other details.

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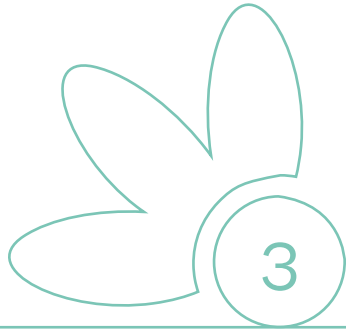


CHAPTER 3
Finishing the Palmetto Trail

"**Proposed gap alignments and realignments** are based on the information garnered through discussions with **PCF staff, the public outreach process for this Plan, aerial imagery review, field work, and multiple stakeholder meetings**."

OVERVIEW

The Palmetto Trail was conceived in 1994 as a cross-state trail that would serve as a spine for a network of bikeways and trails in South Carolina. Two decades later, **nearly three-quarters of the originally proposed 425-mile route is built.** The Palmetto Trail has attracted a broad base of users, supporters, and donors who are committed to the vision of the trail stretching seamlessly from South Carolina's mountains to its coast.

This chapter illustrates the completed route of the Palmetto Trail from its northern terminus at Oconee Station State Historic Site to its southern terminus at Francis Marion National Forest. The recommendations of this master plan are categorized as either a realignment of an existing passage or a proposed alignment for a gap in the Palmetto Trail route.

APPROACH

The project team identified **six passages requiring realignment.** These are:

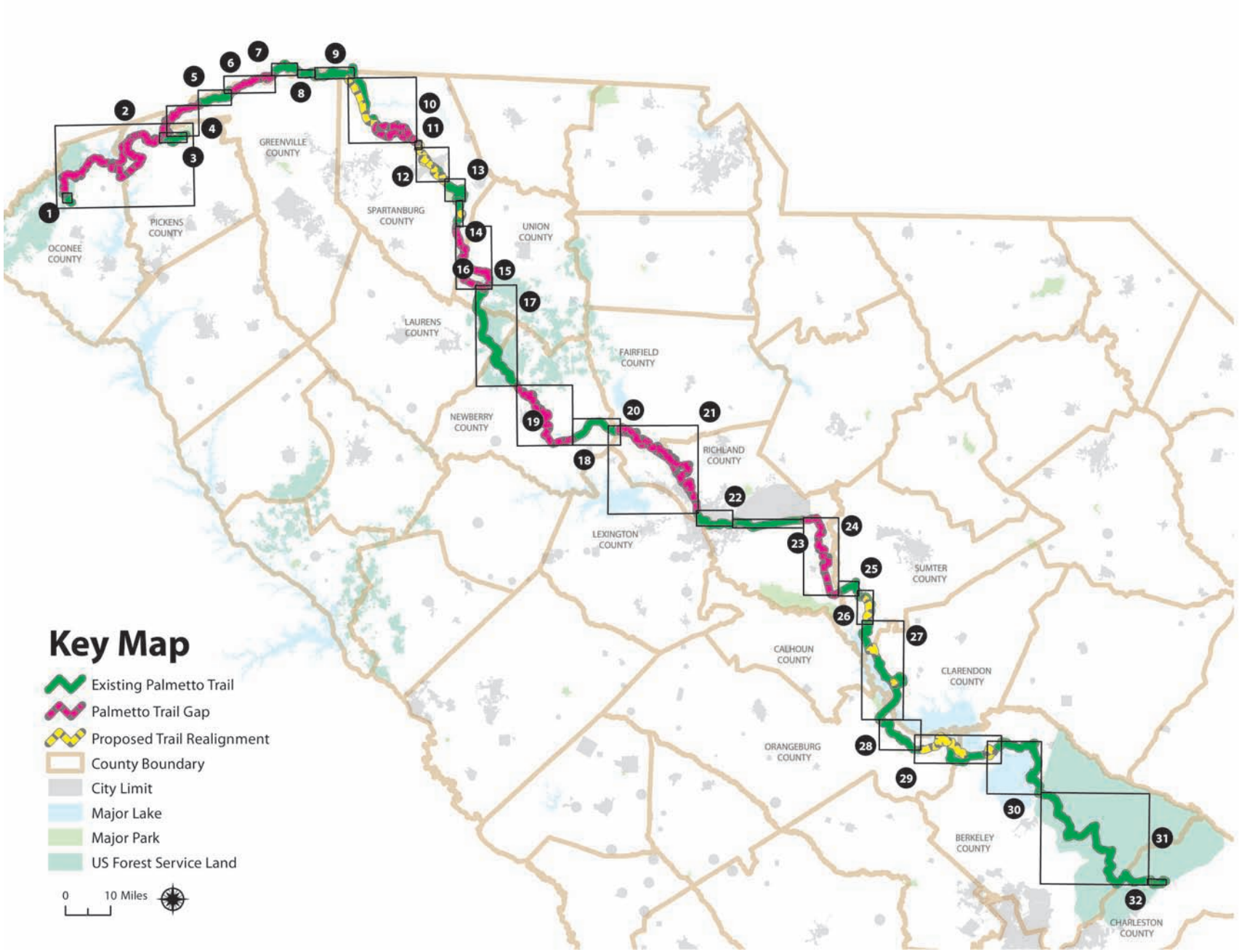
- Hub City Connector
- Glenn Springs
- High Hills of Santee
- Lake Marion
- Eutaw Springs
- Lake Moultrie

Eight gaps (where two existing passages do not connect) exist on the Palmetto Trail route. **The master plan proposes trail alignments to close the following gaps:**

- Gap A: Oconee State Park to Jocassee Gorges
- Gap B: Jocassee Gorges to Middle Saluda
- Gap C: Middle Saluda to Saluda Mountains
- Gap D: Blue Wall to Hub City Connector
- Gap E: Glenn Springs to Enoree
- Gap F: Enoree to Peak to Prosperity
- Gap G: Peak to Prosperity to Capital City Passage
- Gap H: Fort Jackson to Wateree

Proposed gap alignments and realignments are based on the information garnered through discussions with PCF staff, the public outreach process for this Plan, aerial imagery review, field work, and multiple stakeholder meetings.

The statewide map on the facing page traces the existing trail, existing gaps, and proposed realignments.


Key Map
Existing Palmetto Trail
Palmetto Trail Gap
Proposed Trail Realignment
County Boundary
City Limit
Major Lake
Major Park
US Forest Service Land
0
10 Miles
OCONEE COUNTY
PICKENS COUNTY
GREENVILLE COUNTY
SPARTANBURG COUNTY
UNION COUNTY
LAURENS COUNTY
FAIRFIELD COUNTY
NEWBERRY COUNTY
RICHLAND COUNTY
LEXINGTON COUNTY
SUMTER COUNTY
CALHOUN COUNTY
CLARENDON COUNTY
ORANGEBURG COUNTY
BERKELEY COUNTY
CHARLESTON COUNTY

Four trail segments involved additional field work conducted with PCF staff and targeted meetings with key trail development partners:

Gap A: Oconee State Park to Jocassee Gorges –

Any future route within the gap from the Oconee Passage to the Jocassee Gorges Passage would be paralleled by and/or intersect with the Foothills Trail. The Foothills Trail is a popular, long-distance hiking trail that stretches 76 miles along the North Carolina/South Carolina border and is managed by the Foothills Trails Conference (FTC). FTC was identified as a key stakeholder early in the planning process. In addition to ongoing communication through phone, email, and meetings with PCF staff, the Palmetto Trail Statewide Master Plan process included:

- A formal focus group meeting in July 2013 in Easley, SC to discuss trail development opportunities and constraints between Oconee State Park and Jocassee Gorges. Meeting invitees included FTC staff and Board, SCPRT, Oconee County, Pickens County, Greenville Watershed, DNR, USFS, and Duke Energy. The consultant team facilitated the meeting and PCF staff attended.
- A second focus group meeting in October 2013 in Greenville, SC to discuss potential trail alignments and receive stakeholder feedback. This meeting focused directly on the relationship between potential gap alignments and the Foothills Trail. FTC staff and three Board members, a Table Rock State Park staff member, and PCF staff attended the meeting. The consultant team presented alternative trail alignments and facilitated discussion.

The project team did not reach consensus with FTC regarding a preferred trail alignment at the time of completion of this study

Hub City Connector Realignment –

The Hub City Connector Passage stretches through the metro area of Spartanburg, SC. The Spartanburg community has multiple trail development partners leading the effort to expand the local trail network. In early 2013, the City of Spartanburg adopted the Spartanburg Trails & Greenway Master Plan. Given the multiple ongoing efforts to implement the local trail master plan and the multiple partners involved in trail development, the project team hosted a focus group meeting to reach consensus at the local level for the final Hub City Connector route. This ensured that the Palmetto Trail Statewide Master Plan reflects local priorities, capitalizes on local investments in trail development, and affirms PCF's role as a partner with other trail development entities.

Gap F: Enoree to Peak to Prosperity –

Project Steering Committee members provided critical local knowledge related to trail development opportunities within this corridor. These members joined the consultant team and PCF staff in field work and provided insightful details related to key destinations, local priorities for trail development, and feasible trail routing options.

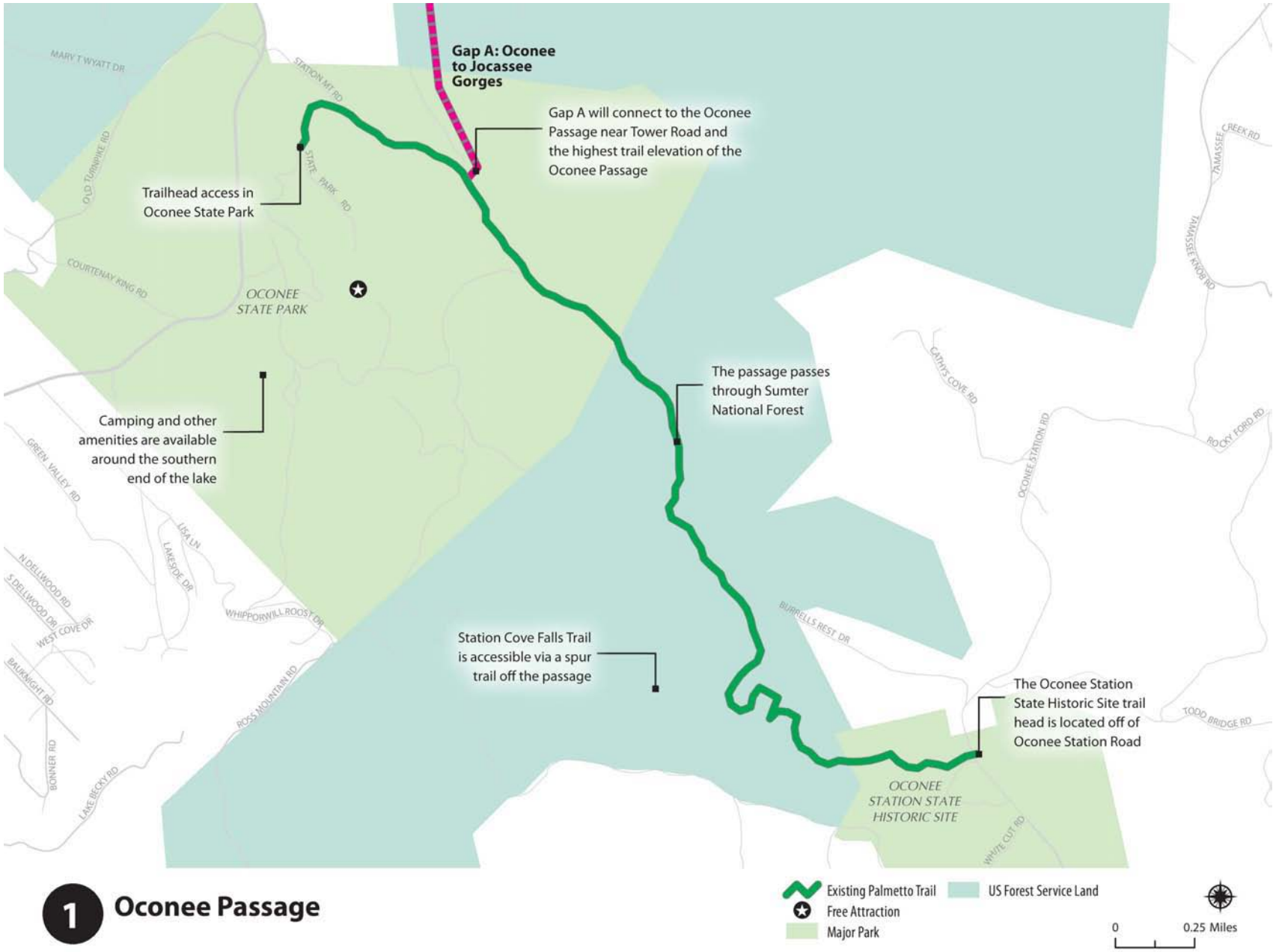
Gap G: Peak to Prosperity to Capital City Passage

This critical gap in the Palmetto Trail presents significant physical constraints. Project Steering Committee members and PCF staff provided critical local knowledge related to trail development opportunities within this corridor and assisted in field investigation.

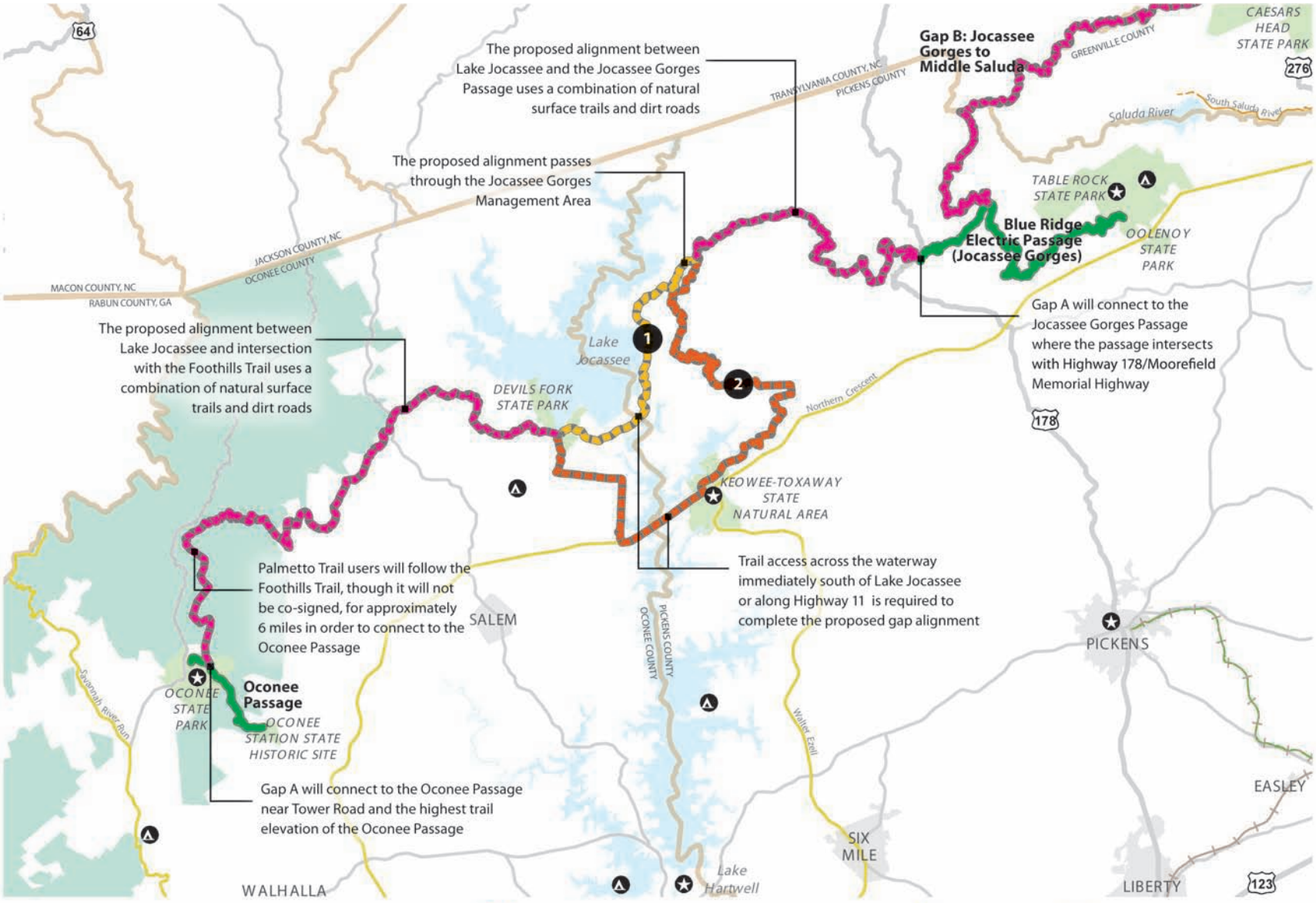
SEGMENT-BY-SEGMENT MAPS

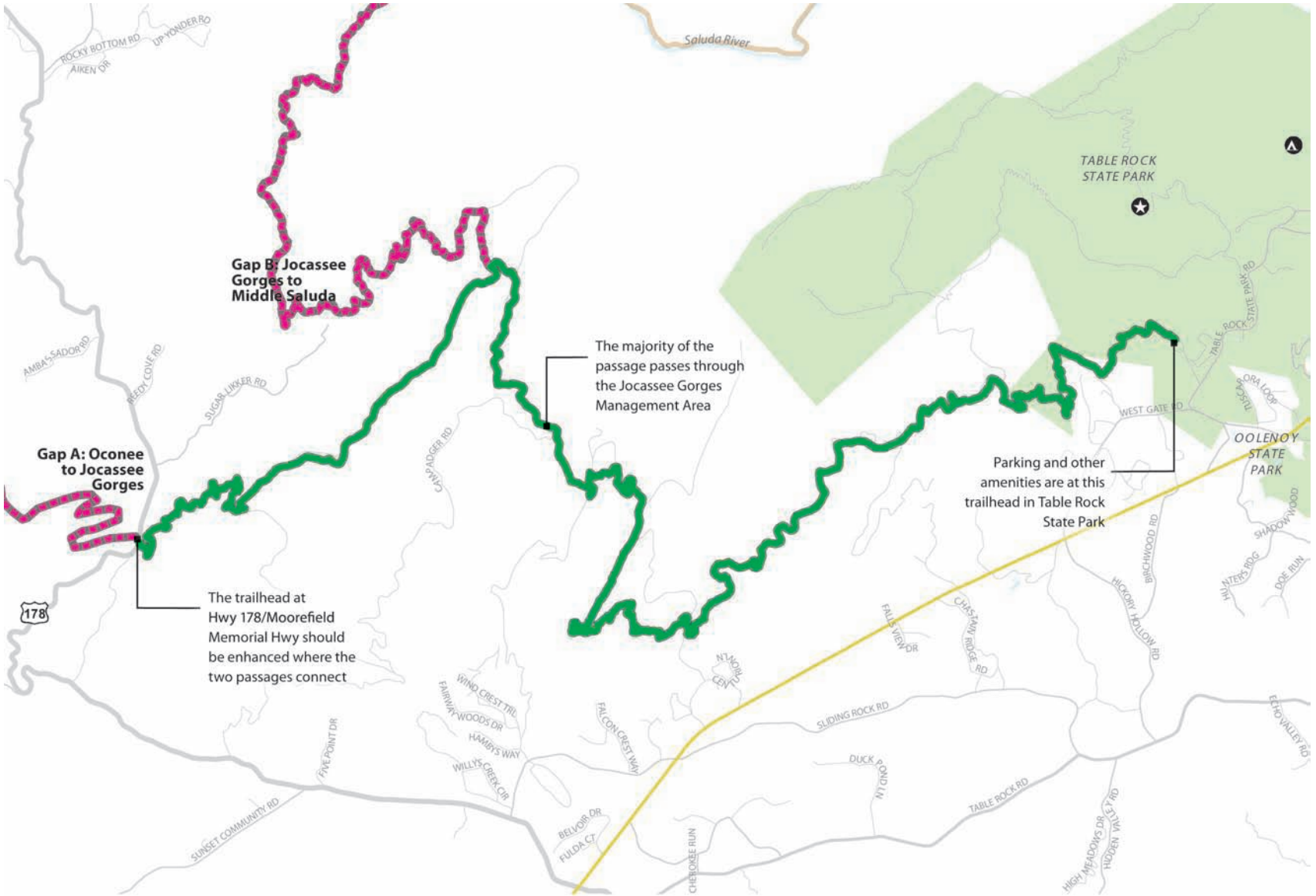
The following 32 maps of Palmetto Trail passages **represent a completed trail system** extending nearly 600 miles across South Carolina. The proposed gap alignments represent approximately 220 to 250 trail miles added to the existing Palmetto Trail mileage. Detailed descriptions of the proposed trail alignments are provided as a supplemental workbook to PCF staff.

The Passages are organized from Northwest (Mountains) to Southeast (Sea).

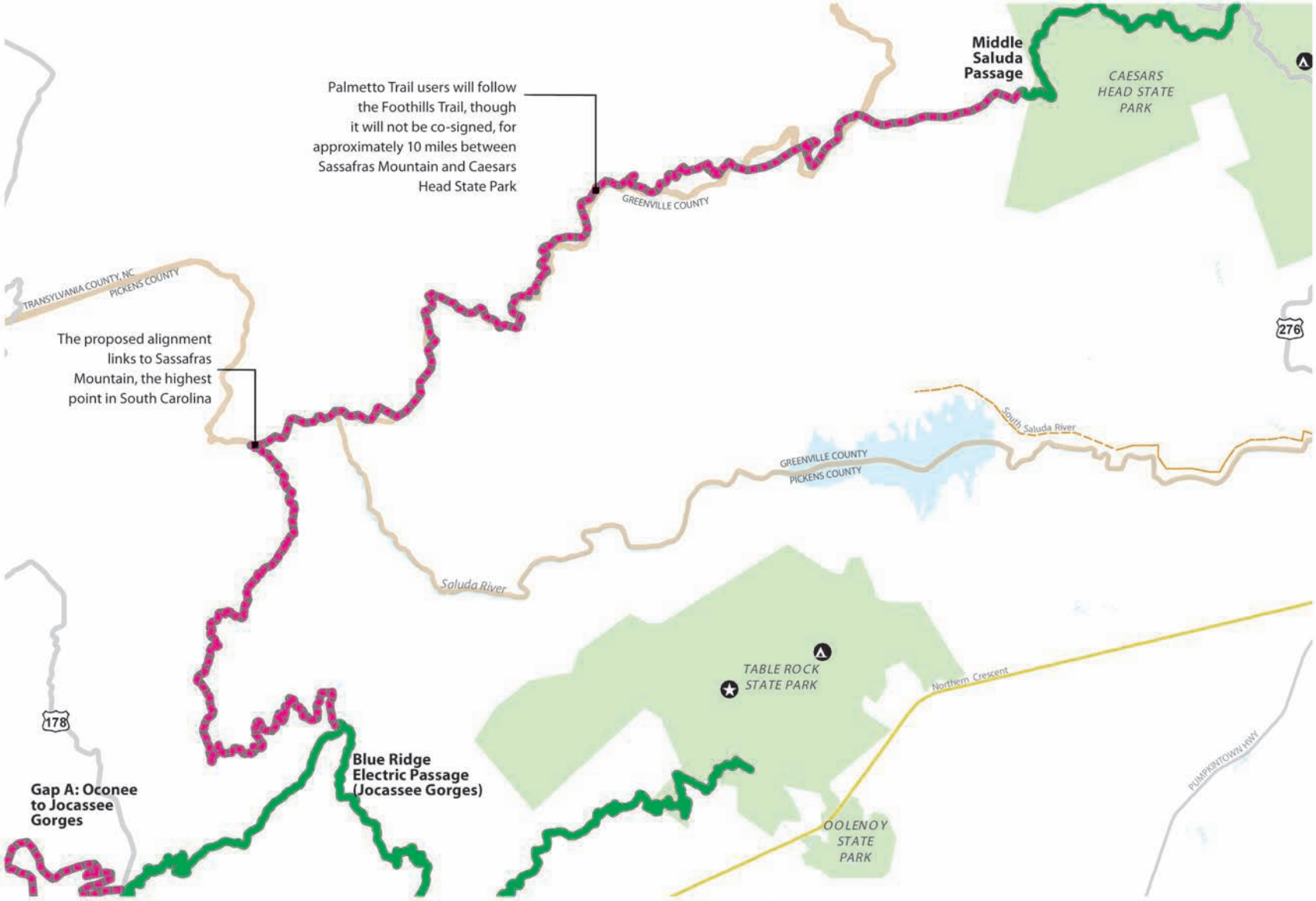


1 Oconee Passage

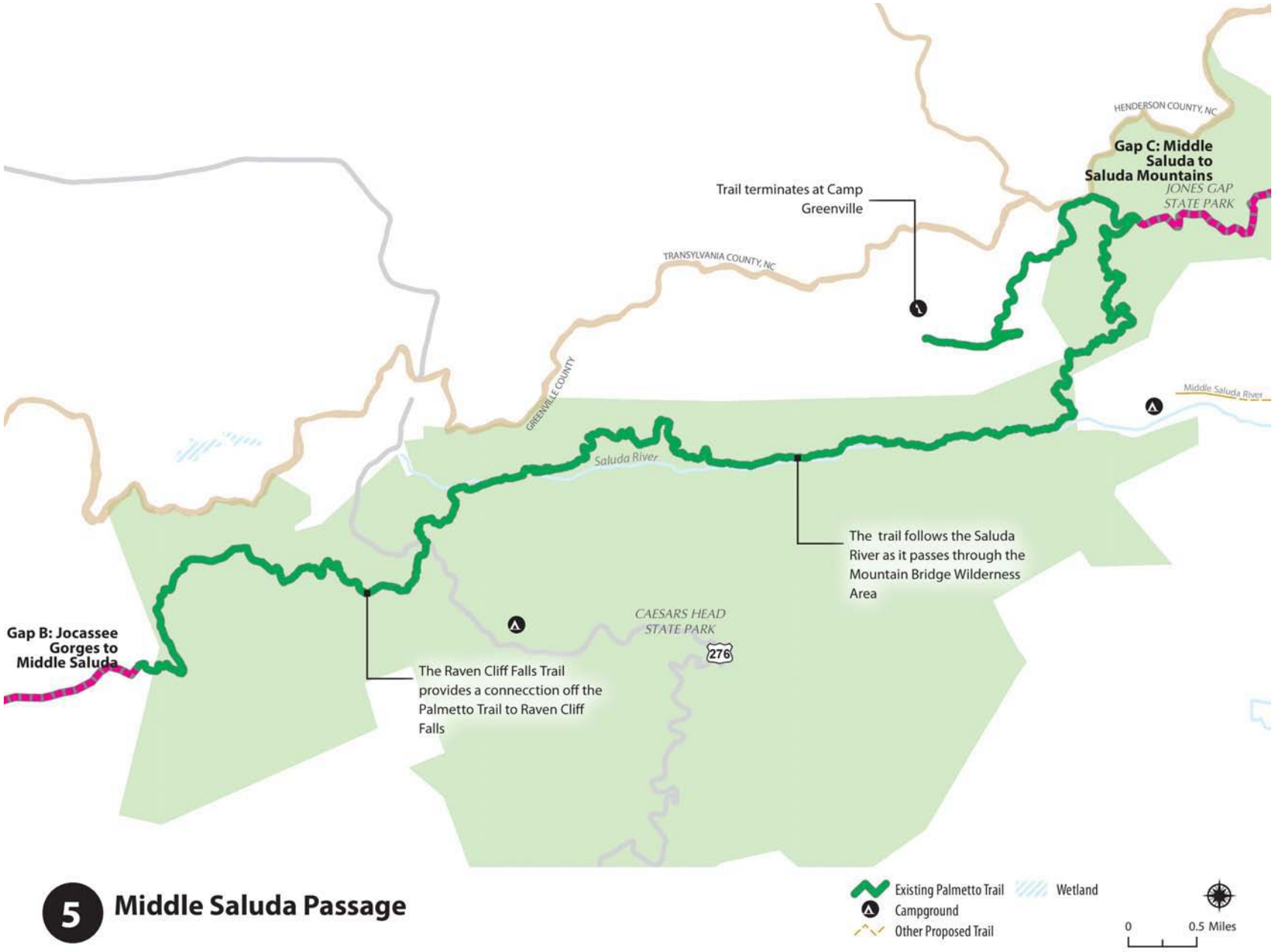

64
The proposed alignment between Lake Jocassee and the Jocassee Gorges Passage uses a combination of natural surface trails and dirt roads
The proposed alignment passes through the Jocassee Gorges Management Area
The proposed alignment between Lake Jocassee and intersection with the Foothills Trail uses a combination of natural surface trails and dirt roads
Palmetto Trail users will follow the Foothills Trail, though it will not be co-signed, for approximately 6 miles in order to connect to the Oconee Passage
Gap A will connect to the Oconee Passage near Tower Road and the highest trail elevation of the Oconee Passage
Gap B: Jocassee Gorges to Middle Saluda
Blue Ridge Electric Passage (Jocassee Gorges)
Gap A will connect to the Jocassee Gorges Passage where the passage intersects with Highway 178/Moorefield Memorial Highway
Trail access across the waterway immediately south of Lake Jocassee or along Highway 11 is required to complete the proposed gap alignment
Oconee Passage
TRANSYLVANIA COUNTY, NC
PICKENS COUNTY
GREENVILLE COUNTY
JACKSON COUNTY, NC
OCONEE COUNTY
MACON COUNTY, NC
RABUN COUNTY, GA
Lake Jocassee
DEVILS FORK STATE PARK
Northern Crescent
KEOWEE-TOXAWAY STATE NATURAL AREA
TABLE ROCK STATE PARK
OOLENOY STATE PARK
CAESARS HEAD STATE PARK
Saluda River
South Saluda River
276
178
123
SALEM
PICKENS
OCONEE STATE PARK
OCONEE STATION STATE HISTORIC SITE
Savannah River Run
Walter Ezell
SIX MILE
EASLEY
LIBERTY
WALHALLA
Lake Hartwell
2 Gap A: Oconee to Jocassee Gorges
Palmetto Trail Gap
Palmetto Trail Gap - Option 1
Palmetto Trail Gap - Option 2
Free Attraction
Campground
Locally Proposed Shared-Use Path
Other Proposed Trail
State Tour Route
Water Body
Wetland
0
2 Miles



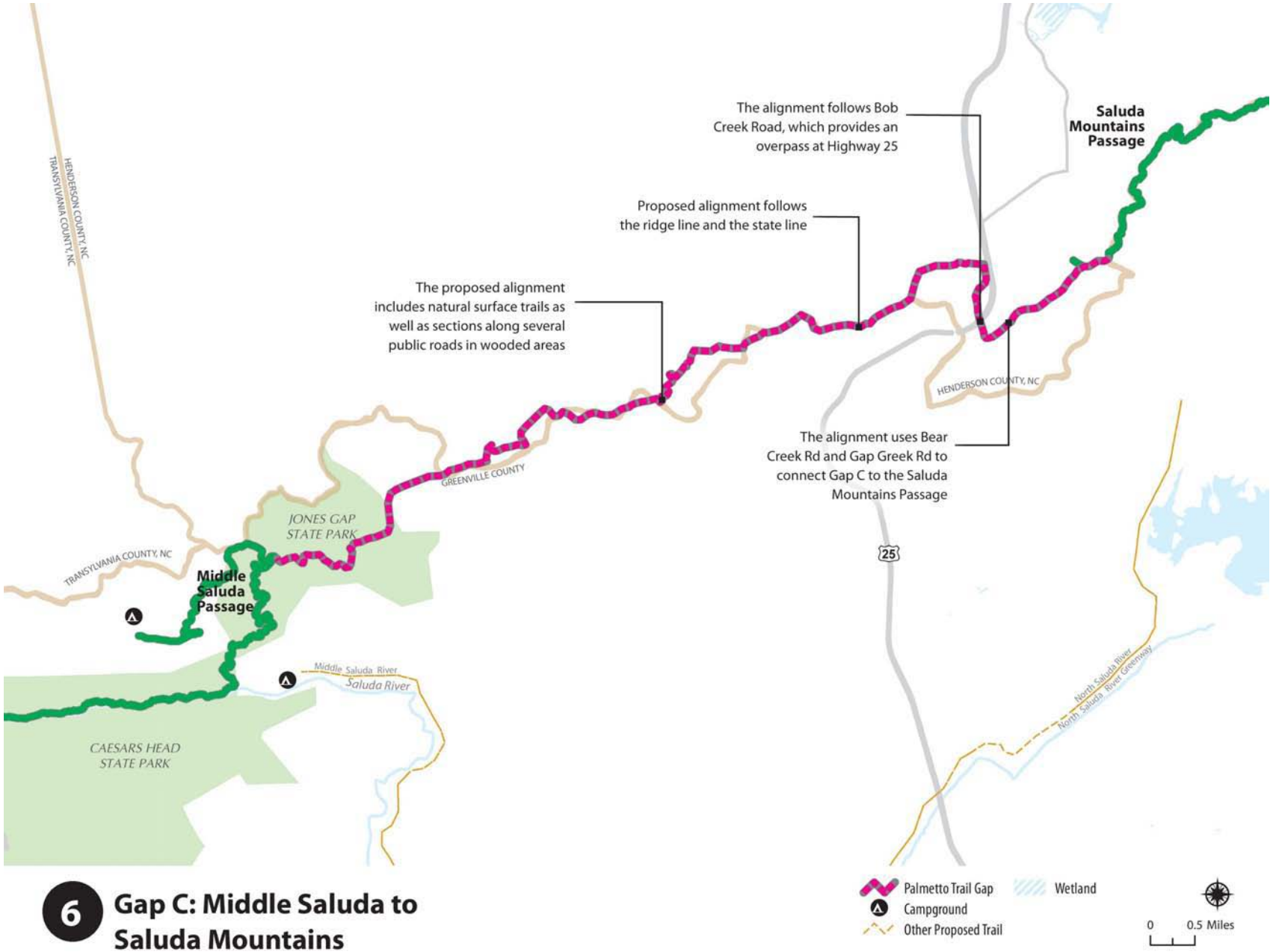
3 Blue Ridge Electric Passage (Jocassee Gorges)



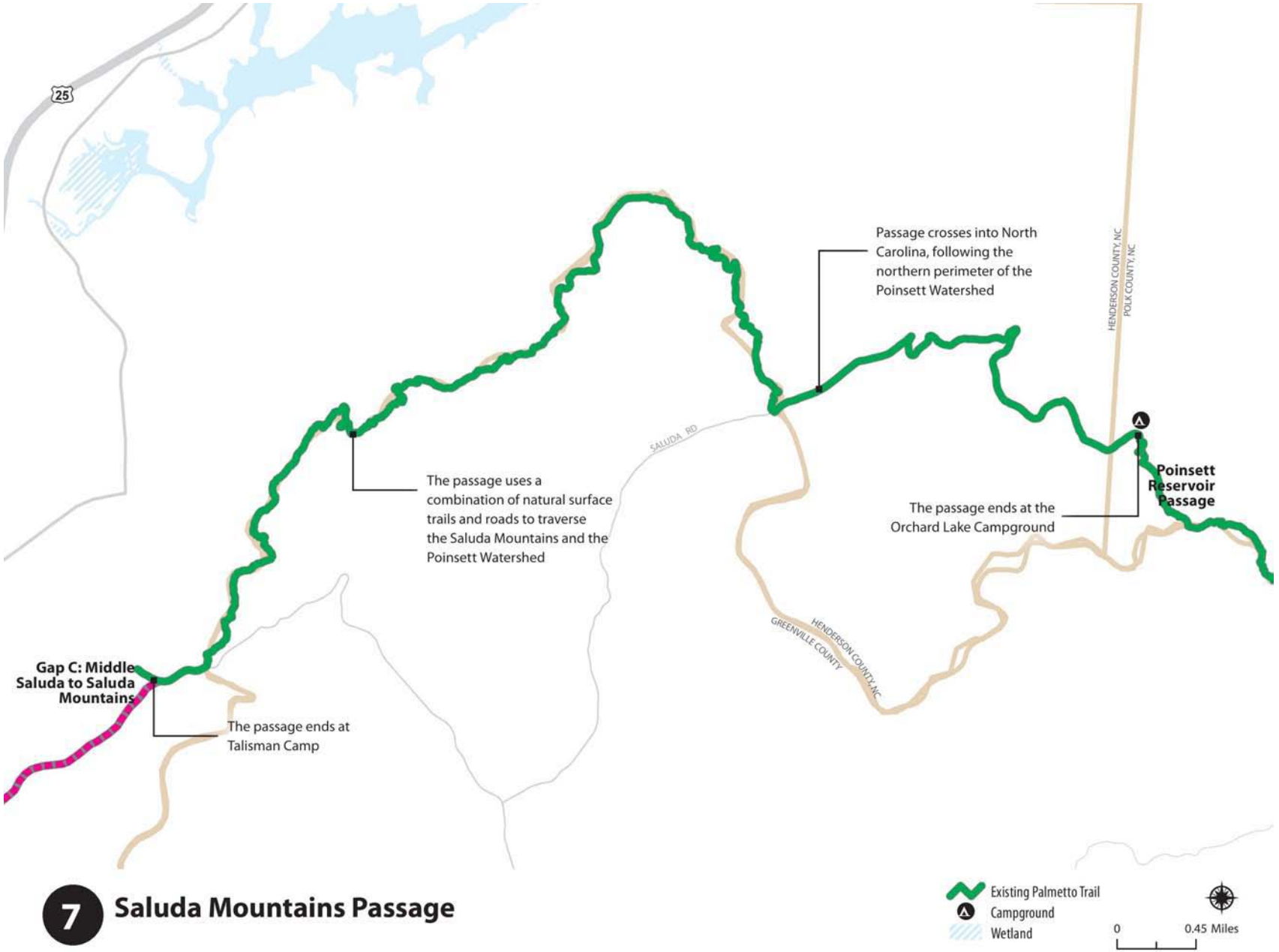
4 Gap B: Jocassee Gorges to Middle Saluda



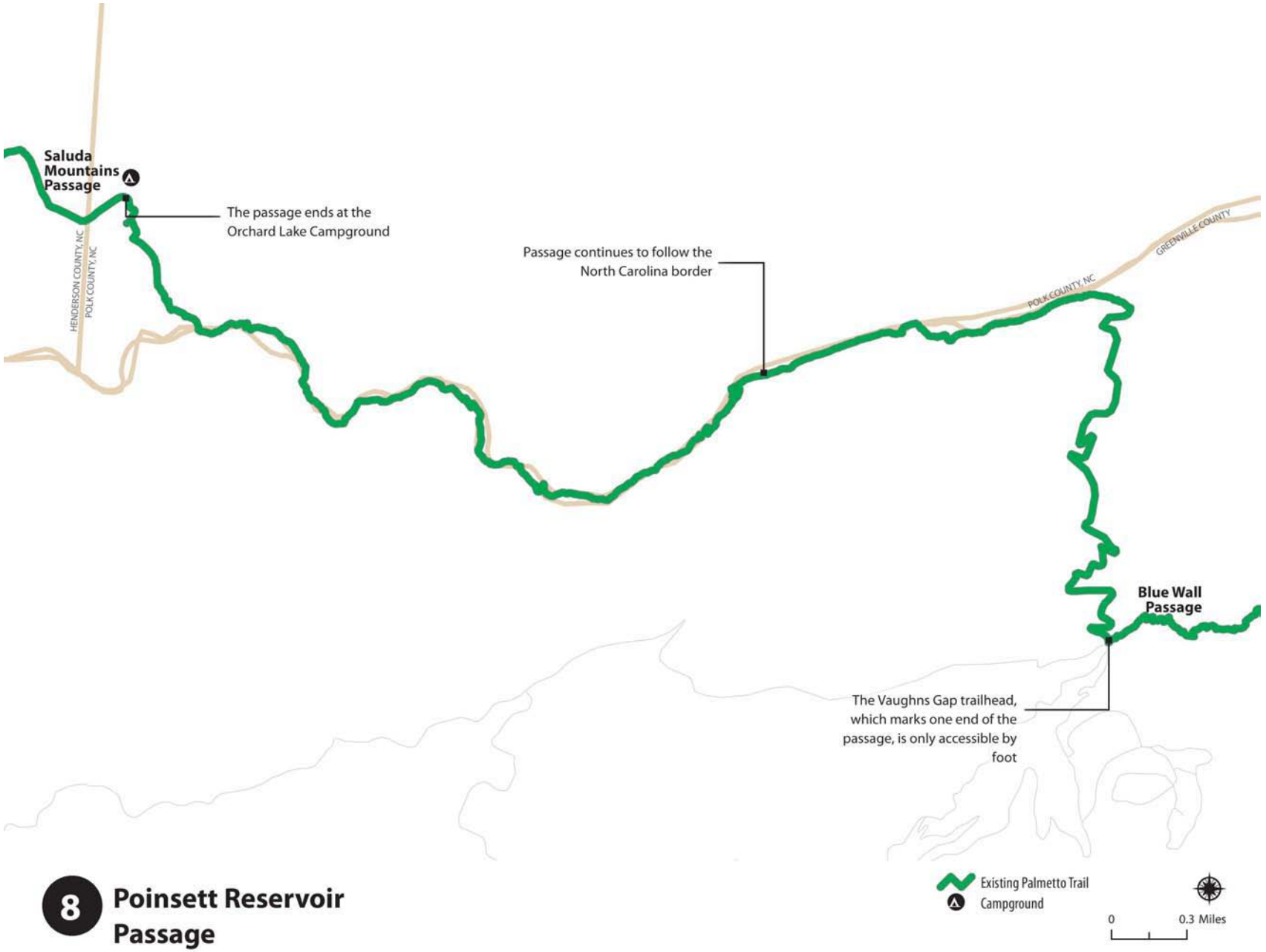
5 Middle Saluda Passage



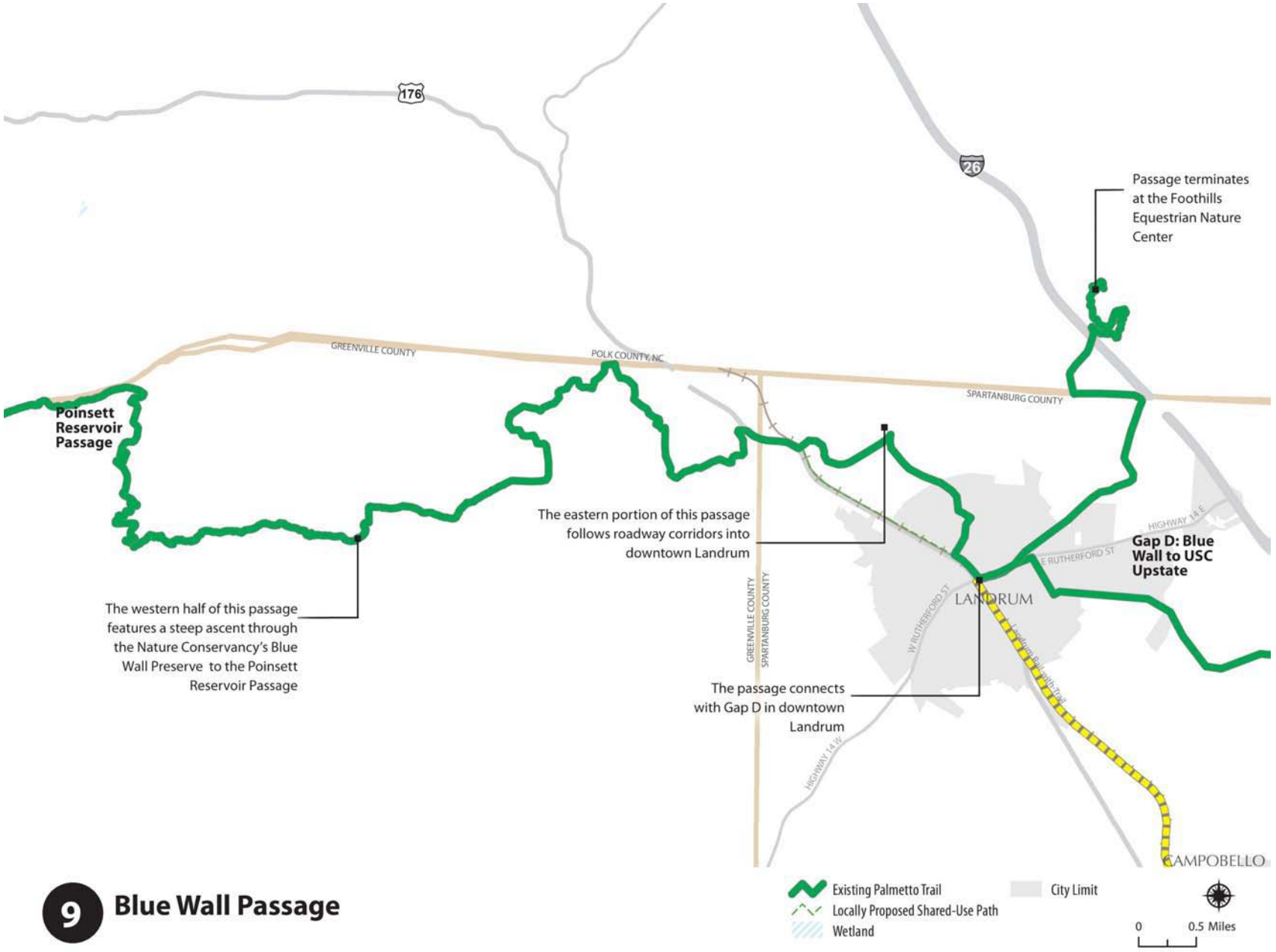
6 Gap C: Middle Saluda to Saluda Mountains



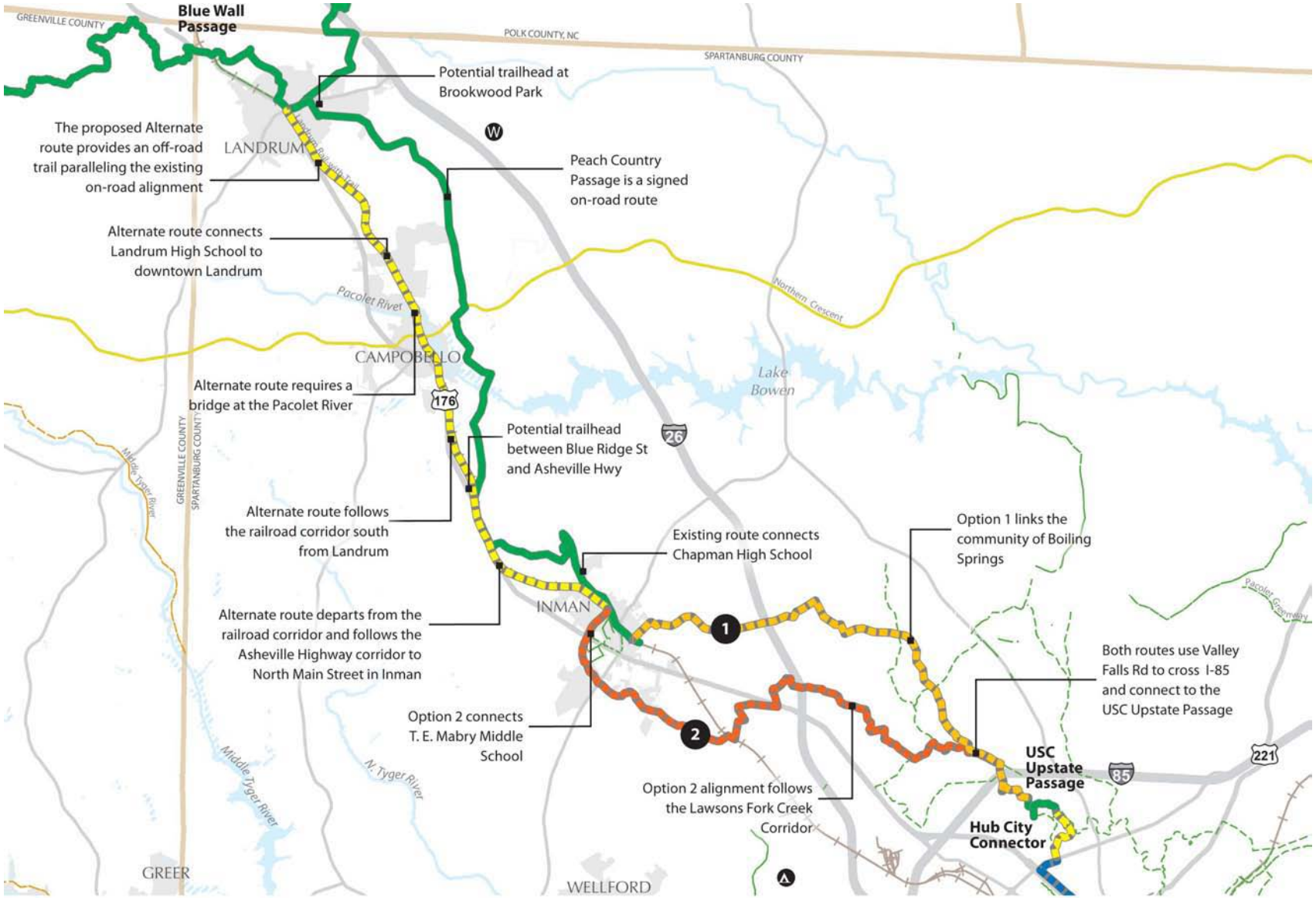
7 Saluda Mountains Passage



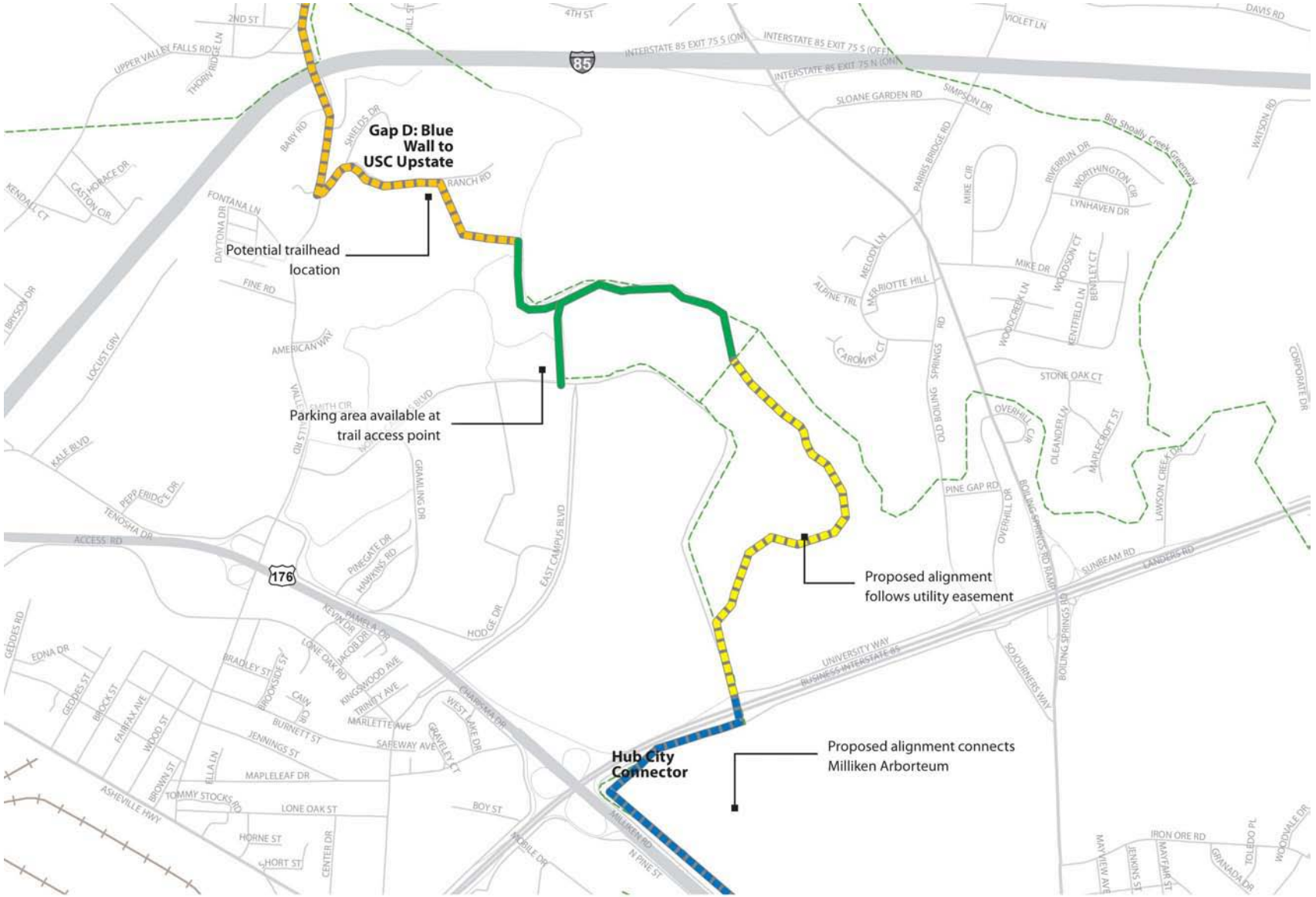
8 Poinsett Reservoir Passage



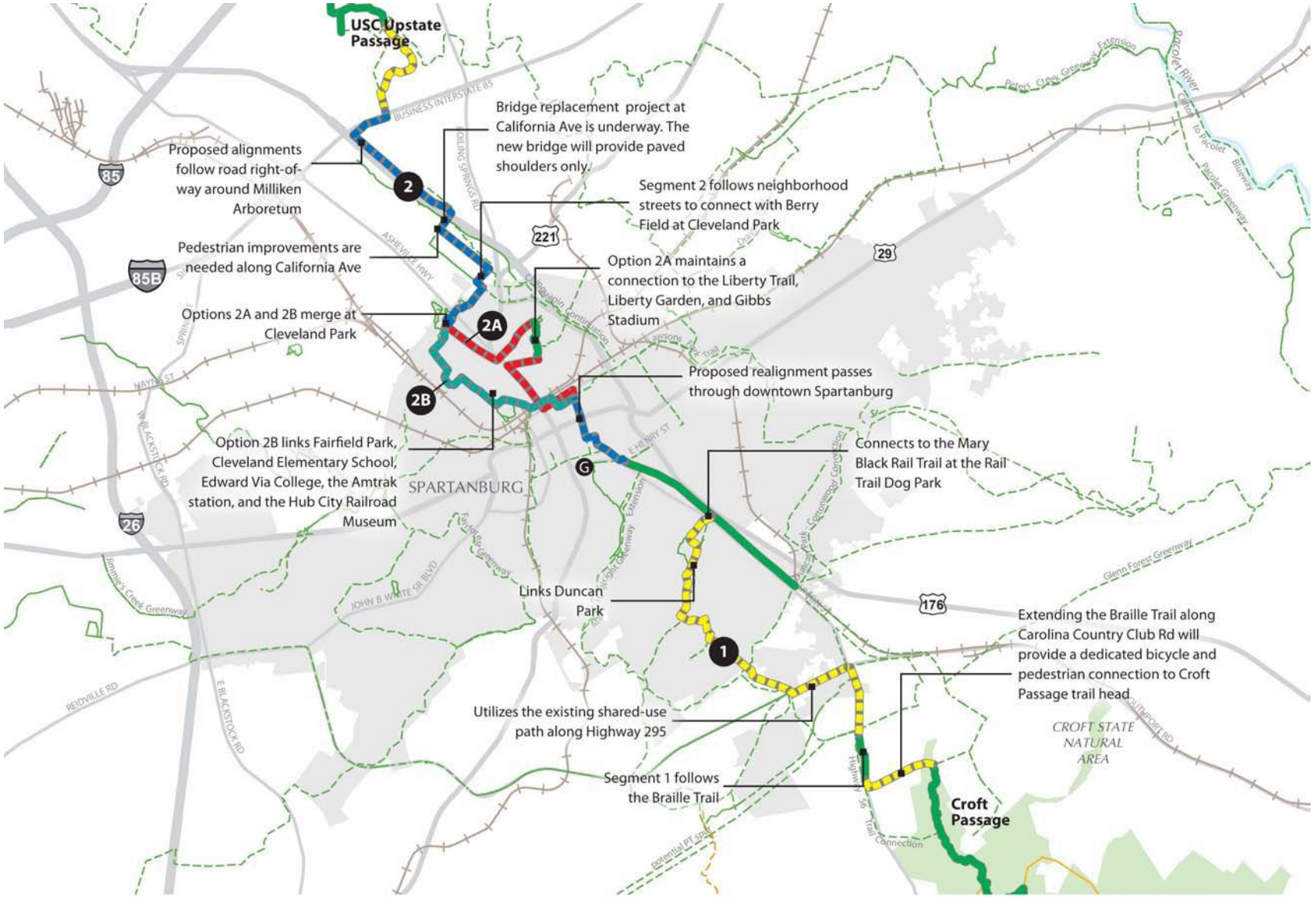
9 Blue Wall Passage



10 Gap D: Blue Wall to USC Upstate



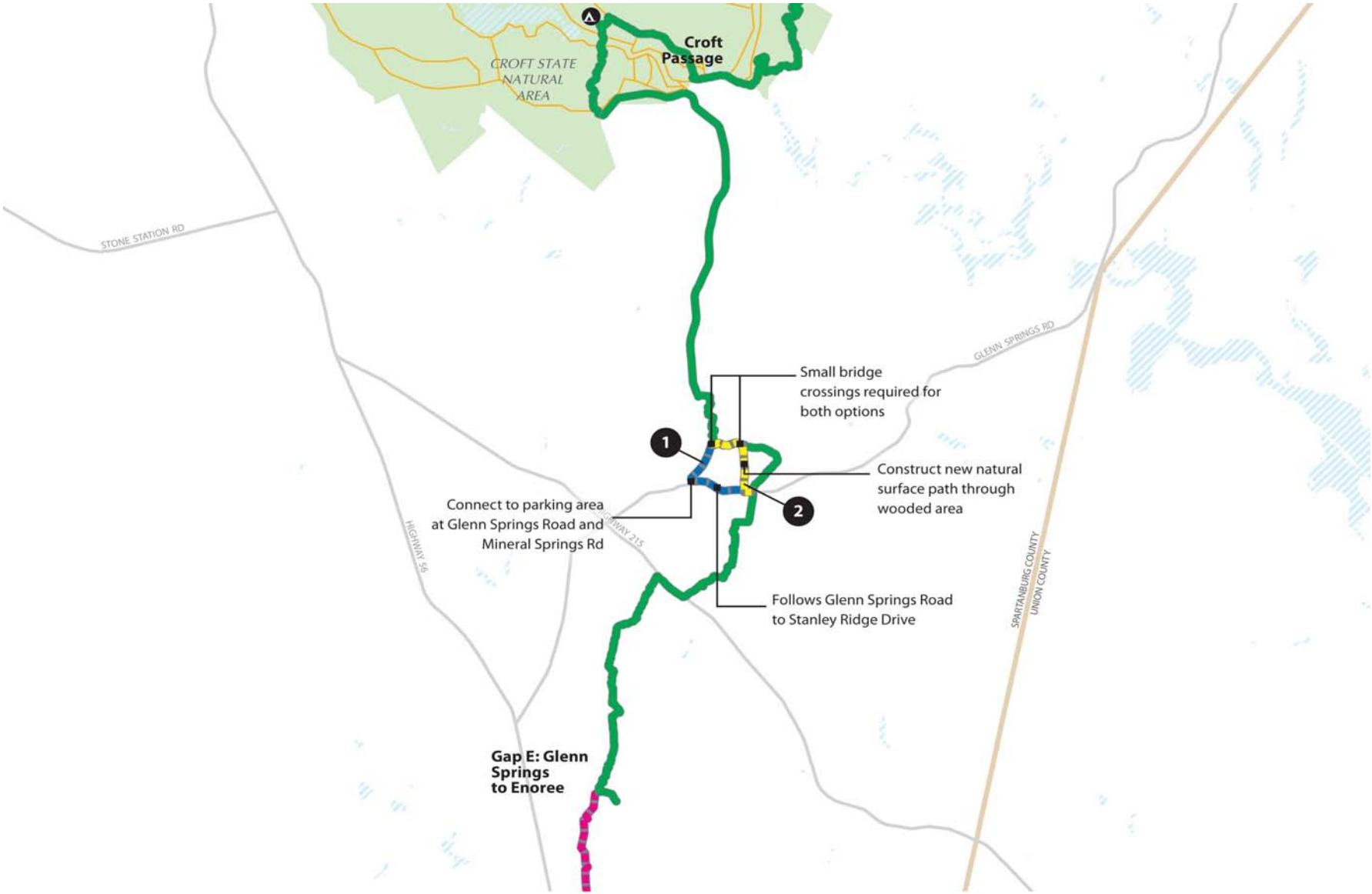
11 USC Upstate Passage



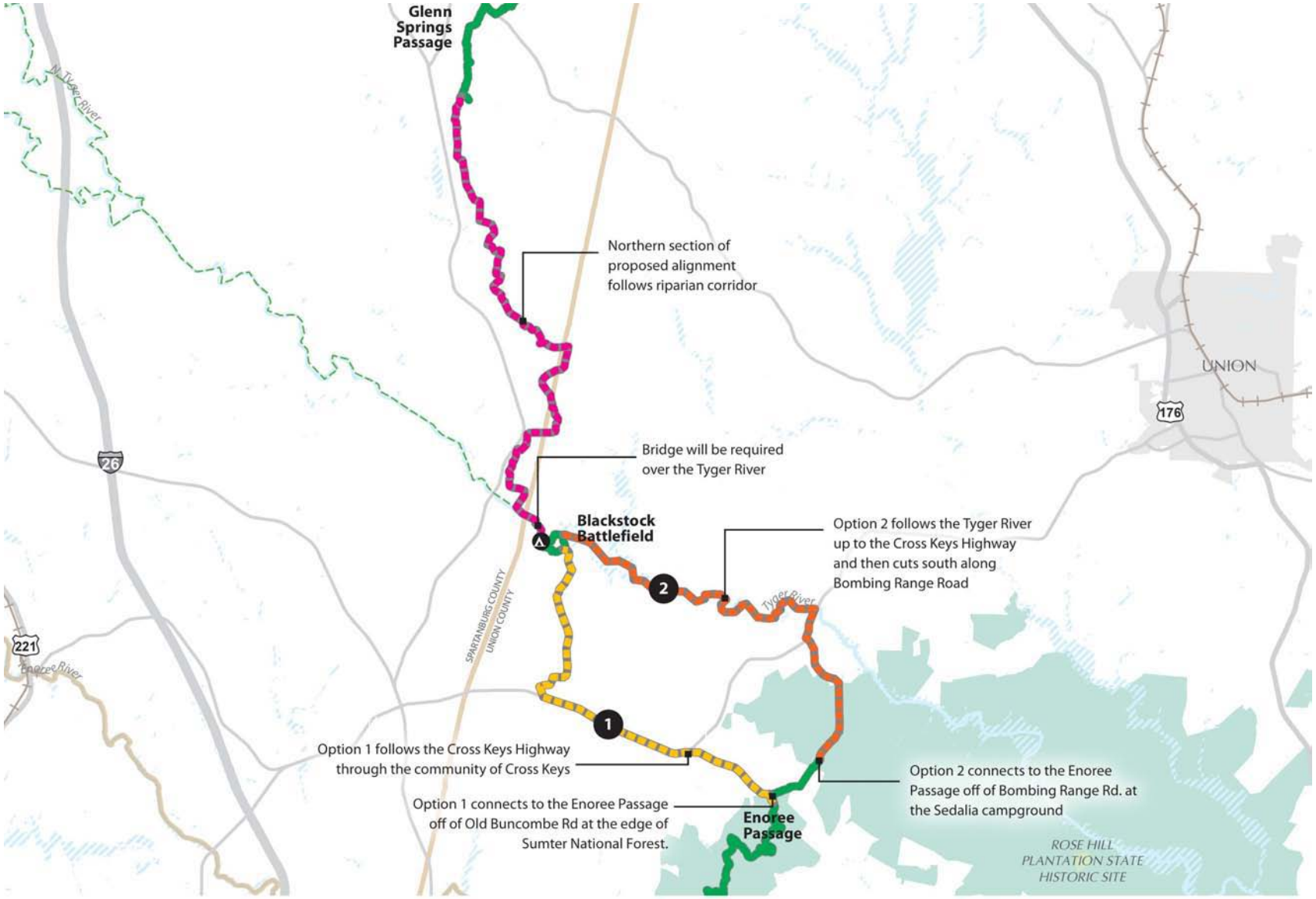
12 Hub City Connector

Existing Palmetto Trail
Proposed Alignment - Segment 1
Proposed Alignment - Segment 2
Prop. Alignment - Option 2A
Prop. Alignment - Option 2B
G Public Garden
Existing Shared-Use Path
Other Existing Trail
Locally Proposed Shared-Use Path
Other Proposed Trail
Major Park
City Limit
0 0.5 Miles

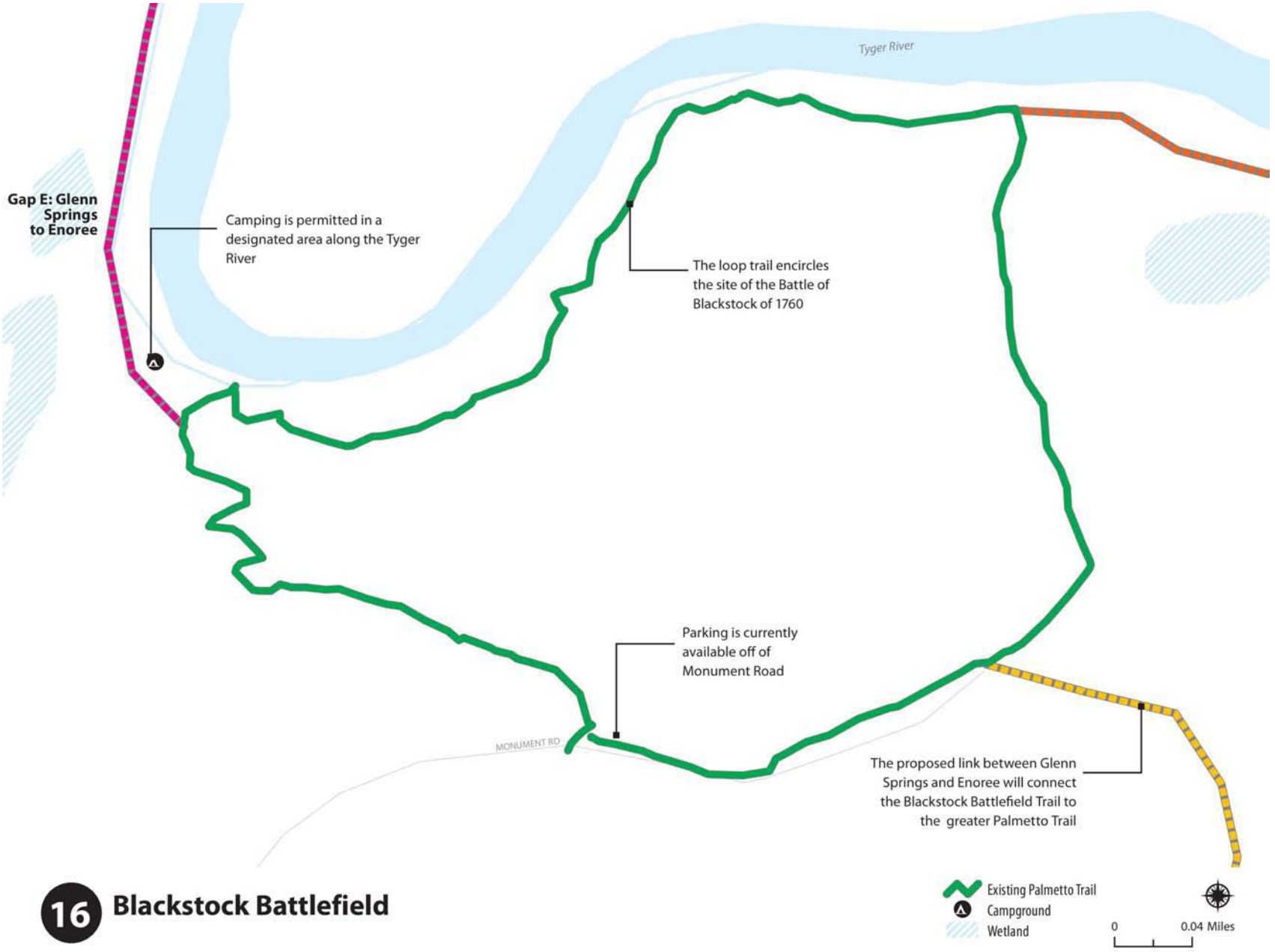
13 Croft Passage



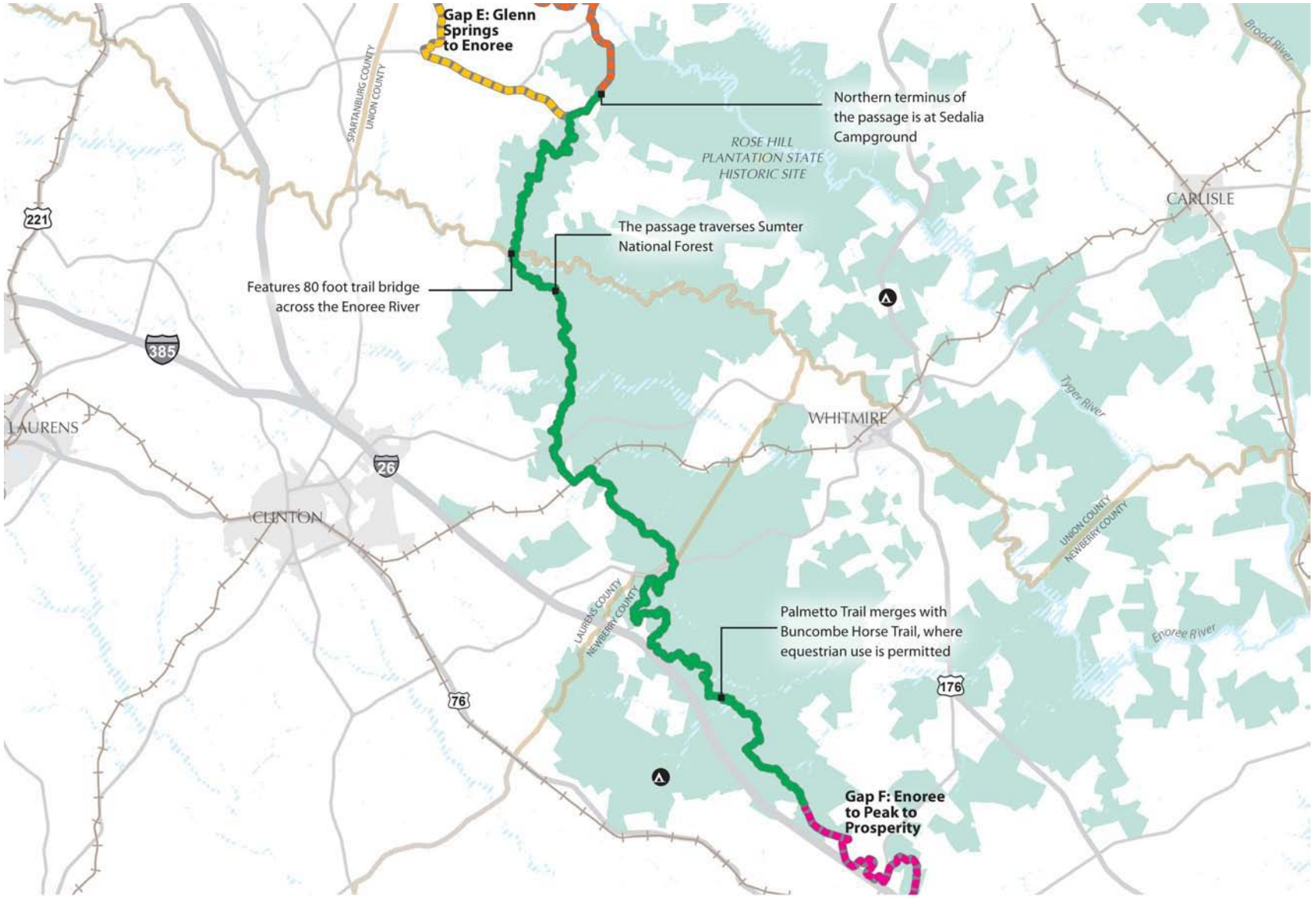
14 Glenn Springs Passage



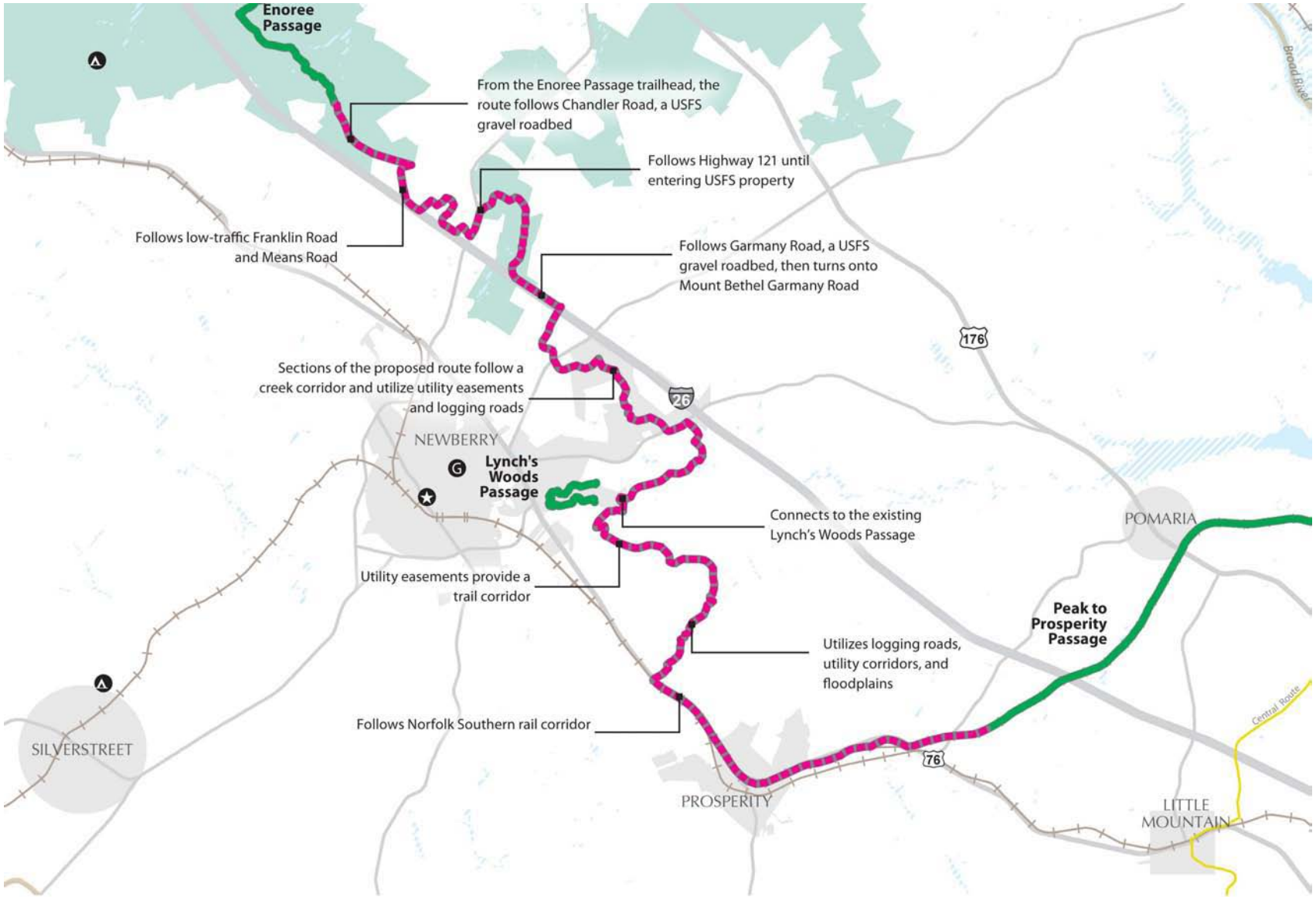
15 Gap E: Glenn Springs to Enoree



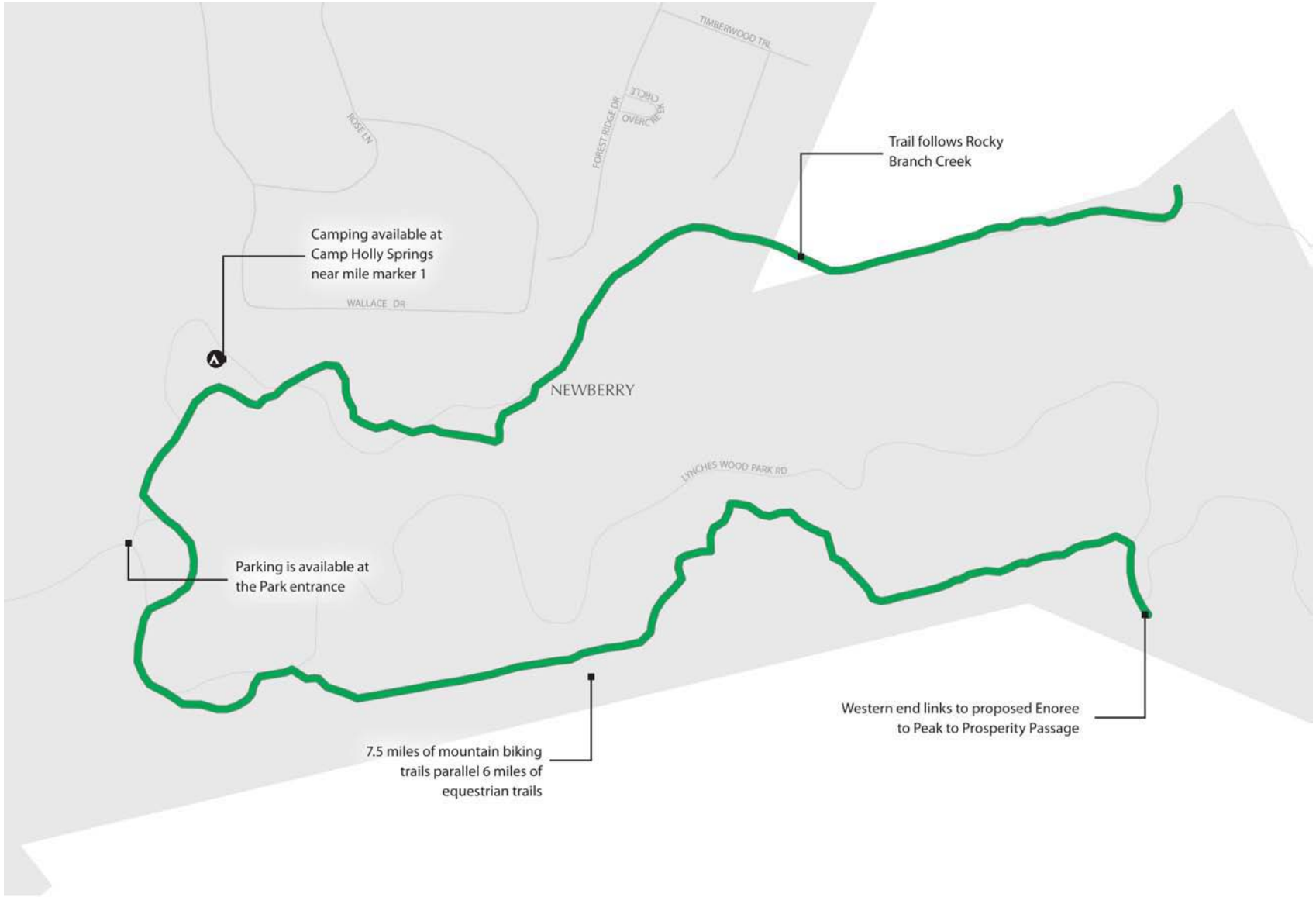
16 Blackstock Battlefield



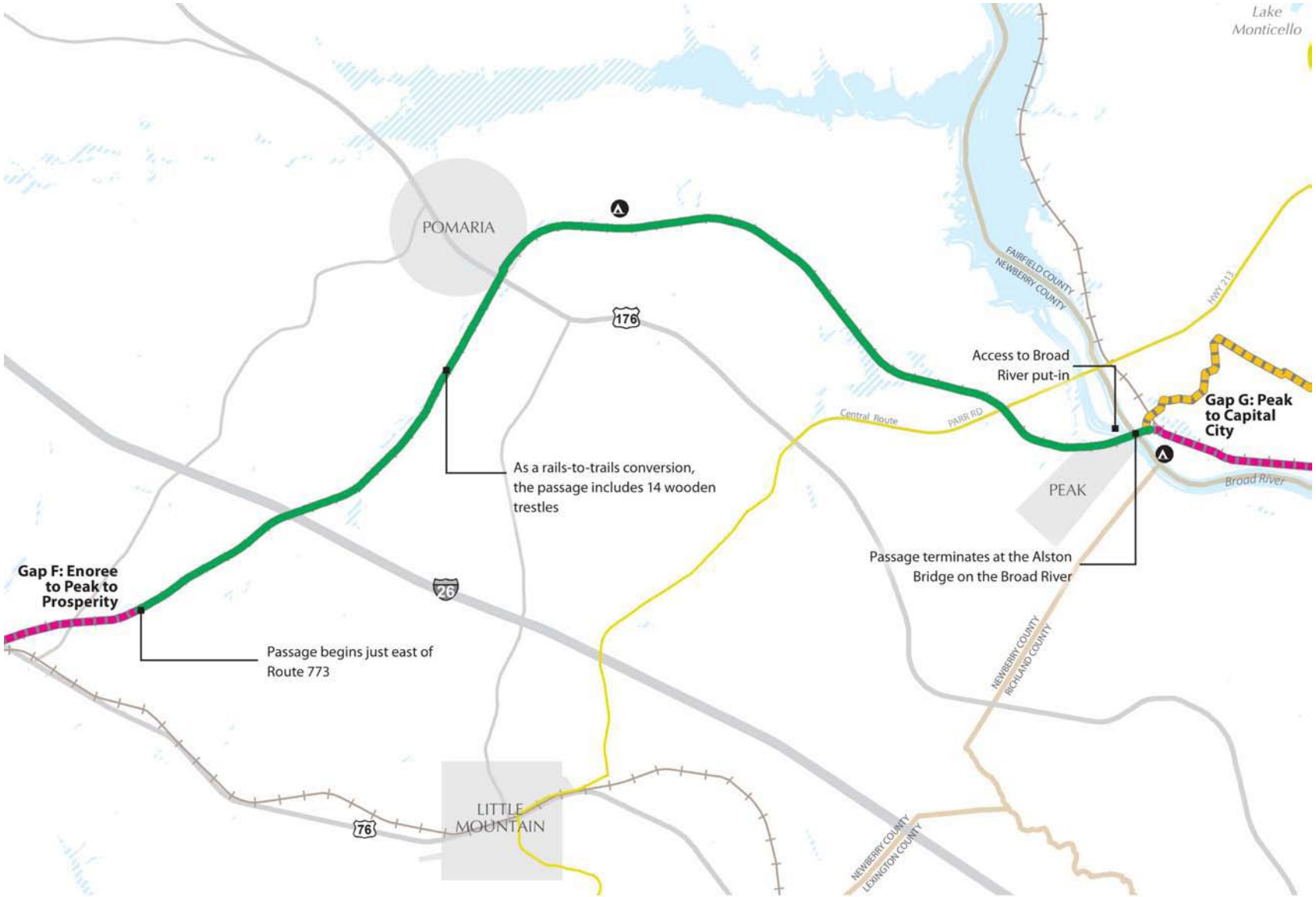
17 Enoree Passage



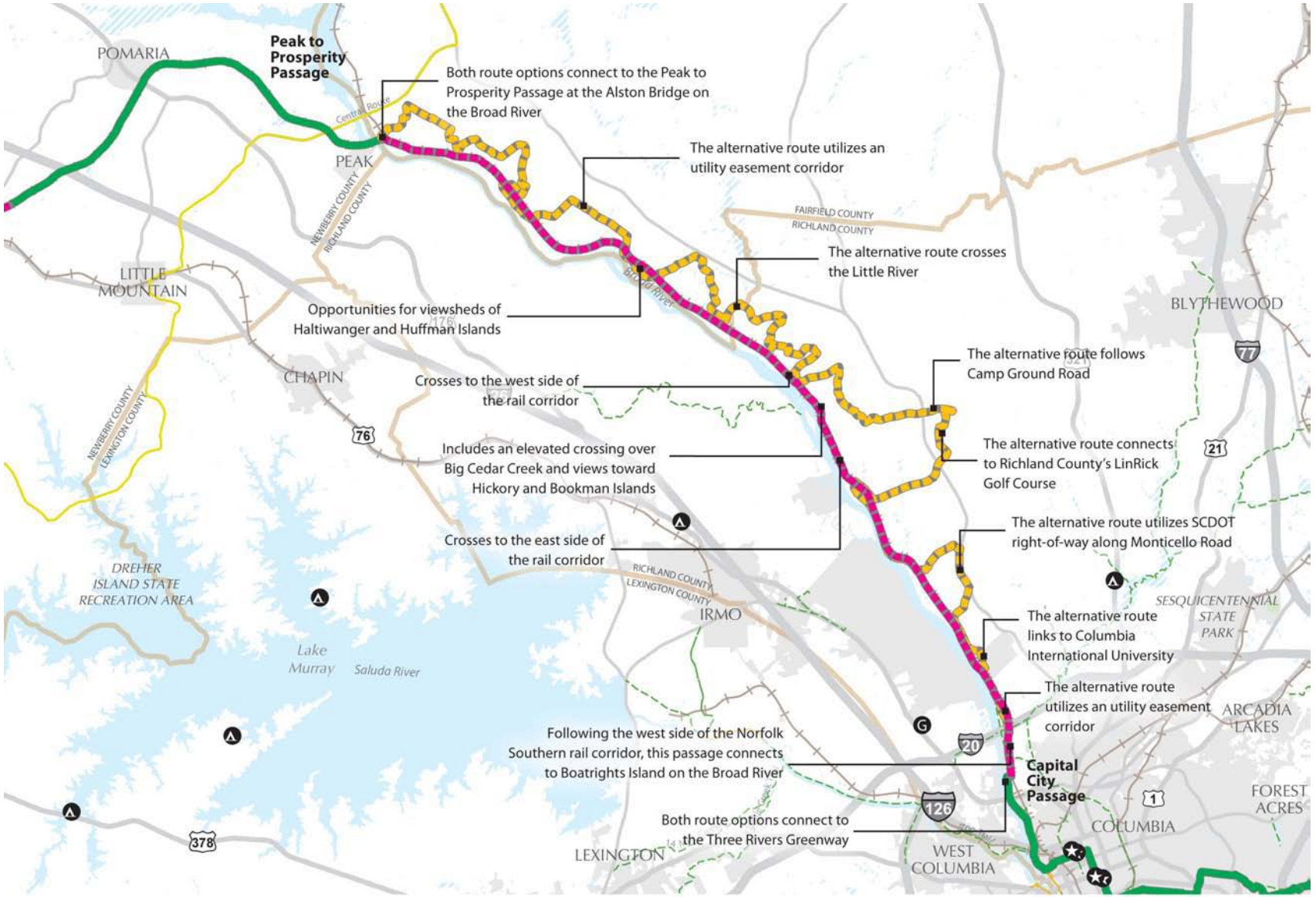
18 Gap F: Enoree to Peak to Prosperity



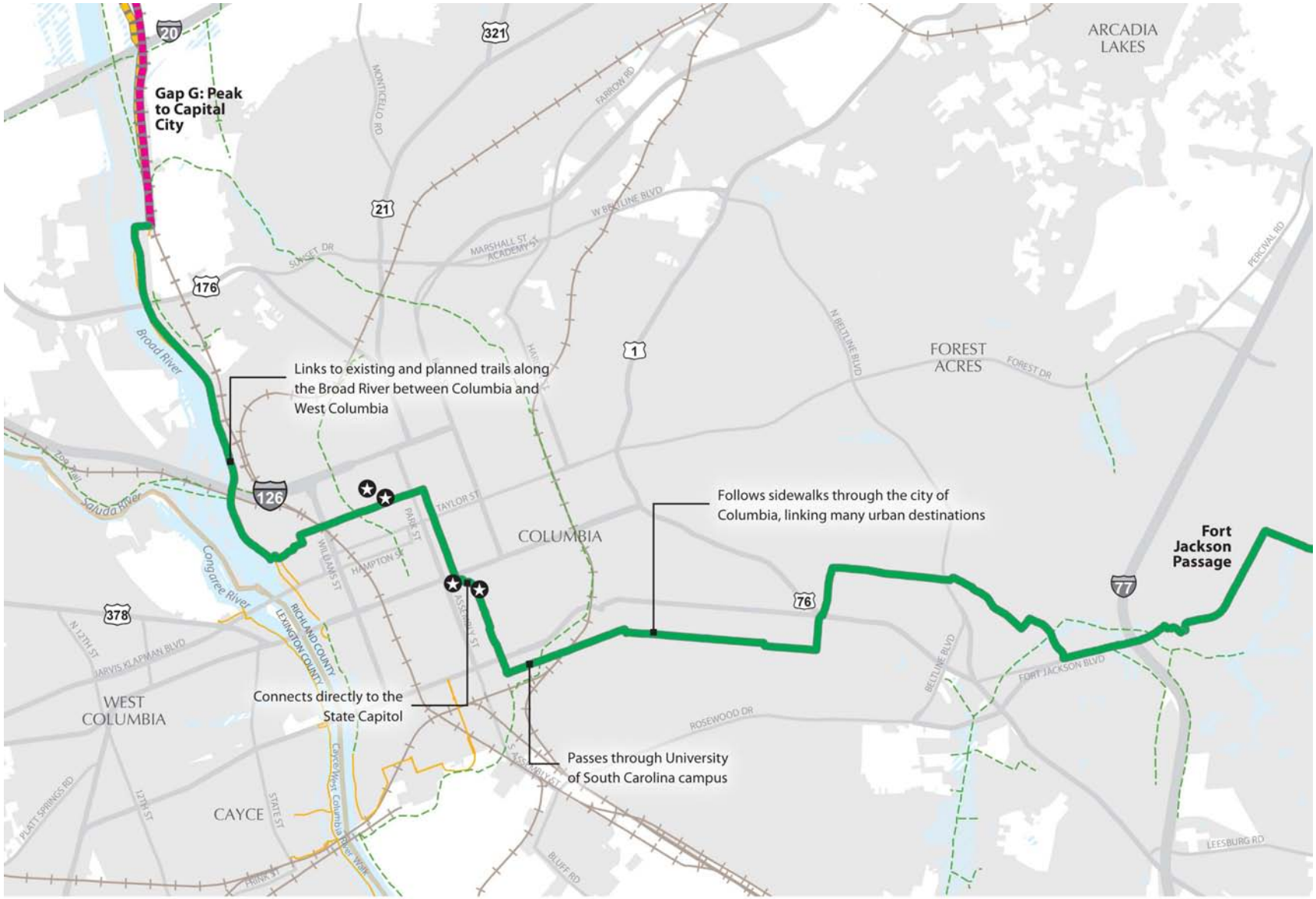
19 Lynch's Woods Passage



20 Peak to Prosperity Passage

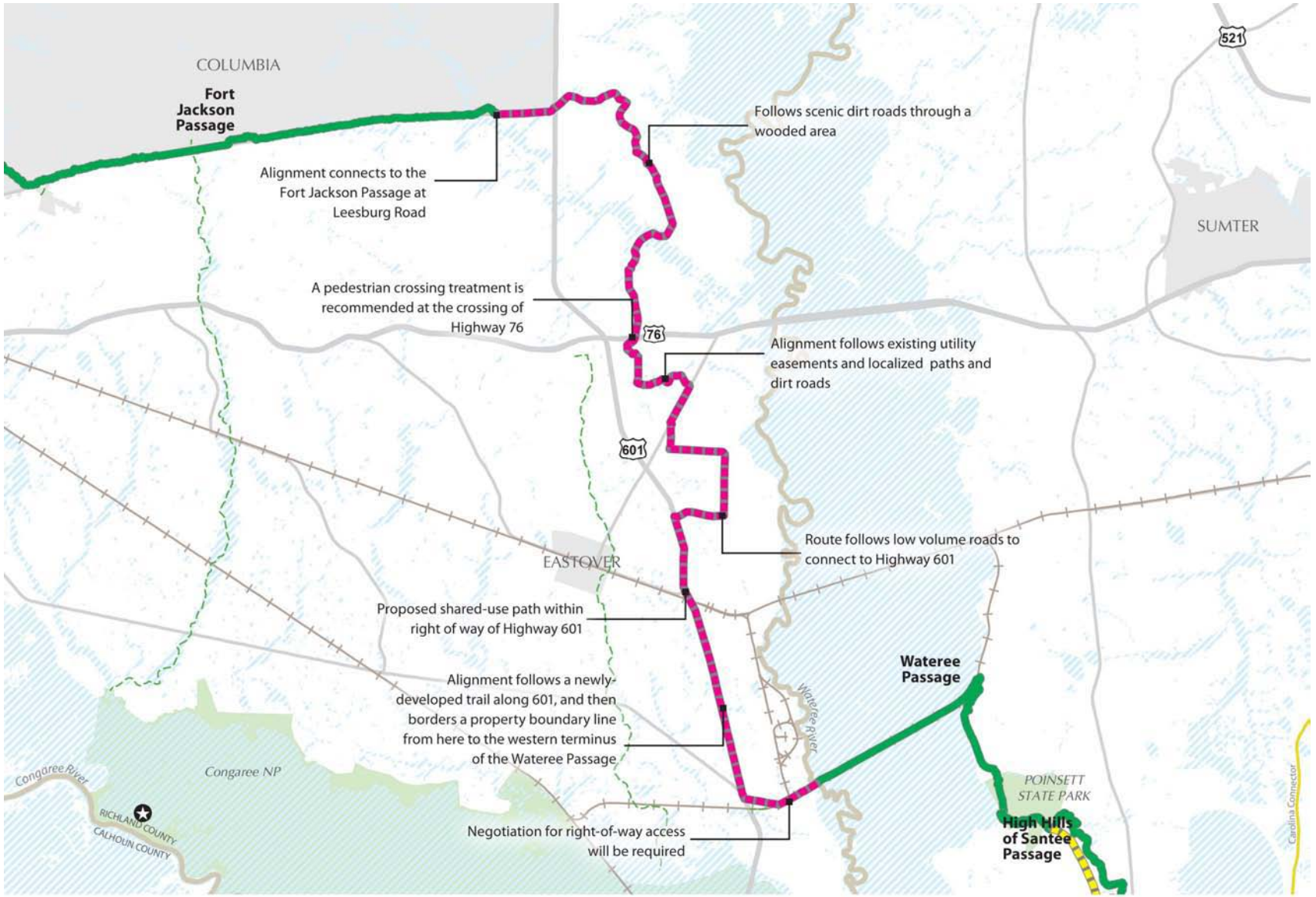


21 Gap G: Peak to Capital City

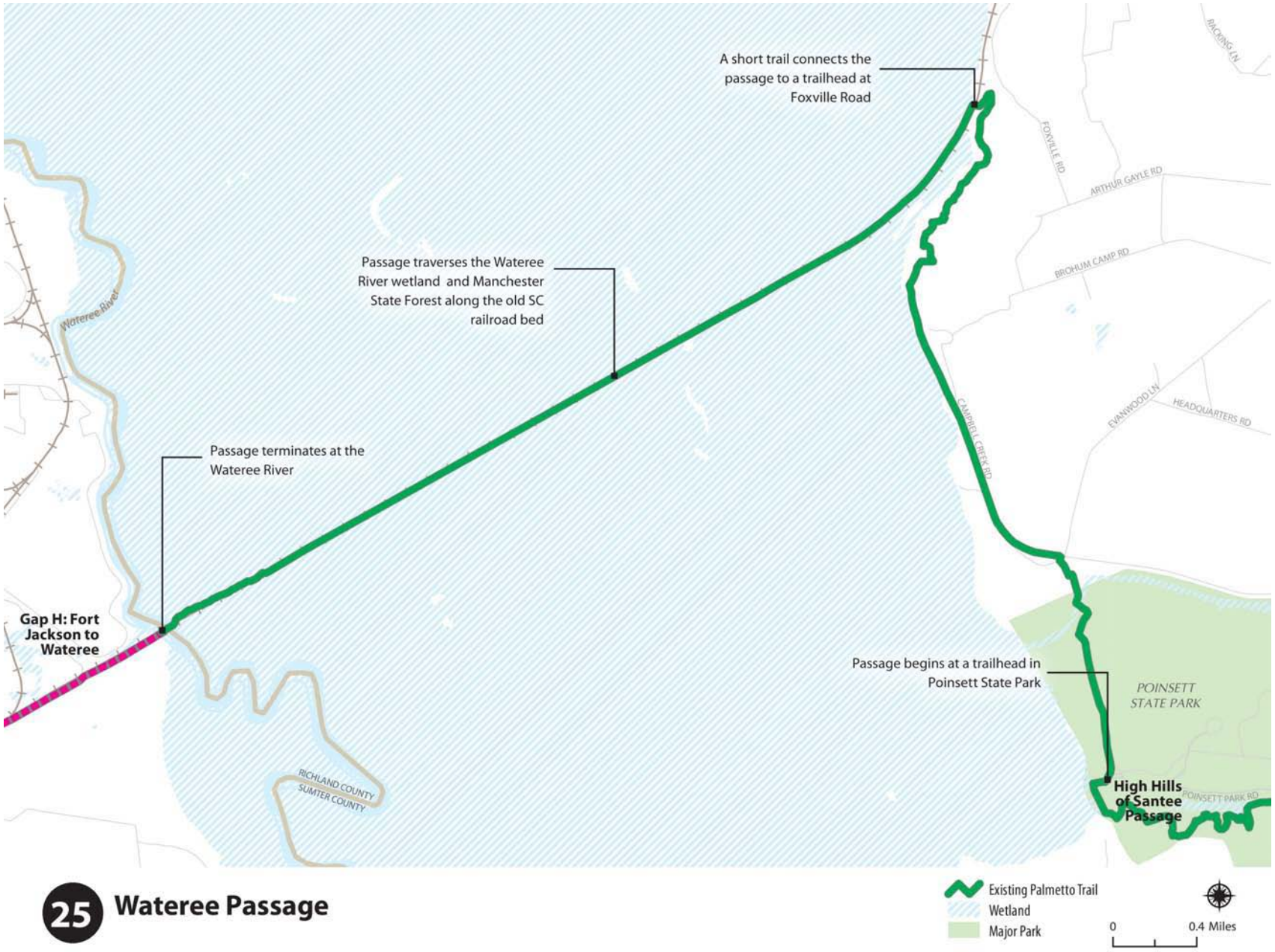


22 Capital City Passage

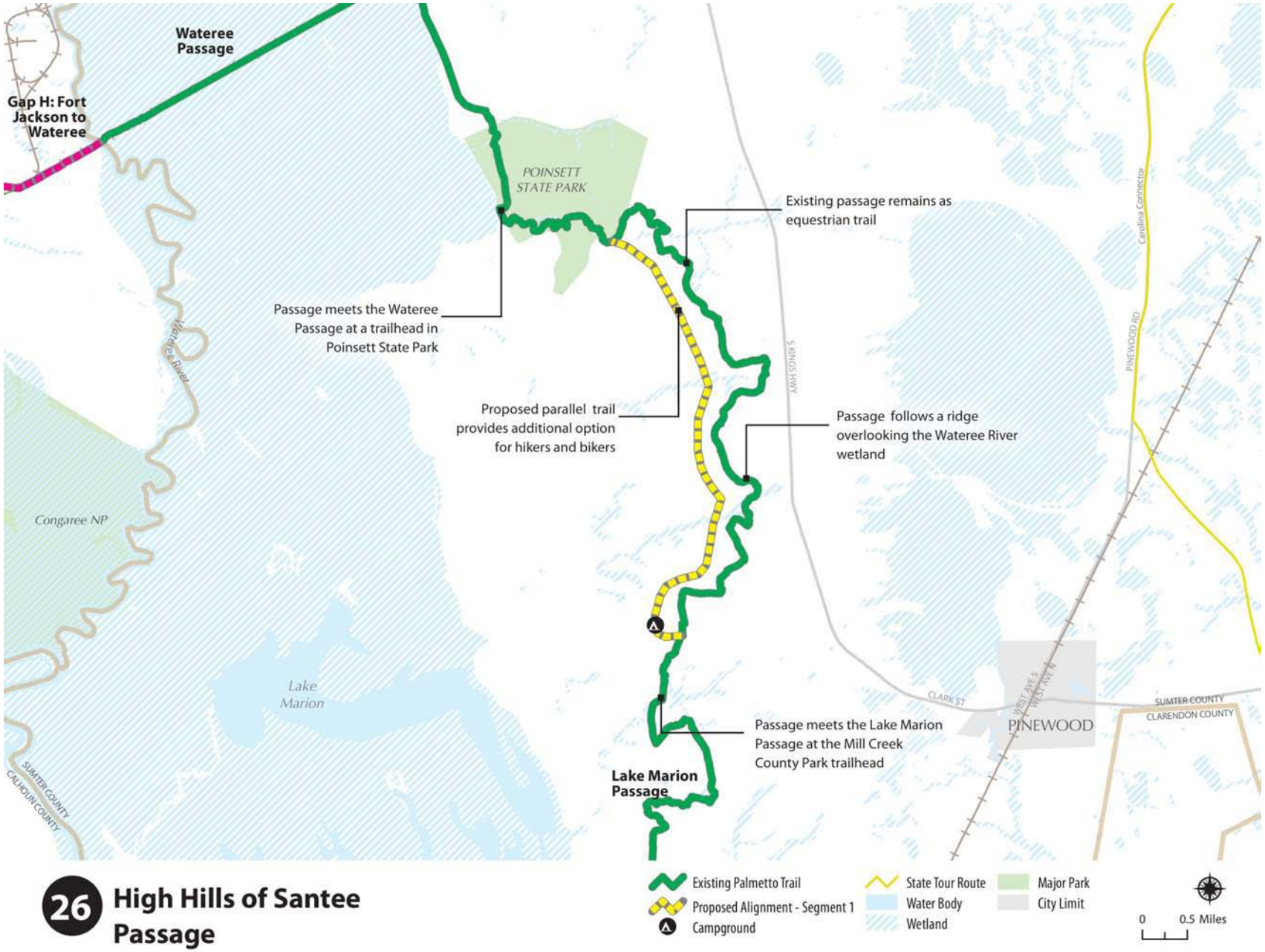
23 Fort Jackson Passage



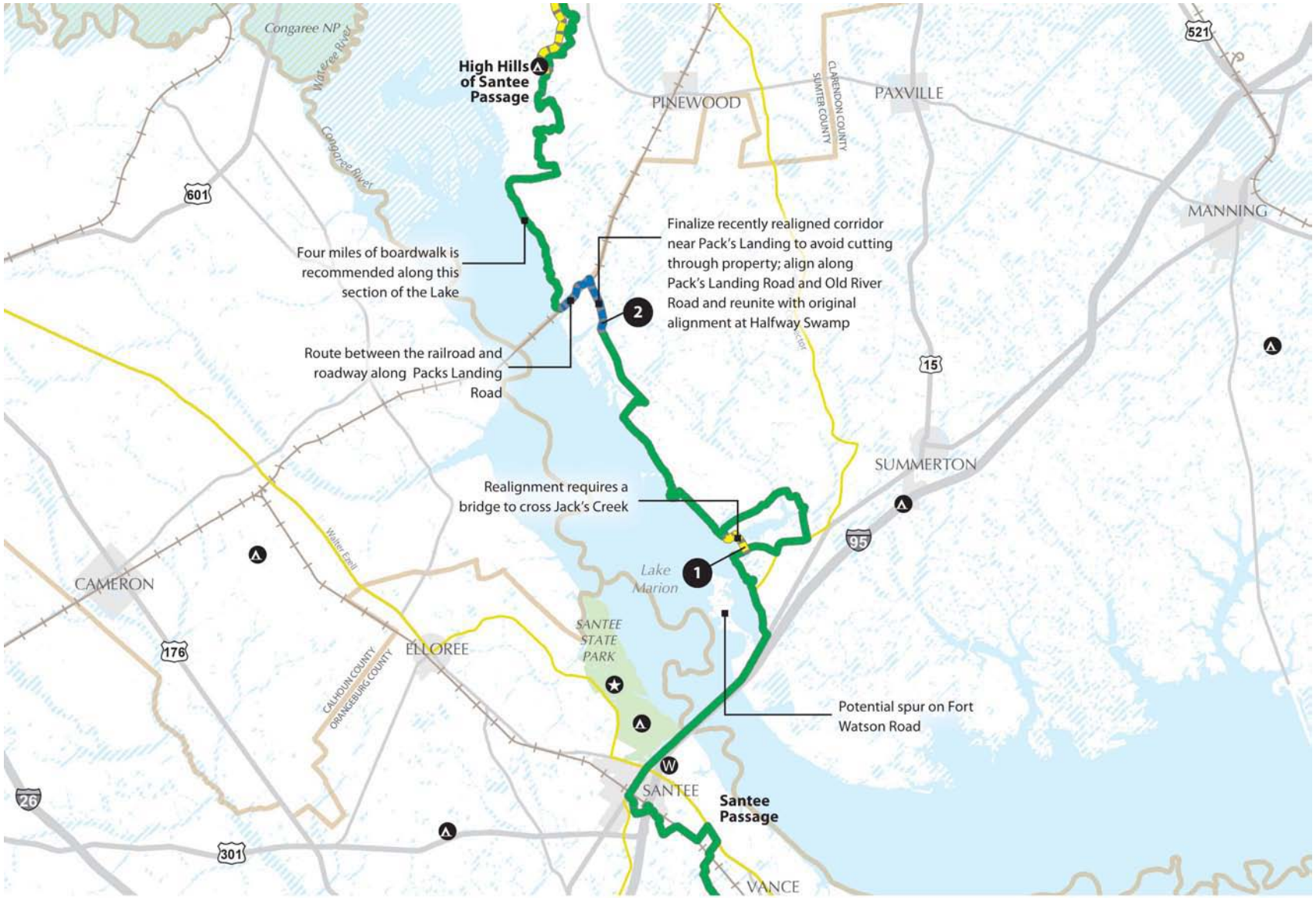
24 Gap H: Fort Jackson to Wateree



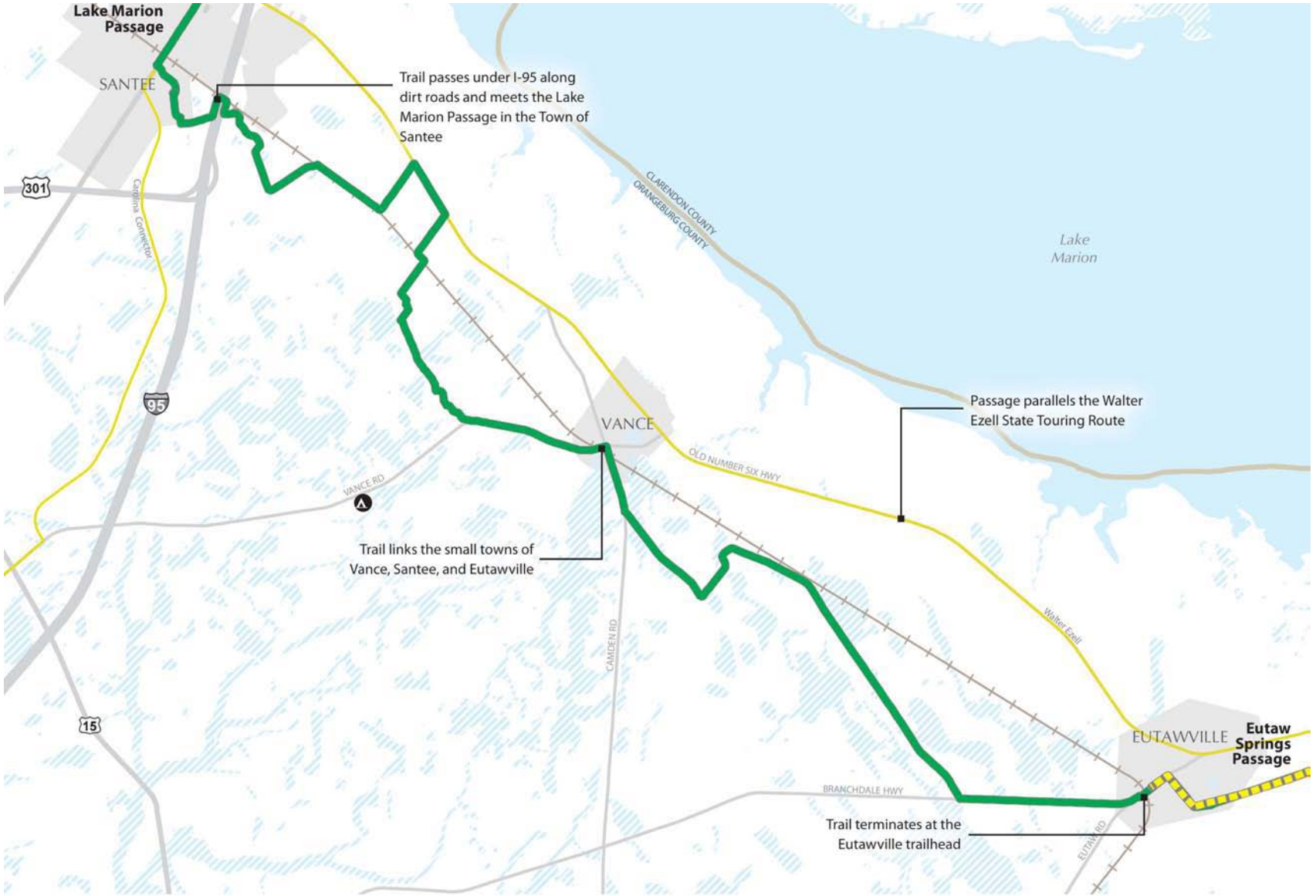
25 Wateree Passage



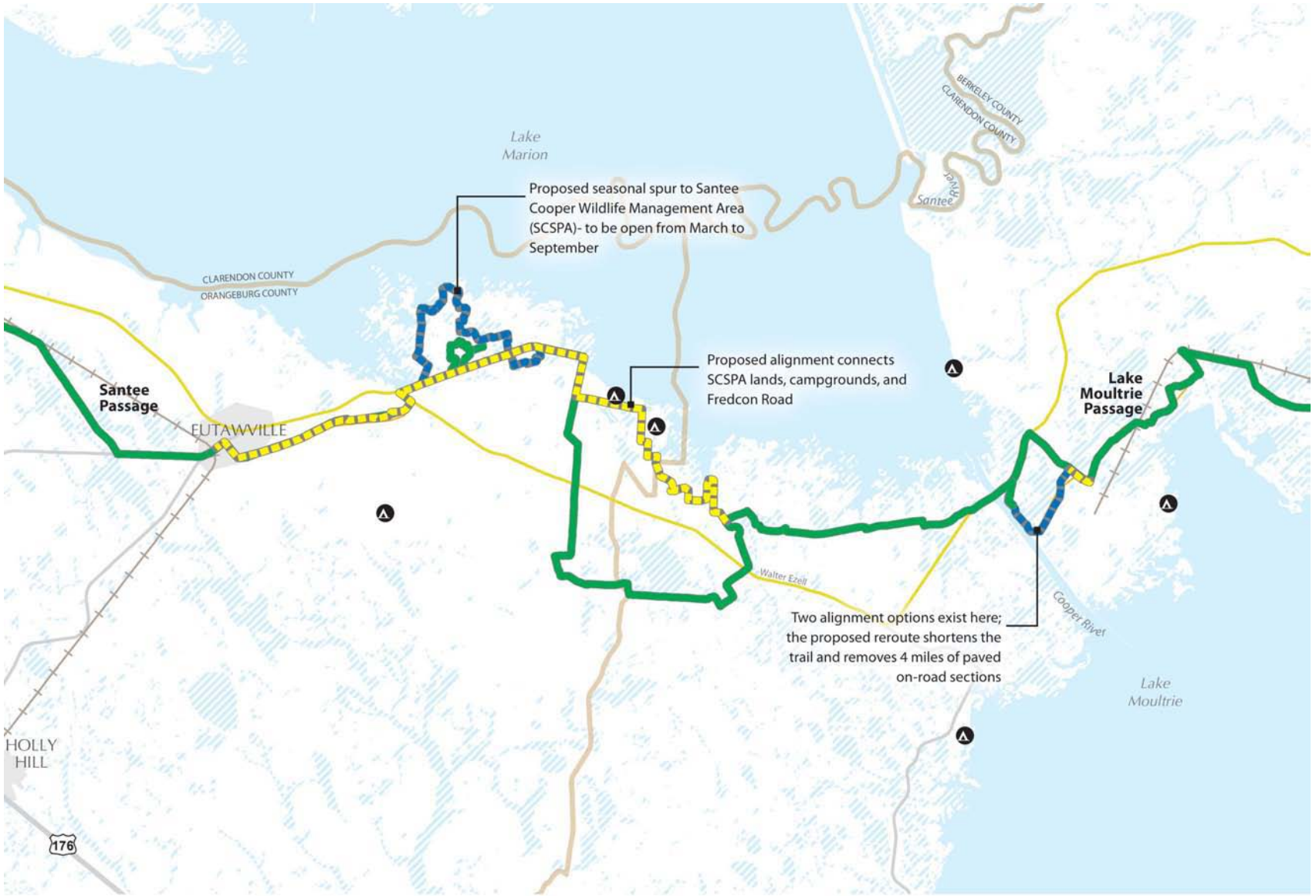
26 High Hills of Santee Passage



27 Lake Marion Passage

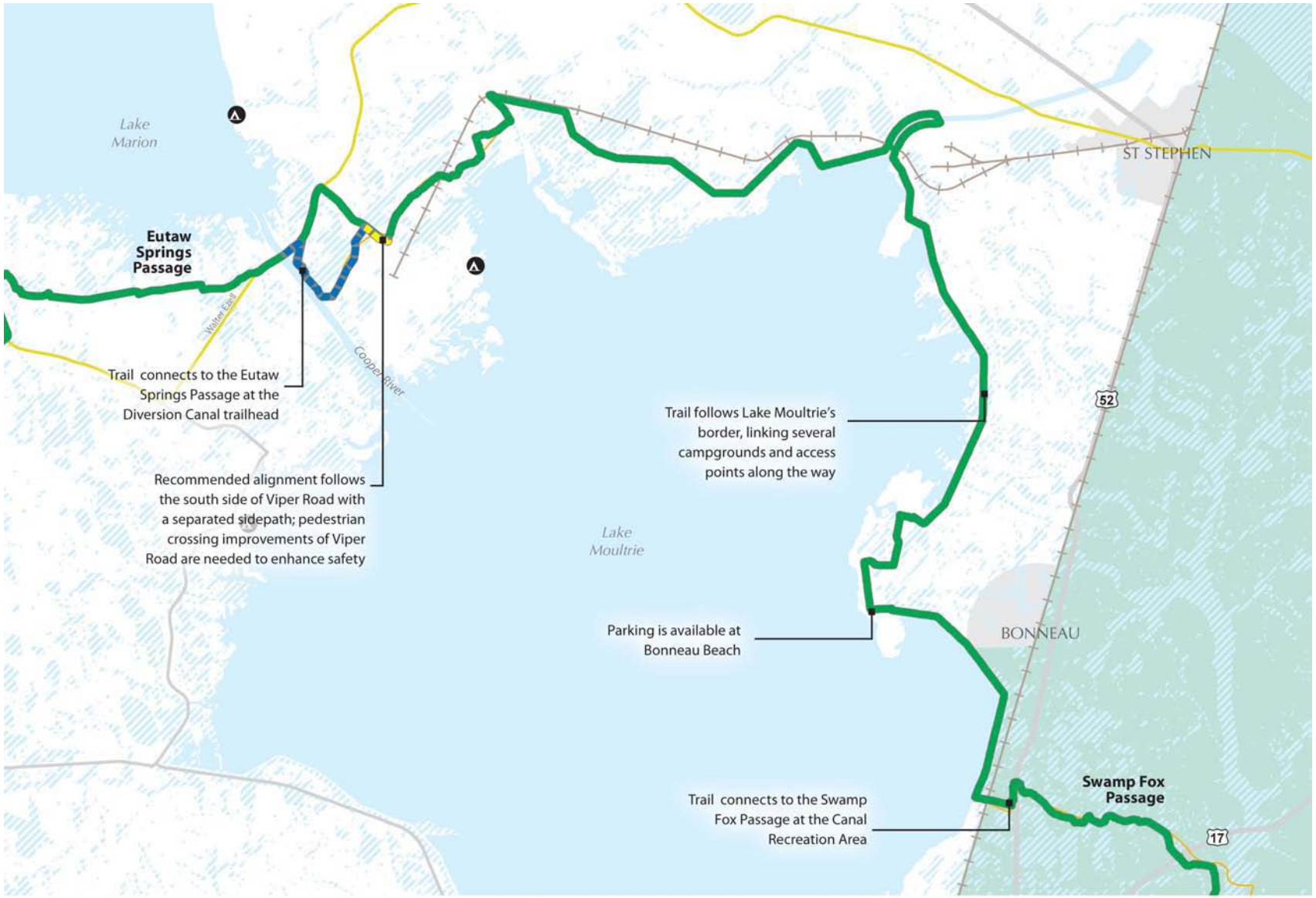


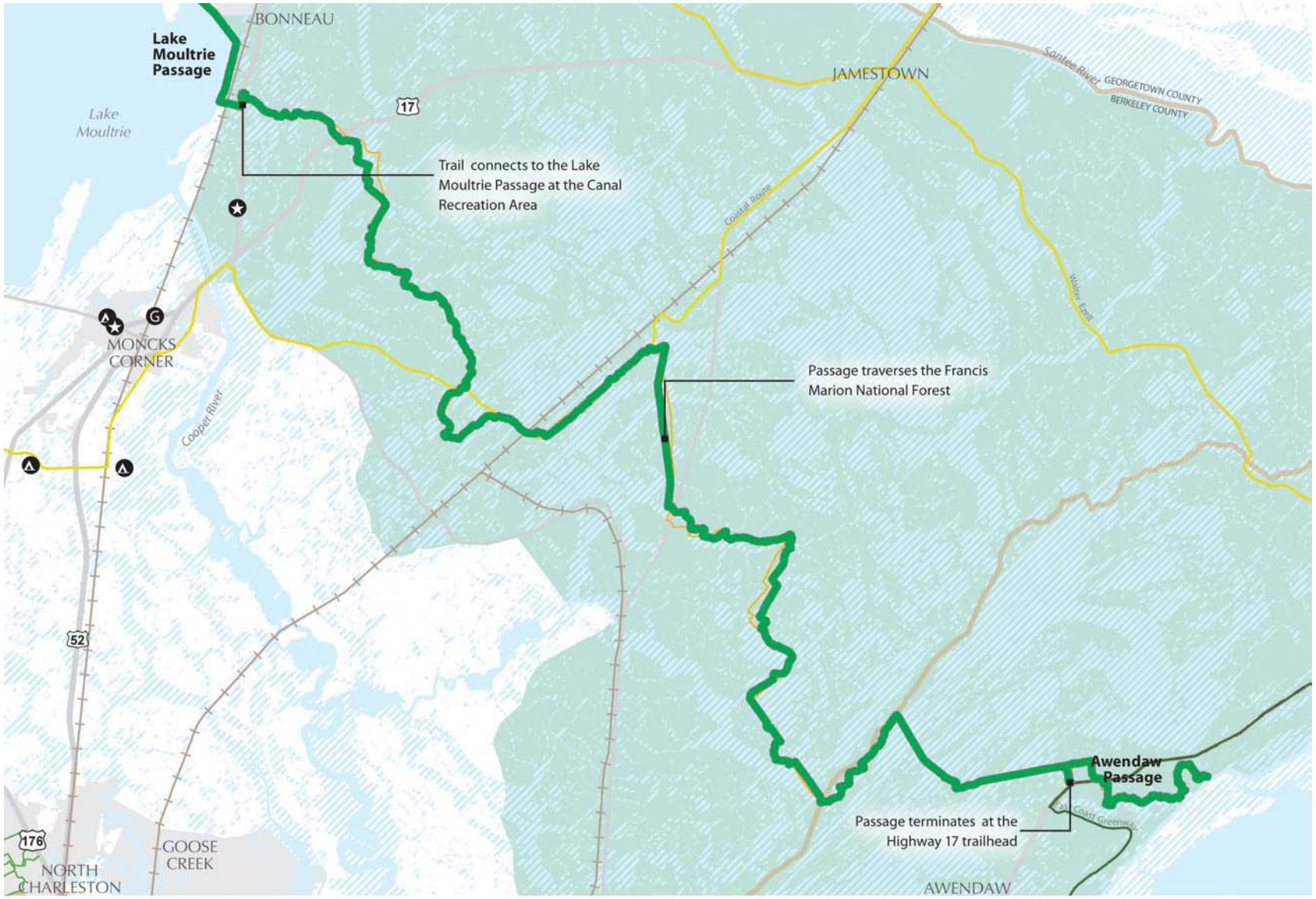
28 Santee Passage



29 Eutaw Springs Passage

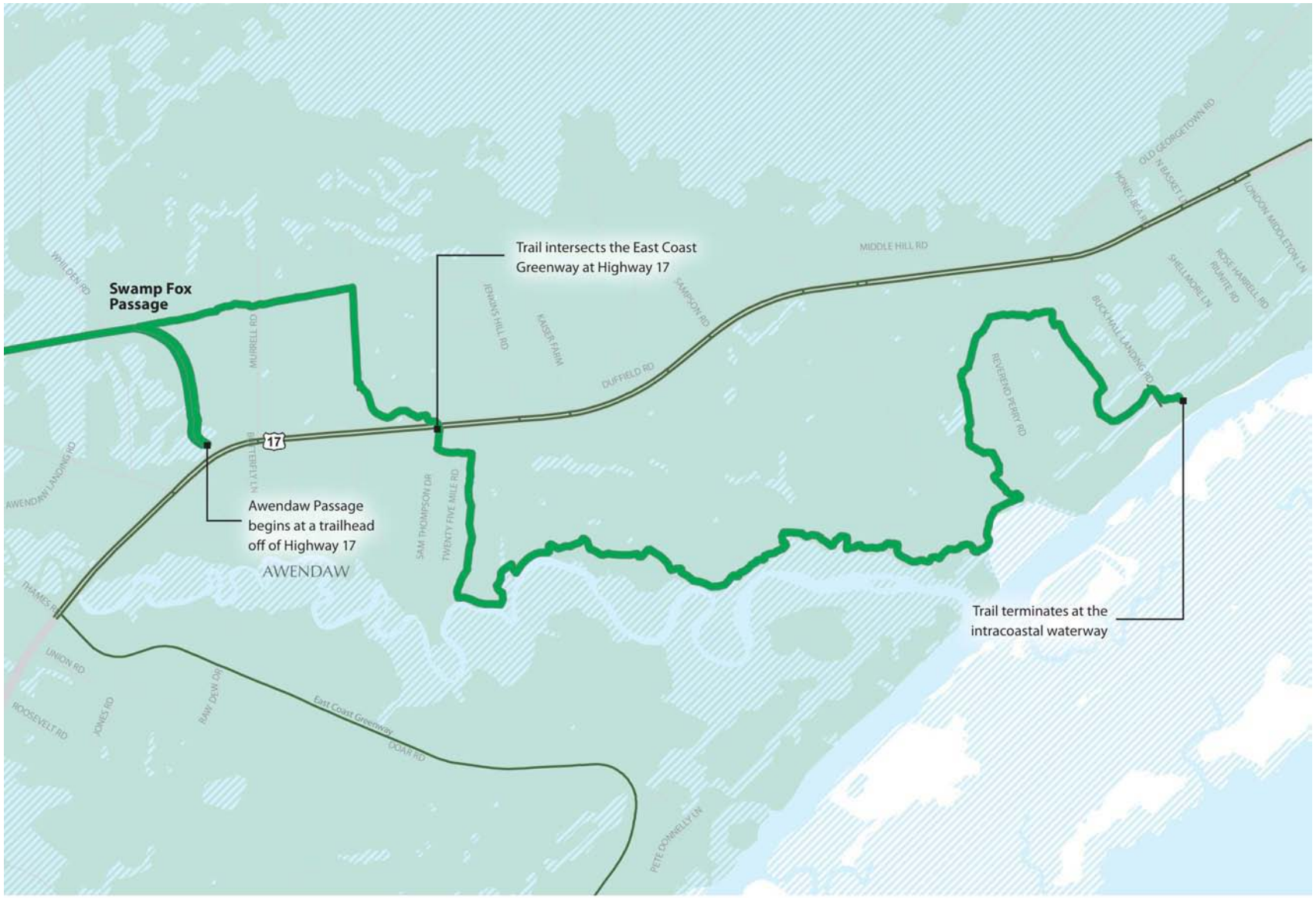
Existing Palmetto Trail
Proposed Alignment - Segment 1
Proposed Alignment - Segment 2
Campground
Other Existing Trail
State Tour Route
Water Body
Wetland
City Limit
0 1.5 Miles


Lake Marion
Eutaw Springs Passage
Walter Ezell
Cooper River
Trail connects to the Eutaw Springs Passage at the Diversion Canal trailhead
Recommended alignment follows the south side of Viper Road with a separated sidepath; pedestrian crossing improvements of Viper Road are needed to enhance safety
Lake Moultrie
Trail follows Lake Moultrie's border, linking several campgrounds and access points along the way
Parking is available at Bonneau Beach
ST STEPHEN
BONNEAU
52
17
Swamp Fox Passage
Trail connects to the Swamp Fox Passage at the Canal Recreation Area
30 Lake Moultrie Passage
Existing Palmetto Trail
Proposed Alignment - Segment 1
Proposed Alignment - Segment 2
Campground
Other Existing Trail
State Tour Route
Water Body
Wetland
US Forest Service Land
City Limit
0
1 Miles



31 Swamp Fox Passage

Existing Palmetto Trail
Free Attraction
Public Garden
Campground
Existing Shared-Use Path
Other Existing Trail
Other Proposed Trail
State Tour Route
East Coast Greenway
Wetland
US Forest Service Land
City Limit
0 2.5 Miles



32 Awendaw Passage

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CHAPTER 4
Expanding the Palmetto Trail

"With construction of the final passages of the Palmetto Trail mountains-to-sea route, **expanding the reach of the Palmetto Trail is the next step**."

OVERVIEW

With construction of the final passages of the Palmetto Trail mountains-to-sea route, expanding the reach of the Palmetto Trail is the next step. Communities across South Carolina see the benefit of linking to the statewide spine and many have expressed to PCF an interest in working to make that connection. Trail building efforts that are underway in counties and municipalities present an opportunity to strategically tie local trail facilities to the Palmetto Trail.

The project team worked with PCF to define appropriate criteria for determining near-term opportunities for spur trails connecting to the existing and proposed Palmetto Trail route. The criteria used in identifying the opportunities outlined in this chapter are described below (in no particular order).

Proximity to the Palmetto Trail

The project team focused on a 25 mile buffer zone on either side of the existing and proposed Palmetto Trail route. Opportunities do exist to link to trail facilities extending beyond a 25 mile distance, however, this buffer zone presents a logical focus area for near-term expansion, with the expectation that further trail development would occur in the mid- or long-term timeframe.

Existing and Proposed Trails

Many local and regional trails already exist across the state. COGs, MPOs, counties, and cities have already developed short- and long-term plans for trail development in their area. Based on data available for the purposes of this Master Plan, the project team identified existing and proposed trails across the state that connect to the Palmetto Trail spine.

Local Community Interest

Communities in South Carolina have expressed a desire to connect to the Palmetto Trail. Some have communicated directly to PCF staff within the last few years, while others expressed this interest through the public involvement process of this Plan.

Readiness and Willingness of Local Partners

As a nonprofit organization spearheading development of the Palmetto Trail, PCF relies heavily on partnerships to fulfill its mission and to create a trail network that is most beneficial to the local communities that manage, maintain, and/or utilize it. The project team relied on a number of factors, both subjective and objective, to identify communities that exhibit a readiness and willingness to contribute toward trail development. This willingness suggests that spur trail opportunities in these communities are practical and feasible as near-term priorities.

TRAIL EXPANSION & TRAIL IDENTITY

Expanding the Palmetto Trail greatly contributes to the Trail's identity. Refer to Chapter 5 for marketing and branding techniques that are important to maintain throughout the trail's entire planning and implementation process.

Desirable Destinations

Connecting to destinations and attractions is a natural priority for near-term expansion of the Palmetto Trail. The project team identified destinations that are particularly desirable for trail users, such as nearby state parks or other protected lands, historic sites, and downtowns.

PURPOSE

Expansion of the Palmetto Trail will not only expand the physical reach of the statewide trail system, but also:

- **Leverage investments** into existing local and regional trails,
- **Encourage investment** from local municipalities, counties, and foundations,
- **Promote more** of South Carolina's cultural, historical, and natural resources and
- **Establish new users, partners, and supporters** of the Palmetto Trail across the state.

The recommendations of this Chapter provide **a guide for pursuing expansion of the Palmetto Trail**. **PCF will serve as the lead facilitato**r for this effort. The work of trail routing, design, funding, and development will necessarily come from local municipalities and counties and regional planning organizations, with technical assistance and staff support from PCF throughout the process.

In some cases, the expansion requires little more than collaborating with local partners to add Palmetto Trail spur trail signage along existing greenways, bicycle- and pedestrian-friendly streets, or bicycle touring routes. **In other cases, the expansion requires construction of a new trail or a new sidewalk and bike lane facilities.** By establishing **priority expansion areas** for linking the Palmetto Trail to nearby communities and destinations, **local partners can begin the work of developing connections** within their area and incorporating these connections within their local planning processes.

The diversity of experiences along the Palmetto Trail mirrors the opportunities to be found within the State of South Carolina itself.

UPSTATE

The Upstate region includes segments of the Palmetto Trail route that are in or near Oconee, Pickens, Greenville, Spartanburg, Cherokee, Union, and Laurens counties.

MIDLANDS

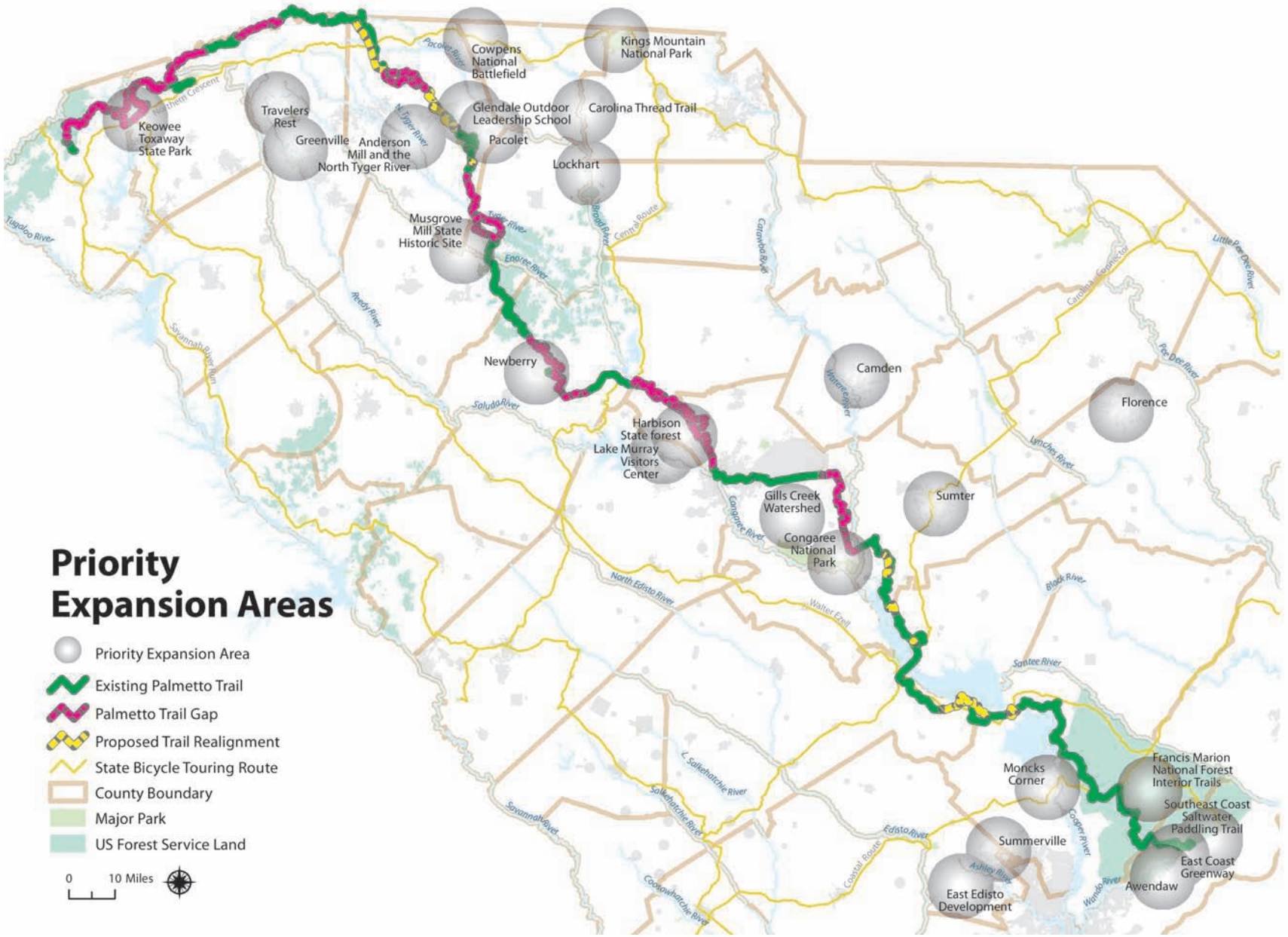
The Midlands region includes segments of the Palmetto Trail route that are in or near Newberry, Fairfield, Richland, and Sumter counties.

LOWCOUNTRY

The Lowcountry region includes segments of the Palmetto Trail route that are in or near Clarendon, Orangeburg, Berkeley, and Charleston counties

PRIORITY EXPANSION AREAS

Priority expansion areas are areas in which near-term spur trail opportunities exist based on the criteria identified at the beginning of this chapter. The opportunities are described below and **categorized based on state regions**. Within each region, the county groupings used for the purposes of the public involvement process are noted. **Page 73 describes each geographic region.**


Priority Expansion Areas
Priority Expansion Area
Existing Palmetto Trail
Palmetto Trail Gap
Proposed Trail Realignment
State Bicycle Touring Route
County Boundary
Major Park
US Forest Service Land
0
10 Miles
Cowpens National Battlefield
Kings Mountain National Park
Keowee Toxaway State Park
Travelers Rest
Greenville
Anderson
Mill and the North Tyger River
Glendale Outdoor Leadership School
Pacolet
Carolina Thread Trail
Lockhart
Musgrove Mill State Historic Site
Newberry
Harbison State forest
Lake Murray Visitors Center
Camden
Florence
Gills Creek Watershed
Congaree National Park
Sumter
Moncks Corner
Summerville
East Edisto Development
Awendaw
Francis Marion National Forest Interior Trails
Southeast Coast Saltwater Paddling Trail
East Coast Greenway
Tugaloo River
Savannah River Run
Reedy River
Saluda River
Tyger River
Enoree River
Broad River
Central Route
Catawba River
Wateree River
Carolina Connector
Little Pee Dee River
Pee Dee River
Lynches River
Congaree River
North Edisto River
Walter Ezell
Black River
Santee River
L. Salkehatchie River
Salkehatchie River
Savannah River
Edisto River
Coastal Route
Cooper River
Ashley River
Wando River
Cooosawhatchie River

Upstate Priority Expansion Areas

CONNECTIONS/DESTINATIONS	CONNECTING FACILITY	JURISDICTION	NOTES
Keowee Toxaway State Park		Oconee County	As identified through prior planning efforts of PCF
Cities of Greenville and Travelers Rest	Swamp Rabbit Trail	Greenville County	Also connects multiple attractions along the existing Swamp Rabbit Trail route
Glendale Outdoor Leadership School	Cottonwood Trail and Glendale Shoals	Spartanburg County	As identified in the Spartanburg Trails & Greenways Master Plan (2013)
Anderson Mill and the Tyger River	Proposed Trails and Tyger River Padding Trail	Spartanburg County	As identified in the Spartanburg Trails & Greenways Master Plan (2013) and by the Tyger River Foundation
Cowpens National Battlefield and Kings Mountain National Park	Overmountain Victory National Historic Trail (OVNHT)	Spartanburg, Cherokee, and York Counties	Trail planning for the OVNHT commenced in late 2013
Carolina Thread Trail	Carolina Thread Trail	Cherokee & York Counties	Trail planning for the CTT is undertaken on county by county basis with support from the Carolina Thread Trail organization
Town of Pacolet, the Pacolet River, and Town of Lockhart	Pacolet River Paddling Trail	Spartanburg & Union Counties	
Musgrove Mill State Historic Site and Enoree River		Spartanburg & Laurens Counties	

Midlands Priority Expansion Areas

CONNECTIONS/DESTINATIONS	CONNECTING FACILITY	JURISDICTION	NOTES
Congaree National Park		Richland County	
City of Camden and the Wateree River	Swamp Rabbit Trail	Kershaw County	As identified in the Kershaw County Bicycle, Pedestrian, Greenways Plan (2013)
Gills Creek Watershed	Proposed Trail	Richland County	As identified by the Gills Creek Middle Watershed Master Plan (2013)
Lake Murray (and Lake Murray Visitors Center)	Proposed Lower Saluda River Greenway	Lexington County	As identified by the Central Midlands Council of Governments
Harbison State Forest		Richland County	Broad River Road bridge provides a bicycle and pedestrian crossing from the preferred Palmetto Trail alignment to the western bank of the Broad River
Downtown Newberry		Newberry County	Preferred Palmetto Trail alignment in Newberry County does not link directly to downtown Newberry
City of Sumter	Carolina Connector State Bicycling Route	Sumter County	As identified by the South Carolina Department of Parks, Recreation, and Tourism and South Carolina Department of Transportation
City of Florence	Carolina Connector State Bicycling Route	Florence County	As identified by the South Carolina Department of Parks, Recreation, and Tourism and South Carolina Department of Transportation

Lowcountry Priority Expansion Areas

CONNECTIONS/DESTINATIONS	CONNECTING FACILITY	JURISDICTION	NOTES
Georgia, North Carolina, and Atlantic Coastal communities	Southeast Coast Saltwater Paddling Trail	Charleston County	The Southeast Coast Saltwater Paddling Trail, East Coast Greenway, and Awendaw Passage of the Palmetto Trail converge at the Atlantic Ocean near Awendaw.
Georgia, North Carolina, and Atlantic Coastal communities	East Coast Greenway	Charleston County	As identified in the Charleston Area Transportation Study (CHATS) Long Range Transportation Plan (2010) and the Charleston County Parks, Recreation, Open Space, and Trails Plan (2013)
Town of Awendaw	East Coast Greenway and proposed Multi-use Trail	Charleston County	As identified by Town of Awendaw and Berkeley Charleston Dorchester Council of Governments
Francis Marion National Forest Interior Trails		U.S. Forest Service (USFS)	As identified by USFS staff
Edisto River, Givhans Ferry State Park, and the City of Moncks Corner	Coastal State Bicycling Route	Berkeley and Dorchester Counties	As identified by the South Carolina Department of Parks, Recreation, and Tourism and South Carolina Department of Transportation
East Edisto development and Cities of Moncks Corner and Summerville	Proposed Trails and On-street Facilities	Berkeley and Dorchester Counties	As identified within East Edisto master plans

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5

Marketing & Branding Strategy

"The Palmetto Trail's identity has **evolved from a visionary concept** for the state of South Carolina to a physical amenity used by a **wide variety of residents and visitors alike**."

OVERVIEW

As the Palmetto Trail has developed, segment by segment, over the last twenty years, South Carolinians and adventure seekers from around the region and around the country have come to know the **trail's signature palmetto tree brand**. For much of the last two decades, trail users have **recognized the Palmetto Trail as an idea** rather than an accessible destination, or as an isolated trail segment, rather than an interconnected cross-state trail. **The Palmetto Trail's identity has evolved from a visionary concept** for the state of South Carolina to a **physical amenity** used by a wide variety of residents and visitors alike. With a majority of the original mountains-to-sea route built, the Palmetto Trail is now a vision being realized with a personality all its own.

The following chapter of the Master Plan focuses on a Palmetto Trail Marketing Plan. This multifaceted initiative is crafted to **provide a brand standard, imagery, strategies, and tactics to advance awareness of the Palmetto Trail.** PCF has already launched numerous promotion efforts, such as the Palmetto Trail web pages, consistently active Facebook and Twitter feeds, a new OnCell call-in program, press conferences for important announcements, and special events to celebrate the development of each new section of trail. These efforts should continue. Outdoor recreation programs such as the Junior Trailblazers, Senior Explorers, and the Glendale Outdoor Leadership School raise awareness of the trail as well.

GOALS FOR TRAIL USAGE, BRANDING, & PROMOTION

By presenting a Marketing and Branding Strategy, this **Chapter provides a framework for advancing this Master Plan's overall goals related to trail usage, branding, and promotion, as cited throughout this plan**. Through a coordinated approach to increasing awareness of the Palmetto Trail, PCF can achieve progress with each of the following:

- Facilitate **overnight trips**
- Establish programs that **increase usage** of the Palmetto Trail and attract a **broad range of ages and trail users**
- Promote the Palmetto Trail as a **unique opportunity to walk across South Carolina**
- **Promote the stories** of South Carolina's **small towns** along the Palmetto Trail
- Establish the Palmetto Trail as an **economic development strategy** for rural communities
- Establish the Palmetto Trail as the c**onduit connecting communities**, local and state destinations, geographies, health, quality of life, and economic vitality in South Carolina
- Promote the Palmetto Trail as a **complement and linkage to other long-distance trails** such as the Carolina Thread Trail and Foothills Trail
- Establish a reliable, well-known, **online source for up-to-date information** about the Palmetto Trail
- **Proactively share up-to-date information with partners** in promotion (such as www.SCTrails.net and the South Carolina Heritage Corridor)
- Establish support for and recognition of the Palmetto Trail as **"South Carolina's Trail"** at the state level

Through this Marketing Plan, PCF can **leverage existing promotions through reinforcing the brand with a targeted approach**.

A key goal of this Plan is to ensure that branding and imagery remain consistent throughout all materials, messaging, and representation of the trail. Coordinating consistent signage and messaging is challenging for the very reasons that make the Palmetto Trail unique. Among them:

- The variety of trail types
- The wide ranging contexts for trail segments (from rural to urban)
- A unique mix of landowner, land managers, and partner agencies

This chapter can serve as a **shared work plan for both PCF and local partners** along the Palmetto Trail to contribute towards trail promotion, while also benefiting from increased awareness. As the life of the trail continues, strategies, target markets, and tactics will change to accommodate the needs of the trail and communities in South Carolina.

BRANDING AND MARKETING THE TRAIL

What is a brand?

Branding is a widely used term to describe the perception of a product or service in a target audience's mind. David Ogilvy said it best - **a brand is, "the intangible sum of a product's attributes."** This includes all images, thoughts, and feelings evoked when interacting with a product or service – not just a logo or name.

"Your brand name exists objectively; people can see it. It's fixed. But your brand exists only in someone's mind". For a trail, a brand includes user experience, logo, signage, purpose, safety, comfort, programming, funding, sponsors, and supporters. Everything from how you write an email to the attitude of a person answering the phone reflects a brand.

Vocabulary and Personality

Brands can also be seen as personalities. If a person were to meet the Palmetto Trail walking through the woods, what would he/she say? How would he/she treat people? Would the trail be a conservationist? Would the trail shake your hand, or give you a hug? Personification conjures images and evokes emotions.

Vocabulary is often an excellent starting point for creating a brand and defining "who" this person is.

This vocabulary, along with the mission of the Palmetto Conservation Foundation, connotes a certain type of person.

Images associated with the trail, including the logo and page personality should be **fresh, bright, and reflect this purpose and mission**.

PCF has launched numerous promotion efforts for the Palmetto Trail, including many successful programs such as the Junior Trailblazers and the Glendale Outdoor Leadership School.

Outcomes and Target Audiences

Three key themes for establishing measurable outcomes have emerged during the planning process for the Palmetto Trail. The marketing plan sets the foundation for achieving these outcomes over the lifetime of the trail. Each outcome further defines which audiences PCF needs to pursue and how to craft messages. The outcomes and target audiences inspire different strategies. **These recommended approaches should be constantly evaluated** for effectiveness, modified to suit the current economic and cultural climate, deleted if deemed ineffective, and continuously augmented with new tactics. **Common themes for outcomes** as expressed among PCF, supporters, and users include:

- Create awareness of the trail to increase use, garner public support, and strengthen communities in South Carolina.
- Provide a foundation for trail benefits that can be used to gain funding for implementation, amenities, and maintenance.
- Establish a sense of community and ownership to encourage people to volunteer to help build and maintain the trail.

IF THE TRAIL WERE DESCRIBED AS A PERSON, HE/SHE WOULD:

- Be welcoming, and eager to connect people with other people as well as new places.
- Enjoy discovery and would shepherd others along the path of education and exploration.
- Be mindful of their purpose for keeping people safe, preserving nature, promoting health, and strengthening communities.
- Value accomplishing goals, and would be eager to share new ideas and wisdom from experience.
- Have a rich cultural history and would hope to tell the world their stories.
- Be hip and like to be part of the crowd.
- Reach out to many different types of people, hoping to become their friend, while staying true to their mission in life.

Target Audiences

Target audiences are often difficult to define for trails. They seem to serve all residents and visitors and many trails require messaging specific to oppositionists. **Narrowing the target audience is helpful** in determining which strategic measures can be reasonably executed. Categorizing targets provides clear direction for tactics and enables prioritization for actions and funding.
The list on the following page presents three targeted outcomes and their corresponding target audiences.

How can PCF draw upon this bike's rider's linkages to his or her surrounding community? Reaching out to adventure and outdoor groups and sporting/cycling goods stores for event sponsorship or other support might by one technique. Image source: Backpackinglight.com

AWARENESS

- Local residents
- Advocacy groups
- Recreation providers
- Schools
- Visiting hikers, bikers, and tourists (regional, national, and international visitors)
- Outdoor adventure groups and promoters
- Home school and other informal educators, after school groups
- Seniors
- Veterans
- Elected officials

FUNDING

- Local government
- Businesses
- Fundraising organizations
- Medical profession and public health community

VOLUNTEERS

- Local government
- Youth organizations
- Businesses
- National volunteer placement organizations
- Clubs for trail user group (mountain biking clubs, geocachers, etc)
- Church and faith based groups
- University groups, outdoor recreation programs, and conservation groups

RECOMMENDED STRATEGIES

Using the **three targeted outcomes of Awareness, Fundraising, and Volunteers** as our guide, the following recommended strategies offer practitioners implementable programs, research opportunities, public events, and more. **When used as a concerted whole, the recommended strategies would welcome a variety of users to discover the wonders of the Palmetto Trail.** Additionally, several of the recommended strategies enhance the economic development and public health improvement opportunities of the trail by identifying ways to work with local partners to quantify these outcomes. Such work would continue to support the Palmetto Trail's conception as a robust asset to the state of South Carolina.

Brand Development

Targeted Outcomes: Awareness, Fundraising

Description: Building on the development of new logos for both the Palmetto Trail and PCF, develop a cohesive brand identity for marketing the Palmetto Trail to residents, visitors, and potential funders. The branding should include a logo, colors, fonts, and a design guide to be used for all trail collateral. The branding exercise should explore the character of the trail and the ideal image to be projected.

Local Partnership Role: Branding guidelines should be clear and easy to follow so that partners can adhere to them. Where needed, plug-and-play templates and graphics files should be developed for ease of use.

The Palmetto Trail
• A PROJECT OF PALMETTO CONSERVATION •
Est. 1994

The Palmetto Trail logo is eye-catching, visually appealing, and cleverly plays upon the trail's path through the state,

Examples:

Northwest Arkansas Razorback Greenway: **http://www.razorbackgreenway.com/**

The Intertwine Alliance, Portland, OR: **http://theintertwine.org/**

CV Link, Coachella Valley, CA: **http://www.coachellavalleylink.com/**

Kentucky Trail Towns, KY: **http://www.kentuckytourism.com/!userfiles/Industry/Adventure/4%20-%20Trail%20Town%20How%20to%20Guide.pdf**

Wayfinding Design and Implementation

Targeted Outcomes: Awareness

Description: Design and implement a comprehensive wayfinding system that brands the trail through each community.

Local Partnership Role: As a component of this sign family, walk/bike timing should be researched and noted for nearby destinations (restaurants, retail, restrooms, etc.). Signage should also be designed for, and placed outside of the trail system to advise potential users of their proximity to the trail system.

Examples:

Transforming Urban Trail Wayfinding by Go! Dallas, TX: **http://www.youtube.com/watch?v=caeqJUZ-SWo**

Park to Playa Trail Wayfinding, Baldwin, CA: **http://www.parks.ca.gov/pages/795/files/park%20to%20playa%20trail.pdf**

Palmetto Trail App

Targeted Outcomes: Awareness

Description: Create a smart phone application (or "app") that links to a smart phone user's GPS system. This app should provide navigation assistance while on the trail. App users should also be able to easily determine, at any location, how far they are from the trail system. Parking, trailheads, restrooms/comfort stations, and other trail amenities should be indicated within the mapping system. Information collected for use in PCF's OnCell service may provide a useful base of information to include within the app. A communication tool such as See Click Fix should also be accessible via the app for users to report maintenance issues along the trail. QR codes should be placed on all kiosks and community directional signage to lead both iPhone and Android users to download sites.

Wide, open vistas along the trail convey serene beauty. Using the OnCell free mobile tour allows visitors to learn about environmental and educational information that tells the backstory behind these beautiful panoramas. The tour contains points of interest with historical details and more.

Local Partnership Role: QR codes should be placed on all kiosks and community directional signage to lead both iPhone and Android users to download sites. Where agencies other than PCF provide ongoing trail maintenance, reported maintenance issues should be forwarded to a single point of contact at the local jurisdiction.

Examples:

RGreenway, Raleigh, NC: **http://rgreenway.com/**

Forest Park, Portland, OR: **http://forestparkpdxapp.info/**

Transit & Trails, Bay Area, CA: **https://itunes.apple.com/us/app/transit-trails-find-plan-share/id415996890?mt=8&ign-mpt=uo%3D4**

Redesigned Website

Targeted Outcomes: Awareness, Fundraising, Volunteers

Description: Update the online presence of the Palmetto Trail to create a dynamic environment that encourages repeat visits. Using the existing PalmettoTrail.org URL, establish a standalone website for the trail that is distinct from the PCF website. The trail website should seamlessly reflect the personality of the Palmetto Trail logo, using the same colors, complementary fonts, and corresponding style.

The website should be organized to serve the needs of trail users (or potential trail users) visiting the site, first and foremost. The site should also provide information about trail sponsorship and volunteerism. Trail users will need information based on trail user type (hiker, biker, geocacher, etc) and ability, an opportunity to report maintenance issues, and maps.

Printable maps of each passage of the trail, legible to the layman map reader, should be provided on the site. Using Google technologies, the site should include an interactive map that allows the user to zoom in and out of a bird's eye view of the statewide trail route, and upload or view geocoded user-submitted photos from along the trail.

SOCIAL MEDIA & PCF

Integrating PCF's already successful Facebook and Twitter feeds within the site will add to its dynamic nature, providing real-time news and information.

PCF should encourage trail users, volunteers, and sponsors to submit stories and photos related to the trail (on an ongoing basis) and regularly post the stories to a blog on the site.

Photographs uploaded by trail users grant humanizing and democratizing elements to online maps and other pages. After visiting the trail, tourists and South Carolina natives alike can return home and check to see if their photographs, notes, "tweets", and Facebook statuses made it to the trail's websites. Image Source: PCF

The interactive map will allow new trail users to better locate trailheads and parking areas before setting out to find a Palmetto Trail passage.

The geocoded photos will provide a de facto virtual tour of each trail segment, highlighting attractions along the trail and allowing new trail users to feel more comfortable in their trip planning.

Local Partnership Role: Link to the Palmetto Trail website from those of the local municipality, the county, and partner community groups.

Examples:

The Intertwine Alliance, Portland, OR: **http://theintertwine.org/**

Trailahassee, Tallahasse, FL: **http://trailahassee.com/**

National Trails Day Events

Targeted Outcomes: Awareness

Description: Special events are a useful tool for inviting new users to experience the trail and obtaining media attention for the trail. However, a single event on one section of trail in one area of the state is unlikely to garner attention across South Carolina. With a goal of blitzing media outlets and gaining media coverage that will convey the true sense of the Palmetto Trail, PCF should seek to host a National Trails Day event on every passage of the Palmetto Trail in one single weekend. The events would vary in size and in variety of activities - whether volunteer maintenance or a guided hike or bike along the trail – but would be tied together through a coordinated media campaign identifying the events as part of a singular statewide trail program. A tagline (such as "Our state, Our trail") would be needed to reinforce the key takeaway from the event – that South Carolina has a singular statewide trail worthy of good stewardship and community investment.

Local Partnership Role: Host a National Trails Day event on each local section of the Palmetto Trail.

Grand openings are not the only causes for media attention. Media outlets are often interested in covering stories regarding local trail development. Since the Palmetto Trail graces the entire State of South Carolina, there are numerous opportunities for both local and statewide news reports and coverage. This photograph shows a small-sized, casual event from another state. These events encourage visitor attendance and sometimes even visitor participation.

TRAILS DAY EXAMPLE: "IT'S MY PARK DAY!" – AUSTIN, TX

A similar structural model for the event can be found in It's My Park Day! hosted by the Austin Parks Foundation in Austin, TX. On a single Saturday each Spring, nearly 100 maintenance events are hosted in parks across the city. During the 2013 event, nearly 3,500 volunteers participated in 90 different park projects, contributing over 10,000 hours of volunteer labor. That contribution is equivalent to 5 park maintenance employees working full-time for a year. All told, including labor, this one day represented an investment of approximately one quarter of a million dollars for Austin's parks.

Examples:

American Hiking Society, National Trails Day: **http://www.americanhiking.org/national-trails-day/**

American Trails, see Promotion section: **http://www.americantrails.org/resources/advocacy/index.html**

It's My Park Day, Austin, TX (multiple maintenance events hosted on a single day): **http://www.austinparks.org/its-my-park-day.html**

Targeted Media Relations

Targeted Outcomes: Awareness

Description: PCF's relationship with local and statewide media contacts in radio, television, and print outlets is an important resource. PCF already gains media coverage for news announcements such as trail openings, recreation programs, etc. In addition to this type of coverage, PCF should create an annual plan for gaining media coverage that highlights the entirety of the trail, rather than activities along a single passage. This would include a focused campaign to gain media coverage of the National Trails Day events (see previous Action Item for similar tactics). Other story ideas could include the results of an economic impact study of the trail, an annual effort to conduct trail user counts along the full length of the trail, a new campaign to "sell" every mile of the Palmetto Trail, etc. The stories should be carefully crafted and pitched to reporters with an interest in the mission of the trail. Establishing relationships with these writers, reporters, and editors is key to having the trail featured in the media.

Local Partnership Role: Support media coverage of the statewide Palmetto Trail through local media contacts. Notify PCF of news-worthy happenings on the local segment of the Palmetto Trail, including the development of new on-street or off-road bicycle and pedestrian facilities that link to the trail.

Examples:

South Carolina Department of Parks, Recreation, and Tourism (SCPRT) Story Ideas, SC: **http://www.scprt.com//media-room/StoryIdeas.aspx**

Midtown Greenway coalition, Minneapolis, MN: **http://midtowngreenway.org/news-and-developments/**

American Trails, "Marketing and Publicity Efforts are Key for Roaring Fork Outdoor Volunteers": **http://www.americantrails.org/resources/advocacy/Roaring-Fork-Outdoor-Volunteers-media.html**

Establish Community Grant Funds for Trail Programs and Trail Development

Targeted Outcomes: Awareness, Volunteers

Description: PCF has established recreation and outdoor education programs as a key piece of the organization's work in South Carolina. Programs like the Senior Explorers and Junior Trailblazers are introducing target groups of trail users to the Palmetto Trail. PCF should create a small grant program available to local governments or nonprofits with the goal of encouraging local partners to establish similar programs and find new ways to connect target audiences with their local trail passage. The grants would provide up

Giving volunteers meaningful work will encourage pride in the Palmetto Trail and could also result in positive branding via enthusiastic "word of mouth" reports. Small grants, such as those described in this section, could generate money for the equipment required to support these activities as well as continued publicity of their occurrence.

GRANTS: SAMPLE NUMBERS

Up to $5,000 in grant monies could be used for programming and ways to connect target audiences with their local trail passage.

$10,000 to $50,000 in grant monies could connect new trail segments to the Palmetto Trail or could purchase physical upgrades to an existing trail connection.

Amenities along the trail, such as places to rest and bike racks in urban areas (such as these, photographed in Illinois), help the trail reach its full potential in terms of environmental, economic, and public health benefits.

to $5,000 in funding for programs that use the Palmetto Trail as an outlet for group activities – whether it be a weekly children's nature walk, a monthly women-only bike ride, etc. The grant program should also be structured to provide a direct connection with volunteerism on the trail. This could include requiring grant recipients to host one volunteer workday on the trail or to "adopt" their local passage of the trail for one year. As a complement to the grant opportunity for trail programs, PCF should establish a grant opportunity for trail development and trail improvement projects. Depending on funding available, the grants would provide $10,000 to $50,000 in grant monies towards development of a new trail segment that will connect to the Palmetto Trail, or physical upgrades to an existing trail connected to the Palmetto Trail.

Local Partnership Role: Apply for grant funds and create new or continue successful programs that bring community members onto the Palmetto Trail. Apply for funds for trail development and leverage any grant monies received with local investment. Encourage stewardship of the trail through these programs.

Example:

American Hiking Society National Trails Fund Grant (national): **http://www.americanhiking.org/national-trails-fund/**

The Community Watershed Stewardship Program, Portland, OR: **http://www.portlandoregon.gov/bes/43077**

Park Grants Program, Austin, TX: **http://www.austinparks.org/park-grants-program.html**

Usage and Impact Analysis

Targeted Outcomes: Fundraising

Description: Long-distance trails across the country are recognizing their value to state and local economies and investing in programs that effectively give credence to and quantify those benefits. While trails are frequently associated with connecting users to nature and providing an amenity for recreation and physical activity, their economic impact is often overlooked. PCF should commission a trail usage and economic impact study that will provide baseline data of activity on the Palmetto Trail and the dollars gained from the direct spending of trail users (food, accommodations, etc), as well as indirect impacts, such as reduced health care and transportation costs. Through quantifying benefits of the trail, PCF strengthens its case for seeking donated funds, capital investment dollars, and gaining local community support for implementing new sections of trail.

Local Partnership Role: Provide locally collected data/research regarding trail usage (such as the usage study on the Mary Black Rail Trail in Spartanburg) and/or identified benefits.

Example:

Silver Comet Trail Economic Impact Analysis and Planning Study: **http://www.bwnwga.org/wp-content/uploads/02_SCT_Trail-Usage-Evaluation.pdf**

Benefits Cut Sheets

Targeted Outcomes: Awareness, Fundraising

Description: Different organizations and companies identify with different benefits of the trail. Some companies may see value in the health benefits, while others may relate to the habitat or water quality impacts. PCF should identify a series of benefits and establish a fact finding and research/recording program to compile information on how the trail supports that benefit. Each series of information can be crafted into separate benefit sheets to use when approaching potential donors.

Local Partnership Role: Provide locally collected data/research regarding trail usage and/or identified benefits.

Examples:

Silver Comet Trail Economic Impact Analysis and Planning Study: **http://www.bwnwga.org/wp-content/uploads/02_SCT_Trail-Usage-Evaluation.pdf**

Rails to Trails, see Benefits Fact Sheets sidebar: **http://www.railstotrails.org/ourWork/trailBasics/benefits.html**

Regional Advertising Campaign

Targeted Outcomes: Awareness

Description: For many lovers of outdoor recreation, long-distance trails are an attraction worthy of traveling hundreds of miles to experience. Studies of usage of long-distance trails such as the Virginia Creeper Trail and the Silver Comet Trail reflect high numbers of visitors traveling from counties and states throughout the region. PCF should partner with the South Carolina Department of Parks, Recreation, and Tourism to launch a one-year advertising campaign promoting the Palmetto Trail to residents of Virginia, North Carolina, Tennessee, Georgia, Alabama, and Florida. The campaign should include billboards, magazine ads, and additional print and tv ads, where possible. PCF should budget to repeat this type of advertising campaign every 3 to 5 years.

COMBINING ECONOMIC & ENVIRONMENTAL BENEFITS FROM TRAIL SYSTEMS

In addition to the economic benefits to surrounding communities from increased State revenue and other economic benefits, trail systems' environmental benefits save money in the long-term.

According to the Rails to Trails Conservancy, greenways save money by acting as natural water filtration and cleansing systems. They serve as flood plains to mitigate against flood damage. They also act as buffer zones to protect bodies of water (such as streams and rivers) from fertilizer and pesticide run-off from nearby farms (source: http://www.railstotrails.org/resources/documents/resource_docs/tgc_economic.pdf).

Local Partnership Role: Participate in the regional campaign by contributing funds for promotion of local trail segments and local trail amenities for tourists (such as a local bed and breakfast, coffee shop, outfitter store, etc).

Examples:

Travel Oregon, OR: **http://traveloregon.com/**

Pedal Minnesota, MN: **http://www.pedalmn.com/**

Cuyuna Billboard: **https://www.google.com/search?q=billboard+cuyuna&rls=com.microsoft:en-US:IE-Address&rlz=1I7SKPT_enUS482&source=lnms&tbm=isch&sa=X&ei=LyiBUsHUAtG-4AONq4GoCw&ved=0CAkQ_AUoAQ&biw=1495&bih=1053#imgdii=_**

Volunteer Vacations

Targeted Outcomes: Volunteers

Description: National organizations like the American Hiking Society (AHS), the Sierra Club, and the United Way coordinate what are known as "volunteer vacations." For student volunteers, these come in the form of an "alternative spring break." The concept is to recruit volunteers from elsewhere in the U.S. with similar interests to one another, and assign them to a week of volunteering on a project in need. For the AHS and Sierra Club, this generally comes in the form of trail development and maintenance. PCF has capitalized on these opportunities in the past. As the final segments of the trail are developed and PCF establishes long-term strategies for trail maintenance, these volunteer vacations can fill an important niche. PCF should identify at least one project a year to offer as a volunteer vacation and facilitate local partners in their efforts to use volunteers for trail improvements. As a way to encourage local stewardship of trail segments, while still overseeing trail projects, PCF should establish a program in which it releases a "Call for Projects" from local partners and, through competitive selection, identifies which projects will be submitted as candidates for nationally recruited volunteer vacations. This allows PCF to use its experience in securing volunteer vacationers and managing the logistics of such an effort, while engaging local partners in trail improvements.

Local Partnership Role: Identify local projects appropriate for volunteer assistance and work with PCF to seek nationally recruited volunteer vacationers.

Examples:

American Hiking Society: **http://www.americanhiking.org/volunteer-vacations/alternative-break/**

American Trails, Volunteers & Service Corps: **http://americantrails.org/resources/volunteer/indexhtml**

PCF, local organizations, or national organizers can create volunteer programs and vacations to foster partnerships in trail improvements.

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PALMETTO
TRAILHEAD

CHAPTER 6
Wayfinding & Signage Plan

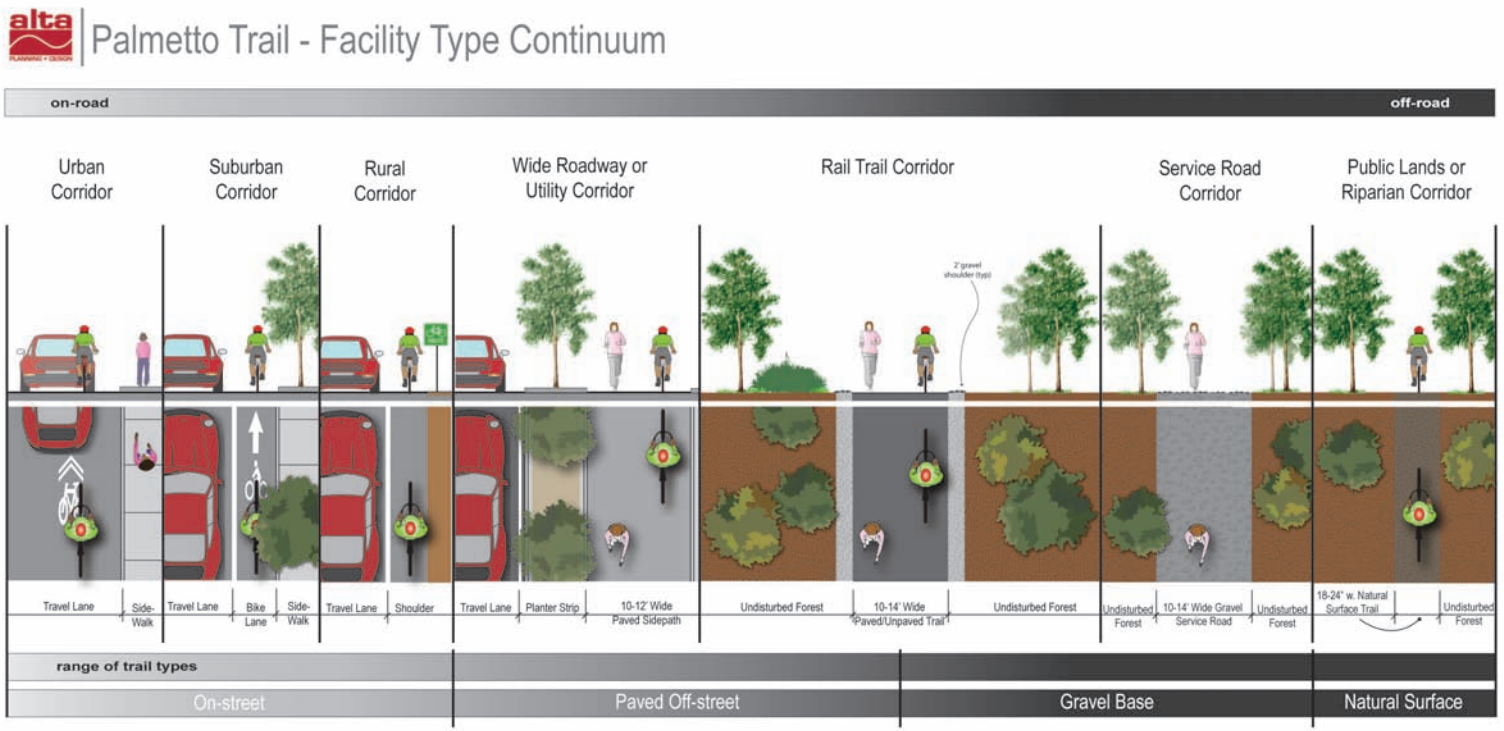
"The existence of wayfinding signage on trails and on-street routes is an **important amenity to trail users** and is **crucial to a trail's success and popularity**."

GUIDANCE FOR WAYFINDING AND SIGNAGE

Context of the Palmetto Trail

The Palmetto Trail traverses many different regions, towns, and municipalities across South Carolina, showcasing the variety of landscapes that make up the state. **The current signage along the trail is an eclectic mix of types and styles reflective of the local areas they occupy.** The trail typologies along the Palmetto Trail, which have been identified for the purposes of this Master Plan, play an important role in determining what type of signage is most suitable for each of the varying contexts of trail passages. The wayfinding and signage recommendations of this Plan correspond to the facility type continuum shown below.

If PCF institutes an economic development initiative in communities connected to the Palmetto Trail (see: 'Kentucky Trail Towns' program link, Chapter 5), signage can greet visitors, help establish the "gateway moment" discussed in the Trail Towns approach, and connect them with tourism resources.



Existing Palmetto Trail Signage

Across the roughly 350 miles of existing Palmetto Trail passages, signage exists to orient trail users and confirm trail routes. There is not, however, consistent sign typology that portrays the Palmetto Trail. The trail is identified in a variety of texts, logos, colors, and materials. Variation occurs based on landowner, locality, and context, as well as other factors. Trail passages within state parks and USFS land or along state roads offer signs that meet the standards of those agencies and provide a complementary style. Local communities that have chosen to implement their own trail signage often use their own design and understate connections to the Palmetto Trail, as a statewide trail network. Additionally, Palmetto Trail's existing signage varies based on context, such as the use of a painted blaze along a remote forest passage or the use of a thematic, fully-designed kiosk along a feature urban passage.

Overall, many of the existing forms of signage on the trail do not clearly identify the trail as part of the statewide Mountains to Sea route. The inconsistency of the Palmetto Trail's representation in these signs does little to impart public awareness or recognition of the Palmetto Trail to trail users. Where wayfinding signage currently exists, each turning movement is identified, but trail users are provided little to no reassurance of their route as they travel between turns. This type of confirmation signage is critical for creating a sense of comfort and safety among trail users. Because the context and feel of trail passages varies so drastically across the Palmetto Trail, the importance of consistent signage that reassures the trail user of his or her route is heightened.

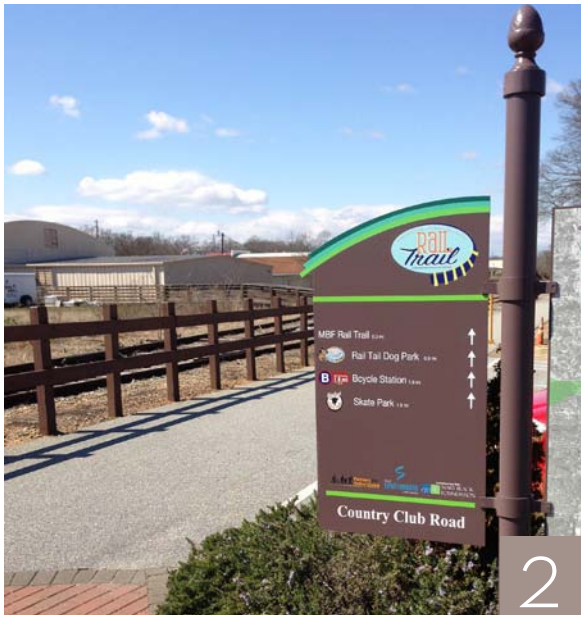
The following are examples of the existing signage found on the Palmetto Trail:

1

Some signage such as this Peak to Prosperity Passage map kiosk, below, incorporates the Palmetto Trail logo and illustrates the larger context of the Palmetto Trail. The sign's aesthetic is playful and appropriately themed to reflect the nature of this particular passage and of the local community.

2

An example of locally developed directional signage is elegant and in excellent condition. However, there is no evidence that the trail is part of the Palmetto Trail network.



2

3

The suburban regulatory signage offers a more simplified and subtle look that identifies the Palmetto Trail through the use of the logo. The regulatory element of the sign, however, dominates and is incongruous with the Palmetto Trail plaque.

3

4

The back side of the suburban directional signage represents a more consistent aesthetic. The widths of the individual plaques align, and the same color is used on both.

4

5

A similar sign is used in the urban section of the Capital City Passage, though the size differs. The logo identifies the route as part of the Palmetto Trail, the design matches other trail signage, and the sign is used consistently for the entire length of the passage.

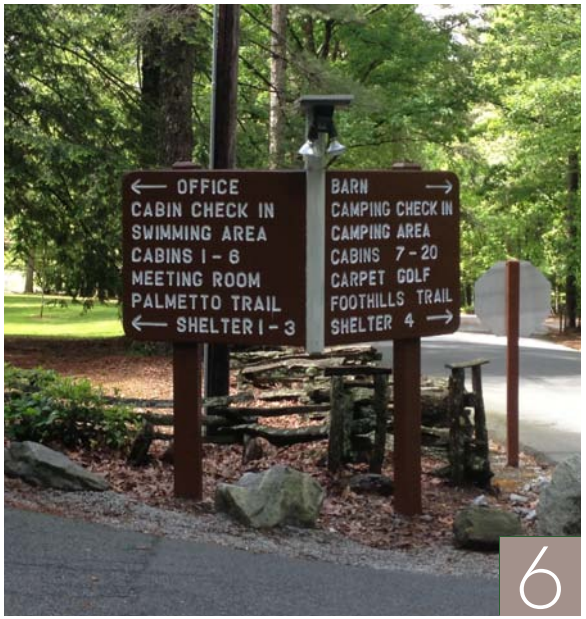
5

6

In many cases, the Palmetto Trail signage must comply with the style of the partner agency's signage guidelines such as in State Parks. The directional signage shown here does not emphasize any particular destination or information. All of the text is the same font, color, and size and provides a uniform aesthetic representation of the State Park's signage guidelines.

7

In more remote trail segments, local area blazes can be found on trees marking the trail alignment. These blazes act as navigational beacons and are an inexpensive way to mark a trail.



6

7

8

Natural surface trail markers provide identification for the Palmetto Trail in the form of a logo and also provide regulatory information through the use of a pictogram.

9

The natural surface trail map shown is a good example of balancing localized trail information with identification of the larger Palmetto Trail network.

8

9

Signage Principles

The existence of wayfinding signage on trails and on-street routes is an important amenity to trail users and is crucial to a trail's success and popularity. **Off-street trail signage increases comfort levels on trails, assists in trail navigation, warns of approaching roadway crossings, and guide users through diverse environments**. Trail signage for on-street trail routes provide similar functions as off-street trail signage but have a larger audience by addressing other modes of transportation such as the automobile. **On-street wayfinding not only provides direction but creates an awareness of the trail within the vehicular-based context**. The safety benefits of on-street wayfinding signs equal that of their navigational benefits.

In general, wayfinding's purpose is to direct people and provide information about destinations, directions, and/or distances. When applied on a regional level, wayfinding can link communities and provide consistent visual indicators to direct bicyclists and pedestrians to their destinations along the route of their choice. **Wayfinding signage increases the legibility of the trail system** as well as achieving public objectives, such as promotion of community's attractions, education, mile marking, and directional guidance. At the local level, effective wayfinding systems address both recreation and transportation perspectives by considering the needs of bicyclists, pedestrians, and motorists in on-street and off-street situations.

The Palmetto Trail's wayfinding system will effectively address both regional and local environments in order to provide an informative, functional, and comprehensive navigational signage system to enhance trail users' experience of the Palmetto Trail.

Wayfinding Signage Goals

- Enhance awareness for users that they are along a larger, state-wide trail network
- Improve wayfinding along the Palmetto Trail
- Improve connections to the Palmetto Trail from adjacent communities
- Improve connections from the Palmetto Trail to nearby amenities, cultural destinations or recreational destinations.
- Enhance education opportunities about local history, amenities, culture and ecology
- Establish wayfinding management and maintenance standards

Introduction to Sign Types

A multitude of trail wayfinding and signage types exist today but proper selection and correct use of a select few of these types can provide successful **identification, branding, and navigation of a bicycle, pedestrian, and trail network**. This section identifies sign types that are the most appropriate for an on and off-street network of trails, and that will serve as a basis for a comprehensive and cohesive wayfinding system for the Palmetto Trail both regionally and locally.

MAKING CONNECTIONS

The destinations identified through wayfinding signage can be linked to the destinations and attractions identified through the newly developed Story Map and the OnCell program, noted in Chapter 5: Marketing & Branding. Additionally, local partners can play a role in working with PCF to determine noteworthy destinations.

Some Palmetto Trail passages, like the Saluda Mountains Passage, offer interpretive signage in addition to kiosks and directional signage.

A FULL PALETTE FOR PALMETTO

We have crafted a palette of sign types for the full range of trail types identified in the Palmetto Trail typology: from urban corridors to public lands/riparian corridors. The signage types cover both on-street and off-street situations and offer varying informational messages.

SIGN TYPES PROPOSED FOR THE PALMETTO TRAIL

- **Trailhead Monuments**
- **Map Kiosks**
- **Directional Signage**
- **Loop Map**
- **Blaze**
- **Confidence Markers**
- **Pavement Markers**
- **Regulatory Signage**

The sign types include regulatory information, regional and cultural details, identification markers, biking/walking distances and timing, and geographical references. Each signage component works together to complete a system of comfortable bike and pedestrian routes for multiple types of trail users. Recreational and transportation users are considered when placing each sign type but trail non-users benefit by an awareness of the proximity and abundance of the many "passages" or trail segments of the Palmetto Trail. These "passages" occur both on and off-street and will therefore require different signage types and approaches specific for the various contexts a nd situations.

Primarily, these will be categorized into On-Street and Off-Street wayfinding typologies.

On–street and Off–street Wayfinding Mechanisms

On-street wayfinding mechanisms will not only benefit bicyclists and pedestrians but will provide a **safety measure** for other modes of transportation by creating a constant reminder of the presence of the Palmetto Trail users. An imposed awareness of trail users and their routes will **deter accidents and increase safety for all**. On-street signage within this category will vary in scale but must be capable of conveying messages to trail users and non-users from a variety of distances and speeds.

Contrary to the on-street signage types, the **off-street wayfinding signs will cater to a more focused, trail-oriented audience** and will be **pedestrian-scaled**. Primarily, these signs will not need to accommodate for the varied sight distances and high speeds that occur in an on-street trail situations. These signs will provide information that is specific to the trail itself with less attention given to nearby destinations or community information.

Both On and Off-street wayfinding signs can be further categorized by the type information that they convey.

These **informational categories** are:

- Orientation
- Informational
- Directional
- Identification
- Regulatory

Many signs have a primary purpose or message that corresponds to one of these informational categories, but some signs will have additional or secondary messages that are also conveyed to the users.

A GUIDE TO SIGN TYPES THROUGHOUT THE PALMETTO TRAIL & SURROUNDING COMMUNITIES

Informational components of a complete wayfinding signage system include:

Orientation: provides an overview of the geographical context (example – Map Kiosk).

Informational: provides general or specific information about a place (example – Informational Kiosk).

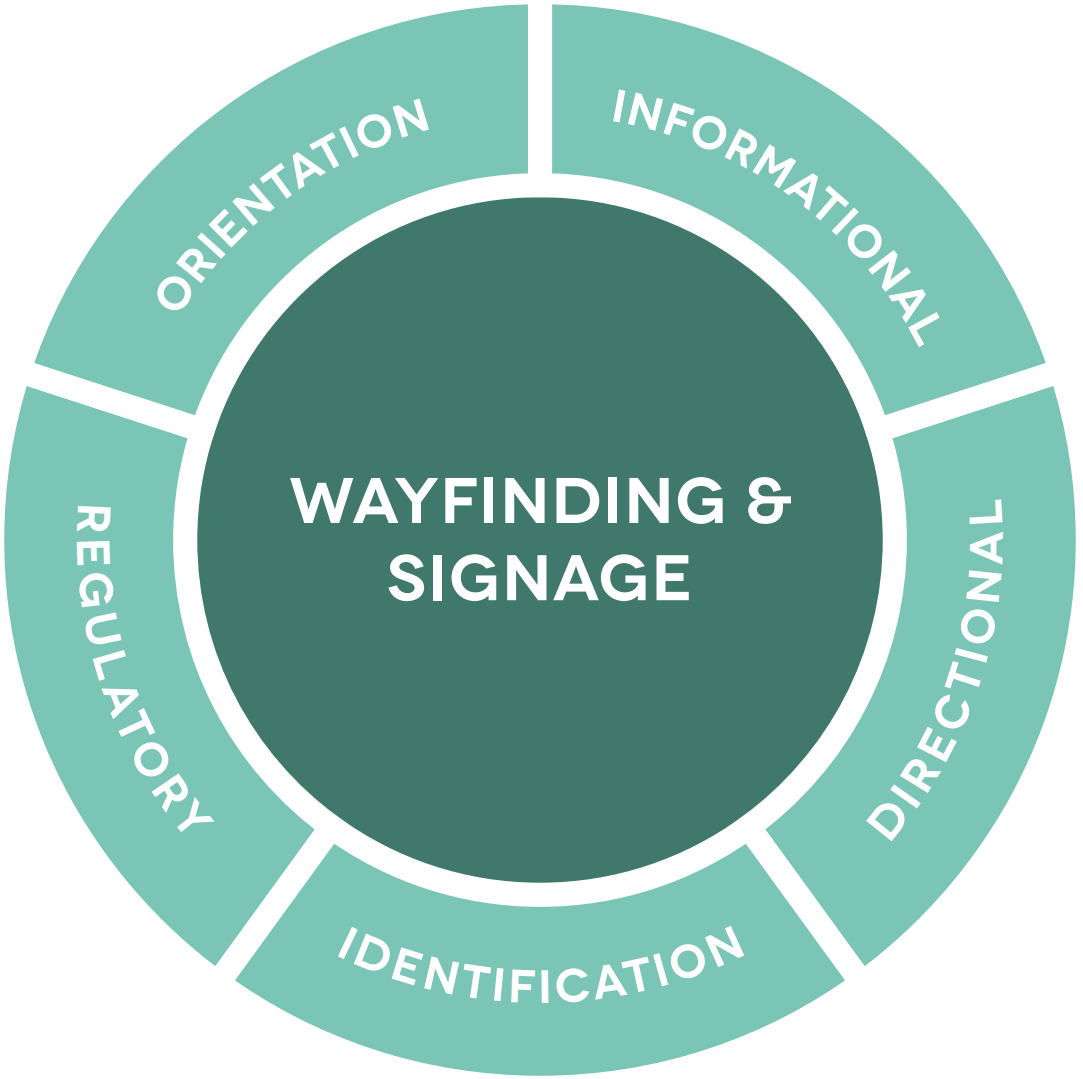
Directional: the circulatory system of the trail (example – Trail Directional Sign).

Identification: first and foremost, identifies the Palmetto Trail but often may identify specific elements of the trail (example -Trailhead Monument).

Regulatory: describes the do's and don'ts of the trail or place along the trail (example – allowed trail uses or hours).

A WAYFINDING KEY

Each element on the outside of this graphic describes a key goal. When developed in unison, a cohesive system would develop. The sign types described throughout the rest of this chapter will build a comprehensive wayfinding system for the Palmetto Trail.



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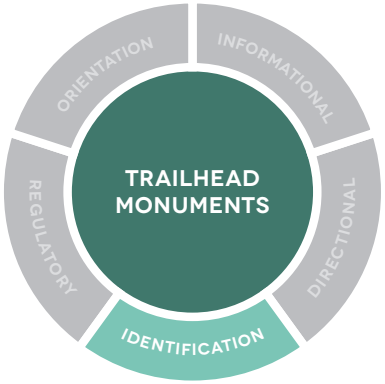


TRAILHEAD MONUMENTS

Serve as the **primary identification sign** of a trail. The sign is often two-sided and able to be viewed from multiple viewing angles. It will usually carry the same information on both sides.

On-street Trailhead Monuments

Those falling within the on-street category would typically be located adjacent to a roadway marking the entrance to a trailhead or trailhead parking area. These are larger and more visible monuments as they are addressing pedestrians, bicyclists, and motorists traveling at various speeds. These are intended to be tastefully eye-catching but not intrusive to the contextual environment. This wayfinding type is primarily for Identification but may also provide informational or directional messages.

Off-street Trailhead Monuments

Similar in function to on-street Trailhead Monuments, off-street versions are more likely to differ in size, intended audience, and might contain varying secondary information. In most cases, these should be located immediately adjacent to the entrance / exit of a trail and allows users to easily identify where they can enter a trail or where others will be exiting. These will be more pedestrian-scaled but the graphic content should be consistent with that of an on-street trailhead monument.

Recommended Guidelines for Trailhead Monuments

TRAIL FACILITY	URBAN CORRIDOR	SUBURBAN CORRIDOR	RURAL CORRIDOR	WIDE ROADWAY OR UTILITY CORRIDOR	RAIL TRAIL CORRIDOR	SERVICE ROAD CORRIDOR	PUBLIC LANDS OR RIPARIAN CORRIDOR
Sign Materials	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite
Sign Color or Finish	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette
Sign Structure	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal, Wood, or other synthetic material	Metal, Wood, or other synthetic material	Wood
Sign Structure Color or Finish	Painted	Painted	Painted	Painted	Painted or Stained	Painted or Stained	Painted or Stained

MAP KIOSKS

This is a **primary sign type that contains an overview** of entire Palmetto trail system and/or a more regional map of the trail system and its surroundings. The Map Kiosk is designed to **educate the viewe**r of the surrounding community and trail system and serve as system-wide education tools, trip planning devices, regulatory information centers, and interpretive signage. They can be thought of as "information hubs" and one of the most informative sign typologies. The kiosks may feature enlargement maps that orient users, allowing them to make decisions and follow progress on the trail.

These Map Kiosks are typically placed at trailheads or located at key points along the trail to identify users' locations within the overall and local trail networks.

On-street Map Kiosks

These should be set back from both vehicular traffic and bicycle/ pedestrian traffic to reduce potential congestion or conflict. One might find these types where a trailhead is located adjacent to an on-street bike route of sidewalk trail.

Off-street Map Kiosks

These would typically be located at trailhead entrances and parking lots. They are more removed from the streetscape environment or may occur at major trail intersections in the wilderness.

Recommended Guidelines for Map Kiosks

TRAIL FACILITY	URBAN CORRIDOR	SUBURBAN CORRIDOR	RURAL CORRIDOR	WIDE ROADWAY OR UTILITY CORRIDOR	RAIL TRAIL CORRIDOR	SERVICE ROAD CORRIDOR	PUBLIC LANDS OR RIPARIAN CORRIDOR
Sign Materials	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite
Sign Color or Finish	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette
Sign Structure	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal, Wood, or other synthetic material	Metal, Wood, or other synthetic material	Wood
Sign Structure Color or Finish	Painted	Painted	Painted	Painted	Painted or Stained	Painted or Stained	Painted or Stained

THESE SIGNS OFTEN:

- Mark the junction of two or more bikeways or trails.
- Inform bicyclists and pedestrians of the designated routes of the Palmetto Trail or to access key destinations.
- Provide distances and travel times to destinations. These are optional but recommended.
- Provide clear direction for pedestrians or cyclists to continue on the Palmetto Trail route.
- Could be a pavement marking as well as a traditional sign.

DIRECTIONAL SIGNAGE

The Palmetto Trail is incorporated to the South Carolina's expansive infrastructure as well as off-street trail networks and can be confusing without proper directional signage. Directional signs are one of the **key points of navigation** for the trail users both on and off-street. Their primary function is to provide direction for the trail users both to remain on the Palmetto Trail but possibly to other nearby attractions or destinations.

Users can orient themselves within the trail system based on key destinations including culturally significant landmarks, shopping districts, and other recreational facilities. These signs provide geographical context, reference points, destination direction, and approximate times in which to get there. This sign type functions like an abbreviated map showing geographical highlights of the communities or environments in and around the trail user.

On-street Directional Signs

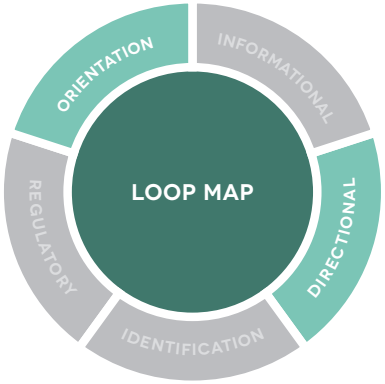
These are typically larger signs but might also be incorporated into standard MUTCD sign formats. They address pedestrians, bicyclists, and motorists at varying distances and speeds.

Off-street Directional Signs

Similar to On-street directional signage in function but likely differ in size, intended audience, and might contain varying secondary information. These will be likely located at trail intersections or along the trail to alert trail users of a destination.

Recommended Guidelines for Directional Signage

TRAIL FACILITY	URBAN CORRIDOR	SUBURBAN CORRIDOR	RURAL CORRIDOR	WIDE ROADWAY OR UTILITY CORRIDOR	RAIL TRAIL CORRIDOR	SERVICE ROAD CORRIDOR	PUBLIC LANDS OR RIPARIAN CORRIDOR
Sign Materials	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image
Sign Color or Finish	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette
Sign Structure	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal, Wood, or other synthetic material	Metal, Wood, or other synthetic material	Wood
Sign Structure Color or Finish	Painted	Painted	Painted	Painted	Painted or Stained	Painted or Stained	Painted, Stained, or Natural



LOOP MAP

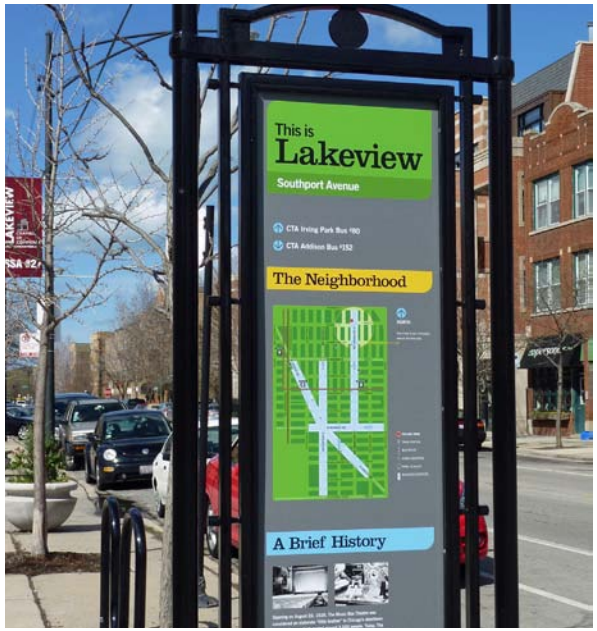
This signage type provides an **overview of the localized trail** that one is on or near the trail user. These maps could contain other types of information such as regulatory and informational messages.

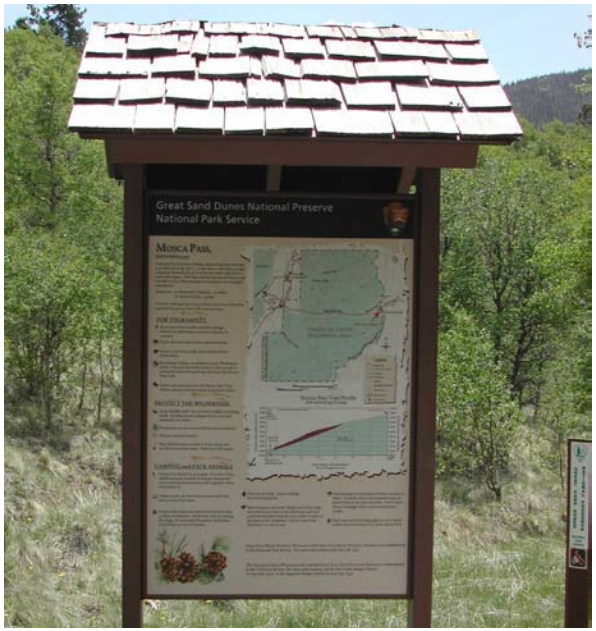
On-street Loop Maps

These maps will likely be in more of an urban context than the off-street loop maps and will likely show more streets and destinations for reference points on the maps than trails. An example might show an on-street bike facility network for a community and how the Palmetto Trail relates these.

Off-street Loop Maps

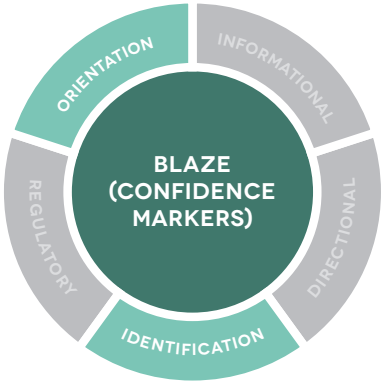
These are extremely important in rural or wilderness environments where it's the users first time on the trail or would have few points of visual reference due to the naturalistic setting. Off-street Loop Maps will provide orientation for the trail users within the natural context.





Recommended Guidelines for Loop Maps

TRAIL FACILITY	URBAN CORRIDOR	SUBURBAN CORRIDOR	RURAL CORRIDOR	WIDE ROADWAY OR UTILITY CORRIDOR	RAIL TRAIL CORRIDOR	SERVICE ROAD CORRIDOR	PUBLIC LANDS OR RIPARIAN CORRIDOR
Sign Materials	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image
Sign Color or Finish	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette
Sign Structure	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal, Wood, or other synthetic material	Metal, Wood, or other synthetic material	Wood
Sign Structure Color or Finish	Painted	Painted	Painted	Painted	Painted or Stained	Painted or Stained	Painted, Stained, or Natural



BLAZE (CONFIDENCE MARKERS)

The Blaze is a type of wayfinding that is typically smaller than the other signage types but is equally important. The Blaze **provides trail users constant comfort or confidence that they are on the right trail** or heading in the right direction. These "confidence markers" are a cost effective way to provide constant trail recognition by the trail users. These should be placed intermittently along the trail in-between the other signage types and in instances where other trails or roads may intersect the Palmetto trail.

On-street Loop Blaze

These may be placed on existing features such as utility poles, existing signage, or on adjacent structures. These can be extremely useful in urban settings where the ability to install a new sign may be restricted by a jurisdictional agency or physical space constraints. The placement of the On-street Blaze largely depends on the context. For instance, in a rural setting with minimal road intersections or opportunities to turn off the trail, placement of these might be one every mile or even longer spacing distances. In this situation, there would be minimal chance the trail user would be confused or need reassurance that he or she is on the trail. Conversely in urban and suburban applications, the placement of the blazes should occur more frequently due to the high number of intersections and opportunities to turn off of the trail. Other distractions, such as multiple signs, increased traffic, poor sightlines, and increased safety hazards, also warrant use of this confidence marker. It is recommended that these be placed, at a minimum, at every major intersection to build trail users' confidence that they have not strayed from the trail. Where a high level of distractions exists, confidence markers should be placed at every cross-street.

Recommended Guidelines for Blaze

TRAIL FACILITY	URBAN CORRIDOR	SUBURBAN CORRIDOR	RURAL CORRIDOR	WIDE ROADWAY OR UTILITY CORRIDOR	RAIL TRAIL CORRIDOR	SERVICE ROAD CORRIDOR	PUBLIC LANDS OR RIPARIAN CORRIDOR
Sign Materials	Digital Vinyl on Aluminum	Digital Vinyl on Aluminum	Digital Vinyl on Aluminum	Digital Vinyl on Aluminum	Digital Vinyl on Aluminum	Digital Vinyl on Aluminum	Digital Vinyl or paint
Sign Color or Finish	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette
Sign Structure	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Wood, metal or other synthetic material	Wood, metal or other synthetic material	Wood, metal or other synthetic material	Wood or on a tree
Sign Structure Color or Finish	Painted	Painted	Painted	Painted, stained, or Natural	Painted, stained, or Natural	Painted, stained, or Natural	Painted, stained, or Natural

Off-street Loop Blaze

In off-street settings, the Blaze can be attached to other signage, fences, trees, or can be a standalone sign. These are helpful in reassuring trail users they are on the right path or trail especially in inclement weather or in the fall when the leaves may be covering the trail. On trails with minimal intersections /optional turn-offs or on trails that are wide and extremely obvious as to the trail direction, these might be placed every half-mile or every mile. In cases where the trail is less discernible such as single-track trails or narrow trails in heavily wooded areas, a more frequent spacing of blazes would be appropriate. They may need to be placed at such a distance in which the user can see the next blaze ahead and use this visual cue for navigational assistance as well as a confidence marker.

PAVEMENT MARKINGS

The use of pavement markings are encouraged to be used in conjunction with any type of wayfinding signage system. With proper placement, these markings can be extremely valuable in s**upplementing a traditional signage system and provides an alternative method of navigation and identification** for all modes of travel.

There are many instances in which pavement markings are appropriate and have a variety of benefits. The use of pavement markings in the following scenarios will greatly benefit the Palmetto Trail network:

- Supplementing the traditional signage
- Reducing the volume of signs needed
- Providing wayfinding in locations where signs are hard to see (i.e. due to vegetation)
- Providing additional visual cues to motorists about the presence of cyclists on the roadway

Recommended Guidelines for Pavement Markings

TRAIL FACILITY	URBAN CORRIDOR	SUBURBAN CORRIDOR	RURAL CORRIDOR	WIDE ROADWAY OR UTILITY CORRIDOR	RAIL TRAIL CORRIDOR	SERVICE ROAD CORRIDOR	PUBLIC LANDS OR RIPARIAN CORRIDOR
Sign Materials	Thermoplastic	Thermoplastic	Thermoplastic or Paint	NA	NA	NA	NA
Sign Color or Finish	White or other approved color	White or other approved color	White or other approved color	NA	NA	NA	NA
Sign Structure	NA	NA	NA	NA	NA	NA	NA
Sign Structure Color or Finish	NA	NA	NA	NA	NA	NA	NA

1

Sharrows

2

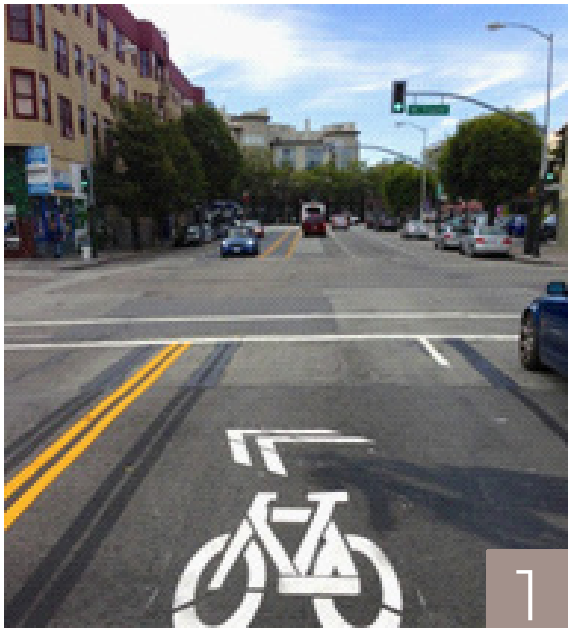
Bike lane identification markings

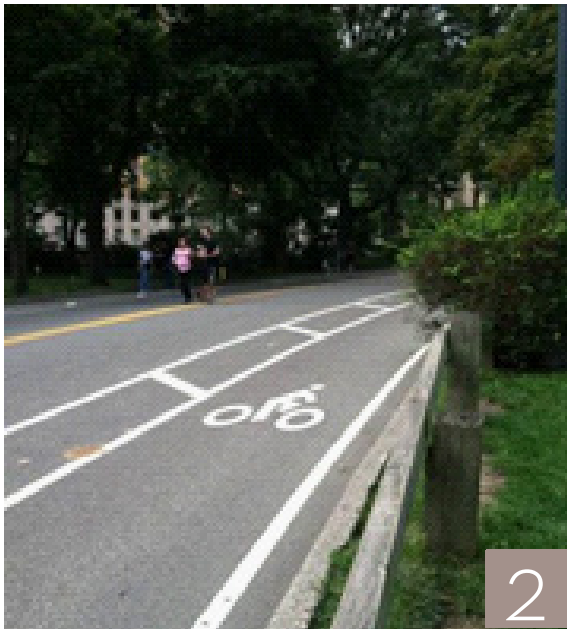
3

Bike lane directional markings.

4

Colored pavement markings indicating bike lanes and bike boxes.



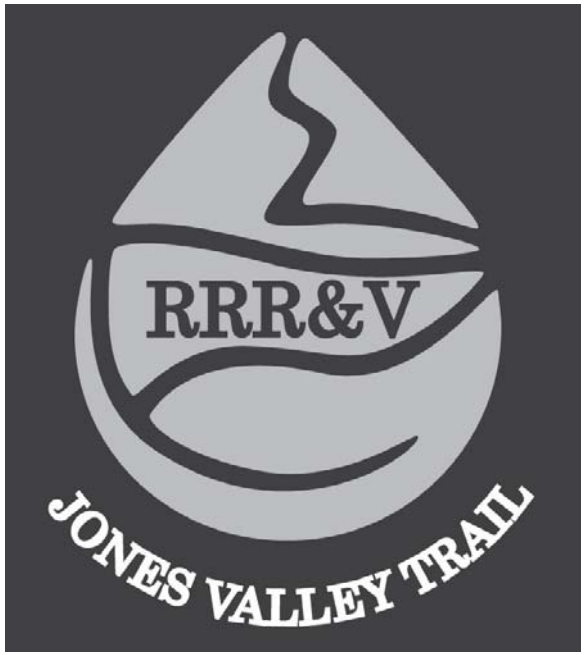


In addition to traditional pavement markings, there is an option to **incorporate a more custom pavement marking in the form of custom thermoplastics,** concrete stamps, or pavement inserts of the Palmetto Trail's logo. The use of this type of marking could be extremely useful in areas where signage may not be clearly visible, have permitting issues, or other restrictions on traditional signage.

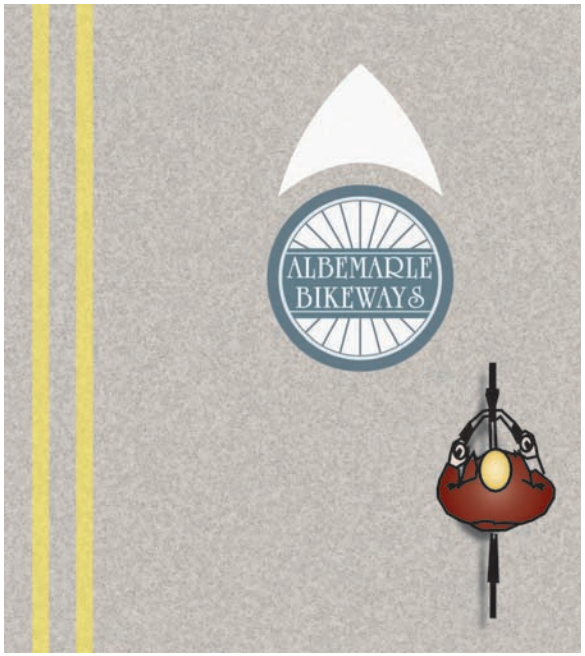
These custom pavement markings would also reinforce the trail's identity and could be a **more cost effective solution than some signage.** These markings serve as an On-street Blaze (confidence marker) as they provide instant visual cues to the Palmetto Trail route and with limited additional information. This treatment lends itself to a wide variety of applications, including sidewalks, urban streets, rural roads, and paved trails. A custom pavement marking could be consistently used as a confidence marker along multiple trail types of the Palmetto Trail, reassuring trail users of their route.

The following images are examples of thermoplastic pavement markings used in on-street situations as confidence markers.

This thermoplastic pavement marker includes the trail's name and an identifying logo. Although the Jones Valley Trail follows the Jones Valley, which passes through mountainous regions, the trail also connects urban areas, hence the need for pavement markers in addition to other wayfinding signage.



This graphic depicts another thermoplastic pavement marker. Markings such as these remind drivers to look for cyclists and grant bicyclists an easy way to follow their route.



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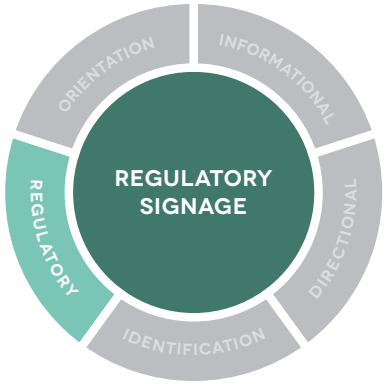


REGULATORY SIGNAGE

These are signs intended to **reinforce the rules and regulations** of the trail or trail system. They should be placed according to the activity to be regulated, preferably at an arrival point or approach to a facility and at appropriate intervals along the trail.

Although these can be standalone signs, they can also occur as a component on another sign type. For instance, regulatory pictograms are often found on map kiosks or trailhead monuments. When found on other signage types, the regulatory signage will follow the recommended guidelines of that particular sign type.

These signs illustrate just a few of the regulatory signage styles available for posting along trails.

Recommended Guidelines for Regulatory Signage

TRAIL FACILITY	URBAN CORRIDOR	SUBURBAN CORRIDOR	RURAL CORRIDOR	WIDE ROADWAY OR UTILITY CORRIDOR	RAIL TRAIL CORRIDOR	SERVICE ROAD CORRIDOR	PUBLIC LANDS OR RIPARIAN CORRIDOR
Sign Materials	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image	Digital Laminate Composite or Screened Surface Image
Sign Color or Finish	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette	Palmetto Trail Color Palette
Sign Structure	Metal or other synthetic material	Metal or other synthetic material	Metal or other synthetic material	Metal, Wood, or other synthetic material	Metal, Wood, or other synthetic material	Metal, Wood, or other synthetic material	Wood
Sign Structure Color or Finish	Painted	Painted	Painted	Painted, Stained, or Natural	Painted, Stained, or Natural	Painted, Stained, or Natural	Painted, Stained, or Natural

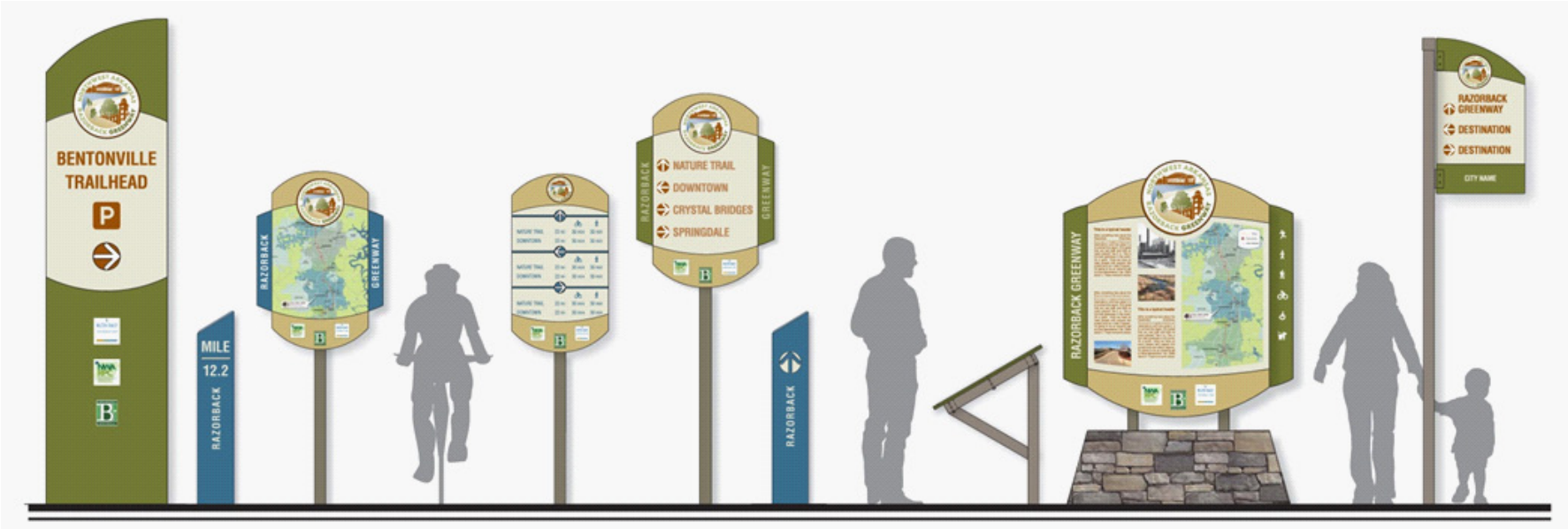
Wayfinding System Design

A wayfinding system is designed to form a **single cohesive signage "family".** The combined use of consistent graphics, materials, design strategies, and placement are critical to the overall success of the Palmetto Trail's wayfinding system. The Northwest Arkansas Regional Razorback Greenway provides an excellent example of a successful wayfinding "family" that addresses both on and off-street conditions while reinforcing the overall trail identity throughout the length of the 32-mile trail system. The colors, fonts, symbology and design of each sign have been crafted to improve navigation, encourage use, and provide an identity for the trail. Sign types include regulatory information, regional and cultural details, identification markers, walk and bike timing, and geographical references.

Each component works together to complete a system of comfortable spaces for multiple types of walker and cyclists. Recreation, fitness, and transportation users are considered when placing each sign type. Community Signs direct users toward the trail and indicate to non-users the proximity and ease of access to the greenway. As areas surrounding the greenway are developed, directional signs would be placed within neighborhoods and commercial centers. These directional signs inform citizens and visitors of the opportunity to recreate or use the trails for active transportation. **The complete signage "family" is illustrated below**.

A wayfinding signage system for the Palmetto Trail will **improve the experience of the users** of the trail both visually and functionally. In designing the Palmetto Trail's wayfinding system, every effort should be made to strike an appropriate balance between **identity and utility**. This includes not only identifying the individual Palmetto Trail passages, but also providing navigation among the many local trails and bike routes that comprise the greater Palmetto Trail. The goal will be to provide simple, consistent, and attractive signs **minimizing the number of unique symbols**, such as logos, adopted specifically for the community. This will diminish visual clutter along vehicular and pedestrian travel

As described in this section, the wayfinding "family" shown below, made for the Razorback Greenway in Northwest Arkansas features common elements to reinforce the trail's usefulness as a placemaking tool for the region. The trail's characteristics reflect the region's values and vice versa. As such, signage serves a variety of uses while simultaneously serving as a positive reflection of the trail itself.



routes and enable visitors to gain familiarity with the system. It is very important to pay attention not only to the content of the proposed signage, but their placement and design. The text box in the on this page describes best practice considerations that were factored into the design of the wayfinding system.

Working with State and Federal Park Agencies or SCDOT

The Palmetto Trail has several segments or passages that are within State or Federal Parks or jurisdictions, and many on-street routes are located on state highways. These parks and state roadways are regulated by state or federal agencies and often have strict regulations regarding wayfinding and signage. **It will be necessary to work with these agencies in establishing the guidelines in which the Palmetto Trail signage must adhere to when located within their jurisdictions.** It is anticipated that separate Palmetto Trail signage may not be allowed within these areas and may have to be incorporated into the existing signage system or new signs installed that adhere to the jurisdictional signage guidelines. Also, it will be necessary to work with SCDOT on the signage along their jurisdictional roads to incorporate signage that doesn't conform to MUTCD standards.

When possible, implementing the Palmetto Trail standard signage is preferred to incorporating the Palmetto Trail's signage into the applicable jurisdictions' signage. This would reinforce the signage consistency within the Palmetto Trail and would strengthen its identity. If it is determined that this method is not allowed, every effort to work with the appropriate agency should be made to permit the Palmetto Trail colored logo to be incorporated into the required signage.

This could include modification of the Palmetto Trail's logo dimensions to fit a specified dimension. In this scenario, maintaining the general Palmetto Trail graphic and colors is more important than maintaining a consistent logo size for the Palmetto Trail. The primary goal in working with these agencies should be to maintain some recognizable identification of the Palmetto Trail when in these particular jurisdictions.

SIGN PLACEMENT CONSIDERATIONS

- **Optimal Sign Location**
- **Sign Frequency**
- **General Design**
- **Message & Content**
- **Placement Guidelines**
- **Regulatory Signs**

ADDITIONAL DESIGN CRITERIA

- The typeface will be easy to read, with adequate space between letters, words and lines of type.
- Messages conveyed by the signage will be as clear and concise as possible.
- The signs will be easily identified in their environment.
- Recommended placements will be low enough to be read by cars and pedestrians, but high enough to not be obscured by sports utility vehicles, trucks, or other large vehicles.
- Lettering will be of appropriate scale given the distance the viewer will be from the sign, and reflective material will be used to insure night visibility
- Sign materials must be cost efficient, durable, and easily replaced if damaged, stolen, or vandalized

CHAPTER 7

Trail Management & Maintenance Plan

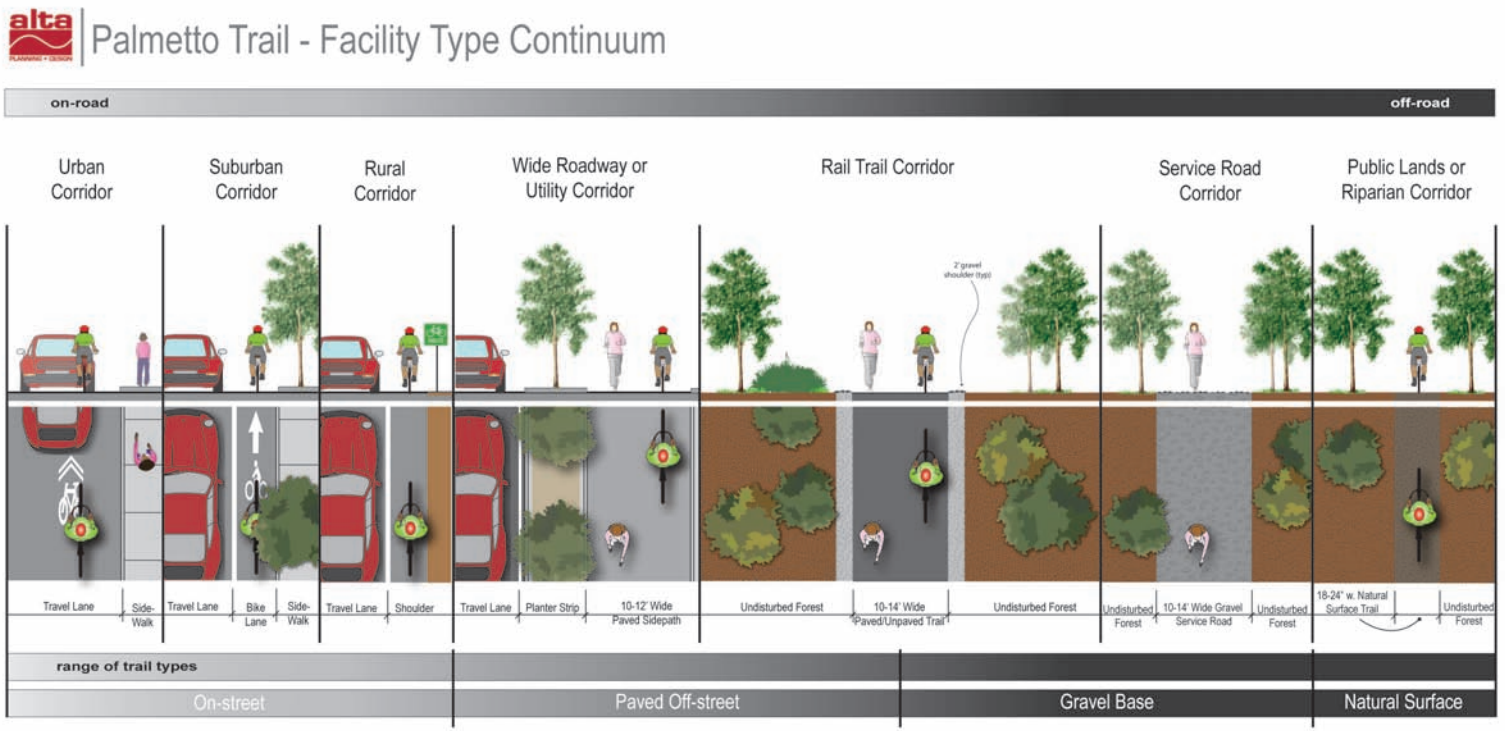
"The **organizational structure of trail management** is critical to effectively addressing each of the other elements of **trail management**, including **trail maintenance**."

OVERVIEW

Effective trail management and maintenance are critical components of establishing and sustaining a successful trail system. In the case of the Palmetto Trail, identifying practical and cost-effective strategies for trail management and maintenance that are sustainable over time is even more crucial. The Palmetto Trail is unique in that it is spearheaded by a statewide nonprofit, rather than a public agency, and the Palmetto Conservation Foundation (PCF) does not own or manage the vast majority of the land on which the trail has been (and is being) built. Each section of the trail has its own particular combination of landowner, land manager, and maintenance partners. PCF primarily acts as an agent for trail development and trail promotion. In some cases PCF is the de facto trail manager and maintainer, in others, a public agency or local government fills those roles.

The Palmetto Trail also encompasses a variety of trail types with differing management and maintenance needs. These needs vary based on surface type, context, trail user types, and other factors. For that reason, this chapter provides recommended strategies for trail management and maintenance along the Palmetto Trail, based on the facility type continuum used throughout this Master Plan (shown below and introduced in Chapter 2).

The text box on the facing page presents an assessment of the Palmetto Trail's challenges and opportunities for management and maintenance.



The Palmetto Trail already attracts numerous volunteers, who work hard on trail maintenance projects. Without these individuals' donated time and talents, the Palmetto Trail would not be what it is today.

CHALLENGES FOR MANAGEMENT AND MAINTENANCE OF THE PALMETTO TRAIL

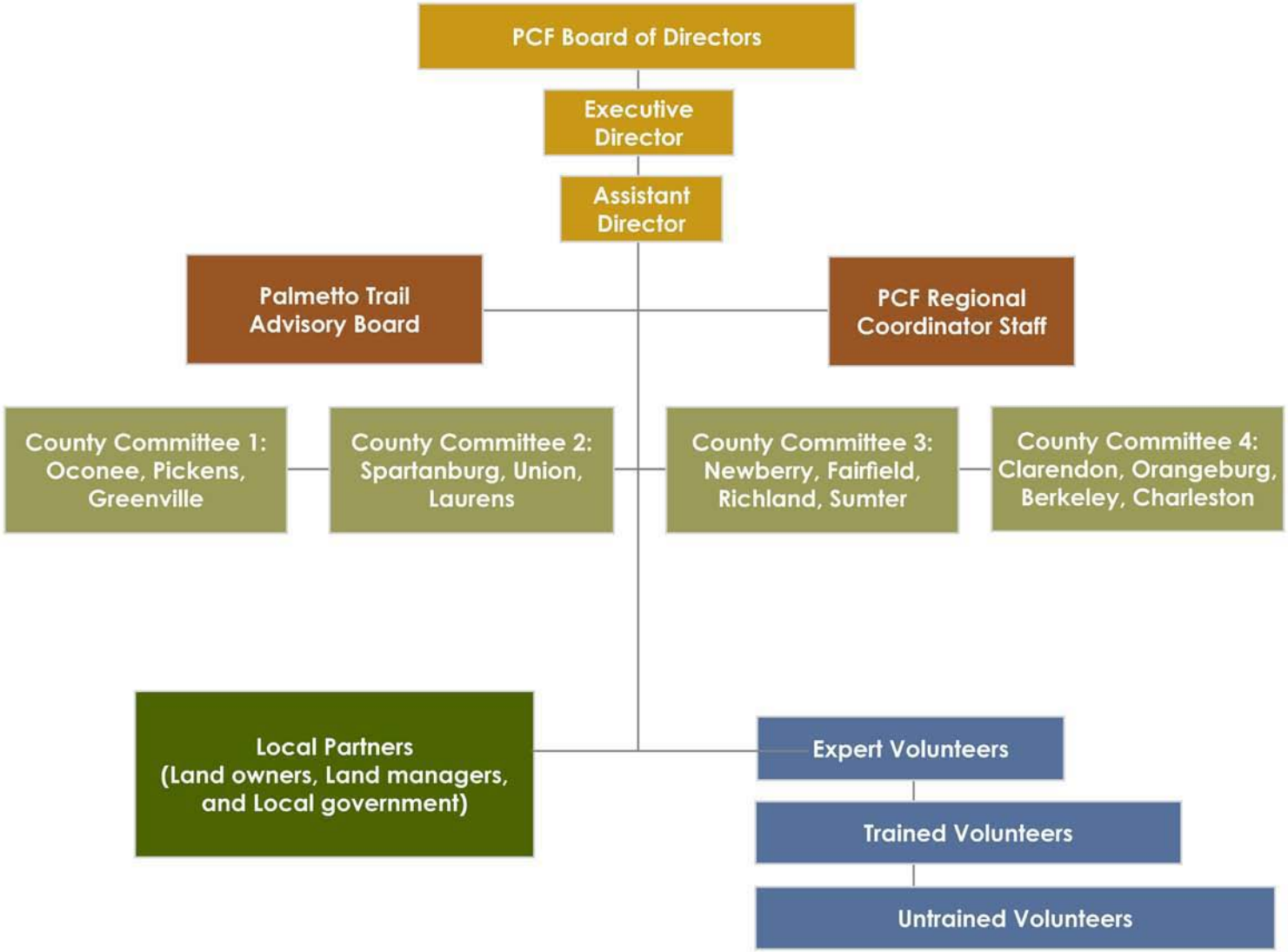
- Multiple jurisdictions/governing agencies along the length of the trail
- Lack of a single trail manager/ maintainer for the entirety of the trail
- Temporary agreements with landowners for trail development
- Lack of resource/information-sharing among various managers/maintainers of the trail
- Limited long-term funding to support trail operations and maintenance
- Lack of regularity to trail maintenance
- Lack of trail management/ maintenance policies or plans in place at the local level
- Opportunities related to management and maintenance of the Palmetto Trail:
- Many supportive jurisdictions/ partners along the length of the trail
- Access to volunteer base (among trail users, participants in PCF programs, local advocacy groups, etc.

Recommended Organizational Structure

This section presents a **recommended organizational framework for handling management and maintenance** of the statewide Palmetto Trail system. Given the existing capacity of PCF as a private Columbia-based non-profit organization spearheading the Palmetto Trail, the recommended structure focuses on:

- **Establishing a workable framework of responsibilities** among PCF staff, state-level volunteers and stakeholders, local-level volunteers and stakeholders, trail land owners and land managers, and local jurisdictions;
- **Establishing clear channels of communication** among multiple contributing individuals and partners;
- **Effectively and strategically sharing the workload** of management and maintenance among the willing partners and stakeholders of the Palmetto Trail;
- **Creating direct linkages between local partners** and PCF administration

The graphic on the following page illustrates the proposed organizational structure. The narrative that follows this graphic outlines the role of each of the structure's components.


PCF Board of Directors
Executive Director
Assistant Director
Palmetto Trail Advisory Board
PCF Regional Coordinator Staff
County Committee 1: Oconee, Pickens, Greenville
County Committee 2: Spartanburg, Union, Laurens
County Committee 3: Newberry, Fairfield, Richland, Sumter
County Committee 4: Clarendon, Orangeburg, Berkeley, Charleston
Local Partners (Land owners, Land managers, and Local government)
Expert Volunteers
Trained Volunteers
Untrained Volunteers

PCF Board of Directors, Executive Director, and Assistant Director

With guidance from PCF's 21-member Board of Directors, PCF's Executive Director will continue to **set a vision** for trail development, investment, and promotion, outline the fundraising strategy, propose policies, and provide quality control for the organization. The Assistant Director will **organize and facilitate** local leader support, work directly with the Palmetto Trail Advisory Board and with regional coordinators on PCF staff.

Palmetto Trail Advisory Board

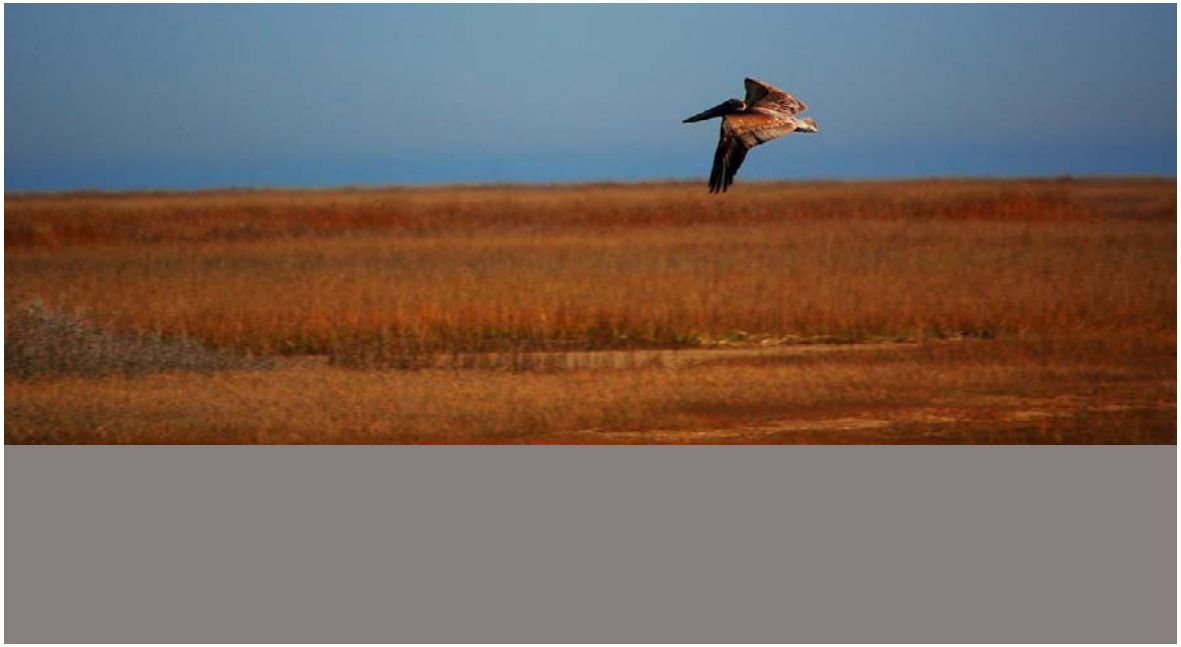
PCF will establish a 6- to 8-member advisory board for the Palmetto Trail comprised of trail advocates from across South Carolina. **This 'working board' will meet quarterly each year,** under the direction of PCF's Assistant Director. Rather than focus on strategies for trail funding, development, and high level management and maintenance policy, which could create redundancies with the PCF Board and PCF staff, the role of the Palmetto Trail Advisory Board will be to **serve as a liaison** to the County Committees and to complement the work of the regional coordinators of PCF staff. The board's make-up will include one representative from each of the six County Committees and four to eight at-large members. This will serve as a **'working board'** with potential activities to include: administer the community grant programs for trail development and trail programs (see Chapter 5: Marketing & Branding); develop and administer education and outreach programs that are consistent across the state; provide technical support for communities organizing 'volunteer vacations' or similar programs on their section of the Palmetto Trail; provide feedback to PCF as it works to implement statewide trail strategies that have a local impact (such as a new wayfinding signage system).

Regional Coordinators

PCF will identify three Regional Coordinators among trail development and management staff (e.g. Upstate Trails Coordinator). Each Regional Coordinator will oversee efforts in three to five counties along the Palmetto Trail corridor and serve as staff support for two County Committees. For example, the jurisdiction of the Upstate Trails Coordinator will include Oconee, Pickens, Greenville, Spartanburg, and Union counties and County Committees 1 and 2.

The Assistant Director will **collaborate with each region's coordinator** on the programming, planning, development, and maintenance, and marketing of sections of the Palmetto Trail. Responsibilities of the regional coordinators will include leading trail development, monitoring trail maintenance needs, managing trail master volunteers, becoming familiar with county and municipal policy, coordinating with local partners (including county and municipal staff), and providing staff support for County Committees.

Clear coordination and management will help contribute to a strong future for the Palmetto Trail.



County Committees

Recognizing the unique opportunities and challenges within each locality of the Palmetto Trail, **PCF will establish County Committees to specifically address local matters**. The committees will be comprised of two representatives from each county totaling six to eight members. The groups will have regular meetings twice a year, with ad hoc meetings scheduled on an as-needed basis. **Activities of each committee will vary based on the status of the Palmetto Trail in that area**. Regional Coordinators of PCF will serve as staff support. Each County Committee will provide up to two representatives to serve on the Palmetto Trail Advisory Board.

Local Partners

Local partners of the Palmetto Trail include **trail land owners and land managers, groups or agencies participating in trail maintenance, and county and municipal agencies.** The role of these partners varies from trail passage to trail passage. The recommended organizational structure outlined in this Plan will provide a more **clear line of communication between these partners and PCF administration** and also establish new opportunities to engage local partners in volunteer coordination. Once the new organizational structure is established, PCF will need to identify its local partners and inform them of the new lines of communication and how this will benefit their work in terms of opportunities to collaborate with volunteers, trail supporters, and PCF. Regional Coordinators will work directly with local partners with County Committee members serving as liaisons when appropriate.

Volunteers

In the interest of helping jurisdictions meet challenges with operations and maintenance of the current and future trail system, a volunteer supported program should be formed. PCF already very successfully utilizes a variety of volunteer groups in a variety of formats. Within each of the three regions, **Regional Coordinators will identify and train a trail master** to assist in managing trail construction and maintenance. The trail masters will organize and train other volunteers and work crews. This will vary in nature from region to region depending on the capacity of PCF staff and the availability of reliable, experienced volunteers.

Trained volunteers will work directly with trail masters. This tier of volunteer will be dependable labor that meets on a frequent basis (weekly or monthly) to perform routine trail construction and maintenance and patrol trails. These volunteers report back to trail masters on trail conditions, help prioritize maintenance needs requiring immediate versus long-term attention, and organize periodic maintenance days to improve the trail environment.

Untrained volunteers are individuals who use the Palmetto Trail frequently and have an interest in participating in monitoring trail usage and performing light maintenance duties on local trails. This group provides less consistent labor for trail work and programs, but **effectively supplements the work of the trail masters and trained volunteers**.

Continuing a robust volunteer program and providing more structure to the existing volunteer efforts on the Palmetto Trail will serve as an effective tool for the long-term sustainability of the trail system. With a well-managed volunteer program in place, PCF will have more staff time and resources to devote to trail development and will be better positioned to meet the burden of additional operations and maintenance demands and costs.

MORE INFORMATION REGARDING VOLUNTEERS

For more information regarding volunteers and their participation in operations related to the Palmetto Trail, please refer to Chapter 5: Marketing & Branding Strategies. Here, PCF and related partners will learn about volunteer vacations and related initiatives.

RECOMMENDED MANAGEMENT STRATEGIES

Based on the identified opportunities and challenges and on case studies of successful efforts elsewhere, **this section provides recommended strategies for managing the statewide mountains-to-sea trail.** The case studies that informed this Plan are included as **Appendix A**.

The organizational structure of trail management is critical to effectively addressing each of the other elements of trail management, including trail maintenance, which is discussed in the following section of this Chapter.

This process should also include local partners. The relevant local partners will vary for each trail passage, but could include the landowner, land manager, maintenance group, local municipality and/or county, and local advocacy or "friends of" group, if the group has a history of promoting and/or programming the trail.

Addressing Conflict among Trail User Groups

The Palmetto Trail is enjoyed by multiple user groups, including hikers, road cyclists, trail runners, mountain bikers, equestrians, and bird watchers. The user groups on any particular passage of the trail vary based on permitted uses (generally determined by the landowner or land manager, rather than PCF) and on the trail type.

User conflict on the Palmetto Trail is currently relatively limited. Based on the Needs Analysis of this Plan and findings from similar trail facilities around the country, the most common type of conflicts are those between pedestrians and bicyclists, between equestrian users and mountain bikers, and between users with dogs (especially those who let them off-leash) and other users. The reoccurring causes of these conflicts can be summarized as:

- Reckless behavior or failure to follow trail rules or etiquette
- User group values and perceptions (environmental impacts, attitude toward nature), and
- Crowding (subjective number of users based on trail type)

Continued vigilance regarding potential conflicts will help continue the Palmetto Trail's reputation of low conflict among user groups.

SIX RECOMMENDED TRAIL MANAGEMENT STRATEGIES

- Addressing conflict among trail user groups
- Impacts to natural resources
- Safety and security
- Usage evaluation
- Corridor protection
- Organizational structure

DISCUSSION: RECOMMENDED MANAGEMENT STRATEGIES

The most definitive study of trail use conflict issues and solutions to date is the ***Trail Use Conflict Study***, California State Parks Road and Trail Change-in-Use Evaluation Process, prepared June 2012 by Alta Planning + Design.[1]

The research for this Study included a **review of existing literature pertaining to trail use conflict issues, as well as a survey of U.S. agencies and organizations that manage significant mileage of multi-use trails** and may have information or informed opinions about the nature of the problems and potential solutions. Thirty six surveys were returned, and follow-up interviews were conducted with many of the agencies that responded.

The literature review was limited to documents from the U.S. and Canada, but it includes research examples from other countries where they are cited in U.S. or Canadian documents. **Conflicts on paved trails tend to center on the speed differential of bikes compared to other users, and on slower users blocking the trail.** User conflicts can be a particular challenge at trail junctions and entry points, and at activity areas and other stopping points.

Recommended Strategies:

ACTION ITEM	SUGGESTED PRINCIPLE ACTOR
Reduce the potential for user conflict through good design.	
Reduce the potential for user conflict through proactive use management, outreach, and education including established rules, enforcement, user information, data tracking, and, where necessary, separate or specialized trails.	
Resolve user conflict by involving all users in the decision-making process, such as having trail users volunteer as patrol and involving users in trail management discussions.	

KEY: SUGGESTED ACTORS

PCF Administration & Staff

County Committee

Local Partners

Summary of Study Findings

- Information on trail use conflict is primarily based on opinion; little data about actual user conflicts are available.
- Complaints and controversy about other trail users are common.
- Actual incidents, including those involving accidents, between trail users are relatively rare.
- Trail use conflict is an important social issue.
- Design of trails to accommodate multiple use helps to avoid or reduce conflict.
- User education and outreach are key methods to avoid or reduce conflict.

Low-conflict design

As in other aspects of trail management, layout and design is the best way to avoid or minimize conflicts. Some paved trail systems have separate designated parallel paved or unpaved paths or lanes for pedestrians. Where multiple uses are combined on a single facility, width helps to minimize conflict – 8 feet is an absolute minimum; 10 feet a desirable minimum; and 14 feet or more is often provided on popular trail systems.

Use conflicts on unpaved, or natural surface, trails are significantly affected by the following nine interrelated design elements:

NINE INTERRELATED ELEMENTS OF LOW-CONFLICT DESIGN

1) Tread Width and Passing Space
Provide sufficient width of the trail tread and existing or created space to allow users to pass each other, either as a continuous condition, or as passing spaces at defined intervals. This also includes vertical clearance from overhanging trees and objects.

2) Sight Distance
Include adequate length of the trail visible ahead to the user. This is particularly important to resolve in conjunction with speed control features, turns, and sinuous layout.

3) Turn Radius
Create a minimum inside radius of turns to ensure that they can be comfortably negotiated.

4) Sinuosity
Lay out a trail with many curves and minimal straight sections (however, with sufficient sight distance). This helps limit the speed of mountain bikers and other users.

5) Speed Control Features
Install pinch points, choke points, trail anchors, technical trail features, 'stiles', and other elements specifically designed to limit users' speeds.

6) Surface Texture
Design the relative smoothness, evenness, and firmness of the trail tread to moderate travel speed by mountain bicyclists, including the presence of irregularities.

7) Low Trail Structures
Avoid steps and waterbar structures that constrain access for horses and mountain bikers and can create points of conflict.

8) Gradient
Apply design limits or variations in the gradient of the trail to allow for multiple uses.

9) Trail Layout and Classification
When considering trail suitability for multiple uses, factor the level of use of the trail, availability of alternative trails and routes, and the potential for trails to primarily serve one or multiple user types.

Use management, outreach, and education

Agencies and organizations successful at keeping trails conflict-free identify pro-active outreach and engagement, combined with on-trail user information and management, as even more important and effective as trail design for avoiding or reducing conflict.

Management Strategies:

- **Rules.** Adopt enforceable rules, regarding staying on designated trails, right-of-way, warning when overtaking, speed limits, etc.
- **Enforcement.** Establish enforcement strategies, including monitoring, warnings, radar and citations.
- **User Information.** Provide information to users about rules, polices, and advice for trail user respect, right-of-way requirements, courtesy, routes, destinations, and conditions.
- **Data Tracking.** Collect and track data on trail use conflict incidents and design or management response successes.
- **Separate Trails and Specialized Trails.** Alternate use days, provide one-way trails, and designate use-intensive trails.

Pavement markings and signage can be used on paved trails to establish usage rules and, where needed, designate separate 'lanes' for trail users. Many paved trails use a center stripe to separate bike travel directions, but there are a variety of approaches to where pedestrians are expected to be situated. The most commonly used trail traffic management system specifies that **pedestrians walk on or move to the right side or shoulder of the trail to yield right-of-way for bicyclists, while bicyclists are expected to pass on the left, obey a maximum speed limit (usually 15 mph), slow when passing, and call out or use a bell to warn others when passing.** The traditional "trail yield triangle" dictates that bikes yield to pedestrians/hikers/ADA assistive device users, and all yield to equestrians. However, from practical and safety standpoints, on paved trails space should be created to allow passage for faster bicyclists.

Clear and consistent signage and markings regarding traffic guidance measures helps users keep themselves sorted out on the trail. This information should be reinforced on mapboards, trail websites, in docent or volunteer patrol contacts, and through user group outreach. **Good wayfinding maps and signs also help to reduce trail user conflicts** because users tend to know here they are headed, including upcoming turns, and tend to be aware of and adhere to changes in trail use designations.

Equestrians, too are welcome on many parts of the Palmetto Trail. Equestrians' trail surface and maintenance needs differ from other users (see text box, this page). They may also need different signage in some locations.

EQUESTRIANS AND OTHER TRAIL USERS

Where equestrians are included the rules of etiquette and safety dictate that they have the right-of-way, within parameters. Typically on a multi-use trail equestrians are accommodated on a wide shoulder or separate adjacent trail, which may be two-way. Having unpaved but negotiable shoulders helps to reduce trail user conflict because slower users can move off the trail to rest or yield, and some trail users (runners, dog walkers) prefer to be on an unpaved trail.

This family is visiting the trail for a day of relaxation and movement. Providing user outreach programs such as educational events and additional activities can provide additional reasons for families and individuals to visit their local section of the Palmetto Trail. This family seems confident in their knowledge of the trail, but following recommendations in the user outreach section can spark ideas for how to encourage new reasons for visitors to return to the trail.

User Outreach and Coordination Strategies:

Education

- Provide user-specific printed materials and web postings, and/or an active, focused public relations campaigns to educate users about trail use rules and appropriate behavior.

User Group Relations

- To establish or improve constructive relationships with user groups, arrange and conduct general meetings with user groups about trail safety or conflict-related issues, or objectives, such as making improving and maintaining trails and making the trail experience more enjoyable.

Volunteer Programs

- Organize, encourage, and /or support establishment of volunteer trail stewardship programs, such as ongoing trail patrol and/or maintenance assistance, specific projects, and help with outreach and education regarding conflict avoidance, safety, and courtesy.

Events

- Organize, encourage, and/or support multi-user social, fun, trail construction, or maintenance events (e.g., Trail Clean-up Days).

These outreach and coordination strategies dovetail with elements of the marketing and branding strategy proposed within this Master Plan **(see Chapter 5: Marketing & Branding)**, as well as maintenance strategies discussed in this chapter.

MANAGING IMPACTS TO NATURAL RESOURCES

The most basic way to avoid trail impacts on natural resources is through proper location and design of

the trail. A poorly sited or designed trail will create far more impact even with diligent maintenance and management, than a well-sited and designed trail that receives virtually no attention.

Recommended Strategies:

ACTION ITEM	SUGGESTED PRINCIPLE ACTOR
Prevent and/or mitigate erosion through prioritizing efforts to manage water on the trail.	
Prevent and/or mitigate trail user impacts through outreach and education and immediate response to damage.	
Establish guidelines and requirements that apply to special events occurring on Palmetto Trail passages	

KEY: SUGGESTED ACTORS

PCF Administration & Staff

County Committee

Local Partners

DISCUSSION: MANAGING IMPACTS TO NATURAL RESOURCES

Water on the Trail

The greatest impact on natural resources for trails, and the biggest challenge in maintaining a usable trail, at least for unpaved trails, is erosion. Beyond the physical design of the trail, **vigilance and responsiveness** make the greatest difference in avoiding saturation and erosion.

Pre-season checks on drainage features – culverts, waterbars (which are generally undesirable per best practices, but are sometimes necessary on inherited "fall line" trails), drain dips and nicks to ensure that they are clear and functional. Where erosion or saturation is occurring, steps should be taken to address the problem before it gets worse.

Trail surface and drainage system checks during and after storms are also critical to addressing problems before they become significant. Plugged culverts are one of the major causes of significant erosion if left unaddressed. Minor slope or embankment failures can lead to major erosion/siltation problems if they block trail drainage patterns. Conversely, improper trail construction or drainage can cause such bank failures. Natural creek bank erosion, which is often dramatically increased during major storms, can also impact an adjacent trail (ideally avoided through trail siting, but often unavoidable due to topographic constraints).

Often relatively minor emergency drainage or erosion control work immediately after these storm events can minimize impacts until a more significant permanent repair can be affected.

Trail User Impacts

Closing trails seasonally or periodically during wet/muddy conditions, especially to horses and mountain bikes, may be an important measure to prevent trail surface deterioration and erosion. Such closures should be accompanied with signage and public information/outreach explaining the reasons.

The creation of "volunteer" unauthorized trails or unauthorized construction of ramps and other technical challenge features by mountain bikers also has natural resource impacts. Though they are not typically as significant as the impacts from unmanaged erosion or saturation, these impacts can be significant in terms of social perception, long-term cumulative impact, or other issues such as trespassing and compliance with resource protection regulations and agreements. In this case vigilance and response are the best measures to prevent impacts. **The physical management and user outreach and coordination strategies outlined above are useful in addressing these problems.** Proactive response to unauthorized trails and features should include closure signs, blocking (by temporary fencing, or ideally "brush packing"), ripping and restoring natural vegetation/surface.

TRAIL DRAINAGE FEATURES

Besides cleaning out the existing drainage features to ensure that water does not flow down the trail, the addition of drainage features, including trail treatments to cross wet ground such as puncheons or causeways may be necessary – ideally programmed as a preventative summer project rather than an emergency effort.

Additionally, maps and public information should clearly delineate authorized/designated trails, prohibit use or construction of unauthorized trails, and provide the environmental and management reasons for these policies/regulations.

Special Event Uses

When special events are hosted on a passage of the Palmetto Trail, a single day with a large volume of hikers, runners, or mountain bikers can create substantial maintenance issues, as well as conflicts with other users of the trail. PCF should establish special event guidelines or requirements as outlined below. PCF can work with a specific trail passage landowners and/or land managers and local agency staff to review the guidelines and establish event-specific requirements for any company or organization seeking to host an event on the Palmetto Trail.

Special Event Usage: Guidelines

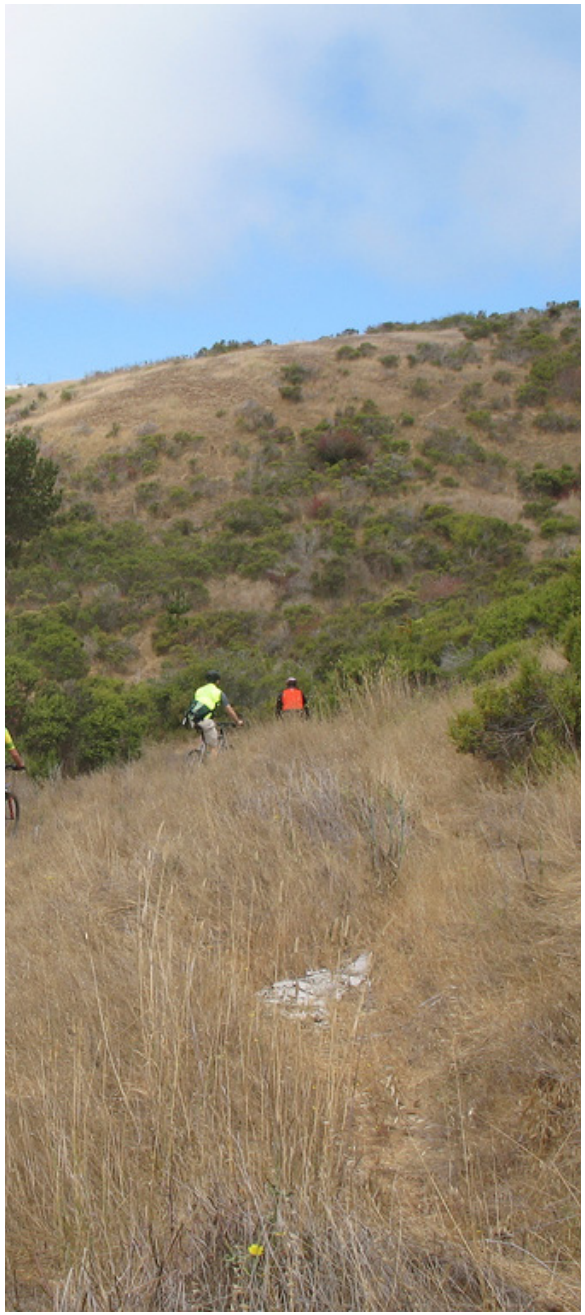
- To ensure a successful event for all involved parties, guidelines should specify:
- Which sections of the passage are available for special events and which are not
- What types of events are permissible or prohibited (from mountain bike races to mud-runs to scavenger hunts)
- Which months of the year or days of the week are available or restricted for special events

Special Event Usage: Requirements

To ensure a successful event for all involved parties, requirements should specify:

- A meeting with PCF staff and the landowner/ land manager at least four weeks prior to the event
- A special event usage fee and/or a negotiated donation amount to be provided to a Palmetto Trail Maintenance Fund
- Maintenance activities that need to occur within a set timeframe after the event to restore the trail's condition and repair any damage (this could occur as a volunteer workday organized by the event promoter)
- Opportunity for PCF to advertise at the event
- Permission for PCF to contact the event attendees (once) with an email inviting them to become members of and/or volunteer for the organization

These mountain bikers from Marin County are using the trail as part of a specially organized mountain bike tour. In the case of organized rides and other special events, a meeting beforehand with PCF can help organize advertising and help stakeholders plan for any possible maintenance needed before or after the event.



SECURITY, SAFETY, AND LIABILITY

The most basic way to avoid trail impacts on natural resources is through proper location and design of the trail. A poorly sited or designed trail will create far more impact even with diligent maintenance and management, than a well-sited and designed trail that receives virtually no attention. Properly designed and managed, the Palmetto Trail system will provide a reasonable level of safety and security. Studies have shown that safety and security issues are rare on well-designed trails with high use. While portions of the trail are expected to occur in rural and forested areas, trails in isolated locations throughout South Carolina and the southeast U.S. have generally not experienced significant safety problems.

Related to security and safety of trail users, potential impacts to private property and the potential for private and public landowner liability are often raised as issues in response to proposed trails, and in association with use and management issues on existing trails. **Common challenges identified by trail managers include:**

Trespassing

- Trail users may trespass on adjoining private property, and if they sustained injuries, create liability for the property owner.

Liability

- Trail users might be injured by activities undertaken by the landowner (e.g., accidental exposure to agricultural spraying or pesticide use), or other activities permitted on private property near the trail.

Loss of Privacy

- Trail implementation may result in loss of privacy for adjacent landowners.

Property Security

- Introduction of a trail may result in theft of private property and/or equipment or contamination of crops.

Vandalism and Litter

- Vandalism concerns include graffiti, littering, and damage or theft of nearby property.

All public facilities require a careful effort to plan and manage trail use and minimize the potential for problems and exposure to liability. The best practice to accomplish this is to manage the trail in a coordinated program of planning, design, operation and maintenance that anticipates impact or liability issues, addresses them in advance, and remedies them efficiently if they should arise.

Recommended Strategies:

ACTION ITEM	SUGGESTED PRINCIPLE ACTOR
Use best practices in trail planning and design to ensure the location and features of a trail maximize safety and functionality for users.	
Include safety and security signage and information within the Palmetto Trail Wayfinding Signage program described in Chapter 6	
Establish PCF or a local government as the land owner along Palmetto Trail corridors wherever possible to limit private landowner liability.	
Establish local operations and maintenance (O&M) plans for each passage of the Palmetto Trail.	
Encourage community involvement in trail monitoring and maintenance.	

KEY: SUGGESTED ACTORS

PCF Administration & Staff

County Committee

Local Partners

DISCUSSION: SAFETY, SECURITY, AND LIABILITY

Trail Location and Design

In order to maximize safety and functionality for users, and to minimize liability exposure for the management agencies and other property owners, **the trail design should meet all mandatory and advisory standards as identified by national standards**, including the MUTCD and the Americans with Disabilities Act (ADA) where feasible. Careful siting of the trail with buffer zones, supplemented by existing or planned vegetation, combined with appropriate fencing and signage, and a program for public information, maintenance and management can help protect the privacy and security of the adjacent land owners. Appropriate trail design can avoid impacts from trespassing.

While crime or vandalism have not proven to be a common problem along most multi-use paths, fencing is still considered a prudent feature. The type, height and maintenance responsibility of the fencing will be dependent on the specific setting, needs and preference. The installation of fences along the trail is also an integral part of the defense against liability, as it prevents trail users from making attractive nuisance claims.

An attractive nuisance claim hinges on the tacit "invitation" of children onto a property by a "nuisance", such as livestock, that is attractive to children.[2] The construction of a fence, which bars children from entry and warns against nuisance, is

THE RECORD ON TRAIL ISSUES AND CRIME

Criminal activity is not likely to occur along a path that is well planned, designed, operated, maintained and used. While concerns about liability are understandable, studies show that neither public nor private landowners have experienced significant liability losses from trail development. The Rails-to-Trails Conservancy surveyed management agencies overseeing 372 trails throughout the United States for their 1998 report titled "Rail-Trails and Safe Communities." This effort documents the level of crime on trails and identifies mitigation measures used by trail designers and managers to minimize the potential for crime. More specifically, the objectives of the study were to: 1) document the levels of crime on urban, suburban and rural trail-trails with current statistics and comprehensive data, 2) examine trail management strategies that can mitigate crime and improve trail safety, and 3) put crime on trails in perspective. The results from the study indicate that rail-trails (including trails created from abandoned rail lines and trails along active rail lines) are safe places, and that liability issues were virtually non-existent. Correspondence from law enforcement agencies consistently reported that rail-trails do not encourage crime. To the contrary, many agencies found that heavy trail usage is a crime deterrent in areas that were isolated prior to implementation of the trail. The study also found that trail managers often utilize design and maintenance strategies to reduce the potential for crime*. Several other studies of trail impacts on neighborhood quality and crime conclude that trails have a negligible effect on crime (the most common infringements include illegal motorized use of the trail, litter and unleashed pets) and that neighbors to the trail are either satisfied or neutral on this issue once the trail is in operation**.

*Rails-to-Trails Conservancy. (1998). Rail-Trails and Safe Communities: The Experience of 372 Trails.

**American Trails. (2000). Trail Effects on Neighborhoods: Home Value, Safety, Quality of Life. Eling, Tim. (2006). Crime, Property Values, Trail Opposition & Liability Issues. Murphy, Michelle Miller. (1992). The Impact of the Brush Creek Trail on Property Values and Crime; Santa Rosa, CA.

a defensible precaution against attractive nuisance claims. The installation of a fence clearly demarcates the boundary between private or other off-limits land and the trail facility.

Public Information and Communication

Good public information and communication, especially with trail neighbors, can also help avoid and address trespassing and other security and liability issues. Printed, posted and on-line maps and information help to "get the word out" regarding rules, off-limits areas, and the fact that keeping the trail open may depend on public cooperation. Signs posted along the trail by the management agency asking trail users to respect private property and 'no trespassing' signs posted by the trail managers and property owners can help deter trespassing. **Safety and security related signage and information should be included in the Wayfinding Signage program discussed in Chapter 6 of this Plan.** Finally, staff or docent walks and talks can educate trail users about agriculture and related challenges and encourage cooperation from trail users.

Liability Protections

As sovereign entities, local governments are protected by additional limitations on liability for injuries occurring on government-owned property. For private or other public landowners, liability protection beyond that provided by statutes and insurance can be afforded by transference of trail ownership to a trail owning/managing agency. Private landowners who grant or sell a public easement to a public entity for a trail or whose property is located adjacent to a public trail are not at risk as long as they abstain from "willful and wanton misconduct" against trespassers, such as recklessly or intentionally creating a hazard. As an alternative to a trail easement, a private landowner could potentially transfer fee ownership of the property containing the public trail to a public entity (subject to property subdivision regulations). **This and other mechanisms for granting access and transferring liability are discussed in the section below on Corridor Protection.**

Operations & Maintenance (O&M) Plans

Given the many local partners involved in land ownership, land management, and trail operations and maintenance (O&M) along the Palmetto Trail, **PCF should establish O&M plans for each passage of the trail.** This may be as simple as an MOU outlining operations and maintenance standards and responsible parties or may come in the form of an addendum to the local government's existing O&M plan for trails within their jurisdiction.

O&M strategies that should be considered for inclusion in each Palmetto Trail Passage O&M Plan include:

Implementation of a Safety Program.

- The trail management partners should implement a safety program that includes systematic risk management assessment, cooperative design review for proposed improvements, and coordinated accident and crime reporting and response. In addition to managers, planners, designers and engineers, police, county sheriffs and fire/rescue and field maintenance personnel should be consulted in the program design and review process.

Implementation of an Emergency Response Protocol.

- The management entities should implement an emergency response protocol working with law enforcement, EMS agencies, and fire and rescue departments that includes mapping of trail and open space access points, design of trails and access roads (to accommodate loads up to 6.5

CONSIDERATIONS FOR RISK MANAGEMENT

- State law of South Carolina, removes much of the liability from landowners who open their property for public recreation except in cases of gross negligence. Specifically, this can be found in South Carolina Code of Laws Title 27, Chapter 3. Additionally, in April 2012, the South Carolina Governor signed amendments to Code of Laws 47-9-710 and 47-9-730 to improve liability protections for landowners allowing equestrian trail riding activity on their property (see Bill H4775).
- Trails and trail users are inherently safe. In a Rails-To-Trails Conservancy survey, most reported suits were the result of one individual being reckless, then trying to shift blame onto the trail. In 150 million trail visits surveyed by the Rails-To-Trails Conservancy, only eleven resulted in lawsuits.[3]

tons), an "address system" such as mile markers to identify locations and, where appropriate, 911 emergency phones in remote areas. The Swamp Rabbit Trail in Greenville, SC has developed an "address system" using numbered pavement markings every tenth of a mile.

Implementation of a User Education Program.

- The management partners should implement a user education program reaching out to key user groups, such as communities, groups and clubs, to teach safe trail behavior and conflict prevention.

Conducting Routine Trail Inspections.

- The management partners should routinely inspect for safety hazards, defective structures, missing safety signs, etc. A key part of this oversight is maintaining contacts with neighboring property owners, residents and businesses, and being responsive to their concerns. A properly trained and coordinated volunteer trail patrol/docent staff is used by many regional and local trail agencies to supplement the work of limited paid staff on inspections and routine contacts.

Posting and Enforcing Safe Trail Behavior.

- The management partners should post and enforce safe user behavior and pathway speed limits (in congested and high risk areas).
- Again, trained and coordinated volunteers can be key to success in providing information and enforcement.

Regular Trail Patrol and Use Monitoring.

- Generally, proper use of the trail is expected to be self-enforced by the general public. For the first three months after opening, the management agencies should patrol the trail on a regular basis – potentially with the assistance of volunteers. After the first three months, the management agencies should patrol on an intermittent basis. The level of patrols should be based on reported incidents and problems.

Trail Monitoring and Maintenance.

- The trail will require maintenance to address deterioration due to weather or general use. Field checks and maintenance will be required to prevent and address potential problems such as damage to signs, litter, and graffiti; travel at unsafe speeds; mismanaged pets; or unauthorized motor vehicles on the trail. The management partners should trim trees, bushes, tall grasses, etc. to address clearance, fire safety and sight distance issues. Control of litter and maintenance of the trail surface, signs, fences and gates are regularly required. Maintenance and management activities will require staff, equipment, and the associated funding.

Regular trail maintenance can help establish paths that steer clear of potential hazards, while still allowing interaction with nature. Discretion should be used when addressing potential hazards such as slipping on the rocks in this waterfall.

VOLUNTEERS AND THE O&M PLAN

Volunteers can play a big role in trail monitoring and maintenance, provided there is overall on-going oversight and coordination.

Each trail segment or project should have a specific operation and maintenance plan that identifies tasks, responsible parties, sources of funding and support.

Community Involvement with Trail Safety and Maintenance

Creating a safe trail environment goes beyond law enforcement officers and should involve the entire community. **The most effective and most visible deterrent to illegal activity on any trail is the presence of legitimate trail users.** As a general pattern, introducing legitimate use on the trail right-of-way will discourage illegitimate use. Getting as many "eyes on the corridor" as possible is a key deterrent to undesirable activity on the trail. There are several components to accomplishing effective community involvement in trail safety as outlined below.

PCF will have a key role in encouraging these programs, providing guidance for their implementation, and establishing their purpose within Palmetto Trail passage O&M Plans (see previous section). Local partners should take the lead in developing and implementing these efforts. The Palmetto Trail County Committees can serve as a liaison to local partners, ensuring that these programs are established and effective.

Volunteer Trail Patrol

- Volunteer trail patrols are beneficial in improving trail safety. Patrols range from informal monthly clean-up and maintenance crews to daily patrols that provide maps, information and emergency assistance. The primary function of these patrols should be to educate trail users and to provide assistance when necessary. Patrols should also be equipped to alert emergency services quickly if needed. Above all, the presence of a patrol deters crime and improves users' enjoyment of the trail. Trail managers should be creative in using local community organizations and law enforcement to maintain and monitor the trail. Along certain passage of the Palmetto Trail, trail masters and trained volunteers will serve this purpose.

Adopt-a-Trail Program

- Businesses and residential neighborhoods abut the Palmetto Trail. Neighbors of the trail often see the benefit of involvement in trail development and maintenance. Businesses and developers may view the trail as an integral piece of site planning and thus be willing to take on some level of responsibility for the trail. Creation of an adopt-a-trail program should be explored to capitalize on this opportunity and build civic pride. Along certain passage of the Palmetto Trail, trail masters and trained volunteers will serve this purpose.

Trail Safety Education and Outreach

- On-going safety education is an important means of reducing liability exposure and encouraging safe behavior. Management agencies need to ensure that warning signs explaining the importance of staying on the authorized trail are prominently displayed and regularly maintained. Additionally, the management agencies could create trail brochures or initiate more formal education programs and engage in trail patrols. County Committees and the Palmetto Trail Advisory Board will play a key role in determining the need for safety education on any given passage of the Palmetto Trail and in developing and implementing appropriate responses to those needs.

USAGE EVALUATION

Data regarding trail use is critical for effective trail management. Such data can help managers:

- Evaluate need for new trails and trail upgrades
- Evaluate community demand
- Identify and respond to overused and under used trail segments
- Explain trail value to community, elected officials, grant agencies
- Justify resource allocation
- Forecast demand
- Support grant applications

KEY: SUGGESTED ACTORS

PCF Administration & Staff

County Committee

Local Partners

Recommended Strategies:

ACTION ITEM	SUGGESTED PRINCIPLE ACTOR
Continue to use infrared counters on passages of the Palmetto Trail to provide general data of trail usage and longitudinal trends.	
Encourage local partners to conduct their own trail counts and surveys in coordination with PCF and to share their data and findings (e.g. the Mary Black Rail Trail usage study).	
Supplement infrared trail counting with manual counts and user surveys conducted every two years on consistent dates/times to provide detailed trail usage data and longitudinal trends.	
Create bi-annual reports analyzing the manual count and survey data, as well as the data collected through infrared counters; use this analysis to inform decisions regarding trail investments and to support grant and donor requests.	

DISCUSSION: USAGE EVALUATION

There are two basic ways to collect user counts: **manual counts and automatic counters.**

PCF owns and uses infrared counters that provide a (relatively) accurate count of trail users. The disadvantage of most automatic count systems, other than video, is that they can't detect user type or direction, and require some assumptions about out-and-back trail use numbers to arrive at a distinct number of users per trail. Video counts can detect overall number and individual type of users, and direction of travel, but they are very expensive for the counters, software and/or post-processing.

Many trail managing agencies and organizations use a combination of automatic counts, providing a complete picture of use levels per location counted over a long period such as an entire year, along with manual counts to provide details of trail user type, direction, and other factors. These manual counts are often conducted by volunteers working under the direction of staff and/or consultants. The manual counts are often conducted in parallel with intercept surveys (although this needs to be done in a way to avoid skewing the counts) to obtain user information and opinions, such as origin, destination, frequency of use, likes and dislikes.

With sufficiently complete automatic counts supplemented by manual counts at strategic locations and times (the more data points the more accurate the results) a very complete and detailed picture of overall trail use can be created at relatively low cost.

A trail use data collection and extrapolation methodology that is used by many trail management agencies and organizations is the **National Bicycle and Pedestrian Documentation Project** (NBPD) (www.bikepeddocumentation.org), a nation-wide effort to improve the methodology for collecting bicycle and pedestrian counts and sharing the data. The NBPD is sponsored Alta Planning + Design and the Institute of Transportation Engineers. The count methodology records the volume of activity at a specific location and also records the direction from which visitors approached the count location, allowing a "network" analysis of use of the trail system similar to a street traffic model. **The NBDP is a way to improve the accuracy of the extrapolation of small blocks of detailed data** into overall estimates of activity by user type and other factors. It also facilitates the preparation of tables and text to present the results, and provides the opportunity to collaborate with others to improve the overall counts methodology and knowledge base.

TYPES OF AUTOMATIC COUNTERS

- Passive Infrared - detects change in thermal contrast
- Active Infrared - detects obstruction in beam
- Video Imaging - software analyzes pixel changes, or Data is played by and analyzed by a person
- In Pavement Magnetic Loop - senses change in magnetic field as metal passes over (not suitable for most trails)
- Slab Sensor - detects change in pressure to measure footsteps (not suitable for most trails)

ADVANTAGES OF AUTOMATIC COUNTERS

- Consistent data rather than a "snap shot"
- Can indicate effects of weather (based on correlation with other data), seasonal variations in use, and impact of events all of which are difficult to capture in manual counts, or to factor in use extrapolations derived from them.
- Are more cost effective than coordinating volunteers on manual counts
- Can provide more in depth data than manual counts

CORRIDOR PROTECTION

A significant challenge to trail planning and implementation is obtaining land or permission to use land to build the trail through private areas, or other public land that is not open for public access. This section discusses mechanisms whereby trail access could be legally acquired or granted. (Note: The sponsors of this Plan do not support the use of eminent domain; and would work only through willing-seller options to gain property access.)

Recommended Strategies:

ACTION ITEM	SUGGESTED PRINCIPLE ACTOR
Establish fee purchase, easement, bargain sale, and land donation as the preferred arrangements for obtaining land or permission for trail development due to PCF's ability to protect the trail corridor through these agreements.	
Include trail corridor protections within any new MOU agreements (or local O&M plans) so that actions which threaten the integrity of the trail, such as prescribed burns or logging, are prohibited or occur only after PCF has been notified in writing of the anticipated impacts of the action	
Pursue amendments to PCF's existing MOU agreements (or local O&M plans) so that actions which threaten the integrity of the trail, such as prescribed burns or logging, are prohibited or occur only after PCF has been notified in writing of the anticipated impacts of the action.	

KEY: SUGGESTED ACTORS

PCF Administration & Staff

County Committee

Local Partners

DISCUSSION: CORRIDOR PROTECTION

Lead agencies or organizations seeking to implement a trail on private land or another agency's land have several options to gain access to the portion of the property needed for the trail. These options include trail dedications, fee purchase, easement, license, memoranda of understanding, bargain sale and donation. **They offer a range of conditions for control of the land and assumed liability.**

Fee Purchase

Public agencies may purchase a parcel of land (fee title) for a trail. Fee purchase of the land **gives the buyer clear title to the property.** It provides the simplest, and sometimes the most feasible approach toward acquiring access to land. Trail and greenway lands are often marginally developable and unsuitable for most development activity. The liability of these lands from a real estate tax perspective creates an opportunity for some developers to reduce their tax burden by selling or deeding the property to an agency for a trail.

Some agencies or nonprofits, particularly land trusts, will purchase a parcel of land to retain conservation and trail easement, and then sell it to provide parties for compatible uses – usually agriculture.

Easement

Easements provide the general public with the right to use a specific parcel of property such as for a trail (a trail easement), and/or to restrict the use and development of the property (a conservation easement), covering either the entire parcel or in a defined area or corridor.

Easements come in variety of forms that all involve the landowner's willingness to allow the use of a portion of their property and/or forego development rights for an agreed upon timeframe or in perpetuity. They typically "run with the land," meaning the easement stands regardless of a change in ownership.

Trail easements are often used in South Carolina, but because they are considered recreational easements, they do not provide the same property tax reduction advantages as conservation easements. Conservation easements typically involve significant constraints on the use of the property, and thus often cost a significant percentage of the fee value of the underlying property. Easements are nevertheless a more affordable option than fee purchase.

Under most circumstances, landowners relinquish liability and management of that portion of the property and the public agency purchases the right to construct and maintain the trail on the property or a portion of the property.

As part of a development permitting process, an agency may require developers to dedicate an easement for a recreational trail such as the Palmetto Trail. Dedications may be included as conditions of approval of the development.

A combined conservation/trail easement would be the best means of protecting the resources and the trail experience, along with the right of access for the trail, provided the property owner was willing and funds were available for the purchase. A model conservation easement from the South Carolina Office of the U.S. Army Corps of Engineers is provided in the Appendix to this report. The effectiveness and value of a conservation easement is often only realized through proactive monitoring of compliance and response to any issues. The Appalachian Trail Conservancy materials outlined under Case Studies above include useful guidance for easement monitoring by volunteers.

Bargain Sale

A property owner may sell property or an easement at a **price less than the appraised fair market value of the land or easement**. Sometimes the seller can derive the same benefits as if the property were donated. Bargain sales are attractive to sellers when the seller wants cash for the property, the seller paid a low cash price and thus is not liable for high capital gains tax, and/or the seller has fairly high current income and could benefit from a donation of the property as an income tax deduction. The lost capital gain, which is the appraised value less the sales price, is taken as a tax deduction.

License

A license is usually a **fixed-term agreement that provides limited rights** to the licensee for use of the property. Typically, these are employed in situations when the property cannot be sold (e.g. a publicly-owned, active electrical utility corridor), or the owner wants to retain use of and everyday control over the property. The trail management authority obtains permission to build and operate a trail. But it will have little control over the property, and may be subject to some stringent requirements that complicate trail development and operation. As with easement agreements, property owners would want a license agreement to address issues on their side. Through cooperative negotiation issues such as access for maintenance, trail management, and future improvements or modifications of the trail can be addressed.

Memoranda of Understanding

In this context Memoranda of Understanding (MOUs) are typically agreements between multiple entities to delegate or share trail planning, development, management and/or maintenance duties. **MOUs are legally binding on the agreeing entities to carry out their duties in good faith.** Entities involved in these agreements may include public, private, non-profit or any other interested party. PCF has used MOUs extensively as a way to reach agreement with a private property owner for trail access. The advantage is that the agreement can often be reached with little or no cost to acquire the access right. The disadvantage is that the agreement does not have the permanence or legal status of an easement that can be recorded on the property title, and does not necessarily protect the resources on the property as clearly and completely as a conservation easement. Over a twenty year period of uninterrupted trail use under an MOU, the right for access could become prescriptive, thus addressing the non-permanence of the MOU.[4]

Some of the resource protections and development limitations afforded by a conservation easement could be built into an MOU, if the property owner was agreeable. This would not offer the legal status or permanence of the protection afforded by an easement, nor would permanence of the protection potentially be created prescriptively, as could basic access rights. However, a clear "gentlemen's agreement" regarding protection of resources and avoiding development that would directly impact the trail experience may still have significant value.

Donation

Donations typically include full transfer of property to an agency or non-profit for a specific use or purpose that may be simple or complicated by extensive conditions. **Financial incentives in the form of tax credits are available in most cases.** The receiving entity agrees to receive title to a parcel of land or easement at virtually no cost. In most cases, the donor is eligible to receive federal and state deductions on personal income, as describe under bargain sales. In addition, property owners may be able to avoid inheritance taxes, capital gains taxes, and recurring property taxes.

Clearly outlining corridor protection options will help keep progress moving for the Palmetto Trail.

RECOMMENDED MAINTENANCE APPROACH

A high level of trail maintenance is critical to the overall success and safety of any trail system. Maintenance includes activities such as pavement stabilization, landscape maintenance, facility upkeep, sign replacement, fencing, mowing, litter removal, painting, and pest control.

ACTION ITEM	SUGGESTED PRINCIPLE ACTOR
Establish an avenue for trail users and volunteers to report maintenance issues. The reporting mechanism should be available via a phone call as well as a smart phone application and should be developed in conjunction with the marketing strategies related to smart phone applications and interactive mapping	
Continue to utilize volunteer labor for the maintenance of off-street facilities by way of 'volunteer vacations' and other partnerships, as outlined in the marketing recommendations of this Plan (Chapter 5: Marketing & Branding)	
Include trail maintenance guidelines within any new MOU agreements (or local O&M plans) and identify the specific agency or organization responsible.	
Pursue amendments to PCF's existing MOU agreements (or local O&M plans) to include trail maintenance guidelines and the parties responsible.	

KEY: SUGGESTED ACTORS

PCF Administration & Staff

County Committee

Local Partners

DISCUSSION: RECOMMENDED MAINTENANCE APPROACH

A successful maintenance program requires continuity and a high level of citizen involvement. Regular, routine maintenance on a year-round basis will not only improve trail safety, but will also prolong the life of the trails. Maintenance activities required for safe trail operations should always receive top priority.

PCF already utilizes volunteer groups for a variety of trail maintenance activities, including trail monitors/adopters who report maintenance issues. Further defining and expanding PCF's channels of communication for reporting maintenance issues and establishing volunteer projects will allow for:

A broader base of volunteer participants

- Easier access to multiple channels for reporting maintenance issues (ranging from a call-in number posted on wayfinding signage to a smart phone application) will encourage participation by trained and untrained volunteers, frequent and infrequent trail users, busy young professionals as well as retired senior citizens.

Targeted utilization of volunteer labor

- Through tighter management of reported maintenance issues and volunteer recruitment, PCF can ensure that the available volunteer labor is directed toward the most appropriate maintenance needs.

Integration of Maintenance with Other Trail Management Efforts

- Opportunities for advancing PCF's volunteer recruitment exist within concurrent initiatives of the organization - for example, advertising and marketing to promote usage of the trail can also include information about volunteer vacations or wayfinding signage can include contact information for reporting maintenance issues.

Each facility type along the Palmetto Trail bears distinct maintenance requirements.

The table on the next page summarizes typical maintenance standards for regional trail systems:

If this group is hiking on a Palmetto Trail path and they find a maintenance issue, they should have access to someone who can help them resolve the problem. One idea could be to place contact information on Palmetto Trail signage so visitors can access the correct department.

Table 1: Schedule of Maintenance Standards

Maintenance Task	Suggested Frequency
Major damage response (fallen trees, washouts, flooding)	Immediate in response to need
Site furnishings; replace damaged components	As needed
Graffiti removal	Weekly; as needed
Shrub/tree irrigation for introduced planting areas	Weekly during summer months until plants are established
Trash disposal	Weekly during high use; twice monthly during low use
Litter pick-up	Weekly during high use; twice monthly during low use
Fencing repair	Inspect monthly for holes and damage, repair immediately
Inspections	Seasonally (4 times/year)
Pavement sweeping/blowing	As needed; before high-use season

Maintenance Task	Suggested Frequency
Culvert inspection	Before rainy season; after major storms
Maintaining culvert inlets	Inspect before onset of wet season
Lighting repair	Annually
Waterbar maintenance (earthen trails)	Annually
Shoulder plant trimming (weeds, trees, branches)	Bi-annual (Fall or Spring)
Sign repair/replacement	4-6 years
Pavement markings replacement	1-3 years
Introduced tree and shrub plantings, trimming	1-3 years
Pavement sealing; pothole repair	5-15 years

On-Street Bikeway Maintenance

While implementing bikeway facilities is important, keeping them in good condition is equally important. When a bicycle lane becomes filled with debris, cyclists are forced into the motor vehicle lane. **Poor bikeway maintenance can contribute to accidents and deter potential cyclists** unwilling to risk flat tires and skidding on roadways.

Maintenance of the on-roadway bicycle facilities is handled by local Public Works Departments and SCDOT's Maintenance Division. Regular inspections throughout the year are necessary to identify the need for minor repairs, replacement of signs, vegetation grooming, and other items that an inspector could remedy in the field. Additional attention should be paid to any potholes or other pavement damage. Additional sweeping may be required where bicycle lanes and wider shoulders are provided along roads.

Sidewalk Maintenance

SCDOT maintains all sidewalks on SCDOT rights-of-way. Maintaining pedestrian facilities is an important part of maintaining the complete right-of-way for all users. When cracks, surface defects, tree root damage, and other problems are identified, SCDOT fixes the area to ensure sidewalks remain accessible to all pedestrians. Repairs are generally completed on an as-needed basis rather than through regularly scheduled evaluation of the sidewalk condition.

On locally-owned streets, local property owners are responsible for routine maintenance of sidewalks (such as clearing vegetation) and local government agencies (usually a public works department) are responsible for more significant repairs. Crosswalks, pedestrian signals, curb ramps, median crossing islands, and other pedestrian facilities should be maintained by the respective local agency and SCDOT, depending on right-of-way ownership.

Paved Multipurpose Path Maintenance

Cracks, ruts and water damage will need to be repaired periodically. In addition, vegetation control will be necessary on a regular basis. Where drainage problems exist along trails, ditches and drainage structures will need to be kept clear of debris to prevent wash outs. Checks for erosion along the trails should occur immediately after any storm that brings flooding to the local area. **The trail surface should be kept free of debris,** especially broken glass and other sharp objects, loose gravel, leaves and stray branches. Trail surfaces should be swept periodically to keep them clear of debris. Sweeping should be scheduled based on need. Path segments in forested areas will tend to accumulate surface debris such as leaves and branches at a faster rate than other path segments. These areas should be swept more frequently in order to maintain safe surface conditions on paved multipurpose paths.

A 7- to 15-year life is assumed for asphalt and crushed fine trails after which an overlay may be required. A complete resurfacing after 20 to 25 years is anticipated. Concrete is assumed to last twice as long. Bridges, tunnels, retaining walls and other heavy infrastructure are assumed to have a 100-year life or longer.

OTHER BENEFITS OF GOOD MAINTENANCE PROGRAMS

- A high standard of maintenance is an effective way to advertise and promote trails as a local and regional recreational resource and destination
- The psychological effects of good maintenance serve as an effective deterrent to vandalism, litter, and encroachments
- Regular maintenance is necessary to preserve positive public relations between adjacent land owners and trail managing agencies
- Good maintenance makes enforcement of regulations on the trails more efficient. The management agencies, local organizations and service groups will take pride in "their" trail and will be more apt to assist in protection of the trail system.
- A proactive maintenance policy will help improve safety along the trails.

Natural Surface Trail Maintenance

In general, trail users should have clear views of their surroundings so plantings along trails should be maintained to allow for visibility. Understory vegetation along trail corridors should not be allowed to grow higher than thirty-six inches. Tree species selection and placement should be made that minimizes vegetative litter on the trail.

The trail surface should be inspected and repaired to avoid erosion and tripping hazards. The management agency should correct or improve drainage to retain the integrity of the trail structure, including the removal of trail edges where berms tend to build up and where uphill slopes erode onto the trails. In flat areas, the trail should be constructed to provide a surface with a crown or cross slope. Trails in hillside areas should be maintained to provide an out slope. Similar to paved multipurpose paths, the trail surface should be kept free of debris, loose gravel, leaves, and stray branches.

Temporary Trail Closures

The trail, or sections of the trail, may be closed from time to time for maintenance of the facility. Trail users will need to be managed during these closures. The procedural policies that should be followed prior to the closing of the trail are listed below.

- The management agency should **post signs at all trail entrances** on the impacted segments to be closed indicating the duration of the closure.
- The management agency should **keep the public informed** and make every effort to keep the closure period as short as possible. The forty-eight hour notice shall be waived in the case of emergencies.
- The management agency should **physically block the trail** that is being closed with barriers and post "Trail Closed" signs.
- The management agency should **provide "Detour" signs** describing alternate routes.

The management agency should not re-open the trail until it has been inspected to ensure that the trail is in usable condition. Where obstructions remain, the management agency should provide warning signs for trail users to slow down or dismount where needed. PCF follows USFS standards for trail maintenance ensuring a trail width of 30-36 inches; corridor clearing of two feet each side of trail path and an eight foot vertical clearance (twelve feet where equestrians are anticipated).Vertical clearance along the trail should be periodically checked and any overhanging branches over the trail should be pruned to the minimum vertical clearance.

Trail maintenance also includes establishing Conservation Easement Areas in places with particularly delicate ecosystems.

ESTIMATING OPERATIONS AND MAINTENANCE COSTS

Operations and maintenance costs vary significantly from one trail system to another. Research and case studies related to these costs are provided in **Appendix A.**

Factors that Affect Per Mile Operations and Maintenance Costs

- Intensity of use
- Rural vs. urban sections of the trail – in addition to a higher intensity of use, urban sections will likely include additional interfaces with other town infrastructure (roads, bridges, etc.), and will require maintenance attention
- What is specifically included in the operations and maintenance budget? Are larger projects like sealing, resurfacing (or smaller resurfacing projects) going to be included? Are other funds or funding sources going to be created or planned for to handle those costs?
- Cost of living in the area
- The answer to these questions can be affected by other town/park capital improvement projects competing for funds
- Use of volunteers – public agency management vs. non-profit/volunteer management
- Some rail trails are owned and managed by non-profit organizations; operations and maintenance costs for these trails will likely be lower due to the extent of volunteer use (however, liability risks are more easily dealt with when rail trails are owned and managed by a public agency)

Operations and Maintenance Costs for the Four Off-Street Palmetto Trail Types

Three of the seven trail typologies along the Palmetto Trail facility continuum occur on municipal, county, or state roads: urban, suburban, and rural corridors. These sections of the Palmetto Trail are maintained by the jurisdiction that owns the road and do not involve maintenance costs typical to off-street trail facilities.

Wide Roadway/Utility Corridor

- $1,500 - $2,500 per mile per year

Rail Trail Corridor

- $1,500 - $2,500 per mile per year

Service Road Corridor

- $1,500 - $2,500 per mile per year

Public Lands/Riparian Corridor

- $150 - $1,500 per mile per year

For these four off-street trail corridor types, per mile deferred maintenance costs are estimated to equal one percent of the original per mile construction costs. For example, an asphalt trail that cost $400,000 per mile to construct would require $4,000 per mile in annual deferred maintenance expenses*.

Estimated Annual Maintenance Cost for the Completed Palmetto Trail

On-road facilities are maintained as part of SCDOT, county, or local jurisdiction roadway networks. On the Palmetto Trail, on-road facilities constitute 122 miles of existing trail and 62 miles of proposed trail. These 184 miles are not included in the annual maintenance costs.

The four off-street trail types constitute 227 miles of the existing Palmetto Trail and 143 miles of proposed trail.

The total annual cost of maintaining the 370 miles of off-street trails of the completed Palmetto Trail is estimated at $737,000.

**Source: Figures are based on the information available and the nature of the Palmetto Trail and PCF, as its lead organization.*

ENDNOTES

1) http://www.parks.ca.gov/pages/980/files/app_c_trailuseconflictstudy_chginuse_draft.pdf

2) McEowen, Roger A. "Recreational Use of Private Lands: Associated Legal Issues and Concerns" (The National Agricultural Law Center, 2003).

3) Poole, T. Rail-Trail Maintenance and Operation. Rails-To-Trails Conservancy Northeast Regional Office. July 2005.

4) Case 25946 - Pittman v. Lowther, State of South Carolina Supreme Court. http://www.judicial.state.sc.us/opinions/displayOpinion.cfm?caseNo=25946

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CHAPTER 8
Implementation Plan

"PCF is in **excellent position to catapult the Palmetto Trail** to its final phase as a continuous linear corridor linking communities, local economies, active transportation, and outdoor adventure across South Carolina's landscape."

OVERVIEW

With an impressive system of existing trails, trail development and funding partners across the state, and new routes identified in gap areas, PCF is in excellent position to catapult the Palmetto Trail to its final phase as a continuous linear corridor linking communities, local economies, active transportation, and outdoor adventure across South Carolina's landscape. In moving forward, **this section details strategies and actions that will guide this momentum for trail development toward concrete results,** benefiting both present and future generations. Key components of this Chapter include:

- Opinion of Probable Cost
- Funding Strategy
- Phased Trail Development
- Phased Management, Maintenance, and Marketing Strategies

The Opinion of Probable Cost section provides an **estimate for total cost** of developing the Palmetto Trail gap alignments. The Chapter then provides an overarching framework for funding the implementation of the Plan's recommendations. This funding framework informs the phasing of both trail development and management, maintenance, and marketing strategies, which is outlined in the final two sections of this Chapter.

Phasing timetables are based on the priorities identified for this master plan, sequential logic (when one action builds upon another), and a reasonable timeline for trail design and construction.

OPINION OF PROBABLE COST

Opinion of probable cost is derived from previous studies, contractor coordination, and recent indexed construction cost through RSMeans Construction Cost Data (2012). Not all trail typologies are typical, and it is assumed that more detailed feasibility studies will be required based on actual field conditions. The opinion of probable cost is a general guideline for the purpose of preliminary planning and budgeting of trail projects and should not be considered actual construction cost to complete the project.

Opinion of probable cost includes the following applicable construction methods and measures:

- **Engineering and Design**
- **Clearing and Grubbing**
- **Silt Fence**
- **Fine Grading**
- **Construction Entrances (as needed)**
- **Demolition**
- **Surface Course (asphalt, concrete, wood chips)**

A 20% contingency has been included in the planning level opinion of probable cost provided in Table 1.0 to reflect additional site specific amenities, such as Detectable Warning Surfaces, Bollards, Signage (traffic control, educational, directional, etc.) and site furnishings. Land acquisition and easement cost are included as part of these estimates based on best practices for purchase of undeveloped properties. Site specific conditions may increase or decrease these cost accordingly.

Probable Cost of Palmetto Trail Gap Alignments

The opinion of probable cost per linear mile in Table 1.0 provides a unit level estimate of the cost to develop proposed segments of the Palmetto Trail based on the trail facility type. The following section identifies the trail facility type proposed along each gap alignment. Each gap alignment includes multiple trail facility types.

The estimated total cost of completing Gaps A through H is approximately $21.5 million.

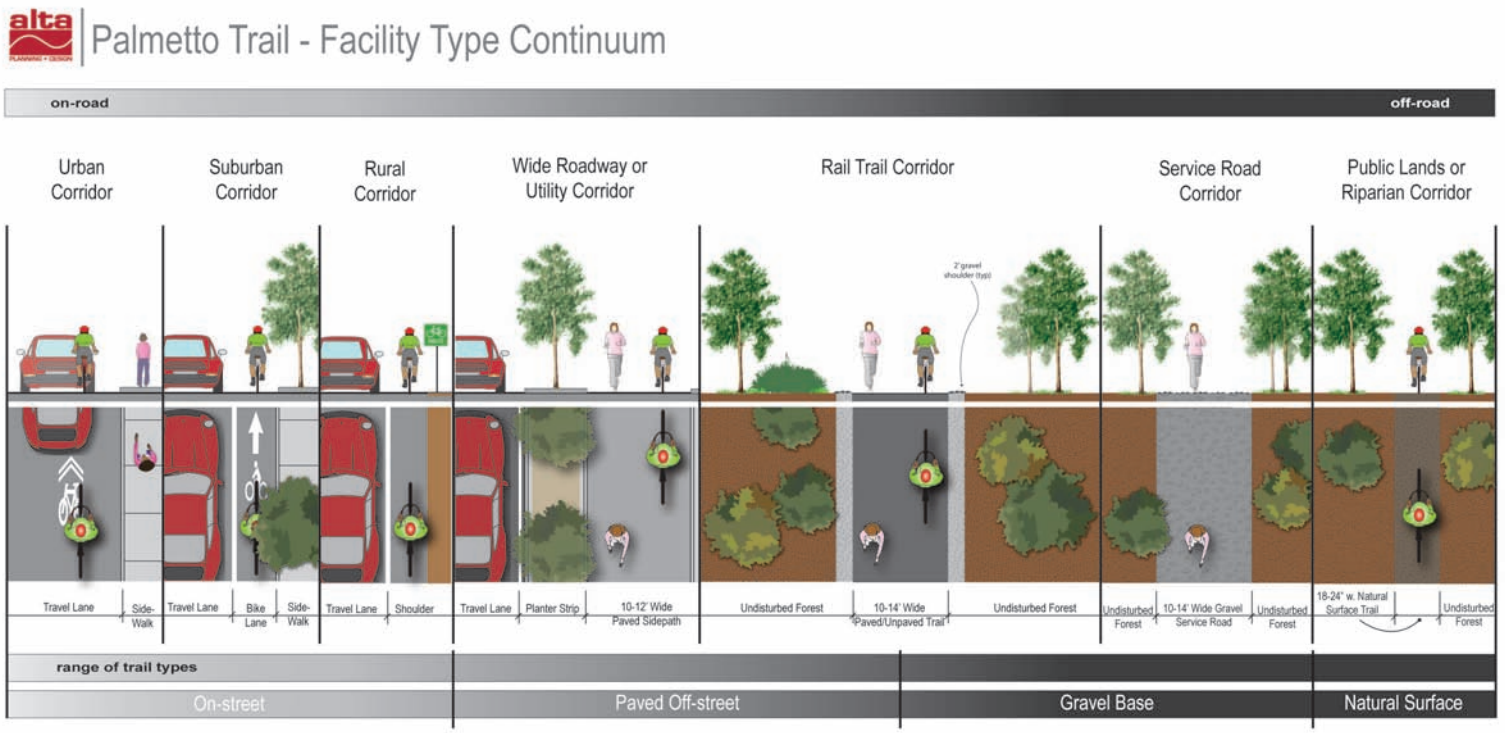


Table 1.0: Opinion of Probable Cost Per Linear Mile

Facility Type	Cost Per Linear Mile	Notes
Public Lands or Riparian Corridor (Natural Surface)	$80,000/mile	
Service Road Corridor (Base in good condition)	$18,000/mile	Wayfinding signage and minimal corridor repairs to include aggregate course repair in select locations, and removal of low hanging limbs
Rail Trail Corridor (Paved trail utilizing existing railroad base)	$750,000/mile	
Wide Roadway or Utility Corridor (Paved trail)	$750,000/mile	
Rural Corridor (Existing shoulder width for bike route)	$30,000/mile with roadway striping; OR $5,000/mile without roadway striping	Striping to include 4" thermoplastic stripe along roadway shoulder; OR wayfinding signage only
Suburban Corridor (Existing width for bike lane)	$30,000/mile with roadway striping; OR $5,000/mile without roadway striping	Striping to include 4" thermoplastic stripe along roadway shoulder; OR wayfinding signage only
Urban Corridor (Existing sidewalk)	$10,000/mile	Wayfinding signage only

Table 2.0 - Gap A | Oconee to Jocassee Gorges – Preferred Route (Crossing Lake Jocassee Dam)

Corridor	Facility Type	Length (mi)	Cost
Oconee Passage to Winding Stairs Road	Natural Surface	4.0	$320,000
Winding Stairs Road	Service Road Corridor	3.5	$35,000
Jumping Branch Road/Cherokee Lake Road	Rural Corridor	2.5	$75,000
Cherokee Lake Road to Piedmont Nursery Road	Natural Surface	1.5	$120,000
Piedmont Nursery Road to Cherokee Valley Road	Rural Corridor	1.0	$30,000
Cherokee Valley Road to Highway 130	Rural Corridor	1.5	$45,000
Highway 130	Rural Corridor	0.2	$6,000
Highway 130 to Laurel Ridge Drive	Service Road Corridor	6.0	$108,000
Laurel Ridge Drive/Devil Fork Road/Jocassee Lake Road/Hudd Station	Rural Corridor	1.5	$45,000
Lake Jocassee Dam Road (Across Lake Jocassee Dam)/Horse Pasture Road	Rural Corridor	9.5	$25,000
Horse Pasture Road to Holcombe Hollow	Service Road Corridor	4.0	$72,000
Holcombe Hollow to Twin Falls Trailhead	Rural Corridor	0.5	$15,000
Twin Falls to Cleo Chapman Road	Natural Surface	1.0	$80,000
Cleo Chapman Road to Blue Ridge Electric Passage	Natural Surface	3.5	$280,000
	Totals:	40.2	$1,256,000

Table 3.0 - Gap B | Jocassee Gorges to Middle Saluda

Corridor	Facility Type	Length (mi)	Cost
TR Campground Road/Table Rock State Park Road	Rural Corridor	1.0	$30,000
Table Rock Mountain Trail	Natural Surface	1.5	$120,000
Table Rock Mountain Trail to Middle Saluda Passage	Natural Surface	13.5	$1,080,000
	Totals:	16.0	$1,230,000

Table 4.0 - Gap C | Middle Saluda to Saluda Mountain

Corridor	Facility Type	Length (mi)	Cost
Middle Saluda Passage to Bear Claw Ridge Road	Natural Surface	2.5	$200,000
Bear Claw Ridge Road/CCC Road/Anderson Road	Rural Corridor	4.0	$120,000
Anderson Road to Bobs Creek Road	Natural Corridor	2.5	$200,000
Bobs Creek Road/Gap Creek Road to Poinsett Passage	Rural Corridor	2.0	$60,000
	Totals:	11.0	$580,000

Table 5.0 - Gap D | Blue Wall to USC Upstate

Corridor	Facility Type	Length (mi)	Cost
Blue Wall Passage to North Main Street (Inman, SC)	Rail-to-Trail Corridor	11.0	$8,250,000
Brock Street/Clark Road/Spring Valley Road/ Sugar Ridge Road/Hanging Rock Road/ Valley Falls Road/Ranch Road	Rural Corridor	9.5	$285,000
Ranch Road to USC Upstate Passage	Natural Surface	0.5	$40,000
	Totals:	21.0	$8,575,000

Table 6.0 - Gap E | Glenn Springs to Enoree

Corridor	Facility Type	Length (mi)	Cost
Glenn Springs Passage to Tucker Road	Natural Surface	5.0	$400,000
Tucker Road	Rural Corridor	0.5	$15,000
Tucker Road to Blackstock Battle Trail	Natural Surface	4.5	$360,000
	Totals:	10.0	$775,000

Table 6.1 - Option 1: Cross Keys Passage

Corridor	Facility Type	Length (mi)	Cost
Blackstock Battle Trail to Battlefield Road	Natural Surface	0.5	$40,000
Battlefield Road	Rural Corridor	0.5	$15,000
Battlefield Road to Blackstock Road	Natural Surface	2.0	$160,000
Blackstock Road/Cross Keys Highway/Old Buncombe Road	Rural Corridor	4.5	$135,000
	Totals:	7.5	$350,000

Table 6.2 - Option 2: Tyger River Passage

Corridor	Facility Type	Length (mi)	Cost
Blackstock Battle Trail to Cross Keys Highway	Natural Surface	5.5	$440,000
Cross Keys Highway/Bomb Range Road	Rural Corridor	3.0	$90,000
	Totals:	8.5	$530,000

Table 7.0 - Gap F | Enoree to Peak to Prosperity

Corridor	Facility Type	Length (mi)	Cost
Enoree Passage along Chandler Road	Service Road Corridor	1.5	$27,000
Fanklin Road/Means Road	Rural Corridor	1.0	$30,000
Means Road to Highway 121	Natural Surface	1.5	$120,000
Highway 121	Rural Corridor	0.5	$15,000
Highway 121 to Garmany Road	Natural Surface	1.0	$80,000
Garmany Road	Service Road Corridor	2.0	$36,000
Mt. Bethel Garmany Road	Rural Corridor	0.5	$15,000
Mt. Bethel Garmany Road to Mawson's Way	Natural Surface	4.5	$360,000
Mawson's Way/Confaloneir Drive	Rural Corridor	1.0	$30,000
Confalonier Drive to Lynch Woods Passages	Natural Surface	0.5	$40,000
Lynch Woods Passage to Ruff Bottom Road	Natural Surface	2.5	$200,000
Ruff Bottom Road to Twin Springs Road	Rural Corridor	2.7	$81,000
Twin Springs Road	Rural Corridor	0.5	$15,000
Rail-to-Trail from Highway 76 to Peak to Prosperity Passage	Rail-to-Trail Corridor	6.0	$4,500,000
	Totals:	25.7	$5,549,000

Table 8.0 - Gap G | Peak to Prosperity to Capital City – Option 1 (Rail-with-Trail)

Corridor	Facility Type	Length (mi)	Cost
Rail-with-Trail from Peak to Prosperity to Three Rivers Greenway	Natural Surface	22.5	
	Totals:	22.5	$16,875,000

Table 8.1 – Gap G | Peak to Prosperity to Capital City – Option 2

Corridor	Facility Type	Length (mi)	Cost
Peak to Prosperity to Alston Road	Rural Corridor	0.5	$15,000
Alston Road to Wallaceville Road	Natural Surface	8.0	$640,000
Depot Road to Wallaceville Road	Rural Corridor	0.5	$15,000
Wallaceville Road to Whispering Pines Road	Natural Surface	3.3	$264,000
Norfolk Southern Railroad to Whispering Pines Road	Rural Corridor	1.5	$45,000
Whispering Pines Road to Richtex Road	Natural Surface	1.7	$136,000
Richtex Road	Rural Corridor	0.5	$15,000
Richtex Road to Ledyard Road	Natural Surface	0.5	$40,000
	Totals:	16.5	$1,170,000

Continued from facing page: Table 8.1 – Gap G | Peak to Prosperity to Capital City – Option 2

Corridor	Facility Type	Length (mi)	Cost
Ledyard Road/Lilton Road/Hinnant Bottom Road/Bookmans Loop Road/Farley Road/ Montgomery Road	Rural Corridor	7.5	$225,000
Camp Ground Road	Rural Corridor	0.5	$15,000
Camp Ground Road to Monticello Road	Natural Surface	2.0	$160,000
Monticello Road to Slatestone Road	Rural Corridor	6.5	$195,000
Slatestone Road to Monticello Road	Rural Corridor	1.0	$30,000
Monticello Road to Three Rivers Greenway	Natural Surface	5.5	$440,000
	Totals:	39.5	$2,235,000

Table 9.0 - Gap H | Fort Jackson to Wateree

Corridor	Facility Type	Length (mi)	Cost
Capital City Passage to McCord's Ferry Road via Leesburg Road	Rural Corridor	1.0	$30,000
Westvaco Road/Screaming Eagle Road/Cate Road	Service Corridor	7.5	$135,000
Highway 76 to Vanboklen Road	Service Corridor	2.5	$45,000
Vanboklen Road	Rural Corridor	1.0	$30,000
Vanboklen Road to Pine Thicket Road	Natural Surface	0.5	$40,000
Pine Thicket Road	Rural Corridor	3.0	$90,000
Pine Thicket Road to Farmstead Road	Natural Surface	3.5	$280,000
Farmstead Road/McCord's Ferry Road	Rural Corridor	3.0	$90,000
McCord's Ferry Road to Wateree Passage	Natural Surface	1.5	$120,000
	Totals:	23.5	$860,000

FUNDING STRATEGY

Funding implementation of this master plan requires dedicated staff time and resources throughout the 10-year horizon. Successful fundraising will include a diversified portfolio of sources, including but not limited to:

- Major corporations
- Local businesses
- Private foundations
- Nonprofit partners
- County and municipality capital improvement budgets
- Federal and state grant programs

PCF has an impressive record of fundraising for trail planning and development and forging donor relationships from a variety of sources. The Blue Ridge Electric Co-op Passage (Jocassee Gorges) is an example of a long-standing sponsorship of a trail passage with significant volunteerism and stewardship by the company. The Advance America Bridge over Fairforest Creek along the Croft Passage could not have been built without the financial support of the Upstate-based company that lent its name. Boeing Corporation's contribution toward this master plan provides another example of PCF's fundraising capacity and the existing support for the Palmetto Trail within South Carolina's corporate community.

Federal funds and state Recreational Trails Program grants are part of PCF's fundraising portfolio. And in early 2014, PCF secured a grant from the foundation of the international company KEEN.

The following principles provide a framework for PCF as it moves forward with funding implementation of this Plan:

- **Strategically align with a variety of funding sources.** Continue to pursue contributions from a variety of funding source, as noted above. Strategically align the funding priorities of the major donor, grant-making foundation, or government agency with the funding needs presented in this Plan. In practice, this may mean seeking funds from a local business to develop a small segment of trail within the business' own community, or seeking funds from a health-focused foundation for a trail segment within a community facing high rates of physical inactivity and related chronic diseases.
- **Make the case.** Many funders require or prefer clear statements of needs that are being addressed and outcomes that are being realized. Management and marketing strategies recommended in this Plan will provide PCF with a quantitative basis for the value of the Palmetto Trail and its impact on South Carolina communities. As PCF strategically aligns the funding needs of this Plan with the priorities of potential funders, the usage evaluation, benefits cut sheets, and other materials will serve as essential tools for fundraising.
- **Package funding needs.** Fundraising is a sales pitch. This master plan provides PCF with clear delineation of the "products" it will be selling over the next ten years. While the Plan includes an extensive list of projects and programs to implement, the following two sections "package" those recommendations into manageable bundles that can be systematically funded and developed.
- **Stagger funding requests.** Funding requests must be staggered over time. This ensures that the right money is secured at the right time, that PCF fundraising staff are not overburdened, and that donor relationships can be cultivated over time, with repeat investments. The following two sections provide a phased timeline for developing gap alignments and for implementing marketing, management, and maintenance strategies. This allows PCF to create a long-term fundraising strategy based on needs that will arise in the near-term (0-3 years), medium-term (3 to 5 years), and long-term (5 to 10 years).
- **Plan for long-term funding needs.** Chapter 7: Management and Maintenance Plan estimates $737,000 in annual costs to maintain the completed Palmetto Trail (i.e. all existing passages and proposed gap alignments). PCF should establish a trust fund for maintaining the trail in perpetuity. This will require an initial major investment. Though PCF may begin the process of exploring trust fund options and potential major donors, active fundraising

for this should not occur until PCF has made substantial progress in funding and developing the remainder of the Palmetto Trail. This is a long-term strategy, for pursuit in 5 to 10 years. Once established, it will benefit the trail for decades to come.

PHASED TRAIL DEVELOPMENT

The Palmetto Trail Statewide Master Plan recommends development of more than 200 miles of new trail along the Palmetto Trail spine, as well as targeted expansion beyond the primary corridor. As PCF moves forward with implementation of this Plan, a strategic phased approach will provide manageable, achievable objectives based on staff and volunteer capacity and will give clarity and focus to fundraising efforts. The recommendations of the Plan are prioritized based on that goals and objectives developed for this master plan and needs identified within the Needs Analysis.

Realignments

Implementing the six proposed realignments should begin immediately. Excepting the Hub City Connector, the realignments are small trail segments with straightforward and feasible new alignments identified within this master plan. PCF staff are familiar with these corridors, the local stakeholders, trail landowners and land managers, and the work required to realign the existing route.

The Hub City Connector involves significant mileage and requires strategic linkages to several existing sections of Palmetto Trail.

The realignments of the Glenn Springs, Lake Marion, Eutaw Springs, and Lake Moultrie Passages can be completed within the next 12 to 18 months. Realignment of the High Hills of Santee Passage will require up to three years, given the mileage of the proposed new, parallel trail facility. The Hub City Connector requires immediate and on-going attention and will be completed on a 5 to 10 year horizon. Ongoing communication with local partners planning, designing, and/or developing segments of or connections to the Palmetto Trail's Hub City Connector Passage is critical to completion of this realignment.

Gap Alignments

"Finishing the Palmetto Trail" is the central priority of this master plan. Developing an additional more than 200 miles of trail requires a phased approach over the next 10 years. Trail development action steps to be carried out by PCF staff, in conjunction with trail development partners, are identified as immediate, near-, medium, or long-term in Table 10.0 below.

Trail Expansion

Given the time and resources required to realign existing trail segments and develop new trail along gap alignments, expanding the trail network beyond the Palmetto Trail spine is a long-term priority. **This expansion will occur based when:**

- Local partners within target expansion areas identified in Chapter 4, who are ready and willing to create connections to the Palmetto Trail and are capable of leading that trail development process, initiate the trail expansion. In this instance, PCF will engage as a key stakeholder and provide high-level technical assistance for the effort.
- Trail realignments and gap alignments are completed and PCF staff has the capacity to initiate the trail development process and work with local partners to expand the Palmetto Trail to target areas.

Table 10.0 – Phased action plan for trail development of gap alignments along the Palmetto Trail.

Corridor	Immediate	Near-Term (0 - 3 years)	Medium-Term (3 - 5 years)	Long-Term (5 - 10 years)
Gap A: Oconee State Park to Jocassee Gorges	-Continue meetings with key stakeholders -Identify land and easement owners -Begin the process of land acquisition and/or MOU agreements	-Continue the process of land acquisition and/or MOU agreements -Fundraise for trail within publicly owned lands -Develop design, permitting, and construction documents for trail within publicly owned lands -Build and/or sign trail within publicly owned lands	-Continue the process of land acquisition and/or MOU agreements -Fundraise for trail along remaining route -Develop design, permitting, and construction documents for trail along remaining route -Build and/or sign trail along remaining route segments	-Fundraise for trail along final route connections -Develop design, permitting, and construction documents for trail along final route connections -Build and/or sign trail along final route connections
Gap B: Jocassee Gorges to Middle Saluda		-Identify land and easement owners -Begin the process of land acquisition and/or MOU agreements	-Fundraise for trail development -Develop design, permitting, and construction documents -Build and/or sign trail	
Gap C: Middle Saluda to Saluda Mountains		-Identify land and easement owners -Begin the process of land acquisition and/or MOU agreements	-Fundraise for trail development -Develop design, permitting, and construction documents -Build and/or sign trail	
Gap D: Blue Wall to Hub City Connector		-Identify land and easement owners -Determine relative feasibility of Options 1 and 2 and confirm final route	-Begin the process of land acquisition and/or MOU agreements (potential rail corridor easement) -Fundraise for trail development	-Develop design, permitting, and construction documents -Build and/or sign trail

Table 10.0 – Phased action plan for trail development of gap alignments along the Palmetto Trail.

Corridor	Immediate	Near-Term (0 - 3 years)	Medium-Term (3 - 5 years)	Long-Term (5 - 10 years)
Gap E: Glenn Springs to Enoree	-Identify land and easement owners -Determine relative feasibility of Options 1 and 2 and confirm final route	-Begin the process of land acquisition and/or MOU agreements -Fundraise for trail development -Develop design, permitting, and construction documents -Build and/or sign trail		
Gap F: Enoree to Peak to Prosperity	-Identify land and easement owners	-Begin the process of land acquisition and/or MOU agreements (potential rail corridor easement) -Fundraise for trail development	-Develop design, permitting, and construction documents -Build and/or sign trail	
Gap G: Peak to Prosperity to Capital City Passage	-Identify land and easement owners -Determine relative feasibility of Options 1 and 2 and confirm final route	-Begin the process of land acquisition and/or MOU agreements (potential rail corridor easement) -Fundraise for trail development	-Develop design, permitting, and construction documents -Build and/or sign trail	
Gap H: Fort Jackson to Wateree		-Identify land and easement owners -Begin the process of land acquisition and/or MOU agreements	-Fundraise for trail development -Develop design, permitting, and construction documents -Build and/or sign trail	

PHASED MANAGEMENT, MAINTENANCE, AND MARKETING STRATEGIES

Chapters 5, 6, and 7 include recommendations for more than a dozen new programs, a new signage system, and a series of management and maintenance strategies. As PCF moves forward with implementation of this Plan, a strategic phased approach will provide manageable, achievable objectives based on staff and volunteer capacity and will give clarity and focus to fundraising efforts. The recommendations of the Plan are prioritized based on that goals and objectives developed for this master plan and needs identified within the Needs Analysis. To that end, the following action steps are identified as immediate, near-, or medium-term and are "packaged" to encourage synergies within related recommendations and to facilitate fundraising.

Immediate (On-going or as-needed)

A number of recommendations of the management plan can be initiated immediately and will occur on an on-going or as-needed basis. This Plan recommends moving forward with the following:

- **Establishing the organizational structure outlined in Chapter 7.** These channels of communications and key stakeholder, volunteer, and staff positions must be in place to provide the capacity and partnerships needed to move forward with implementing this Plan. As this structure is established, PCF should use the recommended strategies of this master plan to develop an annual work plan for each County Coalition, the Palmetto Trail Advisory Board, Regional Trail Managers, and volunteer crew leaders.
- **All strategies related to addressing conflict among trails user groups.** PCF will continue to act proactively to avoid potential conflicts through good design and will work to mitigate conflict, per the recommendations of the Plan, on an as-needed basis should conflict arise.

Other immediate, on-going management strategies are:

- **Managing Impacts to Natural Resources:**
  - Prevent and/or mitigate trail user impacts through outreach and education and immediate response to damage.
  - Prevent and/or mitigate erosion through prioritizing efforts to manage water on the trail.
- **Safety, Security, and Liability:**
  - Use best practices in trail planning and design to ensure the location and features of a trail maximize safety and functionality for users.
  - Establish PCF or a local government as the land owner along Palmetto Trail corridors wherever possible to limit private landowner liability
  - Encourage community involvement in trail monitoring and maintenance
- **Corridor Protections:**
  - Establish fee purchase, easement, bargain sale, and land donation as the preferred arrangements for obtaining land or permission for trail development due to PCF's ability to protect the trail corridor through these agreements.

NEAR-TERM ACTION STEPS (0 TO 3 YEARS)

Document Palmetto Trail Impact

The following strategies will document the Palmetto Trial's impact on South Carolina communities, economies, health, environment, and quality of life. Pursuing these strategies now will lay important ground work for fundraising and grant-writing materials that will be necessary over the next ten years.

- **Usage & Impact Analysis**
- **Benefits Cut Sheets**
- **Usage Evaluation:**
  - Continue to use infrared counters on passages of the Palmetto Trail to provide general data of trail usage and longitudinal trends.
  - Encourage local partners to conduct their own trail counts and surveys in coordination with PCF and to share their data and findings (e.g. the Mary Black Rail Trail usage study)

- Supplement infrared trail counting with manual counts and user surveys conducted every two years on consistent dates/times to provide detailed trail usage data and longitudinal trends.
- Create bi-annual reports analyzing the manual count and survey data, as well as the data collected through infrared counters; use this analysis to inform decisions regarding trail investments and to support grant and donor requests.

Develop Palmetto Trail Brand and Signage Program

In early 2014, PCF completed a branding effort to redefine the image of PCF as an organization. Building on this effort, PCF will develop a brand for the Palmetto Trail and then infuse that brand within a new wayfinding system and the digital presence defined below.

- **Brand Development**
- **Wayfinding Design & Implementation**
- **Safety, Security, and Liability:**
  - Include safety and security signage and information within the Palmetto Trail Wayfinding Signage program described in Chapter 6

Develop Palmetto Trail Digital Presence

The following strategies will follow the branding and signage efforts to offer consistency in look, feel, and imagery. All items listed below should be developed in tandem to ensure compatibility.

- **Redesigned Website**
- **Palmetto Trail App**
- **Maintenance:**
  - Establish an avenue for trail users and volunteers to report maintenance issues. The reporting mechanism should be available via a phone call as well as a smart phone application and should be developed in conjunction with the marketing strategies related to smart phone applications and interactive mapping (Chapter 5: Marketing & Branding)
- **Targeted Media Campaign**

Advance Palmetto Trail Management and Use Agreements

All of the following strategies relate to expectations of and agreements with local partners.

- **Managing Impacts to Natural Resources:**
  - Establish guidelines and requirements that apply to special events occurring on Palmetto Trail passages
- **Safety, Security, and Liability:** Establish local operations and maintenance (O&M) plans for each passage of the Palmetto Trail.
- **Corridor Protections:**
  - Include trail corridor protections within any new MOU agreements (or local O&M plans) so that actions which threaten the integrity of the trail, such as prescribed burns or logging, are prohibited or occur only after PCF has been notified in writing of the anticipated impacts of the action
  - Pursue amendments to PCF's existing MOU agreements (or local O&M plans) so that actions which threaten the integrity of the trail, such as prescribed burns or logging, are prohibited or occur only after PCF has been notified in writing of the anticipated impacts of the action
  - Include trail maintenance guidelines within any new MOU agreements (or local O&M plans) and identify the specific agency or organization responsible
  - Pursue amendments to PCF's existing MOU agreements (or local O&M plans) to include trail maintenance guidelines and the parties responsible

MEDIUM-TERM ACTION STEPS (3 TO 5 YEARS)

Central Hub for Volunteer Activities and Maintenance Responsibilities

All of the following strategies relate to volunteer recruitment, engagement, and management and cultivating stewardship among local partners.

- **Volunteer Vacations**
- **National Trails Day Events**
- **Maintenance:**
  - Continue to utilize volunteer labor for the maintenance of off-street facilities by way of 'volunteer vacations' and other partnerships, as outlined in the marketing recommendations of this Plan
  - Contribute to maintenance of on-street bike facilities and sidewalks by training local volunteers or bicycle advocates to conduct inspections and providing a means for citizens to report any needed repairs
- **Establish Community Grant Funds for Trail Programs and Trail Development**

National/Regional Advertising Campaign

Implementation of a national/regional advertising campaign will occur after trail realignments are finalized and significant new sections of trail are developed, bringing the Palmetto Trail close to completion. It is critical that this campaign follow after the development of the Palmetto Trail's branding and signage and enhanced digital presence. This will allow PCF to present a polished image, cross-promote with digital media platforms, and position the Palmetto Trail as a visitor-friendly, easily-accessible trail (given improved navigational signage).

APPENDIX A

Trail Maintenance and Management Case Studies

"Case studies are **useful for understanding successful strategies** of relevant, similar projects."

TRAIL MANAGEMENT AND MAINTENANCE CASE STUDIES

Case studies are useful for understanding successful strategies of relevant, similar projects. Highlights of the management and maintenance strategies utilized for trail corridors and trail systems around the country are included below. Examples of successful coordination among multiple jurisdictions, partnerships, and volunteer programs are followed by a series of trail maintenance programs.

Management Strategies: Appalachian Trail Conservancy

The Appalachian National Scenic Trail is a 2,184 mile long public footpath that traverses the scenic, wooded, pastoral, wild, and culturally resonant lands of the Appalachian Mountains. Conceived in 1921, built by private citizens, and completed in 1937, today the trail is managed by the National Park Service, U.S. Forest Service, the Appalachian Trail Conservancy, numerous state agencies and thousands of volunteers.

The Appalachian Trail Conservancy (ATC), established in 1925, is a national a 501(c)(3) non-profit organization that is both a confederation of the 31 local organizations with assignments to maintain the Appalachian Trail and a membership organization with support from all 50 states and more than 15 other countries. The ATC mission is to preserve and manage the Appalachian Trail – ensuring that its vast natural beauty and priceless cultural heritage can be shared and enjoyed today, tomorrow, and for centuries to come.

Under agreements that date back to the 1930s, buttressed by federal legislation in 1968 and 1978, ATC leads a cooperative-management system for the Trail that partners with the National Park Service and USDA Forest Service at national, regional, and district levels, as well as with a few other federal agencies, a variety of agencies in 14 states, and some county and town agencies.

The management charge that ATC shares for more than 250,000 acres of public lands extends far beyond enhancing the user's experience and keeping the footpath open and facilities safe. It includes safeguarding the boundaries and monitoring the health of hundreds of rare, threatened, and endangered species between the Trail and the corridor's edge.

Wherever possible, provide clear and consistent detour routing signage for trail closures along the trail. If a maintenance need allows for it, try and offset trail closures and maintenance to times of year where trail use is minimal, such as in the winter months.

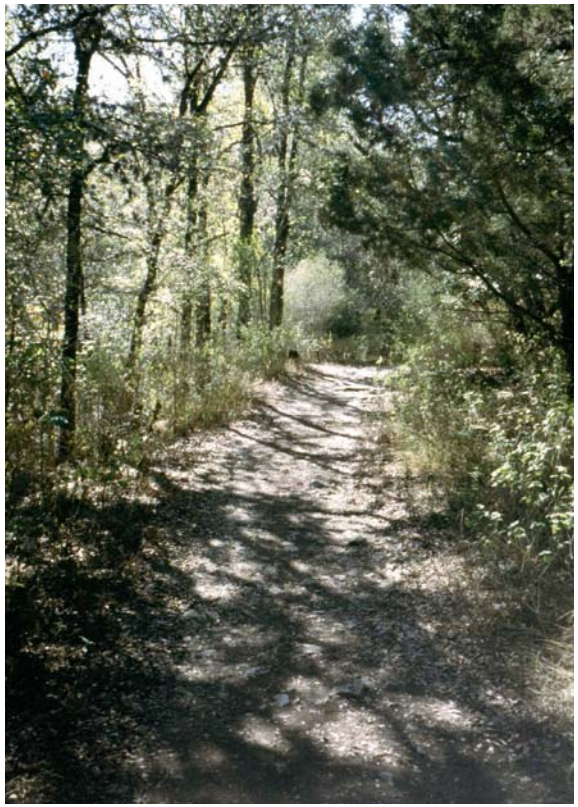
For the first four decades of its existence. ATC had an all-volunteer staff in Washington, D.C. Since 1972 ATC has had central offices in Harpers Ferry, WV, a quarter-mile from the Trail. Today the ATC has a governing body of 15 volunteers, close to 40,000 individual members, an annual budget of $7.3 million, a full-time staff of about 45 in six locations, (along with more than a dozen part-time and seasonal employees), and total assets of about $12 million, including almost 40 properties along the Trail.

Some of the most significant accomplishments of the ATC are in mobilizing, training and supporting volunteer stewards to accomplish significant work in maintaining and protecting the Trail. Some of the most valuable references are noted below. These are available on the ATC website:

http://www.appalachiantrail.org/what-we-do/trail-management-support/volunteer_toolkit

Or available for purchase as noted below.

- ATC Land Protection Policy, adopted May 2009, and the Appalachian Trail Conservancy Policy on Evaluating and Selecting ATC-Managed Fee and Easement Land Parcels, adopted in 2012 to complement and build upon the Land Protection Policy.
- A.T. Corridor Stewardship Field Book. A Guide to Corridor Monitoring and Boundary Maintenance for Volunteers.
- Appalachian Trail Design, Construction, and Maintenance. The primary stewardship manual for volunteers involved in designing, constructing, or maintaining portions of the Appalachian Trail. Available for purchase through the Ultimate A.T. Store (call 888-287-8673).
- Appalachian Trail Fieldbook. Field supplement to Appalachian Trail Design, Construction, and Maintenance. Available for purchase through the Ultimate A.T. Store (call 888-287-8673).
- USDA Forest Service Trail Construction and Maintenance Notebook



Trail maintenance procedures should strive to protect trail users, adjacent property owners, and natural resources potentially impacted by trail maintenance.

Carolina Thread Trail

The Carolina Thread Trail (Thread Trail) is a network of trails through North and South Carolina. It began as a visioning process in 2005. It will be a regional trail network extending over 15 counties serving over 2 million people once completed. Its vision is to preserve, protect and connect open spaces through a 500+ mile ribbon of parks, tails and conservation corridors. Fourteen of fifteen counties on the Tread Trail route have adopted master plans with Thread routes. Seventy six local governments are collaborating; 132 miles of The Thread are open and being enjoyed today, while 28 miles are in the pipeline for near term completion

While there is no state or regional governing body serving as an oversight body for the trail planning, the non-profit Carolina Thread Trail oversees the project. They have contracted with Catawba Lands Conservancy to manage the project, while The Trust for Public Land, serves as a key consultant. Other partners include the Foundation For The Carolinas that provides philanthropic assistance, and Duke Energy that contributes cash, land and in-kind services. The Carolina Thread Trail has four full-time staff members. Each county has a steering committee during the development of their Thread Trail Master Plan. Members are either self-selected or appointed by the County Board of Commissioners.

The image to the right shows a segment of the Carolina Thread Trail. Upon its completion, two million residents will be connected by the Carolina Thread Trail system.

The Thread Trail leadership council serves as the project advisory committee. The council is made up of 17 community, civic and corporate leaders. Each member is recruited by the Catawba Lands Conservancy. The Advisory Council is a 17 member group representing planning and community development departments as well as land trusts. This council is appointed by the Catawba Lands Conservancy and provides technical guidance to the Thread Trail staff.

Community outreach is conducted when individual counties develop their own Thread Trail Master Plan. The Thread Trail has two community coordinator staff who facilitate public outreach. Outreach strategies include public meetings, presentations to community groups and an informative website. The project website includes information on the trail, updates on each county's efforts, and an interactive map.

The Thread Trail is guided by five core principles and a project vision. The five core principles include:

- Invitation to communities
- Active listening
- Communities self-determine trail locations
- Bias towards action
- Respect for land; respect for land ownership.

The vision for the Thread Trail is: "to preserve, protect and connect open spaces through a 500+ mile 'green ribbon' of parks, trails and conservation corridors, touching 2.3 million people in our region. The Thread will protect natural areas and wildlife habitat, will increase recreational and educational opportunities, and promote healthy communities and lifestyles. Freely accessible to all, the Thread will increase access to nature, parks and area attractions. It will improve our quality of life and attract tourism and business. The Carolina Thread Trail is a tangible project around which local communities and governments are rallying to protect natural resources, connect people with nature, and connect our region."

The individual counties and their communities lead their own trail planning, implementation, and management efforts, but have the support of the Thread Trail staff. The Thread Trail is being planned and developed through a four-step grants program. The Thread Trail Grants Committee oversees the grants process and makes recommendations to the Governing Board on grant applications. Grants for county-wide greenway master plans (Planning Grants) are approved on a rolling basis as communities apply. Grants for design, acquisition and construction (Implementation Grants) are awarded on an annual cycle. While Implementation Grants will not be available for all segments of the Thread Trail, they will provide catalytic funding to get priority segments on the ground.

The Thread Trail staff manages a Trail Masters Program, consisting of dedicated volunteer leaders that help to build the trail. After attending a four-day course in the latest techniques in sustainable trail building and maintenance, Trail Masters serve as crew chiefs during our volunteer workdays. They commit 40 hours of volunteer service to the trail each year for a period of three years, and play a vital role in enhancing CTT trail efforts throughout the 15 communities. The program receives funding from the Women's Impact Fund so that volunteers can attend the four-day seminar at no cost. A sample "welcome packet" for participants in the program is provided as Appendix B.

http://www.carolinathreadtrail.org/

Pacific Crest Trail Association

The Pacific Crest National Scenic Trail (PCT) is a treasured pathway through some of the most outstanding scenic terrain in the United States. Beginning in southern California at the Mexican border, the PCT travels a total distance of 2,650 miles through California, Oregon, and Washington to the Canadian border.

Congress assigned the US Forest Service as the lead federal agency for managing the Pacific Crest Trail. The Forest Service partners with the Bureau of Land Management, National Park Service, California State Parks, and the Pacific Crest Trail Association, as well as numerous local and state governments to coordinate the management and operation of the trail. Jurisdiction for managing segments of the PCT has been divided among the federal land agencies according to where PCT sections are located.

The Pacific Crest Trail Association (PCTA) is the Forest Service's major nonprofit partner in managing the trail. PCTA works under a Memorandum of Understanding with public agencies to manage the trail.

The mission of the PCTA is to protect, preserve and promote the Pacific Crest National Scenic Trail as an internationally significant resource for the enjoyment of hikers and equestrians, and for the value that wild and scenic lands provide to all people.

Formed in 1977 with the merger of the Pacific Crest Trail Conference and the Pacific Crest Club, the Association now has over 9000 members and donors, and coordinated over 1700 volunteers, who spent 118,000 hours on 360 projects last year. The PCTA main office is in Sacramento, CA and including five regional offices PCTA has a total of 17 full-time staff. A fourteen member Board of Directors provides leadership and governance.

The various typologies found on the Palmetto Trail require different maintenance and management strategies. Refer to Chapter 7 for more information for combining these strategies into a cohesive plan.

PCTA focus areas are to:

- Preserve, protect and promote the trail.
- Develop and maintain an optimal PCT experience.
- Engage and support volunteers to steward the trail.
- Train volunteers in trail maintenance.
- Construct and maintain PCT to standard and install signage.
- Advocate for the PCT on the local, state and federal levels.
- Work with agency and industry partners to support the trail.
- Respond to and manage wildfire and other closures.
- Respond to threats to the trail, including logging, illegal trespass and development proposals.
- Protect the trail through land acquisition and easements.

Additional detail of the PCTA's accomplishments and approach can be found in the Pacific Crest Trail Association 2014 – 2017 Strategic Plan, available on the PCTA website at:

http://www.pcta.org/about-us/financials-reports-and-plans/

San Francisco Bay Area Ridge Trail

The Bay Area Ridge Trail Council (BARTC or Ridge Trail) is a 501(c)(3) non-profit organization working towards the goal of creating a continuous 500-mile trail that rings San Francisco Bay high on the ridgeline. The objective is a multi-use trail serving hikers, mountain bicyclists and equestrians,. To date, over 320 miles of the Ridge Trail are open and dedicated for public use. The Ridge Trail serves all nine Bay Area counties and helps to create an interconnected system of open space and trails to provide recreation and scenic views to the public. The BARTC has received a substantial amount of its funding from the California State Coastal Conservancy, as state agency that disburses environmental and parks bond funds, in this case to meet statutory and strategic goals of improving access around the San Francisco Bay Area ridgetops.

Since its inception in 1987, the primary purpose of BARTC, has been to plan, promote, acquire, build and maintain the Ridge Trail. The BARTC's governing structure was designed to ensure an ongoing public-private partnership with public agencies and trail enthusiasts. The BARTC has a membership base of approximately 3,000 people and over 100 volunteer workers who regularly participate in its work. These aspects of the BARTC make them uniquely qualified to carry out activities necessary to develop new segments of the Ridge Trail, or improve existing trails to make them accessible and to dedicate them as part of the system.

This Ridge Trail Council works continuously to complete the Trail by identifying and refining the trail route, negotiating and developing agreements for the acquisition of property (including through fee title and trail easements) from willing sellers, designing and engineering trail segments, addressing needed Ridge Trail signage, and preparing environmental review documents, maps and permit applications.

http://www.ridgetrail.org/

San Luis Obispo County, CA

San Luis Obispo County has a number of trails that pass through city, county, state, federal and private lands. Funding, maintenance, and management are tightly interwoven pieces in the successful management of the San Luis Obispo regional trail system. Elements of cooperation included:

- The County of San Luis Obispo (SLO County) and the San Luis Obispo Council of Governments (SLOCOG) collaborate on the administration, planning and implementation of trails and bikeways in the county. SLO County establishes policies and programs to provide and maintain parks, recreation, and natural areas in the county. SLOCOG reviews and advises on the approval of Bicycle Transportation Account (BTA) eligible bicycle plans, distributes federal transportation funding, is responsible for the long range intermodal transportation plan and the facilitation of regional planning, coordination, and technical assistance. SLOCOG staff attends the City of San Luis Obispo and SLO County Bicycle Advisory Committee meetings.
- In a cooperative effort with trail users and other members of the public, SLO County contracts for a Volunteer Services Coordinator. The coordinator manages volunteers to patrol trails, pick-up litter and perform routine trail

maintenance. The manager also organizes quarterly work crews, recruits and trains volunteers in county policy, organizes fundraising events, organizes and implements interpretative programs, and coordinates with Parks and Ranger staff.

- Joint Use Agreements and Operating Agreements are used to delineate the responsibilities for funding, maintenance and operation of facilities that cross jurisdictional boundaries. Often SLO County funds the acquisition and construction of a facility, with the partner agency committing to the maintenance and operation of the facility.
- Adopt-A-Park agreements allow volunteer groups to perform construction and maintenance activities. The agreements are activity, location, and time specific.

Maintenance Program Approaches

Alta Planning + Design has contacted a number of agencies and organizations to provide further insight to specific maintenance activities and budget allowances (if known). These examples show many similarities in responsibilities, but inherent in each are contextual differences as well. Much of the detail provided in these examples relates to maintenance of paved trail facilities. Agencies maintaining natural surface facilities rely heavily on volunteer labor to address maintenance needs, which creates variance in the amount of maintenance work accomplished in any given year and in the schedule of work. Additionally, it is often difficult for agencies to quantify in-house costs related to managing volunteers or the value of the work produced.

Information provided by the agencies and organizations contacted is briefly outlined below:

Constitution Trail – 14 miles paved, Normal-Bloomington, Illinois:

Managed by the Town of Normal Parks and Recreation. All rail trail operations and maintenance costs come out of the town's general park maintenance budget, and estimations specifically for the rail trail's operations and maintenance costs are unavailable. However, here is some insight to key operations and maintenance activities and other details:

- Mowing routine: weekly (non-winter months)
- Vegetation trimming: 3-4 times per year
- They have had difficulty with tree roots growing under the trail that buckle/break up asphalt - have had to resurface small sections due to this
- They have not had to deal with drainage issues very often (the drainage system installed in the 1800s as part of the old railroad still functions well)
- Repairs from vandalism
- Daily - one staff member takes a utility vehicle on trail – picks up trash, dumps trash cans, sweeps and reports anything else as needed
- Mulberry Season - trail is swept frequently using a bobcat skid-steer and broom
- The town of Normal now requires them to remove snow
- Volunteer groups donate money, trees, benches, pick-up trash, etc.

The trail was constructed in the 1980s – they are beginning to resurface 1,500-foot sections each year

Sometimes larger improvements come out of the towns capital improvements budget, but other times they come out of the town's general park operations and maintenance budget – depends on availability of funds and other projects on the agenda

Creekside Trail – 17 miles paved, Greene County, Ohio:

Greene County, Ohio manages this trail as a part of its 62 mile trail network (most of which are rail trails). It is estimated that the county spends approximately $250,000 per year on this 62-mile trail network or ~$4,000 per mile per year on operations and maintenance. Key activities include:

- Mowing routine: 7-10 day intervals
- Vegetation Trimming: approximately 3 times per year
- Some use of volunteer support
- Ditch clean-out
- Have spent additional time with invasive species management (honeysuckle)
- Some resurfacing as well

Cross County Trail – 40 miles paved and unpaved, Fairfax County, Virginia:

Fairfax County, Virginia manages this trail as part of its extensive network of paved and unpaved trails. The Park Authority staff perform a variety of routine trail maintenance task within the trail system focused on extending the life expectancy of the trail, providing the highest quality product to the citizens of the County, and ensuring the safety of trail users.

Routing trail maintenance for both paved and unpaved sections of the trail include:

- Mowing (grassing within 2' of trail edge should not be allowed to grow in excess of 2')'
- Tree and Brush Pruning
- Leaf and Debris Removal (removing of mud and other sediments, etc.)

Regular trimming/pruning and brush removal along the trail ensures safety for users and preserves views of natural areas.

- Snow and Ice Removal (removal centralized to locations that provide alternative transportation routes, safe routes to school, etc.)
- Cleaning and Replacement of Culverts (removing clogs from culverts decreases flooding and unnecessary erosion)
- Maintenance of Water Crossings (remove debris to decrease risk of flooding; inspect on a regular basis for erosion and deflection)
- Signage Repair (repair and maintain regularly to discourage vandalism)

Fairfax County, Virginia also maintains a trail inventory utilized to develop maps for incorporation into the Maintenance Management System (MMS). The MMS is a database that retains maintenance records for all park facilities and assets. This system generates work orders and allows volunteers and managers to track hours, cost, and resources

The Park Authority uses the system to track trail inventory and produce and monitor preventative maintenance (PM) work orders for specific maintenance tasks. The database also accounts for curative maintenance tasks and renovation projects. Work orders can be initiated in several ways. A citizen may contact the Park Authority to report a problem or issue and a work request will be generated and sent to the appropriate crew for action.

Preventive maintenance work orders are generated on daily, monthly and yearly schedules, based on the frequency required. Maintenance staff can generate their own work orders for curative or non-preventive related tasks. Other Park Authority staff can request work to be performed and send the request directly to the appropriate crew through direct access to the system.

Francis Marion National Forest – 52 miles unpaved, Charleston, South Carolina

When the budget allows USFS to outsource maintenance expenses, a $10,000 contract provides one year of maintenance for 52 miles of trail. This expense includes the cost of equipment (bush hog and tractor) and operator. Maintenance activities are centered on mowing twice a year and removing downed trees. This expense equates to roughly $100 per mile of trail, not including additional investments of time and in-kind services of U.S. Forest Service (USFS) staff and volunteers. Activities related to trimming vegetation are conducted by volunteers under the direction of USFS staff.

Under budget constraints, USFS staff manage all maintenance activities in-house. This includes the cost of renting necessary equipment and allocating staff time to operation. Combined, these costs total about $4000 annually or approximately $75 per mile.

Moraine State Park Bicycle Trail – 7.5 miles paved, Moraine State Park, Pennsylvania

Annual maintenance of the trail comes out of the park's general operations and maintenance budget. Estimates are that costs run approximately $17,000 - $20,000 per year; or $2,226 - $2,667 per mile per year. Key activities and other details include:

- Bi-weekly clearing of the trail with pull behind blower
- Tree removal after storms
- Sign replacement
- Pavement repair needs will likely raise costs another $5,000 for the 2012-2013 budget cycle
- Maintain bicycle rental concession, restrooms, parking lots, vending machines, storm shelters and picnic tables at the trailhead and various places along the trail

For Francis Marion National Forest, activities related to trimming vegetation are conducted by volunteers under the direction of USFS staff.

- Culverts cleared by hand as needed and based on staffing
- Trimming/pruning typically done twice per year
- Mowing
- Probation work crew provides help with brush removal several times per year. Some volunteers do this as well.

ADDITIONAL RESEARCH OF COSTS FOR OPERATIONS AND MAINTENANCE

In 2005, the Rails-to-Trails Conservancy's (RTC) Northeast Regional Office researched over 100 organizations managing the operations and maintenance of a rail trail system in the northeastern United States.[1] 39 of these organizations were able to provide a lump-sum amount either budgeted or spent. Key figures from this include:

- ~$1,500 – average operations and maintenances costs per year per mile (costs for asphalt and non-asphalt trails were roughly equivalent)
- ~17 years – average frequency in which complete re-surfacing occurred for asphalt trails
- ~137,000 – average annual users

Previous research by Alta Planning + Design has found the following:

- The City of San Jose estimates it costs $12,500 per mile per year for operations and maintenance of a paved pathway, $6,025 per mile per year for operations and maintenance of an unpaved trail, and $12,050 per acre for maintaining landscaping adjacent to trails.[2]

The East Bay Recreation and Parks District (EBRPD), which manages over 70,000 acres of park and open space in Alameda and Contra Costa Counties in California, estimates maintenance and operations costs for a mile of trail at $25,000 annually.[3] This cost includes police patrol, vegetation management, litter pickup and a contribution to a reserve fund for eventual pathway replacement.

From ***Construction and maintenance costs for trails***, From ***Draft Milwaukee County Trails Network Plan,***
Research was conducted to determine annual per mile maintenance costs for off-street trails. Some estimates found were specific to a trail surface type and others were not. Interestingly, maintenance and operation costs are very similar whether a surface is crushed gravel or asphalt. Due to the low amount of concrete bike trails, a routine maintenance figure could not be found. Below is a list of maintenance costs from various sources:

- $1,500 per mile provided in the Iowa Trails 2000 plan by the Iowa Department of Transportation (includes a mixture of different trail surfaces)

- $2,525 per mile summarized by the Milwaukee County Park System (all asphalt paths)
- $1,200 per mile (as an absolute minimal cost) in the Rail Trail Maintenance & Operation Manual provided by the Rails-to-Trails Conservancy.
- $2,077 per mile for government run trails provided in the Rail Trail Maintenance & Operation Manual provided by the Rails-to-Trails Conservancy.
- $2,042.06 per mile of unpaved trail in the Trail Cost Model - Draft by the Wisconsin Department of Natural Resources.

From ***Columbia, Missouri Trail Maintenance Costs,*** presentation by Steve Saitta and Mike Snyder in October 2010 American Trails Newsletter:

- Concrete - $2,980/mile
- Asphalt - $8,672/mile
- Aggregate (in non-washout area) - $5,280/mile
- Aggregate (in washout area) - $16, 904/mile

From ***Santa Ana River Trail Master Plan,*** June 2011 (2007 costs)**;**

- Annual cost/s.f. for maintenance performed by a contractor
  - Paved Trail = $0.05/sq ft
  - Decomposed Granite Trail = $0.08/sq ft
- Deferred Maintenance + 1% of the original construction cost per year:
  - Paved Trails = $1.2m per mile or $12,000 per mile per year
  - Decomposed Granite Trails = $400K per mile or $4,000 per mile per year

The above examples highlight typical trail operations and maintenance costs along with other context-dependent activities. While the Rails-To-Trails Conservancy's findings showed that average operations and maintenance costs are approximately $1,500 per mile, per year (for both paved and non-paved trails), factors such as usage intensity, the amount of volunteer labor used, geographical location, and specific activities included in the budget can significantly affect annual per mile operations and maintenance costs.

ENDNOTES

1)) Poole, T. Rail-Trail Maintenance and Operation. Rails-To-Trails Conservancy Northeast Regional Office. July 2005

2) Email correspondence with Yves Zsutty, Acting Division Manager, Department of Parks, Recreation & Neighborhood Services, City of San Jose, January 18, 2011.

3) Email correspondence with Jim Townsend, Manager, Trails Development Program, EBRPD, January 13, 2011.

The specific maintenance activities and budget allowances of different agencies and organizations show many similarities in responsibilities, but inherent in each are contextual differences as well. For example, the cleaning and replacement of culverts decreases flooding and unnecessary erosion. However, the frequency and extent to which this is required depends greatly on surrounding terrain, drainage, precipitation and soil characteristics

APPENDIX B

Carolina Thread Trail: Trail Masters Packet

"Carolina Thread Trail Masters are an integral piece in advancing the Thread in our region. **You are our eyes and feet on the ground**."

Trail Masters of the Carolina Thread Trail are dedicated volunteer leaders that are helping to build The Thread throughout its 15-county region.

Carolina Thread Trail Trail Masters are an integral piece in advancing The Thread in our region. You are our eyes and feet on the ground. We cannot thank you enough for your support, dedication and enthusiasm for this unprecedented project that will have a lasting impact on our community to connect people with the outdoors.

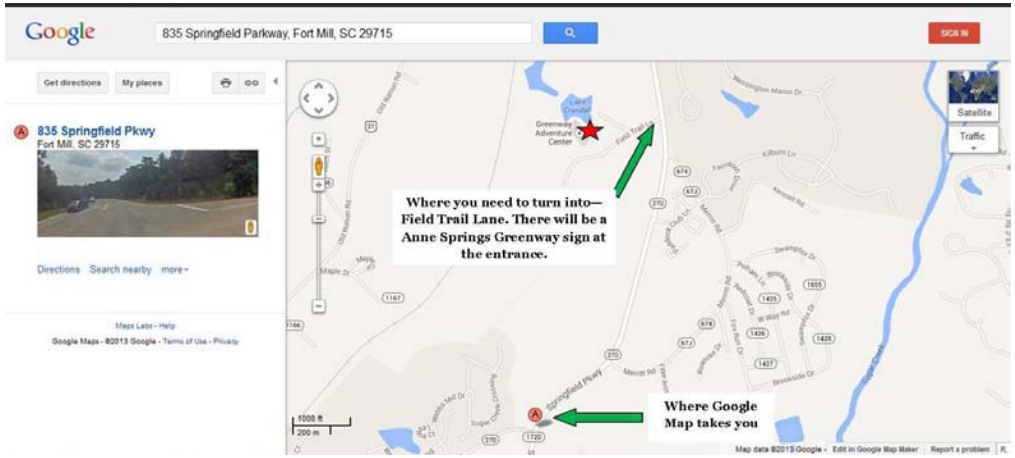
The Trail Masters program started in 2011. To date, there are 32 Trail Masters in 12 of our 15 counties. This unique volunteer program and certification course is made possible through private grants. This year, the certification course has been paid by a two-year generous grant made by The Women's Impact Fund in 2012.

As a Trail Master, you must be willing and able to commit to the following requirements in order to participate in this program:

- Attend all four days of the Trail Master certification course on October 7-10 from 8am-5pm at the Anne Springs Close Greenway, Fort Mill, SC.
- Attend the volunteer workday scheduled for Saturday, October 19 from 8:00am-1pm at South Fork Trail in McAdenville, NC.
- Attend 5 of the 9 volunteer workdays scheduled for 2014:
  - Saturday, January 11
  - Saturday, February 8
  - Friday, March 14
  - Saturday, April 19
  - Saturday, June 7
  - Friday, August 8
  - Saturday, September 27
  - Saturday, October 18
  - Saturday, November 15
- Commit to 40 hours of volunteer service to the Carolina Thread Trail per year for a period of three years. (These hours can include, but are not limited to, regularly scheduled volunteer workdays, helping with information booths at community events, volunteering at Carolina Thread Trail special events, and leading smaller groups of volunteers on trail clean up days. Travel time to and from events is included.)

Trail Masters Certification Course

Date: Monday, October 7 -Thursday, October 10
Time: 8am-5pm (times may vary each day)
Location: Anne Springs Close Greenway – Adventure Center
Address: 835 Springfield Parkway, Fort Mill, SC 29715 MAP
**NOTE – There is no official address for the Adventure Center. This is the given address for the Field Trial Barn next to the Adventure Center, however Google Maps brings you past where it actually is. Please see below. LOOK FOR CAROLINA THREAD TRAIL SIGNS in the ground that will lead you to the Adventure Center.



Mike Riter from Trail Design Specialists will be conducting this training. The following is his course curriculum.

Overview
This course will cover the latest advances in trail design, construction and maintenance with a focus on long term sustainability and ease of maintenance. The last day will be field application on the concepts we covered on the previous days interspersed with leadership techniques for working with volunteers. A detailed booklet specific to each segment will be provided. The course consists of three interactive classroom sessions covering the topics listed below.

Please note: all times are subject to change based on the dynamic of the class.

Monday - Trail Design and Layout
We will cover advances on how to properly design and layout a trail. We will discuss how to avoid erosion, user conflicts, and impact problems through design. This session will give you a good working knowledge of what causes trails to erode through water/soil relationships. An outdoor session will consist of a series of flagging and layout drills designed to utilize the concepts covered in the classroom.

	Start classroom session
	Break
	Continue session
	Test
12:00 pm	Lunch; provided by Carolina Thread Trail – Make your own Sandwich/Salad bar.
	Outdoor session
	Final comments/ wrap up

Tuesday - Trail Construction
We will cover proper corridor clearing for all types of use and proper construction of a durable tread surface. Various types of tread construction, cribbing and raised tread sections, switchbacks and a section on bridges and boardwalks are also included. An outdoor session will consist of construction techniques covered in the classroom. A demonstration of tread construction machinery may be included.

9:00 am	Start classroom session
10:30 am	Break
10:45 am	Continue session

11:45 am	Test
12:00 pm	Lunch; provided by Carolina Thread Trail – Catered Pizza and Salads
12:30 pm	Outdoor session
3:30 pm	Final comments/ wrap up

Wednesday - Trail Maintenance
We will cover maintenance issues on trails. We will discuss how to make long-term repairs and lower environmental impacts. Trail hardening techniques along with rehabilitation of disused trails will also be covered. The outdoor session will consist of maintenance techniques covered in the classroom.

9:00 am	Start classroom session
10:30 am	Break
10:45 am	Continue session
11:45 am	Test
12:00 pm	Lunch; provided by Carolina Thread Trail - Make your own Sandwich/Salad bar.
12:30 pm	Outdoor session
3:30 pm	Final comments/ wrap up

Thursday - Crew leader
This portion of the program will be held entirely outdoors and will give each student the opportunity to lead a crew. The day will be broken into three sessions. At the end of the third session certificates for those that completed the course will be issued.

9:00 am	Session One (trail head)
10:45 am	Session Two (on trail)
12:00 pm	Lunch – provided by Carolina Thread Trail – Catered in from The Roasting Oven
12:30 pm	Session Two and Three
3:30 pm	Final comments/ wrap up/ hand out certificates.

What to bring:
A willingness to learn new concepts in trail design
Pen and paper
Good work boots or shoes
Work gloves
Since we will be outside for part of every day, please dress accordingly.

First Trail Master Workday

Saturday, October 19
South Fork Trail
149 Willow Drive
McAdenville, NC 28056 MAP
Times:

- Trail Masters arrive at 8am
- Community volunteers arrive at 9am
- Project time frame: 9am-11:45am
- Lunch: 12pm-ish

Carolina Thread Trail will provide:

- Project direction
- Tools
- Water, Gatorade
- Snacks
- Lunch
- Bug spray
- Sunscreen
- First aid

Trail Masters and volunteers should bring

- Water bottle
- Day pack (to hold water bottle, snacks, clothing layers, etc…)
- Wear appropriate clothing to do work outside. Long pants are recommended
- MUST wear closed toe shoes. Boots or sturdy shoes you don't mind getting dirty are suggested.

Ending Notes

- Carolina Thread Trail Volunteer Waiver will be required to be signed at Trail Master class. This will only need to be done once with us.
- Explanation on how to register for public, private, and staff/TM only workdays will be explained as well as what hours need to be submitted and how.

THANK YOU!!

Carolina Thread Trail

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