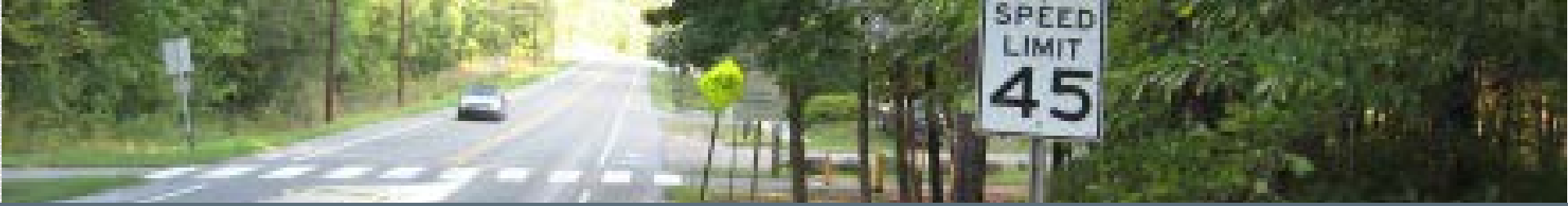


# Preliminary Findings from Evaluating Shared Use Paths in NC

NCAMPO CONFERENCE

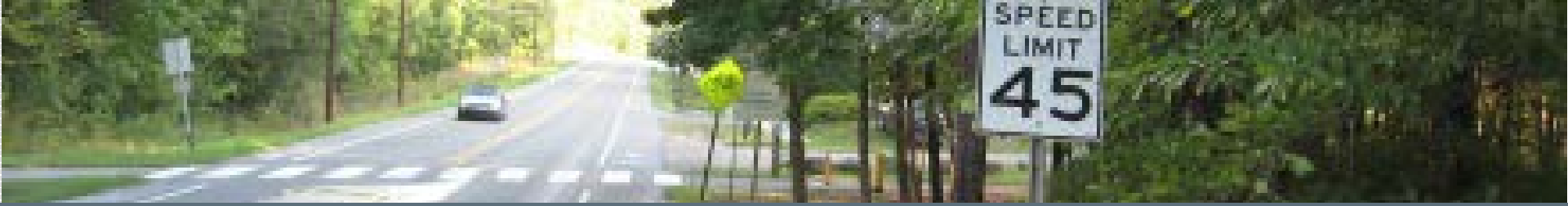
MAY 12, 2016





# Project Objective

- Design a methodology to evaluate economic contributions of a Shared Use Path or system
  - Consistent
  - Replicable
- Apply methodology to 4 case studies over 3 years

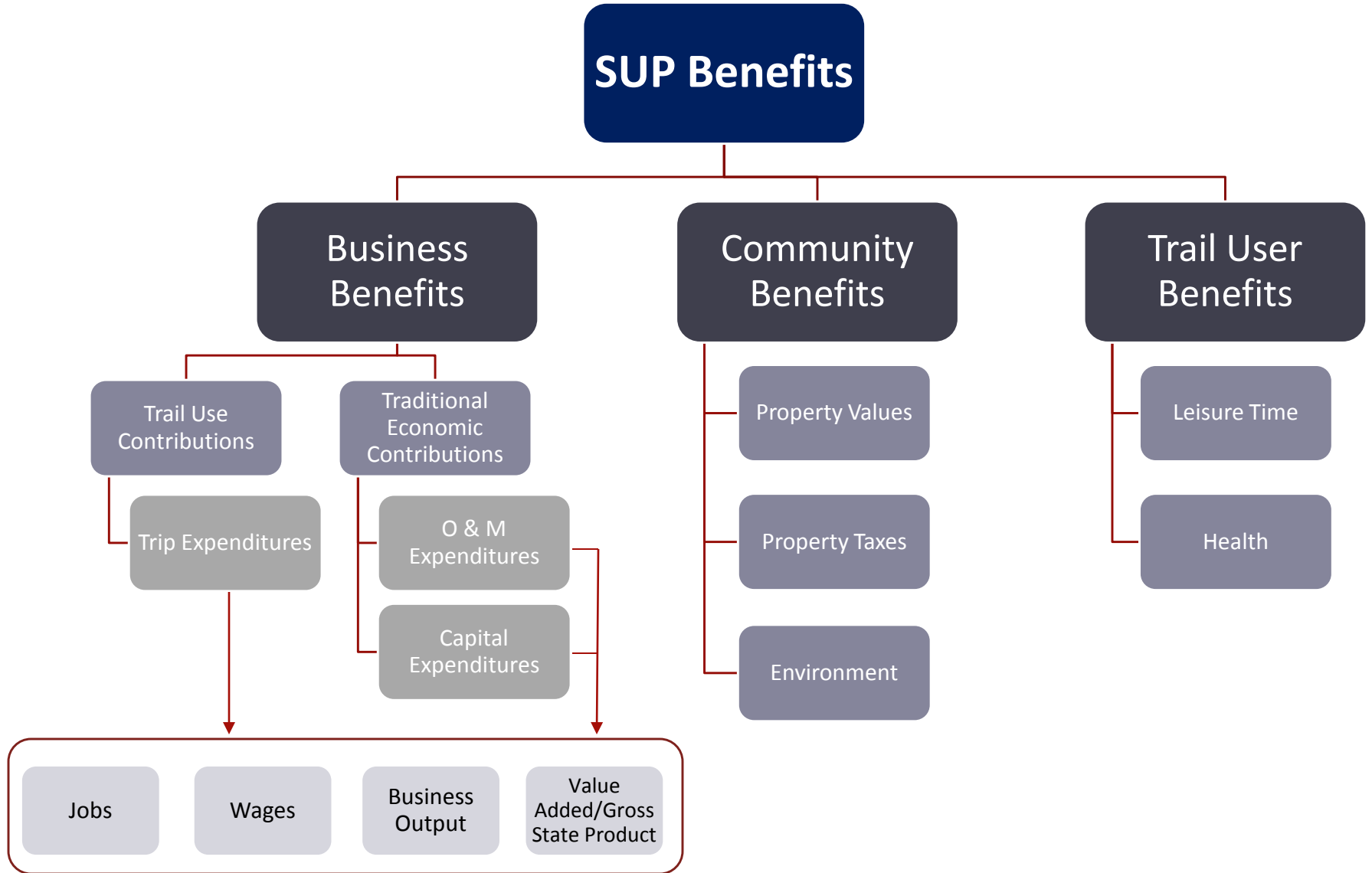


# Project Overview

- Develop Methodological Structure
  - ID candidate SUPs to Study
  - Develop and Implement Case Study Plans
  - Prepare Case Study Summary Reports
  - Develop Final Report
  - Great Trails State Mapping
  - Albemarle Region Mapping Project
- ❖ 3- year project (Mar 2015-Feb 2018)
  - ❖ Advisory Input
    - NCDOT Division of Bicycle and Pedestrian Transportation
    - Department of Commerce
    - NC Parks and Recreation
    - NCDOT Strategic Planning



# Economic Contribution Factors

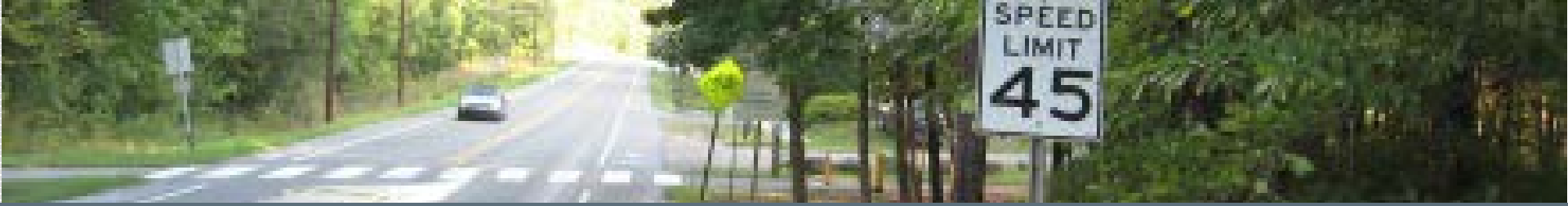




# Selection Criteria

- Has state or regional significance
- Has good opportunities to capture economic revenue
- No new trail construction, maintenance, or detouring
- Is relatively “established”
- Has ability to demonstrate transportation function
- Are geographically dispersed
- Have good mix between urban and rural





# Candidate SUPs

Trail	Year 1	Year 2	Year 3
American Tobacco Trail	1	3	6
Brevard Greenway	2	4	7
Duck		5	
Little Sugar Creek			8

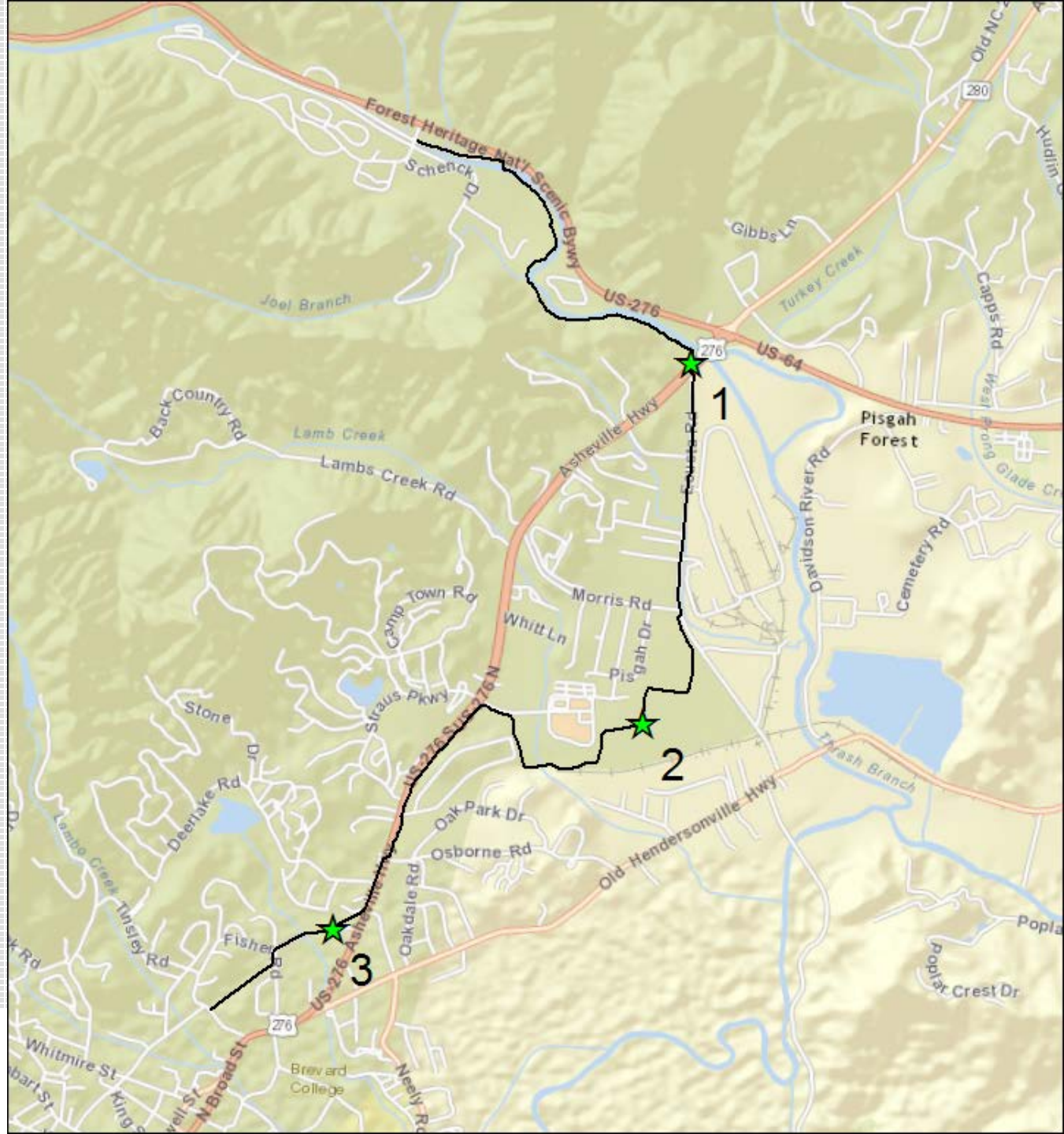


# Year 1 Case Studies - Overview

	Brevard Greenway	American Tobacco Trail
Collection Dates	Wednesday, Oct 14 Saturday, Oct 17	Thursday, Oct 8 Sunday, Oct 11
Time	7 AM – 7 PM, each day	7 AM – 7 PM, each day
Trail Length	4.8 miles	22 miles
Stations	3	10
Staffing (2 surveyors, 1 counter)	9	32
CCS	Transylvania Activity Center (10/13/2015)	Highgate Dr. ( 09/17/2014) Lakewood Ave. (10/6/2015)



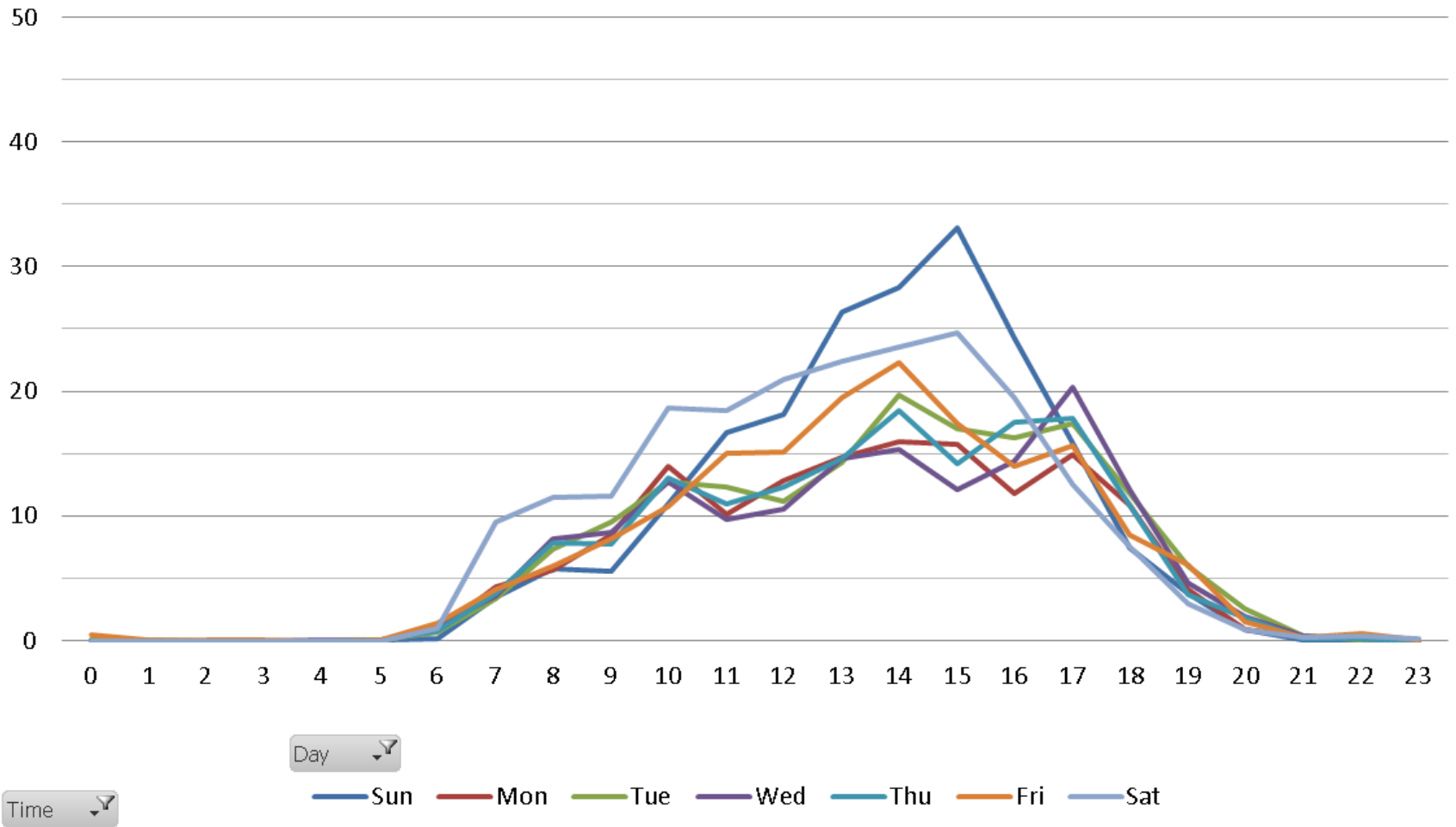
# BREVARD GREENWAY





Average of BRV\_BGW

# Brevard Greenway - Brevard, NC Brevard Sports Complex CCS Station Hour of Day by Day of Week (BRV\_GWY, Ph II - Raw Data 10/15/2015 - 05/07/2016)





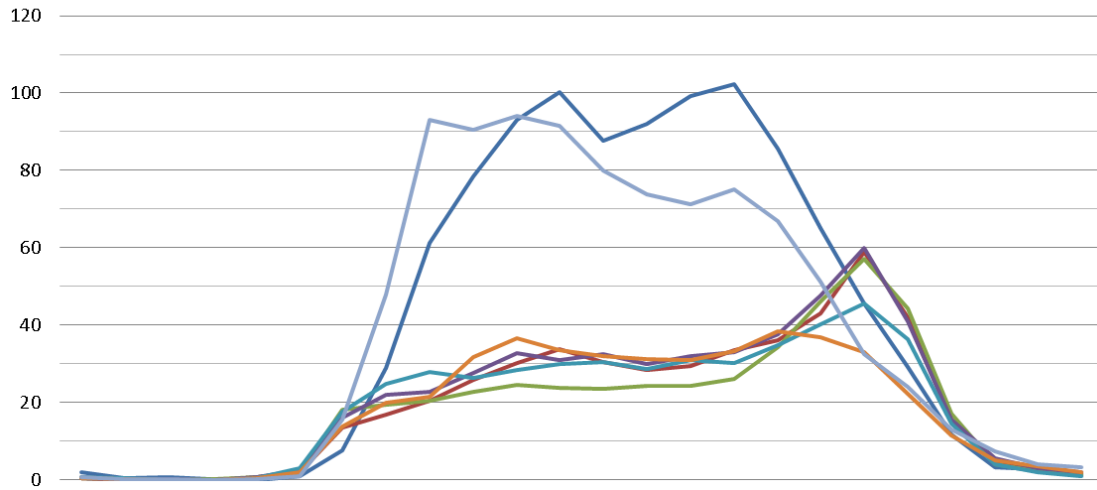
Average of DRH\_ATT

### American Tobacco Trail - Durham, NC

#### I-40 Bridge CCS Station

#### Hour of Day by Day of Week

(DRH\_ATT, Ph I - Corrected Data)



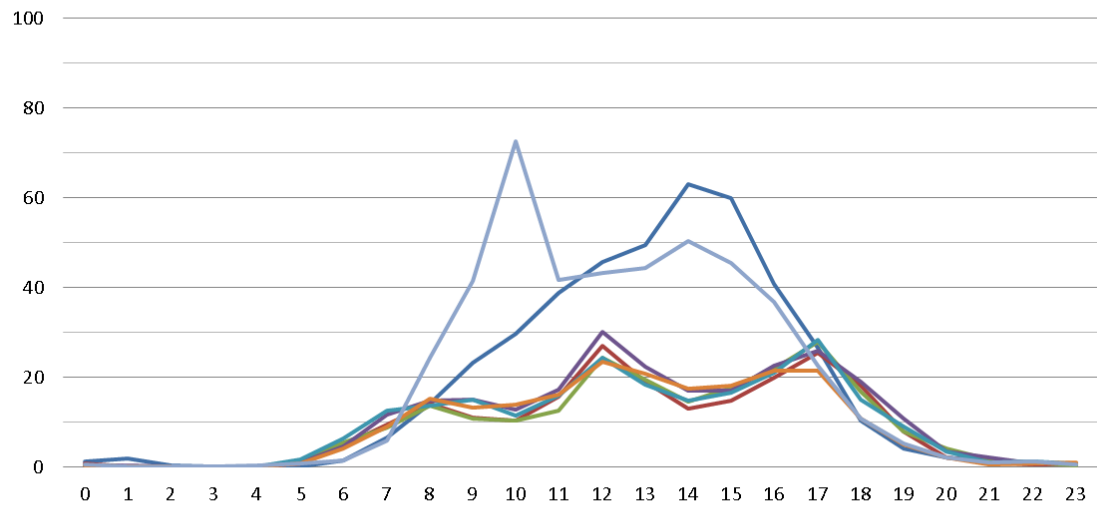
Average of DRH\_ATD

### American Tobacco Trail - Durham, NC

#### Downtown CCS Station

#### Hour of Day by Day of Week

(DRH\_ATD, Ph II - Raw Data 10/15/2015-05/07/2016)



Time

Day

Sun Mon Tue Wed Thu Fri Sat



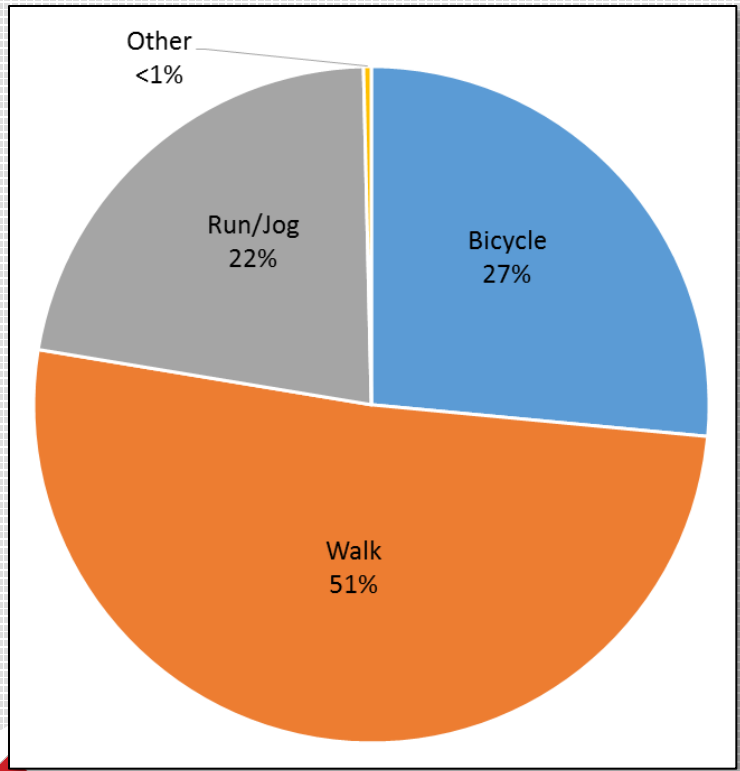
# Surveys Collected

	Station	Name	No. Surveys	Percent	
Brevard Gwy	1	US 64 Intersection	138	51%	
	2	Transylvania Activity Ctr.	93	34%	
	3	McDonald's	39	14%	
American Tobacco Trail	1	Bridge over Lakewood	203	8%	38% N of I-40
	2	MM 1 /Lawson St.	98	4%	
	3	Cornwallis Rd.	79	3%	
	4	Cook Rd.	173	7%	
	5	Southpoint Crossing	367	15%	62% S of I-40
	6	MM 7.5 / Southpoint Mall	215	9%	
	7	Herndon Park	311	13%	
	8	New Hope Church Rd.	373	16%	
	9	White Oak Church Rd.	338	14%	
	10	New Hill Olive Chapel Rd.	244	10%	

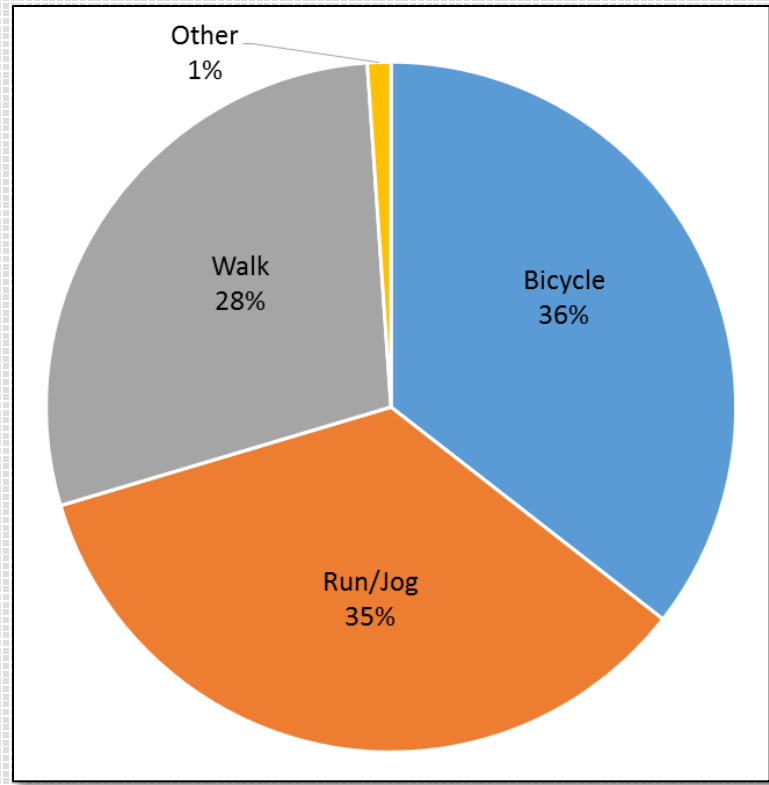


# Activity on Trail

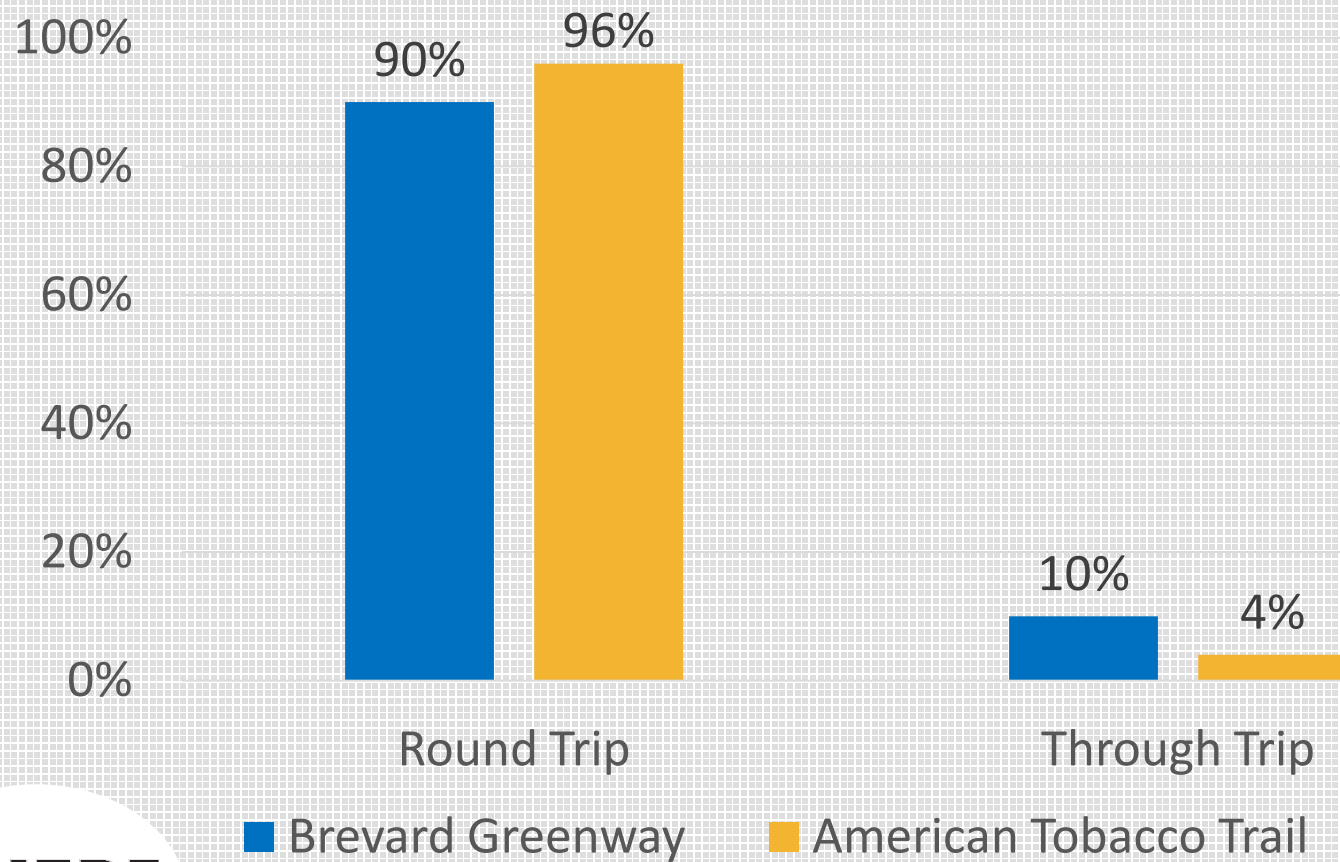
## BREVARD GREENWAY



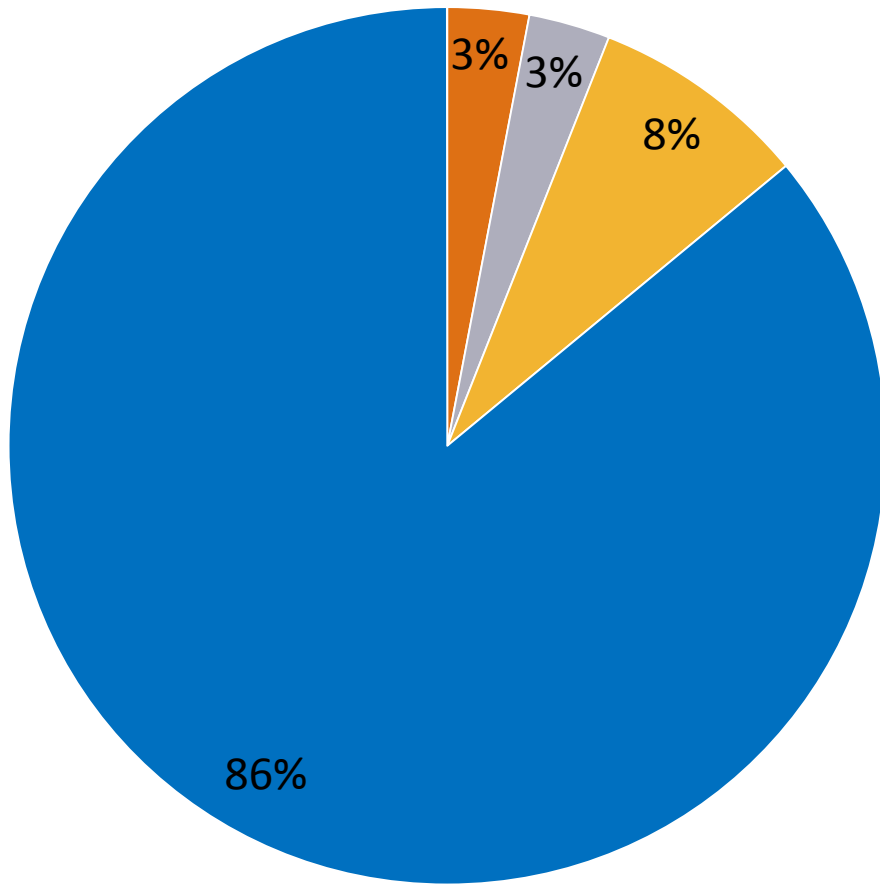
## AMERICAN TOBACCO TRAIL



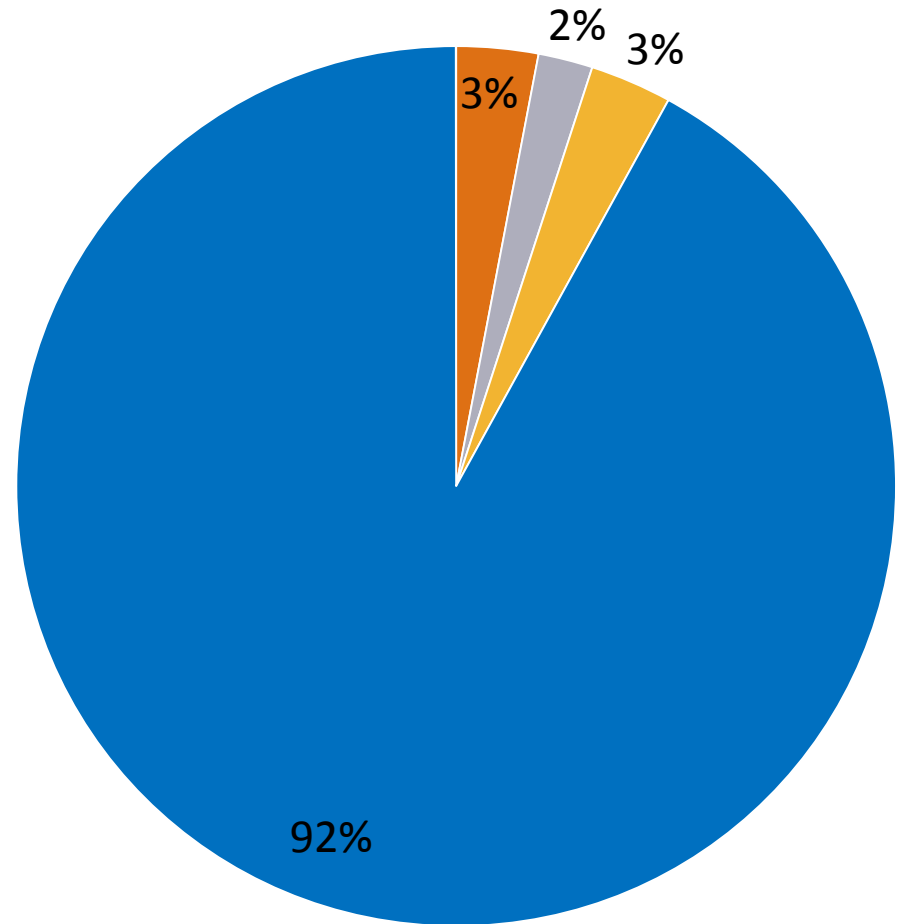
# Round vs. Through Trips



## Brevard Greenway

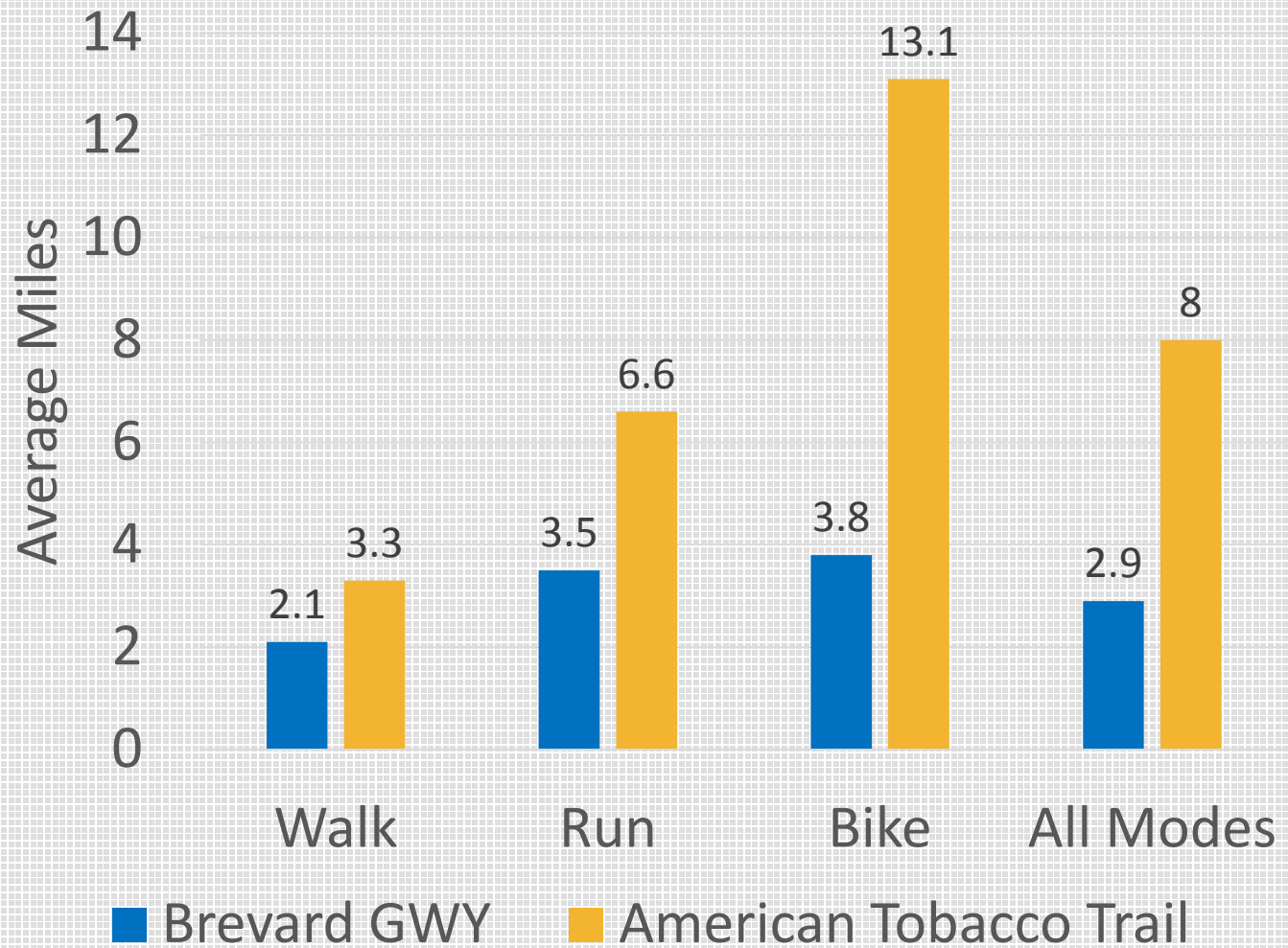


## American Tobacco Trail



- Travel to/from work or school
- Travel to/from cultural attraction/entertainment/leisure activity
- Travel to/from dining/shopping/running errands
- For exercise/recreation/sightseeing

# Average Trip Distance

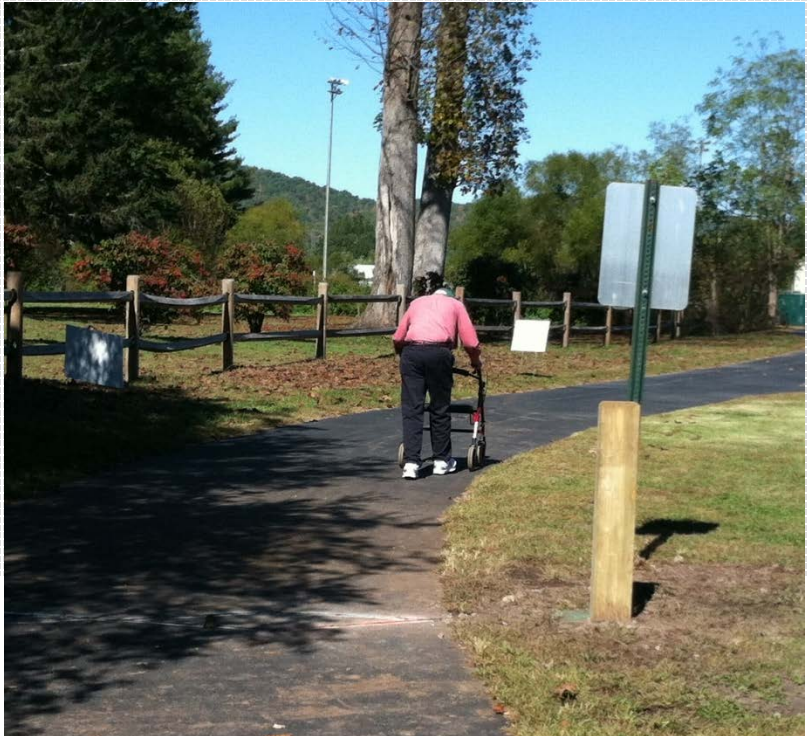




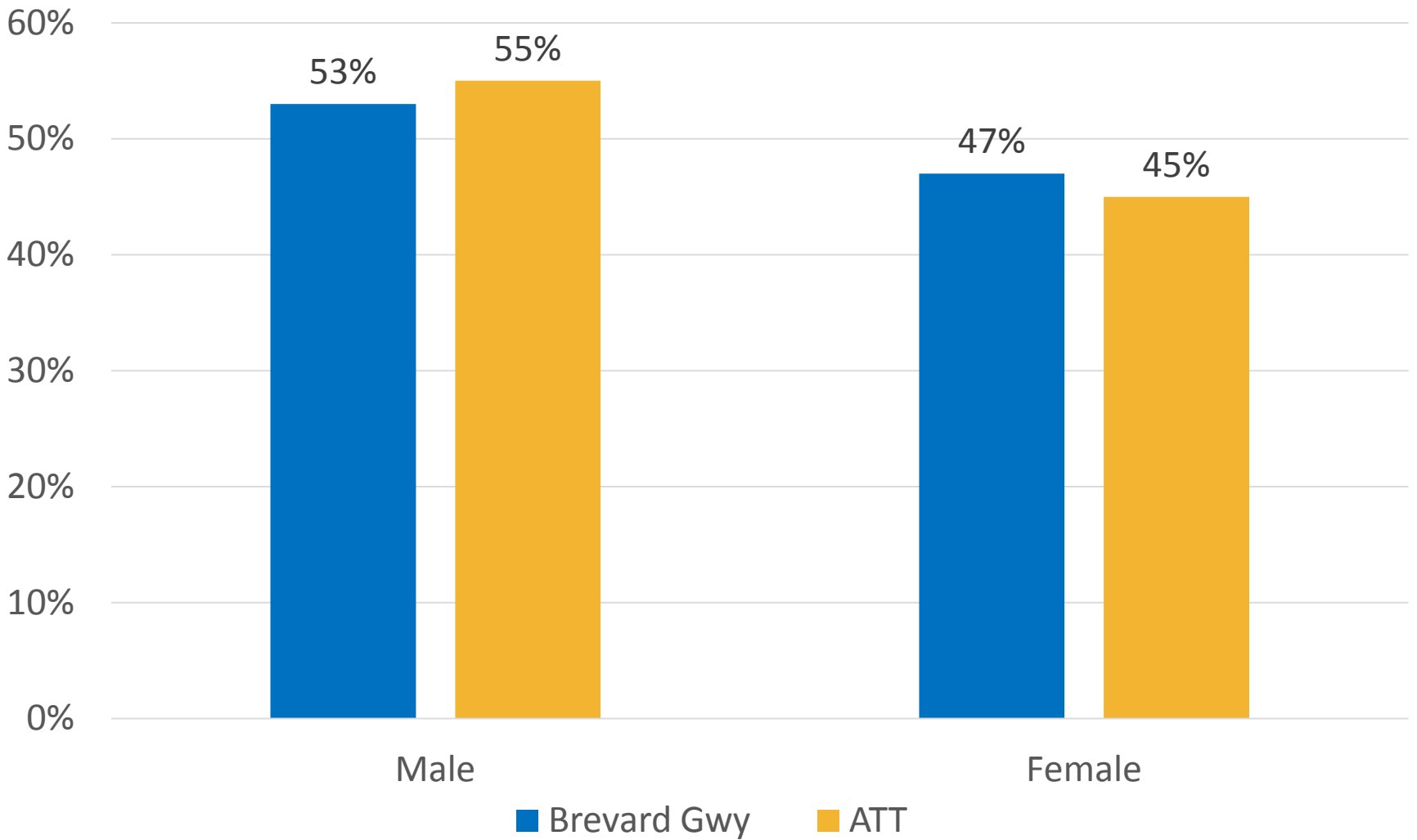


# Age on Trails

	Avg. Age	Max. Age	Min. Age	(n)
Brevard Greenway	52	94	18	250
ATT	44	86	18	1677

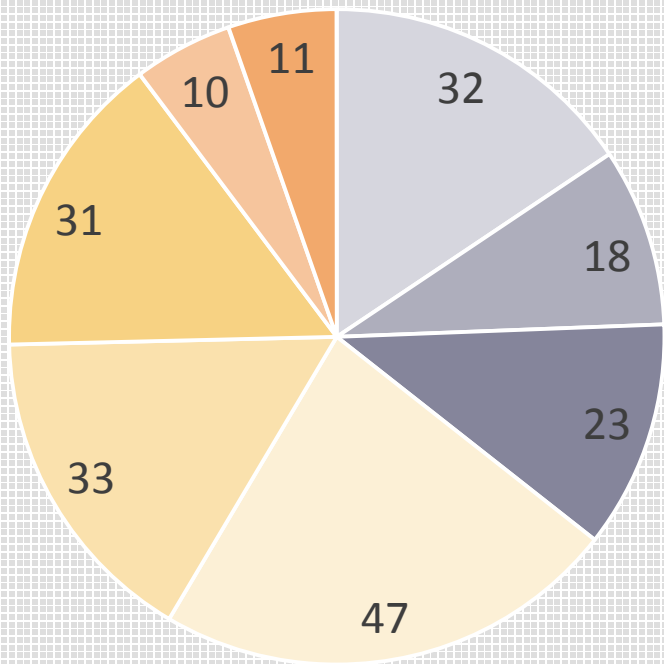


# Gender On Trails

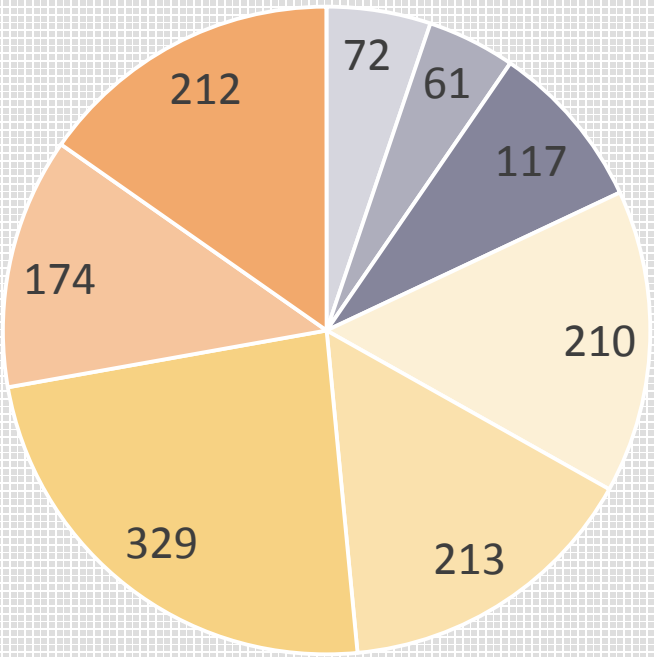


# Household Income

Brevard GWY



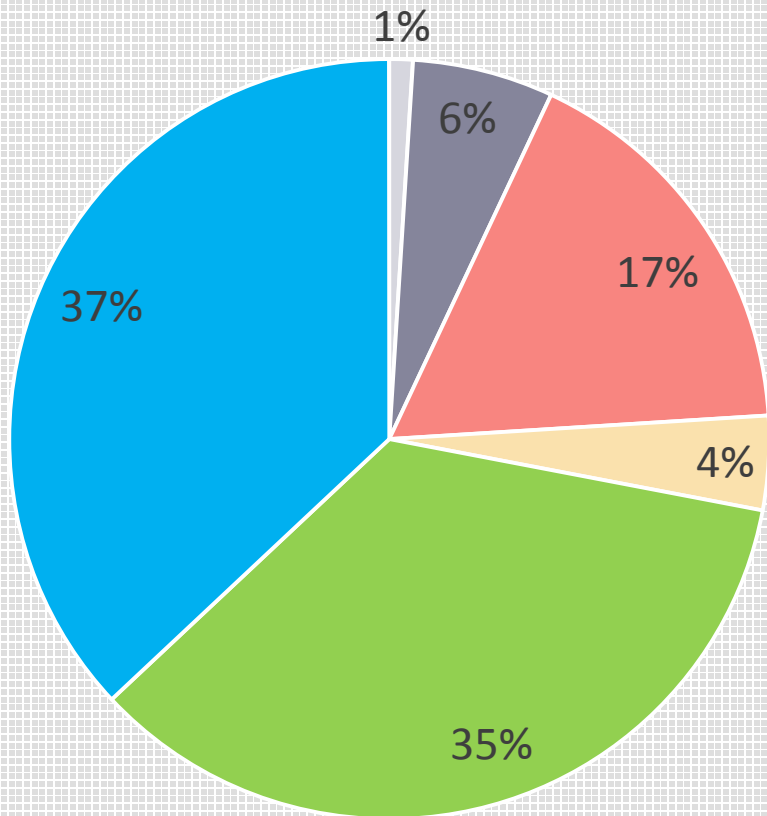
American Tobacco Trail



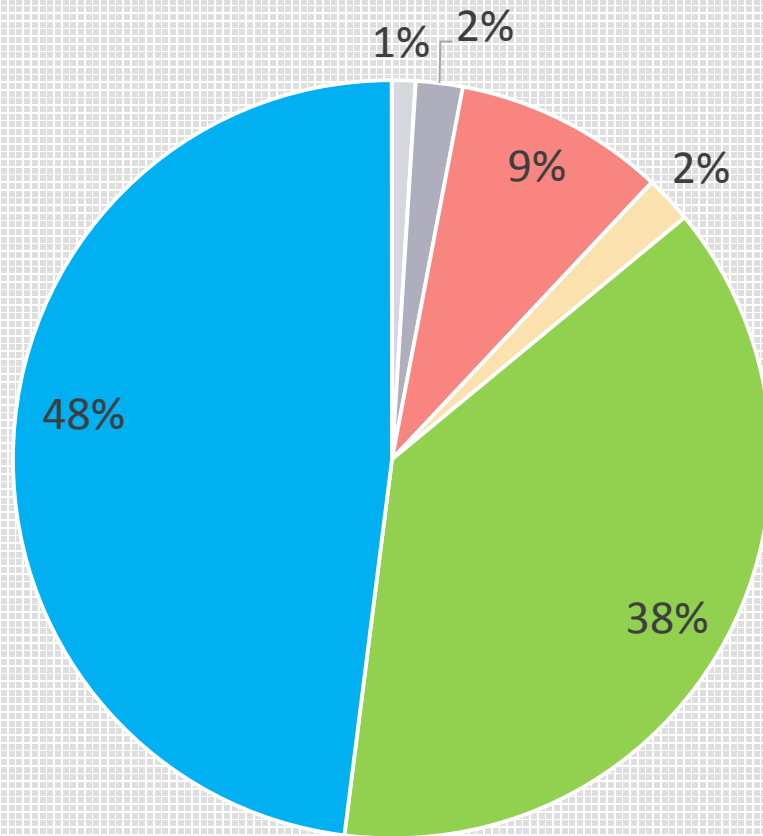
- less than \$25,000
- \$25K-\$34,999
- \$35K-\$49,999
- \$50K-\$74,999
- \$75K-\$99,999
- \$100K-\$149,999



### Brevard GWY



### American Tobacco Trail



Some High School

Some College

College

High School

Business/Technical School

Advanced Degree





# Deliverables to Come

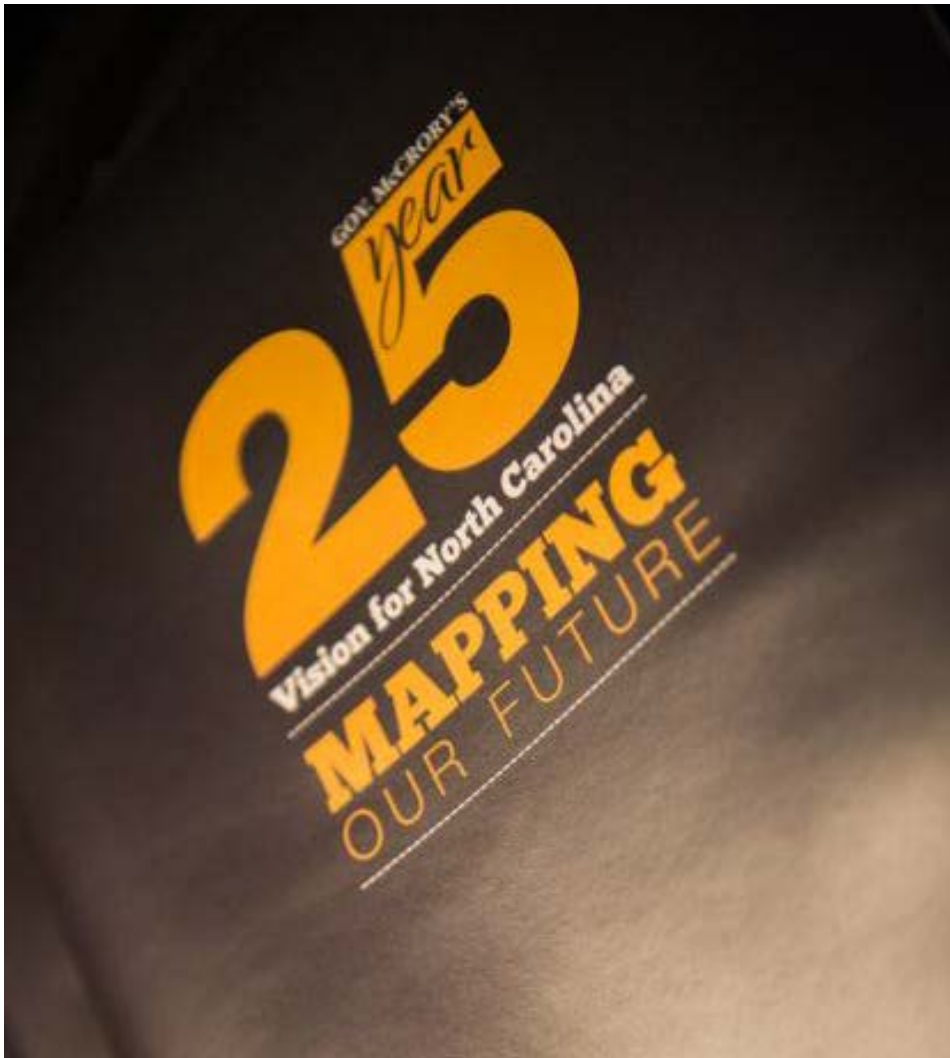
- Longitudinal Studies (ATT and Brevard Gwy)
  - 2 Interim Findings Reports (“snapshot” analysis)
  - 1 Final Technical Brief (comparative analysis across years)
- Cross-Sectional Studies (Duck Trail and Little Sugar Creek Gwy)
  - 1 Technical Brief (“snapshot” analysis)
- Final Summary Report
  - Brochure-style
  - High quality graphics
  - Summarizes highlights from all case studies
- Full Report



*the*  
**GREAT  
TRAILS  
STATE**

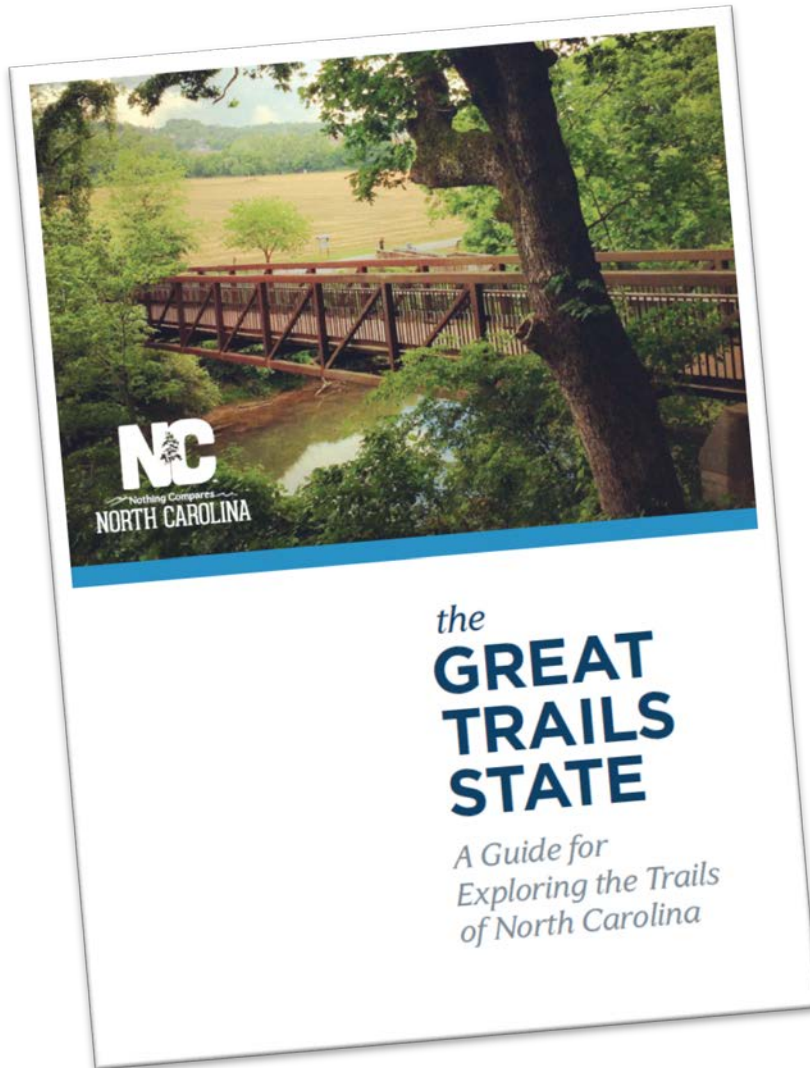
*A Guide for  
Exploring the Trails  
of North Carolina*

# Great Trails State: Background



*“Support the completion of statewide and regionally significant bicycle and pedestrian systems in order to provide transportation options and promote the ‘great trails state’ brand.”*

# Purpose of the Booklet



- To highlight & promote great trails throughout the state, encouraging further use and support for trails among residents, visitors, and decision-makers.
- Just a sampling of NC's greatest trails
- Booklet may be updated in future years to feature more trails



# The Great Trails State Booklet



- Funded by NCDOT, NCDPR, and other state agency partners
- Written and designed by Alta Planning + Design, with direction and support from ITRE
- Inaugural edition – updates expected in coming years

# Challenges in Trail Selection

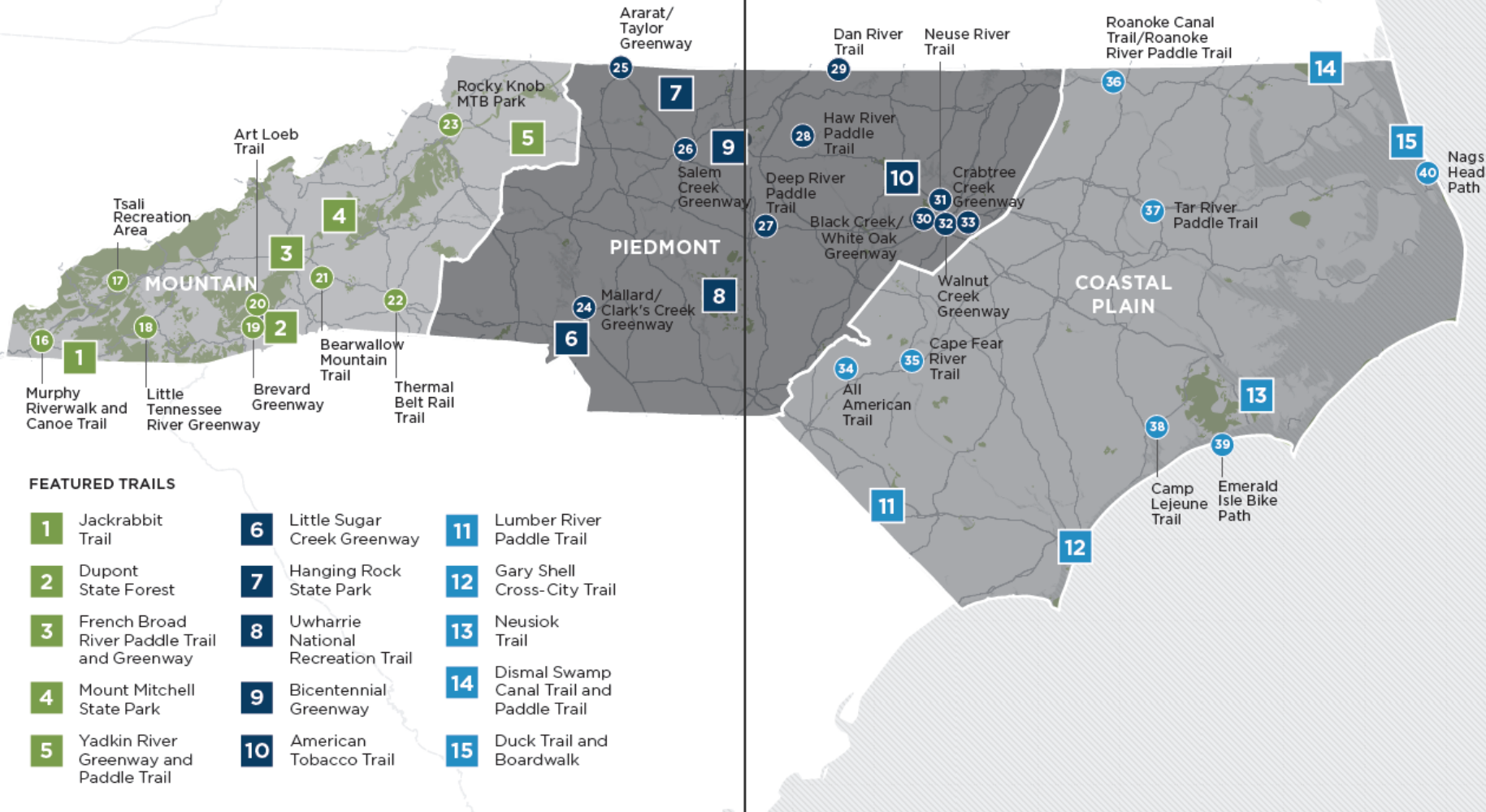


## Considerations/Criteria:

- Geographic distribution
- Variety in trail types (paved, natural, paddle)
- Variety of settings (State Parks, urban, and rural)
- Focus on completed, longer-distance trails (generally, at least 5 miles)
- Public input from WalkBikeNC.com (asking people about their favorite trails)

# Explore NORTH CAROLINA'S TRAILS

These are just a sampling of North Carolina's greatest trails. These were selected based on input from residents and visitors about their favorite trails, trail length, and a desire to feature a variety of trail types across the state. North Carolina is fortunate to have many great trails, and this booklet may be updated in future years to feature more of them.



## FEATURED TRAILS

- |   |   |   |
|---|---|---|
| <b>1</b> Jackrabbit Trail                             | <b>6</b> Little Sugar Creek Greenway        | <b>11</b> Lumber River Paddle Trail                 |
| <b>2</b> Dupont State Forest                          | <b>7</b> Hanging Rock State Park            | <b>12</b> Gary Shell Cross-City Trail               |
| <b>3</b> French Broad River Paddle Trail and Greenway | <b>8</b> Uwharrie National Recreation Trail | <b>13</b> Neusiok Trail                             |
| <b>4</b> Mount Mitchell State Park                    | <b>9</b> Bicentennial Greenway              | <b>14</b> Dismal Swamp Canal Trail and Paddle Trail |
| <b>5</b> Yadkin River Greenway and Paddle Trail       | <b>10</b> American Tobacco Trail            | <b>15</b> Duck Trail and Boardwalk                  |

## Regional & Statewide Trails

Explore a whole region of North Carolina or even the entire state by using a few of the statewide and regional trail systems. The Mountains-to-Sea State Trail, East Coast Greenway, and Carolina Thread Trail are all currently under development, but the completed sections are open for use. These trail systems seek to connect existing greenways and to offer an expanded trail network that allows for the exploration and appreciation of nature.

PIEDMONT | AMERICAN TOBACCO TRAIL

Photo Credit: Dave Connelly



### MOUNTAINS-TO-SEA STATE TRAIL

[www.ncmountainstosea.org](http://www.ncmountainstosea.org)

The Mountains-to-Sea State Trail (MST) is a continuous off-road trail that will stretch about 1,000 miles from the Great Smoky Mountains to Jockey's Ridge State Park on the Outer Banks. The trail is a charming mixture of natural surface through remote wilderness and paved greenways through cities and towns, representing the diversity of North Carolina. Over 600 miles are already developed and in use.

East Coast



Greenway.

### EAST COAST GREENWAY

[www.greenway.org](http://www.greenway.org)

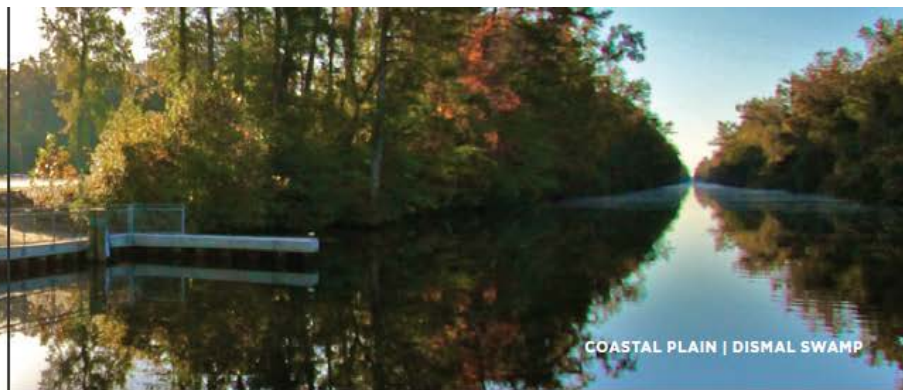
The East Coast Greenway is a shared-use trail system that will provide a continuous route along the eastern coast from Canada to Florida. In North Carolina, the current route runs through the Triangle, Sandhills region, Fayetteville, and the Cape Fear River. Currently, about twenty-five percent of the trail is on traffic-free greenways in NC, offering safe and accessible corridors for users of all abilities and ages.



### CAROLINA THREAD TRAIL

[www.carolinathreadtrail.org](http://www.carolinathreadtrail.org)

The Carolina Thread Trail is a regional network of over 220 miles of greenways, blueways, conserved corridors, and trails that connect 15 counties and two states. The vision for the Carolina Thread Trail originated from a regional process that identified open space preservation as a top priority. Activities offered along this trail include hiking, biking, and paddling.



COASTAL PLAIN | DISMAL SWAMP

# Trails in State Parks



Conservation, recreation, and education are hallmarks of the state park system. The North Carolina state parks system encompasses more than 225,000 acres of land and seeks to preserve the natural resources of the state while offering outdoor recreation opportunities. Hundreds of miles of trails with varying levels of difficulty can be found within the state parks. Aside from activities like hiking and biking, there are also equestrian, paddle, and accessible trails for persons with disabilities. Visit [www.ncparks.gov](http://www.ncparks.gov)

MOUNTAIN STATE PARKS				
Chimney Rock	●			
Crowders Mountain	●			
Elk Knob	●			
Gorges	●	●	●	
Grandfather Mountain	●			
Hanging Rock	●	●	●	●
Lake James	●	●		
Lake Norman	●	●		
Mount Jefferson	●			
Mount Mitchell	●			
Morrow Mountain	●	●		
New River	●		●	
Pilot Mountain	●	●	●	
South Mountains	●	●	●	
Stone Mountain	●	●		

PIEDMONT STATE PARKS				
Carvers Creek		●		
Eno River		●	●	
Falls Lake	●	●		
Haw River		●		
Jordan Lake		●		
Kerr Lake		●		
Lumber River		●	●	
Mayo River		●		
Occoneechee Mountain		●		
Raven Rock		●	●	
Weymouth Woods		●	●	
William B. Umstead	●	●	●	

COASTAL PLAIN STATE PARKS				
Cliffs of the Neuse		●		
Dismal Swamp	●	●		●
Goose Creek		●		●
Jones Lake		●		
Lake Waccamaw		●		
Medoc Mountain		●	●	
Merchants Millpond	●	●		●
Pettigrew	●	●		
Singleary Lake		●		
Carolina Beach		●		
Fort Fisher		●		
Fort Macon		●		
Hammocks Beach		●		●
Jockey's Ridge		●		



## North Carolina's Longest Trails



### NEUSE RIVER TRAIL (LONGEST GREENWAY)



The Neuse River Trail offers scenic views of the Neuse River, winding wetlands, boardwalk, historical sites, interpretive signs, and agricultural fields. Open to cyclists and pedestrians, the Neuse River Trail is the longest greenway trail in North Carolina, spanning 28 miles with connections to the Raleigh Capital Area Greenway System. The trail is a section of the Mountains-to-Sea State Trail, and a portion of it is designated as the East Coast Greenway.



### NEUSE RIVER PADDLE TRAIL (LONGEST PADDLE TRAIL)

If strolling the Neuse River Greenway Trail doesn't satisfy, users can paddle the river instead. With canoe launches along the river, a quick trip can be made to relax and view wildlife or a several-day camping adventure can be had from Falls Dam to New Bern. A main feature along the 142 mile paddle trail is the Cliffs of the Neuse State Park, with breathtaking riverside cliffs that soar 70 feet above the water.



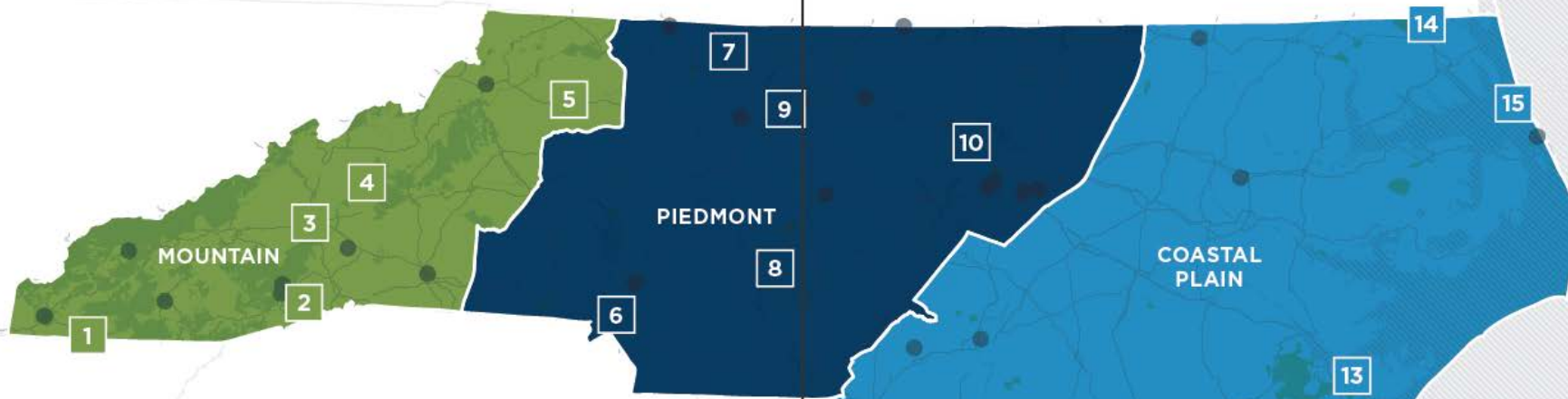
### MOUNTAINS-TO-SEA STATE TRAIL: BALSAM TO STONE MOUNTAIN STATE PARK SEGMENT (LONGEST HIKING TRAIL)

This 270-mile segment of the Mountains-to-Sea State Trail provides stunning mountain vistas and dramatic waterfalls. As you hike some of the most challenging terrain in the state, you will be able to see four states from the top of Waterrock Knob, walk through the ghost forest at Graveyard Falls, and immerse yourself in the history of this place and its people. The route follows part of the Blue Ridge Parkway and passes through Pisgah National Forest, Biltmore Forest, Mount Mitchell State Park, and Grandfather Mountain State Park.



# Explore NORTH CAROLINA'S TRAILS

The rest of this booklet is organized by the state's three distinct regions—Mountain, Piedmont, and Coastal Plain—and features five trails within each region. Get ready to start exploring the great trails of North Carolina.



## FEATURED TRAILS

- |   |   |   |
|---|---|---|
| <b>1</b> Jackrabbit Trail                             | <b>6</b> Little Sugar Creek Greenway        | <b>11</b> Lumber River Paddle Trail                 |
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| <b>5</b> Yadkin River Greenway and Paddle Trail       | <b>10</b> American Tobacco Trail            | <b>15</b> Duck Trail and Boardwalk                  |

● OTHER NC TRAILS



# MOUNTAIN REGION

- 1 Jackrabbit Trail
- 2 Dupont State Forest
- 3 French Broad River Paddle Trail and Greenway
- 4 Mount Mitchell State Park
- 5 Yadkin River Greenway and Paddle Trail

*As its name suggests, the Mountain region is characterized by mountain ranges that weave through the western part of the state. The region showcases a number of natural features, including waterfalls, valleys, lakes, rivers, and streams. In the fall, make your way up to one of the 6,000-foot peaks to enjoy scenic views of foliage and wild flora. Forests and parks are plentiful in the Mountains region, including the Pisgah National Forest, Great Smoky Mountains National Park, and the Nantahala National Forest.*





Photo Credit: Jeff Rich

3

## French Broad River Paddle Trail and Greenway

Paddle, bike, and play along the French Broad River Paddle Trail and Greenway. Nearly three miles of the greenway consists of paved biking and walking trails that connect parks along the river. For the water sports enthusiast, the French Broad River offers access to a 140-mile recreational watercraft trail between Rosman, North Carolina and Douglas Lake, Tennessee. Take a day trip or complete a 10-day journey from start to finish. Paddle-in campsites can be found every 12 to 15 miles along the river.

**Distance**  
2.8 miles paved,  
140 miles paddle trail

**Surface Type**  
Paved, Paddle Trail

**Location**  
French Broad River Park  
508 Riverview Drive  
Asheville, NC 28806

**Activities**



4

## Mount Mitchell State Park

As the highest peak in the Appalachian Mountains and highest peak east of the Mississippi River, Mount Mitchell is a must-see in a region of spectacular trails. The park offers a museum, an extensive trail network, and access to nearby wilderness areas. Whether you're looking for a quick trip to the easily accessible observation deck to admire the dense spruce-fir forest, a short self-guided nature trail, or a more strenuous trek to the summit, Mount Mitchell offers something for everyone.



**Distance**  
16 miles

**Surface Type**  
Dirt

**Location**  
Mt Mitchell State Park  
2388 NC-128  
Burnsville, NC 28714

**Activities**



Photo credit: NC State Parks



Photo Credit: Lumber River Conservancy

11

## Lumber River Paddle Trail

Recognized as one of the country's few designated Wild and Scenic Rivers, the Lumber River holds protected status for its free-flowing route and spectacular natural value. It's the only blackwater river in North Carolina with this distinction. Your next excursion could entail paddling, fishing, or just taking in the scenery. One of the best ways to experience the Lumber River is by canoe or kayak, where one can admire the geologic features, vegetation, and wildlife along miles of remote natural areas.

**Distance**  
81 miles

**Surface Type**  
Paddle Trail

**Location**  
Lumber River State Park  
2819 Princess Ann Road  
Orrum, NC 28369

**Activities**  




Photo Credit: City of Wilmington

12

## Gary Shell Cross-City Trail

This trail connects four beautiful city parks, Cameron Art Museum, the University of North Carolina at Wilmington, and the Intracoastal Waterway, as well as restaurants, coffee shops, bike shops, and neighborhoods along the way. Combine the trip with the nearby Rivers-to-Sea Bikeway, an 11-mile on- and off-road bike route that connects the waterfront attractions of Historic Downtown Wilmington to one of North Carolina's most popular beach towns, Wrightsville Beach.



**Distance**  
15 miles

**Surface Type**  
Paved

**Location**  
Halyburton Park  
4099 S. 17th Street  
Wilmington, NC 28412

**Activities**



# Benefits of Trails



## ECONOMIC AND TOURISM BENEFITS

Trails often yield high returns on investment through economic revitalization, recreational tourism, and small business opportunities. Residents have repeatedly identified trails as desired neighborhood amenities. Communities that have trails and greenways often see increases in property values and enhanced tax revenue. **To read more about leading research on the economic impacts of greenway and trails, visit [www.ncdot.gov/bikeped/researchdata](http://www.ncdot.gov/bikeped/researchdata) or [www.americantrails.org/resources/economics](http://www.americantrails.org/resources/economics)**



## HEALTH AND WELLNESS BENEFITS

Trails and greenways offer safe and accessible opportunities for physical activity. People who utilize trails are able to connect with places that they want or need to go. A 2012 study that quantified health benefits of trails found that for every dollar spent on trails, nearly three dollars of public health benefits are produced. Other health impacts studied as a result of building more walkable and bikeable communities can be found within the state's bicycle and pedestrian plan, Walk Bike NC. **Check out [www.walkbikenc.com](http://www.walkbikenc.com) for more information.**



## TRANSPORTATION BENEFITS

Trails can be implemented at a low cost and serve as part of a multi-modal transportation system. In areas where public transit doesn't offer direct routes to employment centers, trails can serve as important connections between transit stops and workplaces.

**To learn more about how to design and fund a bicycle or pedestrian project, please visit [www.ncdot.gov/bikeped/Design-Prioritization-Funding](http://www.ncdot.gov/bikeped/Design-Prioritization-Funding)**



## ENVIRONMENTAL BENEFITS

Decreasing reliance on automobiles and reducing congestion by utilizing trails will lead to improved air quality. Trails and greenways serve as a tool for conserving open space and preserving wetlands.

**Source: [www.railstotrails.org/experience-trails/benefits-of-trails](http://www.railstotrails.org/experience-trails/benefits-of-trails)**

## RESOURCES

[www.walkbikenc.com/pillars-of-plan](http://www.walkbikenc.com/pillars-of-plan)

[www.americantrails.org](http://www.americantrails.org)

[www.railstotrails.org](http://www.railstotrails.org)



Sarah O'Brien  
skworth@ncsu.edu



Matt Hayes  
matthayes@altaplanning.com



QUESTIONS?

Thank You!