



**SOUTHWESTERN COMMISSION**  
Council of Governments



# Southern Blue Ridge Bicycle Plan EXECUTIVE SUMMARY

*Ride the Ridge!*

---

## Acknowledgments

---

---

### STEERING COMMITTEE

---

**Agency Partner:** Southwestern Commission

*Thank you to the following individuals and organizations who contributed to this plan:*

- Eddie Sylvester
- Pam Forshee
- Joanna Atkisson
- Jackie Moore
- Paul Worley
- Brian Burch
- Andy Cable
- John Vine-Hodge
- Jason Sawyer
- Rose Bauguess (Project Lead)

---

*And many thanks to all the engaged citizens who took time out of their day to attend community meetings and provide valuable input. A plan is only viable if it has support from the people it will affect - the project team is indebted to all of your contributions.*

*Thank You!*

---

### CONSULTANTS

---



Making bicycling a safe and appealing form of transportation and recreation for all ages and abilities has the potential to dramatically impact the mobility, commerce, health, and overall quality of life in Cherokee, Clay, Graham and Macon Counties. A growing number of visitors are also attracted to Western North Carolina as a recreational cycling destination, as evidenced by the success of events held at Jackrabbit and the numerous recreational rides organized throughout the year.

### SOUTHERN BLUE RIDGE BIKE PLAN FOCUS AREAS:

- Emphasizing an interconnected network of on- and off-street bicycling facilities;
- Identifying safe and convenient connections between downtowns, local parks, schools, shops, neighborhoods, and other popular destinations;
- Developing strategies for the Southwestern Commission, Counties, Towns, Chambers of Commerce and Tourism Development Authorities to develop materials and campaigns that promote the area's bicycling assets and potential to residents, tourists and companies.
- Compiling a set of route maps and queue sheets for bicyclists who want to ride the areas roads and existing state-designated bicycling routes.
- Identifying low-cost, short-term projects and phased action items for longer-term projects;
- Closely coordinating recommendations with NCDOT Division 14 officials to build support for investments in the state's project ranking methods; and
- Identifying tools and partners that allow the communities to feasibly expand and enhance bicycling education, encouragement and enforcement strategies.

## Key Survey Findings

### 1. Tourists come from a wide range of locations to bicycle in Western North Carolina.

A large proportion of bicycle tourism to the area comes from South Carolina, Georgia, and Tennessee. The wide variety of locations represented in responses include many states across the country, and even as far away as Bermuda.



### 2. Bicycle tourism in North Carolina is happening during all 4 seasons.

Although fall and spring are the most popular seasons for both day and overnight bicycling trips, many cyclists also take trips during the summer and some even take trips in the winter.



### 3. Businesses in WNC are bike-friendly.

A large majority of respondents rated the bike-friendliness of lodgings, restaurants, and other businesses as either excellent or good. A very small percentage rated the bike-friendliness of businesses as poor.



### 4. Bicycling tourists to WNC want the following improvements and amenities:

- a. more greenways, trails, and paths
- b. more paved shoulders and bike lanes
- c. better motorist education/improved motorist behavior towards cyclists
- d. wayfinding signage with directions and distance to the location



## PLANS REVIEWED:

- **NCDOT County Comprehensive Transportation Plans (CTPs)**
- **Cherokee County Tomorrow (2015)**
- **Reimagining Robbinsville**
- **Robbinsville Pedestrian Plan**
- **Graham County's Gateway to Tomorrow (2015)**
- **Clay County's Comprehensive Plan (2010)**
- **Macon County's Comprehensive Plan (2011)**
- **Highlands Land Use Plan (2005)**
- **Town of Franklin's 10 Principles of Growth (2006)**
- **Cherokee County Heritage Plan (2008)**
- **Andrews NC STEP Community Profile (2008)**
- **Southwestern Commission Regional Trails Plan (2013)**
- **Mountain Landscapes Initiative (2008)**
- **Southwestern NC Economic Development Strategy (2012)**
- **MountainWise (2015)**
- **Opt-In Regional Vision (2015)**
- **2016-2025 State Transportation Improvement Program (STIP)**
- **North Carolina's Statewide Pedestrian and Bicycle Plan: WalkBikeNC**

## BUILDING THE PLAN

The process of identifying projects for the Southern Blue Ridge Bicycle Plan consisted of:

- Reviewing project recommendations from past planning efforts;
- Gathering feedback at the Steering Committee meetings and public involvement efforts (citizen input);
- Conducting field evaluation of biking conditions along roadways and evaluating likely greenway routes where property access was available;
- Identifying popular destinations and biking routes.

## SAFETY IN THE MOUNTAINS

- Cyclists involved in crashes in the Mountains region were slightly younger than those in the Coastal region, with more children involved and fewer adults over 55. The gender profile was similar to other parts of the state, with female bicyclists being involved in 15.3% of crashes in the Mountains, 14.9% statewide, and 18.9% in the small sample size for the four counties. Three out of the 25 bicyclists killed in the Mountains region were female (one was in Macon County).
- Crashes in the Mountains region were more likely to occur on US Routes (12.8% vs 6.8% statewide), and state secondary roads (27.3% vs 17.6%) and less likely to occur on local streets (43.7% vs 60.8%) in the mountains than across the state.
- The timing of crashes in the Mountains region was fairly similar to statewide and national profiles. **Most crashes occurred in the summer months**, beginning in May, which matched North Carolina statewide data but was earlier in the year than the peak nationally of August to October. This might indicate less involvement of students biking to school or college and more involvement of tourists, but more study would be needed to draw conclusions.
- Also consistent with broader trends, crashes occurred predominantly in the late afternoon to evening hours, with slightly more later in the evening. Crashes during morning peak time were less common but slightly more severe. Somewhat surprisingly, weekend days, particularly Sunday, were underrepresented, which might lead to different explanations than the months during which crashes occur, namely more utilitarian cycling and less recreational, or it could indicate safety in numbers for "weekend warrior" cyclists.

### Bicyclist Crashes in the Four Counties

County	Bicyclist Crashes (1997-2012)	Crashes per 1,000 People
Cherokee	17	0.62
Clay	8	0.75
Graham	4	0.45
Macon	8	0.24



## EXISTING CONDITIONS

The four counties covered by North Carolina's Southern Blue Ridge Bicycle Plan are rural with very low highway traffic volumes when compared with urban and suburban areas. At about 54 residents per square mile, **the region is only one-third as densely populated as the rest of North Carolina**. Suburban style development exists on some of the major highways around the small towns of the region, though all towns retain interesting features in historic downtowns.

**Motorists in this region general do not expect to routinely encounter bicyclists on the road, so it is important for cyclists to stay visible and obey traffic laws.** In 2007 the Department of Transportation installed rumble strips on most of the paved shoulders on the primary routes in the region. Due to an outcry from cyclists, the local Division of the Department uses guidelines that are accommodating to bicycle traffic. Routes resurfaced since 2007 generally do not have rumble strips on paved shoulders, so riding on divided four-lane highways, despite sometimes heavy traffic, is often a more comfortable place to ride. The portion of Corridor "K", NC 28 from Almond to Stecoah, is an example of a low traffic volume scenic divided four-lane with paved shoulders that is very comfortable and enjoyable to ride by bicycle.

Most of the secondary road system in the region has been paved, and these traditionally "farm to market" roads offer **quiet, scenic beauty**. These roads are generally winding and often steep due to the terrain, so cyclists need to listen for traffic, and especially avoid being in blind spots as motor vehicles come around curves behind them. Some roads are so remote that a vehicle may not pass for an hour or more, and cellular telephone service is not universal, so these factors should be evaluated when deciding whether or not to ride alone.

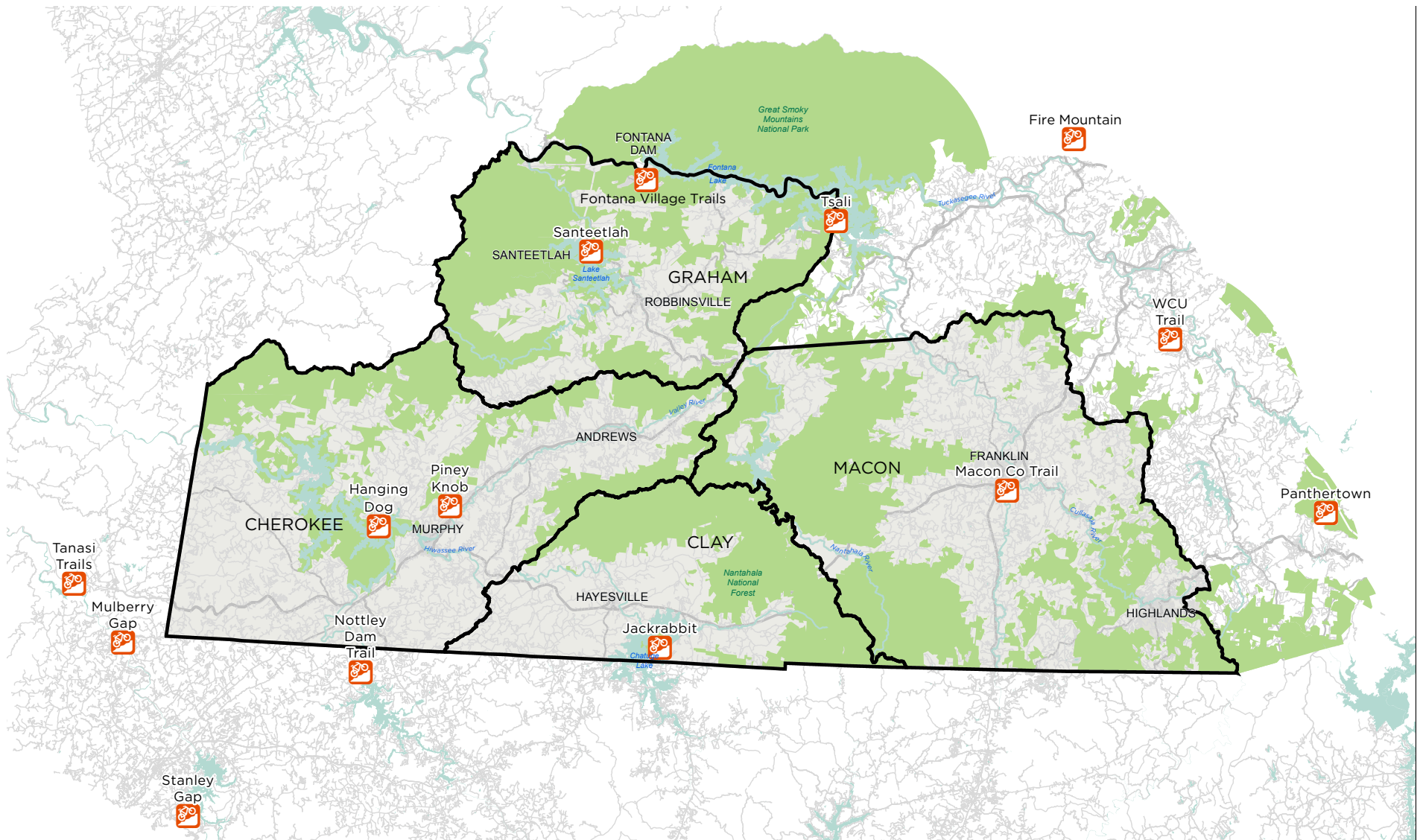
Although popular cycling roads may have "Share the Road" signs, **practically all lane widths are too narrow for real sharing**. Secondary roads have widths as narrow as eight feet, though nine and ten are more common. Primary routes usually have twelve-foot lanes, though some newer multi-lane routes have 14-foot wide lanes designed for sharing unless there is a bikable shoulder. Fortunately, state legislators recently decriminalized crossing a double yellow line to pass a cyclist, and **increased the required passing clearance to four feet**.

In many rural communities residents live long distances from services, but most small towns provide a compact center well-suited for bicycle trips.



*People are traveling to regions with Forest Service roads for the purpose of riding their bicycles through beautiful forests. This image is from the Wilson's creek area of Pisgah National Forest in Caldwell County.*

## Map of Existing Mountain Bike Trail Facilities in the 4-County Region





### ECONOMIC IMPLICATIONS

- **\$14 million** estimated total impact of bicycle tourism in Western North Carolina.
- **\$150,000 to \$170,000 estimated visitor spending per year** from the Blue Ridge Breakaway.
- **\$500,000 estimated economic impact** of the 2014 Lake Logan Multisport Festival.
- **91.5 million Americans went biking** in 2013.
- **33 percent** of cycling tourists are **staying overnight**.
- **\$76 spent per day** of overnight stay and \$50 per day trip.
- 2.8 people in the average group of cyclists.

The economic impacts of bicycling can be broken into four distinct categories:

- 1. Bicycle Tourism:** Attracting bicyclists, including recreational road riders, touring bicyclists, mountain bikers, event bicyclist and low stress/family riders, all contribute to the tourism-based economy. Estimates are that 2% of the existing tourism market in Western North Carolina is tied to some type of bicycle tourism.
- 2. Job Creation:** Bicycle tourism creates jobs, most notably in the service sector. Bicycling is becoming an increasingly important economic development tool across the United States. From public input on this plan we heard economic developers and others discuss how they feel the region should invest in more bicycling facilities--both on- and off-road--as a **way to** attract companies, retain physicians and continue to enhance the area's quality of life.
- 3. Construction Impacts:** The building of facilities for bicyclists, including bike lanes, greenways and trails, also impacts the economy of the region. A study by the American Association of State Highway Transportation Officials (AASHTO) found that the job creation value of building facilities for bicycling and walking was nearly 50% higher than traditional highway-based transportation investments.

For information about NCDOT's goal of maximizing economic competitiveness, return on investment, and employment opportunities by creating bikable communities, visit:

<http://www.walkbikenc.com/pillars-of-plan/economy>

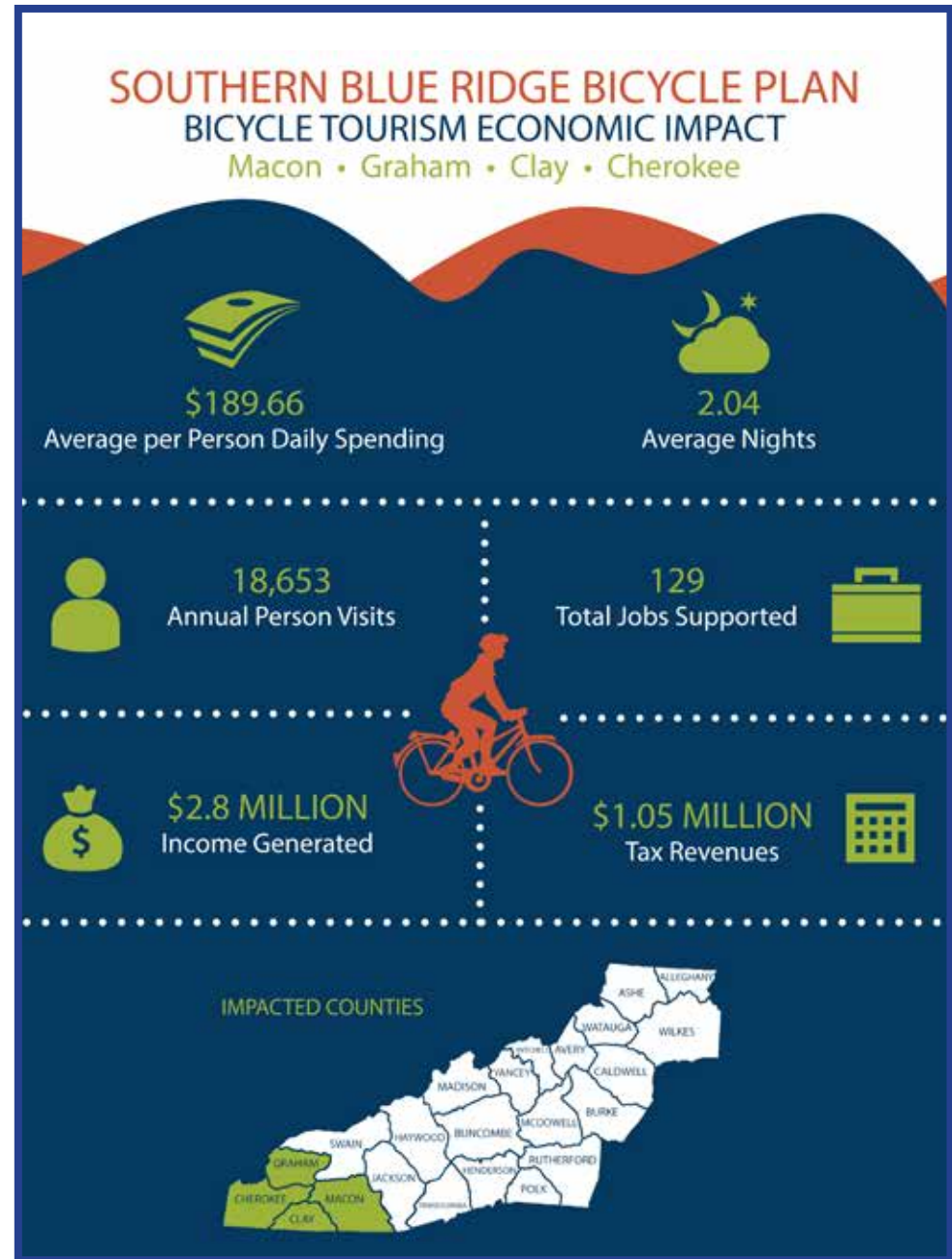
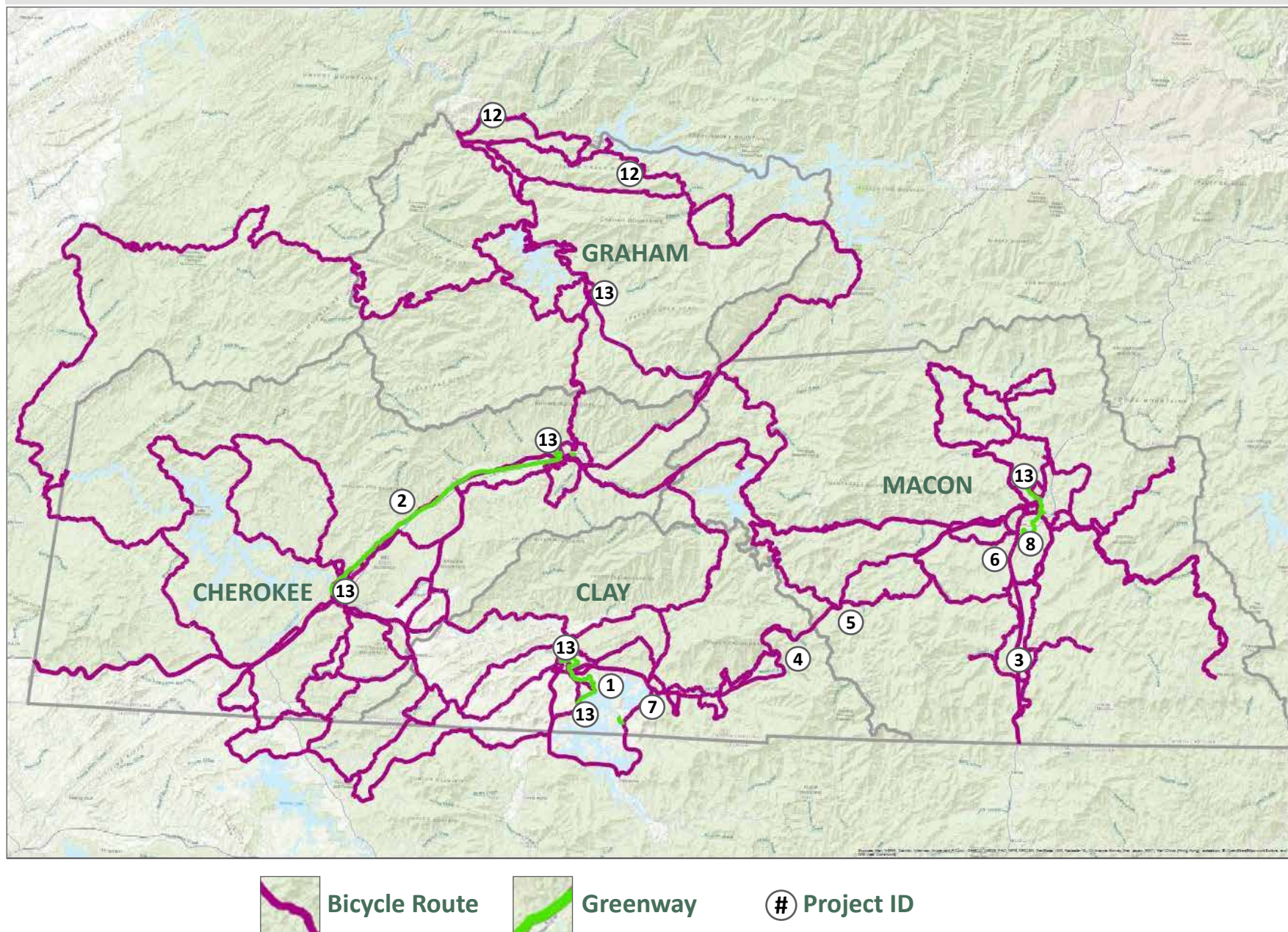


Figure 6-1 — All Project Recommendations





## IMPACTS OF RECOMMENDED PROJECTS

Greenways, bike lanes, and other bicycle infrastructure provide a safe place for people to enjoy nature and experience a sense of community and create stronger social and familial ties, while enabling physical fitness opportunities by encouraging healthy behavior- likewise, these amenities attract tourism and business investment which can spur the local economy and affect the community's wellbeing.

Bicycle networks can also reinforce the identity of a community by incorporating public art and highlighting local history into the design.

The specific project recommendations of the Southern Blue Ridge Bike Plan affect the community's health in different ways.

- New greenways will connect schools to recreational opportunities, help users appreciate the scenic beauty of the area - its agricultural land and winding rivers, connect towns to each other, and encourage commercial, business, and real estate investments and returns.
- Bicycle climbing lanes serve as safety and comfort measures, enabling cyclists to ride at their own pace without feeling as though they are slowing down traffic (truck lanes do the same thing). Encouraging cyclists to ride more strenuous uphill routes can improve their overall physical health and stamina as well.
- New bicycle lanes help demonstrate support for the cycling community by offering designated facilities. They also encourage more timid riders who may feel uncomfortable on narrow shoulders or shared lanes, thereby increasing interest in a healthy method of transportation and increasing the number of people commuting and traveling by bike.
- Bicycle routes may encourage more group rides and cycle events (races, charity fundraisers, themed rides), while printable maps of a regional route system can have a positive effect on branding the area as a bicycling tourism destination.
- Bike racks and fix-it stations help ensure peoples' bicycles are in working order and do not get stolen, thereby encouraging the practice in general and demonstrating support from the community.
- "Cyclist Ahead" actuated warning flashers offer a clear safety improvement, helping motor vehicle drivers maintain awareness of the cycling community, while improving the relative security of cyclists as they traverse particularly winding roads.

## HEALTH IMPLICATIONS

In **Cherokee County**, tracts that had health concerns displayed high rates of stroke and heart disease. Both health issues can be largely prevented or risks minimized with regular exercise such as bicycling.

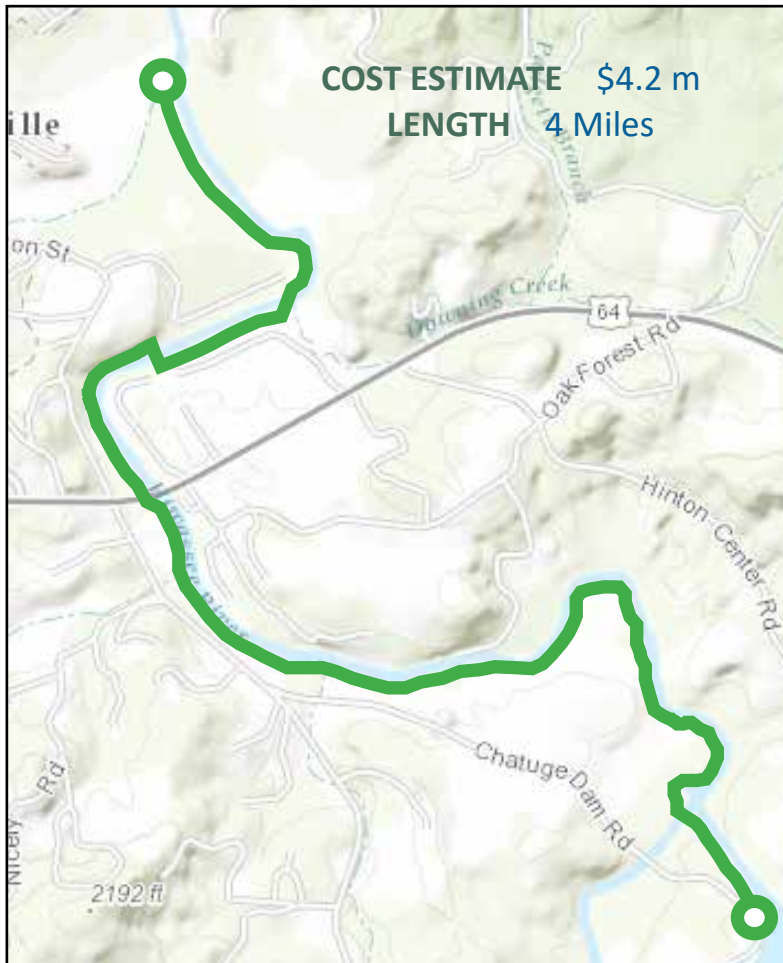
In **Clay County and Graham County**, rates of high stroke, lung cancer, and a high population paying over 30% for rent were factors in higher prevalence tracts. Like heart disease and stroke, lung cancer is mostly avoidable through life choices. Exercising the lungs through bicycling has a correlation with reduced rates of lung cancer and can be part of an overall reduction strategy.

For **Macon County**, tracts with elevated concern had high rates of stroke and heart disease but also the number of households paying over 30% for housing costs. Bicycling does have an economic impact and even providing citizens with a choice of transportation options may reduce their monthly expenditures, which improves economic health.

## ACTION STEPS FOR IMPLEMENTATION

- **Count Bicyclists:** The region's health organization, MountainWise, purchased automated counters for trails and greenways. The region can utilize these to gain a better understand of use of these facilities. For on-road facilities, local volunteers are needed to count bicyclists on popular riding routes. This could be organized by local advocacy organizations or institutions such as Western Carolina University. Understanding bicyclist volumes, and how they change over time, help make a better policy argument and will help the region better understand safety in the region.
- **Work with NCDOT to better understand safety issues in the Mountains:** Data from PBCAT did not provide the opportunity to analyze all safety issues noted in papers from the 2014 International Cycling Safety Conference. These include the impact of pavement skid resistance, crosswinds, and the impact of age on an older cyclist's risk of being involved or injured in a single bicycle crash. Knowing this information will help inform future investment and policy decisions.

## #1 - The Hiwassee River Greenway



The Hiwassee Greenway will serve to provide citizens and visitors of Hayesville and Clay County an opportunity to connect from the Clay County Recreation Department/Spikebuck Mound, a culturally significant Cherokee site, to expansive vistas found along the Chatuge Dam trail. From the Dam trail, users can easily connect to the Clay County Recreation Park and will also find several improved locations to access the Hiwassee River.

## #2 - The Valley River Trail (Rail-Trail or Rail-with-Trail)

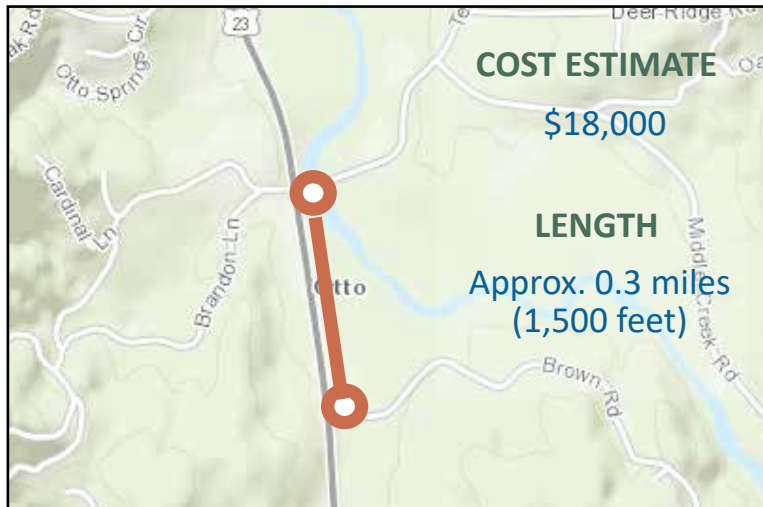


The Valley River Rail Trail, using the rail line and rail bed from Andrews to Murphy, has potential as an alternative option if passenger or freight rail is determined infeasible. Both rail-with-trail and rail-trail options would use the approximately 10-mile rail corridor that connects Murphy to Andrews through an easement under the ownership of the NCDOT Rail Division.

This corridor could have significant economic impact if paired with other attractions along the Valley River Trail, like the Casino, campgrounds, fishing, and bicycle excursions from Murphy or Andrews.



### #3 - Two-Way Cycle Track (Macon County)

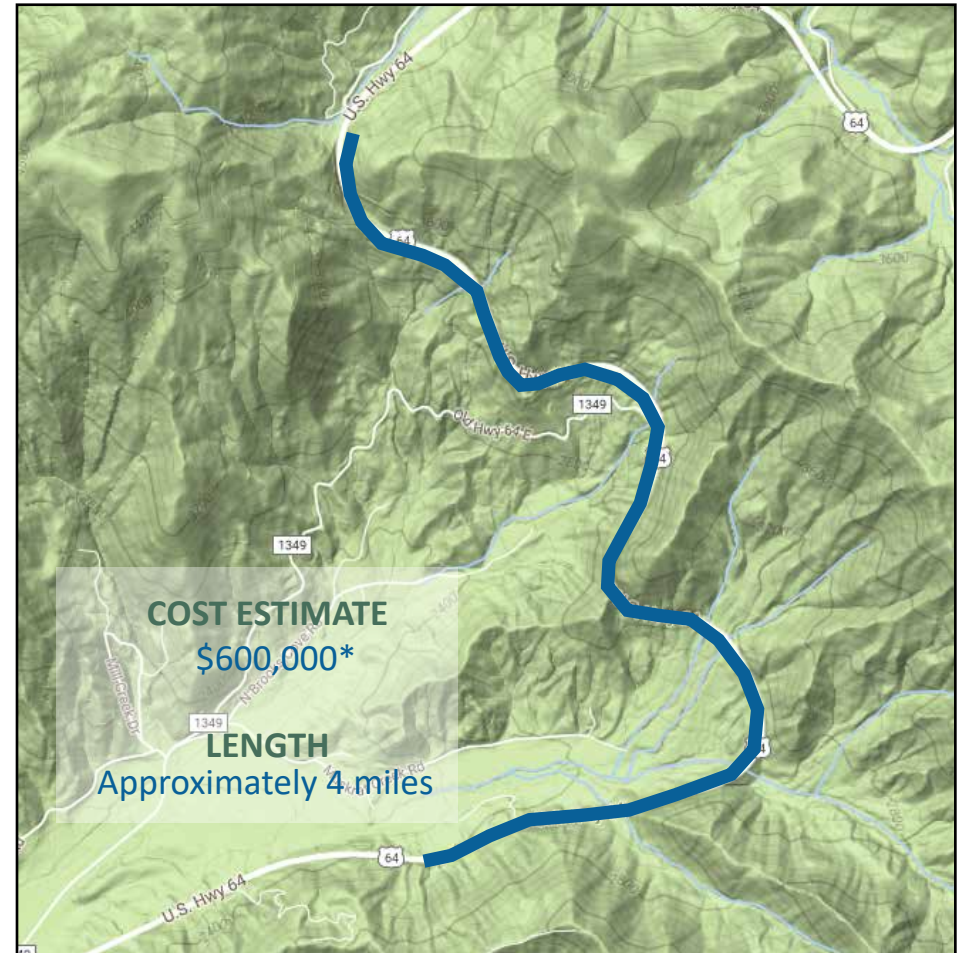


Coupled with green paint and other markings, physical delineators (bollards) separate bicyclists from cars.

The existing paved shoulder on US-23/441 (Georgia Road) is extra wide between Tessentee Road and Brown Road, near the Otto Post Office south of Franklin.

Curb delineators and traffic paint could be used to create a 2-way cycle track on this shoulder so that cyclists would not have to cross US-23/441 twice at the two southbound left turns required to traverse this 0.30-mile (1,500 foot) section.

### #4 - Chunky Gal Gap Climbing Lane (US-64)

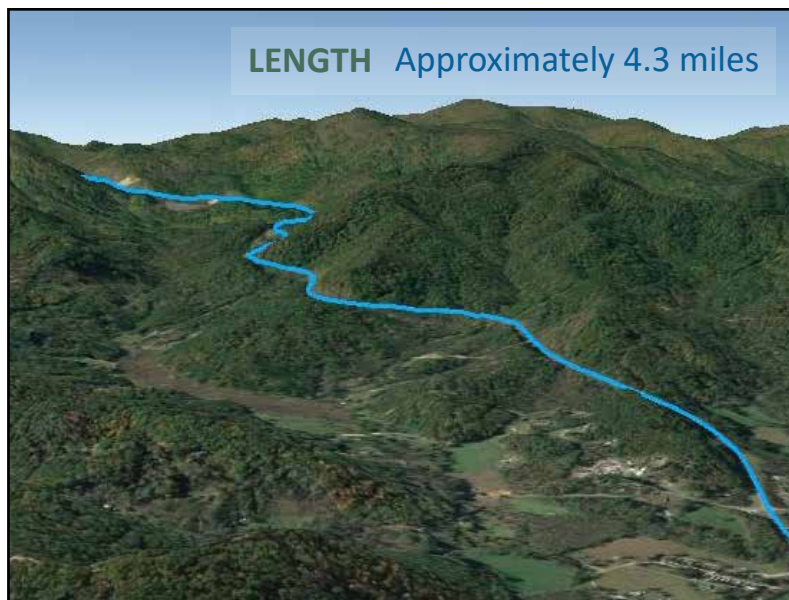


NCDOT TIP Project R-4416 is under construction, encompassing 4 miles of grading, drainage, and paving along US-64 in Clay County. Approach NCDOT to request a five-foot shoulder upgrade along this segment, marked as a bicycle lane, on the uphill travel lane. A bicycle climbing lane allows cars to pass cyclists, who are traveling at slow speeds up the hill.

\* As a standalone project. NCDOT should cover the entire cost if incorporated into STIP project R-4416.



## #5 - Winding Stair Climbing Lane (US-64)



Coordinate with NCDOT to ensure that bicycle facilities - a 5' minimum bike lane on the uphill (eastbound) - are included in the scope of any resurfacing project along this portion of US-64. This could include a project to add a truck climbing lane or another widening project.

### COST ESTIMATE

**\$640,000\***

\* As a standalone project. NCDOT should cover the entire cost if incorporated into a STIP project.

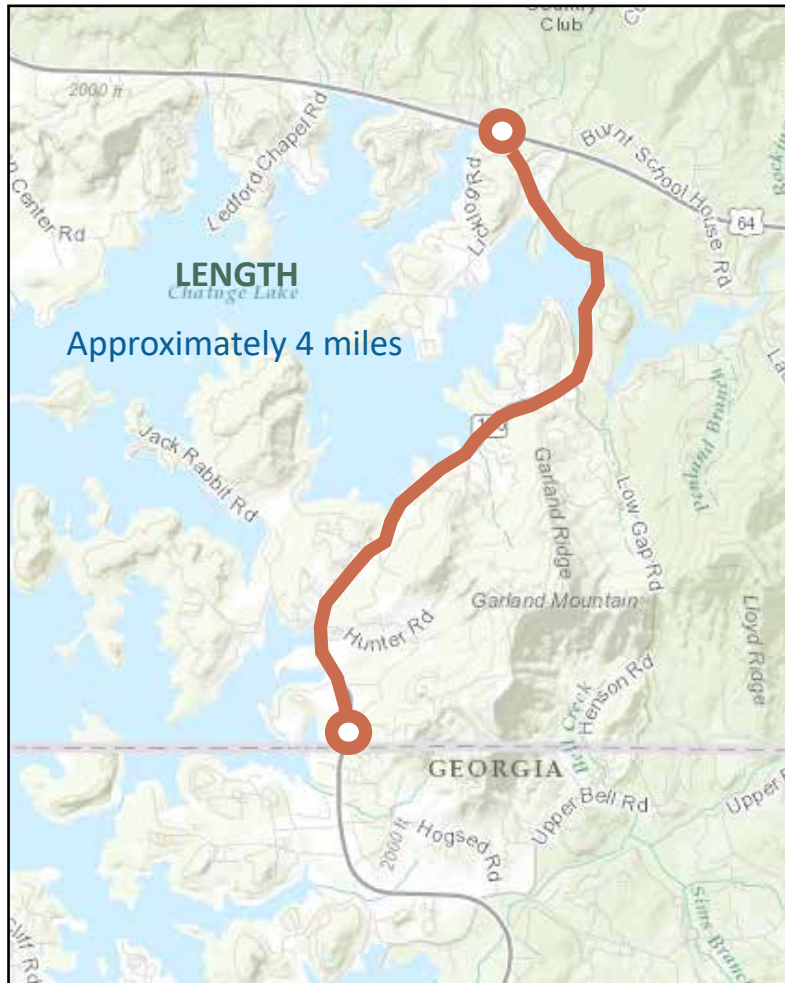
## #6 - Georgia Road Bicycle Improvements



R-5734 and U-5604 are funded NCDOT STIP roadway projects on US-441 Business and US-23/441 in Franklin. This Plan recommends communication with NCDOT to include bicycle facility features - 5-foot buffered bike lanes on both sides of the road along Georgia Road (from US-64 to Addington Bridge Road/Prentiss Bridge Road) and shared lanes along Wayah Road to Depot Street.



## #7 - Bicycle Lanes on NC-175



R-5742 is a funded STIP roadway project on NC-175 (improvements from Georgia state line to US-64). Communicate to NCDOT the need for bicycle facility features to be included on both sides of the road. Active coordination by the Southwestern Commission and Clay County are needed to ensure that these features are included in this project.

## #8 - Little Tennessee River Greenway Extension

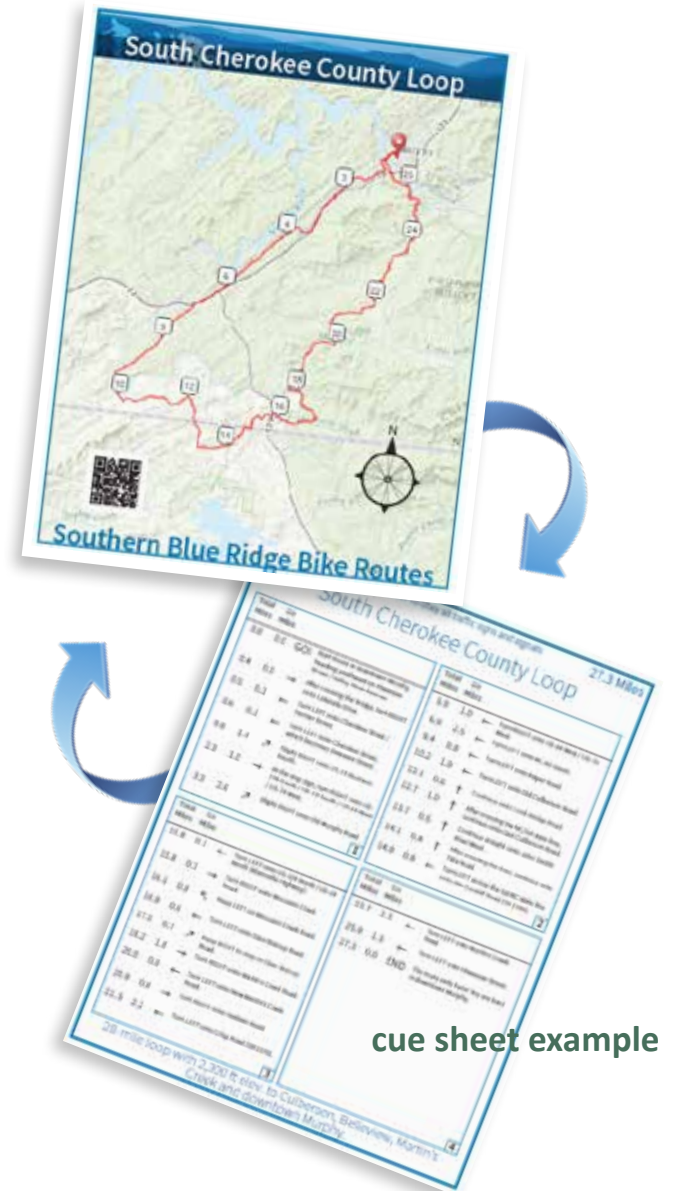
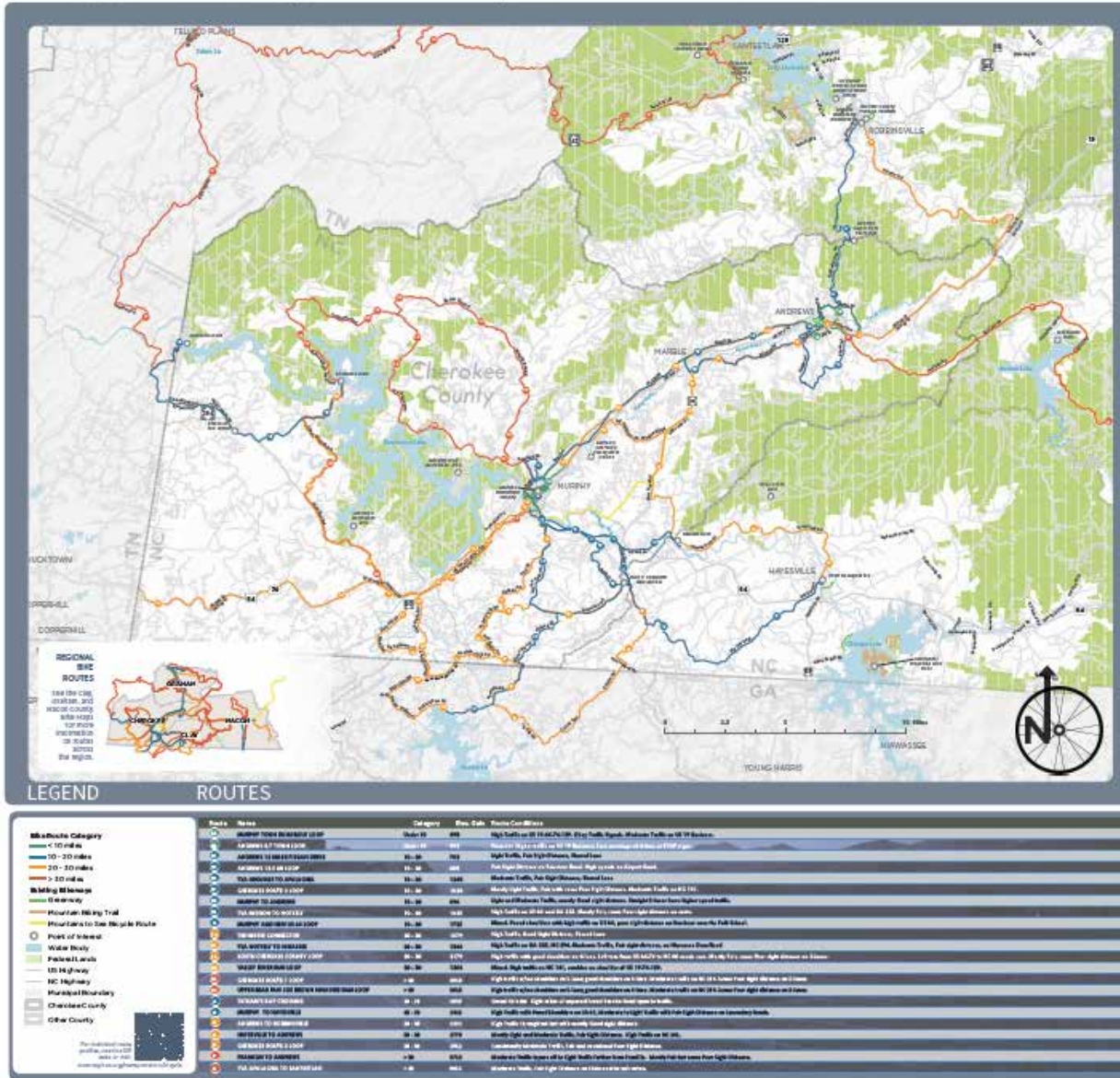


The Little Tennessee River Greenway can be continued around the loop of Cartoogechaye Creek or by crossing the creek twice for a much shorter trail; construct a 10'-12' paved trail from the existing trail behind the library to the rec park facility. The trail should be continued well into the park, even as far as the main building, which would mean upgrading the existing creek bridge that connects the main building to baseball fields, the pool, a playground, and a larger pavilion. The pedestrian bridges should be another focus for future upgrades, demonstrating commitment to recreation in the region and ensuring accessibility.



# #9 - Regional Bicycle Route Maps & Cue Sheets

## route map example





## #9 - Regional Bicycle Route Maps & Cue Sheets

Regional bicycle routes were developed by the project team to help advance several goals: improving bicycle tourism in the area, demonstrating support for bicyclists in the community, and opening the door to cooperation between county and state infrastructure projects. Routes were identified from several sources (some are well-worn with riders in the community), field-checked for applicability, and compiled in interactive map form. The bicycle routes range in length, elevation change, and overall difficulty. Some are out-and-back trips, some are loops, and some connect two destinations.

The project team produced four formatted printable versions to distribute as a tourism product - one folded edition for each county. These maps include safety tips, a description of NC bicycle laws, some general information about the region, inset maps of key towns in each county, and selected route elevation graphics. Each route had mileage categorized (under 10, 20-30, etc.) and the maps note their elevation gain, road conditions, and a "ride effort index".

In addition to the large-format glossy maps, cue sheets were developed for each individual route, so cyclists can print out a usable guide for their ride - with a map on one side and turn-by-turn directions on the other.

A good bicycle map provides information to guide novice cyclists to less-traveled routes, helps an experienced cyclist get around unfamiliar parts of town, and guides users to recreational opportunities in the area.

### Multi-County

- A** Tatham's Gap Crossing
- B** Main Streets: Murphy to Hayesville
- C** Main Streets: Andrews to Robbinsville
- D** Main Streets: Hayesville to Andrews
- E** Cherokee Route 3 Loop
- F** Main Streets: Franklin to Andrews
- G** TVA Dams: Apalachia to Santeetlah
- H** TVA Dams: Emory to Chatuge
- I** TVA Dams: Fontana to Nantahala
- J** Winding Rainbow Tusquittee Half Gravel Grinder Loop
- K** TVA Dams: Apalachia to Santeetlah

### Cherokee

- 1A** Murphy Town Runabout Loop
- 1B** Andrews Town Loop
- 1C** Andrews 12 Miler
- 1D** Andrews 13.5 Mile Loop
- 1E** TVA Dams: Hiwassee to Apalachia
- 1F** Cherokee Route 2 Loop
- 1G** Main Streets: Murphy to Andrews
- 1H** TVA Dams: Mission to Nottely
- 1I** Murphy & New US-64 Loop
- 1J** Tennessee Connector
- 1K** TVA Dams: Nottely to Hiwassee
- 1L** South Cherokee County Loop

### Clay

- 2A** Myers Chapel Out-&-Back
- 2B** Hayesville Ten-Miler Loop
- 2C** TVA Dams: Chatuge to Mission
- 2D** Chatuge Lake Loop
- 2E** Tusquittee Adventure Loop
- 2F** Clay Co. West Side Loop
- 2G** Clay Co. East Side Loop
- 2H** Three Logs Tour - Pine Log, Ivy Log, Gum Log
- 1M** Valley River Run Loop
- 1N** Cherokee Route 1 Loop
- 1O** Upper Bear Paw Joe Brown Hiwassee Dam Loop

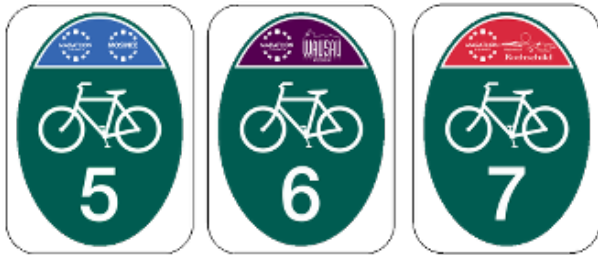
### Graham

- 3A** Main Streets: Robbinsville to Santeetlah
- 3B** TVA Dams: Santeetlah to Cheoah
- 3C** Santeetlah 12 Mile Loop
- 3D** TVA Dams: Cheoah to Fontana
- 3E** Main Streets: Santeetlah to Fontana Village
- 3F** Fontana Village 30 Mile Rural Loop
- 3G** Cherohala Skyway Highest Point Out-&-Back
- 3H** Robbinsville to Fontana Out-&-Back
- 3I** Graham County Big Loop

### Macon

- 4A** Sugarfork Recommended Alternative to NC#2
- 4B** NC Route #2 Highway Connector to GA Route #85
- 4C** NC#2 Scenic to GA#85
- 4C** Coweta Lab Loop
- 4E** Tessentee Out-&-Back
- 4F** Main Streets: Franklin to Highlands
- 4G** TVA Dams: Nantahala to Emory
- 4H** Tour de Franklin (53 Mile Loop)

## #10 - Bicycle Route Signs



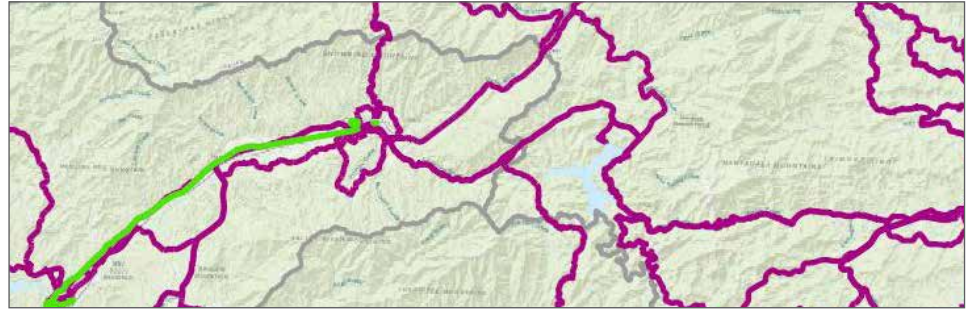
Bike route signs can be customized to highlight different towns within each county within the MUTCD's M1-8 sign.

A bicycle route system should have appropriate directional and informational markers. Maps and cue sheets can be dramatically supplemented by signs, helping guide bicyclists and providing visual reinforcement that they are on the right path and that bicyclists are welcome and expected in the area. Together, these elements encourage greater use of roadways by bicyclists.

A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes (informing bicyclists of route direction changes) and confirmation signs that indicate on which route you are traveling (with information about direction, distance, and destination).

Counties and towns should work with NCDOT to establish a branding and color scheme for the regional bicycle routes and install permanent signs along each route. In addition, install “Share the Road” and “Bicycles Yield to Peds” signs and Sharrow Pavement Markings where needed and appropriate.

## #11 - Safety Improvements Along Bicycle Routes

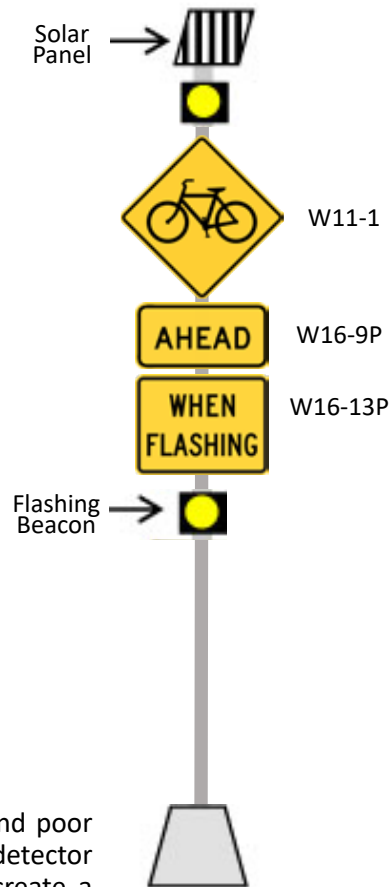


Developing a bicycle route system should include the targeting of roadway improvements along important or heavily used sections. The route selection process often reveals barriers to bicycling such as bridges with inadequate width or low railings and roadways that need bicycle improvements such as bike lanes, wide curb lanes, or wide paved shoulders to provide a continuous safe corridor of travel.

RECOMMENDATIONS for SAFETY IMPROVEMENTS along BICYCLE ROUTES:

- Where paved shoulders (less than 4 feet wide) and 10 feet of right-of-way already exist, widen the road to include **5-foot shoulders on each side**. Mark as bike lanes.
- Coordinate with NCDOT and Southwestern Commission to **include bikeable shoulders in future STIP roadway investments**. Saving small towns and rural counties money in construction costs is imperative to ease of implementation.
- Always **recommend designated bicycle facilities on roadways with average daily vehicular traffic (AADT) of 2,000 or more**.
- Consider phasing construction of **shared lane markings ("sharrows") and bike lanes (where feasible) along all routes as they pass through downtown areas**.
- **Bicycle parking facilities should be installed at public spaces in every Main Street** in the four-county region, including town halls, courthouses, and along Main Street itself.

## #12 - "Cyclist Ahead" Actuated Warning



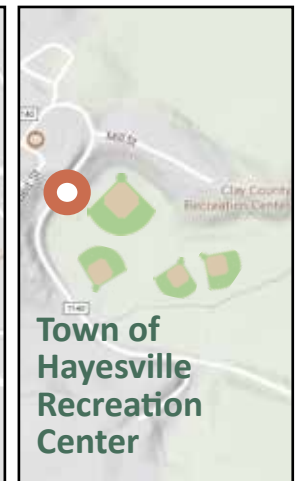
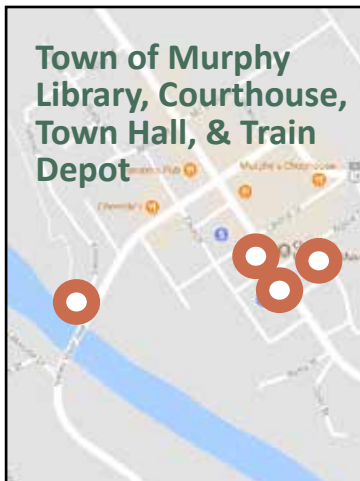
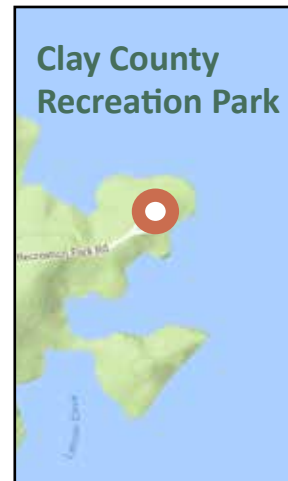
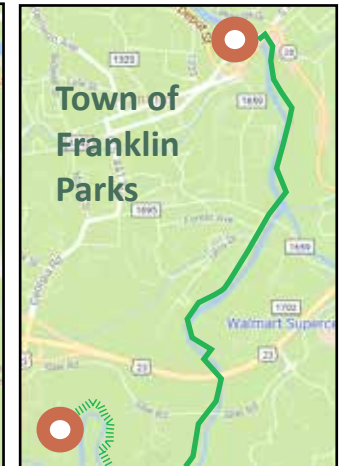
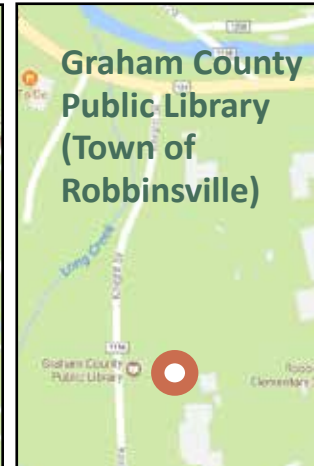
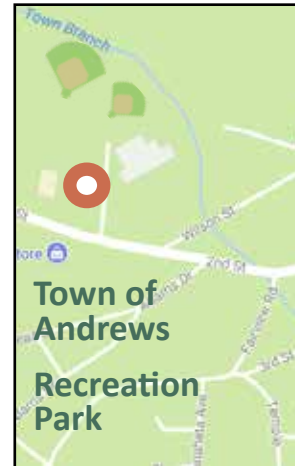
**COST ESTIMATE**  
\$8,000

At locations with steep grades and poor sight distance, combine a bicycle detector with a flashing LED beacon to create a timed warning of a cyclist ahead. Use a warning sign of a cyclist (W11-series or special sign).

Recommended locations include:

- US-129 at Deal's Gap; this is the only direct route to NC-28 from Tennessee.
- NC-28 between Fontana Village and Stecoah.

## #13 - Bike Racks and Bicycle Fix-It Stations



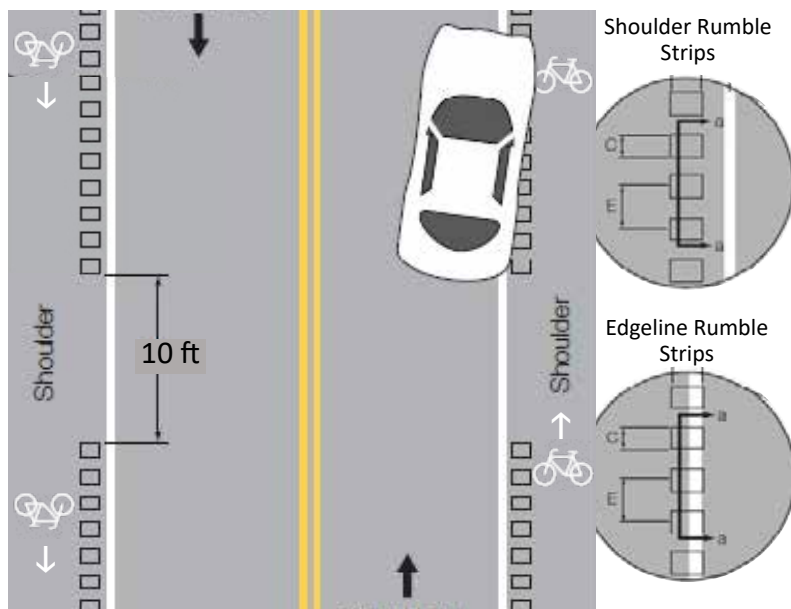
Provide fix-it stations and bicycle parking at appropriate locations. These small improvements will advocate for more bicycling in the community by providing infrastructure support for visitors and local residents.

**COST ESTIMATE**

\$1,000 for one (1) bike rack with space for 5 bicycles  
\$2,000 for one (1) fix-it station



## #14 - Rumble Strip Remediation



### COST ESTIMATE

**\$75,000 per shoulder mile.**

This recommendation is to pave over rumble strips (depressed gouges along a road's edge designed to change the noise a vehicle's tires make and warn drivers of the edge of the road) either entirely or creating gaps for bicyclists to transition between the travel lane and shoulder.

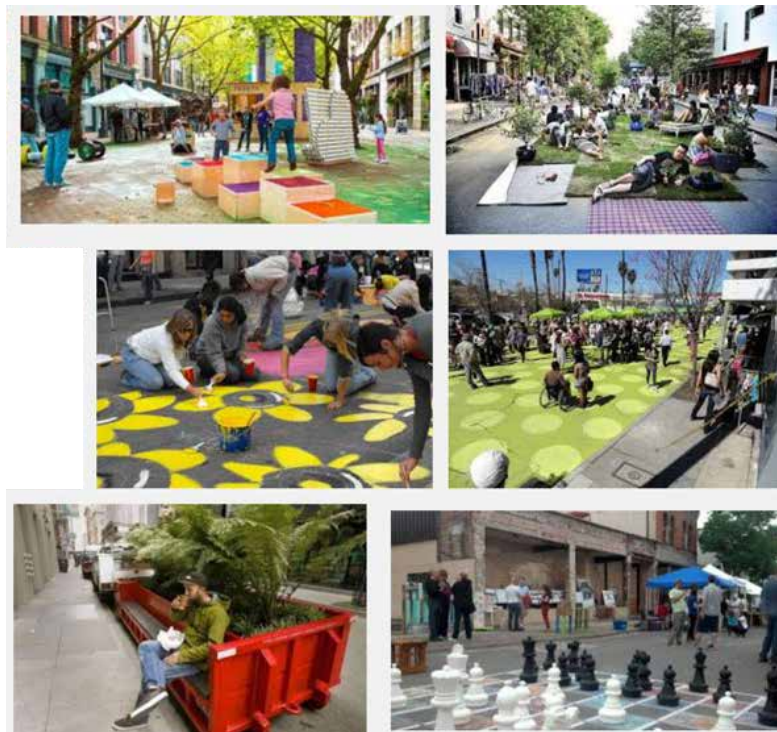
While rumble strips can present ride-ability issues for bicyclists - the presence, composition, and integrity of the shoulder surface can affect where a bicyclist chooses to travel.

Work with NCDOT to add bicycle priority to resurfacing schedules. Many shoulders have already been resurfaced since rumble strips were installed wholesale in 2007. Regular scheduled resurfacing presents the best opportunity for removing or upgrading rumble strips.

## KEY PARTNERS TO CONSIDER FOR IMPLEMENTATION OF BICYCLE PROGRAMS

- Incorporated towns and cities in the four counties of the far Western North Carolina region – Towns and cities are important parties in initiating and supporting programmatic efforts.
- Active Routes to School Project – NC's Department of Transportation and Division of Public Health support this SRTS project. The Regional Project Coordinators are key partners for implementing SRTS programming in any community. The far Western counties of this project fall within Region 1 of the ARTS project. The Region 1 Coordinator is already actively working on SRTS projects (both walking and bicycling) in many of the communities in the area.
- Any local walking/bicycling/trails committees – Communities with existing Bicycle, Pedestrian, or Trails/Greenways Committees can help coordinate efforts and may be able to connect needs with interested volunteers.
- Public health agencies and nonprofits – Public health professionals can help to implement and evaluate recommendations that will help residents increase daily physical activity.
- Major employers and universities – The far Western region has several employers who may be engaged in bicycle-related issues.
- Local police departments and county sheriff's offices – Law enforcement professionals can help support safety campaigns through strategic enforcement and educational events.
- School districts – School districts and schools are natural partners for Safe Routes to School efforts as well as for education programs related to student safety.
- Parent Teacher Associations (PTAs) and Organizations (PTOs) – PTAs and PTOs can be effective partners in implementing Safe Routes to School efforts and other school-oriented traffic safety initiatives.
- Parks and Recreation – Parks and Recreation departments are natural partners for public events and classes such as organized walks.
- YMCA, Boys and Girls Clubs, and other youth-oriented service providers – These groups can partner on programs that benefit children.

- Cycling clubs – Clubs may be able to provide volunteer support for bicycling programs.
- Chambers of commerce, business improvement districts, downtown development associations – These groups may be interested in supporting initiatives that bring residents and visitors to the downtowns and business districts.
- Economic and tourism development organizations – These groups may be interested in supporting initiatives that bring visitors to the region.
- Senior centers and retirement communities – More and more organizations that work with seniors are interested in projects that help their clients live active, healthy lives.
- Hospitals and private health professionals – Private sector partners with an interest in promoting health and wellness can serve as local champions and funders of education and awareness campaigns.



## Performance Measures & Frequency

Performance Measure	Frequency
Percentage of Bicycle Facilities Addressed from Plan	2 years
Miles of Designated Routes, Shoulders, Bike Lanes, Greenways	2 years
Number of New Bicycle Racks	2 years
New Signs Added Along Bike Routes	2 years
Performance Measure	Frequency
Number of Participants in Bike-to-School or Bike-to-Work Programs	Yearly
Performance Measure	Frequency
Number of Participants in Themed Community Bike Rides	Yearly
Number of Bicycle Route Maps Printed and Distributed	Yearly
Number & Prevalence of Automobile Crashes with Bicyclists	Yearly
User Counts on Greenways & Trails	Yearly
Funding Amount Allocated for Bicycle Infrastructure Projects and Programs	Yearly
Percentage of Greenway & Trail Crossings with Painted Striping	2 years
Percentage of Bicycle Route Lengths with 4-foot minimum Shoulder	2 years

*Mode-specific infrastructure planning typically performed by local agencies suggests that performance measurement methodologies add value to the bicycle components of comprehensive transportation planning efforts at the local level.*

## Implementation Plan

Action	Lead Agency ( <i>Partners</i> )	Timetable	Cost Range
<b>Adopt the Southern Blue Ridge Bicycle Plan</b> The Southwestern Commission should lead the way by adopting this plan, with the four counties following. Municipalities should also consider adopting the plan, showing support for local and regional projects.	Southwestern Commission; <i>Towns and Counties.</i>	Immediately	--
<b>Project #9 - Publish &amp; Publicize the Bike Route Maps</b> The Southwestern Commission and NCDOT should work together to print as many maps as possible for distribution to Visitor's Centers, bike shops, and other promotional opportunities.	Southwestern Commission; <i>Towns, Counties, TDAs, Chambers of Commerce, Parks &amp; Recreation Departments, Trail Advocacy Groups, Bicycle Clubs, Health Advocates, NCDOT.</i>	Begin immediately (2018-2019); Ongoing	\$
<b>Build a Regional Bicycle Coalition</b> A diverse group of bicycling advocates (like the Plan Steering Committee) can work together to expedite implementation of projects and make sure that no opportunity is overlooked. Towns should consider staffing a part-time Bicycle Coordinator.	Southwestern Commission; <i>Southern Blue Ridge Bike Plan Steering Committee Members, County Schools, Greenway Advocacy Groups, Health Advocates, Active Routes to School (ARTS), Bicycle Clubs.</i>	Form Immediately (2018-2019); Continue to meet on a regular basis (quarterly)	-- (will require volunteer time for meetings)
<b>Collaborate on Bicycle Performance Measures &amp; Share Results Between Agencies</b> It's important to keep track of growth in the region as more infrastructure is planned and built. This is a perfect task for a Regional Bicycle Coalition to spearhead, along with data from NCDOT and funding from the Southwestern Commission.	Regional Bicycle Coalition; <i>Southwestern Commission, Towns, Counties, Health Departments, Bicycle Clubs, ARTS.</i>	Ongoing; Metrics should be measured yearly or every two years (see Figure 8-1)	\$
<b>Complete "Bicycle-Friendly Community" Applications and Support Local Businesses To Do So</b> The counties and towns in the study area should each apply for this designation and use the results and feedback to better plan for investment prioritization. This designation can be attributed to businesses and universities as well.	Southwestern Commission; <i>Counties, Towns, Businesses, Colleges, Citizen Volunteers.</i>	Immediately (Application Deadlines: Aug. 9, 2018 and Feb. 5, 2019)	-- (will require time to fill out 42-page application)
<b>Align with NCDOT's Roadway Resurfacing Schedule and STIP Prioritization Process</b> The Regional Bicycle Coalition could also work to make sure all parties are aware of NCDOT's roadway resurfacing plans in the region.	Southwestern Commission; <i>Regional Bicycle Coalition, Towns, Counties.</i>	Ongoing	--



## Implementation Plan, Cont'd

Action	Lead Agency ( <i>Partners</i> )	Timetable	Cost Range
<b>Research the Economic Impact of Bicycling in WNC</b> One of the best motivators to induce spending on bicycle infrastructure is to demonstrate its economic benefit to the community. The local colleges should work on surveys and statistical analysis to assess the current and possible impact of bicycling in the region.	Southwestern Commission; <i>Towns, Counties, Greenway Advocacy Groups, Tri-County Community College, Southwestern Community College, NCDOT.</i>	Ongoing	\$\$
<b>Research Roadway Safety Issues in WNC</b> Bicycling in the mountains can be dangerous, so NCDOT and the Southwestern Commission should work with the local colleges on research for targeted and specific health and safety improvements.	Southwestern Commission, NCDOT; <i>Counties, Towns, Tri-County Community College, Southwestern Community College.</i>	Ongoing	\$\$
<b>Project #1 - The Hiwassee River Greenway</b> Clay County should support planning efforts to design a feasibility study for this project and establish a fundraising apparatus. A long-term funding approach could work to eventually connect this project to the proposed Valley River Trail.	Town of Hayesville, Clay County Parks & Recreation; <i>Southwestern Commission, Clay County Schools, Property Owners (along the Hiwassee River), Tennessee Valley Authority (TVA).</i>	Planning 2018-2019; Fundraising 2019-2026; Property Acquisition 2027; Construction 2030	\$\$\$
<b>Project #2 - The Valley River Trail</b> Cherokee County should support planning efforts to design a feasibility study for this project and establish a fundraising apparatus. A long-term funding approach could work to eventually connect this project to the proposed Hiwassee River Greenway.	NCDOT Rail Division, Town of Murphy, Town of Andrews, Cherokee County, ; <i>Southwestern Commission, Cherokee County Center for Applied Technology, Property Owners (along Tomotla Road), Western Carolina Regional Airport, Harrah's Cherokee Valley River Casino, Team Industries, Inc., Perfect Fit Components, Andrews Housing Authority, United Community Bank, Andrews Chamber of Commerce, Great Smoky Mountain Railroad.</i>	Planning 2018-2019; Fundraising 2019-2026; Property Acquisition 2027; Construction 2030	\$\$\$
<b>Project #3 - Two-Way Cycle Track on Georgia Road</b> This can be funded and constructed through NCDOT's resurfacing plans. Macon County should coordinate with the local Division to prioritize wide shoulders along this short corridor (perhaps with outside funding for additional design elements).	NCDOT, Macon County; <i>Southwestern Commission, Bicycle Clubs, Town of Franklin.</i>	Planning 2020-2022; Construction 2024	\$

## Implementation Plan, Cont'd

Action	Lead Agency ( <i>Partners</i> )	Timetable	Cost Range
<b>Project #4 - Chunky Gal Gap Climbing Lane (US-64)</b> Though perhaps too late to include in NCDOT's construction plans for this segment, a climbing lane should be added to future resurfacing projects.	NCDOT, Southwestern Commission; <i>Clay County.</i>	Immediate (2018, if included in R-4416); 10+ years (if aligned with NCDOT repaving schedule)	\$\$
<b>Project #5 - Winding Stair Climbing Lane (US-64)</b> The Southwestern Commission should make sure to include bicycle climbing lane in NCDOT's future road-way resurfacing projects in this corridor.	NCDOT, Southwestern Commission; <i>Clay County.</i>	2+ years (if incorporated into a NCDOT TIP project)	\$\$
<b>Project #6 - Georgia Road Bicycle Improvements</b> The Town of Franklin should continue to monitor these NCDOT projects and make sure that bicycle infrastructure designs are included and do not get abandoned.	NCDOT, Town of Franklin, Macon County; <i>Southwestern Commission</i>	U-5603 ROW 2018, Construction 2019; R-5734 A ROW 2018, Construction 2019; R-5734 B ROW 2022, Construction 2024	\$\$\$
<b>Project #7 - Bicycle Lanes on NC-175</b> Though perhaps too late to include bicycle lanes in NCDOT's construction plans for this segment, this is an important strategic corridor and lanes should be added to future resurfacing projects.	NCDOT; <i>Clay County, Southwestern Commission, Town of Hayesville, Georgia DOT.</i>	R-5742 ROW 2018, Construction 2019	\$\$\$
<b>Advocate for Paved Shoulders</b> The Southwestern Commission should continually monitor NCDOT's STIP investments and advocate for bikeable shoulders on all projects that feature heavily in this Plan's bicycle route system.	Southwestern Commission, NCDOT; <i>Counties and Towns.</i>	Ongoing	--
<b>Project #8 - Little Tennessee River Greenway Ext.</b> This popular greenway could provide a crucial link for bicyclists if extended to Georgia Road and the Parks and Recreation facilities there. The County should spearhead this effort to design and fund the project.	Town of Franklin, Macon County Parks & Recreation; <i>Southwestern Commission, Smoky Mountain Center for the Performing Arts, Cecil L Groves Center, Macon Early College High School, Macon County Public Library, Property Owners (along Cartoogechaye Creek).</i>	Planning 2018-2019; Fundraising 2019-2026; Property Acquisition 2027; Construction 2030	\$\$

## Implementation Plan, Cont'd

Action	Lead Agency ( <i>Partners</i> )	Timetable	Cost Range
<b>Project #10 - Bicycle Route Signs</b> Once the route maps are printed and promoted, it would serve the region's tourism industry to design a sign branding and implementation system for routes.	NCDOT, Southwestern Commission; <i>Towns and Counties.</i>	Planning/Design 2019-2020; Installation 2022-2024	\$\$
<b>Municipal Policies</b> Towns in the 4-county regions should consider making policy decisions to support bicycling in the region. Each town should explore Vision Zero and Complete Streets policies, take decisive action on lowering speed limits, and make decisions about bicycle-friendly language in their ordinances. These policies should be continually reviewed and revised in accordance with State and Federal law and best practices.	Towns; <i>Southwestern Commission, Counties.</i>	Immediately (2019-2020); Policy Adoption 2020 and later; Ongoing Review (every 2-4 years)	--
<b>Prioritize Bicycle Infrastructure Downtown</b> Municipalities should use this Plan to determine which roads through their towns should be prioritized for shared lane markings and bike lanes. Each town should develop a prioritized implementation schedule.	Towns and Counties.	Immediately (2019-2020)	--
<b>Fund Bicycle Infrastructure Downtown</b> Municipalities should work with the Counties and the Southwestern Commission to allocate fundings for prioritized bicycle infrastructure in their downtown areas to support the regional routes. A bond referendum is an option for continued funding.	Towns, Counties; <i>Southwestern Commission.</i>	Fiscal Year 2019-2020; Ongoing	\$\$-\$
<b>Develop &amp; Implement Tactical Urbanism Projects</b> The Southwestern Commission should recommend projects to municipalities reflective of the goals of this regional plan for short-term, low-cost, and scaleable bicycle projects. These can demonstrate the feasibility of permanent improvements to elected officials and NCDOT.	Towns, Bicycling Advocacy Groups, Southwestern Commission, Bicycle Clubs; <i>Neighborhood Associations.</i>	Short-term (2020); Ongoing on an annual basis (i.e. one new project per year)	\$



## Implementation Plan, Cont'd

Action	Lead Agency ( <i>Partners</i> )	Timetable	Cost Range
<b>Project #13 - Bike Racks &amp; Fix-It Stations</b> Each county should invest in funding for these minor bicycle improvements at all public parks, rec centers, libraries, and town/county offices.	Counties, Towns; <i>Southwestern Commission</i> .	Fiscal Year 2019-2020; Ongoing	\$
<b>Project #14 - Rumble Strip Remediation</b> The Southwestern Commission and NCDOT should work together to devise a policy for rumble strip implementation in the region and work to incorporate gaps in future resurfacing projects.	NCDOT, Southwestern Commission.	Ongoing	\$\$
<b>Safe Routes to School</b> NCDOT and the Department of Health should continue to fund these programs in the rural counties of WNC. The Southwestern Commission should support these efforts with advocacy and promotion.	NCDOT, NC Department of Health; <i>Southwestern Commission, County Schools, Police Departments, Fire Departments</i> .	Ongoing	\$
<b>Open Streets Events</b> Municipalities with Main Streets should organize annual Open Streets events, where the aim is to allow nonmotorized transportation to enjoy full use of the downtown core.	Town of Murphy, Town of Franklin, Town of Andrews, Town of Highlands, Town of Robbinsville, Town of Hayesville; <i>Southwestern Commission, Chambers of Commerce, TDAs</i> .	Begin Planning Immediately for 2020; Ongoing on an annual basis	\$
<b>Main Street Parking</b> Towns should explore replacing angled parking with back-in angled parking or parallel parking to improve safety for bicyclists along their Main Streets. Temporary measures and response surveys should assuage negative concerns.	Towns.	Planning 2019; Implementation 2022	\$



This page is intentionally left blank.





# **SOUTHWESTERN COMMISSION**

Council of Government

