



Stakeholder Meeting 4: **December 2018**



## Transylvania County BICYCLE PLAN



Prepared for Transylvania County  
Prepared by Alta Planning + Design

Draft Plan  
Fall 2018

# Draft Plan

- Draft Plan Overview
  1. Chapter 1:  
Introduction
  2. Chapter 2: Existing  
Conditions
  3. Chapter 3:  
Recommendations
  4. Chapter 4:  
Implementation



Stakeholder Meeting 4: **December 2018**

# Ch. 1

- Introduction
  - Project Background
  - Planning Process
  - Vision and Goals
  - The Value of Bikeable Communities

## CHAPTER 1: INTRODUCTION

Meeting 4: December 2018

## THE VALUE OF BIKEABLE COMMUNITIES

Potential benefits for Transylvania County in supporting and implementing this plan include improvements in safety, health, economic impact, mobility, and environmental stewardship.

### SAFETY

#### Trends and Challenges

According to a survey of 16,000 North Carolina residents for the 2011 North Carolina Bicycle and Pedestrian Safety Summit, the most commonly reported safety issue for walking and bicycling was inadequate infrastructure (75%).<sup>1</sup> A lack of bicycle facilities, such as bicycle lanes, sidepaths, greenways, and safe crossings, lead to unsafe conditions for bicyclists.

- From 2007-2015, there were 17 documented bicycle crashes within Transylvania County.
- In 2017, 15% of all traffic fatalities in North Carolina were bicyclists and pedestrians.<sup>2</sup>
- North Carolina is ranked as one of the least safe states for bicycling (44th).<sup>3</sup>

#### Improving Safety

Separate studies conducted by the Federal Highway Administration and the University of North Carolina Highway Safety Research Center demonstrate that installing pedestrian and bicycle facilities directly improves safety by reducing the risk and severity of pedestrian-automobile and bicycle-automobile crashes (see examples to the right). Some facilities improve safety for both bicyclists and pedestrians, such as sidepaths, paved shoulders, bicycle/pedestrian overpasses or underpasses, and intersection crossing improvements. The following web addresses link to more comprehensive research on safety.

- <http://www.walkbikenc.com/>
- [http://www.pedbikeinfo.org/data/factsheet\\_crash.cfm](http://www.pedbikeinfo.org/data/factsheet_crash.cfm)



# 193

Average number of bicyclists and pedestrians killed each year in North Carolina (169 pedestrians & 24 bicyclists)

Source: National Highway Traffic Safety Administration: Fatality Analysis Reporting System (FARS), (American Community Survey 3-yr estimates for 2007, 2010, and 2013).

# 60%



Shared use paths (like the Brevard Greenway) reduce injury rates for cyclists, pedestrians, and other nonmotorized modes by 60% compared with on street facilities.

Source: Teschke, Kay, "Route Infrastructure and the Risk of Injuries to Bicyclists", (2012), American Public Health Association.

#### Bicycle Facilities with Bicyclist/Pedestrian Crash Countermeasures

FACILITY TYPE	PEDESTRIAN/ BICYCLIST CRASH REDUCTION FACTOR
Install bicycle & pedestrian overpass/underpass	90%
Install sidewalk or sidepath (to avoid walking along roadway)	88%
Provide paved shoulder (of at least 4 feet)	71%
Install raised median at unsignalized intersection	46%
Install bike lanes	35%
Install separated bike lanes	74%

### HEALTH

The state of North Carolina ranks 33<sup>rd</sup> compared to all other states in core determinants of health.<sup>4</sup> Two key measures in that ranking are cardiovascular deaths and obesity, for which North Carolina is ranked 30<sup>th</sup> and 35<sup>th</sup>, respectively. Other key trends and challenges related to health and transportation in North Carolina and Transylvania County:

- 66% of adults in North Carolina are either overweight or obese.<sup>5</sup> The state is also ranked 5<sup>th</sup> worst in the nation for childhood obesity.<sup>6</sup>
- The annual direct medical cost of physical inactivity in North Carolina is estimated at \$3.67 billion, plus an additional \$4.71 billion in lost productivity.<sup>7</sup> However, every dollar invested in pedestrian and bicycle trails can result in a savings of nearly \$3 in direct medical expenses.<sup>8</sup>
- Of North Carolinians surveyed, 60% would increase their level of physical activity if they had better access to sidewalks and trails.<sup>1</sup>
- Nutrition, physical activity, and weight was a priority issue identified in the Transylvania County Community Health Assessment (2015). According to the assessment, only half of county residents say they get the recommended amount of daily physical activity.<sup>9</sup>

#### Better Health through Active Transportation

Transylvania County can make strides to improve community health by improving roads that are unsafe for bicycling, thereby creating more opportunities for healthy living and active transportation. Using active transportation to and from school, work, parks, restaurants, and other routine destinations is one of the best ways that children and adults can lead measurably healthier lives. Increasing one's level of physical activity through bicycling reduces the risk and impact of cardiovascular disease, diabetes, chronic disease, and some cancers. It also helps to control weight, improves mood, and reduces the risk of premature death.<sup>10</sup>

- Two 14-year studies of more than 60,000 people investigated if total physical activity, as well as different types of physical activity, were associated with heart failure risk. It found that walking or bicycling at least 20 minutes per day was associated with the largest risk reduction of heart failure.<sup>11</sup>
- Active transportation (i.e., biking and walking) can dramatically improve health by reducing and preventing not only incidences of obesity, but community levels of diabetes, stroke, and heart disease, as noted in the figure below.

#### Active Transportation: Pathway to Health



Source: Alta Planning + Design; WalkBikeNC



20 MINUTES WALKING OR BIKING each day is associated with a

**21%** LOWER RISK OF HEART FAILURE FOR MEN and  
**29%** LOWER RISK FOR WOMEN

Rahman, 2014 and 2015





# Ch. 2

- Existing Conditions
  - Plan Review
  - Bicycle Level of Comfort
  - Bicycle Crashes
  - Public Input Summary

## CHAPTER 2: EXISTING CONDITIONS

These relatively high proportions of bicyclists are likely due to the fact that these are popular commuting and recreational bicycle routes in Brevard as a result of their lower automobile traffic volumes, generally lower speed limits, and connectivity to other locations in Brevard.

Traffic counts from 2016 and 2017 as part of upcoming roadway improvement projects at the US 64/US 276/NC 280 intersection, as well as along Wilson Road, counted a very small percentage of bicyclists at 0.3% of total traffic or less. This is likely related to the low bicycle comfort levels at these

locations due to higher automobile traffic volumes and speeds combined with no dedicated space for bicyclists.

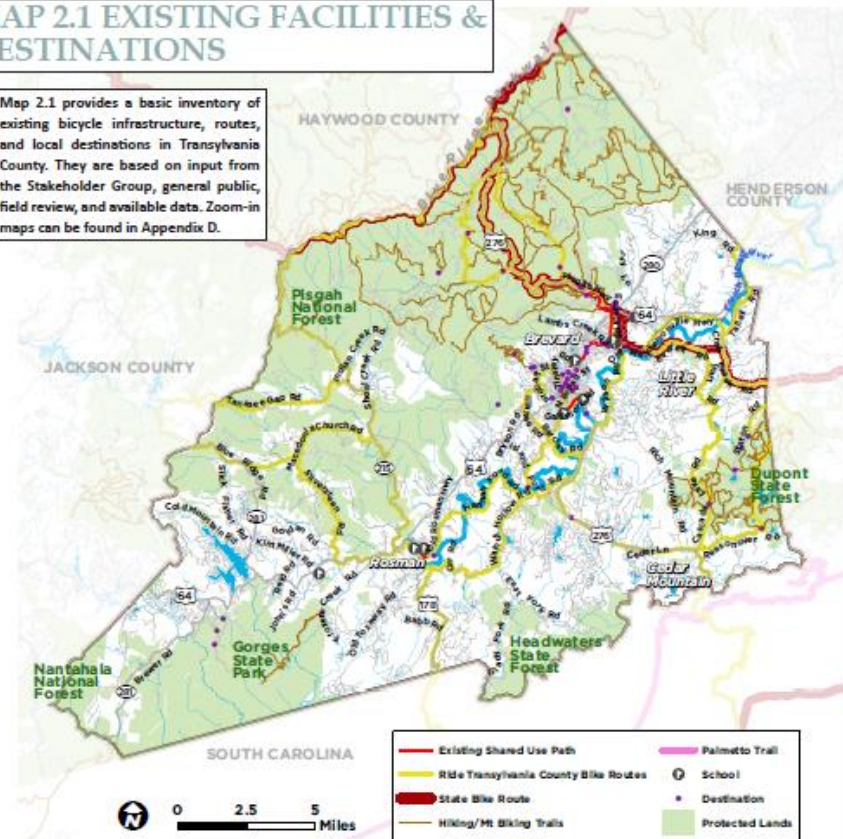
As highlighted in Chapter 1, the US Census also collects commuting statistics by mode of travel to work. The table below highlights the relatively low levels of bicyclists currently commuting to work by bicycle in Transylvania County, North Carolina, and nationwide.

Transylvania County	0.5%
NC Average	0.2%
US Average	0.6%

% Bike to Work:  
US Census  
Bureau, 2012-  
2016 American  
Community Survey

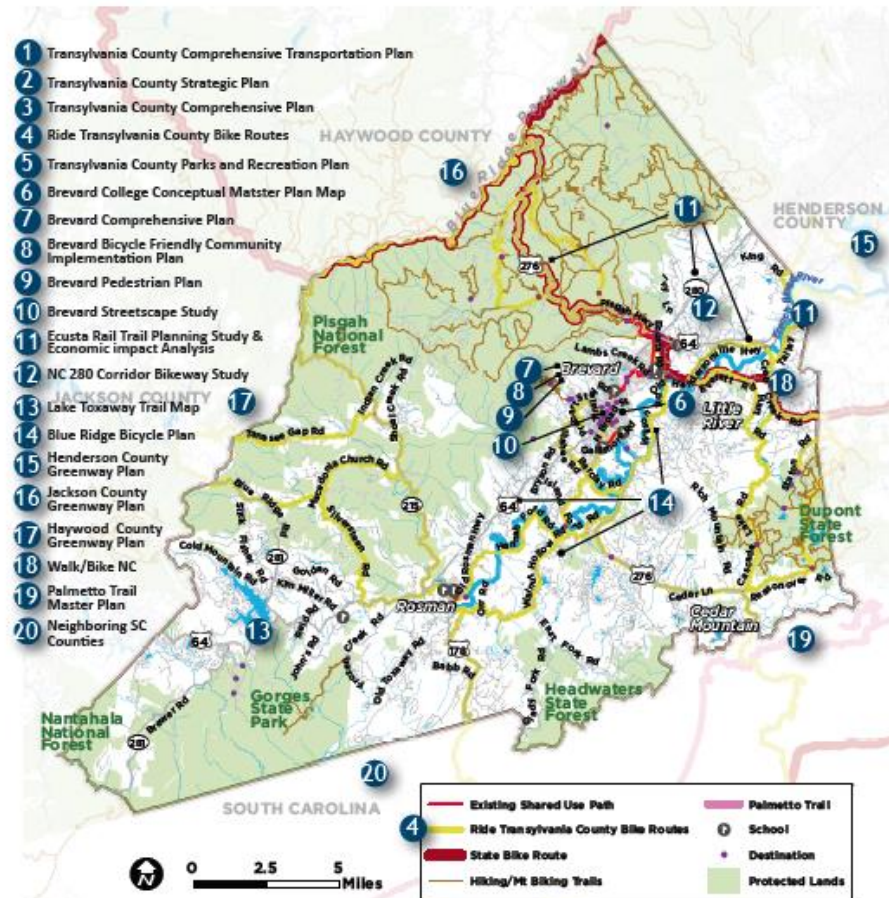
## MAP 2.1 EXISTING FACILITIES & DESTINATIONS

Map 2.1 provides a basic inventory of existing bicycle infrastructure, routes, and local destinations in Transylvania County. They are based on input from the Stakeholder Group, general public, field review, and available data. Zoom-in maps can be found in Appendix D.



## MAP 2.2 PLAN REVIEW

This map highlights past planning efforts and key recommendations from those plans that are relevant to this planning process. These are important elements from which to build recommendations for Transylvania County. Further plan review detail can be found in Appendix D.





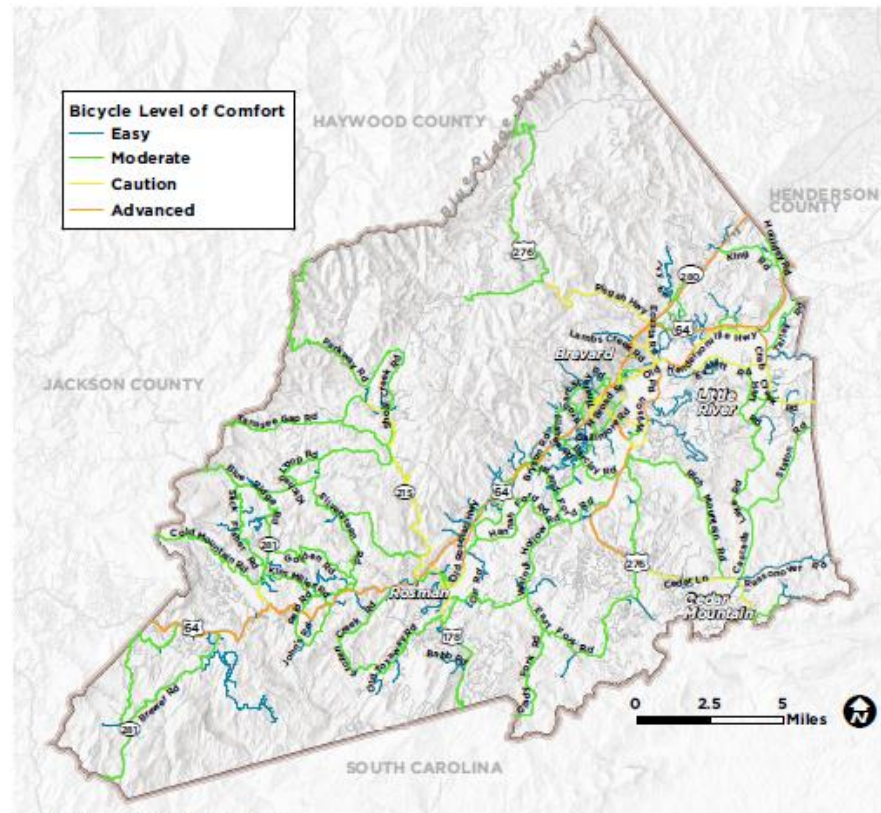
## MAP 2.3 BICYCLE LEVEL OF COMFORT

The project team developed a rating system to evaluate roads across Transylvania County to determine biking suitability. In addition to using this data in developing recommendations, this system was used to create this suitability map, classifying each roadway by comfort level for a moderately experienced bicyclist. The data available to classify those roadways includes traffic volumes, speed limits, presence of 4' or wider paved shoulder or bike lane, and designated truck routes.

Much of Transylvania County is covered by easy and moderate (blue and green) routes - generally, these are relatively lower traffic volume/speed neighborhood streets (blue) or low traffic volume/higher speed rural roadways such as East Fork Road (green). The majority of the roadways that provide lower comfort levels are found along Transylvania County's arterial roadways that separate most areas of Transylvania County from one another and carry the highest traffic volumes and speeds.

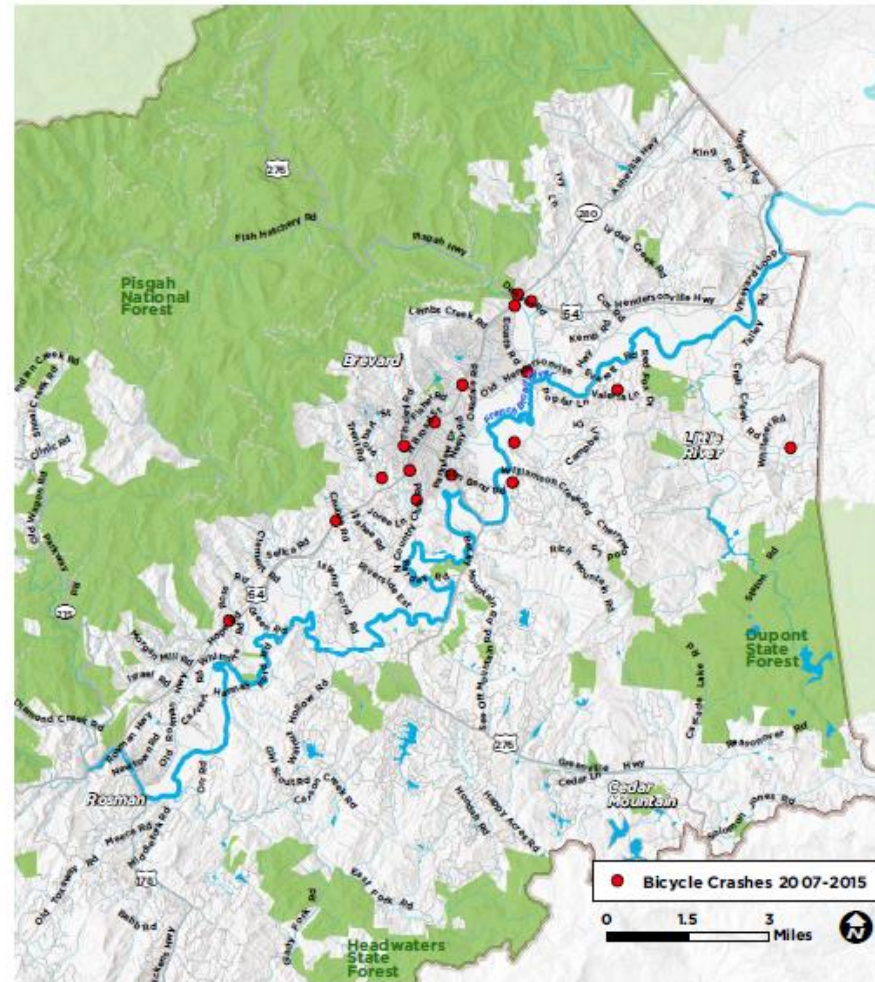
Topography also plays a key role in Transylvania County. While topography is not directly included in this analysis, many roadways in Transylvania County have steep hills that are an important factor in the experience of a bicyclist. Particular examples in Transylvania County include Pisgah Highway (US 276), Parkway Road (NC 215), Walnut Hollow Road, and Rich Mountain Road.

See Appendix D further detail to the characteristics of key roadways across Transylvania County.



## MAP 2.4 BICYCLE CRASHES 2007-2015

This map examines the most recently available bicycle crash data for Transylvania County from 2007-2015. During this time period, 17 crashes were reported, eight of which were either along or very close to US 64 and US 276. Three out of the 17 crashes were along Wilson Road.





## PUBLIC INPUT SUMMARY

Public input during this planning process and related planning processes were recorded and incorporated into this document. Stakeholder group members helped spread the word about the plan in order to garner responses about existing conditions and areas for improvement. During public meetings, stakeholder group members and residents marked up maps and completed open comment sheets to share their ideas and preferences with respect to bicycling in Transylvania County.

Summaries of several public feedback mediums are included below and on the following pages, which include the following:

- Existing Conditions and Draft Plan public open house workshops for the Transylvania County Bicycle Plan
- SPOT 5.0 Bicycle and Pedestrian Project survey results
- Brevard College Bicycle Survey
- 2025 Transylvania County Comprehensive Plan survey results



Sign at the driveway entrance of the Little River Community Center advertising for the public open house workshop held in Little River on June 26th.

## TRANSYLVANIA COUNTY OPEN HOUSE WORKSHOPS

Four open house workshops were held during the existing conditions phase of the Transylvania County Bicycle Plan to gather input from the public specific to bicycle infrastructure, programming, and the bicycle planning process in general. These workshops were advertised through social media, flyers, and a press release. All of the public input sessions were drop-in formats. Below are the dates and locations of the first four public open house workshops. The following pages provide a summary of the workshop feedback received. All comments received are compiled in Appendix C.

### Public Input Wanted!

### Future Bicycle Infrastructure to be Determined



828.884.3205

<http://planning.transylvaniacounty.org/>

Transylvania County Planning and Community Development is working with Alta Planning and Design to develop a Comprehensive Bicycle Plan for the County

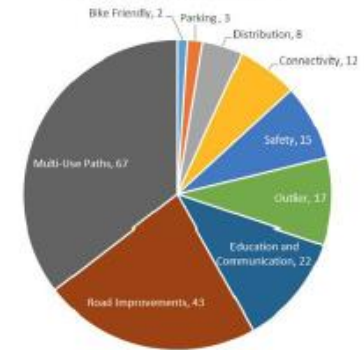
### Drop-In Sessions will be held:

- June 26<sup>th</sup> 6:30-8:30 Little River Community Center,
- June 28<sup>th</sup> 4:30-6:30 Rosman Town Hall,
- July 9<sup>th</sup> 4:30-6:30 Rogow Room of the Transylvania Library,
- July 16<sup>th</sup> 4:30-6:30, Cedar Mountain Community Center

Four public open house workshops were held in different parts of Transylvania County during the existing conditions phase of the planning process.

## Open Ended Response Question about Share your Thoughts, concerns, priorities and results

What would you like to see?  
189 open ended responses



For data categorization purposes, the term "multi-use paths" includes greenways, trails, bike paths, shared use paths, Ecusta Trail and NC280 Trail



### TYPES OF BICYCLE INFRASTRUCTURE

Which do you like best? Vote with your dots & leave comments below.





# Ch. 3

- Recommendations
  - Bicycle Facility Types
  - Projects in Development
  - Priority Network
  - Comprehensive Network
  - Program Recommendations

## CHAPTER 3: RECOMMENDATIONS



## BICYCLE FACILITY TYPES

These are the primary facility types recommended in this plan. See the maps (and legends) in this chapter to see where these different types of facilities are recommended in Transylvania County. For more information on facility design, please see the list of design resources in Appendix A.







## KEY RECOMMENDATIONS:

- 1 KEEP MOMENTUM ON BICYCLE PROJECTS THAT ARE ALREADY IN-DEVELOPMENT.**

Map 3.1 features existing facilities along with projects that have some level of funding, design, or construction in progress. These "in-development" projects should be fully funded first, as the lowest hanging fruit for new bicycle infrastructure.
- 2 STRATEGICALLY AND PROACTIVELY FUND AND BUILD PRIORITY PROJECTS.**

Map 3.2 features a set of priority projects that developed out of this planning process and previous planning processes. These are detailed in individual project cut-sheets (starting on page 50) that summarize why the project is a priority, and what the key opportunities and challenges are to its development. See the Priority Project Considerations (p. 48) for how priorities were selected.
- 3 USE THE COMPREHENSIVE NETWORK OF RECOMMENDATIONS TO BUILD OTHER PROJECTS INCREMENTALLY OVER TIME.**

As Transylvania County continues to grow, new development and roadway construction projects should incorporate facilities recommended in Map 3.3. As progress is made on priority projects, new priorities should be selected from this comprehensive map of recommendations.
- 4 IMPLEMENT NEW PROGRAMS AND POLICIES THAT SUPPORT AND ENCOURAGE BICYCLING.**

As new facilities are built, they will need to be maintained with coordination between agencies for multi-jurisdictional projects; strategically lowering posted speed limits, identifying solutions for steep hills, capitalizing on numerous bicycle-related events and continuing the Watch for Me NC educational campaign will add to a comprehensive effort toward both bicyclist and motorist safety.

Together, these recommendations make up the core of this plan, as featured in Chapter 3. They are supplemented by detailed implementation guidance in Chapter 4, including a list of resources for the latest information on bicycle facility design and bicycle-related policy.

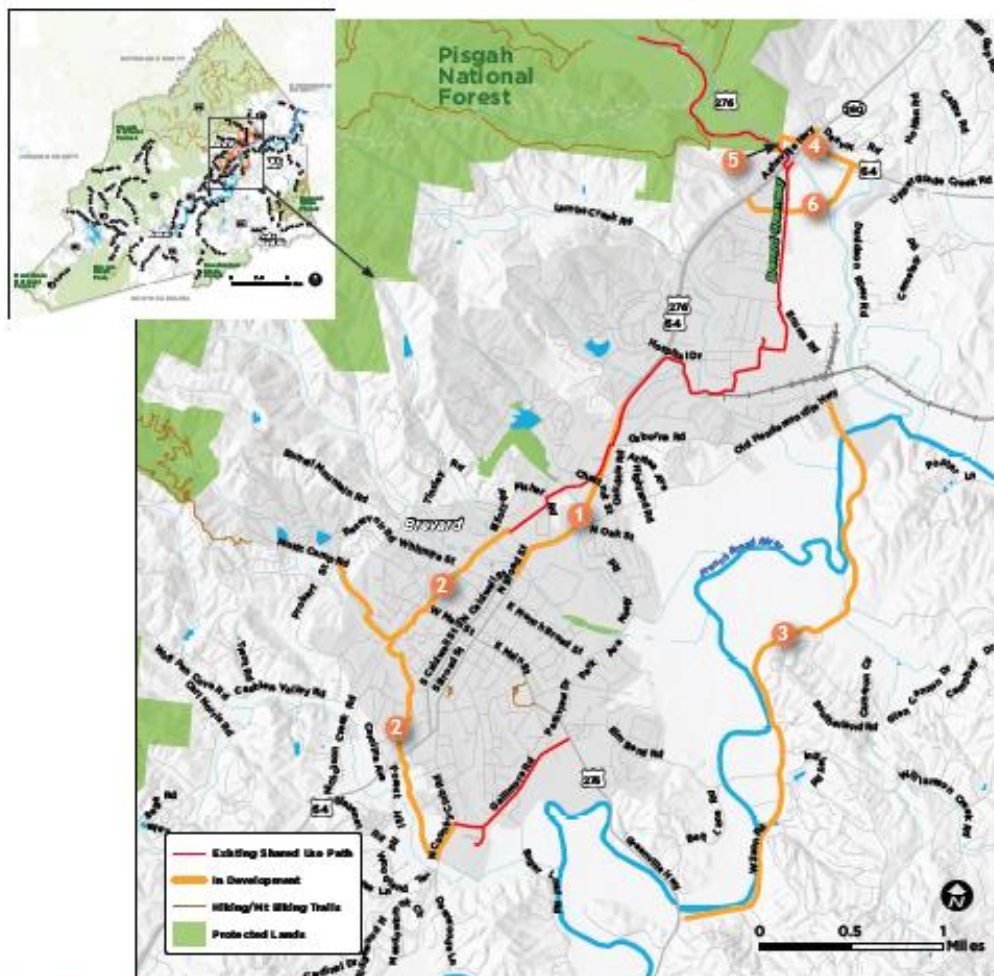




## MAP 3.1 PROJECTS IN DEVELOPMENT

This map features existing facilities along with projects that have some level of funding, design, or construction in progress. These "in development" projects should be fully funded first, as the lowest hanging fruit for new bicycle infrastructure. These are critical to improving bicycle infrastructure connectivity in Transylvania County. Key projects in development include the following:

- 1 N. Broad Street from Fortune Cove Road to North Caldwell Street bike lanes and sidepath (R-5800)
- 2 Brevard priority greenway development, committed to completion in summer 2021
- 3 Wilson Road improvements, paved shoulders (R-5763)
- 4 US 64/US 276/NC 280 intersection improvements, including bicycle and pedestrian accommodations (R-5799)
- 5 Davidson River bicycle/pedestrian bridge from Brevard Greenway across Davidson River to business at the US 64/US 276/NC 280 intersection (EB-5858)
- 6 Davidson River Village Connector to include bike lanes (new road construction from Asheville Hwy (US 64/US 276) to Hendersonville Hwy (US 64) (R-5605)



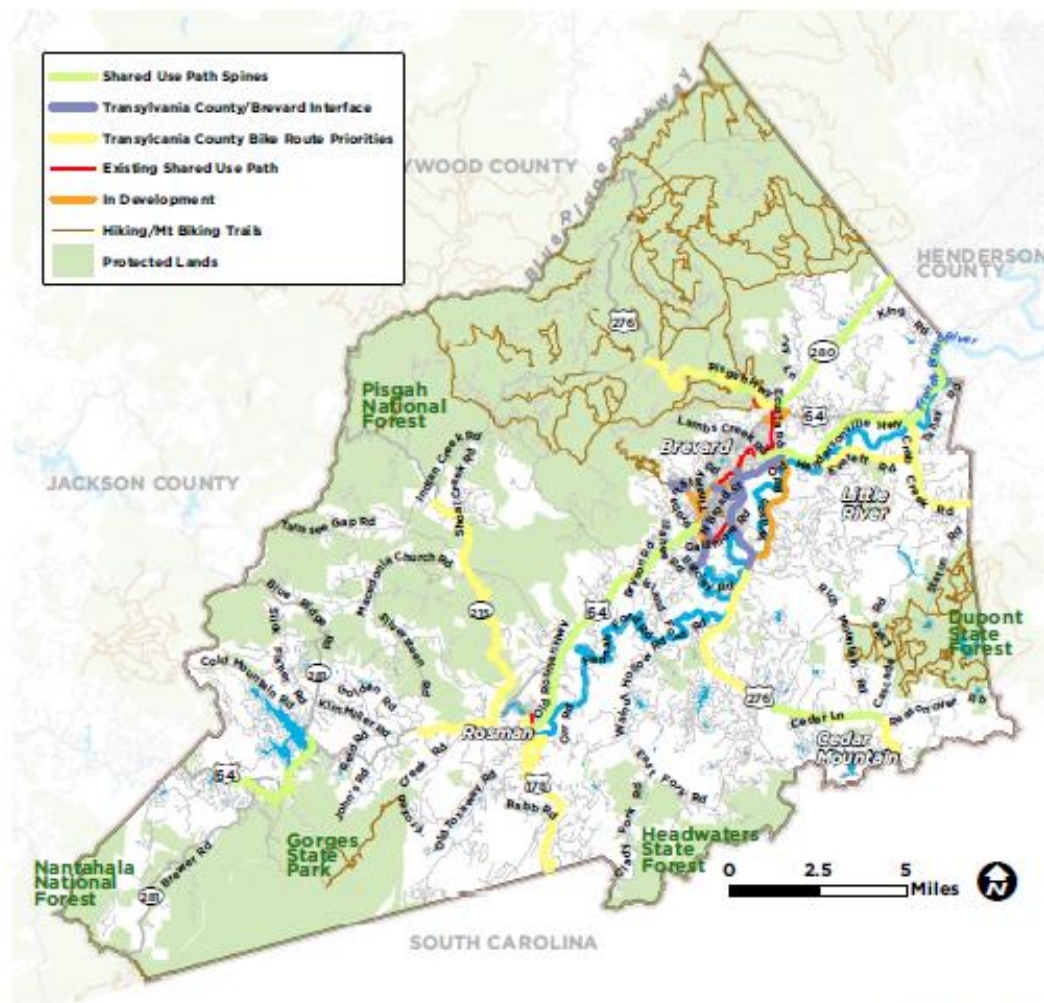




## MAP 3.2 PRIORITY NETWORK

Over time, opportunities to implement this priority network will involve multiple jurisdictions, funding sources, and time. The elements of this priority network were most consistently mentioned in stakeholder group meetings and public outreach, and each component strategically adds value to bicycle connectivity, connecting key destinations across Transylvania County. This map includes the following elements.

- Shared Use Path 'Spines' - These projects reach out in each direction of Transylvania County, providing a physically separated 'spine' that can form the key building blocks for comprehensive connectivity between or through Transylvania communities.
- Transylvania County/Brevard Interface - As the Brevard bicycle network continues to develop, multijurisdictional efforts will be needed to connect this network beyond the City of Brevard municipal limits.
- Transylvania County Bike Route Priorities - Higher traffic volume, higher speed sections of these routes should be improved first with higher degrees of separation from automobile traffic to the extent possible.





## PRIORITY PROJECTS - TRANSYLVANIA COUNTY SHARED USE PATH SPINES:

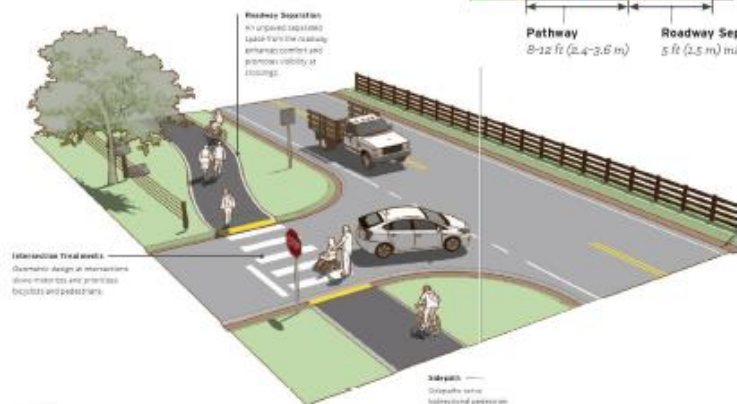
Several shared use path connections have been identified in this planning process and previous planning process that can serve as 'spines' of connectivity through or between Transylvania County communities. These projects provide physical separation between bicyclists and motorists, providing options for all ages and abilities of bicyclists (and pedestrians).

- 1 Brevard to Rosman** - This connection includes a proposed shared use path between Brevard and Rosman along the US 64 corridor. This would provide a link between the two largest population centers in Transylvania County, and serve as an essential passageway to the southwestern portion of Transylvania County, including Gorges State Park and the Lake Toxaway community. This corridor is also identified as a designated growth area in the Transylvania County Comprehensive Plan.
- 2 Brevard to Mills River** - NC 280 serves as a direct commercial link from Brevard through the northern/northeastern end of Transylvania County, connecting directly to Mills River, and eventually Asheville. This project would consist of a shared use path along or near the NC 280 corridor as identified in the 2014 Mills River NC 280 Corridor Study. This corridor provides the flattest connection through the valley, also serving as a gateway into Transylvania County and Pisgah National Forest from the north. The southern terminus of this project could connect into the future NC 280/US 64/US 276 intersection improvements and Davidson River bike/ped bridge that will also connect to the Brevard Greenway and Pisgah National Forest.

- 3 Ecusta Rail Trail** - The proposed Ecusta Rail Trail was the most often cited improvement needed for bicycling in Transylvania County during this planning process. Completely separated from roadways, this project would utilize the old Ecusta railroad corridor. It provides a relatively flat, direct connection from the Brevard Greenway through northeastern Transylvania County, Little River, and eventually Hendersonville. US 64, Old Hendersonville Hwy, Crab Creek Road, and Everett Road, which carry high traffic volumes and speeds, provide a low level of comfort for the average bicyclist and are currently the only bicycling alternatives through this part of the County.
- 4 Lake Toxaway Trail** - The proposed shared use path through Lake Toxaway highlights an opportunity to create a spine through the heart of the community as identified in the Lake Toxaway Trail Plan. This project would connect businesses, residential areas, Lake Toxaway dam, and Gorges State Park, along and near the US 64 corridor.
- 5 Cedar Mountain Trail** - This proposed shared use path connects from See Off Mountain Road to Cascade Lake Road along the north side of US 276. This project would connect businesses, the Cedar Mountain Community Center, and residences through the heart of the Cedar Mountain community. This trail could also serve as a connection to Cascade Lake Road toward Dupont State Forest trails.



See the Small Town and Rural Multimodal Network Design Guide for further detail regarding design best Practices and options: shared use paths and sidewalks - <http://ruralsdesignguide.com/physically-separated>



- Priority Shared Use Path Projects**
- Existing Shared Use Path**
- Hiking/Mt Biking Trails**
- In Development**

0 2.5 5 Miles





## PRIORITY PROJECTS - TRANSYLVANIA COUNTY/ BREVARD INTERFACE:

As the Brevard bicycle network continues to develop, multijurisdictional efforts will be needed to connect this network beyond the City of Brevard municipal limits. While the Brevard to Rosman, Brevard to Mills River, Ecusta Rail Trail, and Avery Creek Road project sheets cover some of these, several other multijurisdictional links are shown on the map to the right to improve Brevard/Transylvania Bicycle circulation. Aside from the Greenville Hwy segment connecting to Hap Simpson Park, all of these projects are currently under consideration for STI funding in SPOT 5.0 and could be completed as part of future roadway improvement projects. Incorporating bicycle facilities into the design of these projects now will save significant money down the road due to the high degree of difficulty in adding bicycle facilities after a roadway corridor has been improved.

Preliminary planning level cost estimates have been created for these projects during the SPOT 5.0 process and are listed below as well. While all of these projects will not be funded during this round of SPOT 5.0, the remaining unfunded projects should remain on the priority list to create a comprehensive bicycle network over time.

These projects include:

- 1 **Greenville Hwy/US 276** - link from Gallimore Road sidepath/Brevard High School and Elementary to Hap Simpson Park/Wilson Road/Rich Mountain Road: This stretch of Greenville Hwy is a critical link between neighborhoods and schools in southern Brevard to Hap Simpson Park, Wilson Road, Rich Mountain Road, and eventually Cedar Mountain and Dupont State Forest. Bicycle improvements should include physical separation from automobile traffic as a sidepath along the roadway or along a potential future sewer easement away from the roadway. One of the key challenges for this segment is the likely need for constructing a bike/ped bridge across the French Broad River.

» **DISTANCE = 1.6 MILES**

- 2 **Old Hendersonville Hwy and Chestnut Street** - links to northeast Transylvania County: These short links would provide a significant improvement in connectivity from the Brevard Greenway and future improvements to N. Broad Street and Wilson Road to the neighborhoods, businesses, schools, and recreation opportunities in the immediate area (in addition to the northeastern portion of Transylvania County). Because these segments carry higher traffic volumes and speeds, physical separation from the roadway is recommended (consider sidepath and separated bike lane options during the design phase).

» **DISTANCE = 2.4 MILES**

- 3 **N. Country Club Road from S. Broad Street to Illohee Road/Barclay Road** - links to south/southwest Transylvania County: These short links would provide a significant improvement in connectivity from the southern part of Brevard to County bike routes and destinations to the south including Rosman. This is a key pinch-point for bicyclists heading south because of the relatively higher traffic volumes and narrow roadway corridor. Because these segments carry higher traffic volumes and speeds, physical separation from the roadway is recommended where possible.

» **DISTANCE = 1.5 MILES**

- 4 **Parkview Dr/Park Ave/Neely Rd from US 276 to Old Hendersonville Hwy** - links north/south along the east side of Brevard/Transylvania County boundary: This corridor would provide a direct link from the Brevard Greenway and future bike lanes along N. Broad Street to the Gallimore Road sidepath. Part of Neely Road is currently 35 mph - it is recommended to lower this to 25 mph. Buffered bike lanes are recommended due to higher traffic volumes.

» **DISTANCE = 1.5 MILES**

- 5 **Brevard College Greenway** - links Brevard College campus to the developing Brevard bike network as well as potential future connectivity to Neely Road and the French Broad River corridor. The Brevard College greenway through the heart of campus is a top priority for Brevard College.

» **DISTANCE = 1 MILE**

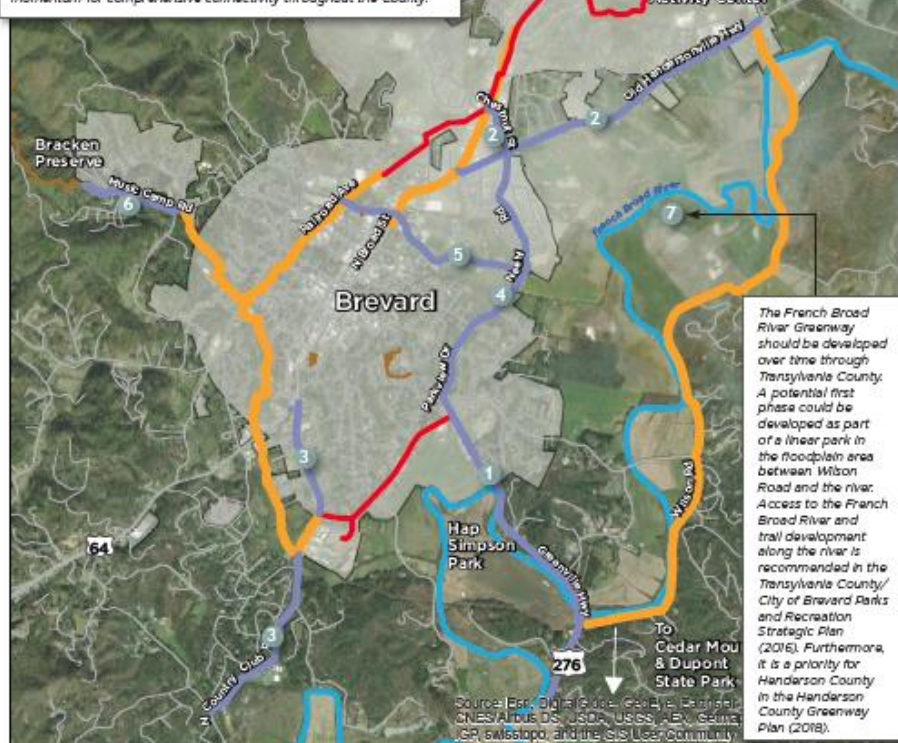
- 6 **Music Camp Road** - link to Bracken Preserve: Music Camp Road is a low traffic volume roadway that provides the final, steep link from the developing Brevard greenway system to Bracken Preserve. Bicycle improvements along Music Camp Road should include shared lane markings and wayfinding signage. Traffic calming elements such as speed tables should be considered as well.

» **DISTANCE = 0.5 MILES**

- 7 **French Broad River Greenway** - see call-out box in the map on the following page highlighting potential greenway opportunities along the French Broad River.

The City of Brevard is committed to completing its proposed priority greenway projects (see page 44 of the City of Brevard Pedestrian Plan (2018 update)) by the summer of 2021. This will be a significant step forward for bicycling (and walking) in Brevard. The projects highlighted in green below submitted in SPOT 5.0 will build upon these efforts and serve as connection opportunities for connectivity into Transylvania County.

Furthermore, the Brevard Streetscape Study (2012) details improvements along Broad Street and Main Street in the downtown core including bicycle facilities. In addition to these proposed improvements, bicycle boulevard opportunities along neighborhood streets such as Jordan Road, Maple Street, S. Johnson Street, S. Rice Street, and Franklin Street can significantly enhance bicycle circulation in the downtown core. These improvements in combination with the developing greenway network and implementation of SPOT 5.0 projects over time will create comprehensive connectivity through the heart of Transylvania County's largest community, and provide significant momentum for comprehensive connectivity throughout the County.



The French Broad River Greenway should be developed over time through Transylvania County. A potential first phase could be developed as part of a linear park in the floodplain area between Wilson Road and the river. Access to the French Broad River and trail development along the river is recommended in the Transylvania County/City of Brevard Parks and Recreation Strategic Plan (2016). Furthermore, it is a priority for Handerson County in the Handerson County Greenway Plan (2018).



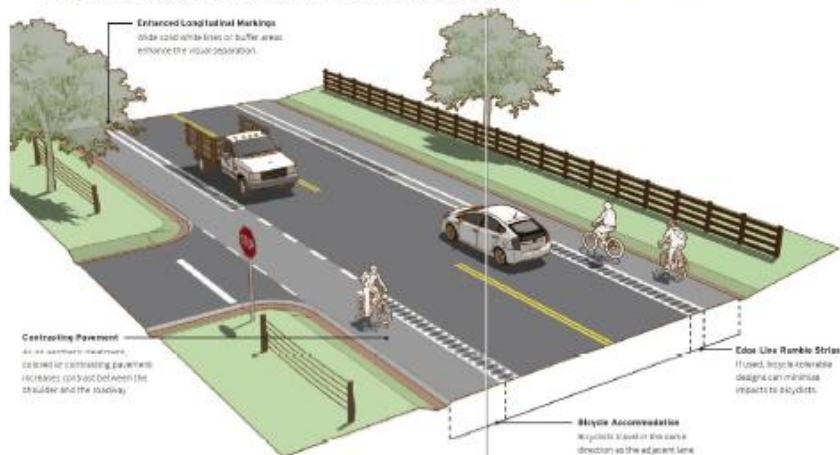
## PRIORITY PROJECTS - TRANSYLVANIA COUNTY BIKE ROUTES:

The Transylvania County bike routes recently updated in 2017 and presented in the Ride Transylvania County Bike Map connect every corner of Transylvania County. These roadways should be standardized with paved shoulders/ dedicated bike lanes over time. Higher traffic volume, higher speed sections of these routes (highlighted in dark green in map to the right), should be improved first with higher degrees of separation from automobile traffic to the extent possible. Wide paved shoulders/bike lanes with bicycle friendly rumble strips may be the best option for improving bicycle comfort along these corridors and should be explored further during the design phase. For further design guidance for paved shoulders and bike lanes, see the Small Town and Rural Multimodal Network Design Guide [here](http://ruralsdesignguide.com/visually-separated) - <http://ruralsdesignguide.com/visually-separated>.

These higher traffic volume sections include the following (note: Pisgah Hwy southeast of Avery Creek Road, N. Country Club Road, and Greenville Hwy/US 276 north of Rich Mountain Road are included in the previous priority project pages):

- 1 **Greenville Hwy/US 276** - from Rich Mountain Road to the South Carolina border (note: section north of Rich Mountain Road to the Gallimore Road side-path is covered in the Brevard/Transylvania County Interface project sheet): This section of US 276 provides the flattest, direct link to Cedar Mountain, with further connectivity to Dupont State Park.
- 2 **Old Hendersonville Hwy/Everett Road/Crab Creek Road** - from the Wilson Road/Ecusta Road intersection, these roads serve as the main arteries to Little River and beyond to Dupont State Forest and Henderson County. Without the Ecusta Rail Trail, these roads are the only options for bicyclists and currently carry high traffic volumes and speeds.
- 3 **Rosman Hwy - US 64** southwest of Rosman and US 178 south of Rosman are the main corridors connecting to the south and far southwest sections of Transylvania County. As such, they carry higher traffic volumes and speed limits along these stretches in particular.
- 4 **NC 215/Parkway Dr and US 276 Pisgah Hwy** - these two sections of US 276 carry higher levels of traffic volumes and speeds. Traffic volumes drop substantially closer to the Blue Ridge Parkway. Furthermore, these roads are very steep and narrow, and are popular bicycling routes due to connectivity to the Blue Ridge Parkway.

See the Small Town and Rural Multimodal Network Design Guide for further detail regarding design best Practices and options: Paved shoulder and bike lanes - <http://ruralsdesignguide.com/visually-separated>



- Ride Transylvania County Routes with Highest Traffic Volumes**
- Ride Transylvania County Bike Routes**
- Existing Greenway**
- Hiking/Mt Biking Trails**
- In Development**

0 2 4 Miles





## REGIONAL TRAILS AS AN ECONOMIC DEVELOPMENT OPPORTUNITY

Transylvania County is uniquely positioned as not only part of the NC Statewide Bike Route System (NC 8 Southern Highlands Bike Route), but also the Hellbender Regional Trail that will eventually connect Transylvania County to Asheville. Both NC and SC's Mountains to Sea Trail connect along Transylvania County's border as well. There are several existing features from which to build (the signed NC 8 Southern Highlands Bike Route, the existing NC Mountains to Sea Trail along the Blue Ridge Parkway, and the existing SC Mountains to Sea Trail (Palmetto Trail) that runs along Transylvania County's southeastern border with South Carolina in Headwaters State Forest), but regional bicycle connectivity will only come with connected/continuous, dedicated bicycle facilities. Building dedicated bicycle infrastructure along the NC 8 Southern Highlands Bike Route and working to complete regional links to surrounding counties is critical for the positive economic impact often associated with popular trails. This type of impact can come in the form of increased property values and revenue from increased tourism (in addition to savings associated with health benefits of active living). A research group (Headwaters Economics) compiled 120 studies on the impacts of trails in a single library, searchable by type of benefit, use, year, and region.

For more on this topic, please refer to this research available at: <https://headwaterseconomics.org/economic-development/trails-pathways/trails-research/>.

## NC 8 SOUTHERN HIGHLANDS BIKE ROUTE

From the NC Bikeways website (<https://www.ncdot.gov/bikeped/ncbikeways/routes/nc8-southern-highlands/default.aspx>):

*This ~120 mile route begins northwest of Brevard with a 15-mile downhill from its connection with NC 2 Mountains to Sea on the Blue Ridge Parkway, passing through small mountain towns such as Brevard, Saluda, Flat Rock, and Tryon. It traverses the foothills of the Blue Ridge Mountains southeast toward the South Carolina border before turning northeast through Forest City and finishing at its intersection with the NC 6 Piedmont Spur Bike Route in Lincolnton.*

The existing signage for NC 8 Southern Highlands Bike Route follows Pisgah Highway from the Blue Ridge Parkway to US 64, Davidson River Road, Everett Road, and Crab Creek Road through Transylvania County. North Carolina's Statewide Pedestrian and Bicycle Plan (Walk/Bike NC) recommends amending the route to utilize Talley Road into Henderson County to connect directly to Hendersonville.

## THE HELLBENDER REGIONAL TRAIL

The Hellbender Regional Trail is a concept that would feature trail connectivity across western North Carolina counties, including Transylvania County. The Brevard to Mills River (NC 280), Rosman to Brevard, and Ecusta Trail Trail shared use path projects are proposed as part of this regional trail network. These would link into Henderson County's network as identified in the Henderson County Greenway Plan.

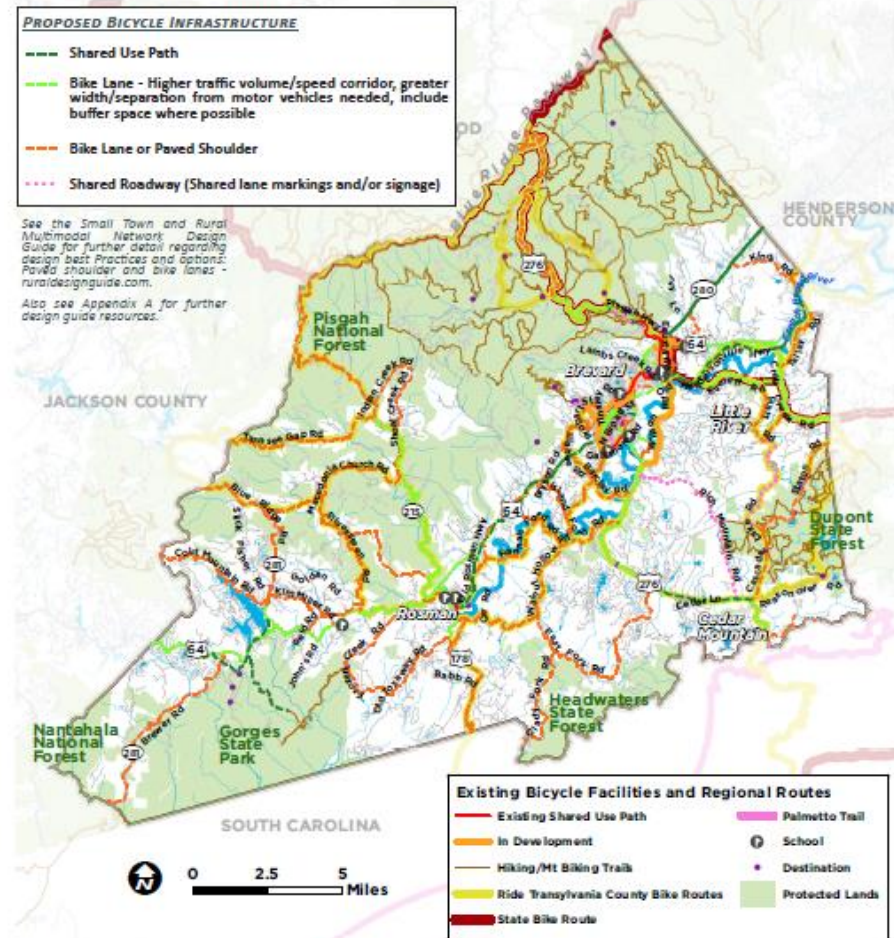


NC 8 Southern Highlands Bike Route is detailed in Walk/Bike NC section 9.3.

<https://www.ncdot.gov/bikeped/walkbikenc/plan-resources/default.aspx#recommendations>

## MAP 3.3 COMPREHENSIVE NETWORK

This comprehensive network should be built incrementally over time. These are long term recommendations that may be implemented in conjunction with future roadway projects, new development, and/or a myriad of potential public/private/non-profit sector partnerships. While longer term, they are an important vision of this plan, as they show what the potential is for any given future development or roadway construction that may provide an opportunity for incorporating bicycle facilities. As progress is made on priority projects, new priorities should be selected from this comprehensive map of recommendations.





## PROGRAM RECOMMENDATIONS

These program recommendations are essential and complementary to the recommended infrastructure projects. Each of the following program ideas (among others) were presented at stakeholder group meetings and public open house workshops to gauge interest among Transylvania County residents. The program ideas that follow were the highest rated by the public.

### BICYCLE FACILITY MAINTENANCE

Bicycle facilities require regular maintenance in order to keep them free of debris and structural deterioration. Bike lanes are especially vulnerable to the accumulation of leaves and gravel as they are blown off the travel lane by automobile traffic. Such accumulation, as well as potholes, cracks, and joints, create serious obstacles and hazards to bicyclists. A good maintenance program is necessary to protect the public investment in bikeways and keep them safe for their users.

Currently, Transylvania County does not have any dedicated bicycle lanes, but as this plan is implemented, the County in partnership with NCDOT and Transylvania communities should commit to a maintenance program that sweeps its future bicycle lanes and shoulder space (ie: future Wilson Rd improvements, sweep as needed) on a regular basis. The American Association of State Highway and Transportation Officials (AASHTO) has provided some model maintenance policy language in its Guide for the Development of Bicycle Facilities. At right are some examples of recommended maintenance policies regarding roadway sweeping, specifically. The AASHTO Guide also has policy recommendations for the following areas: surface repairs, pavement overlays, vegetation, traffic signal detectors, signs and markings, drainage improvements, chip sealing, patching activities, utility cuts, snow clearance, and operating bikeways in work zones.



#### Example Maintenance Policies from the AASHTO Guide for the Development of Bicycle Facilities

- Establish a regular sweeping schedule for roadways and pathways that anticipates both routine and special sweeping needs. This may involve more frequent sweeping seasonally, and also should include periodic inspection, particularly in areas that experience frequent flooding, or in areas that have frequent vandalism. The sweeping program should be designed to respond to user requests for sweeping activities.
- Remove debris in curbed sections with maintenance vehicles that pick up the debris; on roads with flush shoulders, debris can be swept off the pavement.
- Reduce the presence of loose gravel on roadway shoulders by paving gravel driveway approaches, prioritized on corridors that receive the heaviest bicyclist use. Also require parties responsible for debris to contain it; for example, require tarps on trucks loaded with gravel. Local ordinances often require tow-vehicle operators to remove glass after crashes, and contractors are usually required to clean up daily after construction operations that leave gravel and dirt on the roadway.

### GREENWAY TRAIL MAINTENANCE

Greenway maintenance is essential to the long-term viability and sustainability of the greenway network in Transylvania County. Construction of greenway trails should not take place without a maintenance plan in place. This Plan recommends a strong, collaborative approach to maintenance.

#### MAINTENANCE PRINCIPLES

The greenway trail system should be viewed and maintained as a public resource, serving generations to come. The following guiding principles will help assure the preservation of a first class system:

- Good maintenance begins with sound planning and design.
- Foremost, protect life, property and the environment.
- Promote and maintain a quality outdoor recreation and transportation experience.
- Develop a management plan that is reviewed and updated annually with tasks, operational policies, standards, and routine and remedial maintenance goals.
- Maintain quality control and conduct regular inspections.
- Include field crews, police and fire/rescue personnel in both the design review and on-going management process.
- Maintain an effective, responsive public feedback system and promote public participation.
- Be a good neighbor to adjacent properties.
- Operate a cost-effective program with sustainable funding sources.

#### GREENWAY TRAIL FLOODING

As considerations for greenway development along the French Broad River are examined in Transylvania County, flooding considerations will need to be addressed. In general, trail flooding can sometimes be addressed by elevating sections of trail as a boardwalk, but that option may be constrained by floodplain regulations in some areas. Another potential solution is to reroute trail alignments further from floodways. At a minimum, when trails are designed to flood, then quarterly inspections should be made to ensure their integrity, and signage should be used to both caution trail users of flooding potential, and to inform them that the trail is designed to flood periodically.

#### Longevity of Facilities

• Mulch	2-3 years
• Granular Stone	7-10 years
• Asphalt	7-15 years
• Concrete	20+ years
• Boardwalk	7-10 years
• Bridge/Underpass	100+ years

#### Range of Trail Maintenance Costs

Reported annual maintenance costs from cities and regions for shared-use trails range widely, from just \$500/mile to over \$15,000/mile. As a North Carolina example, the Town of Cary uses \$6,000/mile for annual mowing and trash pick up, and minor repairs like replacing a fence rail; they budget asphalt and drainage repairs separately on case by case basis. Some key factors affecting these wide ranges include:

- Quality of materials used, and frequency of sealing and reconstruction of the path
- Amount of leaf drop affecting the trail that requires concentrated sweeping
- Amount of flooding of the trail that has to be cleaned up
- Amount of snow removal/grooming needed
- Whether or not mowing, irrigation, and other care of adjacent open space is calculated in the cost
- Presence of waste receptacles

The largest factor affecting the annual maintenance figures of different cities is whether or not the eventual trail reconstruction is accounted for in annual maintenance budgets, as opposed to being considered as separate capital item.





## WATCH FOR ME NC: MEDIA CAMPAIGN

In 2018, Transylvania County's Planning Department pulled together a number of organizations to assist with the Watch for Me NC campaign. The City of Brevard's Police Department has been a great advocate for the program and the Blue Ridge Bicycle Club has worked hard to educate the public. Other Watch for Me NC partners include:

- Brevard College
- Blue Ridge Bicycle Club
- City of Brevard
- Friends of Ecusta Trail
- Land of Sky Regional Council
- Transylvania County Health Department
- Transylvania County Parks and Recreation Department
- Transylvania County Sheriff's Department

## EDUCATIONAL AND ENFORCEMENT ACTIVITIES

Watch for Me NC materials were distributed to insurance companies, displayed at local bike shops and outfitters, and made available at Pisgah National Forest, DuPont State Forest, and Gorges State Park. Children and young adults in Transylvania County received information at elementary schools and summer camps.

Transylvania County kicked off their Watch for Me NC campaign at a Fourth of July festival, where thousands of locals and visitors received program materials. Staff were also on hand with a public safety booth at the Oskar Blues Festival in late July. The county worked to introduce the goals of Watch for Me NC to both the area's diverse rural and municipal enforcement agencies, and spent time communicating with the county Transportation Advisory Board and to the regions' Safe Routes to School coordinator.

## KEY OUTCOMES

Watch for Me NC billboards created a buzz around Transylvania County. Officials also took an innovative approach to spreading the word about safety by pressure washing stencils into the sidewalk of US 64. Awareness about bicycle and pedestrian safety issues were raised in the county



Watch for Me NC: example materials. The night, educational, poster produced during this planning process.

due to staff interviews on WSQL and press releases. Two targeted enforcement campaigns were held in the latter part of the 2016.

## LESSONS LEARNED AND RECOMMENDATIONS

Transylvania County should continue engaging and expanding upon the Watch for Me NC campaign (such as incorporating Vision Zero programmatic elements ([visionzeronet.org](http://visionzeronet.org))). Improving bicycle infrastructure will increase the effectiveness of education, as multi-faceted efforts are needed to increase bicycle friendliness of a given community.

Working with local bicycle industry professionals to help both bicyclists and motorists better understand the rules of the road and the needs of all roadway users will increase safety across the County.



## BICYCLE RIDES AND RACES: CAPITALIZING ON BICYCLE EVENTS

By the end of 2018, over 8 bicycle rides and races will have utilized the scenic landscape across or near Transylvania County, and these are excellent opportunities to promote and celebrate bicycling through the communities in which these events cross. The following rides/races are held in 2018 that are within or partially cross through Transylvania County:

- Assault on the Carolinas
- Looking Glass Tour
- Hunter Subaru WNC Flyer
- Etowah Time Trial
- Tour de Cashiers
- White Squirrel Cycling Classic
- Pisgah Monster Cross
- Dirt Diggler

Combined, these events bring thousands of bicyclists and tourists to the region each year, presenting an opportunity for communities and businesses to capture tourism dollars and market local destinations and rural amenities.

"Bikes in Beds", a 2015 report in Haywood County, NC details bicycle tourists and specifically bicyclists that participate in these types of rides and events. Many cyclists that engage in these types of events:

- Ride on 30-, 50-, or 100-mile single-day or multi-day organized events and may do this with a group, a spouse/partner or friends.
- Seek scenic areas or locations that offer some type of "reward" in terms of scenic beauty or historic value.
- May seek these events in places where they are also planning a vacation.
- Will identify pre-event ride cue sheets from local bike clubs to scout the route.
- Find events that contribute to a charity that matches their values.

Challenges for Event Bicyclists in western NC include:

- Lack of bike lanes/shoulders
- Lack of signage/wayfinding
- Terrain
- Limited published routes

Event Cyclists' needs may include:

- Well-organized events
- Convenient access
- Bathrooms and parking
- A safe, dry place to store their bike overnight
- Healthy breakfast at lodging
- Camping near event start
- Scenic vistas or routes
- Cool places to eat and drink
- Maps or cue sheets
- Bike shop for repair or rental

Ways in which communities, partner organizations, and businesses across Transylvania County can expand upon these event-based tourism opportunities include:

- Create a local/regional brand for promotional purposes.
- Develop an education campaign for hospitality industry and motorists.
- Identify/promote bicycle-friendly businesses.
- Cross-market with other outdoor activities.

Transylvania County has a significant foundation from which to further incorporate this market opportunity into the local and regional tourism strategies. Combined with bicycle infrastructure improvements, this is a key way in which communities and businesses across Transylvania County can efficiently move towards a more bicycle friendly region and diversify the economy.

Further Resources:

- Assault on the Carolinas - <https://www.assaultonthecarolinas.com/>
- Looking Glass Tour - <https://www.blueridgeadventures.net/looking-glass-tour/race-7/>
- Hunter Subaru WNC Flyer - <http://wncflyer.com/>
- Lung Buster Time Trial Series - <https://idaph.net/events/lung-buster-time-trial-series/>
- Tour de Cashiers - <https://tourdecashiers.com/>
- White Squirrel Cycling Classic - [https://www.blueridgeadventures.net/white\\_squirrel\\_cycling\\_classic/race-8/](https://www.blueridgeadventures.net/white_squirrel_cycling_classic/race-8/)
- Pisgah Monster Cross - <http://www.pisgahproductions.com/events/pisgah-monster-cross-challenge/>
- Dirt Diggler - <https://www.blueridgeadventures.net/dirt-diggler/race-2/>

## BIKE



Bike Transylvania is a publication of the Transylvania Times that hosts a website and publishes a yearly magazine in collaboration with the Transylvania County Tourism Development Authority. Both the website and magazine serve as a comprehensive guide to bicycling in Transylvania County, including as a resource for all rides and races in and near Transylvania County.



## SPEED LIMIT REDUCTION AND TRAFFIC CALMING

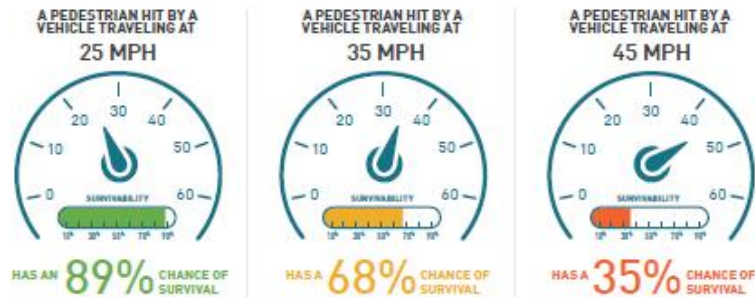
Lowering speed limits has enormous safety benefits for all users, including bicyclists, by lowering both the rate and severity of crashes. In addition to a media campaign spreading awareness, enforcement of existing speed limits as well as strategic speed limit reduction and traffic calming measures, can save lives. Several locations were specifically identified during this process, and they are as follows:

- US 276 from the US 64/NC 280 intersection to Avery Creek Road is currently 50 mph. This is a popular section for bicyclists and multiple nearby destinations include businesses proximate to the US 64/US 276/ NC 280 intersection, Davidson River Campground, Pisgah ranger office and visitor center, Schenk Job Corps and Civilian

Conservation Center, and Avery Creek Road. The speed limit in this location should be lowered to at least 35 mph.

- Dupont Road/Staton Road and Cascade Lake Road connect through sections of the Dupont State Forest and are 45-55 mph. Due to the frequency of Dupont State Forest mountain biking trails in this area, these sections of roadway should be lowered to 35mph.
- Greenville Hwy connects through the Cedar Mountain community at 45mph. This section of roadway through Cedar Mountain should be lowered to 35 mph.

Requests can be submitted by citizens and public agencies to the NCDOT Division 14 Traffic Engineer. See NCDOT Division 14 contact information here - <https://apps.ncdot.gov/dot/directory/authenticated/UnitPage.aspx?id=653>



Teft, B. C. Impact speed and a pedestrian's risk of severe injury or death. Accident Analysis & Prevention 50 (2013) 871-878.

US 276/Pisgah Hwy from the US 64/US 276/ NC 280 intersection to Avery Creek Road is a popular road for bicycling due to the frequency of Pisgah National Forest, destinations and proximity to the City of Brevard. Bicyclists on this stretch of roadway pictured to the right - the posted speed limit is currently 50 mph.



## BICYCLE FACILITIES ON STEEP HILLS

Steep hills and mountain roads are often places where limited shoulder and narrow overall road widths occur for significant distances. Bicyclists climbing these sections of road will be traveling at slower speeds. Even with lower traffic volume levels, cars may have difficulty passing cyclists, and traffic may begin to accumulate behind a bicyclist. Pisgah Highway/US 276 and Parkway Road/NC 215 are salient examples in Transylvania County.

Limited sight lines, narrow roadway widths, and steep grades contribute to this problem. Because of steep drop-offs and geographical constraints, a bicyclist may not have the opportunity to pull off to the side of the road and allow cars to pass. As a result, a line of cars may begin to form, slowly following the cyclist up the mountain. With cars sometimes traveling at higher speeds downhill in the opposite direction, opportunities to pass a cyclist (or group of cyclists) can be dangerous.

Bicyclist waiting areas/pull-offs or periodic segments of paved shoulder are a potential solution that could ameliorate this problem. This type of roadway feature could provide temporary refuge along the ascent of steep roads where bicyclists will be able to shift further to the right

or pull over altogether, allowing a line of cars to pass. These may be more feasible solutions in places where geographical constraints and/or funding may limit the addition of paved shoulder along the entirety of a steep section of roadway.

### FURTHER STUDY NEEDED

NCDOT Division 14 policy currently does not allow for periodic segments of paved shoulder along steep sections of roadway to serve as bicycle or automobile pull-offs. Paved shoulder along the length of a steep roadway is permitted. However, very long sections of steep roadway such as Pisgah Highway and Parkway Road in Transylvania County present particular problems since adding shoulder space along the length of the climb will be very difficult to implement due to geographical constraints and expense. Periodic segments of paved shoulder or pull-off areas could present a solution.

Further study is recommended to develop specific guidance for where and when periodic paved shoulder sections or designated bicycle pull-off areas may be appropriate and safe. Current engineering guidance does not specifically address this particular need and further research is needed before NCDOT Division 14 may be able to apply such facilities.

Numerous mountainous roadways in western North Carolina could benefit from such guidance and a detailed study should be conducted.



Long, steep, winding, winding climbs (such as US 276/Pisgah Hwy pictured left) can be problematic for both bicyclists and automobiles wishing to pass slower moving traffic. If limited space is available to pass, this can cause significant traffic congestion for faster vehicles wishing to pass.



A photograph of a cyclist riding away on a paved road that curves into a dense forest. The road has a double yellow line. The cyclist is wearing a red and black jersey and a white helmet. The background is filled with lush green trees and foliage.

## CHAPTER 4: IMPLEMENTATION

# Ch. 4

- Implementation
  - Key Steps
  - Project Development Opportunities
  - Key Partners in Implementation
  - Performance Measures
  - Facility Development Methods



## OVERVIEW

This chapter defines a structure and the action steps for managing the implementation of the Transylvania County Bicycle Plan. The award-winning 2025 Comprehensive Plan for Transylvania County identified four focus areas: economic health, environment health, land use and livability, and health, culture, and equity. Arguably, a more bikable Transylvania County helps to address all of these focus areas in terms of economy, environment, livability, and health. One of the specific objectives is: "Promote[s] the health and well-being of its citizens, by providing and actively supporting high-quality and well maintained parks, recreational facilities, programs and services throughout the county." In addition, the Comprehensive Plan states that in and around Brevard has a large bicycling population with higher than typical rates of bicycle commuting.

Currently, the ordinances in place that guide development, zoning, and land use are the County Subdivision Regulations and the Pisgah Forest Community Zoning Ordinance. The zoning ordinance, however, only exists for a very small area in Pisgah Forest and there is no zoning for the rest of the county. Today, within these ordinances, there are no land use and development regulations that promote bikeable new development, programs, and capital projects. See Appendix E for further detail on comprehensive policy considerations related to complete streets and greenways, bicycle-oriented design, and connectivity.

Implementing the recommendations within this plan will require leadership and dedication to bicycle facility and program development on the part of a variety of agencies and partners. Equally critical, and perhaps more challenging, will be meeting the need for a recurring source of revenue. Success will be realized through collaboration with regional and state agencies, local municipalities, the private sector, and non-profit organizations. Funding resources that may be available are presented in Appendix B of this plan.



The Stakeholder Group for the Transylvania County Bicycle Plan are key partners for implementing this plan.

## KEY STEPS

The following represent key, immediate action steps for Transylvania County and its partners:

**ADOPT THE PLAN.** Adoption does not obligate the county financially, but signals an intent to support the vision, goals, and projects of this plan in the coming years and decades.

**UPDATE COUNTY POLICIES.** Policy recommendations are presented in Appendix E. In their essence, new policies and updated existing policies are low-cost or zero-cost means for the county to influence or enforce bikeable transportation corridors and development. Priority network recommendations should be implemented as part of roadway projects that align with the priority recommendations in Chapter 3.

**BEGIN WORK ON PRIORITY PROJECTS.** The implementation of bikeway infrastructure projects will take time and will happen through multiple mechanism including the NCDOT SPOT process, rails to trails, and incidental improvements that can happen during scheduled roadway reconstruction, resurfacing, or maintenance. Because infrastructure is the high dollar item (and most critical) part of this plan, the county should consider setting aside a revenue stream for local match or standalone projects.

**ENGAGE NEW PROGRAMS AND RESEARCH.** Program recommendations can be found in Chapter 3. The county is already involved in the Watch for Me NC campaign and should begin engaging all program recommendations in 2019, working closely across departments, including Parks and Recreation, Planning, and the Sheriff's Office. Research bicycle "pull-outs" or respites along bicycle routes, especially where paved shoulder cannot be provided due to topographical or other constraints.

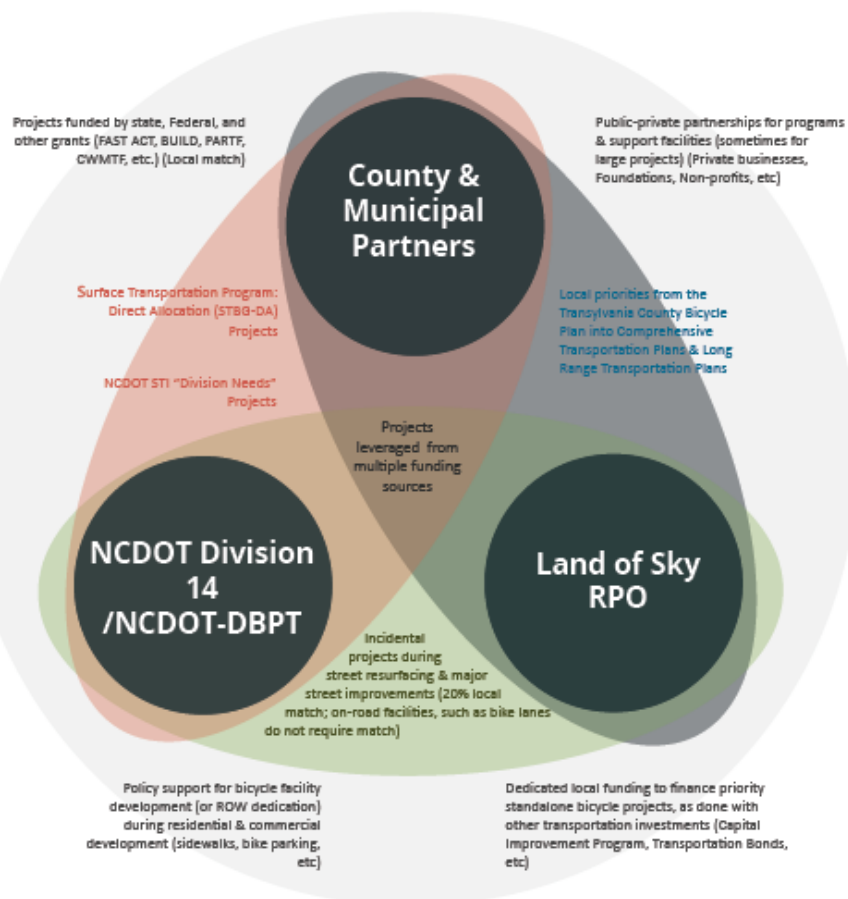
**CONTINUE BUILDING COUNTY-MUNICIPAL PARTNERSHIPS.** For Transylvania County to improve bicycle connectivity, coordination will be important with the City of Brevard, Town of Rosman, and others. The City of Brevard, at the time of this study, is pursuing greenway and bikeway development that will feed towards the county. As the region grows and new bike facilities are added, there should be regular coordination in planning and implementation.





## PROJECT DEVELOPMENT OPPORTUNITIES FOR IMPLEMENTING THE TRANSYLVANIA COUNTY BICYCLE PLAN

Project development opportunities and key players are summarized in this graphic. To implement the recommendations of this plan will require a comprehensive, well-rounded approach with public and private partnerships.



## KEY PARTNERS IN IMPLEMENTATION

### ROLE OF THE COUNTY BOARD OF COMMISSIONERS

The County Board should be responsible for understanding and adopting this plan. The Board will ultimately determine the timing of action steps, dedication of resources, and policy updates to implement this plan.

### ROLE OF THE CITY/TOWN COUNCILS

Brevard, Rosman, and township leaders should be responsible for understanding and endorsing (or adopting) this plan. Through adoption, the municipalities and townships signal support and cooperation with Transylvania County to assist with plan implementation.

### ROLE OF THE TRANSYLVANIA COUNTY PLANNING BOARD

The Planning Board serves as an advisory board to the Board of Commissioners on matters of planning and zoning. The Planning Board should be prepared to:

- Become familiar with the policy recommendations of this plan, and support its implementation.
- During subdivision master plan review, ensure required space for priority projects if applicable.
- Learn about bicycle-related policies in North Carolina. (see: <https://www.ncdot.gov/bikeped/lawspolicies/>)

### ROLE OF THE LOCAL NCDOT DIVISION 14

Division 14 of the NCDOT is responsible for the construction and maintenance of bicycle facilities on NCDOT-owned and maintained roadways in Transylvania County, or is expected to allow for the municipalities to do so with encroachment agreements. The county and its communities should be proactive and take the lead in communicating with and working with Division 14, but Division 14 should also be prepared to do the following, as they are able:

- Recognize this plan as not only an adopted plan of the county, but also as an approved plan of the NCDOT.
- Become familiar with the bicycle facility recommendations for NCDOT roadways in this plan (Chapter 3); take initiative in

incorporating this plan's recommendations into the Division's schedule of improvements whenever possible.

- Become familiar with the design standards listed in Appendix A of this plan; construct and maintain recommended facilities using the highest standards allowed by the State (including the use of innovative treatments on a trial basis).
- Notify county staff of all upcoming roadway reconstruction or resurfacing/restriping projects in Transylvania County, no later than the design phase. Provide sufficient time for comments from county staff.
- If needed, seek guidance and direction from the NCDOT Division of Bicycle and Pedestrian Transportation on issues related to this plan and its implementation.

### ROLE OF THE SHERIFF'S OFFICE

Sheriff and police departments are responsible for providing the community the highest quality law enforcement service and protection to ensure the safety of the citizens and visitors. The Sheriff's Office should be prepared to:

- Become experts on bicycle related laws in North Carolina (see: <https://www.ncdot.gov/bikeped/lawspolicies/>).
- Continue to enforce not only bicycle- and pedestrian-related laws, but also motorist laws that affect bicycling, such as speeding, running red lights, aggressive driving, etc.
- Participate in bicycle-related education programs.
- Review safety considerations as projects are implemented.

### ROLE OF DEVELOPERS

Developers in Transylvania County can play an important role in facility development whenever a project can include the enhancement of transportation facilities or the dedication and development of on-road bicycle facilities, sidewalks, trails or crossing facilities. Developers should be prepared to:

- Become familiar with the benefits, both financial and otherwise, of providing amenities for biking (including trails) in residential and commercial developments.
- Consider voluntary installation of bike infrastructure and/or contribute in-lieu fees as part of the subdivision review and approval process.
- Be prepared to account for bicycle circulation and connectivity in future developments.



A person wearing a green helmet and a blue shirt is riding a red bicycle on a paved path. The path is surrounded by dense green trees and foliage. The scene is slightly blurred, suggesting motion.

# APPENDIX B: FUNDING RESOURCES

DESIGN RESOURCES  
**Appendix A**

FUNDING RESOURCES  
**Appendix B**

PUBLIC INPUT  
**Appendix C**

EXISTING CONDITIONS  
**Appendix D**

RECOMMENDATIONS  
**Appendix E**





# General Schedule

## Task

Task 1: Stakeholder Meetings	March 2018 – December 2018
<i>Kickoff Meeting</i>	<i>March 2018</i>
<i>2<sup>nd</sup> Stakeholder Meeting</i>	<i>June 2018</i>
<i>3<sup>rd</sup> Stakeholder Meeting</i>	<i>September 2018</i>
<i>4<sup>th</sup> Stakeholder Meeting</i>	<i>December 2018</i>
Task 2: Data Collection/Assessment	February 2018 – July 2018
Task 3: Public Involvement	Ongoing
<i>Public Outreach Open Houses</i>	<i>April – July 2018</i>
Task 4: Draft Comprehensive Plan	July – November 2018
Task 5: Client Review	November – January 2018/2019
<i>Public Outreach Open Houses</i>	<i>December - January 2018/2019</i>
Task 6: Final Plan and Presentations	January 2019
Task 7: Bicycle Benefit Brochure	December – January 2018/2019



Stakeholder Meeting 4: **December 2018**



# Next Steps

- Incorporate stakeholder group comments
- Draft Plan Release to the Public
- Draft Plan Public Open House Workshops
- Presentations to the Transportation Advisory Committee and County Board of Commissioners
- Incorporate feedback into Final Document

