



 **fonta flora state trail master plan** | lake james section  
BURKE COUNTY, NC SPRING 2016





# FONTA FLORA STATE TRAIL

## LAKE JAMES SECTION MASTER PLAN

PRODUCED FOR:



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**DESTINATION BY DESIGN**  
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# ACKNOWLEDGMENTS

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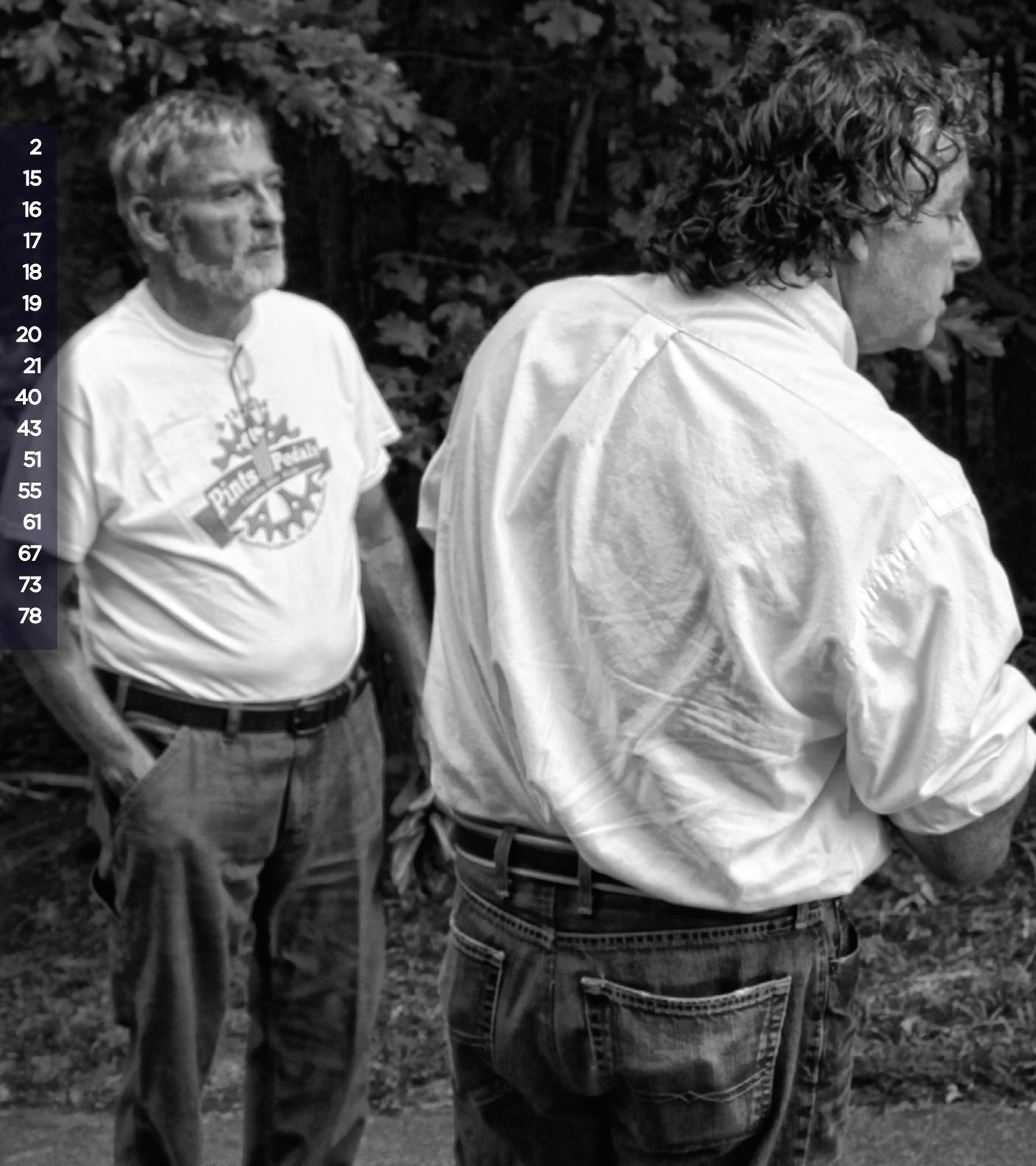
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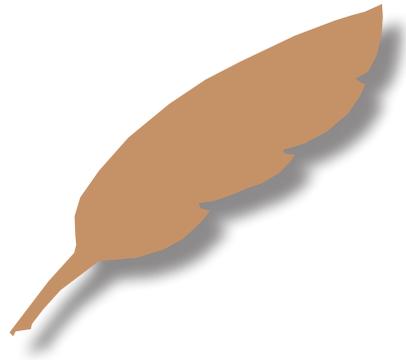
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THE FONTA FLORA STATE TRAIL  
WILL EXTEND FROM ASHEVILLE TO  
MORGANTON - WITH THE LAKE JAMES  
LOOP SERVING AS ITS ANCHOR.



This trail master plan serves as a road map for establishing the Fonta Flora State Trail around Lake James in Burke County, NC. This chapter provides an overview of previous planning efforts and their goals.



- IN THIS CHAPTER:
- (A) PURPOSE AND BACKGROUND
  - (B) PREVIOUS PLANNING EFFORTS
  - (C) VISION STATEMENT
  - (D) PLAN GOALS
  - (E) TRAIL BENEFITS

# CHAPTER ONE

## INTRODUCTION AND BACKGROUND

### PURPOSE & BACKGROUND

The *Fonta Flora State Trail Master Plan: Lake James Section* serves as a major update to the Lake James Loop Trail Master Plan published by Burke County in 2014. The Fonta Flora State Trail (formerly the Lake James Loop Trail) will ultimately encircle Lake James with a continuous 29.4-mile greenway and state-of-the-art hiking, recreational and nature trail. While this trail was birthed from efforts to create a trail loop around Lake James, the Fonta Flora State Trail, now under the purview of the NC Division of Parks and Recreation, also extends west to Asheville and east to the City of Morganton.



**LEGISLATION WAS SIGNED INTO LAW BY GOVERNOR MCCRORY IN SUMMER 2015 THAT MAKES THE FONTA FLORA LOOP TRAIL IN BURKE COUNTY THE LATEST ADDITION TO NORTH CAROLINA'S STATE PARK SYSTEM.**

The Fonta Flora State Trail finds its origins in the desires of Burke County citizens to

increase the quality of life enjoyed by residents, provide a recreational amenity for visitors and the region's diverse population, and provide public access to the area's cultural and natural resources.

To help advance the project to completion, Duke Energy has promised \$1.1 million in

grants to assist with development of the Fonta Flora State Trail. Financial resources will be released from Duke Energy now that the Federal Energy Regulatory Commission has issued the company's re-licensing to operate its hydroelectric power plants along the Catawba River.



## PREVIOUS PLANNING EFFORTS

### Overmountain Victory National Historic Trail Master Plan (OVNHT): Lake James to Morganton

In 2015, Burke County developed the OVNHT plan from Lake James to Morganton. The National Park Service provided financial assistance for plan development. The OVNHT overlaps with southern portions of the FFST at Lake James.



### Lake James Trail Master Plan

In 2005, the Burke County Planning Department and Lake James Trails Association, in partnership with the National Park Service – Rivers, Trails, and Conservation Assistance Program, began the process of creating an “implementation plan” for a proposed Lake James Loop Trail. The first draft of the implementation plan outlined the work of the group, provided topics for future discussion, and included



suggestions for funding. Unfortunately, the plan was never completed or adopted.

In early 2013, the Burke County Community Development Director began a new planning effort to jumpstart the Loop Trail initiative and promoted the project to the top of the department’s priority list. Initially, research was conducted with potential stakeholders and Burke County citizens to understand the history of the project. In September 2013, a diverse stakeholder work group met to begin creating the Lake James Loop Trail Master Plan to serve as a guide for the development, management, and implementation of the trail.

The Lake James Loop Trail Master Plan, published in 2014, outlined an easy to moderate multi-use hiking and biking trail with a natural mineral soil surface. The trail will average a width of five feet wide and will be approximately 30 miles long, depending on the final location and the overall average trail grade, which will be 10% or less. This will allow for a family and leisure trail experience while protecting the natural environment.

The Lake James Trail Master Plan serves as the foundation of the Lake James section of the Fonta Flora State Trail Master Plan.

### Growth Management Overlay Districts

The Catawba River and Lake James Overlay District and the Scenic Overlay District were created in 2007 to provide design criteria for future development and recommendations for recreational trails around Lake James. These efforts also promote the creation of the Overmountain Victory National Historic Trail (OVNHT) through Burke County.

### Blueprint Burke

Blueprint Burke (2002), Burke County’s Strategic Plan, describes the need for a linear park system of greenways, trails, and avenues to connect major areas of recreational and cultural value. Prompted by the strategic plan and concerns about development around Lake James, the Burke County Board of Commissioners passed new zoning measures to appropriately manage further development around the Lake.



# VISION STATEMENT

The Fonta Flora State Trail will provide pedestrians and bicyclists of all abilities a safe and legal route that will extend from Morganton to Asheville. The trail will allow users to experience the natural diversity of the area, incorporate multiple access points and support facilities, create a community and regional asset that will provide for recreation opportunities for local residents and visitors, and promote tourism and low-cost infrastructure economic development for Burke County and the surrounding region.

# PLAN GOALS

- 1 Refined and Specific Trail Routes.** Using the 2014 Lake James Loop Trail Master Plan as its basis, this plan and process must engage landowners and other stakeholders to further refine the trail route.
- 2 Visual Plan.** Create and utilize renderings and schematics to demonstrate trail character.
- 3 Plan Section Organization.** Organize planning sections based on plausible project implementation areas.
- 4 Design Guidelines and Character.** Develop general trail design guidelines for each trail type (ie. natural surface, paved, etc.) and create a design manual that provides a unique character for all trail support facilities.



## ECONOMIC

There is no question that countless communities across America have experienced significant economic growth from a result of trail and greenway infrastructure. Below are a few examples of such impacts:

### **Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts (2011)**

- Evaluated 58 separate projects in 11 cities
- Multi-use trails (e.g., greenways) create 9.6 jobs per \$1 million invested.

### **East Central Florida Regional Planning Council. Economic impact of Orange County trails. (2013)**

- Little Econ Greenway (7.4 miles); West Orange (20 miles) and Cady Way Trails (7.2 miles) in Orange County, Florida
- Supported 516 jobs and had an estimated positive economic impact of \$42.6 million on the area.
- Nearby Downtown Winter Garden (pop. 37k) = \$14.6M Revenues

### **Year 3 Economic Impact of Swamp Rabbit Trail (2014)**

- Swamp Rabbit = 20 miles (Greenville, NC to Travelers Rest)
- \$6.7 Million

### **Virginia Creeper Trail, Damascus Va.**

- 34 mile rail-trail
- direct economic impact approximately \$3 million a year.



## RECREATIONAL

The recreational benefits offered by the Fonta Flora State Trail will complement existing opportunities found in the area at Lake James State Park, NCWRC Game Lands, Linville Gorge, Catawba River, and adjoining US Forest Service lands.

The Fonta Flora State Trail will anchor a host of recreation offerings. Foremost, this trail offers the unique opportunity to separate automobiles from cyclists to circumnavigate the Lake, thereby creating a safe and scenic destination for cycling enthusiasts. This plan also calls for a new boat launch, camping and cabin facilities, fishing access areas, and over 25 miles of trails, boardwalks, and bridges. All of these additional recreational opportunities will be beneficial for personal, community, and business development.



## EDUCATIONAL

The Fonta Flora State Trail will provide for a variety of educational opportunities. A significant portion of the trail will pass through Lake James State Park, which will provide an educational experience about natural habitats and native flora and fauna from throughout the region. Since this trail utilizes portions of the Overmountain Victory National Historic Trail, users have the opportunity to learn about the Overmountain Men and their impact on the Revolutionary War. Other opportunities exist to learn about hydroelectric dams, bicycle safety, wilderness medicine, and search and rescue.



## HEALTH

Trails and greenways provide an attractive, safe, and accessible low- or no-cost place to walk, hike, jog, or bicycle. More parks and green spaces lead directly to more physical activity by citizens. This gives people of all ages an opportunity to incorporate exercise into their daily routines.



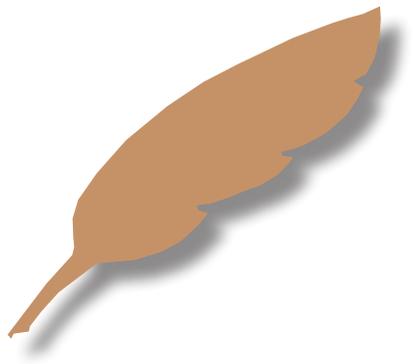
## ENVIRONMENTAL

Trails and greenways protect important habitat, improve water quality, and provide corridors for wildlife. By protecting land along rivers and streams, greenways help filter pollution caused by agricultural and road runoff. These areas can often serve as natural floodplains. Also, trails and greenways can serve as hands-on environmental classrooms.



## TRANSPORTATION

Trails and greenways serve as a crucial element within a regional multi-modal transportation system. These facilities provide efficient and safe connectors among civic, commercial, and residential land uses. The Fonta Flora State Trail help create these connections and play a central role in establishing a regional trail network that will ultimately include the NC Mountains-to-Sea Trail, Overmountain Victory National Historic Trail, Upper Catawba River Trail, and other local connecting trails.





THIS SECTION OF THE FONTA FLORA STATE TRAIL HAS A SIGNIFICANT NATURAL AND CULTURAL HISTORY.



This chapter discusses significant natural and cultural resources found within the study area. In addition, this chapter also provides an updated analysis to the 2014 Lake James Loop Master Plan.



IN THIS CHAPTER:  
(A) STUDY AREA MAJOR FEATURES  
(B) THE NATURAL ENVIRONMENT  
(C) ANALYSIS

# CHAPTER TWO

## EXISTING CONDITIONS, ANALYSIS, AND PRELIMINARY ALIGNMENTS

### STUDY AREA MAJOR FEATURES

#### LAKE JAMES

Lake James is a large reservoir located in the foothills of Western North Carolina which straddles the border between Burke and McDowell Counties. This 6,812 acre impoundment, with over 150 miles of shoreline, was created between 1916 and 1923 to produce hydroelectric power for the small towns of Marion and Morganton. Low density zoning requirements help to ensure that areas around the lake will be carefully managed and developed. Lake James offers residents and visitors opportunities to boat, fish, swim, and participate in other water-based activities.



#### Lake James State Park

Lake James State Park is one of the most recent additions to the North Carolina State Parks system. It was established in 1987 by the North Carolina General Assembly when funds were appropriated for the purchase of 565 acres of land and the initial phase of facility development in McDowell County. In 2004, Lake James State Park acquired an additional 2,915 acre tract from Crescent Resources Inc. in Burke County. This purchase expanded the state park to six times its former size and protected more than 30 miles of shoreline. The state park offers opportunities for hiking and mountain biking trails, picnicking, nature observation, swimming, and canoeing. The Fonta Flora State Trail will meander through the park and provide trail users the opportunity to take advantage of traditional state park facilities and services.



#### Mountains to Sea Trail Connector

The Mountains to Sea Trail (MST) is an approximately 1,000 mile planned trail that connects Clingmans Dome in the Great Smoky Mountains National Park to Jockey's Ridge State Park on the coast. The trail is envisioned as the scenic backbone of an interconnected trail system spanning the state of North Carolina. The MST's route attempts to connect as many trail systems and natural scenic areas as possible providing residents and visitors a diverse range of opportunities. Approximately half of the MST is complete in multiple disconnected segments across the state.

The Fonta Flora State Trail will connect with the MST via an existing three-mile spur trail, located across NCWRC Gamelands, just east of the Linville River bridge on NC Hwy 126. This spur will also provide access to additional trails in the Linville Gorge, Wilson Creek, Pisgah National Forest, and over 300 miles of the MST from Clingmans Dome in the Great Smoky Mountains National Park to Stone Mountain State Park in Wilkes County.

## Overmountain Victory National Historic Trail

The Overmountain Victory National Historic Trail (OVNHT) is part of the National Park Service - National Trails System. It recognizes the Revolutionary War Overmountain Men, patriots from what is now East Tennessee, who crossed the Great Smoky Mountains and fought in the Battle of Kings Mountain in South Carolina.

The trail network consists of a 330-mile corridor, including a 70-mile branch from Elkin, North Carolina, that joins the main route at Morganton, North Carolina. Fifty-seven miles of OVNHT are officially developed for public use, and development continues on the remaining sections. The official sections of the trail were established through agreements with landowners and land managers and often have overlapping designations. All officially certified segments are identified by signs displaying the trail logo (an Overmountain man in profile on a brown and white triangle) or a white triangular blaze.

Currently, 5.5 miles of OVNHT are certified in Burke County with an additional seventeen miles in the planning stages. Up to 8.5 miles of new OVNHT will be constructed based on this master plan. The additional mileage to Morganton will be approximate-

ly 12 miles along the Catawba River to the existing Catawba River Greenway. A parallel Commemorative Motor Route travels along state highways.

The Overmountain Victory National Historic Trail is a cooperative effort of the National Park Service, U.S. Forest Service, U.S. Army Corps of Engineers, Overmountain Victory Trail Association, local governments, local citizens' associations, local historical societies and the states of Virginia, Tennessee, North Carolina, and South Carolina.



## North Carolina Wildlife Resources Commission Game Lands

The Pisgah Game Land - Linville River Tract is owned and managed by the North Carolina Wildlife Resources Commission (NCWRC) for public hunting and trapping. It encompasses approximately 1,432 acres and is adjacent to US Forest Service (USFS) lands to the west. The Game Lands provide protection for a portion of White Creek which feeds into Lake James. Residents and visitors may enjoy hunting, birdwatching, and nature observation opportunities, as well as hiking along the MST connector trail located within these Game Lands.



# CHAPTER TWO

## EXISTING CONDITIONS, ANALYSIS, AND PRELIMINARY ALIGNMENTS

### STUDY AREA MAJOR FEATURES

#### **Linville Gorge Wilderness & Linville State Natural River**

The Linville Gorge Wilderness (“The Grand Canyon of North Carolina”) is the third largest wilderness area in North Carolina and one of only two wilderness gorges in the Southern United States. The Wilderness area contains approximately 11,786 acres within the Pisgah National Forest and is managed by the US Forest Service.

The Linville River is approximately 1,400 feet below the surrounding ridges providing a challenging and enjoyable hike for serious recreationists. The thirteen miles of river that divide the Gorge is one of four rivers in North Carolina’s Natural and Scenic Rivers System. Early white settlers named the river Linville in honor of area explorers John and William Linville. In the Cherokee language, the Linville River is called Ee- see-oh, which means “river of many cliffs”. The Gorge is a favorite destination for those seeking eco-tourism related activities in remote areas.

The flora and fauna in the Gorge is extremely diverse, with a dense hardwood/pine forest and a wide variety of smaller

trees and other plants as well as bear, fox, raccoon, trout, grouse, turkey, vultures, owls, hawks, copperheads, and timber rattlesnakes. The Linville Gorge contains some rare plant and animal species, as well as interesting geologic formations.

At the northern end of the gorge lies Linville Falls which is considered one of the most photographed waterfalls along the Blue Ridge Parkway. Wiseman’s View, a rock outcrop near the center of the gorge, provides excellent views of Table Rock and Hawksbill Mountains and the interior of the Gorge.



#### **Catawba River**

The Catawba River (named after the Native American tribe that first settled on its banks) is a tributary of the Wateree River in the states of North and South Carolina. The river is approximately 220 miles long and is considered one of “America’s Most Endangered Rivers” by the American Rivers organization. The river includes a series of reservoirs for flood control and hydroelectricity and provides drinking water to millions of residents.

The headwaters of the Catawba River begin in the Blue Ridge Mountains in western McDowell County approximately 20 miles east of Asheville. The Catawba joins the Linville River and forms Lake James. The river then extends east and south flowing through other impoundments near Morganton, Hickory, and Mooresville on its way to Lake Norman. From Lake Norman it flows south, passing west of Charlotte, before entering Lake Wylie, where it forms approximately ten miles of the border between North and South Carolina. The Catawba River continues through South Carolina before joining the Wateree River, which spills into the Atlantic Ocean.



## NATIVE AMERICANS

The Catawba River has served as a historic transportation route, cultural connector, and wildlife corridor throughout the area's history. Early Native Americans in the area identified themselves as the Kawahcatawbas, "the people of the river". The Catawba and Wateree Tribes used the river for transportation and traded with Spanish explorers at river outposts. The ruins of one of these outposts, Fort San Juan, have been located and excavated in close proximity to the Catawba River in Morganton. Based on Spanish records and archaeological findings, it appears that Fort San Juan was occupied in 1567 and 1568.



## OVERMOUNTAIN MEN

The Catawba River and its tributaries were also followed by Revolutionary War soldiers on their way to the campaign leading up to the Battle of Kings Mountain in 1780. The Overmountain Victory National Historic Trail preserves and commemorates the route.



## FONTA FLORA VILLAGE

The impoundment of the Catawba River to form Lake James also marks another important moment in history. The local settlement of Fonta Flora, an African American sharecropping village, was flooded in 1916 by the Southern Power Company to develop Lake James. This community included approximately 100 full-time residents; there are no known photographs or painted pictures of Fonta Flora before it was slowly covered by the rising waters of Lake James.

# CHAPTER TWO

## EXISTING CONDITIONS, ANALYSIS, AND PRELIMINARY ALIGNMENTS

### THE NATURAL ENVIRONMENT



#### Climate

At an elevation of approximately 1,200 feet, the Lake James area's climate is fairly warm during summer, with temperatures in the 80s and 90s, and moderately cold during the winter, with temperatures typically in the 30s and 40s.

Rainfall is fairly evenly distributed throughout the year with the wettest month of the year being March. Snowfall averages seven inches in the winter. The annual average precipitation in the area is 54 inches.



#### Geography/Topography/ Physiography

Lake James is located at the base of the Blue Ridge Mountains, approximately 1,200 feet above sea level, between the small towns of Marion and Morganton. It is the uppermost lake in the Catawba River system and lies behind a series of four earthen dams.

Lake James contains 10.2 square miles of surface area and more than 150 miles of shoreline. The average depth of the Lake is 65 feet with a maximum recorded depth of 120 feet. The Lake James area is located within the Catawba River drainage.

Lake James is influenced by two distinct geomorphic regions, classified by similarity of landform and geology, the Blue Ridge and Piedmont Physiographic Provinces.

Elevations in Blue Ridge Province range from about 1,200 to 4,000 feet. This montane section of Burke County consists of steep slopes and ridges with deep valleys on the eastern escarpment of the Blue Ridge. Elevations in the Piedmont Province typically range from 1,200 to 1,400

feet. This area is characterized by the rolling to moderately steep topography of the western Piedmont. Although only a couple of hundred feet in elevation difference, the area surrounding Lake James is quite rugged and characterized by steep slopes. Development is difficult and typically limited to areas adjacent to narrow ridges where roads can be placed.





## Plants & Wildlife

Native plants and animals of the Lake James region are characteristic of the two physiographic regions. The substantial differences in elevation, topography, and geology between the two regions produce significant natural community and species diversity. The transition zone between these two distinct regions also creates an ecologically unique area.

Especially noteworthy rare species include the Mountain Golden Heather plant, the Peregrine Falcon, and the Bald Eagle.

**THE ENDANGERED BALD EAGLE FEATHER PROVIDES THE INSPIRATION FOR THE FONTA FLORA LOGO.**



# CHAPTER TWO

## EXISTING CONDITIONS, ANALYSIS, AND PRELIMINARY ALIGNMENTS

### ON THE GROUND RESEARCH

#### @ SOUTHPOINTE

DbD principal, Eric Woolridge, and Burke County Deputy Manager, Scott Carpenter, meet with Southpointe subdivision representatives to discuss potential trail routes.



#### NCDOT & NC Parks

Trail planners met with NCDOT & NC Parks officials throughout the study area to discuss trail alignments within NCDOT right-of-ways and Lake James State Park.



#### TRAIL BUILDERS

The planning team met with professional trail builders to understand trail construction challenges and determine an accurate estimate of probable cost.

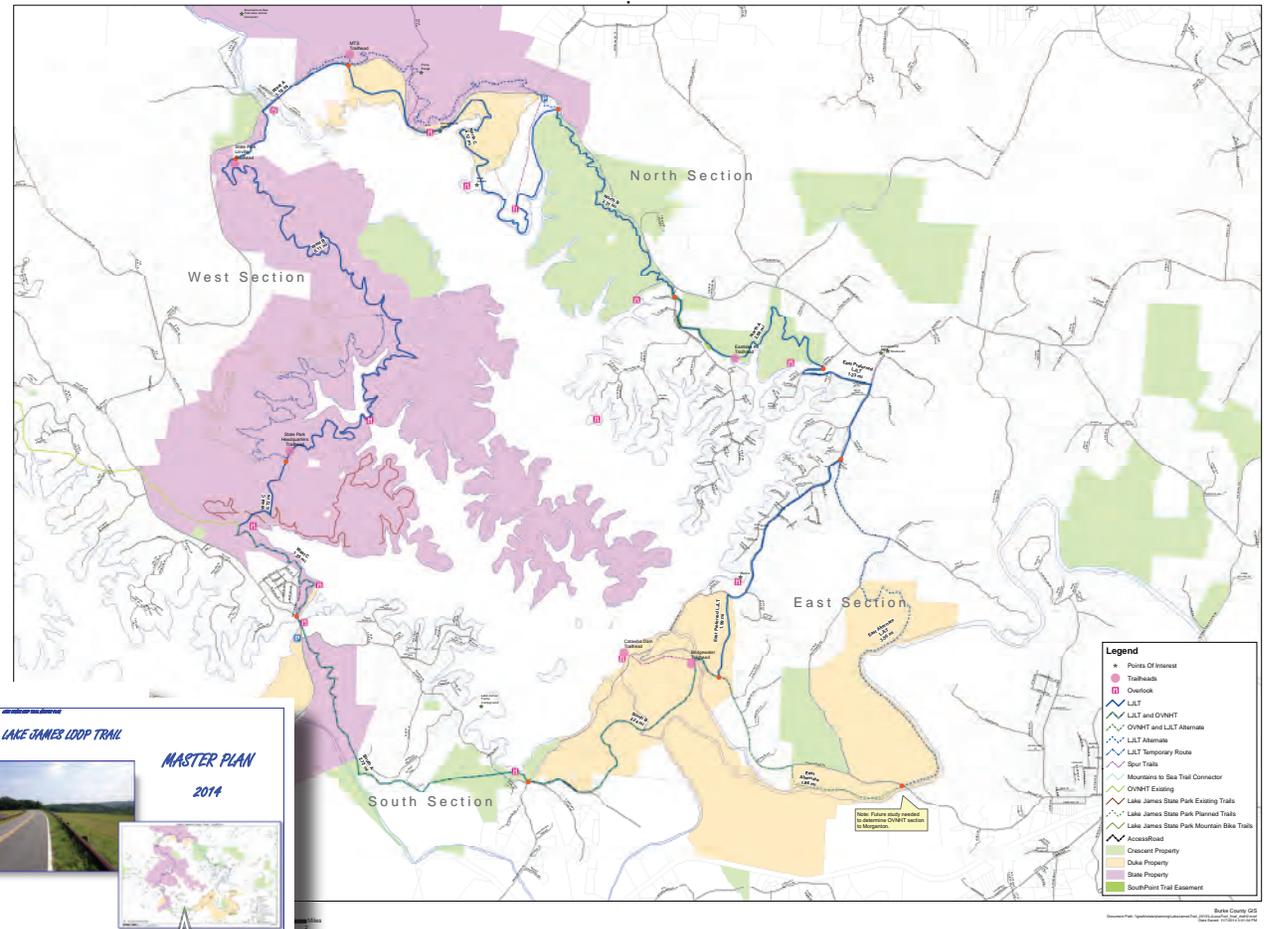


# ANALYSIS

The following analysis map series provides opportunities and constraints discovered since the 2014 Lake James Loop Trail Master Plan was developed. A lot has changed since 2014.

THE FOLLOWING ANALYSIS MAP SERIES PROVIDES OPPORTUNITIES AND CONSTRAINTS DISCOVERED SINCE THE 2014 LAKE JAMES LOOP TRAIL MASTER PLAN WAS DEVELOPED. A LOT HAS CHANGED SINCE 2014.

## 2014 LAKE JAMES LOOP TRAIL - FINAL DRAFT



The following maps series is taken from the 2014 Lake James Loop Trail Master Plan.

# CHAPTER TWO

## EXISTING CONDITIONS, ANALYSIS, AND PRELIMINARY ALIGNMENTS

### SECTION 1 ANALYSIS



### OPPORTUNITIES

1. Burke County property includes the intersection of Hwy. 125 and Fish Hatchery Road, a prominent and ideal location for a trailhead.
2. Excellent views of Lake James
3. Excellent views of Lake James
4. A side path along Hwy. 126 will help create awareness of the Fonta Flora State Trail

### CONSTRAINTS

1. Wetland areas will increase trail construction costs
2. Due to topography, the trail will not be extended along Hwy 126, but an easement will need to be secured from a private landowner.
3. The trail will need to share the vehicular road and entrance to the private campground.



## OPPORTUNITIES

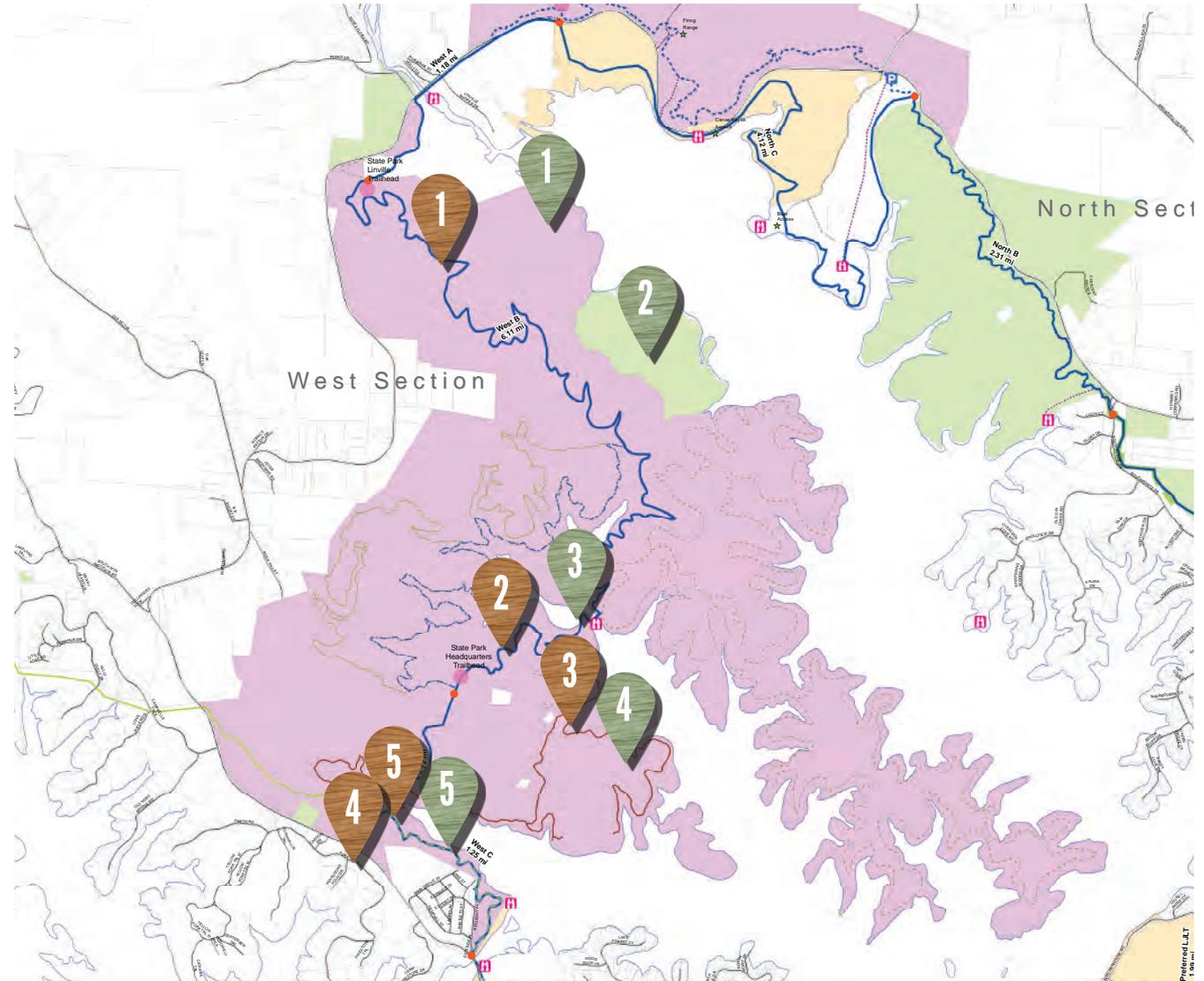
1. Explore creating the trail along the shoreline
2. NC State Parks recently purchased this tract
3. After the bridge is constructed, the trail could split and provide hikers a lakeside option, while cyclists could travel the park's road.
4. Excellent lake views create an ideal location for the Fonta Flora State Trail.
5. A multi-use path along the Overmountain Victory Trail could prevent cyclists from having to exit onto Hwy. 126



## CONSTRAINTS

1. This prior alignment does not take advantage of lake views
2. This prior alignment does not take advantage of lake views
3. Challenging topography will likely prevent multi-use trail construction
4. Hwy. 126 provides for a dangerous option for leisure cyclists using the Fonta Flora State Trail.
5. The existing OVNHT needs to be enhanced to provide for cyclists.

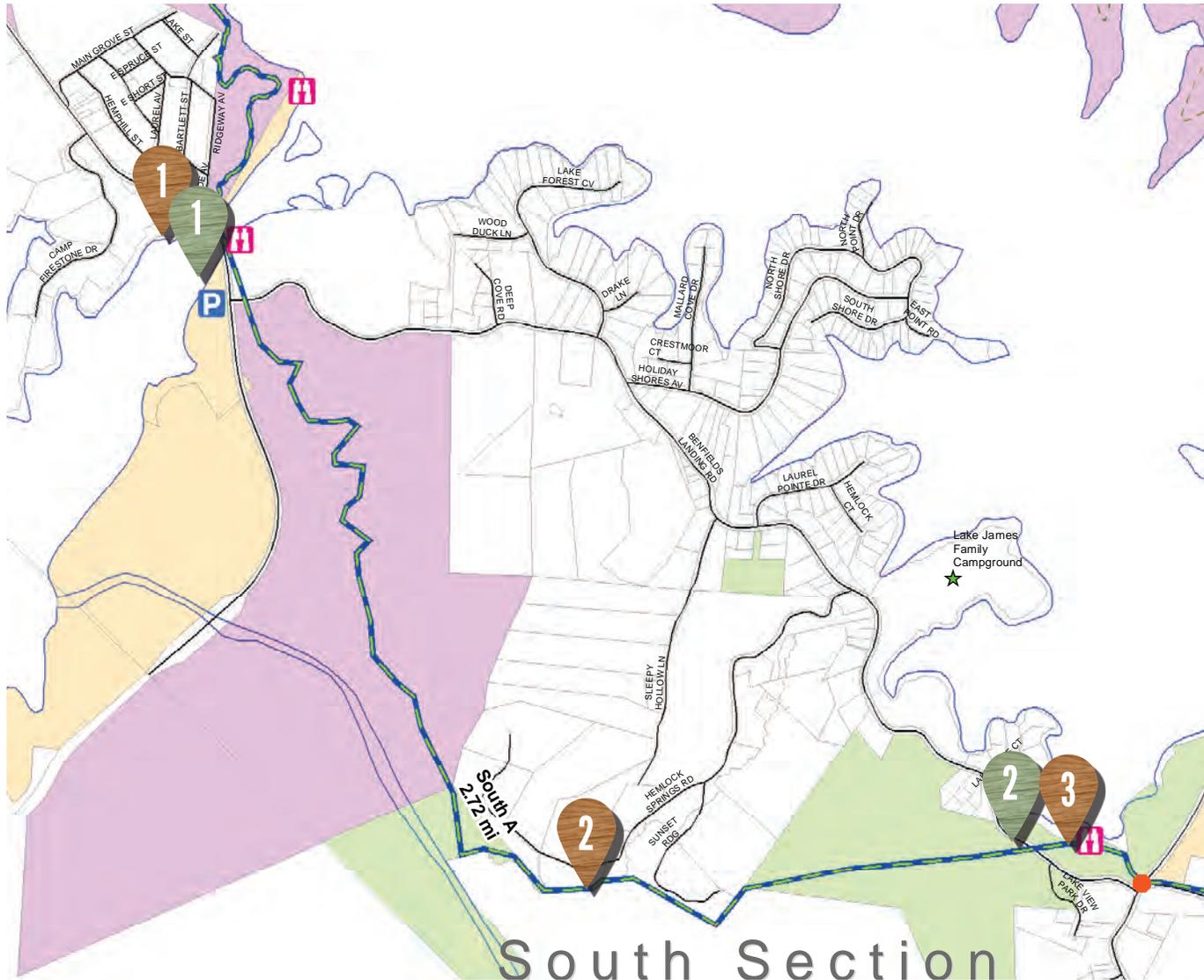
## SECTION 2 ANALYSIS



# CHAPTER TWO

## EXISTING CONDITIONS, ANALYSIS, AND PRELIMINARY ALIGNMENTS

### SECTION 3 ANALYSIS



### OPPORTUNITIES

1. Burke County controls the intersection near Canal Bridge, a prominent location for a trailhead.
2. Excellent views of Lake James

### CONSTRAINTS

1. The trail will need to cross Canal Bridge.
2. Private landowner challenges
3. The Benfields Landing and N. Powerhouse Road intersection will require an appropriate design to alleviate sight distance challenges.



## OPPORTUNITIES

1. Duke Energy has agreed to provide an easement for the Fonta Flora State Trail.
2. The Catawba Dam Trailhead will be improved by Duke Energy and will provide a portage for canoes and kayaks.
3. Duke Energy has agreed to provide an easement for the Fonta Flora State Trail.



## CONSTRAINTS

1. A trail along the dam would be challenging because of permitting and topography
2. The trail will need to cross the bridge near the Bridgewater trailhead.
3. The trail will need to cross to the west side of N. Powerhouse Road.

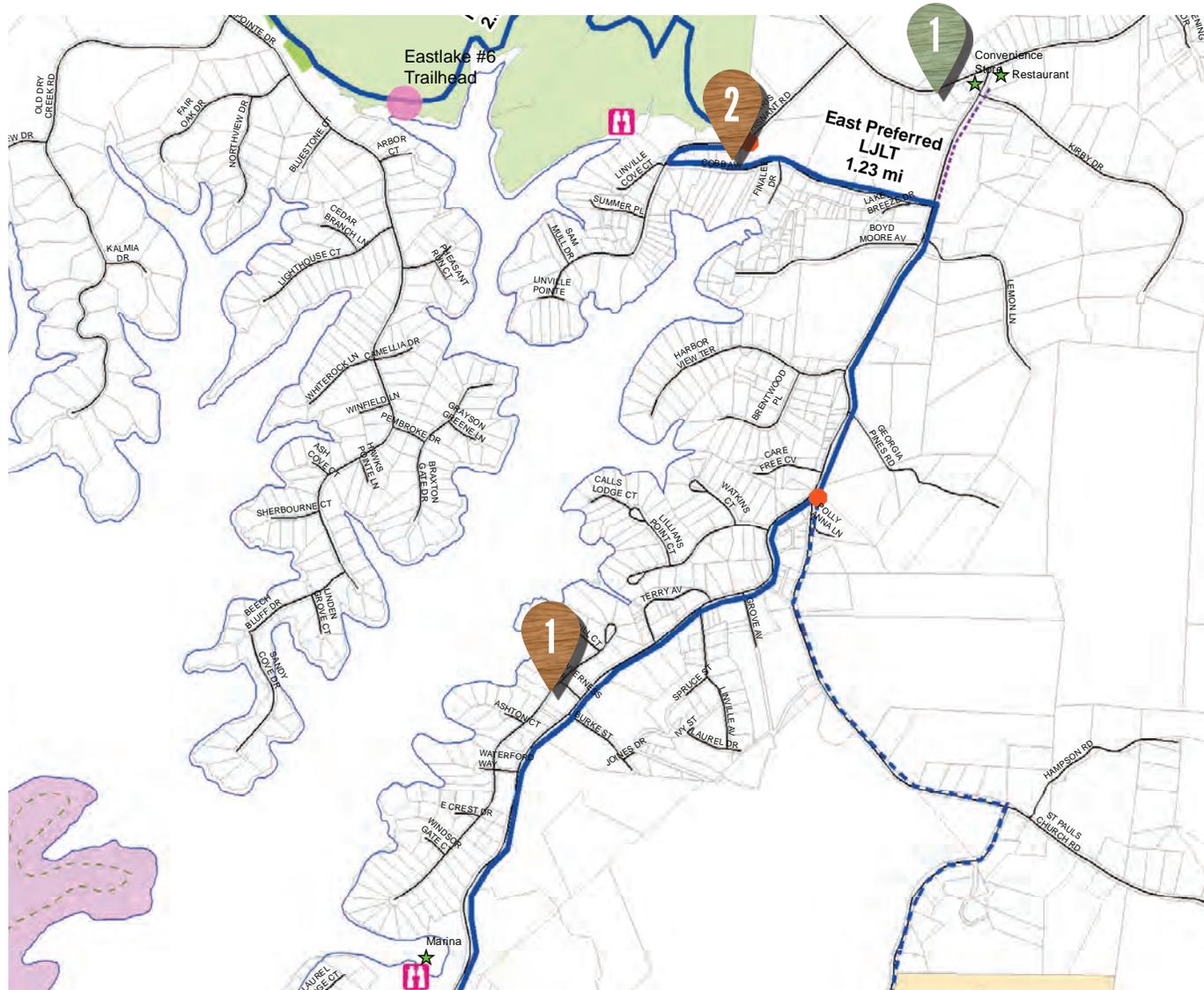
## SECTION 4 ANALYSIS



# CHAPTER TWO

## EXISTING CONDITIONS, ANALYSIS, AND PRELIMINARY ALIGNMENTS

### SECTION 5 ANALYSIS



### OPPORTUNITIES

1. A trail spur will connect to the “three-way” commercial node.

### CONSTRAINTS

1. A side path alongside NCDOT right-of-way will be physically challenging and will require easements from many private landowners.

2. There are topography challenges with constructing a side path along Cobb Road.



## OPPORTUNITIES

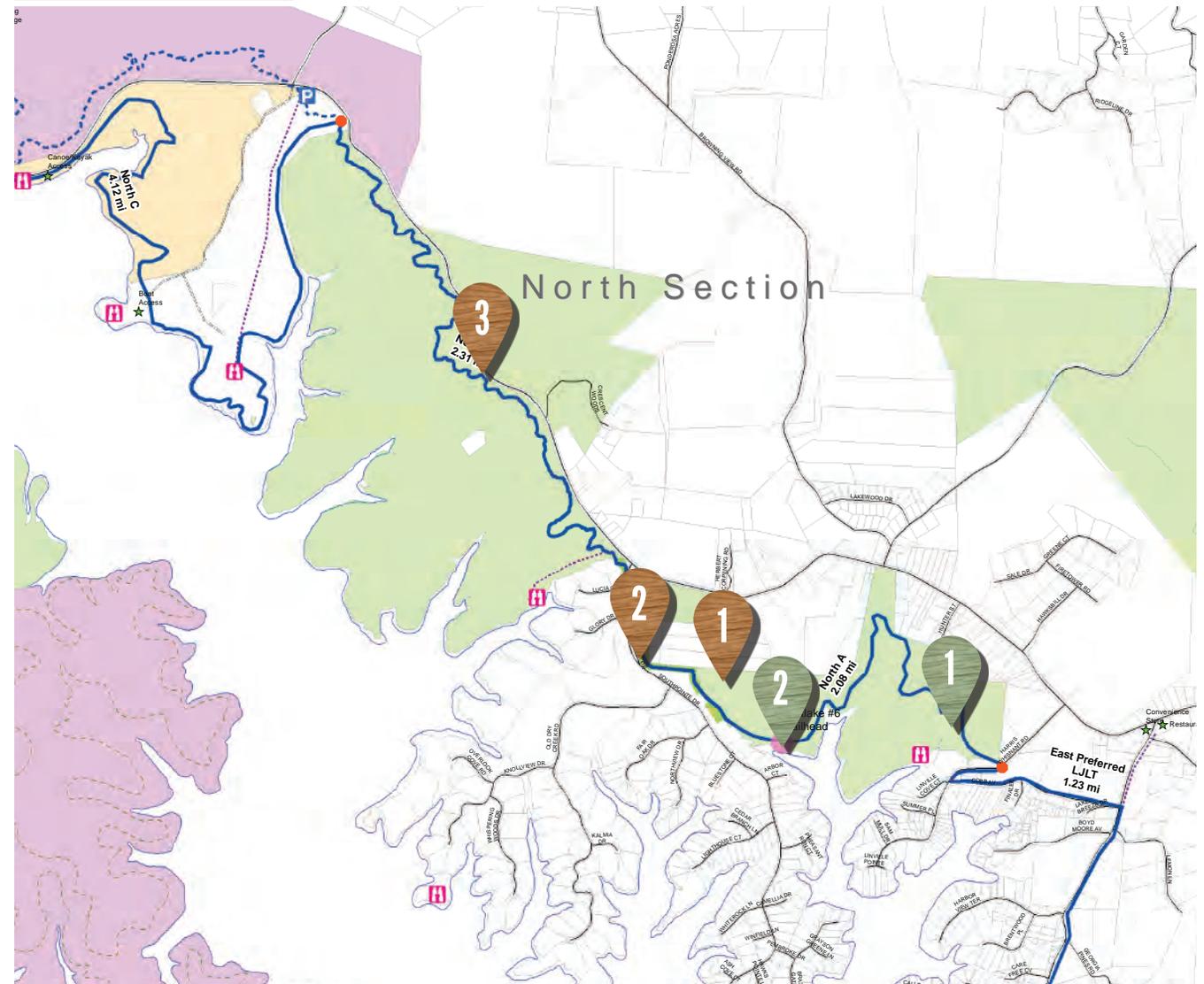
1. An easement has been provided for the Fonta Flora State Trail.
2. A pocket park, accessible to only trail users, will provide access to Lake James.

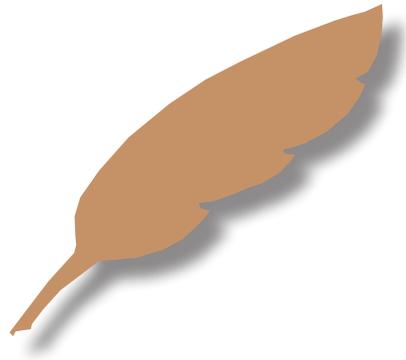


## CONSTRAINTS

1. Due to landowner issues, this original trail route will need to be moved north and farther away from Lake James.
2. There are topography issues within South-pointe neighborhood.
3. Agreements with landowners require that the trail stay near Hwy. 126 rather than along Lake James.

## SECTION 6 ANALYSIS







THIS CHAPTER PROVIDES DESIGN DETAILS FOR VARIOUS TRAIL TYPES AND TRAIL SUPPORT FACILITIES AND OFFERS INSIGHT FOR INCORPORATING SOCIAL MEDIA.

This chapter describes specific trail construction standards and trail types to ensure minimal maintenance and the best user experience.

A unique architectural and branding theme is presented for signage, wayfinding, and other trail support facilities. This chapter concludes with recommendations for using social media to market the trail.

IN THIS CHAPTER:  
(A) Trail Types  
(B) Trail Profile  
(C) Trail Support Facilities  
(D) Social Media Marketing

# TRAILS

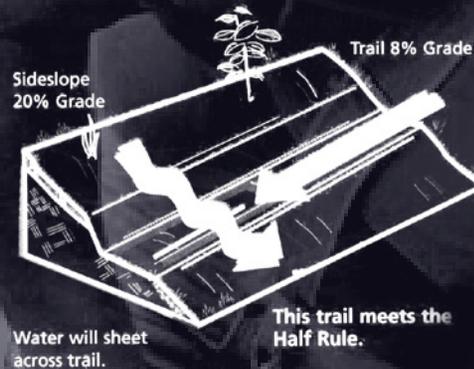
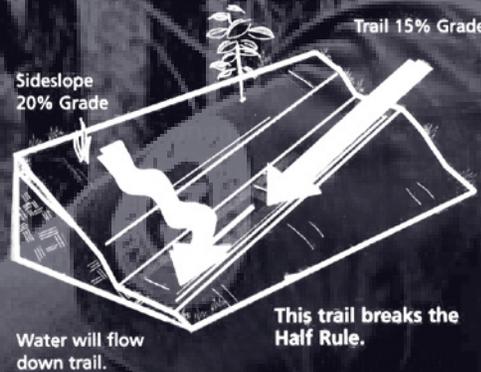
## SUSTAINABLE TRAIL DESIGN

The trail must be designed and constructed to minimize erosion and ongoing maintenance, while providing for a leisure, family-oriented experience. The trail width will be approximately five-feet wide and allow for multiple users and emergency access from off-road vehicles. The overall average trail grade or steepness will be 10% or less, providing for a leisure or family experience. The trail will be slightly rolling with a gentle grade that follows the terrain contours. The trail will be slightly out-sloped, and meanders and undulates frequently to remove water from the trail surface and create interest. The trail corridor will remain as narrow as possible while still maintaining the required tread width.

The trail design will utilize the five essential elements of sustainable trails as outlined in the International Mountain Bicycling Association's (IMBA) publication "Trail Solutions".

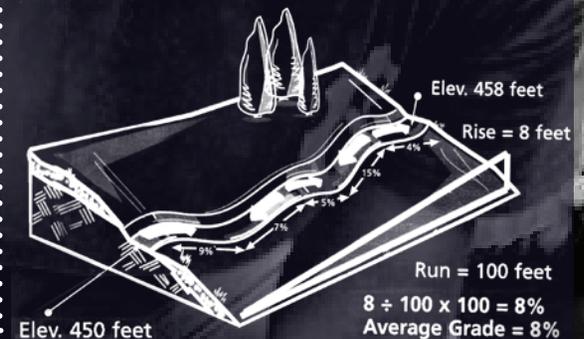
### 1. THE HALF RULE

A trail's grade shouldn't exceed half the grade of the hillside or sideslope that the trail traverses. If the grade does exceed half the sideslope, it's considered a fall-line trail. Water will flow down a fall-line trail rather than run across it.



### 2. THE TEN PERCENT AVERAGE GUIDELINE

An average trail grade of 10 percent or less is considered sustainable. This doesn't mean that all trails should be kept under 10 percent, but the trail builder will need to limit the length of sections that exceed 10 percent.



# THE FIVE ESSENTIAL ELEMENTS OF SUSTAINABLE TRAILS



## 3. MAXIMUM SUSTAINABLE TRAIL GRADES

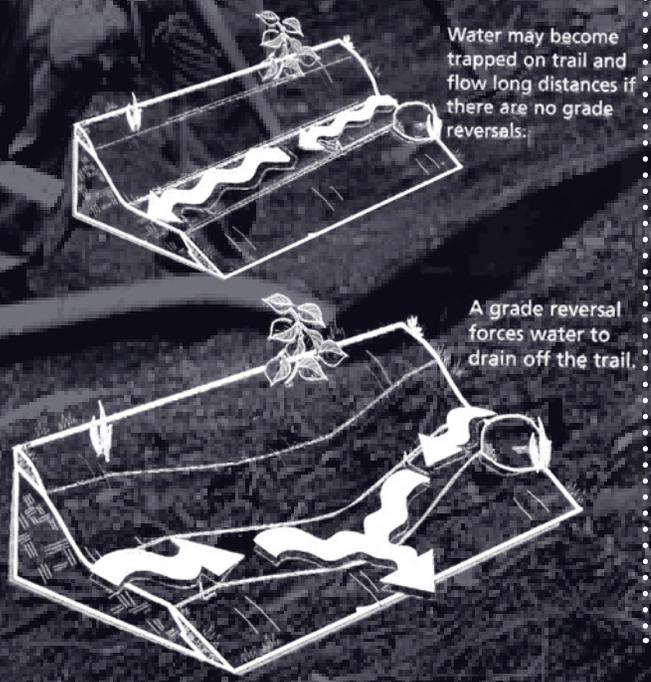
Maximum grade is the steepest portion of a trail that is more than approximately 10 feet in length. It's critical to determine what the maximum allowable trail grade will be prior to beginning construction. Several factors should be considered when determining the maximum sustainable trail grade which include:

- Half Rule
- Soil Types
- Rock
- Annual Rainfall Amount
- Grade Reversals
- Type of Users
- Number of Users
- Difficulty Level.



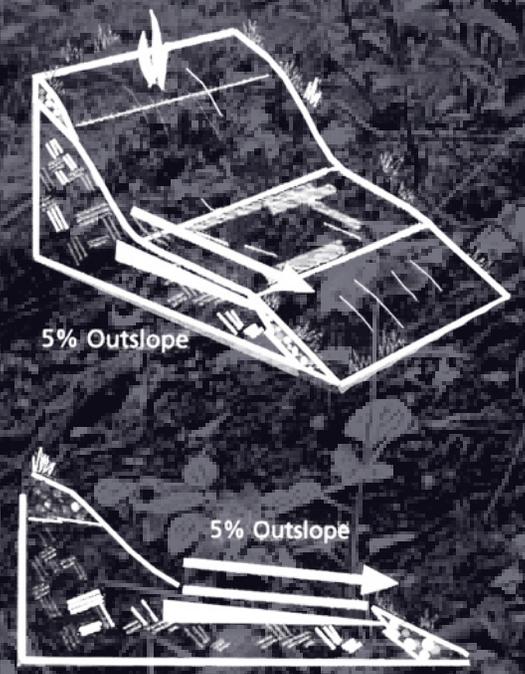
## 4. GRADE REVERSALS

A grade reversal is a point where an ascending trail changes direction subtly for 10 to 50 linear feet before ascending again. This change in grade allows for water to exit the trail.



## 5. OUTSLOPE

Outslopes allow water to sheet flow off the trail instead of channeling down its center.



# TRAILS

## TRAIL CONSTRUCTION

Members and associates of the Professional Trailbuilders Association (PTBA) should be preferred contractors for constructing the trail with mechanized equipment. These contractors have a thorough understanding of sustainable trail design and construction.

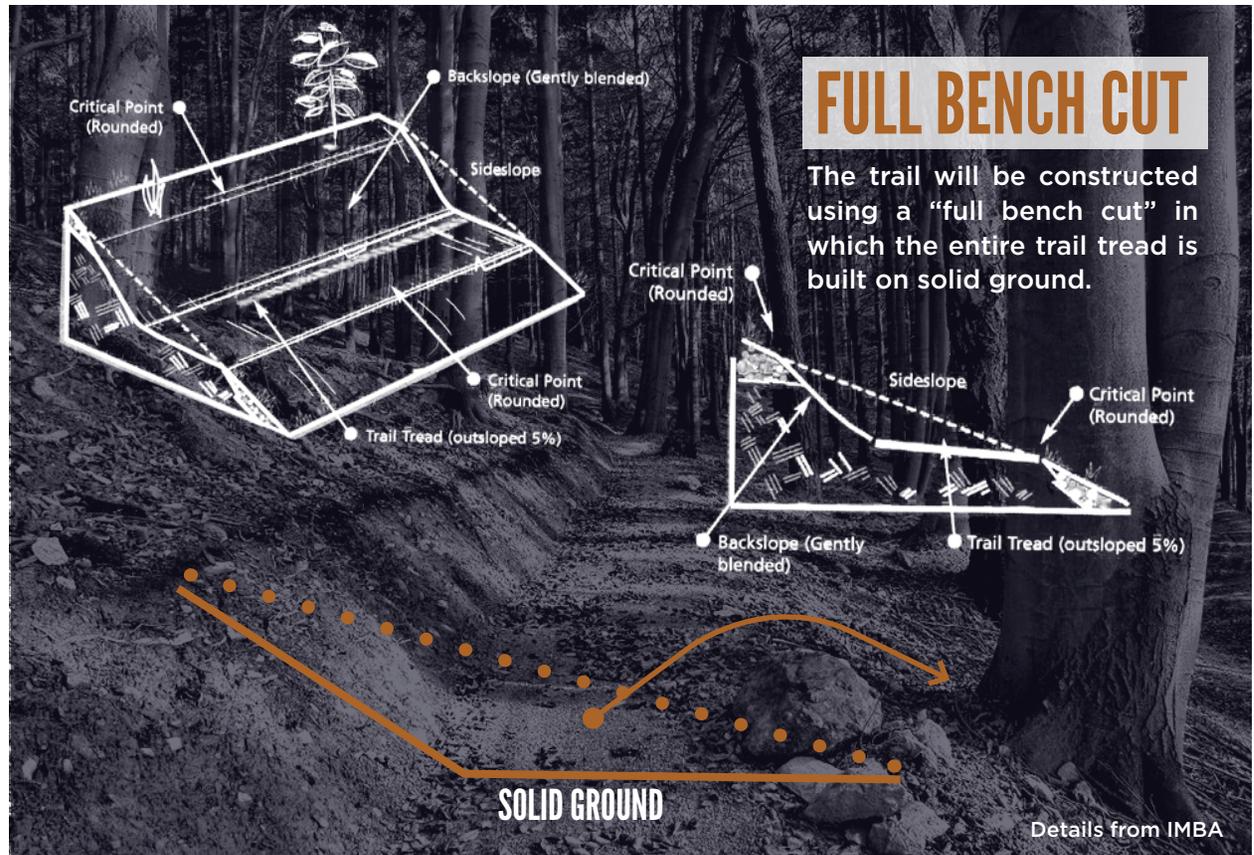


Volunteers may also work with PTBA contractors in a “hybrid” manner. When utilizing this method, the contractor is responsible for the rough cut of the trail tread and volunteers complete the finish work. Burke County will be responsible for securing any required local, state, or federal permits for construction.

The trail will be constructed using a “full bench cut” in which the entire trail tread is built on solid ground. A “partial bench cut” which is similar to “cut and fill” will only be utilized if a full bench cut is not feasible due to rock outcrops, slabs, or other natural features. A partial bench cut uses loose fill dirt to construct a portion of the trail treads. The fill dirt has a tendency to loosen over time and can

then wash and erode. This issue is minimized when constructing a full bench cut. The trail bed will be shaped to leave an even, compacted, uniform surface free of indentations or protruding roots and stumps. The grading of the trail tread, back slope, and drainage

features will be finished to a smooth, stable surface. Any excess or disturbed soil outside the trail tread is evenly distributed and covered with leaves, organic debris, and other natural materials to aid in aesthetics and sedimentation and erosion control.



### FULL BENCH CUT

The trail will be constructed using a “full bench cut” in which the entire trail tread is built on solid ground.

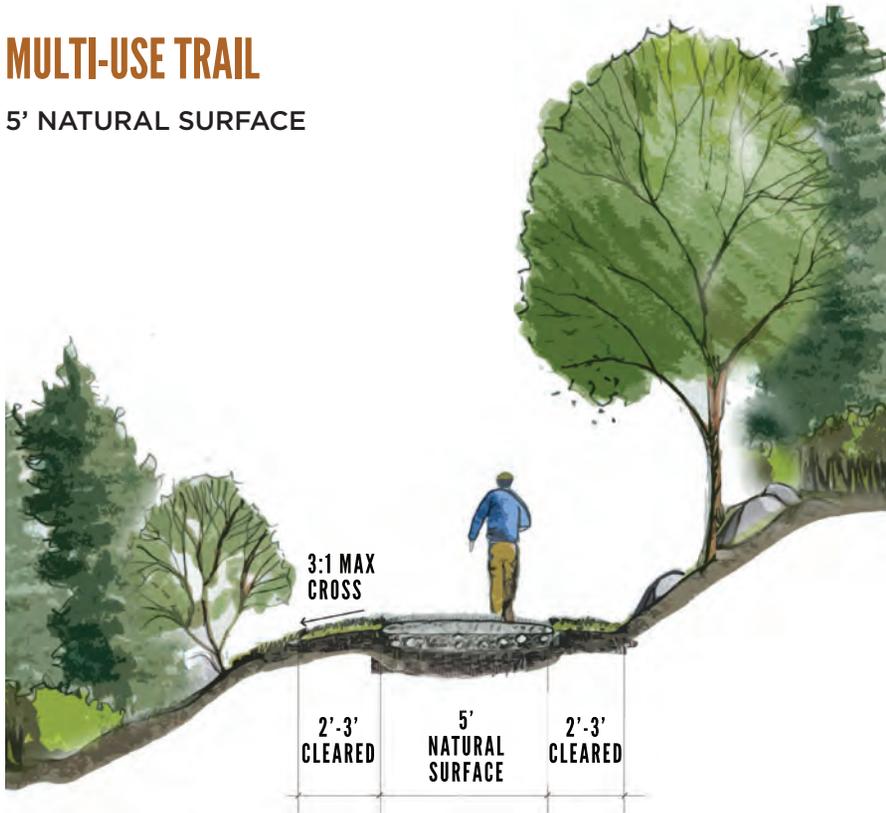
Details from IMBA

# TRAIL TYPES

Six trail types are proposed along the preferred alignment. A specific trail type is proposed according to its surrounding environment,

## MULTI-USE TRAIL

5' NATURAL SURFACE



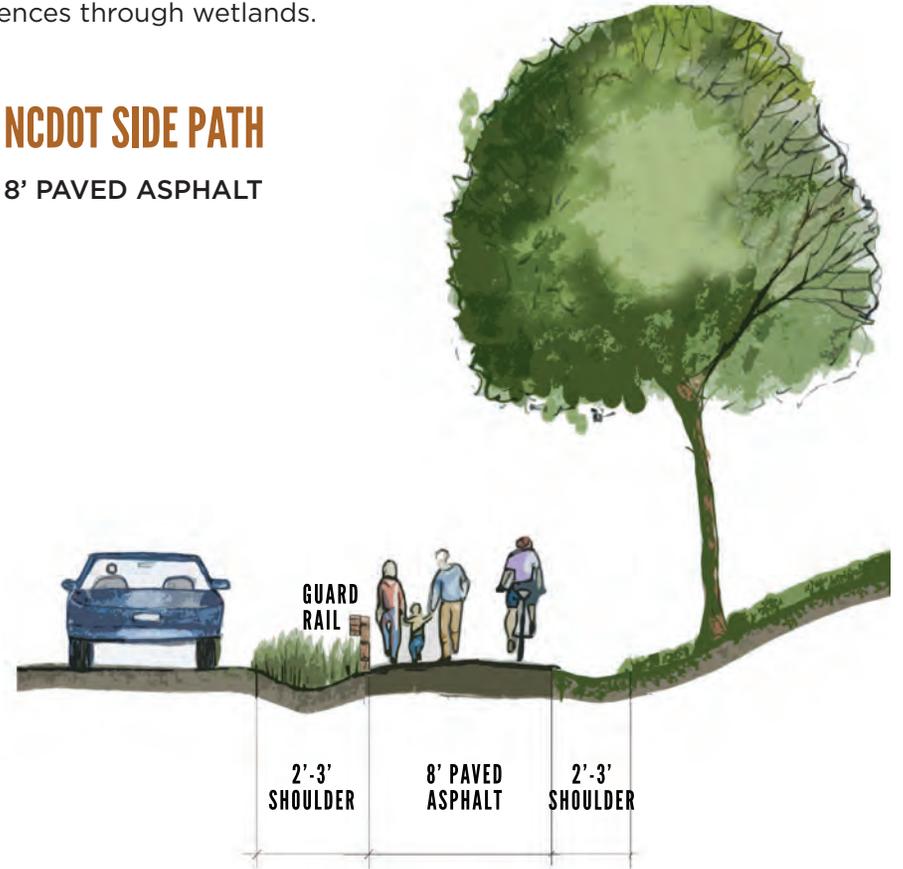
**User Group:** Hikers and Bikers  
**Material:** Crushed gravel fines  
**Preferred Width:** 5'

**Avg. Construction Cost:** \$6/ln. ft.  
**Preferred Easement Width:** 50'

whether it is for safety along roadways or to enhance user experiences through wetlands.

## NCDOT SIDE PATH

8' PAVED ASPHALT



**User Group:** Hikers and Bikers  
**Material:** Paved Asphalt  
**Preferred Width:** 8'

**Avg. Construction Cost:** \$80/ln. ft.  
**Preferred Easement Width:** 25'

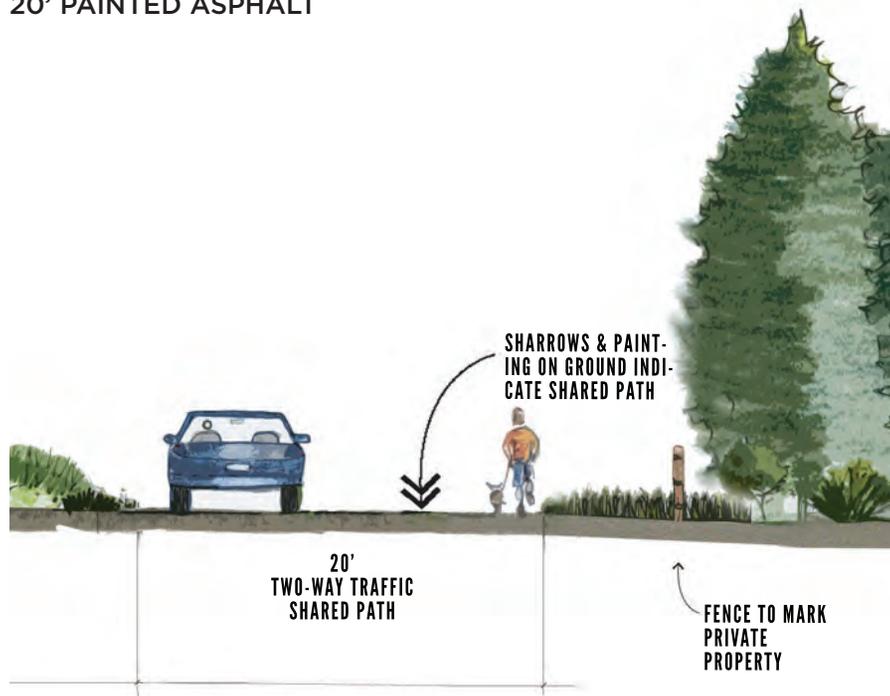
Note: Trail to be approved in accordance with NCDOT encroachment agreement.

# TRAILS

## TRAIL TYPES

### SHARED PATH

20' PAINTED ASPHALT



**User Group:** Hikers, Bikers and Vehicles

**Material:** Painted Asphalt

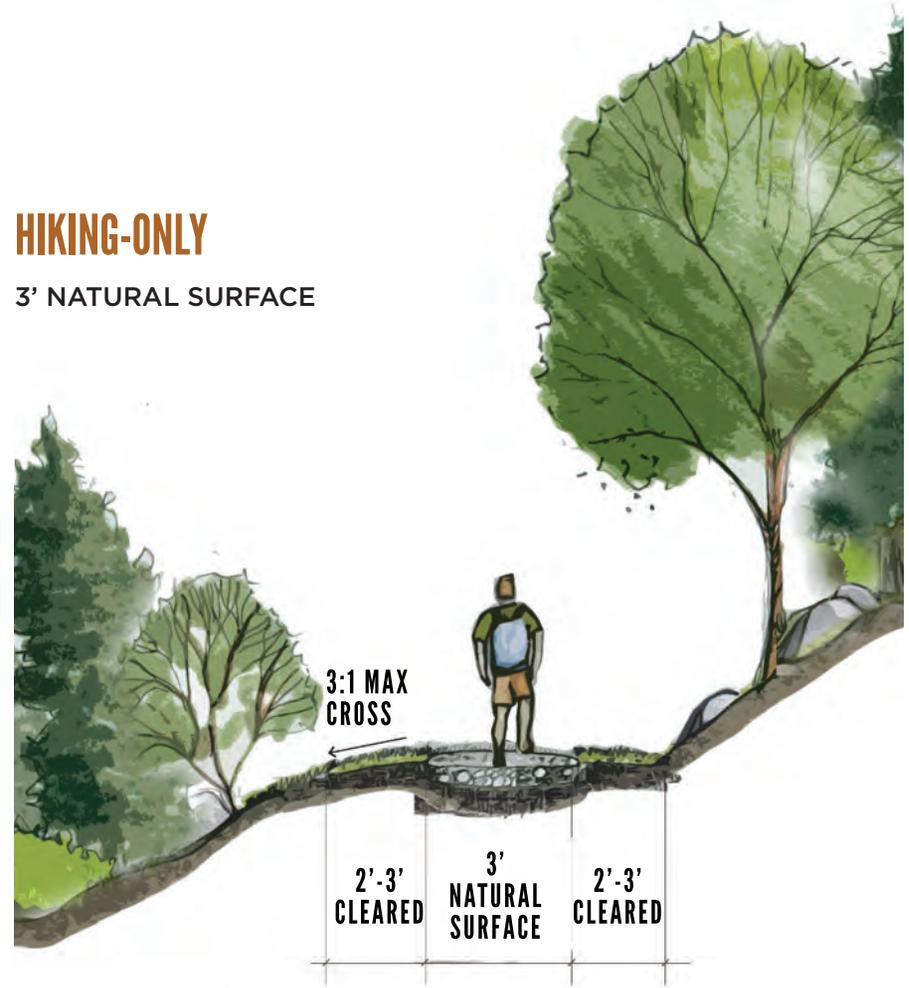
**Preferred Width:** 20'

**Avg. Construction Cost:** \$15/ln. ft.

**Preferred Easement Width:** Existing road width

### HIKING-ONLY

3' NATURAL SURFACE



**User Group:** Hikers

**Material:** Crushed Gravel Fines

**Preferred Width:** 3'

**Avg. Construction Cost:** \$4/ln. ft.

**Preferred Easement Width:** 25'

Note: The hiking-only trail type is found within Lake James State Park and should be constructed in accordance with NC State Parks standards.

## BIKING-ONLY

5' NATURAL SURFACE

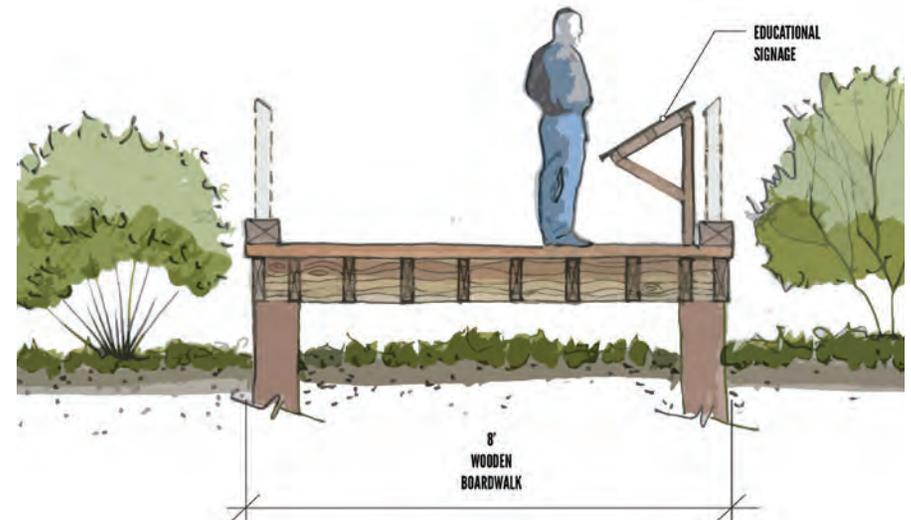


User Group: Bikers  
Material: Natural Mineral Soil Surface  
Preferred Width: 3'

Avg. Construction Cost: \$4/ln. ft.  
Preferred Easement Width: 25'

## WETLAND TRAIL

8' BOARDWALK



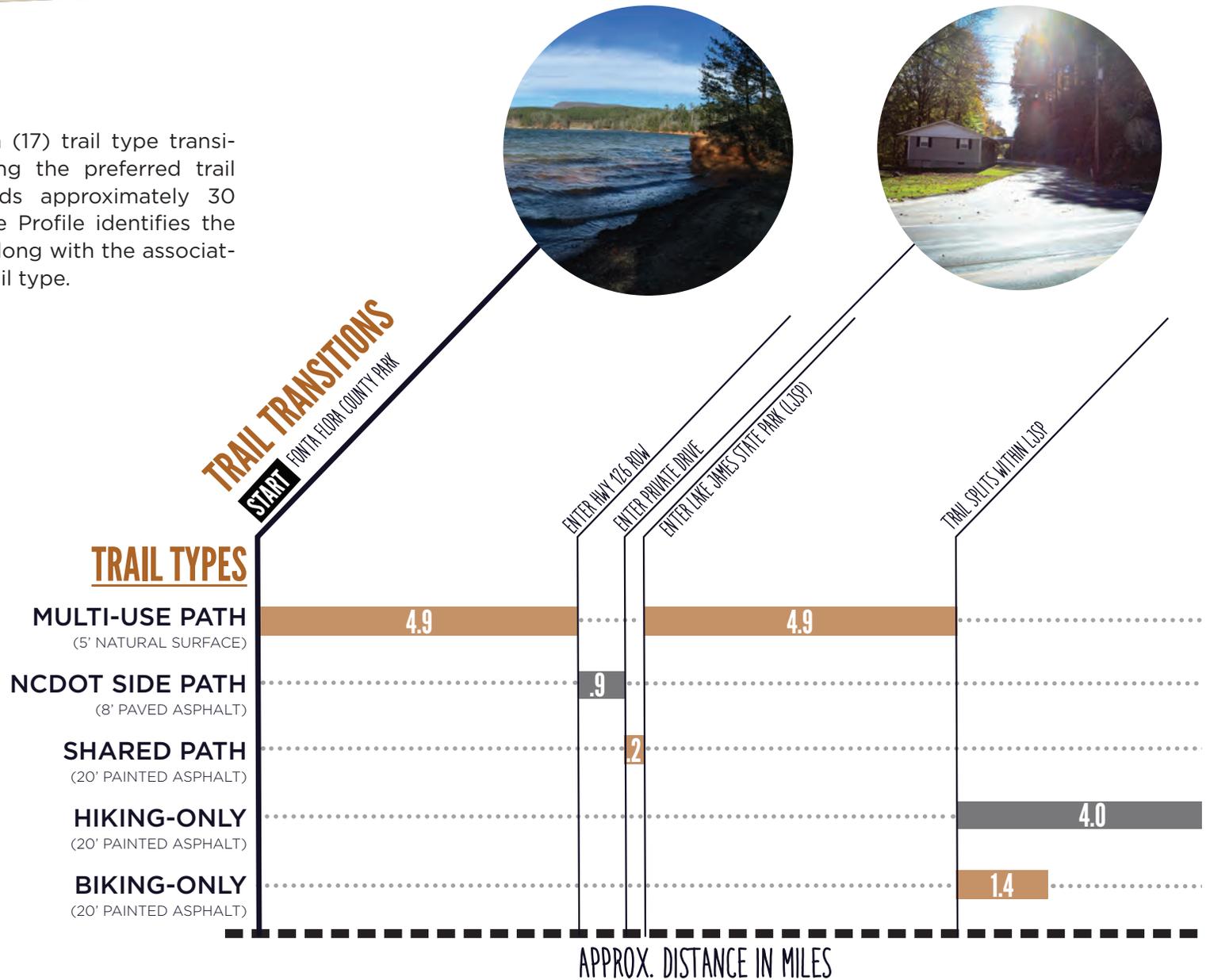
User Group: Hikers  
Material: Wooden Boardwalk  
Preferred Width: 8'

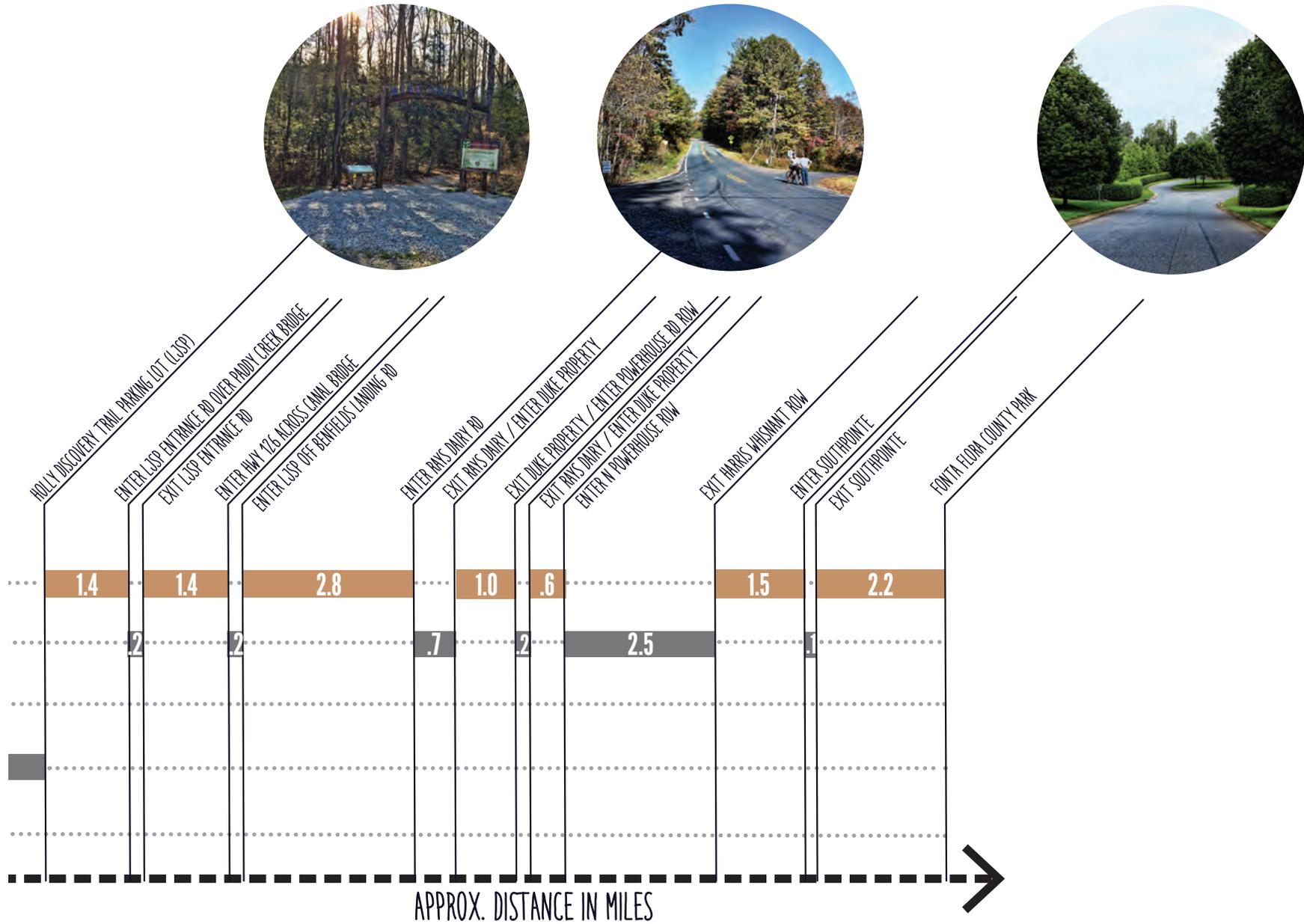
Avg. Construction Cost: \$140/ln. ft.  
Preferred Easement Width: 50'

# TRAILS

## TRAIL TYPES PROFILE

There are seventeen (17) trail type transitions proposed along the preferred trail route, which extends approximately 30 miles. The Trail Type Profile identifies the transition location, along with the associated length of each trail type.





# SUPPORT FACILITIES

## OVERVIEW

A unique architectural and branding theme is presented for trail support facilities presented on the following pages.

### TRAIL MARKERS

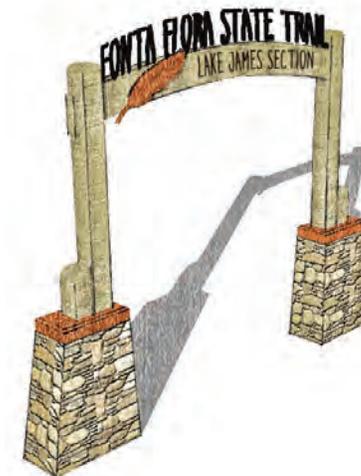
The Fonta Flora State Trail will be marked by a representation of an eagle feather. The symbol is appropriate because it honors the following:

- (a) Catawba Indians, Cherokee Indians, and Native American cultures generally;
- (b) The conservation efforts at Lake James, in particular, that have resulted in eagles returning to the area; and
- (c) The Colonial and Revolutionary Americans who only two years after the Battle of Kings Mountain adopted the EAGLE as the national bird of the USA.



### VEHICULAR GATEWAY

The large vehicular gateway is designed to be located at the entrance of Fonta Flora County Park and any other major park facilities to be developed by Burke County in the future.



### PEDESTRIAN GATEWAY

The large pedestrian gateway will be located at major trailheads when feasible. This gateway will signal the trail location and serve as a significant confidence marker for trail users.



## SHELTERS

### LARGE SHELTER @ 18'X24' & SMALL SHELTER @ 14'X16'

The shelter design includes a timber frame structure with a rock base along each of the four support posts. This architectural style, along with a green metal roof, provides for a natural character conducive to the Lake James environment.



## OVERLOOK PAVILION

: This unique shelter was specifically designed  
 : for locations at Fonta Flora County Park,  
 : where there are significant views of Lake  
 : James.



## LARGE MONUMENT

: Large monuments will be located at major  
 : trailheads or pocket park facilities that pro-  
 : vide access to the FFST. This monument  
 : should also provide for the name of the spe-  
 : cific trailhead or pocket park.

# SUPPORT FACILITIES



## MINI MONUMENT / CONFIDENCE MARKER

This confidence marker will be placed at locations where the trail intersects with roads and major driveways. Also, for small trailheads and pocket parks, this feature can serve as the FFST gateway.



## ROADSIDE MONUMENT

This monument will serve as a signal to motorists that the FFST and its users are within the vicinity. Also, this marker will help advertise the trail and further establish the FFST as a destination-quality trail.



## TRAILHEAD KIOSK

The kiosk will provide a trail map and other important information for trail users. This facility will be located at trailheads and pocket parks along the FFST.



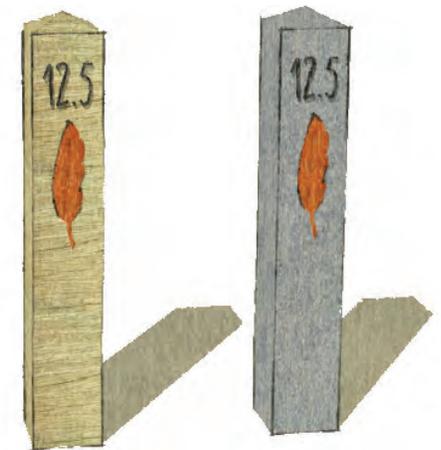
### VAULT TOILET

The vault toilet does not require a septic system, but must be pumped regularly. This facility will be provided for at the Fonta Flora County Park



### DIRECTIONAL SIGNAGE POST

The FFST intersects with the Overmountain Victory National Historic Trail, a connector trail for the Mountains-to-Sea Trail, and other local trails. The directional signage post will provide users with important trail information.



### MILEAGE POSTS (1/4 AND 1/2 MILES)

Mileage posts not only provide distance information, but also serve as confidence markers that create a feeling of safety. These posts will be placed every 1/4 and 1/2 mile

# SUPPORT FACILITIES



## FURNITURE PROTOTYPES

Burke County is working in partnership with Oak Hill Iron to develop custom site furniture and other support facilities. These unique and custom elements will be provided for at Fonta Flora County Park, trailheads, pocket parks, and other locations where trail users can be served.



MILEAGE MARKER



BENCHES



BICYCLE RACK



BENCH DETAIL

# SOCIAL MEDIA: THE NEW WORD OF MOUTH

Trail users should be encouraged to utilize social media to share their experiences with their “friends” and “followers.” Special signage along the trail will signal users to consider posting pictures of themselves or their group of friends as they walk or ride bikes along the trail. In addition, special props and features should be developed during the final design phase. After all, who can market this destination-quality trail better than trail users themselves? Lets take advantage of social media - the new word of mouth.

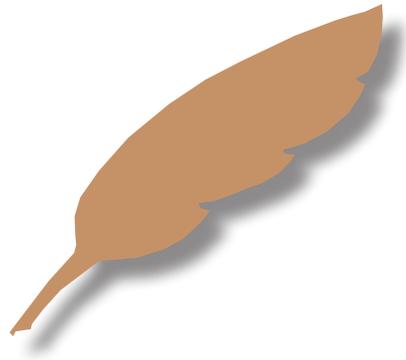
## #FONTAFLORA

The proposed official hashtag for the Fonta Flora State Trail is #fontaflora. The use of this hashtag will allow local tourism leaders to curate local photos and content that can be shared on website and re-posted through other social media platforms.

## CROSS PROMOTE WITH OTHER NOTABLE HASHTAGS

#trailtovictory  
@NCParks  
#LakeJames







THIS CHAPTER SERVES AS THE HEART OF THE TRAIL MASTER PLAN, PROVIDING SPECIFIC TRAIL ALIGNMENTS AND RECOMMENDATIONS.



Specific trail alignments and recommendations are provided for the FFST within six (6) planning sections.

Trail recommendations are supported with renderings that demonstrate trail character at specific locations.



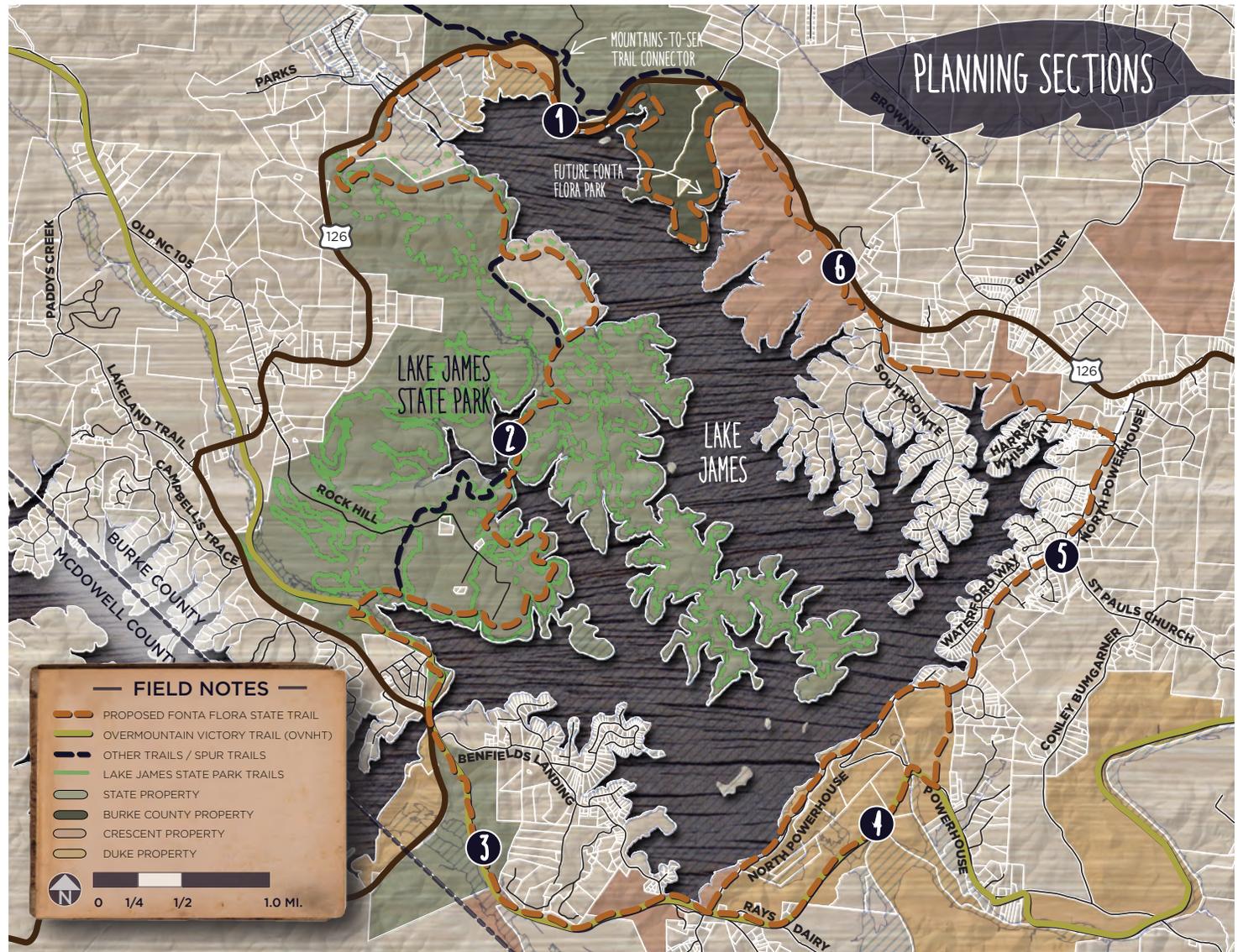
IN THIS CHAPTER:  
(A) PLANNING SECTIONS OVERVIEW  
(B) TRAIL SECTION RECOMMENDATIONS

## PLANNING SECTIONS:

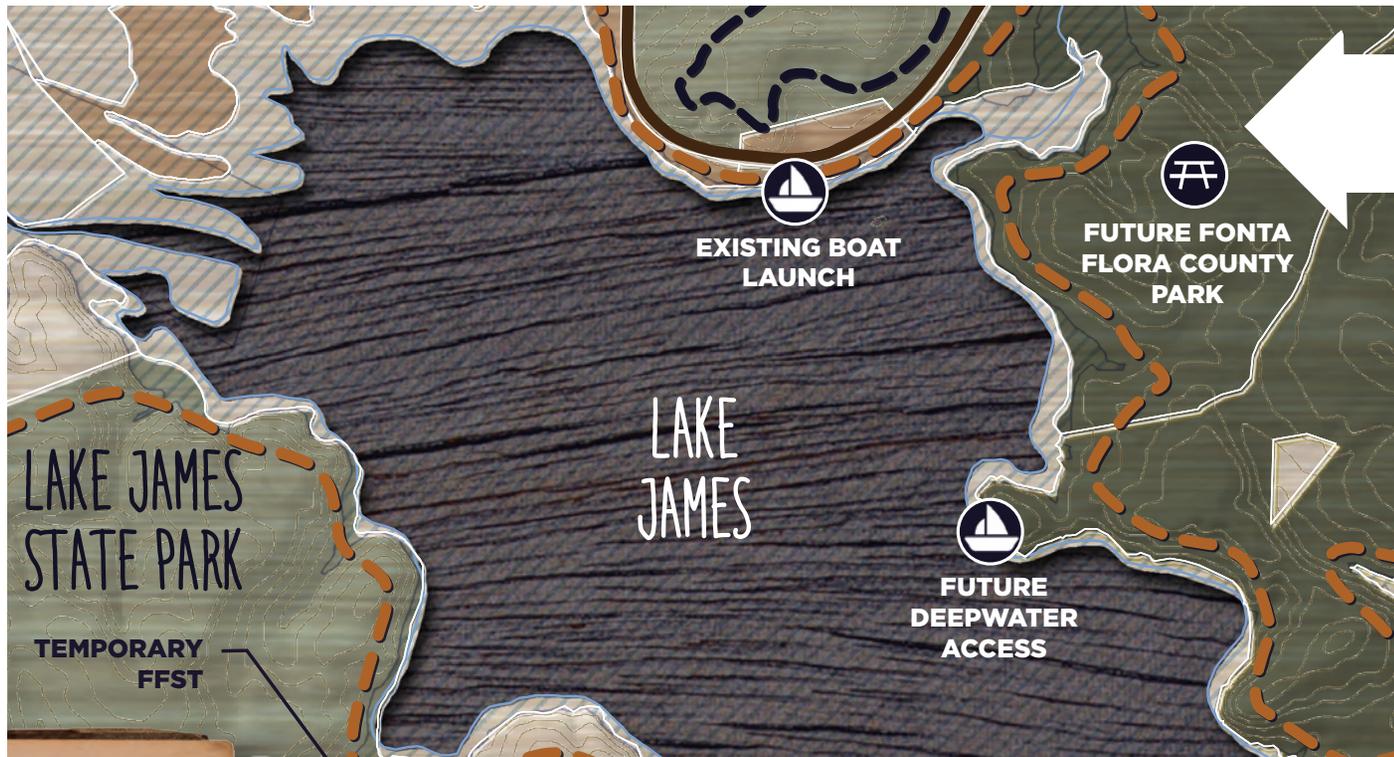
The 29 mile study area forms a loop around the eastern half of Lake James and consists of six (6) planning sections. The geographic extent of each section includes a beginning and ending terminus that features a key asset or significant connectivity point for the trail. Many of the planning sections represent project areas that can be developed independently over time, providing a logical method for implementation as funding and other opportunities arise.

The planning sections include:

- 1 FONTA FLORA COUNTY PARK >> LAKE JAMES STATE PARK
- 2 LAKE JAMES STATE PARK
- 3 CANAL BRIDGE >> BENFIELDS LANDING
- 4 BENFIELDS LANDING >> N. POWERHOUSE
- 5 N. POWERHOUSE >> HARRIS WHISNANT
- 6 HARRIS WHISNANT >> COUNTY PARK



THE 29 MILE STUDY AREA FORMS A LOOP AROUND THE EASTERN HALF OF LAKE JAMES AND CONSISTS OF SIX (6) PLANNING SECTIONS; THIS CHAPTER IS ORGANIZED ACCORDINGLY.



EACH PLANNING SECTION IS ANCHORED BY A MAP THAT HIGHLIGHTS PROPOSED TRAIL ROUTES AND FEATURES.

## **i** ABOUT THE PLANNING SECTION MAPS

Each planning section is anchored by a map that highlights proposed trail routes and features. The proposed routes are identified as either preferred trails, state park trails, Overmountain Victory National Historic Trail (OVNHT), or spur trails. These trail alignments are the result of extensive stakeholder meetings

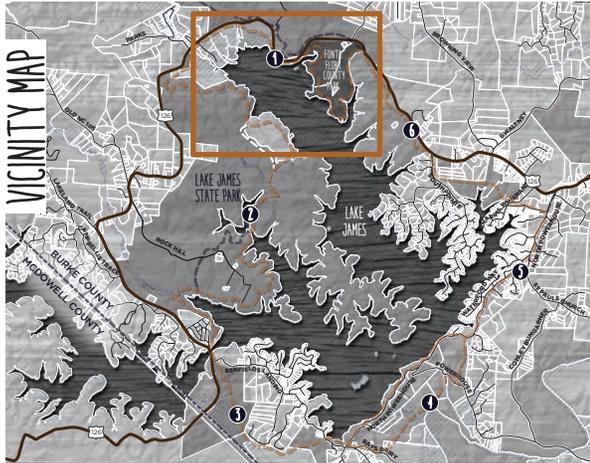
## **#** THE LOOP: BY THE NUMBERS

- 29.4 >> TRAIL MILES**
- 5.87 >> SHARED OVNHT MILES**
- 9 >> TRAILHEADS**
- 2 >> MAJOR NEW BRIDGES**
- 3 >> BRIDGE ENHANCEMENTS**
- 3.6 M >> APPROX. COST**

## **☰** QUICK FACTS

Each planning section begins with a “quick facts” exhibit. This information includes the trail distance, trail type (see Chapter 3: Design Guidelines), and key features and assets associated with each section.

# SECTION 1 COUNTY PARK >> LINVILLE BRIDGE



## QUICK FACTS:

LENGTH: 5.8 Miles

TRAIL TYPE(S): Multi-Use Trail  
NCDOT Side Path  
Shared Path

POINTS OF INTEREST: Fonta Flora County Park  
Linville Access Area  
Linville River Bridge

## PREFERRED ROUTE

The proposed FFST within Section 1 extends approximately 5.8 miles from the future Fonta Flora County Park trailhead east to Lake James State Park.

Within this section the FFST incorporates three different trail types: 5' wide multi-use natural service; 8' wide paved NCDOT side path; and a shared path. The multi-use path trail type extends from the Fonta Flora County Park trailhead located near the intersection of Fish Hatchery Road and Hwy. 126, past the existing boat launch, before reaching the Linville Bridge.

A short section of 8' wide NCDOT side path is necessary as the trail approaches the Linville Bridge where the trail will utilize an existing 5' shoulder that was provided for when the bridge was recently replaced.

After crossing the Linville Bridge, the trail turns south along a private road that pro-



vides access to the Linville River Campground. Trail users will be expected to share this low traffic-volume road with motorists along this "shared path" until reaching Lake James State Park.

## TRAILHEADS

The trailhead near the entrance of the county park is the only planned trailhead within this section. Not only will users have access to the FFST, but also to the connector trail for



## PHOTOS:

(1) Road grading is underway for the future deepwater access at Fonta Flora County Park.

(2) Fonta Flora County Park will offer significant lake views to trail users.



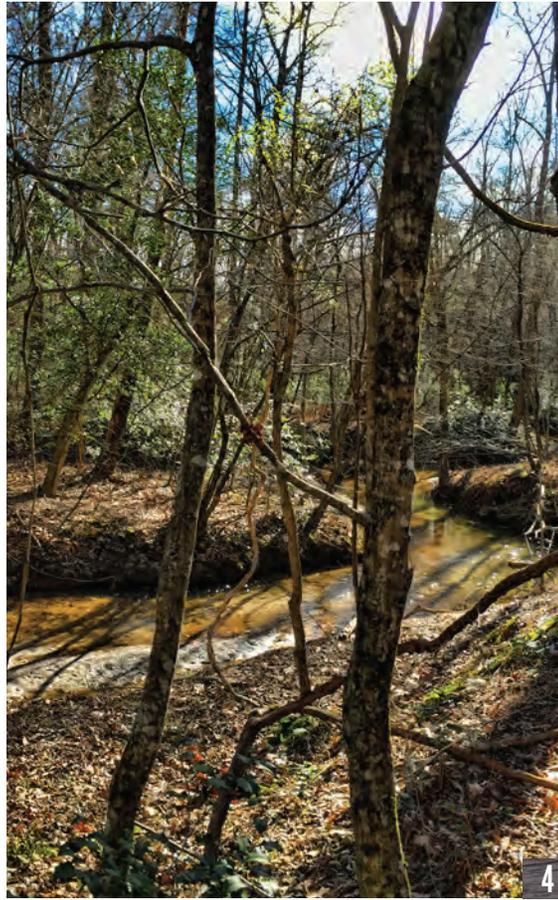


the NC Mountains-to-Sea State Trail (MST), which begins across Highway 126 from the proposed trailhead. The MST connector trail, noted with a dashed black line on the map, extends approximately 3 miles before reaching the MST near Linville Gorge.

The Fonta Flora County Park trailhead will provide support facilities, including parking, an information kiosk, shelter, and FFST trail gateway.

## WATER FEATURE CROSSINGS

Throughout the county park the trail will need to traverse many small ravines and small water features. However, within this section, only one major bridge feature will be required along with a short section of wetland boardwalk. These features will be necessary near White Creek and its wetlands found along the western edge of the park.



### PHOTOS:

(3) The preferred route will utilize portions of the Linville Boat Access parking lot.

(4) A substantial bridge will be required to cross White Creek.

## EXHIBIT 1:

# FONTA FLORA COUNTY PARK

Fonta Flora County Park will boast of approximately 4 miles of the FFST, over half which will meander along the shores of Lake James. The county is working to lure a private “eco-tourism” company to help develop and operate the park. However, various amenities, such as disc golf, picnicking, and boat access, will be made available for public use.

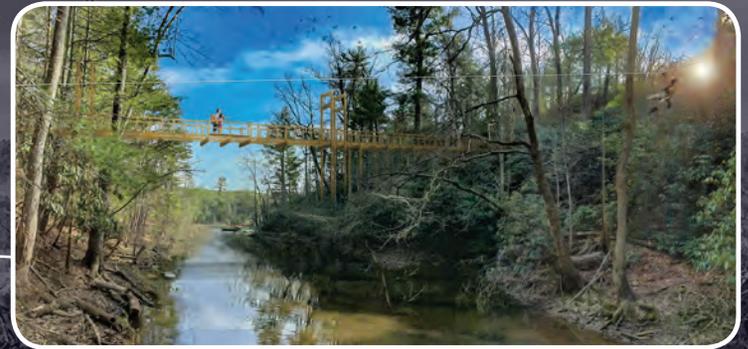


EAGLE NEST PLATFORM

HWY 126



TRAILHEAD



ZIP LINE



OVERLOOK PAVILION

**LEGEND**

<b>Public Program Element</b>	<b>Private Program Element</b>
-------------------------------	--------------------------------

- |                            |                                    |
|----------------------------|------------------------------------|
| 1 Eagle Nest Platform      | 12 Outfitter Base Camp             |
| 2 Deep Water Launch        | 13 Zip Line                        |
| 3 Fonta Flora Trailhead    | 14 Overlook Pavilion               |
| 4 Loch Bridge              | 15 Yurt Village                    |
| 5 18 Hole Disc Golf Course | 16 Private Road                    |
| 6 Restroom                 | 17 Provisions Store & Kayak Livery |
| 7 Event Pavilion           | P Parking                          |
| 8 Adventure Playground     |                                    |
| 9 NC Wildlife Fishing Pier |                                    |
| 10 Picnic Area             |                                    |
| 11 Visitor's Dock          |                                    |
| P Parking                  |                                    |





## EXHIBIT 2: LINVILLE BRIDGE EAST TRANSITION



The FFST will utilize NCDOT right-of-way along the Linville Bridge and its approach areas. Looking east, after the FFST crosses Linville Shores Road, private trail easements must be secured to provide for the trail. The FFST is better suited away from Highway 126 due to its narrow shoulders.





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EXISTING

## EXHIBIT 3: LINVILLE RIVER BRIDGE

Enhancements to the Linville Bridge will include green pavement markings along with the FFST logo. Large, vertical signs will highlight the significance and importance of this unique state trail.



## EXHIBIT 4:

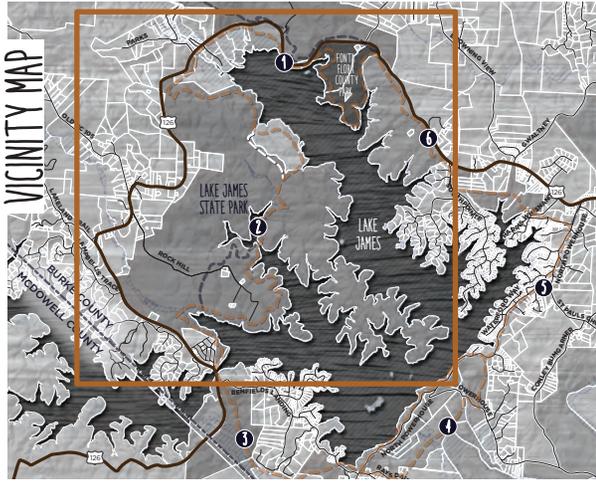
# LINVILLE BRIDGE WEST TRANSITION



The entrance to Linville Campground is narrow and will require the dedication of a shared path for both motorists and trail users. As the FFST continues into the private campground property, the trail will utilize a gravel road before reaching the northern extent of Lake James State Park.



# SECTION 2 LAKE JAMES STATE PARK



## QUICK FACTS:

**LENGTH:** 11.8 Miles

**TRAIL TYPE(S):** Multi-Use Trail  
Hiking only  
Biking only  
NCDOT Side Path

**POINTS OF INTEREST:** Lake James State Park  
Bath House & Camping



**OVNHT SHARED TRAIL SECTION**

## PREFERRED ROUTE

The preferred route of this section extends approximately 11.8 miles from the State Park’s northern boundary to Canal Bridge. In the north, the preferred route quickly extends east and near Lake James. Ideally, users will be able to see views of the lake in accordance with the goals set forth in this plan. The area noted as “recent acquisition” was acquired by the state in fall 2015 and was thus not part of the state’s original LJSP master planning efforts. The preferred route for the FFST is contingent upon its affirmation through future state planning efforts. The preferred route extends south to the location of a future bridge (at the time of the writing of this plan, the bridge was in the engineering phase).

**THE AREA NOTED AS “RECENT ACQUISITION” WAS ACQUIRED BY THE STATE IN FALL 2015 AND WAS THUS NOT PART OF THE STATE’S ORIGINAL LJSP MASTER PLANNING EFFORTS. THE PREFERRED ROUTE FOR THE FFST IS CONTINGENT UPON ITS AFFIRMATION THROUGH FUTURE STATE PLANNING EFFORTS.**



After crossing the future bridge, cyclists and hikers will be guided along two different routes. Cyclists will be guided along a hike/bike trail to the Lake James Mountain Biking Trailhead and continue along the roads to the current section of OVNHT. Hikers will utilize a hiking-only trail, most of which currently exists and meanders along Lake James. The hiking-only trail route will end at the park’s main road and users will walk south to the future dual-use trail where the OVNHT currently exists.

The OVNHT section is not designed for dual-use, but is currently a hiking-only trail.

## PHOTOS:

(5) The Lake James State Park Section will provide for some of the most remote portions of the Fonta Flora State Trail.

# SECTION 2 LAKE JAMES STATE PARK



## FIELD NOTES

- PROPOSED FONTA FLORA STATE TRAIL
- OVERMOUNTAIN VICTORY TRAIL (OVNHT)
- OTHER TRAILS / SPUR TRAILS
- LAKE JAMES STATE PARK TRAILS
- STATE PROPERTY
- BURKE COUNTY PROPERTY
- CRESCENT PROPERTY
- DUKE PROPERTY



0 1/8 1/4 1/2 MI.

The planning analysis revealed that routing cyclists to Highway 126 is cost prohibitive and does not provide for a safe alternative. Therefore, this current 1.2 mile section of OVNHT must be reconstructed to provide for the dual-use trail type. In order for the preferred route to be approved by State Parks, the county must: 1) flag a new and sustainable trail route with an overall average trail grade not to exceed 10%; 2) submit and have approved any engineering plans for technical trail features or bridges; 3) engage all landowners with property adjacent to the park boundary between the park entrance road and canal bridge and disclose the preferred route; and 4) have documented NCDOT approval of plans for a connection to NC HWY 126 and across Canal Bridge.

## WATER FEATURE CROSSINGS

The only major crossing required within this section will be addressed by the 150 to 200 foot bridge now being engineered by NC Division of Parks and Recreation. This bridge will link to the park's peninsula and will be part of the FFST. Numerous stream crossing and small bridges will likely be necessary on new trail sections, but will need to be addressed as detailed trail plans are developed.



## TRAILHEADS

No new trailheads are proposed at Lake James State Park other than those existing or proposed within the State Park's existing master plan. As the FFST is completed throughout the park, each existing trailhead should be evaluated to determine how best to promote the trail through the provision of signage, maps, and other information.

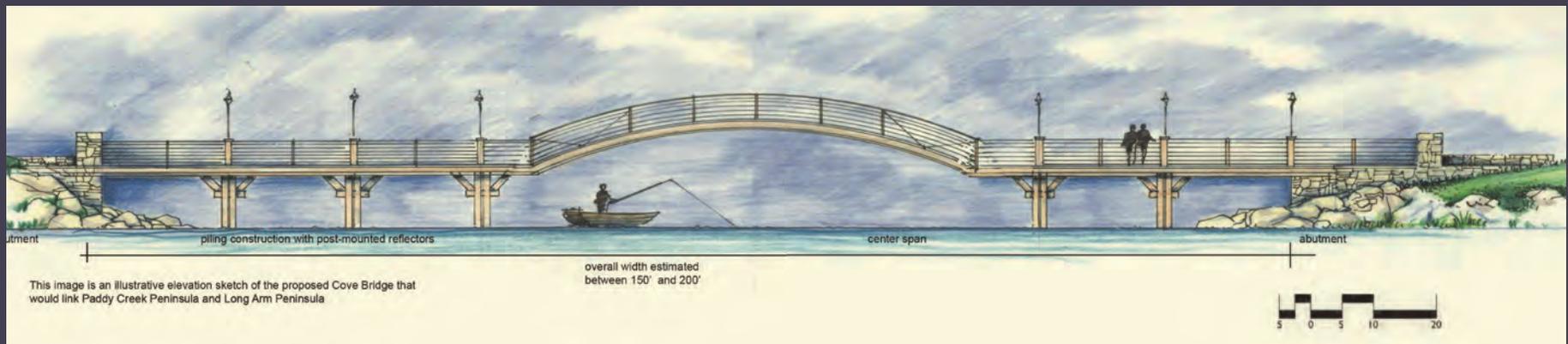


### PHOTOS:

(6) The Paddy's Creek Bridge provides for pedestrian access.

## EXHIBIT 5: COVE BRIDGE

The proposed Cove Bridge will link Paddy Creek Peninsula and Long Arm Peninsula. At the time of the writing of this plan, the planned bridge was in the engineering phase.



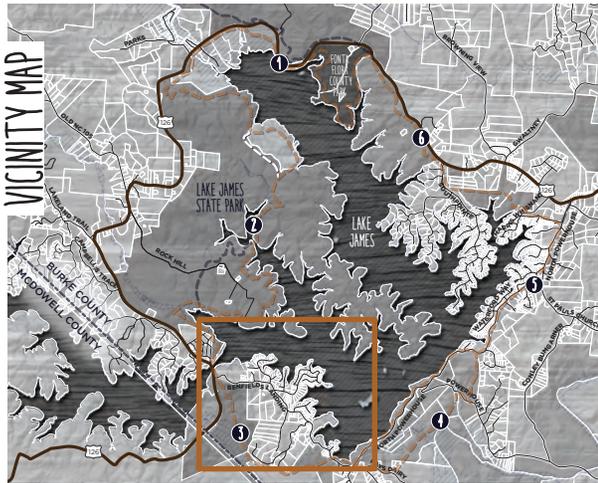
## EXHIBIT 6: CANAL BRIDGE WEST TRANSITION

From Lake James State Park, the FFST will connect to NCDOT right-of-way west of Canal Bridge. An existing guardrail will need to remain in place. Site enhancements at this location will create awareness of the FFST to passing motorists.

EXISTING



# SECTION 3 CANAL BRIDGE >> BENFIELDS LANDING RD



## QUICK FACTS:

LENGTH: 3.0 Miles

TRAIL TYPE(S): NCDOT Side Path  
Multi-Use Trail

POINTS OF INTEREST: Canal Bridge Trailhead



**OVNHT SHARED TRAIL SECTION**

## PREFERRED ROUTE

The proposed FFST within Section 3 extends approximately 3.0 miles from Canal Bridge to Benfields Landing near N. Powerhouse Road.



The FFST exits State Park property and then utilizes Canal Bridge and other NCDOT right-of-way until it reaches additional state-owned land south of Benfields Landing Road; approximately 1,050 feet of NCDOT Side Path trail type will be required along Canal Bridge and Hwy. 126 before reaching additional state property. The FFST will meander through the state's property for approximately 1.2 miles before reaching private property where county officials continue to work with landowners to secure trail easements. The FFST will cross Benfields Landing Road and connect to a planned trailhead, which serves as the terminus of this planning section.

## TRAILHEADS

There are two planned trailheads within this section. Canal Bridge Trailhead will be developed at the intersection of Highway 126, Benfields Landing and Canal Bridge. This trailhead will include parking and signage. This trailhead will require its own bike/ped crossing over Hwy. 126 to connect with the FFST.

The county has obtained permission to develop another trailhead on Benfields Landing Road - Benfields Trailhead - which is located near North Powerhouse Road. This trailhead will provide for six parking spaces and signage and serves as the eastern terminus of this planning section.

## ROAD CROSSINGS

Two road crossings are required within this section to complete the FFST, both which cross Benfields Landing Road. The western crossing is near the intersection of Hwy. 126 and should include design measures to slow vehicular traffic and alert motorists of



## PHOTOS:

(7) Canal Bridge offers long-range views of Lake James.

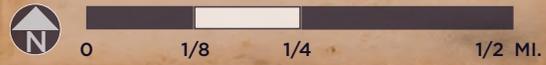
# SECTION 3

CANAL BRIDGE >>  
N. POWERHOUSE RD. &  
BENFIELDS LANDING



### FIELD NOTES

- PROPOSED FONTA FLORA STATE TRAIL
- PROPOSED OVERMOUNTAIN VICTORY TRAIL
- OTHER TRAILS / SPUR TRAILS
- STATE PROPERTY
- CRESCENT PROPERTY
- DUKE PROPERTY



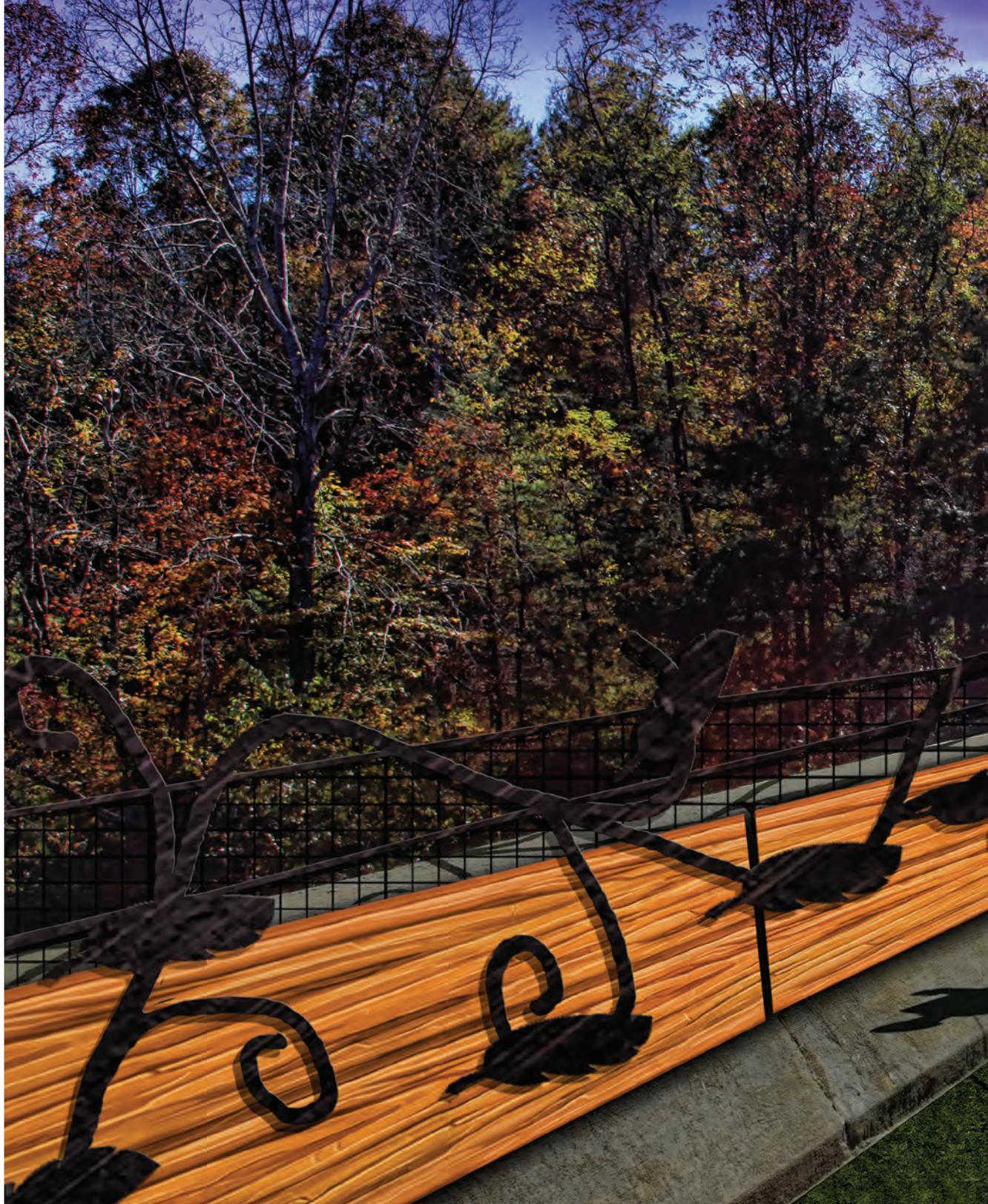
LAKE JAMES

trail users. The other crossing is near North Powerhouse Road and will connect the FFST to the small trailhead located off Benfields Landing Road.



#### PHOTOS:

(8) Substantial measures should be taken to make the Fonta Flora State Trail visible at the Hwy 126 and Benfields Landing intersection.

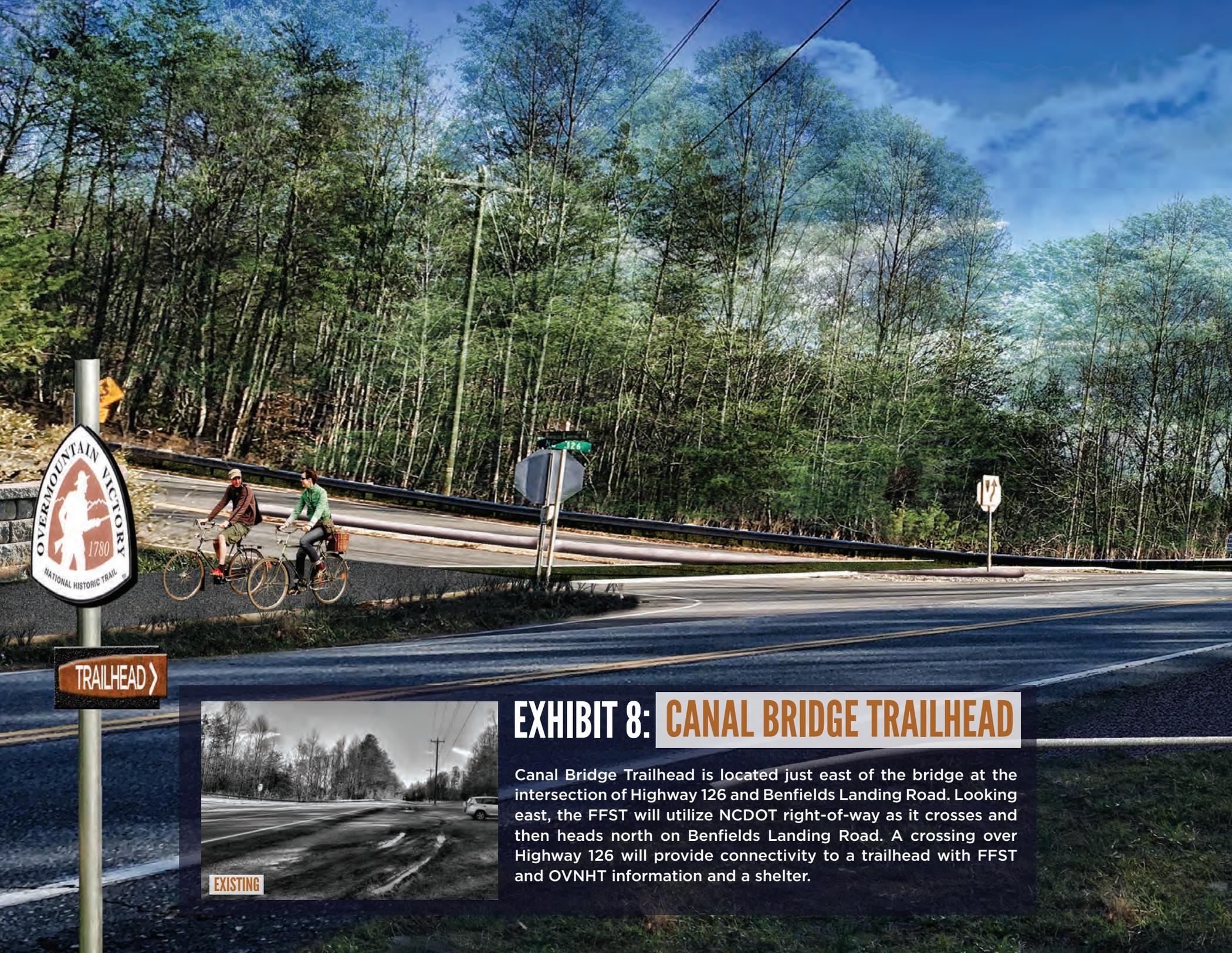




## EXHIBIT 7: CANAL BRIDGE

Enhancements to the Canal Bridge will include green pavement markings along with the FFST logo. A short railing should be attached to the bridge's wall to ensure trail user safety. This section is also part of the OVNHT.





## EXHIBIT 8: CANAL BRIDGE TRAILHEAD

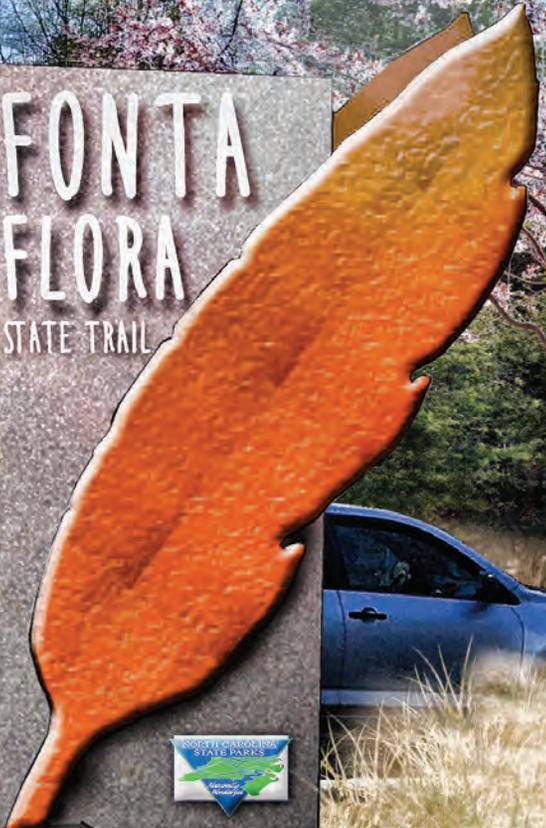
Canal Bridge Trailhead is located just east of the bridge at the intersection of Highway 126 and Benfields Landing Road. Looking east, the FFST will utilize NCDOT right-of-way as it crosses and then heads north on Benfields Landing Road. A crossing over Highway 126 will provide connectivity to a trailhead with FFST and OVNHT information and a shelter.



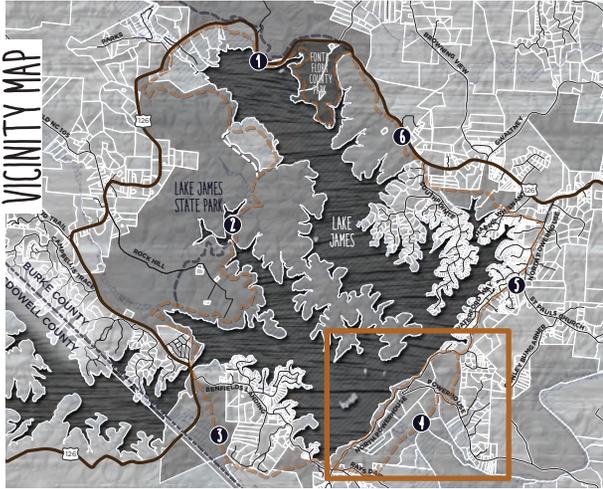
EXISTING



FONTA  
FLORA  
STATE TRAIL



# SECTION 4 BENFIELDS LANDING >> N. POWERHOUSE



## PREFERRED ROUTE

Planning Section 4 extends approximately 2.6 miles from the Benfield Landing Trailhead to N. Powerhouse Road near Mimosa Landing. A natural surface trail will extend only a short distance before the trail crosses N. Powerhouse Road. An NCDOT side path trail type will then be employed along Corpening Chapel Road and Rays Dairy Road. From here, a natural surface trail will meander to the existing Bridgewater River Access after crossing an existing bridge and the location of a proposed camping area.

From the Bridgewater Public Access, the NCDOT side path trail type is necessary again along Powerhouse Road for approximately 1,050 feet before the FFST: Lake James Loop Section trail extends north toward N. Powerhouse Road, which serves as the terminus of this planning section.

## QUICK FACTS:

LENGTH: 2.6 Miles

TRAIL TYPE(S): Multi-Use Trail

NCDOT Side Path

POINTS OF INTEREST: Bridgewater Public River Access

Catawba Dam Trailhead

Proposed Campsite



**OVNHT SHARED TRAIL SECTION**



Although beyond the scope of this plan, note that the OVNHT and FFST will continue south along Powerhouse Road as both of these trails are planned to extend further east more than 20 miles to connect to the City of Morganton.

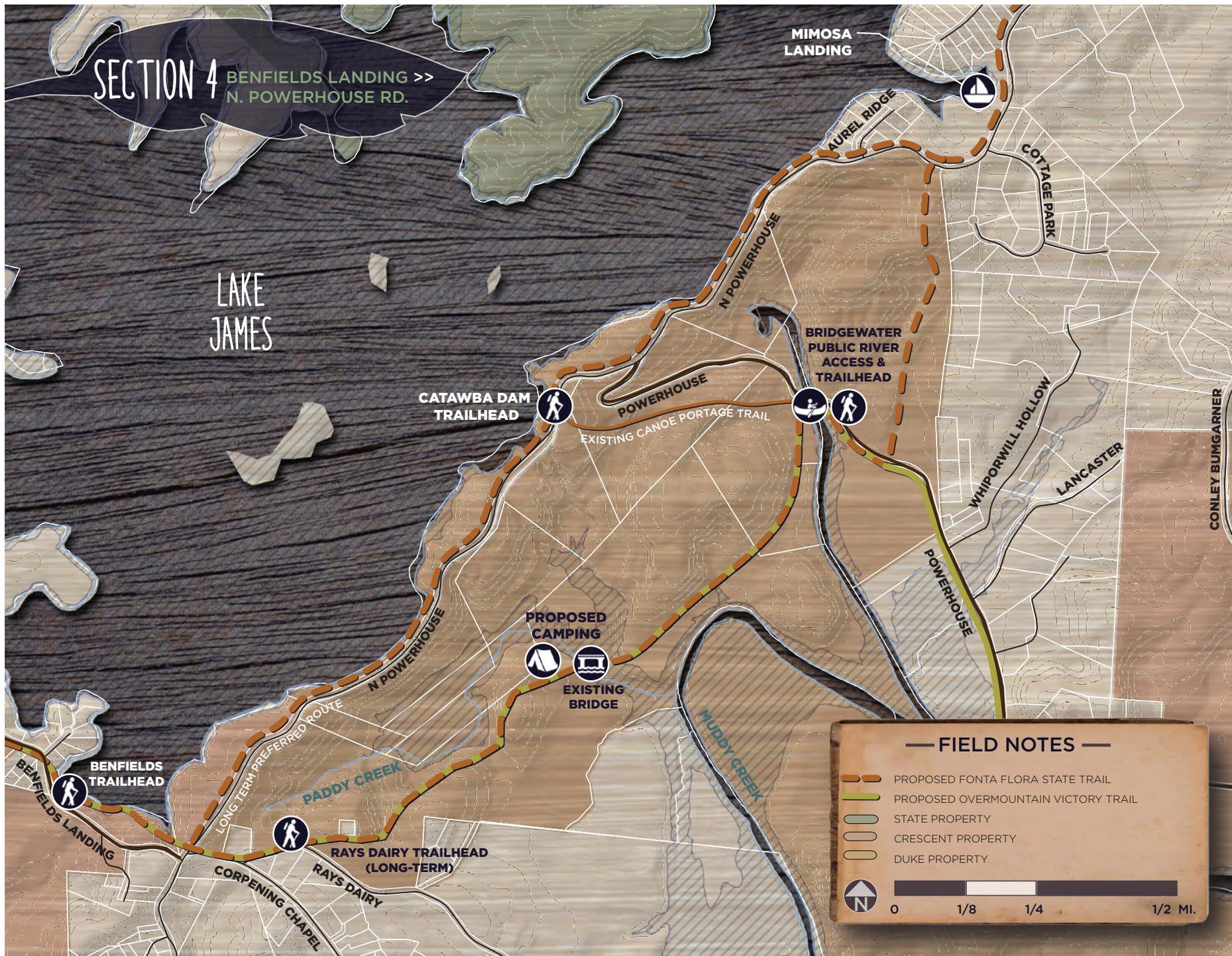
## TRAILHEADS

Benfield Trailhead, which is the western terminus of this section and was discussed in the previous section, and Bridgewater public river access area are the only two trail-

## PHOTOS:

(9) In the event of Benfields Trailhead becoming crowded in the future, a secondary trailhead could be located along Rays Dairy Rd.

(10) Duke Energy has planned a significant renovation to the Bridgewater Trailhead.



heads located in this section. Duke Energy has planned a significant renovation for the Bridgewater Access, which includes additional parking and an improved boat launch. Both of these trailheads will serve as shared access areas for the OVNHT.

## Road Crossings

There are two major road crossings within this section. West of the Benfield Trailhead, the trail will cross N. Powerhouse Road. There

is ample sight distance to safely move trail users across N. Powerhouse Road, but this crossing will need to include design features to slow vehicular traffic and alert motorists of trail users.

The other road crossing is located on Powerhouse Road west of the Bridgewater Access and trailhead. This road crossing also demarcates where the FFST and OVNHT will deviate from the study area and head east towards Morganton. The Powerhouse Road

crossing will guide users north and toward N. Powerhouse Road as the FFST approaches Mimosa Landing.



### PHOTOS:

(11) The long term preferred route would follow N. Powerhouse and offers exceptional views.





EXISTING

## EXHIBIT 9: N. POWERHOUSE CROSSING

West from Benfields Trailhead, the FFST will cross North Powerhouse Road. A green pavement treatment, FFST sign, and pedestrian activated rapid flash beacons will signal motorists to reduce speeds and watch for trail users.



## EXHIBIT 10: BRIDGEWATER

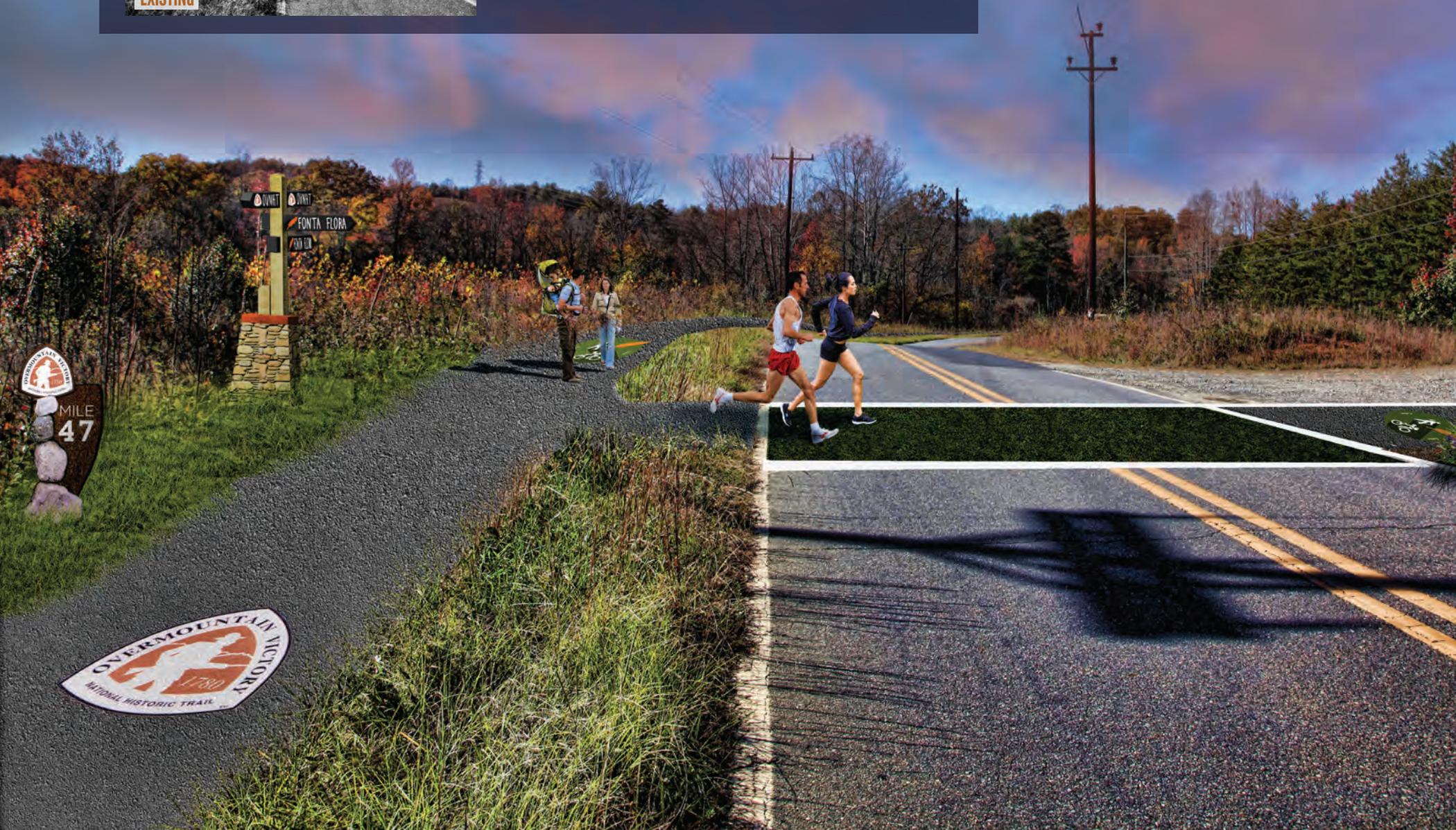
The bridge near Duke Energy's Bridgewater River Access will serve as the third and final major NCDOT bridge crossing. A short railing should be attached to the bridge's wall to ensure trail user safety. This section is also part of the OVNHT.



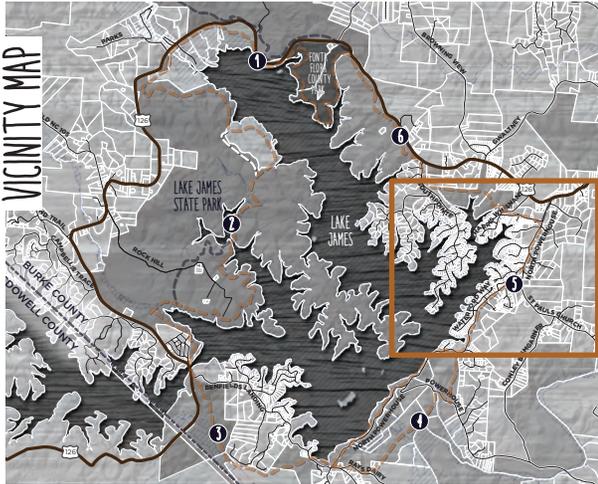


## EXHIBIT 11: SPLIT AND CROSS

Approximately ½ mile south of Bridgewater, the FFST Lake James Section will cross Powerhouse Road and head north toward North Powerhouse Road. However, the FFST and the OVNHT will continue south along Powerhouse Road toward Morganton.



# SECTION 5 N. POWERHOUSE >> HARRIS WHISNANT



## QUICK FACTS:

LENGTH: 2.5 Miles

TRAIL TYPE(S): NCDOT Side Path

POINTS OF INTEREST: Mimosa Landing  
three Way Commercial Node

## PREFERRED ROUTE

Section 5 extends approximately 2.5 miles from N. Powerhouse Road near Mimosa Landing to the proposed trailhead at Harris Whisnant Road. This section will be the most difficult to implement among the six planning sections included within this plan. The FFST must be constructed along North Powerhouse Road utilizing the side path trail type and will require extensive negotiations with property owners to secure trail easements.

From the south, the trail will cross N. Powerhouse Road south of Mimosa Landing. The trail will extend parallel to N. Powerhouse on its west side until reaching Cobb Road. The trail will cross onto the north side of Cobb Road and extend west to the proposed Harris Whisnant trailhead.

A spur trail will extend north from Cobb Road



to the “three-way” intersection, which serves a rural commercial node. This FFST connector trail will provide a convenient and safe route to restroom facilities and businesses that can cater to trail user needs.

## TRAILHEADS

The county has secured an agreement on Harris Whisnant Road to provide for one trailhead within this planning section. This trailhead will accommodate parking for six vehicles and include an information kiosk.

## ROAD CROSSINGS

There are three required road crossings within this section: N. Powerhouse Road; Cobb Road; and Harris Whisnant Road. Details regarding the exact location and manner of these crossings must be provided within detail engineering documents and will require cooperation with NCDOT and private landowners.

## PHOTOS:

(12) A spur trail to the “three-way” commercial node will provide a safe route to restroom facilities and businesses that can cater to trail user needs.





**EXISTING**

## **EXHIBIT 12:** **APPROACHING N. POWERHOUSE**

The FFST will need to utilize NCDOT right-of-way along North Powerhouse Road. Also, private easements will need to be secured to make a safe connection.





## EXHIBIT 13: CROSSING NEAR MIMOSA LANDING

The FFST extends along the east side of North Powerhouse Road, but will cross just south of the Mimosa Landing entrance. From here, the FFST will extend along the west side of North Powerhouse Road until reaching Cobb Road.



EXISTING



## EXHIBIT 14: CROSSING @ COBB

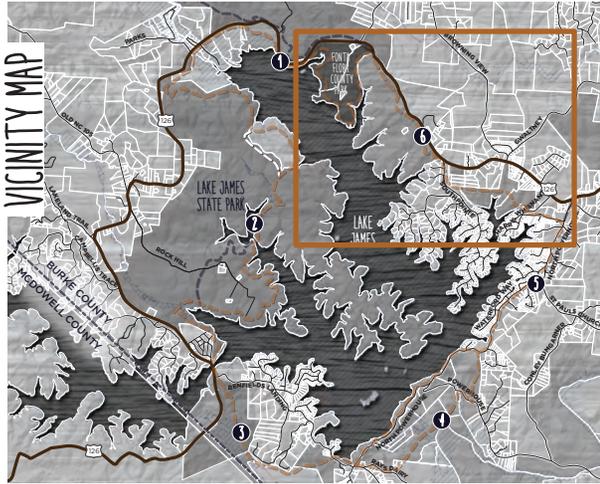
The FFST will cross Cobb Road and extend along its north side as the trail approaches the Harris Whisnant Trailhead.



EXISTING



# SECTION 6 HARRIS WHISNANT >> FONTA FLORA COUNTY PARK



## PREFERRED ROUTE

The final planning section extends approximately 3.7 miles from the trailhead at Harris Whisnant Road to the trailhead at the planned Fonta Flora County Park.

From the trailhead at Harris Whisnant Road, the trail will traverse west along former Crescent owned property before reaching the Southpointe community. A pocket park is planned that will provide views and access to Lake James; however, this small park area will only be accessible to FFST trail users.

The Southpointe neighborhood continues to work with county officials to ensure that an appropriate route for the FFST is provided. The trail will remain in wooded areas to the west of Southpointe Road before exiting near the community's entrance. The trail type will transition to an NCDOT side path up to Hwy. 126 and along its edge before entering into Eastlake 2 and 3 where a 100' wide trail easement has been recorded within the wooded edge of the property. The trail sections at Eastlake 2 and



3 and Fonta Flora County Park are ready for construction; once complete, together these sections will serve as the longest continuous built portion of the FFST.

## TRAILHEADS

Although this section begins and ends with trailhead facilities, no definite trailhead location has been identified along this corridor. However, the county should explore opportunities within the Southpointe community to develop a defined trailhead within the neighborhood.

## ROAD CROSSINGS

The only FFST crossing within this section is located at Southpointe Road, which only serves a residential neighborhood and a low volume of traffic. The crossing will be near the neighborhood entrance and will signal motorists of possible FFST users.

## QUICK FACTS:

LENGTH: 3.7 Miles

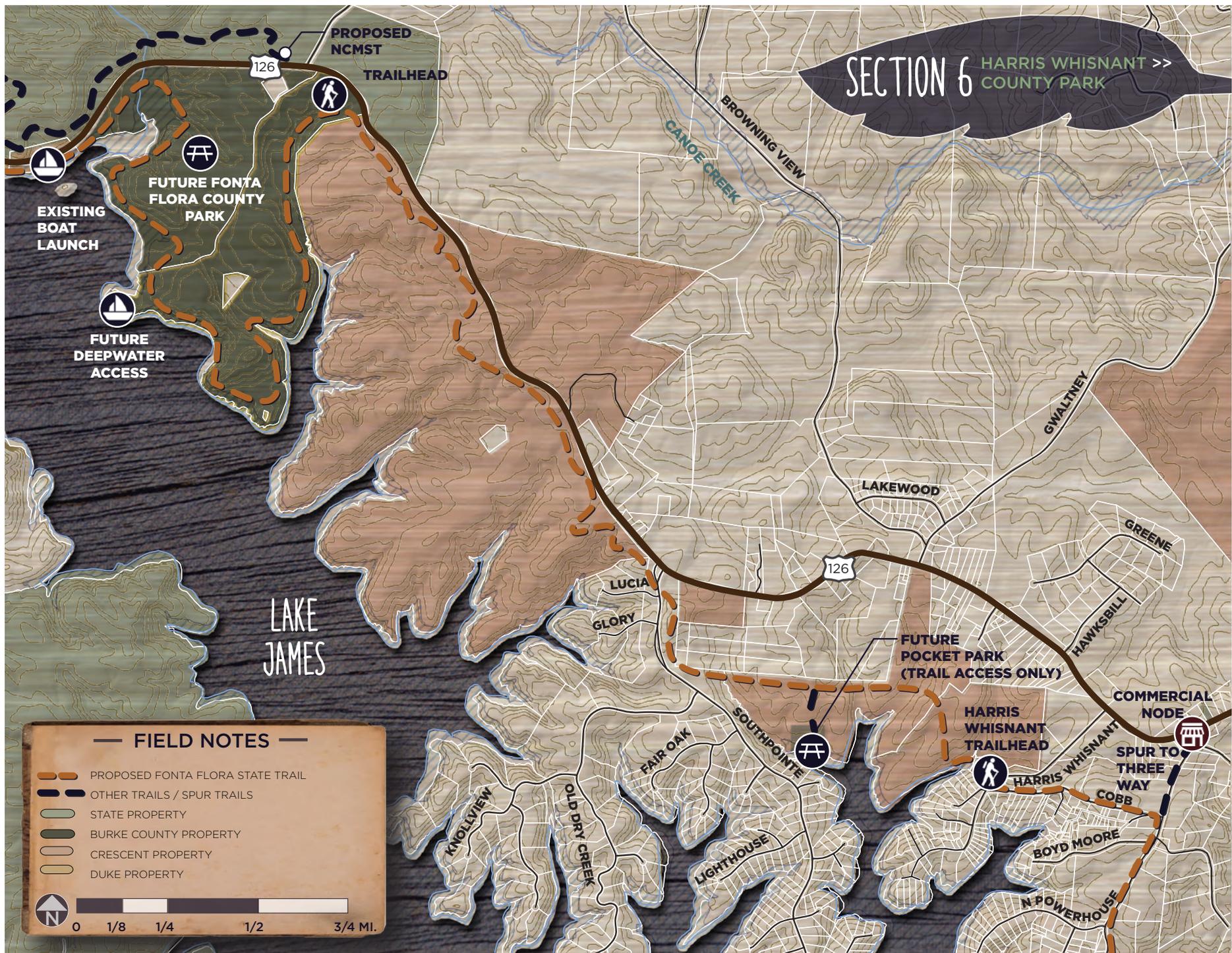
TRAIL TYPE(S): Multi-Use Trail  
NCDOT Side Path

POINTS OF INTEREST: East Lake 6 Park

## PHOTOS:

(13) A series of internal trails currently exist within the Southpointe neighborhood.

SECTION 6 HARRIS WHISNANT COUNTY PARK >>





## EXHIBIT 15: SOUTHPOINTE CROSSING

The FFST will extend in wooded areas east of Southpointe Drive before crossing the road near the neighborhood entrance. A short retaining wall will likely be necessary to ensure a safe trail grade.

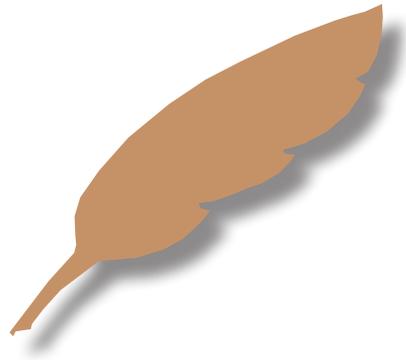


## EXHIBIT 16: ALONG HWY 126 @ SOUTHPOINTE



Looking southeast and towards the entrance of Southpointe, the FFST will utilize a short section of NCDOT right-of-way before entering wooded areas until reaching the trailhead at Fonta Flora County Park.







THE CORE PURPOSE OF THIS CHAPTER IS TO HIGHLIGHT THE EIGHT (8) IMPLEMENTATION SECTIONS, INCLUDING THE MAJOR STEPS NECESSARY FOR COMPLETING THE TRAIL. THIS CHAPTER POSITIONS FFST STAKEHOLDERS FOR ACTION.

• Burke County will initially serve as the lead agency to manage the development of the FFST, but will work in partnership with NC Division of State Parks, the National Park Service and OVNHT leaders, community stakeholders, volunteers, land managers, and landowners as it pertains to planning, construction, management, and maintenance of the trail.

• IN THIS CHAPTER:  
• (A) IMPLEMENTATION SECTIONS  
• (B) TRAIL MANAGEMENT AND MAINTENANCE  
• (C) TRAIL FUNDING  
•

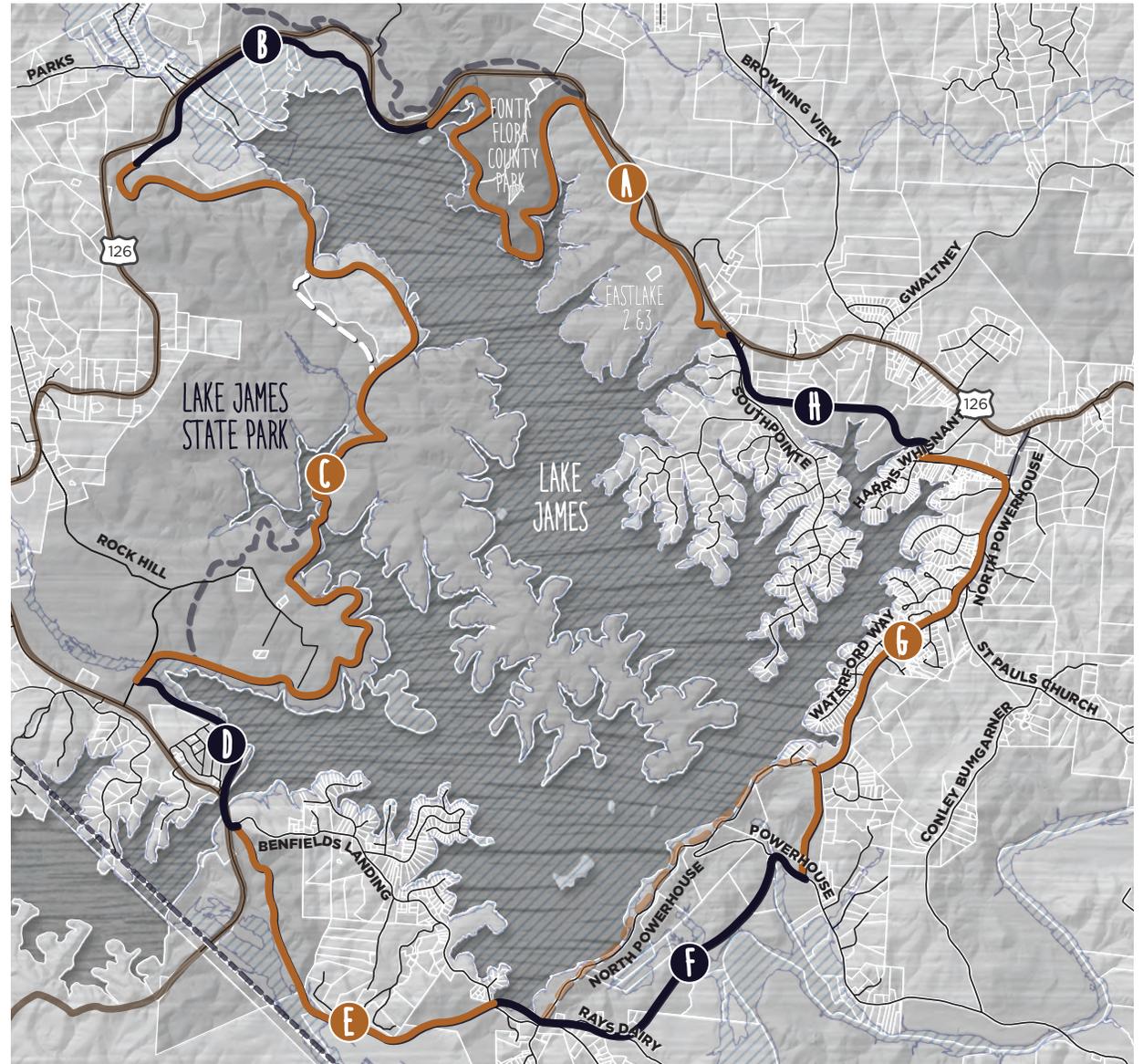
## TRAIL IMPLEMENTATION SECTIONS:

The six (6) planning sections outlined in Chapter 4: Recommendations have been reorganized into eight (8) Implementation Sections for this chapter. Even if constructed independently, each Implementation Section can provide meaningful connections until other connecting sections are complete. These sections are not phases, but can be worked on simultaneously according to available financial and human resource capacity.

This section highlights each of the eight (8) Implementation Sections, including the major steps necessary for completing the trail within each section and a general Estimate of Probable Cost (note: a more detailed Estimate of Probable Cost is provided in the Appendix).

The implementation sections include:

- A** FONTA FLORA COUNTY PARK  
>> SOUTHPONTE DRIVE
- B** FONTA FLORA COUNTY PARK  
>> LAKE JAMES STATE PARK
- C** LAKE JAMES STATE PARK (NORTH)  
>> LAKE JAMES STATE PARK (OVNHT)
- D** LAKE JAMES STATE PARK (OVNHT)  
>> CANAL BRIDGE TRAILHEAD
- E** CANAL BRIDGE TRAILHEAD  
>> BENFIELDS TRAILHEAD
- F** BENFIELDS TRAILHEAD  
>> BRIDGEWATER TRAILHEAD
- G** BRIDGEWATER TRAILHEAD  
>> HARRIS WHISNANT TRAILHEAD
- H** HARRIS WHISNANT TRAILHEAD  
>> SOUTHPONTE DRIVE



THIS SECTION HIGHLIGHTS EACH OF THE EIGHT (8) IMPLEMENTATION SECTIONS, INCLUDING THE MAJOR STEPS NECESSARY FOR COMPLETING THE TRAIL WITHIN EACH SECTION AND A GENERAL ESTIMATE OF PROBABLE COST.

A



## FONTA FLORA COUNTY PARK » SOUTHPOINTE ROAD

With easements in place, the FFST is ready to construct through Fonta Flora County Park and west to Southpointe Road. Construction details must be developed for the trailhead at the Fonta Flora County Park prior to bidding and construction.

Fonta Flora County Park Trailhead will provide for the following:

- Parking (12 spaces + 1 van-accessible handicap parking space)
- Small shelter
- Trailhead gateway

### **Steps to Completion**

1. Design/Build Trail
2. Develop Construction Details for County Park Trailhead
3. Bid and Construct trailhead

**Estimate of Probable Costs = \$435,690\***

B



## FONTA FLORA COUNTY PARK » LAKE JAMES STATE PARK

This section begins at the western edge of the County Park and will require the acquisition of trail easements from private landowners west of the existing boat launch managed by Duke Energy. Also, an NCDOT encroachment agreement will need to be secured for the trail areas that approach and cross Linville Bridge.

### **Steps to Completion**

1. Design and Engineering for FFST
2. Land Acquisition
  - >> Private Easements
  - >> NCDOT Encroachment
3. Bid and Construction

**Estimate of Probable Costs = \$387,375\***

\*Details provided in appendix.

C



## LAKE JAMES STATE PARK (NORTH) » LAKE JAMES STATE PARK (OVNHT)

This section includes trail to be constructed completely within Lake James State Park. Portions of this trail will traverse lands adjacent to the lake and recently acquired by the NC Division of Parks and Recreation; these trail areas will require more extensive planning since they were not accounted for within the state's original Lake James State Park Master Plan. This Implementation Section ends on the park's entrance road where the FFST connects with the OVNHT.

### **Steps to Completion**

1. Preliminary Design by State Parks
2. Design/Build with professional trail builder

**Estimate of Probable Costs = \$153,864\***

D



## LAKE JAMES STATE PARK (OVNHT) » CANAL BRIDGE TRAILHEAD

The FFST will share a trail section with the OVNHT that currently exists at the state park. Since this section of trail will need to be redeveloped to accommodate a multi-use trail, all stakeholders want to ensure that the complete connection can be made to and over Canal Bridge and ultimately to the trailhead planned east of the bridge.

Canal Bridge Trailhead will provide for the following:

- Parking (12 spaces)
- Park Sign
- Small shelter
- Trailhead gateway

### **Steps to Completion**

1. Design and engineering for entire section
2. Approval from LJSP and adjacent landowner for new FFST/OVNHT
3. Secure NCDOT Encroachment Agreement
4. Bid and Construction

**Estimate of Probable Costs = \$334,644\***

E



## CANAL BRIDGE TRAILHEAD » BENFIELDS TRAILHEAD

This section includes large areas that are controlled by LJSP and others that are controlled by private landowners that have yet to commit to trail easements. LJSP officials want to ensure that private easements are in place before trail is constructed on state lands. This planning section connects to Benfield Trailhead, which will be constructed as part of the subsequent Implementation Section.

### **Steps to Completion**

1. Acquire easements from private landowners
2. Design and engineering for Benfields Landing Rd. crossing
3. Acquire NCDOT encroachment agreement for Benfield Landing crossing
4. Design/Build LJSP and private easement sections
5. Bid and construct Benfield Landing crossing

**Estimate of Probable Costs = \$102,196\***

\*Details provided in appendix.

F



## BENFIELDS TRAILHEAD » BRIDGEWATER TRAILHEAD

This section includes the construction of Benfield Trailhead, an NCDOT crossing at North Powerhouse, and the construction of FFST to Bridgewater Trailhead. All trail easements are in place.

### Steps to Completion

1. Design and engineering for Benfield Trailhead
2. Acquire NCDOT encroachment agreement for N. Powerhouse crossing
3. Bid and construct Benfield Trailhead and FFST

**Estimate of Probable Costs = \$468,654\***

G



## BRIDGEWATER TRAILHEAD » HARRIS WHISNANT TRAILHEAD

From Bridgewater Trailhead, an NCDOT encroachment agreement must be secured over the bridge and along Powerhouse Road, including a road crossing. Significant private trail easements must be secured along North Powerhouse Road and Cobb Road before reaching the Harris Whisnant Trailhead, which will be constructed as part of the subsequent Implementation Section.

### Steps to Completion

1. Design and engineering for Powerhouse Road, North Powerhouse Road, and Cobb Road.
2. Acquire NCDOT encroachment agreements
3. Acquire private trail easements
4. Bid and construct FFST

**Estimate of Probable Costs = \$1,878,182\***

H



## HARRIS WHISNANT TRAILHEAD » SOUTHPOINTE DRIVE ENTRANCE

Landowners within this area have either formally or informally committed to providing for the FFST. However, specific details and plans must be developed to acquire final trail easements. Also, NCDOT must provide for an encroachment agreement for areas near the entrance of the Southpointe neighborhood and along Highway 126. Harris Whisnant Trailhead will need to be constructed along with the Fonta Flora Pocket Park to be located west of the Southpointe neighborhood.

Harris Whisnant Trailhead will provide for the following:

- Parking (12 spaces)
- Park Sign
- Small shelter
- Trailhead gateway

Fonta Flora Pocket Park will provide for the following:

- Park Sign
- Small shelter
- Trailhead gateway

### Steps to Completion

1. Design and engineering Southpointe neighborhood entrance
2. Acquire NCDOT Encroachment Agreement and approval from neighborhood
3. Bid and Construct NCDOT R/W areas
4. Design/Build FFST from trailhead to Southpointe Road
5. Design and engineer the trailhead and pocket park
6. Bid and construct trailhead and pocket park

**Estimate of Probable Costs = \$319,800\***

\*Details provided in appendix.

# CHAPTER FIVE

## IMPLEMENTATION

### TRAIL MANAGEMENT & MAINTENANCE

Trail maintenance is critical to provide for and sustain the trail users experience. Trail maintenance will primarily consist of ensuring that the trail corridor is trimmed of brush and vegetation and that the natural surface trail is debarmed and clear of fallen debris.

Volunteer training and participation is an important aspect of user group involvement. Burke County will explore trail building volunteer training with members of the Professional Trail Builders Association. Federal Recreational Trails Program (RTP) funding is often available for educational courses and may require matching funds. Burke County or a non-profit "Friends" group could sponsor these courses and provide the matching funds for interested volunteers. By training volunteers in this manner, it demonstrates a significant commitment by the participant and "Friends" group at great benefit to the landowners, land managers, and Burke County.

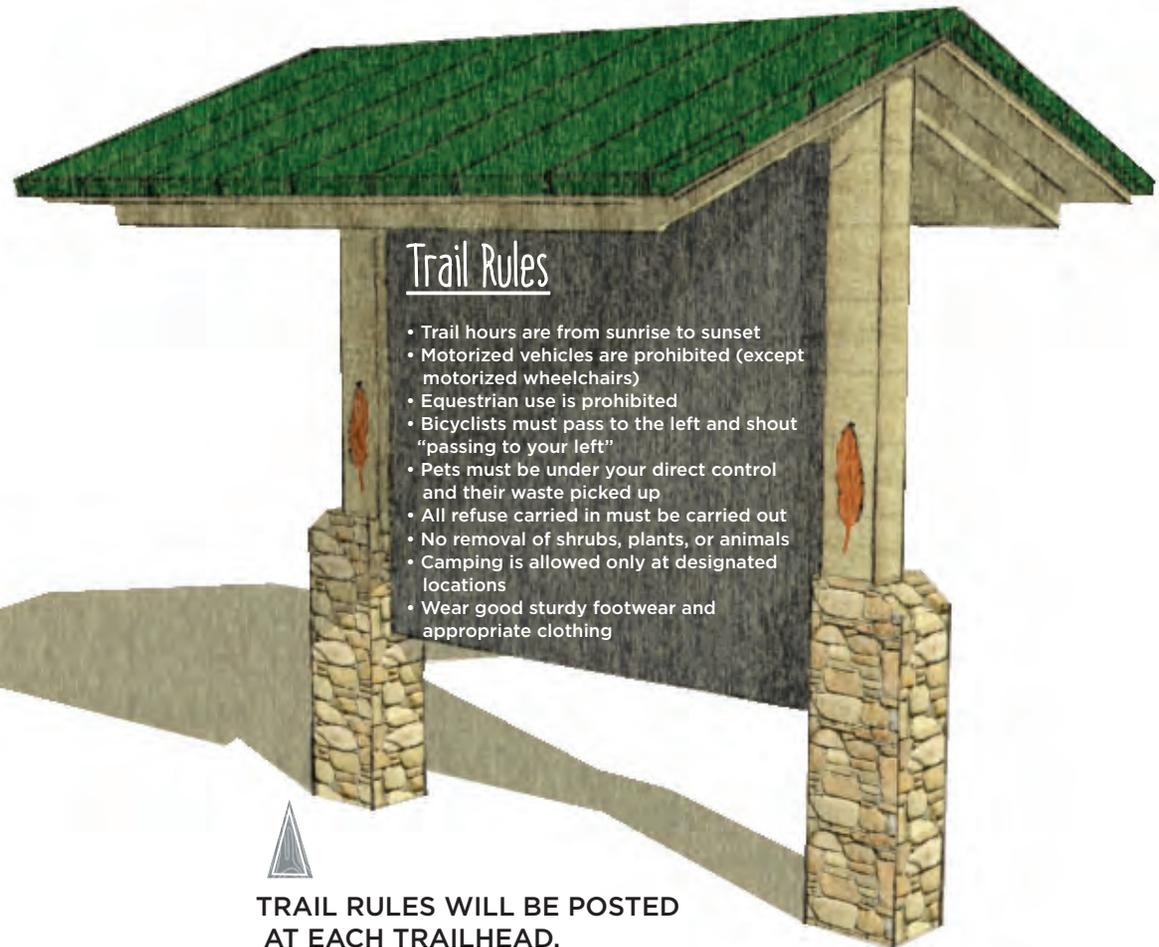
A separate financial account will be established and managed for trail maintenance by Burke County in the amount of 5% of the total available funds for trail construction. Since there is currently 1.1 million dollars identified for trail construction, the initial trail maintenance account would be \$55,000.

An adequate level of law enforcement should be provided to help maintain a safe and secure trail environment. Trail users should also be educated and encouraged to understand and obey trail rules, respect other users, and respect adjoining properties.

### TRAIL FUNDING

#### **FERC Relicensing**

Constructing and maintaining the various sections of the FFST will require leveraging funds from both public and private entities.



At this time, the largest funding contribution will come directly from Duke Energy as a result of the Comprehensive Relicensing Agreement (CRA) for the Catawba-Wateree Project. FFST Trail development funds are included in CRA 10.27.2.3 in the amount of \$500,000 for construction of the FFST. Another \$600,000 is included in CRA 10.27.4.3 for the OVNHT.

### Connect NC Bond

Between \$500,000 and \$750,000 of FFST Trail development funds are included in the pending Connect NC infrastructure bond.

### Everyone Working Together

In addition to the contributions from Duke Energy, it will be necessary for Lake James State Park, NC Wildlife Resources Commission, NCDOT, Burke County, and others to contribute financial resources to this project. A conservative estimate to construct the entire FFST and its associated trailheads is approximately 3.6 million dollars.

### Local Leadership

Implementing the recommendations of this plan will require a strong level of local support and commitment through a variety of local funding mechanisms. Perhaps most important is the addition of bicycle and greenway infrastructure as an item within the Burke County annual budget. These improvements should become a high priority and be sup-

ported through portions of the funding currently used for public safety, streets, parks and recreation, planning, community development, travel and tourism, and local bonds.

### Leveraging Funds Related to Other Community Goals

Burke County and its municipalities should also seek a combination of funding sources that include local, state, federal, and private money. Fortunately, the benefits of protected greenways are many and varied. This allows programs in Burke County to access money earmarked for a variety of purposes including water quality, hazard mitigation, recreation, alternate transportation, wildlife protection, community health, and economic development.

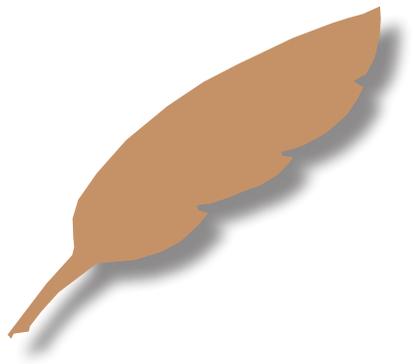
Availability of funds targeted directly for trail use has decreased in recent years, so it is imperative that local governments work together to create multi-jurisdictional partnerships and to develop their own local sources of funding. These sources can then be used to leverage outside assistance.

For the past two decades, a variety of funding has been used throughout North Carolina to support the planning, design and construction of urban and rural bicycle and greenway projects. The largest single source of funding for these projects has come from the Sur-

face Transportation Act; the North Carolina Department of Transportation manages and distributes the majority of federal funds that are derived from the Act to support the development of bicycle/trail development.

## POSSIBLE FUNDING SOURCES

- Clean Water Management Trust Fund**  
[www.cwmtf.net](http://www.cwmtf.net)
- Land & Water Conservation Fund (LWCF)**  
<http://ils.unc.edu/parkproject/lwcf/home1.html>
- Local Capital Improvements Program (CIP) and Bonds**
- Western Piedmont COG - Rural Planning Organization**
- NCDOT Division of Bicycle and Pedestrian Transportation:**  
[www.ncdot.org/financial/fiscal/Enhancement/](http://www.ncdot.org/financial/fiscal/Enhancement/)
- North Carolina Conservation Tax Credit**  
[www.enr.state.nc.us/conservationtaxcredit/](http://www.enr.state.nc.us/conservationtaxcredit/)
- Recreational Trails Program, NC Div. of Parks & Recreation:**  
<http://ils.unc.edu/parkproject/trails/home.html>
- State Transportation Improvements Program (STIP)**  
(Incidental Projects i.e. wider lanes, bike lanes)
- State Safe Routes to School Program**
- State Parks and Recreation Trust Fund (PARTF), Parks & Recreation Authority**  
[www.partf.net/learn.html](http://www.partf.net/learn.html)
- State Health and Wellness Trust Fund (HWTF)**
- Water Resources Development Grant**  
[www.ncwater.org/Financial\\_Assistance](http://www.ncwater.org/Financial_Assistance)
- Private Foundations, Partnerships & Volunteers**
- General Obligation Bonds, Property Taxes, Occupancy Taxes**





# APPENDIX

## (A-1) IMPLEMENTATION BUDGET

SECTION A- Fonta Flora County Park to Southpointe Road	Units (ft)	Units (miles)	Unit Cost	Subtotal Cost
Multi-Use Trail (5 ft. Natural Surface) - FF County Park	21120	4.0	\$4.50	\$95,040.00
Trailhead #1: Fonta Flora County Park (Including Engineering)				\$135,000.00
Road Crossing #7: Southpointe	1		\$2,000.00	\$2,000.00
Multi-Use Trail (5 ft. Natural Surface) - FF Trailhead to Southpointe Rd.	9700		\$4.50	\$43,650.00
Future: Pedestrian Bridge across White Creek (No Adverse Impact Certification Needed)				\$160,000.00
<b>Total Section Cost</b>				<b>\$435,690.00</b>
SECTION B- FF County Park to Lake James State Park	Units		Unit Cost	Subtotal Cost
Trail through parking lot of existing boat launch on Highway 126	850	0.2	\$25.00	\$21,250.00
Multi-Use Trail (5 ft. Natural Surface) -- Boat Launch to NCDOT Side Path	4670	0.9	\$6.00	\$28,020.00
Linville River Bridge Improvements				\$25,000.00
NCDOT Side Path (6 ft. Paved Asphalt)	3463	0.7	\$60.00	\$207,780.00
Shared Path (Linville Bridge to LISP)	1355	0.3	\$15.00	\$20,325.00
Design, Engineering, Surveying, Easement Acquisition				\$85,000.00
<b>Total Section Cost</b>				<b>\$387,375.00</b>
SECTION C- Lake James State Park (North to OVNHT)	Units		Unit Cost	Subtotal Cost
Multi-Use Trail (5 ft. Natural Surface)- to New LISP bridge	25644	4.9	\$6.00	\$153,864.00
Split: Hiking Trail (3 ft. Natural Surface) - Existing	21145	4.0		\$0.00
Split: Biking Shared Path -- Existing	7505	1.4		\$0.00
Side Path - Existing	983	0.2	\$0.00	\$0.00
<b>Total Section Cost</b>				<b>\$153,864.00</b>
Section D- Lake James State Park (OVNHT) to Canal Bridge Trailhead	Units		Unit Cost	Subtotal Cost
Multi-Use Trail (5 ft. Natural Surface)-- Redevelop -- OVNHT segment to Canal Bridge	7137	1.4	\$12.00	\$85,644.00
NCDOT Side Path/ Road Crossings (6 ft. Paved Asphalt) - Canal Bridge to Benfields Landing Rd.	1400	0.3	\$60.00	\$84,000.00
Trailhead #2: Canal Bridge				\$58,000.00
Canal Bridge Enhancements				\$32,000.00
Design, Engineering, Surveying (new OVNHT, Bridge, Trailhead)				\$75,000.00
<b>Total Section Cost</b>				<b>\$334,644.00</b>
SECTION E-Canal Bridge Trailhead to Benfields Landing Trailhead	Units		Unit Cost	Subtotal Cost
Multi-Use Trail (5 ft. Natural Surface) - Benfields Landing to N. Powerhouse Rd.	13366	2.5	\$6.00	\$80,196.00
Road Crossing #2: Benfield Landing East	1		\$2,000.00	\$2,000.00
Design & Engineering				\$20,000.00
<b>Total Section Cost</b>				<b>\$102,196.00</b>
SECTION F- Benfields Landing Trailhead to Bridgewater Trailhead	Units		Unit Cost	Subtotal Cost
Trailhead #3: Benfields Landing Trailhead				\$55,000.00
Multi-Use Trail (5 ft. Natural Surface) - from Trailhead to N. Powerhouse Rd.	1320	0.3	\$6.00	\$7,920.00
Road Crossing #3: N. Powerhouse (w/ rapid flash beacon)				\$22,000.00
NCDOT Side Path (6ft. Paved Asphalt) - Rays Dairy	3920	0.7	\$60.00	\$235,200.00
Multi-Use Trail (5 ft. Natural Surface) - Rays Dairy to Bridgewater	5089	1.0	\$6.00	\$30,534.00
Bridgewater Bridge Enhancements				\$18,000.00
Trailhead #4 Ray's Dairy Trailhead : Alternate				\$25,000.00
Design, Engineering, Surveying (Trailhead, Crossings)				\$75,000.00
<b>Total Section Cost</b>				<b>\$468,654.00</b>

<b>SECTION G- Bridgewater Trailhead to Harris Whisnant Trailhead</b>	<b>Units</b>		<b>Unit Cost</b>	<b>Total Cost</b>
NCDOT Side Path (6 ft. Paved Asphalt) - Bridgewater to Powerhouse Rd. Crossing	1247	0.2	\$60.00	\$74,820.00
Multi-Use Trail (5 ft. Natural Surface) - Powerhouse Rd. to N Powerhouse Rd.	3252	0.6	\$6.00	\$19,512.00
Restroom @ Bridgewater Trailhead				\$35,000.00
NCDOT Side Path (6 ft. Paved Asphalt)	11253	2.1	\$130.00	\$1,462,890.00
Road Crossing #4: Powerhouse Road	1		\$2,000.00	\$2,000.00
Road Crossing #5: Cobb Road	1		\$2,000.00	\$2,000.00
Road Crossing #6: Harris Whisnant	1		\$2,000.00	\$2,000.00
Trail Spur to "Three-Way"	1416	0.3	\$60.00	\$84,960.00
Design, Engineering, Surveying, Easement Acquisition (Trailhead, Crossings, Side Path)				\$195,000.00
<b>Total Section Cost</b>				<b>\$1,878,182.00</b>
<b>SECTION H- Harris Whisnant to Southpointe Drive Entrance</b>	<b>Units</b>		<b>Unit Cost</b>	<b>Total Cost</b>
Multi-Use Trail (5 ft. Natural Surface) - Whisnant Trailhead to Southpoint Drive	7500	1.5	\$6.00	\$45,000.00
Multi-Use Trail (5 ft. Natural Surface) - Spur Trail to East Lake 6 Park	900	0.1	\$6.00	\$5,400.00
NCDOT Side Path (6 ft. Paved Asphalt)	490	0.1	\$60.00	\$29,400.00
Trailhead #5: Harris Whisnant Trailhead				\$120,000.00
East Lake 6 Pocket Park				\$35,000.00
Design, Engineering, Surveying (Trailhead, Pocket Park, Crossings)				\$85,000.00
<b>Total Section Cost</b>				<b>\$319,800.00</b>
<b>ALL SECTIONS TOTAL</b>				<b>\$3,644,715.00</b>

