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Division of
Bicycle &
Pedestrian
Transportation



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Adoption Dates

Alleghany County	11/18/2013	Wilkes County	12/3/2013
Ashe County	11/18/2013	Yancey County	12/9/2013
Avery County	2/3/2014	Town of Boone	11/21/2013
Mitchell County	12/2/2013	High Country RPO	3/19/2014
Watauga County	11/19/2013	High Country COG	12/16/2013



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Section 1

Executive Summary



Executive Summary



The High Country Regional Bike Plan was developed to increase safety, mobility, and recognition of cycling in the High Country region (Alleghany, Ashe, Avery, Mitchell, Watauga, Wilkes, and Yancey Counties). While the region has a significant number of recreational cyclists and organized events, major infrastructure improvements are needed to increase safety and make cycling a viable transportation option for the intermediate cyclist.

The Plan was developed under the supervision of a Steering Committee appointed by the seven Boards of County Commissioners. The Steering Committee also included North Carolina Department of Transportation (NCDOT) staff. Additional input on the Plan was provided by Town and County Planning staff, local cyclists, and the general public. Public input was gathered from over 1,000 survey responses and comments at 17 meetings.

The High Country Regional Bike Plan has two major components. It makes specific facility improvement recommendations for a Bicycle Transportation Route Network that connects the Towns and other major destinations in the region. It also recommends the establishment of seven Recreational Routes designed for tourism promotion. Additional recommendations regarding Enforcement, Education, Transit Interface, Economic Impact from Cycling, and Policies are included in the plan.

The Bicycle Transportation Route Network identified in the Plan includes 620 miles of NCDOT road, Blue Ridge Parkway, and existing and proposed Greenway trails. The network is divided into 46 segments. The Plan includes a map, recommended improvement, and prioritization of each route segment. Recommended improvements are based on guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO).



One Recreational Route was developed in each County. With recommended wayfinding signs and promotion strategies, the Recreational Routes are intended to take advantage of the economic impact from bicycle tourism. In addition to the Recreational Routes, there are many organized cycling events (rides and races) in the High Country region that can be promoted to increase tourism spending. Based on various studies, the average cycling event participant spends between \$260 and \$495 per day.

In addition to the Bicycle Transportation Route recommendations and establishment of the seven Recreational Routes, the High Country Regional Bike Plan recommends strategies in the areas of enforcement,

transit, economic development, education, and land-use policies. Accommodation of bicycles on transit vehicles can help make cycling a feasible transportation option. It is recommended that all seven County transit agencies operating in the region continue or begin to transport bicycles on their vans and buses. Recommendations regarding education and enforcement focus on educating law enforcement officers,

cyclists, and motorists on current NC traffic laws related to bicycles. Recommended land-use policies are intended to improve access for cyclists during new land development.

Implementation of the High Country Regional Bike Plan includes short-term and long-term strategies. Establishment, signing, and promotion of the Recreational Routes can occur quickly. Promotion of the Recreational Routes and existing cycling events will be a function of local governments, Chambers of Commerce, bike clubs, and event organizers. Education on cycling laws can also be accomplished locally, primarily through the High Country Rural Planning Organization (RPO).

Implementation of the Bicycle Transportation Route recommendations will be long-term. It is anticipated that most bicycle facility improvements (bike lanes, wide shoulders) will occur as part of larger highway projects. Programming of those improvements will require coordination among local governments, High Country RPO, and NCDOT.



Section 2

Purpose



Purpose

Purpose

The purpose of the High Country Regional Bike Plan is to improve regional bicycle transportation in the area. Need for the plan stems from lack of a comprehensive plan to guide infrastructure improvements, improve awareness, and increase safety for cyclists.

NCDOT and local governments currently conduct long-range bicycle planning through four programs:

1. Municipal Bicycle and Pedestrian Planning Program – NCDOT’s Division of Bicycle and Pedestrian Transportation (DBPT) provides funding to municipalities to develop comprehensive bicycle plans.
2. Regional Bicycle Planning Program – NCDOT’s Division of Bicycle and Pedestrian Transportation (DBPT) provides funding to regional organizations to develop multi-county comprehensive bicycle plans.
3. Statewide Pedestrian and Bicycle Plan (WalkBike NC) – “statewide master plan to define a vision, goals, and strategies for improving walking and bicycling for residents and visitors.”
4. County-level Comprehensive Transportation Plans (CTPs) – CTPs are developed by NCDOT’s Transportation Planning Branch (TPB) in cooperation with local governments to identify future deficiencies and make recommendations for improvements in all modes of transportation.

The High Country Regional Bike Plan intends to complement existing State, County, and Municipal plans by making specific regional-level recommendations for bicycle facility projects. The plan identifies a network of routes that connect municipalities and other destinations within the High Country region. The route network also includes connections to destinations and other bike routes outside the High Country region. In addition to identifying the route network, the Plan makes recommendations for facility improvements, and sets priorities for the improvements.

In addition to the transportation-focused route network and associated recommendations, the High Country Regional Bike Plan identifies seven recreational loop routes. The inclusion of these routes in the Plan is intended to acknowledge the economic impact of cycling to the region through tourism.

Goals and Objectives

The following Goals and Objectives were developed to guide development of the Plan. The Goals and Objectives were developed by the project Steering Committee, based in part on responses to a citizen survey. More information on the Steering Committee and the citizen survey is included in Section 4—Methodology.

Goal #1 :: Improve safety for cyclists through engineering, education, and enforcement

Objectives

- 1.A. Design bicycle infrastructure that reduces crashes between cyclists and motorists
- 1.B. Maintain condition of bicycle infrastructure
- 1.C. Educate cyclists, motorists, and law enforcement officials to improve adherence to traffic laws

Goal #2 :: Connect major destinations in the High Country region with appropriate bicycle infrastructure

Objectives

- 2.A. Identify bicycle traffic generators and major destinations within the region
- 2.B. Utilize existing NCDOT roads, Town streets, and the Blue Ridge Parkway in developing a seamless bicycle network
- 2.C. Recommend specific bicycle infrastructure improvements to achieve connectivity
- 2.D. Integrate bicycle infrastructure construction into future roadway improvements
- 2.E. Remove barriers to cycling



Goal #3 :: Promote Cycling in the High Country region

Objectives

- 3.A. Develop signage plan to identify routes within the region
- 3.B. Develop support facilities that make cycling a viable transportation option
- 3.C. Establish clearinghouse of information related to cycling in the High Country region
- 3.D. Include consideration of cycling in future transportation, land-use, economic development, and recreation plans

Section 3

Scope



Geographic Scope

The High Country Regional Bike Plan covers the following seven counties and 19 Towns in northwestern North Carolina:

Alleghany County	Town of Sparta
Ashe County	Town of Jefferson Town of Lansing Town of West Jefferson
Avery County	Town of Banner Elk Town of Crossnore Town of Elk Park Town of Newland Village of Sugar Mountain
Mitchell County	Town of Bakersville Town of Spruce Pine
Watauga County	Town of Beech Mountain Town of Blowing Rock Town of Boone Town of Seven Devils
Wilkes County	Town of North Wilkesboro Town of Ronda Town of Wilkesboro
Yancey County	Town of Burnsville

The region covers 2,509 square miles and had a 2010 population of 210,049 (US Census). This equates to a population density of 84 persons/square mile, compared to a statewide population density of 196 persons/square mile. The High Country region is characterized by small towns separated by long distances. Commuting within counties, between neighboring counties, and between the states of Virginia and Tennessee is common for employment, medical, and shopping trips.

Map #1 shows the High Country region.

The High Country region is mountainous, with elevations ranging from 6,684’ on Mount Mitchell in Yancey County to 900’ along the Yadkin River in eastern Wilkes County. The region is heavily dissected, with roadways typically following stream valleys. The region contains 630 miles of primary highways and 3,449 miles of secondary road. 22% of the secondary road mileage in the region is unpaved, compared to a statewide unpaved rate of 6.6%.

The High Country region contains 168 miles of the Blue Ridge Parkway. The Blue Ridge Parkway is accessed from NCDOT’s road system in 64 locations throughout the region. The Parkway is a popular destination for recreational cyclists.

The High Country Regional Bike Plan focuses on road cycling, and therefore did not consider unsurfaced off-road “trails.” Also, unpaved secondary roads were avoided to the extent possible while still meeting project purpose.

Project Scope

The High Country Regional Bike Plan addresses the following:

Bicycle Transportation Route Network
The Plan identifies 46 individual route segments, totaling 620 miles. This network makes long-range connections, and does not include extensive internal circulation routes within Towns. A facility-improvement recommendation is made for each route segment, and each route segment is prioritized (low, medium, or high priority).

Recreational Routes
The Plan identifies one recreational loop route in each of the seven Counties. No facility-improvement recommendations are made for the recreational routes, except where they coincide with the bicycle transportation route network.

Signage
The Plan provides general guidance on placement of Share the Road signs within the region, and provides specific recommendations for wayfinding signs on the Recreational Routes.

Economic Impact of Cycling
The Plan discusses the economic impact of cycling, specifically from visitation to the region.

Safety
The Plan provides bicycle accident data.

Laws/Enforcement
The Plan provides information on State and Local laws as they relate to cycling, and makes recommendations for enforcement.

Implementation
The Plan provides a strategy for implementation of the recommendations.

Issues Outside the Project Scope

The High Country Regional Bike Plan does not include recommendations for extensive bicycle circulation routes within municipalities.

Development of the High Country Regional Bike Plan did not include analysis of existing Rights-of-Way (ROW). The existence of ROW varies throughout the roadway system and along road segments. The recordation of ROW also varies, making system-level ROW analysis unfeasible.

The High Country Regional Bike Plan does not include consideration or recommendation of off-road unpaved trails.

Development of the High Country Regional Bike Plan did not include collection of bicycle traffic counts, or collection of comprehensive data on lane widths, shoulder widths, or bridge widths.

The High Country Regional Bike Plan does not include cost estimates specific to the individual recommendations. Project costs will vary considerably based on existing right-of-way and environmental constraints. Also, costs are assumed to vary over time, and will vary if bicycle facilities are constructed as part of a highway project versus an independent bicycle facility project.

General cost estimates for adding 3’ and 4’ bike lanes to existing roadways are included in **Appendix 1**. The estimates were developed in 2012 by NCDOT.

Section 4

Methodology



Methodology

Steering Committee

The High Country Regional Bike Plan was developed by a Steering Committee consisting of appointees from the seven Boards of County Commissioners. The Steering Committee also included representatives of NCDOT Division 11 and Division 13. The Steering Committee members are listed in the Acknowledgements section (Page 2).

Public Input

Citizen Survey

An online survey instrument was developed to gather citizen input at the beginning of the Plan development. The survey consisted of 22 questions, designed to gather information on cyclist demographics, current cycling behavior, and preferences for improvements. The survey was publicized in local newspapers, and through various websites (governmental and media).

The High Country Regional Bike Plan Survey is included as Appendix 2.

There were 1,025 responses to the survey. Statistics regarding the survey respondents include:

- Alleghany–12; Ashe–41; Avery–71; Mitchell–21; Watauga–767; Wilkes–40; Yancey–40; Out of region–33
- 53% male; 47% female
- Good split amongst age brackets
- 15% are non-cyclists
- 24% are members of a bike club
- 26% ride frequently (1-2 times/week); 20% ride regularly (daily); 20% ride rarely (5-6 times/year); 15% ride occasionally (monthly)

Survey responses also indicated:

- Most respondents ride for exercise or recreation
- Majority (26%) of rides were 2-5 miles, but 18% of rides were over 20 miles
- Traffic speed and volume are bigger deterrents than roadway condition
- Narrow roads/no shoulders posed biggest challenge for cyclists
- Signage identified as the most important non-infrastructure program to increase safety
- Cyclists can increase safety by following laws and being more visible
- Motorists can increase safety by driving slower and giving more room when passing cyclists

The survey also included questions on destinations, roads used for recreational riding, roads used for transportation-focused trips, and roads that currently are unsafe for cyclists.

The survey responses were used to:

- identify origins and destinations
- develop goals and objectives
- guide development of a bike route network to achieve project purpose
- guide recommendations regarding facility improvements
- guide recommendations for road segment priorities

Public Workshops (July/August 2012)

Five public meetings were held throughout the region during Summer 2012 to gather citizen input on the High Country Regional Bike Plan. Information was presented at the meetings on Plan purpose, goals, and objectives. Information was also provided on current road network and existing transportation plans. Attendees were asked to identify roads currently used by cyclists, and roads where improvements are needed to improve cyclist safety. General comments were also accepted.



A total of 63 people attended the meetings.

The input from the meetings was used to guide development of a bike route network.

Cyclists Meetings – November 2012–January 2013

Five meetings were held throughout the region between November 2012 and January 2013 to gather cyclist input on the proposed bike route network. Attendees were presented with maps of the proposed route network, and asked to provide input on preferred facility improvements and priority of the individual route segments.

The input from the meetings was used to guide recommendations for specific facility improvements and priority of the individual route segments.

Cyclists Meetings – August/September 2013

Five meetings were held throughout the region during Summer 2013 to gather cyclist input on recreational bike routes. Attendees were presented with guidance on recreational route criteria, and were asked to identify preferred recreational cycling routes.

The input from the meetings was used to guide development of the seven recreational bike routes.

Draft Document

A draft of the High Country Regional Bike Plan document was posted online with instructions for submitting comments. A press release was sent to the local newspapers in the region announcing the posting of the draft document for comments. No comments were received.

Public Workshop – October 2013

A public workshop was held on October 23, 2013 to gather citizen input on the draft High Country Regional Bike Plan. Attendees were presented with information on the draft plan. Twelve people attended the workshop.

Route Determination

The High Country Regional Bike Plan Steering Committee used the following factors to determine a bicycle route network:

- project purpose, goals, and objectives
- responses from the citizen survey
- input from the public workshops
- input from the cyclists' meetings
- existing road system data
- existing roadway conditions
- existing transportation plans

Existing data analyzed for the road system and transportation plans included the following:

- Crash locations
- 2010 Average Annual Daily Traffic (AADT) counts
- NCDOT designated truck routes
- Speed limits
- NC Scenic Byway designations
- Adopted long-range transportation plans
 - ◊ Yancey County Comprehensive Transportation Plan (CTP) – 2008
 - ◊ Ashe County CTP – 2010
 - ◊ Alleghany County CTP – 2012
 - ◊ Watauga County CTP – 2012 Draft
 - ◊ Region D Thoroughfare Plan – 1993

- ◊ Wilkesboro/North Wilkesboro Thoroughfare Plan – 1993
- ◊ Banner Elk Thoroughfare Plan – 1985
- ◊ Newland Thoroughfare Plan – 1994
- ◊ Beech Mountain Thoroughfare Plan – 2003
- ◊ Spruce Pine Thoroughfare Plan – 1994
- ◊ Boone/Blowing Rock Alternative Transportation Plan – 1993
- ◊ Crossnore Alternative Transportation Plan – 2010
- ◊ Yadkin River Greenway Plan – 2012
- ◊ Town of Boone Greenway plans – ongoing
- ◊ Middle Fork Greenway plans – ongoing
- 2012-2020 NCDOT Transportation Improvement Program (TIP)
- High Country RPO Priority Needs List – 2011

Additional roadway conditions were analyzed through windshield survey. All NC and US Routes in the region, as well as selected secondary roads, were driven and photographed. A total of 1,943 photos were taken. Photograph locations were collected and transferred into Google Earth files for sequential viewing. While the roadway conditions analysis was not comprehensive, it allowed for general evaluation of shoulder width, bridge width, sight distance, and development density.

Route Evaluation Criteria were developed to evaluate individual route segments. A weighted scoring system was used to evaluate the segments. The resulting scores for 104 road segments were considered (along with the other factors listed above) by the project Steering Committee in developing a bicycle route network. The route network is detailed in Section 8—Bicycle Transportation Route Segments.

Route Evaluation Criteria and scoring spreadsheet used is included as Appendix 3.

The following maps illustrate roadway conditions evaluated in development of the route network:

- Map #2 – Crash Rates
- Map #3 – 2010 AADT
- Map #4 – Truck Routes
- Map #5 – Speed Zones
- Map #6 – NC Scenic Byways
- Map #7 – Existing Transportation Plans
- Map #8 – 2012-2020 TIP, High Country RPO Priority Needs List

Facility Improvements

The following documents were used to guide facility improvement recommendations:

- NC Bicycle Facilities Planning and Design Guidelines – 1994
- AASHTO Guide for the Development of Bicycle Facilities – 2012

Both documents include minimum guidelines for appropriate bicycle facilities, based on factors including:

- Land use
- Speed limit
- Presence of curb and gutter
- Truck traffic
- Bicycle traffic

Facility improvement recommendations were developed using the following factors:

- minimum guidelines from the documents noted above
- input from the cyclists’ meetings

- input from NCDOT Division 11 and Division 13 staff (Division Engineers and Division Planning Engineers)
- Town limits
- NCDOT Strategic Highway Corridor designations

Map #9 depicts the NCDOT Strategic Highway Corridor designations.

The recommended facility improvements are included for each route segment in Section 8—Bicycle Transportation Route Segments. Recommended facility improvements include the following:

- 2’ paved shoulder – typically recommended on roads with low traffic volumes where no future road improvement is anticipated



- 4’-6’ bike lane – typically recommended in Town Limits



- Signage for bike lanes may include examples illustrated below, based on consultation with Division 11 and 13 staff



- 4' paved shoulder – typically recommended on rural roads with low to medium traffic
- 4'-5' paved shoulder – typically recommended on roads with higher traffic volumes
- 4'-6' paved shoulders – typically recommended on roads with high traffic volumes or roads designated as Strategic Highway Corridors



- Off-road paved path – recommended where existing or planned greenways serve as parallel routes to roadways, and provide desired connectivity



- No improvement – typically recommended where speed limits are no greater than 25 mph and on-street parking exists. These locations are in downtown areas where existing development would prohibit road widening, and where vehicle speeds are slow enough that cyclists do not impede the flow of traffic. At these locations, Town governments and NCDOT should evaluate the practicality of installing shared-lane markings (sharrows) to alert motorists and to guide cyclists' path of travel.



Appendix 4 includes graphic descriptions of typical highway cross-sections.

Prioritization

Individual route segments were prioritized (low, medium, or high) based on the following factors:

- responses from the citizen survey
- input from the public workshops
- input from the cyclists' meetings
- Route Evaluation Criteria scores
- Intra-region connectivity
- equal distribution among priority levels

Map #10 depicts the Route Segment Priorities at a regional scale.

The priorities are also included for each route segment in Section 8—Bicycle Transportation Route Segments.

Recreational Routes

A Recreational Cycling Route was developed in each of the seven counties in the region. The Recreational Routes were developed using the following criteria as guidance:

- Parking/restroom access
- Proximity to NC State Parks
- AADT, Speed limit, Crash rates
- Existing web-based routes
- Opportunity to use off-road trails
- Roadway conditions
- Proximity to lodging/dining
- Scenic views
- Proximity to cultural attractions
- 20-30 mile preference
- Moderate grades

Map #11 illustrates the Recreational Routes at a regional scale.

The individual Recreational Routes are detailed in Section 9—Recreational Routes.

Law Enforcement

Based on the concern for safety and enforcement of laws expressed in the Citizen Survey and Public Workshops, a survey instrument was developed and sent to all law enforcement agencies in the region (19 Towns, 7 County Sheriff Departments, Blue Ridge Parkway, Appalachian State University Police). The survey consisted of 21 questions, designed to gather input on bicycle-related complaints, accidents, incidents, ordinances, enforcement, training, and infrastructure.

A total of 19 responses (68%) were received. Highlights from the responses include:

- 22% indicated that cyclists are a significant concern; 45% indicated that cyclists are not a significant concern; 33% reported occasional incidents
- 94% indicated no pattern regarding fault or location of bicycle accidents
- 5 jurisdictions have ordinances/policies regarding cycling
- 28% are interested in receiving training on bike laws
- 100% of respondents provide traffic control for organized bike rides

The Law Enforcement Survey is included as Appendix 5.

Transit Interface

The seven county-level transit agencies in the region were surveyed regarding accommodations for bicycles. Following are the current accommodations:

- Alleghany in Motion – transport in paratransit van, strap bicycle down
- Ashe County Transportation Authority – no accommodations
- Avery County Transportation – no requests, but would utilize paratransit van and strap bicycle down
- Mitchell County Transportation – no accommodations
- AppalCART (Watauga County) – bike racks on buses; riders must load their own bike
- Wilkes Transportation Authority – no accommodations
- Yancey County Transportation Authority – no accommodations

Horizon Coach Lines, which currently operates daily inter-city trips to the High Country region, was also contacted regarding accommodation of bicycles. Horizon accommodates bicycles in the cargo compartment of its buses.

Economic Development

Section 5—Existing Conditions contains descriptions of existing bicycle rides and races (events), and the economic impact of cycling. All seven counties in the High Country region have established tourism economies, and there are existing cycling events throughout the region. It is recommended that local governments, tourism-promotion agencies, and event organizers work together to increase the economic impact from the events. Increase in economic impact can result from more event participants, promotion of events to spectators, or marketing to event participants of extended stay opportunities.

Section 5

Existing Conditions



Existing Conditions

The table below provides an overview of existing conditions related to bicycle transportation in the High Country region, by County. The following pages provide details of existing roadway infrastructure, bicycle infrastructure, regulations, policies, and bicycle crash data.

County	Alleghany	Ashe	Avery	Mitchell	Watauga	Wilkes	Yancey
2012 Population	11,237	27,611	17,965	15,578	52,850	69,665	17,834
% Urban	0%	15%	11%	17%	45%	27%	0%
2012 PCI	\$19,640	\$18,978	\$18,527	\$22,465	\$22,904	\$18,556	\$19,611
Commute Time (mins.)	26	26	21	23	19	25	26
Total Road Mileage	448	795	337	320	567	1,315	396
NCDOT Road Mileage	439	782	322	305	538	1,276	389
Town Street Mileage	9	13	15	15	29	39	7
Unpaved Road Mileage	69	199	57	37	119	193	39
Number of Towns	1	3	5	2	4	3	1
Greenway Mileage	0	0	0	0	5.9	7.1	0
Bike Lane Mileage	0	0	0	0	4.4	0.6	0
Bicycle Advocacy Group	None	None	None	None	Boone Area Cyclists	Brushy Mountain Cycling Club	None
Established Bike Routes	0	0	0	10	13	14	10
Bike Facility Plans	2012 CTP	2010 CTP	None	None	2013 CTP; 2014 Boone Bike Plan	None	2008 CTP

Alleghany County

Alleghany County contains 439 miles of NCDOT road and 9 miles of town street, including 69 miles of unpaved road. The Alleghany County Comprehensive Transportation Plan (2012) includes recommendations for bicycle facility improvements throughout the County. The Town of Sparta does not have a Bicycle Plan. There are currently no bike lanes, greenways, or designated bike routes in the County.

Ashe County

Ashe County contains 782 miles of NCDOT road and 13 miles of town street, including 199 miles of unpaved road. The Ashe County Comprehensive Transportation Plan (2010) includes recommendations for bicycle facility improvements throughout the County. None of the three Towns in Ashe County have Bicycle Plans. There are currently no bike lanes, greenways, or designated bike routes in the County.

Avery County

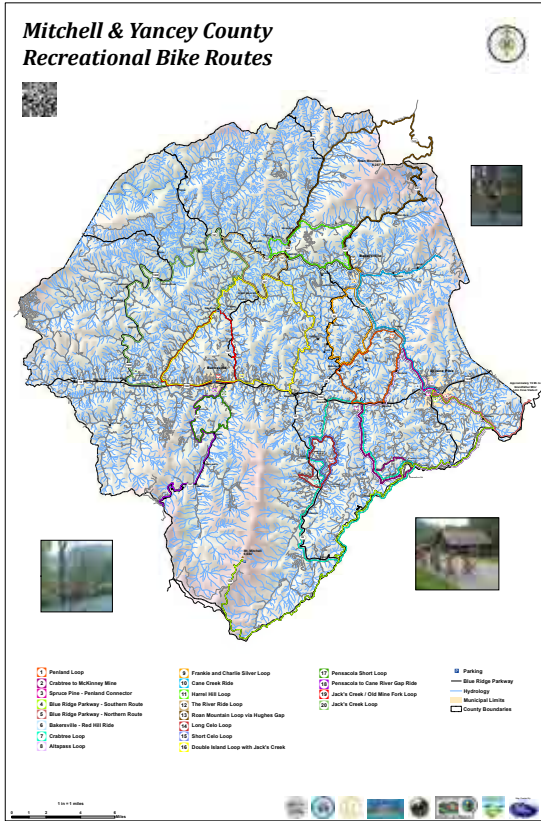
Avery County contains 322 miles of NCDOT road and 15 miles of town street, including 57 miles of unpaved road. The Avery County Comprehensive Transportation Plan is scheduled for completion in 2014. It will include bicycle facility improvement recommendations throughout the County. None of the five Towns in Avery County have Bicycle Plans.

There are currently no bike lanes, greenways, or designated bike routes in the County.

Mitchell County

Mitchell County contains 305 miles of NCDOT road and 15 miles of town street, including 37 miles of unpaved road. Mitchell County currently does not have a Comprehensive Transportation Plan (CTP). Neither of the two Towns in Mitchell County have Bicycle Plans. There are currently no bike lanes or greenways in the County.

Mitchell County has 10 recreational bike routes developed. The routes are not signed, and are publicized through maps distributed to 2013 Cycle NC riders and online.



Mitchell and Yancey County Bike Route Map, 2013

Watauga County

Watauga County contains 538 miles of NCDOT road and 29 miles of town street, including 119 miles of unpaved road. The Watauga County Comprehensive Transportation Plan (2013) includes recommendations for bicycle facility improvements throughout the County.

Striped Bike Lanes exist on East King Street, Rivers Street, Wilson Road, and Hardin Street in Boone. The Boone Bike Plan is scheduled for completion in 2014. The Boone Bike Plan will make bicycle facility recommendations throughout the Town of Boone. The Town of Blowing Rock has an Alternative Transportation Plan dated 1993. Neither the Town of Seven Devils nor the Town of Beech Mountain has a Bicycle Plan.



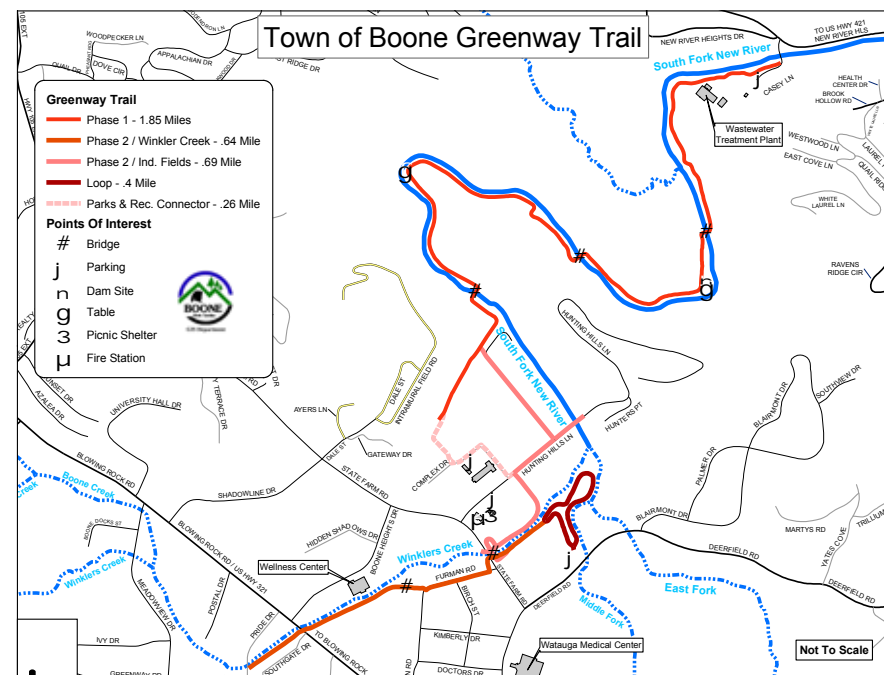
King Street, Boone



Hardin Street, Boone

No bike lanes exist in the Towns of Blowing Rock, Seven Devils, or Beech Mountain.

The Boone Greenway currently includes 4.9 miles. It is managed by the Town of Boone. With planned extensions (and current use of Town Streets), the Boone Greenway connects US 421 to US 321.



Town of Boone Greenway Map, 2008

The Middle Fork Greenway is planned to connect the Towns of Boone and Blowing Rock, and connect to the Blue Ridge Parkway. The project is managed by the non-profit High Country Pathways. Currently, 1 mile of paved greenway exists.



Middle Fork Greenway Plan, 2011

The Boone Area Outdoor Recreation Plan was developed by the Watauga County Tourism Development Authority to highlight and improve recreation opportunities. The Plan includes the Watauga County Road Cycling Map that features a series of recreational bike routes. The routes are not signed.



Watauga County Road Cycling Map, 2011

Wilkes County

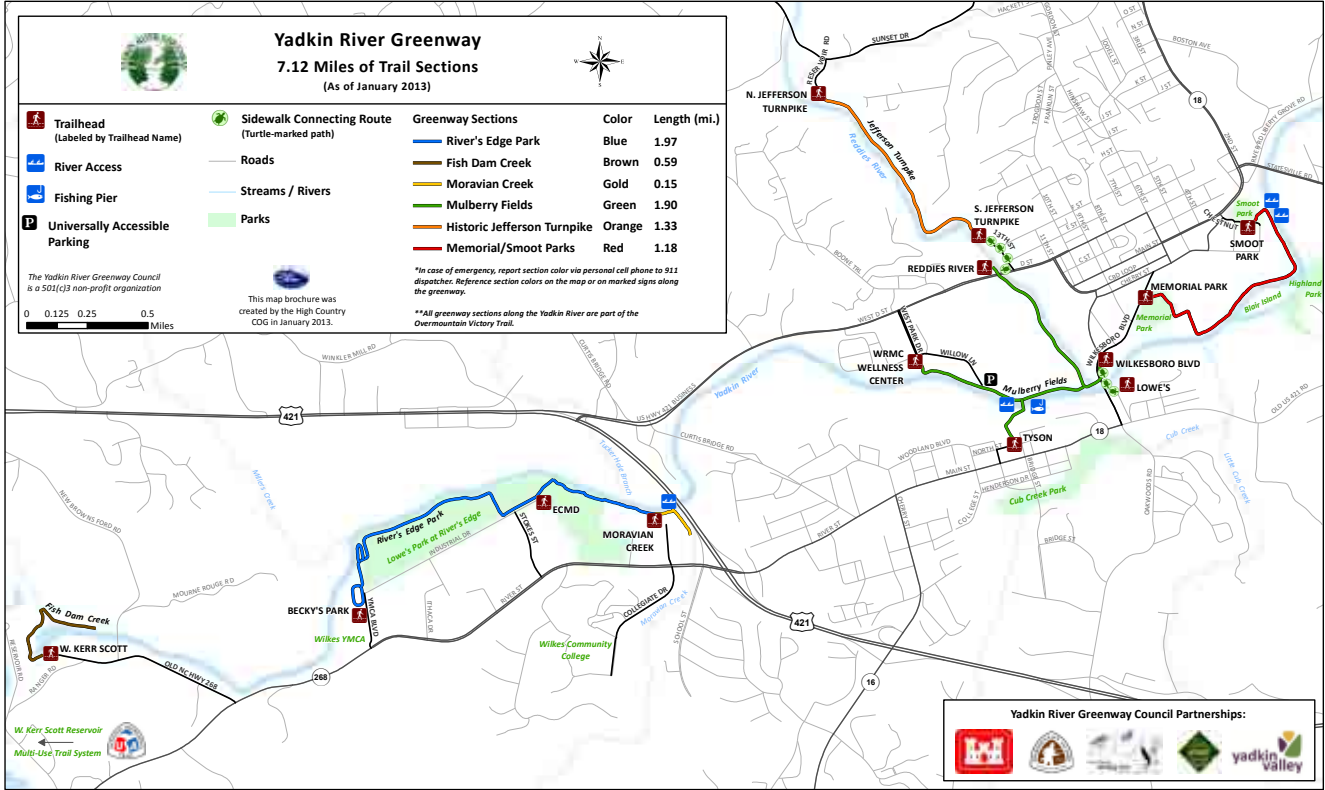
Wilkes County contains 1,276 miles of NCDOT road and 39 miles of town street, including 193 miles of unpaved road. Wilkes County currently does not have a Comprehensive Transportation Plan (CTP). None of the three Towns in Wilkes County have Bicycle Plans.

Striped Bike Lanes exist on the CBD Loop in North Wilkesboro. No bike lanes exist in the Towns of Wilkesboro or Ronda.



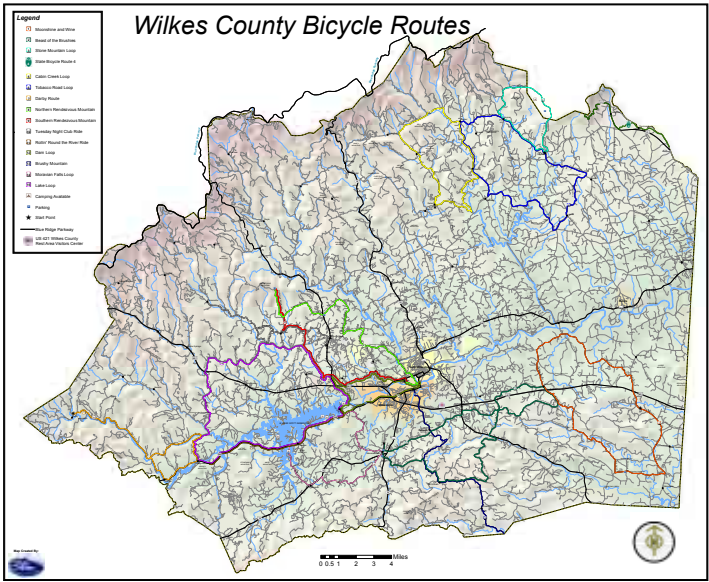
CBD Loop, North Wilkesboro

The Yadkin River Greenway currently includes 7.1 miles of paved trail. The existing segments of the Yadkin River Greenway connect the downtowns of Wilkesboro and North Wilkesboro. With planned extensions, the Greenway will connect NC 268 to both downtowns. The Yadkin River Greenway is managed by the non-profit Yadkin River Greenway Council.



Yadkin River Greenway Map, 2013

Wilkes County has 14 designated recreational bike routes. The routes are signed, and are publicized through distribution of printed maps.

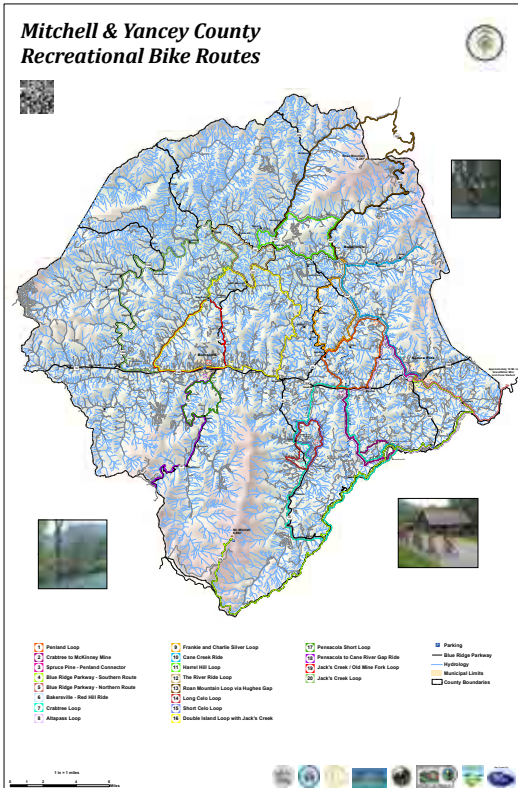


Wilkes County Bicycle Routes, 2009

Yancey County

Yancey County contains 389 miles of NCDOT road and 7 miles of town street, including 39 miles of unpaved road. The Yancey County Comprehensive Transportation Plan (2008) includes recommendations for bicycle facility improvements throughout the County. The Town of Burnsville does not have a Bicycle Plan. There are currently no bike lanes or greenways in the County.

Yancey County has 10 recreational bike routes developed. The routes are not signed, and are publicized through maps distributed to 2013 Cycle NC riders and online.



Mitchell and Yancey County Bike Route Map, 2013

Blue Ridge Parkway

The Blue Ridge Parkway includes 168 miles in the High Country region. The Parkway is owned and managed by the National Park Service. It is a 2-lane facility with 9-foot lanes, grass shoulders, and posted speed limits of 35 mph and 45 mph. Currently, 1% of traffic on the Parkway is bicycles. There are 64 intersections of the Parkway and NCDOT roads in the High Country region.

Map #12 shows the Blue Ridge Parkway in the region.



The Blue Ridge Parkway is included as part of NC Bike Route #2 (Mountains to Sea Bicycling Highway). The National Park Service does not allow signage on the Parkway for State or local bicycle routes.

The Code of Federal Regulations provides regulations on cycling in all National Parks, including the Blue Ridge Parkway (36 CFR 4.30 – Bicycles). The regulations include:

- Bicycle riders must comply with all applicable state and federal motor vehicle regulations.
- Bicycles may be ridden only on paved road surfaces and parking areas.
- The bicycle operator must exhibit a white light or reflector visible at least 500 feet to the front and a red light or reflector visible at least 200 feet to the rear during periods of low visibility, between the hours of sunset and sunrise, or while traveling through a tunnel.
- Bicycles must be ridden single file.

Organized group bicycle rides on the Parkway require a Special Use Permit.

The Blue Ridge Parkway’s Final General Management Plan/Environmental Impact Statement dated January 2013 provides a strategy for managing the park’s natural and cultural resources. The Preferred Alternative in the General Management Plan includes the following strategy concerning bicycling:

“Continue to allow bicycling on the main parkway road and other parkway roads, recognizing that bicyclists would be sharing the road with higher volumes of motorized traffic, especially in the more urbanized areas of the parkway.”

The High Country Regional Bike Plan treats the Blue Ridge Parkway as a destination, and recommends improvements to NCDOT roads that access the Parkway. The section of the Parkway between NC 80 and NC 128 in Yancey County is included in the High Country Regional Bike Plan, but no recommendations for improvements or signage is included.

NC Bicycling Highways

Portions of two NC Bicycling Highways are located in the High Country region. The Mountains to Sea Route (NC Bike Route #2) follows the Blue Ridge Parkway through Yancey, Mitchell, and part of Avery County. The North Line Trace Route (NC Bike Route #4) follows NC 93, US 21, and a series of secondary roads through Alleghany County. The NC Bicycling Highways are signed.

The NC Bicycling Highways were updated in December 2013 as part of the NC Statewide Pedestrian and Bicycle Plan (WalkBikeNC). The WalkBikeNC Plan updated the existing NC Bicycling Highways, and developed a series of “connector” routes.

Map #13 shows the NC Bicycling Highways in the region.

The NC Bicycling Highways are currently being revised as part of the NC Statewide Pedestrian and Bicycle

Existing Laws and Policies

The Bicycle and Bikeway Act of 1974 is codified in NC General Statutes 136-71.6 through 136-71.12. The Act:

- supports the legal definition that a bicycle is a vehicle.
- defines bicycle facilities as a bona fide highway purpose.
- designates the North Carolina Department of Transportation to carry out the provisions of the article.
- allows for designation of bicycle facilities along and upon the state’s public roadways.
- authorizes the department to spend budgeted funds and other funds from federal, state, local, and private sources.
- establishes the North Carolina Bicycle Committee.

To implement the provisions of the Bicycle and Bikeway Act of 1974, NCDOT has an adopted Bicycle Policy (most recently updated in 2009). The NCDOT Bicycle Policy details how bicycling will be accommodated in the following areas:

- Planning and Design
- Construction
- Operations
- Maintenance
- Education
- Parking

The Bicycle Policy is included as Appendix 6.

Since bicycles are legally defined as vehicles, cyclists are subject to various sections of Chapter 20 NC General Statutes dealing with motor vehicles. NC traffic laws require bicyclists to:

- ride on the right in the same direction as other traffic.
- obey all traffic signs and signals.
- use hand signals to communicate intended movements.
- equip their bicycles with a front lamp visible from 300 feet and a rear reflector that is visible from a distance of 200 feet when riding at night.

Additionally, NC General Statutes include the following:

- All bicycle operators under 16 years of age must wear a bicycle helmet on public roads, public paths and public rights-of-way
- All child passengers under 40 pounds or 40 inches must be seated and secured in a child seat or a bicycle trailer
- Bicycling on Interstate or fully controlled limited access highways, such as beltlines, is prohibited by policy, unless otherwise specified by action of the Board of Transportation

NCDOT has other policies that relate to bicycle transportation. These include:

1. Standard Practice for Milled Rumble Strips – provides guidance on accommodating the movement of bicycles on facilities where they are legally allowed to operate when designing rumble strips. The document can be accessed at:

<https://connect.ncdot.gov/resources/safety/Teppl/TEPPL%20All%20Documents%20Library/R-44%20Rumble%20Strip%20Practice%20FINAL.pdf>

2. Complete Streets Policy - directs NCDOT to consider and incorporate all modes of transportation when building new projects or making improvements to existing infrastructure. Information on Complete Streets, including the policy and guidelines, can be accessed at:

<http://www.completestreetsnc.org/>

3. Greenway Policy – directs NCDOT to consider greenways and greenway crossings during the highway planning process. The document can be accessed at:

http://www.ncdot.gov/_templates/download/external.html?pdf=http%3A//www.ncdot.gov/bikeped/download/bikeped_laws_Greenway_Admin_Action.pdf

4. Bridge Policy – establishes the controlling design elements of new and reconstructed bridges on the North Carolina Highway System (including provisions for bikeways). The document can be accessed at:

<https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Bridge%20Policy.pdf>



NCDOT's Division of Bicycle and Pedestrian Transportation maintains a website dedicated to laws and policies affecting bicycle and pedestrian transportation. The website address is:

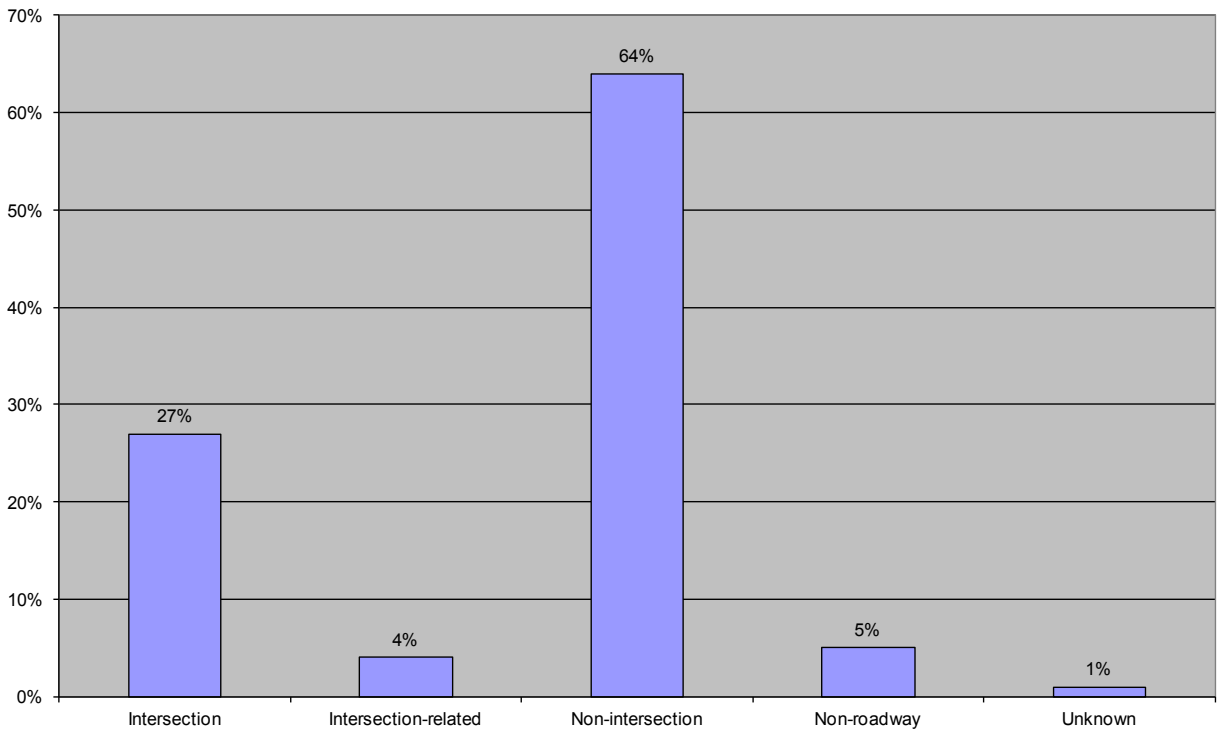
<http://www.ncdot.gov/bikeped/lawspolicies/>

Bicycle Crash Data

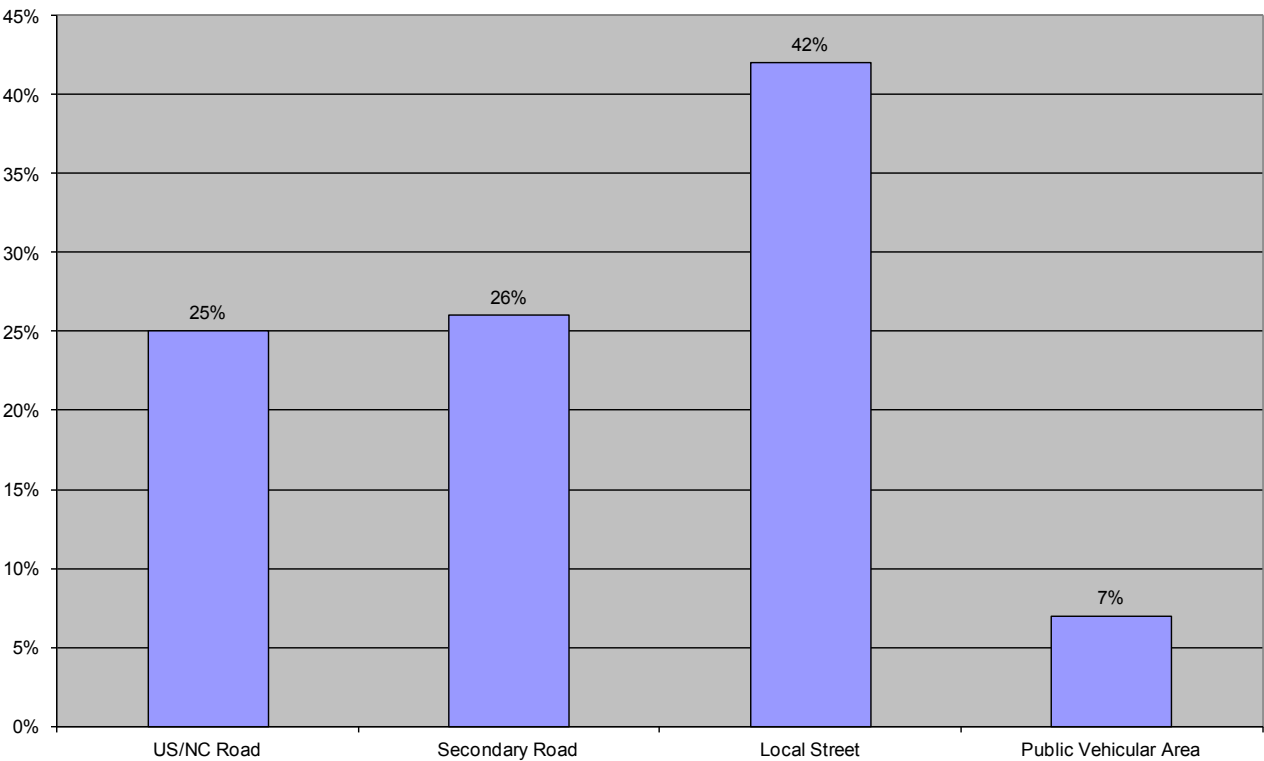
NCDOT Division of Bicycle and Pedestrian Transportation maintains data on bicycle crashes for the years 1997-2010. The data represents all bicycle-motor vehicle crashes reported to the NC Division of Motor Vehicles by investigating law enforcement officers. The following table and graphs illustrate bicycle crash facts in the High Country region for 1997-2010.

	Alleghany	Ashe	Avery	Mitchell	Watauga	Wilkes	Yancey	High Country
1997	0	1	0	0	4	2	0	7
1998	0	1	0	0	6	5	0	12
1999	0	1	1	0	7	0	0	9
2000	0	0	0	0	3	2	0	5
2001	0	1	0	0	2	4	0	7
2002	0	0	0	0	8	4	0	12
2003	0	0	1	0	8	4	0	13
2004	0	0	0	0	5	3	0	8
2005	0	0	0	1	4	2	0	7
2006	0	1	0	0	0	1	1	3
2007	0	1	0	0	4	5	0	10
2008	0	0	1	0	12	2	0	15
2009	0	1	0	0	4	1	1	7
2010	0	1	1	0	9	1	0	12
TOTAL	0	8	4	1	76	36	2	127

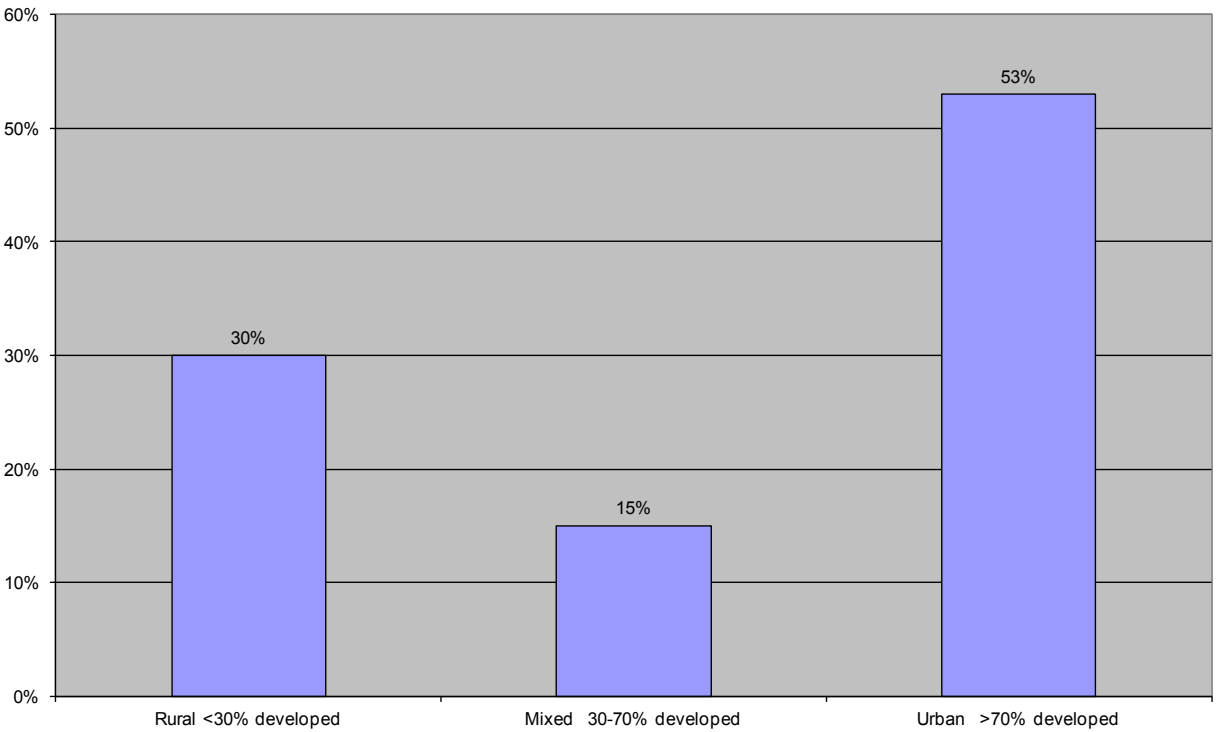
CRASHES-LOCATION



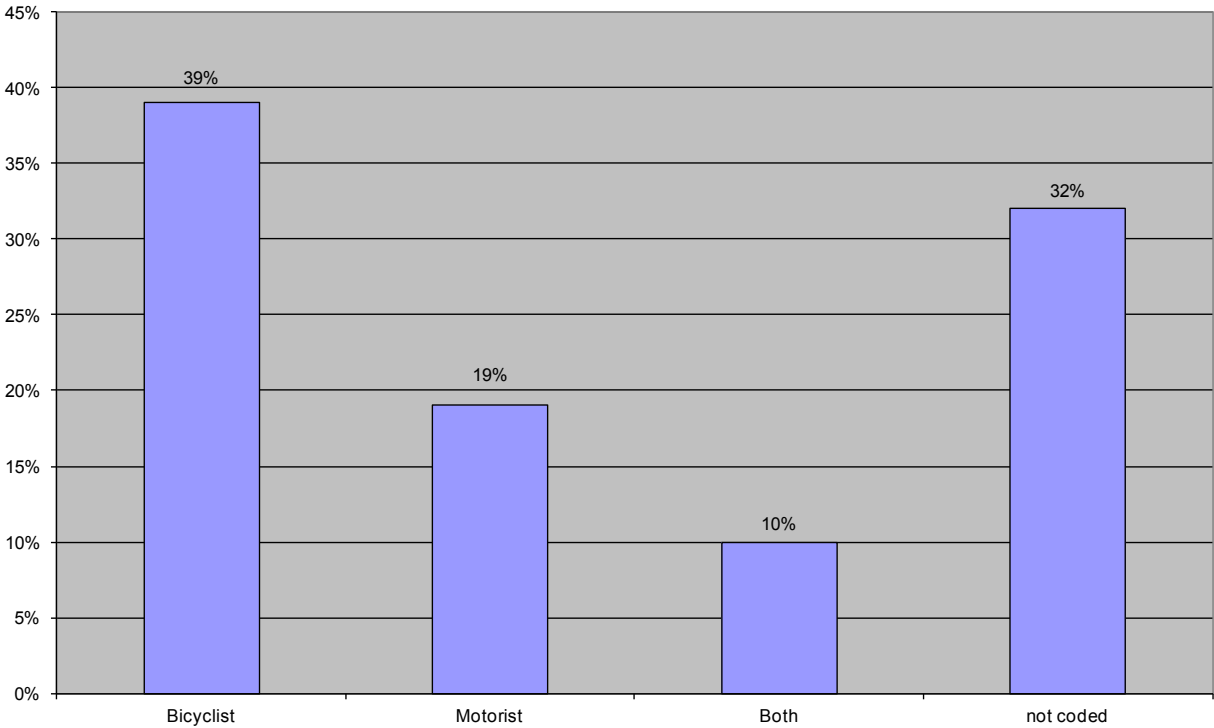
CRASHES: ROAD TYPE



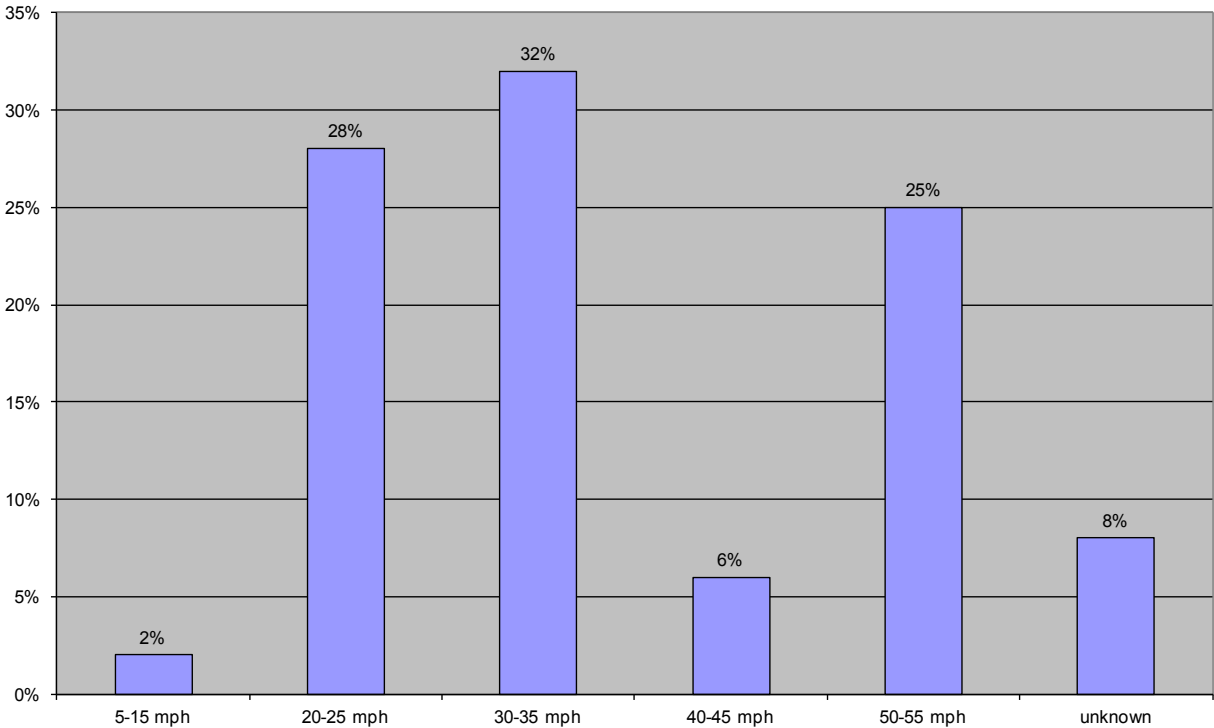
CRASHES-LAND USE



CRASHES-FAULT



CRASHES-SPEED LIMIT



Conclusions

No trends are revealed in the statistics, either for the region as a whole or in the individual counties (i.e., there is no evidence of an increase or decrease in the number of crashes over the years). Crashes happened overwhelmingly (75%) off the main highways on secondary roads, local streets, and public vehicular areas. This may reflect a tendency for bicyclists to avoid the more dangerous and uncomfortable highways. 60% of crash sites were in areas with a speed limit at or below 35 mph. Most crashes (53%) occurred in an urban setting, and 31% happened at intersections or were intersection-related.

Barriers to Cycling

The High Country region is characterized by its mountainous terrain and low development density. The topography of the area has resulted in roadways that have significant horizontal and vertical curves, and limited shoulders. The steep grades and limited sight distance are deterrents to cycling. Also, the abundance of small streams requires many bridges and culverts. The existing bridge widths and culvert lengths limit the roadway width, and increases the required right-of-way, construction costs, and environmental impacts of upgrading roadways to accommodate bicycles.

The low population and development density of the region has resulted in a transportation system primarily serving automobiles. The major roadways connecting population centers tend to have relatively high traffic volumes and speed limits. Mass transit is limited to the Town of Boone. Long-distance commuting between Towns is common for employment, medical trips, and shopping.

Another barrier to cycling in the High Country region is the prevalence of unpaved roads. Over 700 miles of roads in the region are unpaved. Ashe and Wilkes Counties have the most miles of unpaved road in the State, with 199 miles and 193 miles, respectively.

The High Country Regional Bike Plan makes specific roadway recommendations intended to increase safety for cyclists, making bicycle transportation a more feasible option for more people.

Section 6

Organized Rides & Races





Organizational Rides and Races

Existing Rides and Races

There are numerous organized rides and races held each year throughout all seven Counties in the High Country region. The rides/races are typically organized by non-governmental entities, and held as fundraisers. The rides/races often include traffic control and staging/support areas within road right-of-way.

NC General Statute 20-171.2 requires that all bicycle races involving state and local roads be authorized by designated state and local authorities. NCDOT's Bicycle Racing Guidelines (2009) provide guidance on race approval, planning, and traffic control. **The Racing Guidelines are included as Appendix 7.**

Map #14 depicts current/recent rides and races in the High Country region.

Economic Impact of Cycling

The economic impacts from bicycling include:

- Direct expenditures during construction of bicycle facilities
- Decrease in health care costs resulting from availability of bicycle facilities
- Increase in property values in areas with bicycle facilities
- Increase in business activity in urban areas that accommodate bicycling
- Expenditures and jobs resulting from bicycle-related tourism

In the High Country region, the most relevant economic impact to analyze is tourism-related expenditures. Specifically, expenditures by participants in organized rides is a metric that is easy to attribute and quantify. Various studies conducted on the topic were researched. The studies measured the same expenditure categories at cycling events, including registration fees, lodging, meals, fuel, and shopping/entertainment. The studies include:

- Arizona Economic Impact Study (2013). Commissioned by Arizona Department of Transportation, the study consisted of surveying event participants statewide.
Result - \$260 average expenditure per person
- Bikes Belong: The Size and Impact of Road Riding Events (2009). The Bikes Belong Coalition surveyed promoters of 156 cycling events nationwide.
Result - \$240 average expenditure per person
- Economic Impact of Walking and Biking in Vermont (2012). This comprehensive study included a section on impacts from over 40 events with over 16,000 participants.
Result - \$383 average expenditure per person
- Economic Impact of Blood, Sweat, and Gears on the High Country Economy (2012). Appalachian State University conducted this study of the longest-running organized ride in the region. Study consisted of surveying 1,200 participants, and using figures only from non-local respondents.
Result - \$495 average expenditure per person



Blood, Sweat, and Gears

Section 7

Recommendations



Recommendations

Facility Improvements

Specific facility improvements are recommended throughout the region. The recommended improvements are divided into 46 segments. Section 8 – Bicycle Transportation Route Segments details the specific recommendation for each segment, accompanied with a map.

Prioritization

The individual route segment recommendations are prioritized, as shown on Map #10.

Section 8—Bicycle Transportation Route Segments details the facility improvement recommendations, including priorities.

Recreational Routes

The Plan recommends the establishment of seven recreational routes. Section 9—Recreational Cycling Routes details the recommended recreational routes. To establish the routes, it is recommended that wayfinding signage be installed, and the routes be publicized through various established tourism-promotion methods.

Signage

Signage is proposed for two aspects of the High Country Regional Bike Plan: 1) Share the Road signs, and 2) directional signage for the 7 Recreational Cycling Routes.

The Bicycle Transportation Route Segments detailed in the Plan cover 620 miles and a variety of road types and conditions. The recommended improvements are intended to make cycling safer throughout the entire region. The individual segments do not represent specific routes, and therefore do not warrant route marker or wayfinding signage.

Without available data on bicycle traffic, there is not a quantifiable method to determine locations where Share-The-Road signs would best be used throughout the region. Instead, it is recommended that Share-The-Road signs be installed on a case-by-case basis where local governments and NCDOT agree that conditions warrant them. Suggested locations include:

- At the end of striped bike lanes
- Along the revised NC Bicycling Highway routes
- Along the 7 Recreational Routes recommended in this Plan

For the Recreational Routes, it is recommended that directional signs be installed at turn locations along the routes, and confirmation signs be installed along the routes at select locations (i.e., major intersections with no turn, long stretches of roadway). A total of 208 wayfinding signs are recommended. Included in Section 9—Recreational Cycling Routes are individual maps of the seven Recreational Routes showing recommended sign locations.

Enforcement

Based on the responses to the Law Enforcement Survey described in Section 4—Methodology, the following recommendations were developed regarding bicycle laws/enforcement:

- Provide education materials on State bicycle laws to local law enforcement agencies. Information on NC laws regarding cycling can be accessed at <http://www.ncdot.gov/bikeped/lawspolicies/laws>
- Encourage law enforcement officials to consistently and equally enforce motor vehicle and bicycle laws
- Create a Public Service Announcement regarding State bicycle laws, and distribute to media outlets

- Provide copy of High Country Regional Bike Plan to local law enforcement agencies

Transit Interface

It is recommended that all local transit agencies accommodate bicycles, either with racks or inside vans.

Economic Development

It is recommended that local governments, tourism-promotion agencies, and event organizers work together to increase the economic impact from existing and future road cycling events. Increase in economic impact can result from more event participants, promotion of events to spectators, or marketing to event participants of extended stay opportunities.

It is also recommended that local governments and tourism-promotion agencies publicize any established recreational cycling routes. These include the existing routes in Wilkes, Watauga, Mitchell, and Yancey Counties described in Section 5—Existing Conditions, and any future routes that are mapped and/or signed.

Education

To increase cyclist safety, the following education programs are recommended:

- Incorporate cycling safety into the physical education curriculum in elementary schools <https://connect.ncdot.gov/projects/BikePed/Pages/LetsGoNC.aspx>
- Incorporate bicycle safety elements into Drivers Education courses
- Watch for Me NC Campaign—A comprehensive campaign aimed at reducing the number of pedestrians and bicyclists hit and injured in crashes with vehicles. The program is a collaborative effort with state and local transportation agencies. The campaign consists of safety and educational messages directed toward drivers, pedestrians and bicyclists, and an enforcement effort by area police to crack down on some of the violations of safety laws. It is recommended that local governments adopt the campaign by publishing Watch for Me NC Public Service Announcements, and distributing Watch for Me NC bumper stickers. <http://www.watchformenc.org/>

Land-Use Policies

To facilitate bicycle transportation, local governments are encouraged to consider the following recommendations when establishing or amending land-use plans and ordinances:

- Require new subdivisions to dedicate right-of-way for off-road trails that connect to the local or State road system
- Require new subdivisions to construct bike lanes on roads that connect to the local or State road system
- Encourage new development to minimize driveways to reduce conflict points
- Require new commercial and multi-family development to provide bicycle parking
- Adopt and implement NCDOT’s Complete Streets Policy

General Program Recommendations

NCDOT’s WalkBikeNC Plan provides a variety of recommendations related to bicycle and pedestrian transportation in the areas of education, encouragement, and enforcement. In addition to the specific recommendations made above, following is a list of recommended programs and resources from the WalkBike NC Plan that can be used by local governments, bicycle-advocacy groups, and individuals to promote cycling awareness and safety.

1. Bicycle Helmet Initiative
2. Let’s Go NC – Bicycle and Pedestrian Curriculum

3. Share the Road Posters
4. Safe Routes to School Program/Community Workshop
5. Bicycle Planning and Design Workshops
6. Streetwise Cycling – Guide to Safe Bicycling in NC
7. Statewide Bicycle Skills Training for Adults
8. Train the Trainers Bicycle Skills Training
9. Bicycle rodeo kit
10. Bicycle and Pedestrian Facility Design Seminars
11. Bicycle/Pedestrian Commuter Incentive Program
12. Campus Commuter Program
13. Bicycling Poster contest
14. Bike Repair Program

The NCDOT WalkBikeNC Plan (Chapter 7) provides details on the programs listed above, including background, status, lead agencies, and links to additional information. The WalkBikeNC Plan can be accessed at:

<http://www.ncdot.gov/bikeped/download/WalkBikeNCPlanChapterslowres.pdf>

Section 8

Bicycle Transportation

Route Segments



The High Country Regional Bike Plan identifies a route network encompassing 620 miles. The network includes 46 individual route segments. Specific facility-improvement recommendations were made for each segment, and each segment was prioritized. The following pages detail the individual route segments.

The table below summarizes the facility improvement recommendations by County.

Total Mileage per Improvement Recommendation									
County	2' Paved Shoulder	4' Paved Shoulder	4' Bike Lane	4-5' Bike Lane	4-5' Paved Shoulder	4-6' Paved Shoulder	Extension of Existing Greenway	Off-Road Paved Path	No Improvement
Alleghany	–	35.1	3.2	–	30.1	10.8	–	–	0.8
Ashe	–	61.3	3.3	1.73	13.3	22.3	–	–	0.3
Avery	18.4	20.3	13.5	–	11	23.3	–	–	0.5
Mitchell	12.3	9.6	5.8	–	8.1	5.3	–	–	–
Watauga	25.1	22.3	10.4	2.9	3.3	23	–	6.6	0.8
Wilkes	9.7	39.5	3.6	7.8	54	–	2.2	–	1.7
Yancey	22	29.1	1.7	–	–	17.2	–	–	5.8

The facility improvement recommendations are intended to be used to guide decisions by local governments and NCDOT in the following stages of planning and project development:

- Long-range planning (i.e., when developing bicycle elements of county-level Comprehensive Transportation Plans)
- Requesting new projects for inclusion in the STIP
- Assigning points to projects at the RPO-level
- Roadway design

Route Segment #1

Current Conditions
US 19 and US 19E from Madison County Line to Jacks Creek Road was recently upgraded to a four-lane divided facility through NCDOT TIP Project R-2518. The remainder of US 19E through Burnsville is currently being upgraded to a four-lane divided facility through NCDOT TIP Project R-2519A. The projects include construction of four-foot paved shoulders. The highest 2012 AADT count on the route segment was 16,000; the average of the 2012 AADT counts along the route segment was 14,375. Route segment #1 follows West Main Street and East Main Street through downtown Burnsville. Both sections of Main Street are densely developed. Posted speed limit on US19 and US 19E is 55 mph. Posted speed limit on West and East Main Streets is 35 mph, with 25 mph section around Town Square.

Justification
Route Segment #1 connects the Town of Burnsville to Madison County. It also includes the primary east-west corridor through downtown Burnsville. West Main Street and East Main Street currently do not have adequate accommodations for cyclists. The segment also connects to a recommended bicycle corridor identified in the 2013 Blue Ridge Bike Plan. All of US 19 and US 19E in Yancey County is included in the Bicycle Map of the 2008 Yancey County Comprehensive Transportation Plan (CTP). The entire segment is designated as NC Scenic Byway (Mount Mitchell Scenic Drive).

Recommendation
The recommendation for Route Segment #1 is for 4- to 6-foot paved shoulders outside Burnsville Town Limits, and 4-foot bike lanes within Burnsville Town Limits. No improvements are recommended on sections posted 25 mph or less. NCDOT TIP projects R-2518 and R-2519A will achieve the minimum recommendation on US 19 and US 19E.

Priority
High



Cane River

Roads :: US 19, US 19E, West Main Street, East Main Street

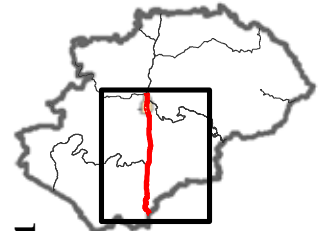
Segment Limits :: From Madison County to NC 197

Length :: 11.4 Miles

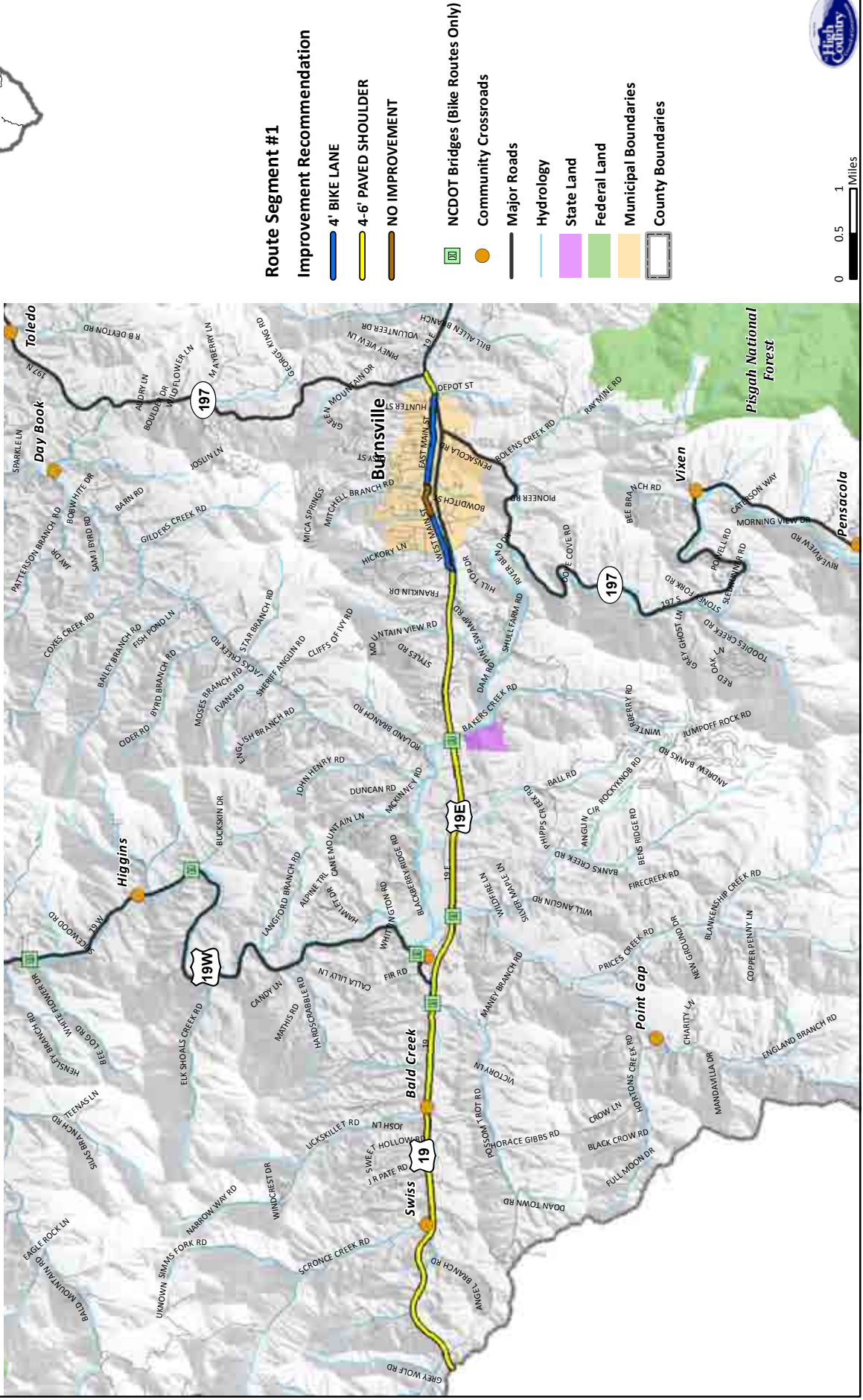


West Main Street, Burnsville

High Country Regional Bike Plan Route Segment #1 Yancey County



Route Segment #1
Inset Map



Route Segment #2

Current Conditions
US 19W has narrow lanes with no paved shoulder. Posted speed limit is 55 mph. The highest 2012 AADT count on the route segment was 1,700; the average of the 2012 AADT counts along the route segment was 737.

Justification
Route Segment #2 connects US 19 to Pisgah National Forest and Tennessee. It is scenic and therefore popular with recreational cyclists. A portion of Route Segment #2 is included in the NC Statewide Bicycling Highways network.

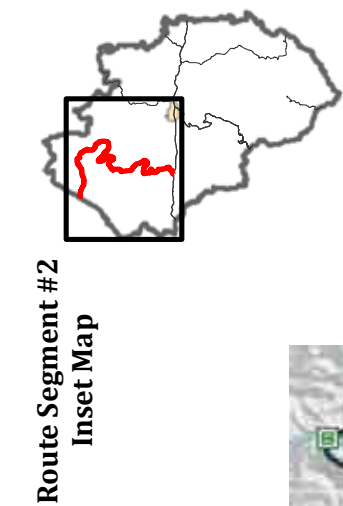
Recommendation
The recommendation for Route Segment #2 is for 2-foot paved shoulders.

Priority
Low

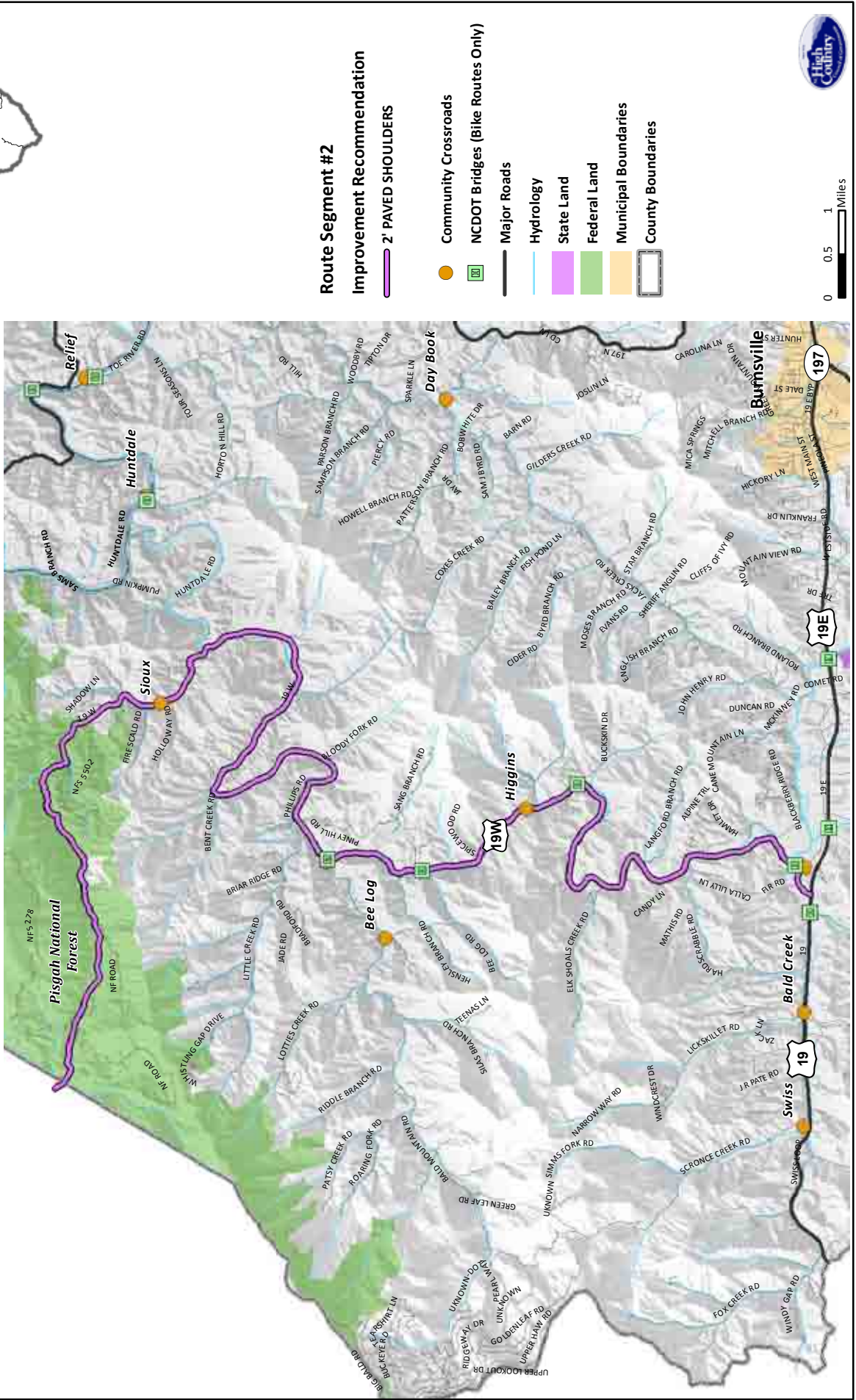
Roads :: US 19W

Segment Limits :: From US 19 to Tennessee State Line

Length :: 22.1 Miles



High Country Regional Bike Plan
Route Segment #2
Yancey County



Route Segment #3

Current Conditions
NC 197 and NC 226 have narrow lanes with no paved shoulder. Posted speed limit is 55 mph. The highest 2012 AADT count on the route segment was 4,100; the average of the 2012 AADT counts along the route segment was 2,000.

Justification
Route Segment #3 connects the Towns of Burnsville and Bakersville. It provides a shorter alternative between the Towns than the US 19E/NC 226 option. A portion of Route Segment #3 is included in the NC Statewide Bicycling Highways network.

Recommendation
The recommendation for Route Segment #3 is for 4-foot paved shoulders.

Priority
Medium

Roads :: NC 197, NC 226

Segment Limits :: From Burnsville to Bakersville

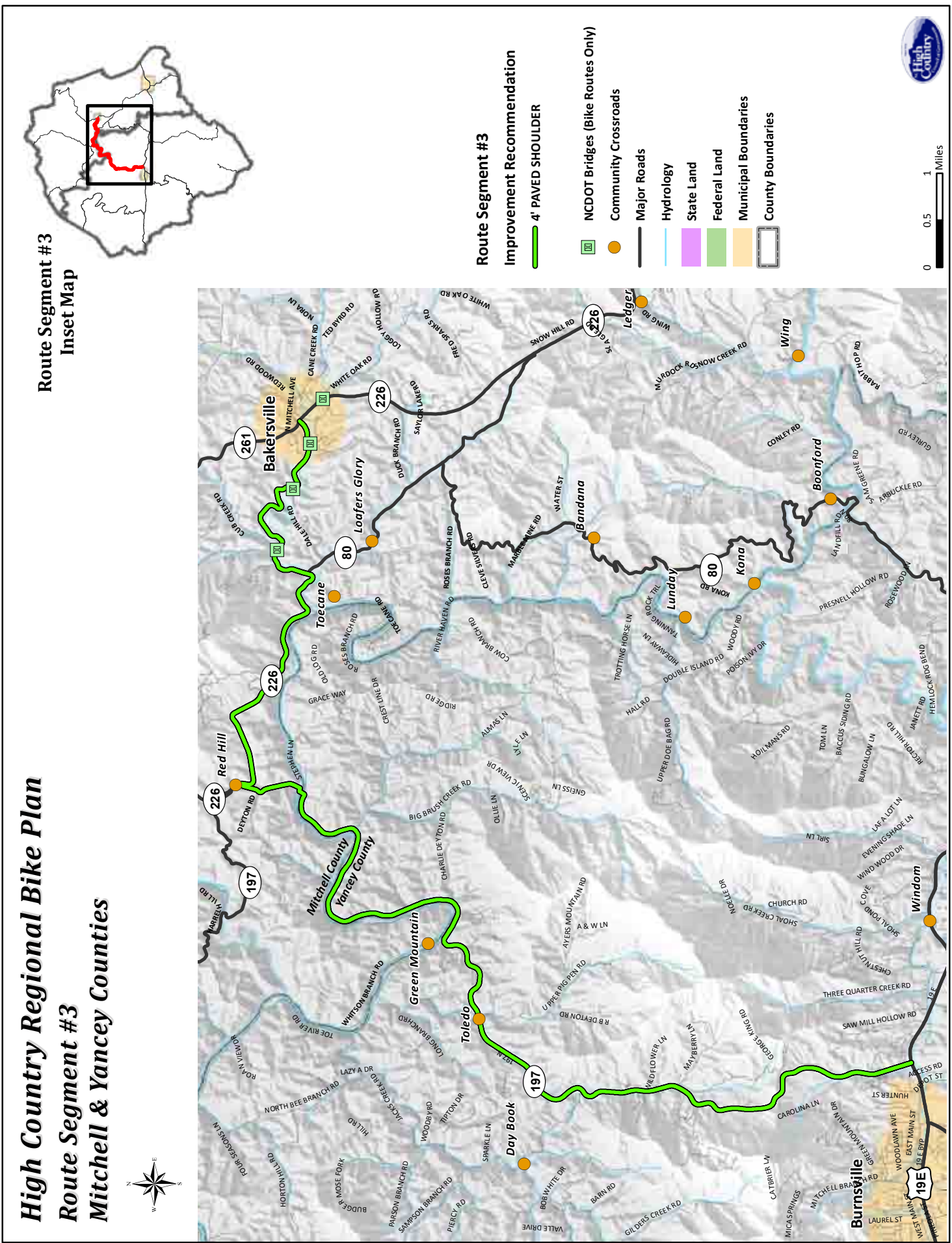
Length :: 16.6 Miles



NC 197, Green Mountain



NC 226, Cub Creek Bridge



Route Segment #4

Current Conditions
US 19E from west of Burnsville to Spruce Pine is currently being upgraded to a four-lane divided facility through NCDOT TIP Project R-2519. The project will include construction of four-foot paved shoulders. The highest 2012 AADT count on the route segment was 16,000; the average of the 2012 AADT counts along the route segment was 10,162. Posted speed limit on US 19E is 55 mph.

Justification
Route Segment #4 connects the Towns of Burnsville and Spruce Pine. The route segment also connects to NC 80. All of US 19E in Yancey County is included in the Bicycle Map of the 2008 Yancey County Comprehensive Transportation Plan (CTP). US 19E from NC 197 to NC 80 South is designated as NC Scenic Byway (Mount Mitchell Scenic Drive).

Recommendation
The recommendation for Route Segment #4 is for 4- to 6-foot paved shoulders. NCDOT TIP project R-2519 will achieve the minimum recommendation on US 19E.

Priority
High

Roads :: US 19E

Segment Limits :: From NC 197 in Burnsville to NC 226 in Spruce Pine

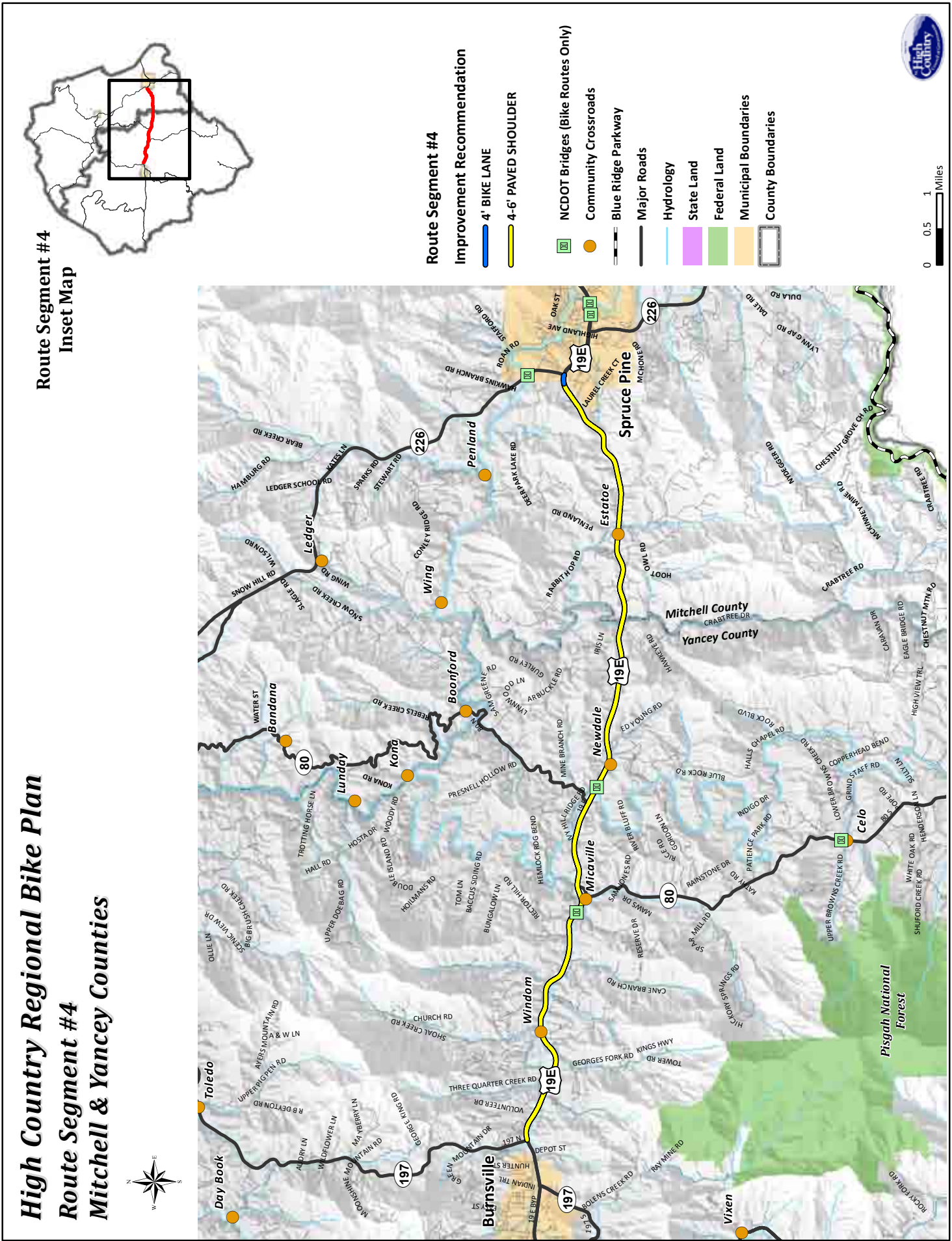
Length :: 11.5 Miles



US 19E under construction, Micaville



Estatoe



Route Segment #5

Current Conditions
NC 261 has narrow lanes with no paved shoulder. Posted speed limit is 55 mph. The highest 2012 AADT count on the route segment was 2,200; the average of the 2012 AADT counts along the route segment was 1,145.

Justification
Route Segment #5 connects the Town of Bakersville to Pisgah National Forest facilities at Roan Mountain. It is scenic and therefore popular with recreational cyclists. All of Route Segment #5 is included in the NC Statewide Bicycling Highways network.

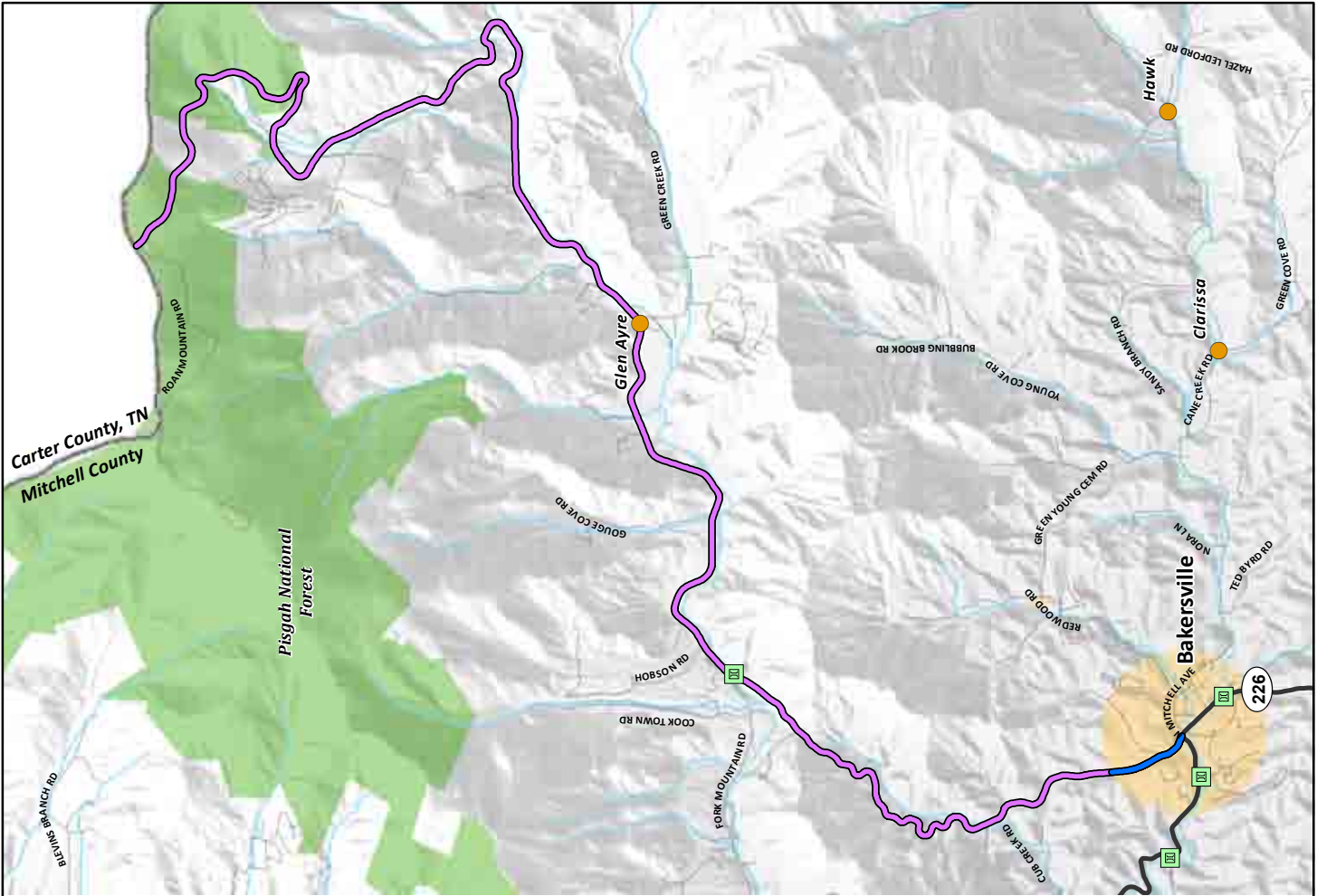
Recommendation
The recommendation for Route Segment #5 is for 2-foot paved shoulders, and 4-foot bike lanes within Bakersville Town Limits.

Priority
Low

Roads :: NC 261

Segment Limits :: From Bakersville to Tennessee State Line

Length :: 12.8 Miles



Route Segment #6

Current Conditions
NC 80 and NC 128 have narrow lanes with no paved shoulder. The Blue Ridge Parkway has 9-foot lanes with no paved shoulder. Posted speed limit on NC 80 and NC 128 is 55 mph, with a section of 35 mph and 45 mph on NC 80. Speed limit on the Blue Ridge Parkway is 45 mph. The highest 2012 AADT count on the route segment was 3,800; the average of the 2012 AADT counts along the route segment was 1,611.

Justification
Route Segment #6 connects US 19E to the Blue Ridge Parkway and Mount Mitchell State Park. NC 80 and NC 128 are included in the Bicycle Map of the 2008 Yancey County Comprehensive Transportation Plan (CTP). The entire route segment is designated as NC Scenic Byway (Mount Mitchell Scenic Drive).

Recommendation
The recommendation for Route Segment #6 is for 4-foot paved shoulders on NC 80, and 4-foot paved shoulder on east side only of NC 128. No improvements are recommended for the Blue Ridge Parkway.

Priority
Medium

Roads :: NC 80, Blue Ridge Parkway, NC 128

Segment Limits :: From US 19E to Mount Mitchell State Park

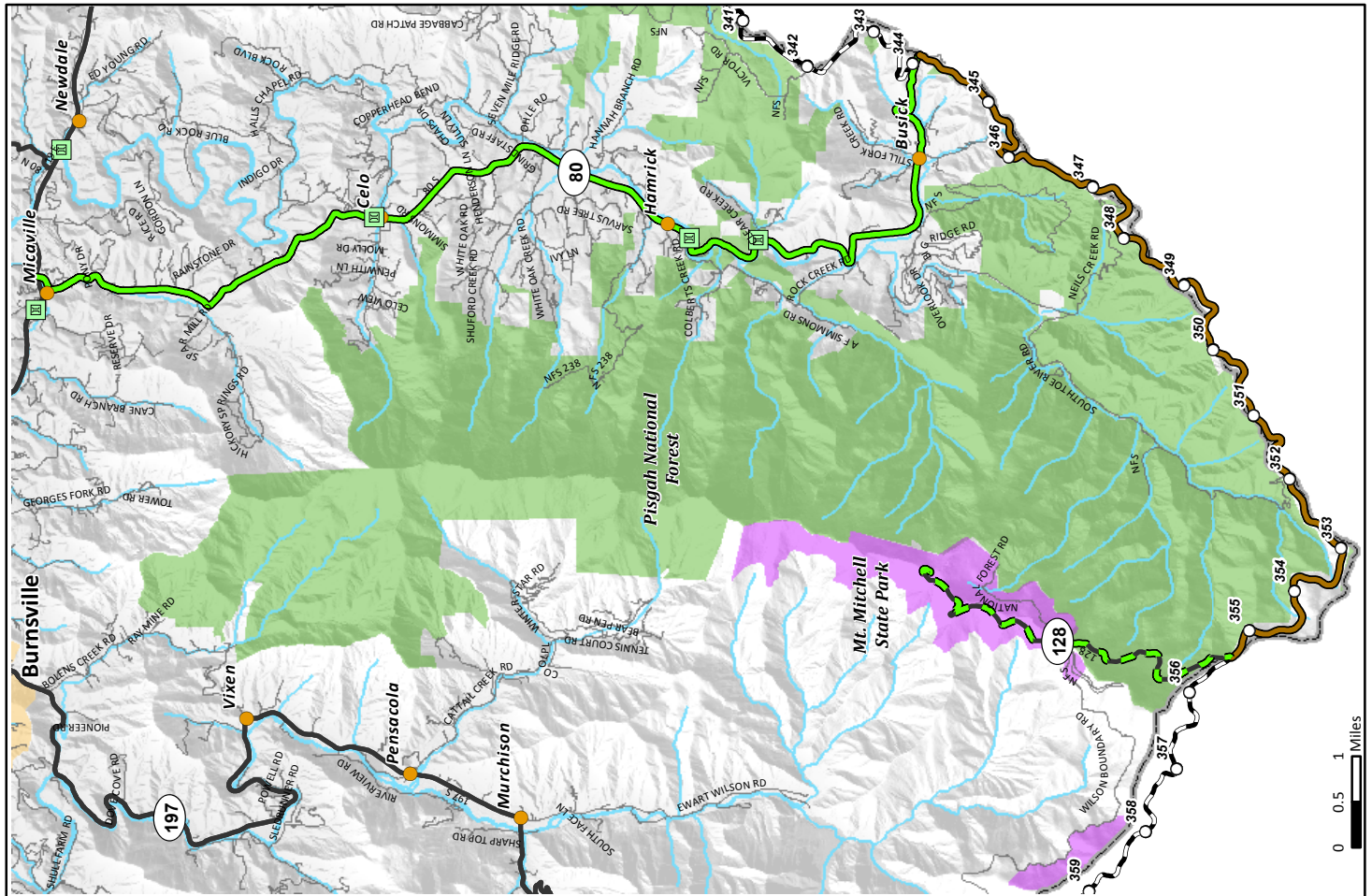
Length :: 30 Miles



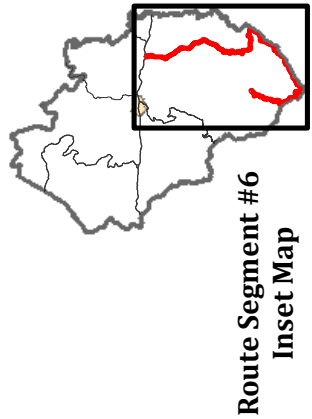
NC 80 near US 19E



NC 128, Mount Mitchell State Park



High Country Regional Bike Plan Route Segment #6 Yancey County



- Route Segment #6**
- Improvement Recommendation**
- 4' PAVED SHOULDER
 - 4' PAVED SHOULDER (NORTHBOUND LANE ONLY)
 - NO IMPROVEMENT
- Legend**
- NC DOT Bridges (Bike Routes Only)
 - Community Crossroads
 - Blue Ridge Parkway
 - Blue Ridge Parkway Milepost
 - Major Roads
 - Hydrology
 - State Land
 - Federal Land
 - Municipal Boundaries
 - County Boundaries



Route Segment #7

Current Conditions

NC 226 includes approximately two miles of 4-lane from US 19E north. The remainder is 2 lane. Average paved shoulder width is approximately 2 feet for the entire segment. Posted speed limit is 55 mph. The highest 2012 AADT count on the route segment was 8,300; the average of the 2012 AADT counts along the route segment was 5,925.

Justification

Route Segment #7 connects the Towns of Spruce Pine and Bakersville. A portion of Route Segment #7 is included in the NC Statewide Bicycling Highways network.

Recommendation

The recommendation for Route Segment #7 is for 4- to 5-foot paved shoulders, and 4-foot bike lanes within Town Limits.

Priority
High

Roads :: NC 226

Segment Limits :: From Spruce Pine to Bakersville

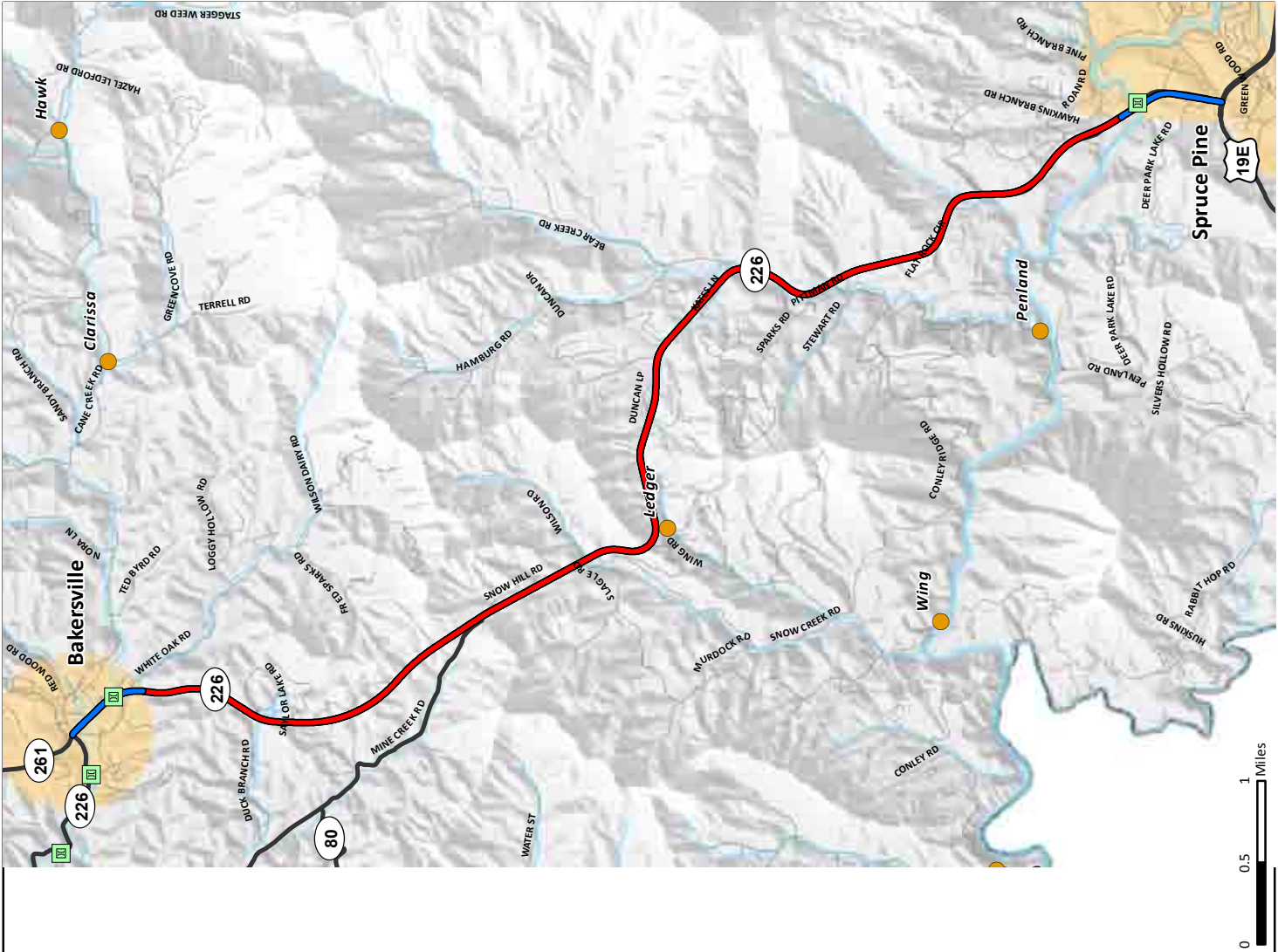
Length :: 9.4 Miles



NC 226, Bakersville



NC 226, Spruce Pine



High Country Regional Bike Plan

Route Segment #7

Mitchell County

Route Segment #7 Inset Map

Route Segment #7 Improvement Recommendation

- 4' BIKE LANE
- 4-5' PAVED SHOULDER

Legend

- NC DOT Bridges (Bike Routes Only)
- Community Crossroads
- Major Roads
- Hydrology
- State Land
- Federal Land
- Municipal Boundaries
- County Boundaries



Route Segment #8

Current Conditions
Altapass Highway has narrow lanes and no paved shoulder. Posted speed limit is 35 mph within the Town of Spruce Pine, and 45 mph outside. The highest 2012 AADT count on the route segment is 5,900; the average of the 2012 AADT counts along the route segment is 3,133.

Justification
Route Segment #8 connects the Town of Spruce Pine to the Blue Ridge Parkway.

Recommendation
The recommendation for Route Segment #8 is for 4-foot paved shoulders, and 4-foot bike lanes within Spruce Pine Town Limits.

Priority
Medium

Roads :: Altapass Highway

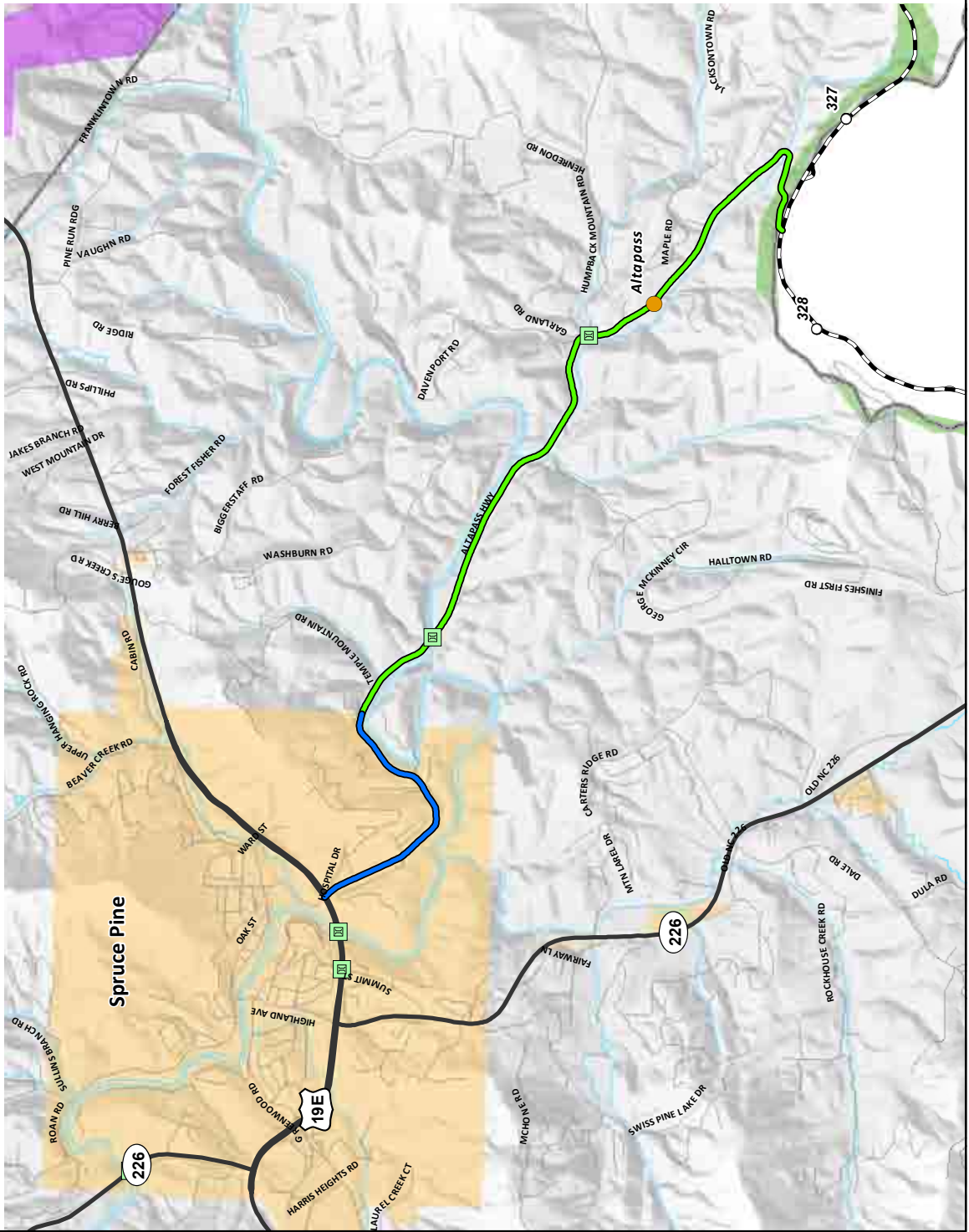
Segment Limits :: From Spruce Pine to Blue Ridge Parkway

Length :: 4.6 Miles



High Country Regional Bike Plan
Route Segment #8
Mitchell County

Route Segment #8
Inset Map



Route Segment #9

Current Conditions

All of Route Segment #9 is currently included in the STIP. Two NCDOT STIP projects comprise the corridor. NCDOT Project R-2520 includes US 19E and NC 194 from Spruce Pine to US 221. NCDOT Project R-2595 includes US 221 from NC 194 to Linville. Both projects will consist of widening to multi-lanes. Both projects are currently unfunded in the STIP. Currently, the segment has a variety of cross-sections. US 19E has 4-lane, 3-lane, and 2-lane sections. Shoulder width varies throughout the US 19E section, typically between 1 and 3 feet. NC 194 and NC 221 have narrow lanes with no paved shoulder. Posted speed limit varies from 35 mph to 55 mph. The highest 2012 AADT count on the route segment was 15,000; the average of the 2012 AADT counts along the route segment was 7,914.

Justification

Route Segment #9 connects the Town of Spruce Pine to the Town of Crossnore, and to other route segments. A portion of Route Segment #9 is included in the NC Statewide Bicycling Highways network.

Recommendation

The recommendation for Route Segment #9 is for 4- to 6-foot paved shoulders, and 4-foot bike lanes within Spruce Pine Town Limits.

Priority
High

Roads :: US 19E, Mullins Hill Road, NC 194, US 221

Segment Limits :: From Spruce Pine to north of Crossnore

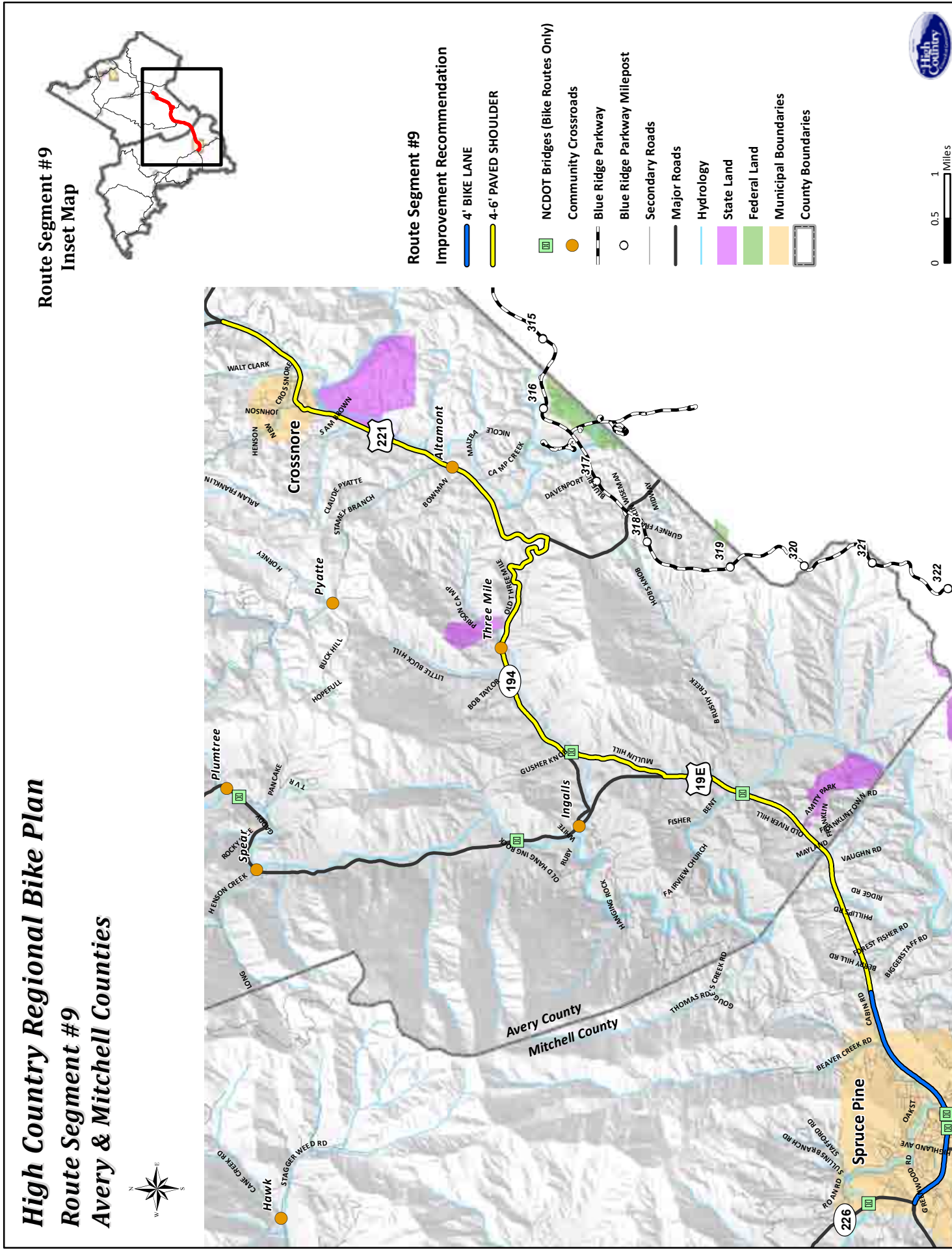
Length :: 15.9 Miles



NC 194, near Mullins Hill Road



US 221, North of Crossnore



Route Segment #9A

Current Conditions
Route Segment #9A is currently included in the STIP. NCDOT Project R-2596 includes US 221 from NC 226 in McDowell County to NC 194. The project will consist of widening to multi-lanes, and is currently unfunded in the STIP. Currently, the segment has narrow lanes with no paved shoulder. Posted speed limit is 55 mph. The only 2012 AADT count on the route segment was 2,800.

Justification
Route Segment #9A connects the Route Segment #9 to the Blue Ridge Parkway. All of Route Segment #9A is included in the NC Statewide Bicycling Highways network.

Recommendation
The recommendation for Route Segment #9A is for 4- to 6-foot paved shoulders.

Priority
Medium

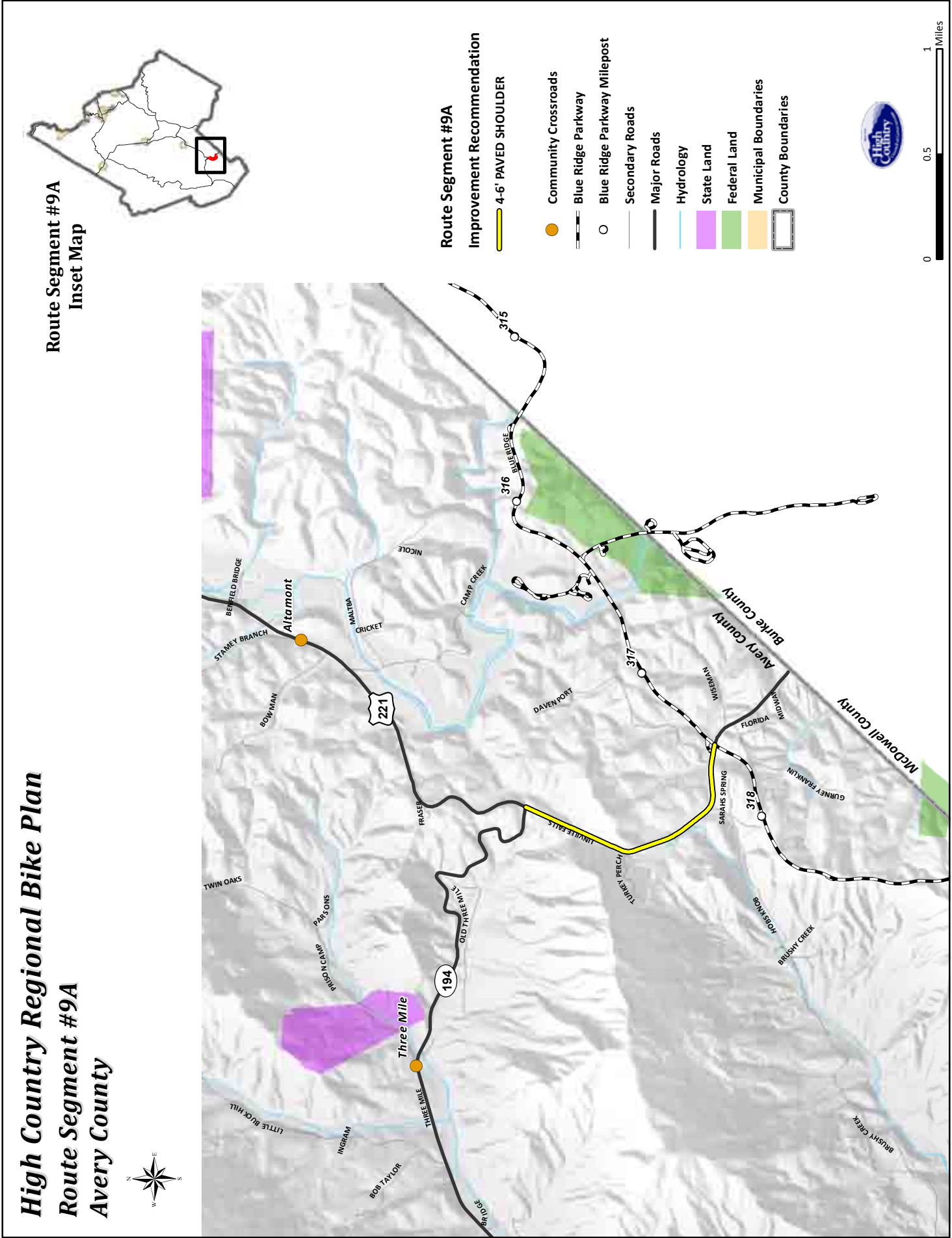
Roads :: US 221
Segment Limits :: From NC 194 to Blue Ridge Parkway
Length :: 1.3 Miles



US 221 at NC 194



US 221 at the Blue Ridge Parkway, Linville Falls



Route Segment #10

Current Conditions

The majority of Route Segment #10 has narrow lanes with no paved shoulder. Posted speed limit is 55 mph, with sections of 45 mph and 35 mph near Elk Park. The highest 2012 AADT count on the route segment was 6,900; the average of the 2012 AADT counts along the route segment was 2,943.

Justification

Route Segment #10 connects Elk Park to other route segments.

Recommendation

The recommendation for Route Segment #10 is for 4-foot paved shoulders from Ingalls Community to Cranberry Community; 4- to 5-foot paved shoulders from Cranberry Community to Elk Park; 4-foot bike lane within Elk Park Town Limits.

Priority
Low

Roads :: US 19E, Big Plumtree Creek Road, Licklog Road, Squirrel Creek Road

Segment Limits :: From NC 194 in Ingalls Community to US 19E

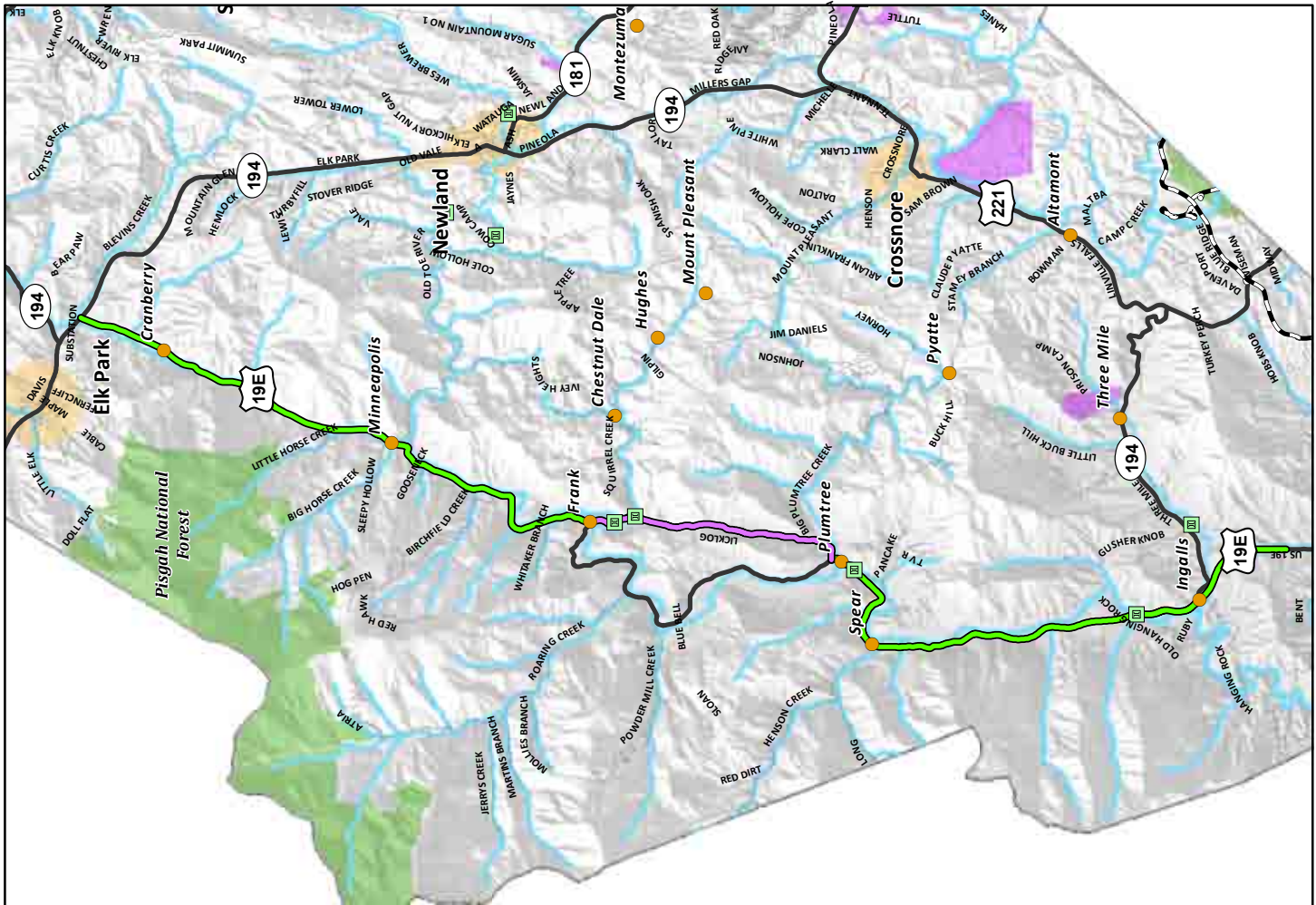
Length :: 17 Miles



US 19E, Minneapolis



US 19E, Ingalls



0 0.5 1 Miles

High Country Regional Bike Plan Route Segment #10 Avery County

Route Segment #10 Inset Map



- Route Segment #10
Improvement Recommendation**
- 4' PAVED SHOULDER (Green line)
 - 2' PAVED SHOULDER (Purple line)
- Legend:**
- NCDOT Bridges (Bike Routes Only)
 - Community Crossroads
 - Blue Ridge Parkway
 - Secondary Roads
 - Major Roads
 - Hydrology
 - State Land
 - Federal Land
 - Municipal Boundaries
 - County Boundaries



Route Segment #11

Current Conditions

The southern portion of NC 194 (from Newland to Blevins Creek Road) is 2-lane with no paved shoulder. From Blevins Creek Road to US 19E, NC 194 is 3-lane with a 2-foot paved shoulder on the northbound lane. US 19E is 2-lane with 2-foot paved shoulders. Posted speed limits along the route segment include 25 mph, 35 mph, 45 mph, and 55 mph. The highest 2012 AADT count on the route segment was 8,900; the average of the 2012 AADT counts along the route segment was 6,780.

Justification

Route Segment #11 connects the Towns of Newland and Elk Park.

Recommendation

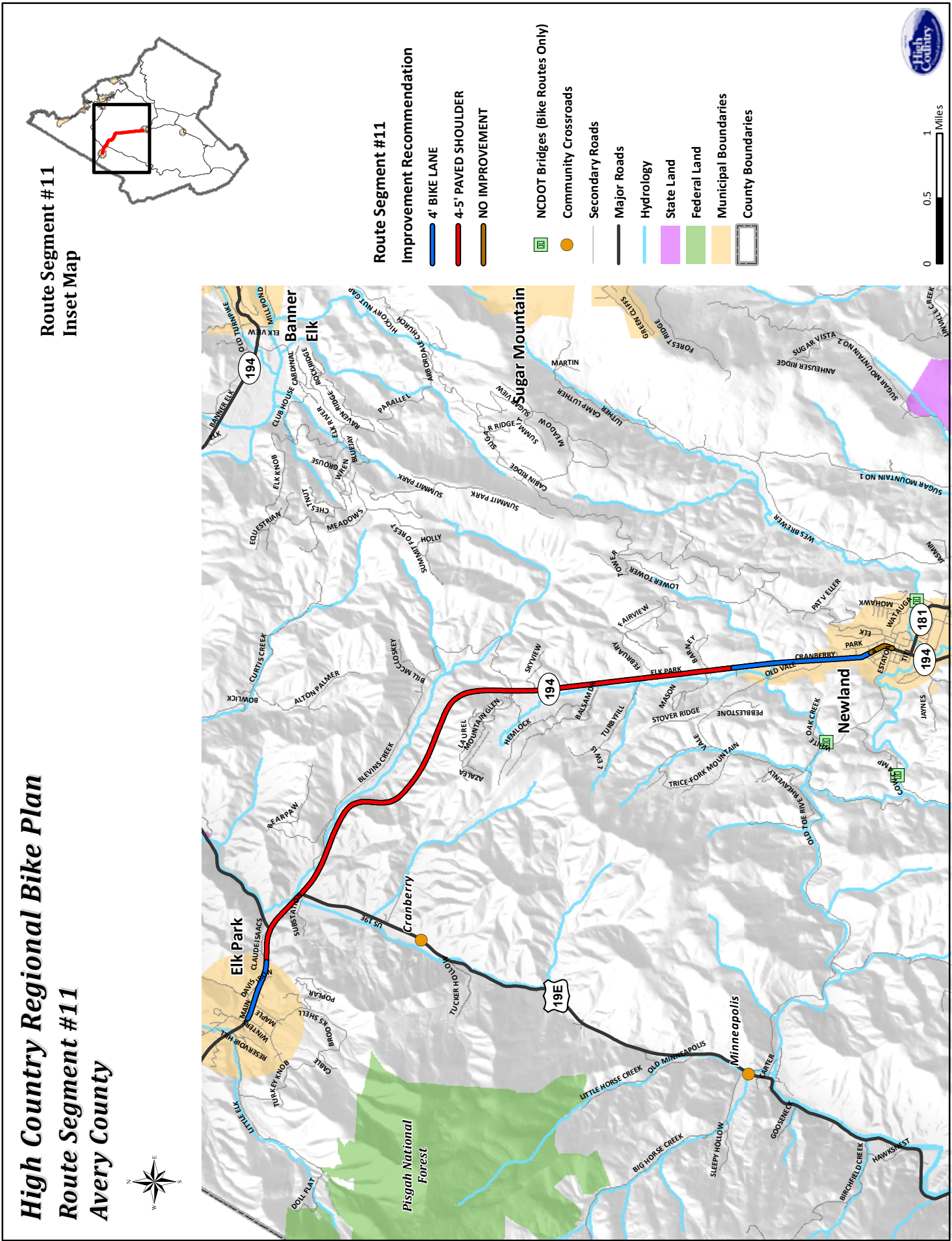
The recommendation for Route Segment #11 is for 4- to 5-foot paved shoulders, with 4-foot bike lanes within Newland and Elk Park Town Limits.

Priority
Medium

Roads :: NC 194, US 19E

Segment Limits :: From Newland to Elk Park

Length :: 6.5 Miles



Route Segment #12

Current Conditions
US 19E is 2-lane with 2-foot paved shoulders. NC 194 has narrow lanes with no paved shoulder. Posted speed limit along the route segment is 55 mph, with a 25 mph section and 35 mph section outside the Towns of Elk Park and Banner Elk, respectively. The highest 2012 AADT count on the route segment is 6,900; the average of the 2012 AADT counts along the route segment is 4,233.

Justification
Route Segment #12 connects the Towns of Elk Park and Banner Elk. All of the NC 194 portion of Route Segment #12 is designated as NC Scenic Byway (Mission Crossing).

Recommendation
The recommendation for Route Segment #12 is for a 4-foot paved shoulder on the northbound lane of NC 194; 4- to 5-foot paved shoulders on US 19E; and 4-foot bike lanes within Elk Park and Banner Elk Town Limits.

Priority
Medium

Roads :: NC 194

Segment Limits :: From US 19E to Banner Elk

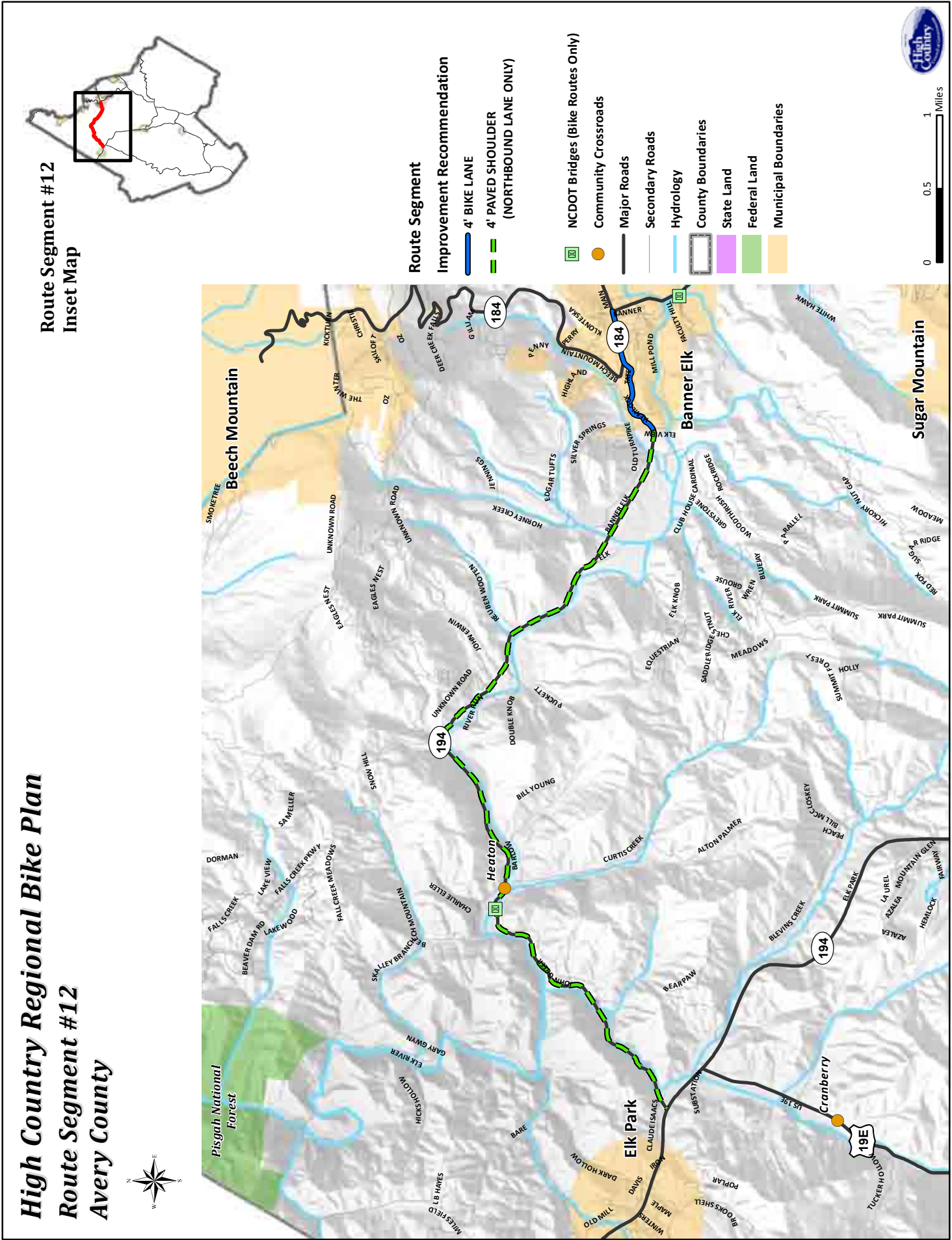
Length :: 7.6 Miles



NC 194, Heaton



NC 194, Banner Elk



Route Segment #13

Current Conditions
NC 194 and Hickory Nut Gap Road have narrow lanes with no paved shoulder. Posted speed limits along the route segment include 55 mph, 45 mph, 35 mph, and 25 mph. The highest 2012 AADT count on the NC 194 portion of the route segment is 11,000; the average of the 2012 AADT counts along the route segment is 6,483. No AADT data is available for Hickory Nut Gap Road.

Justification
Route Segment #13 connects the Towns of Newland and Banner Elk, and connects the Towns to other route segments.

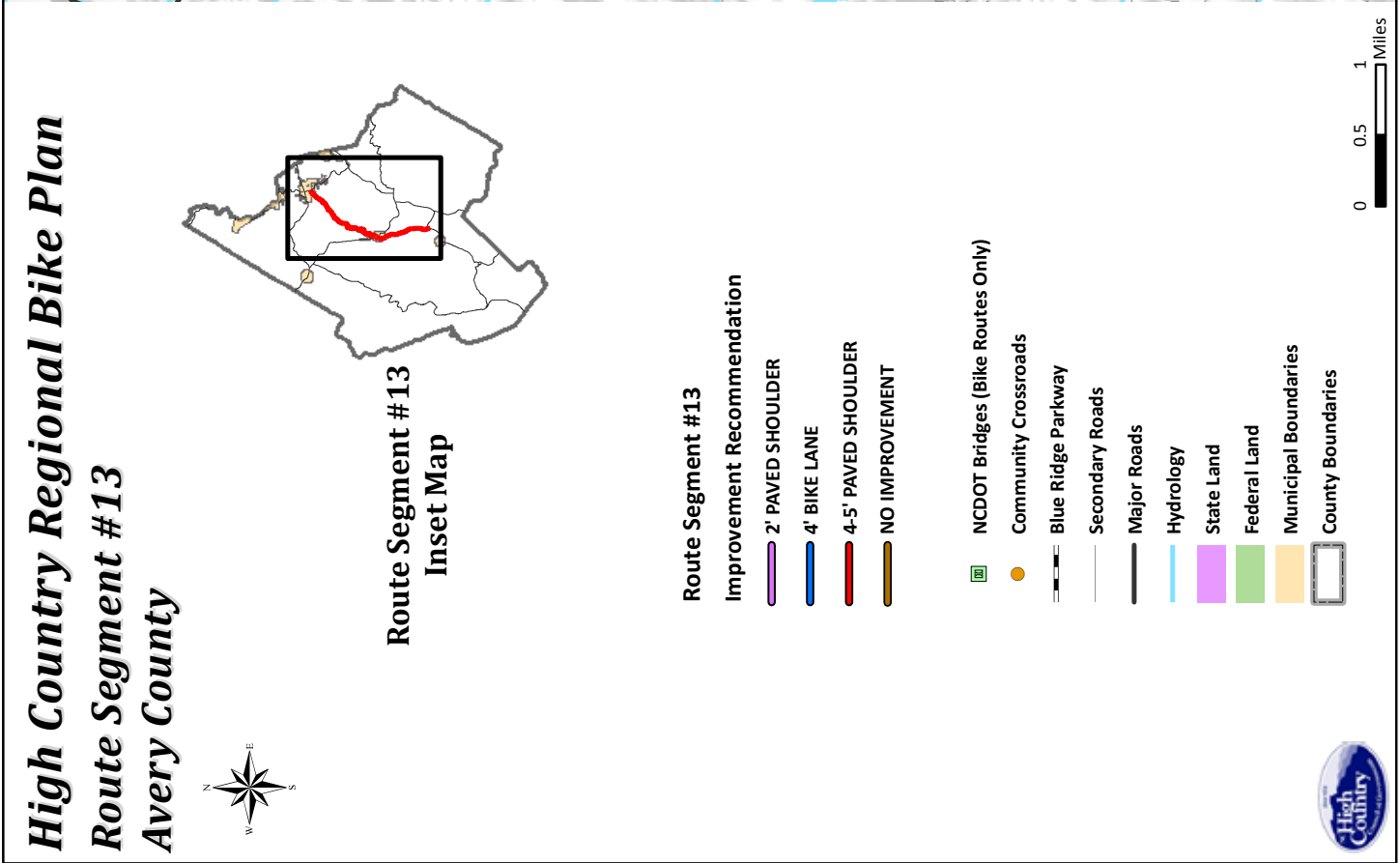
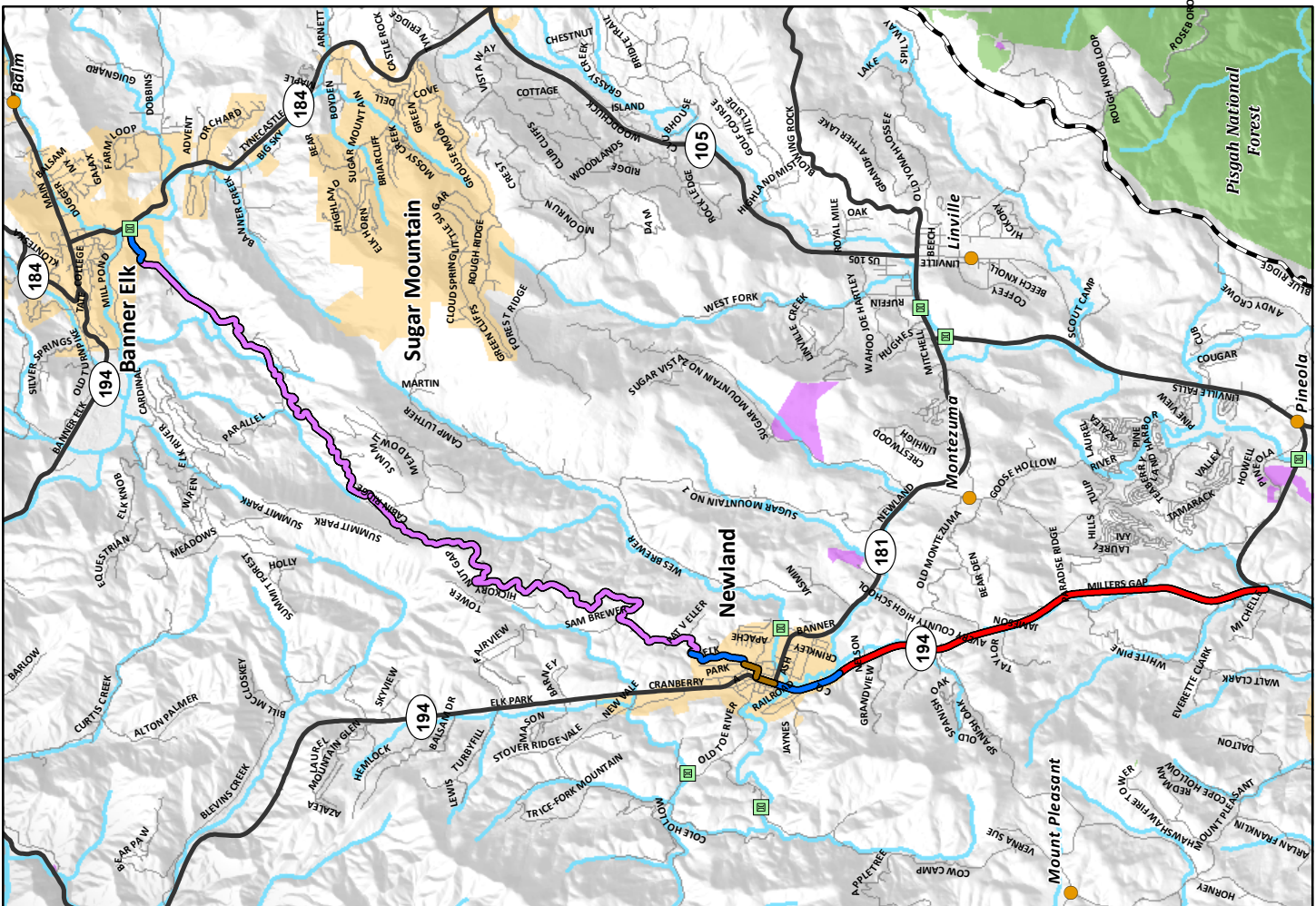
Recommendation
The recommendation for Route Segment #13 is for 4- to 5-foot paved shoulders on NC 194; 2-foot paved shoulders on Hickory Nut Gap Road; and 4-foot bike lanes within Newland and Banner Elk Town Limits.

Priority
Medium

Roads :: NC 194, Montezuma Street, Hickory Nut Gap Road

Segment Limits :: From US 221 to Banner Elk

Length :: 12.1 Miles



Route Segment #14

Current Conditions
NC 181 is a mix of 2-lane, 3-lane, and 4-lane with variable paved shoulder width. US 221 is 2-lane with 2-foot paved shoulders. Posted speed limits along the route segment include 55 mph, 45 mph, and 35 mph. The highest 2012 AADT count on the route segment is 9,900; the average of the 2012 AADT counts along the route segment is 8,467.

Justification
Route Segment #14 connects the Town of Newland to the Linville Community and other route segments.

Recommendation
The recommendation for Route Segment #14 is for 4- to 5-foot paved shoulders on NC 181; 4- to 6-foot paved shoulders on US 221; and 4-foot bike lanes within Newland Town Limits.

Priority
High

Roads :: NC 181, US 221

Segment Limits :: From Newland to US 221

Length :: 4.1 Miles

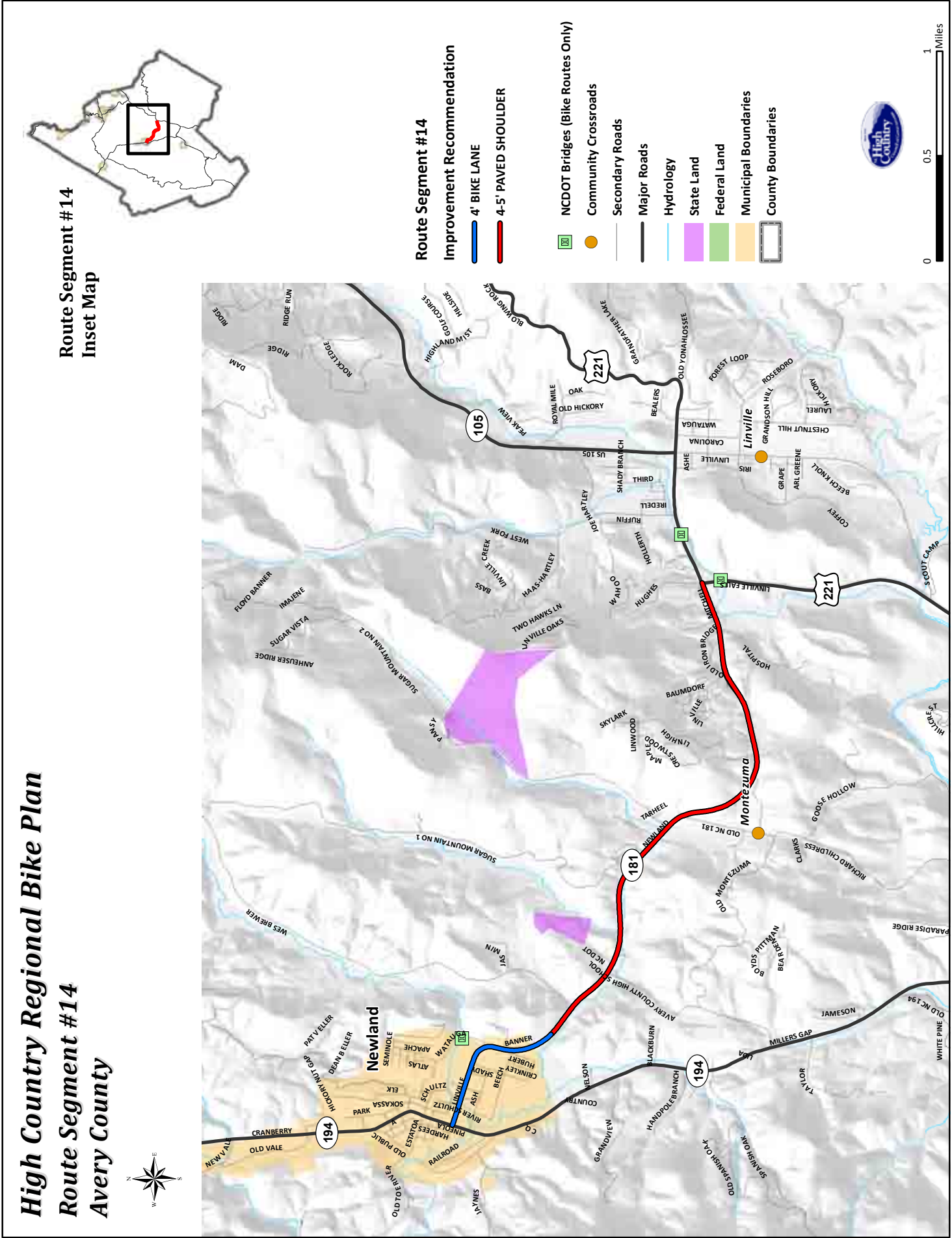


US 221, Linville



NC 181, Newland

High Country Regional Bike Plan Route Segment #14 Avery County



Route Segment #15

Current Conditions

NC 184 is 2-lane, most of which has no paved shoulder. Posted speed limits along the route segment include 55 mph, 45 mph, 35 mph, and 25 mph. The highest 2012 AADT count on the route segment is 8,900; the average of the 2012 AADT counts along the route segment is 6,425.

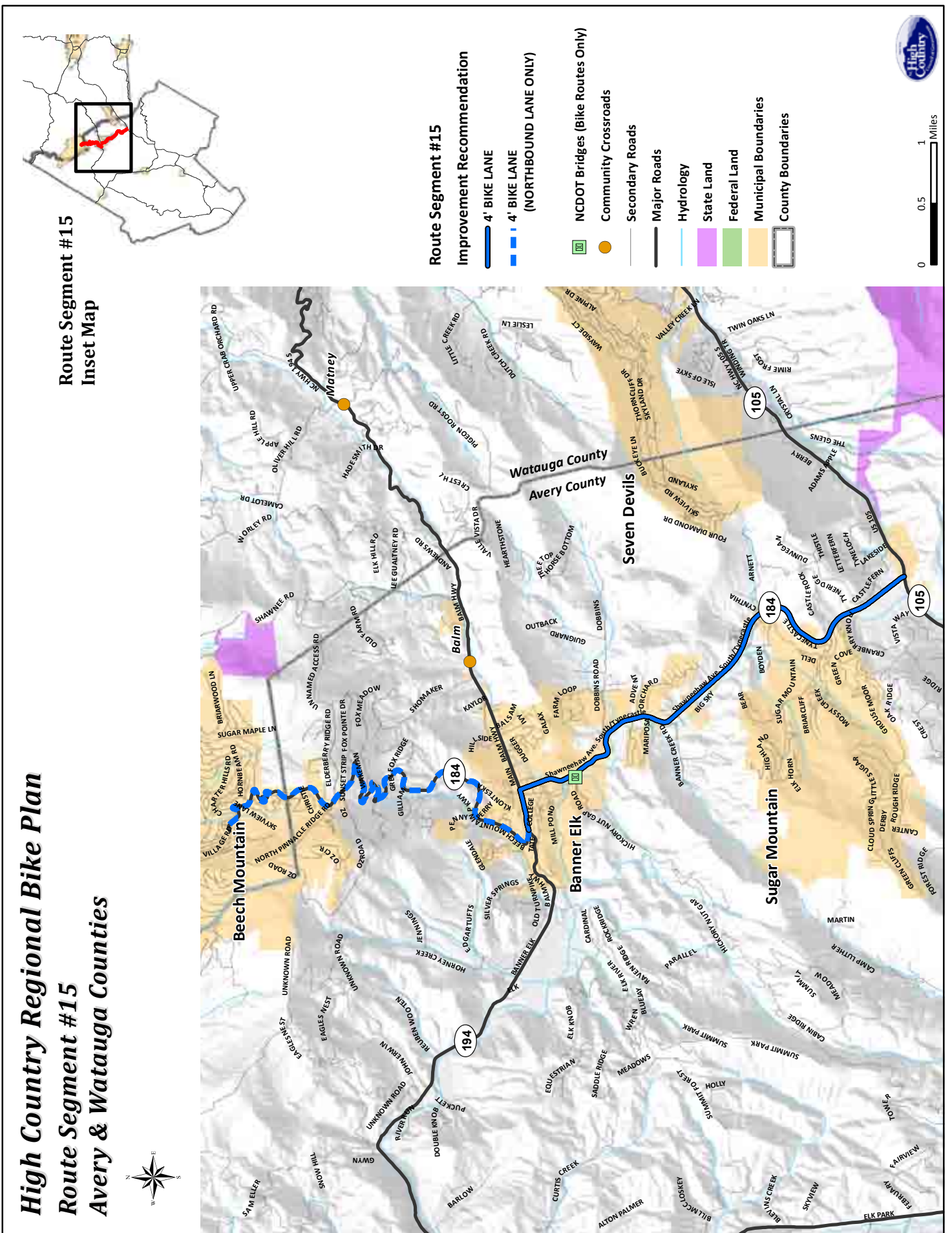
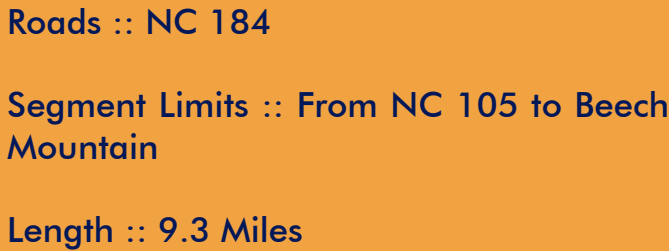
Justification

Route Segment #15 connects the Town of Beech Mountain, the Town of Banner Elk, and the Village of Sugar Mountain. It also makes connections to other route segments.

Recommendation

The recommendation for Route Segment #15 is for 4-foot bike lanes from NC 105 to Banner Elk, and a 4-foot bike lane on the northbound side only from NC 194 in Banner Elk to Beech Mountain.

Priority
High



Route Segment #16

Current Conditions
US 221 has narrow lanes with no paved shoulder. Posted speed limits along the route segment include 55 mph, 45 mph, 35 mph, and 25 mph. The highest 2012 AADT count on the route segment is 9,900; the average of the 2012 AADT counts along the route segment is 3,087.

Justification
Route Segment #16 connects the Town of Blowing Rock to the Blue Ridge Parkway, Grandfather Mountain, and other route segments. The portion of Route Segment #16 in Watauga County is included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP). US 221 from NC 105 to Blowing Rock is designated as NC Scenic Byway (Little Parkway). The route is scenic and popular with recreational cyclists.

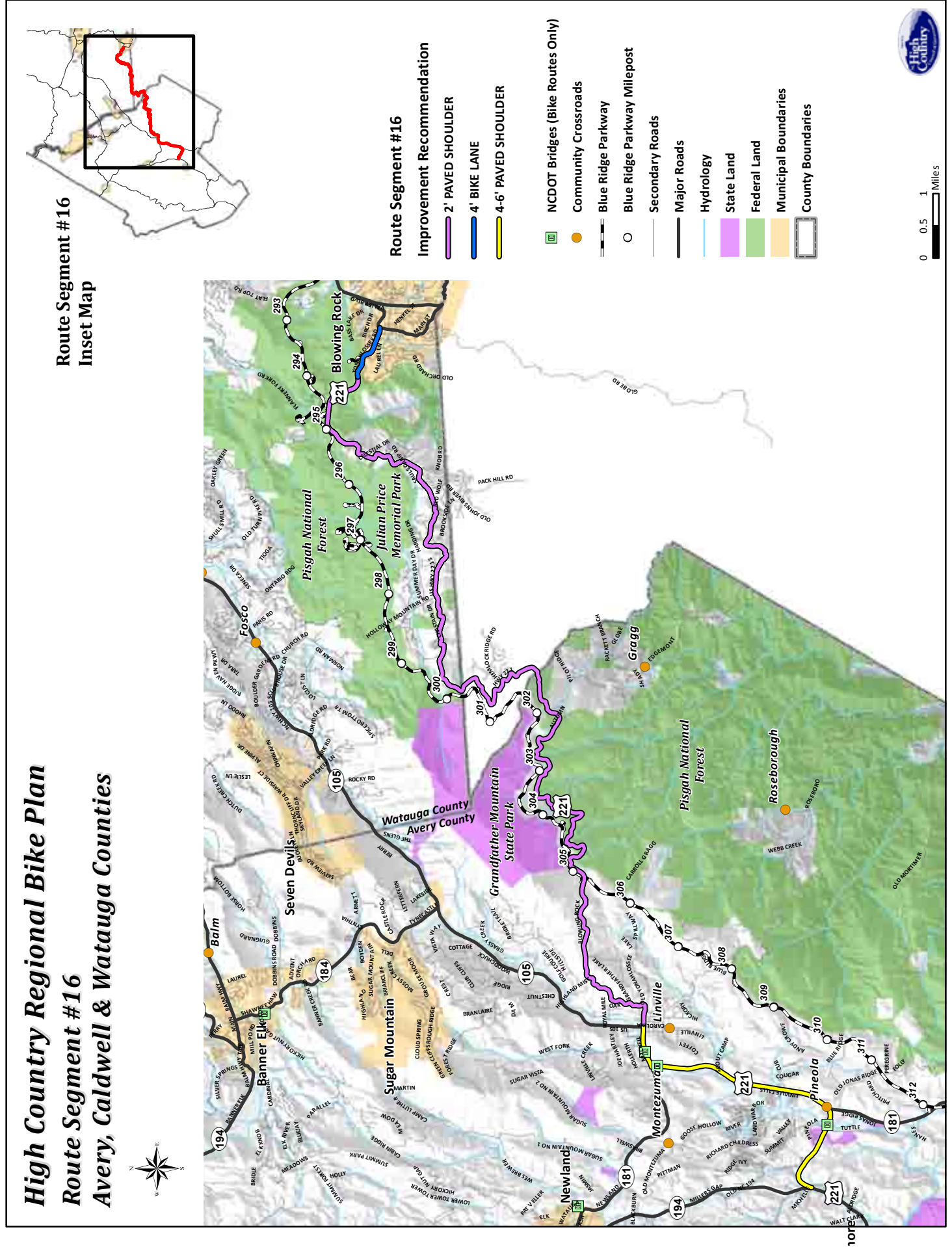
Recommendation
The recommendation for Route Segment #16 is for 4- to 6-foot paved shoulders from NC 194 to NC 105; 2-foot paved shoulders from NC 105 to Blowing Rock; and 4-foot bike lanes in Blowing Rock Town Limits.

Priority
High from NC 194 to NC 105; Medium from NC 105 to Blowing Rock

Roads :: US 221

Segment Limits :: From NC 194 to Blowing Rock

Length :: 9.3 Miles



Route Segment #17

Current Conditions

NC 105 consists of 2-lane with 2-foot paved shoulders from US 221 to Boone Town Limits. NC 105 from Boone Town Limits to NC 421 is a combination of 4-lane and 5-lane, with curb and gutter. All of Route Segment #17 is currently included in the STIP. NCDOT Project R-2566 consists of widening NC 105 to multi-lanes from US 221 to Boone Town Limits. Section A (US 221 to Foscoe) is currently unfunded in the STIP. Section B (Foscoe to Boone) is scheduled in the STIP for construction to begin in 2018. Posted speed limits on NC 105 include 55, 45, and 35 mph. All of NC 105 within Boone Town Limits has a posted speed limit of 35 mph. The highest 2012 AADT count on the route segment is 29,000; the average of the 2012 AADT counts along the route segment is 15,182.

Justification

Route Segment #17 connects the Town of Boone to the Town of Seven Devils, Grandfather Mountain State Park, and other route segments. The route also connects residential and commercial areas within Boone. The portion of Route Segment #17 in Watauga County is included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP).

Recommendation

The recommendation for Route Segment #17 is for 4- to 6-foot paved shoulders, with 4-foot bike lanes within Boone Town Limits.

Priority
High

Roads :: NC 105

Segment Limits :: From US 221 to US 421 in Boone

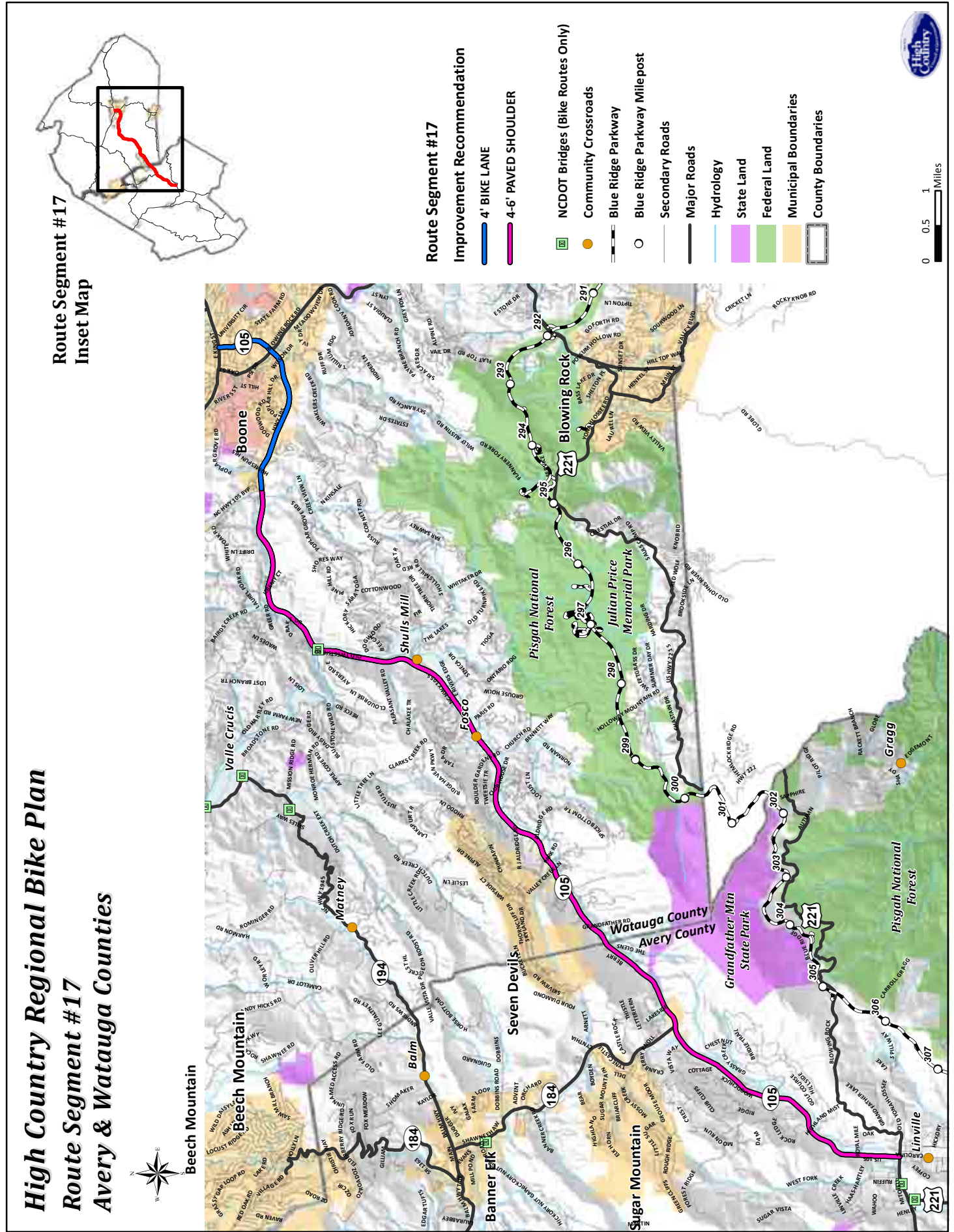
Length :: 17.7 Miles



NC 105 near US 221 Intersection



NC 105 at US 421 Boone



Route Segment #18

Current Conditions
NC 194 has narrow lanes with no paved shoulder. Posted speed limit along the route segment is 55 mph, and 35 mph within and east of the Town of Banner Elk. The highest 2012 AADT count on the route segment is 3,600; the average of the 2012 AADT counts along the route segment is 1,626.

Justification
Route Segment #18 connects the Town of Banner Elk to the Valle Crucis Community and to other route segments. The Watauga County portion of Route Segment #18 is included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP). All of the route segment is designated as NC Scenic Byway (Mission Crossing).

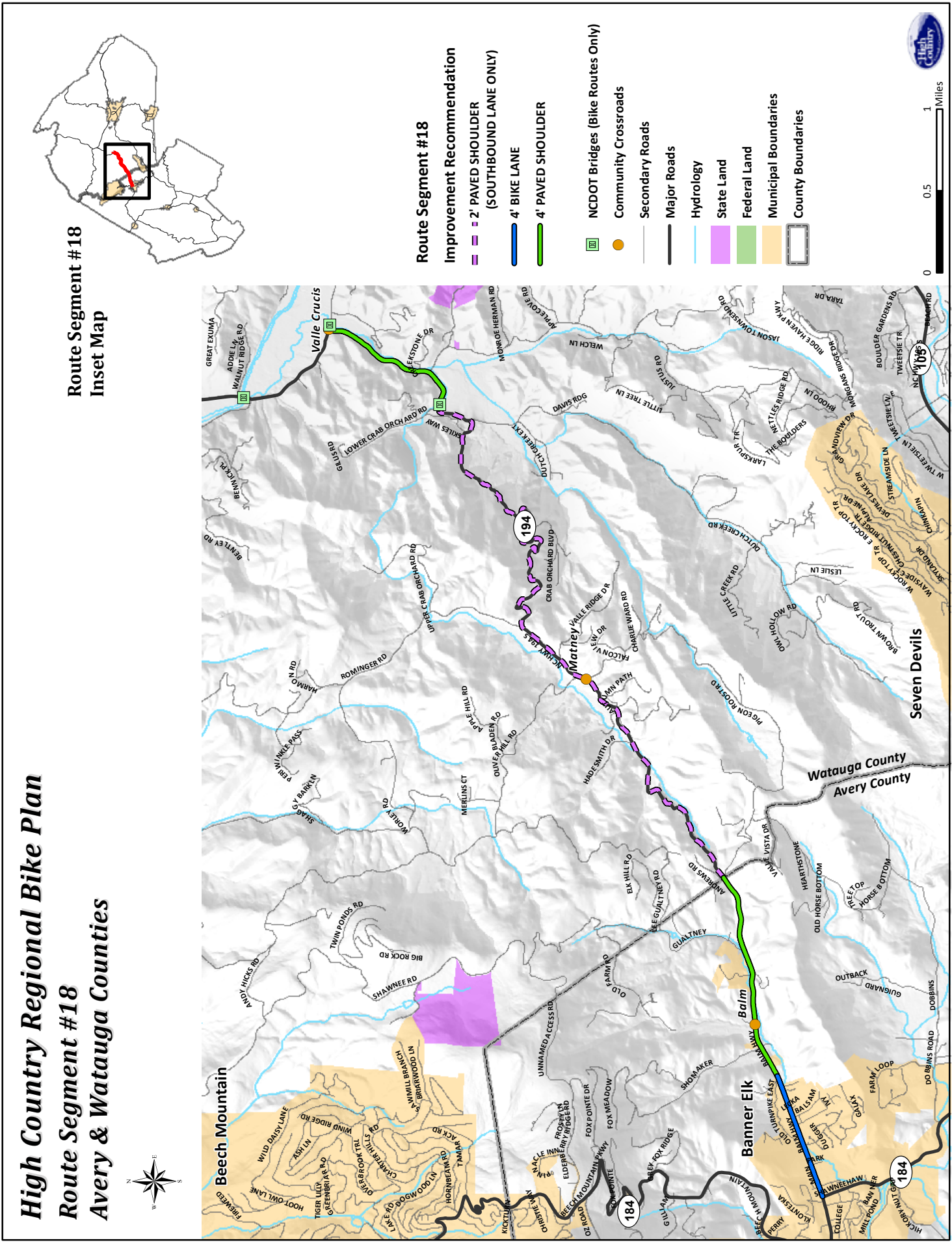
Recommendation
The recommendation for Route Segment #18 is for 4-foot bike lanes within Banner Elk Town Limits; 4-foot paved shoulders from Banner Elk to Avery/Watauga County Line; 2-foot paved shoulders on southbound side only from County Line to SR 1152 (Old Crab Orchard Road); and 4-foot paved shoulders from SR 1152 to Broadstone Road.

Priority
Low

Roads :: NC 194

Segment Limits :: From Banner Elk to Valle Crucis

Length 7.5 Miles



Route Segment #19

Current Conditions
Broadstone Road, NC 194, Mast Gap Road, and US 321 all have narrow lanes with no paved shoulder. Posted speed limits along the route segment are mainly 55 mph, with a 25 mph section in Valle Crucis and a 35 mph section in Sugar Grove. The highest 2012 AADT count on the route segment is 5,900; the average of the 2012 AADT counts along the route segment is 3,390.

Justification
Route Segment #19 connects the Valle Crucis Community to other route segments. The Broadstone Road, NC 194, and US321 portions of Route Segment #19 are included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP). A portion of Route Segment #19 is included in the NC Statewide Bicycling Highways network.

Recommendation
The recommendation for Route Segment #19 is for 4-foot paved shoulders on Broadstone Road and NC 194; 2-foot paved shoulders on Mast Gap Road; and 5-foot paved shoulders on US 321.

Priority
Medium

Roads :: Broadstone Road, NC 194, Mast Gap Road, US 321

Segment Limits :: From NC 105 to US 421 in Vilas

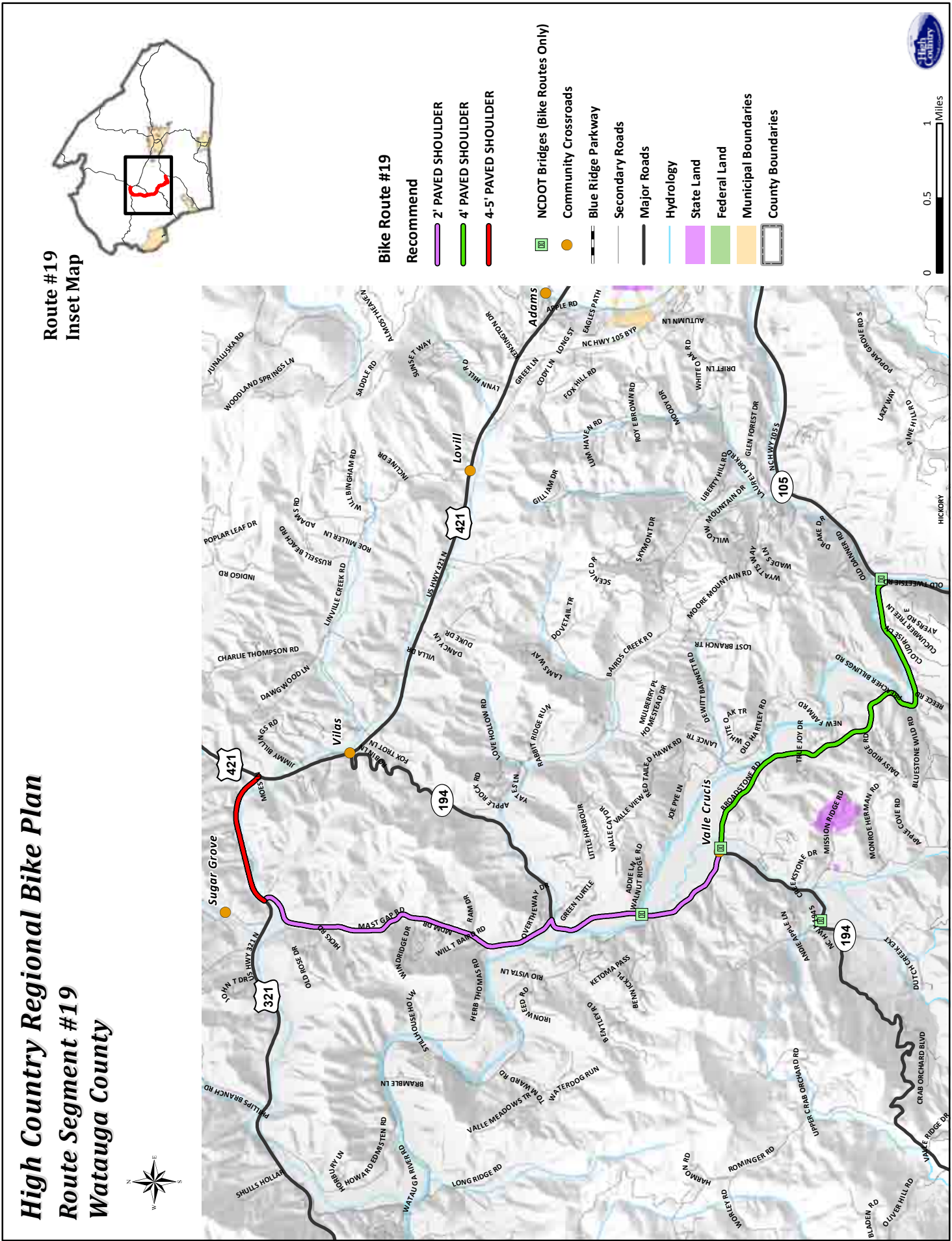
Length :: 7.4 Miles



US 421 in Vilas



Broadstone Road near NC 105



Route Segment #20

Current Conditions

US 321 in Boone is 5-lane with curb and gutter. US 321 between Boone and Blowing Rock is a combination of 4-lane undivided and 4-lane divided. US 321 Business is a narrow 2-lane with no paved shoulders. Posted speed limits along the route segment are 35 mph in Boone, 45 mph and 50 mph between Boone and Blowing Rock, and 25 mph in Blowing Rock. The highest 2012 AADT count on the route segment is 46,000; the average of the 2012 AADT counts along the route segment is 19,025.

Justification

Route Segment #20 connects the Towns of Boone and Blowing Rock, as well as connecting residential areas and commercial areas within the Towns. The entire route segment is included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP).

Recommendation

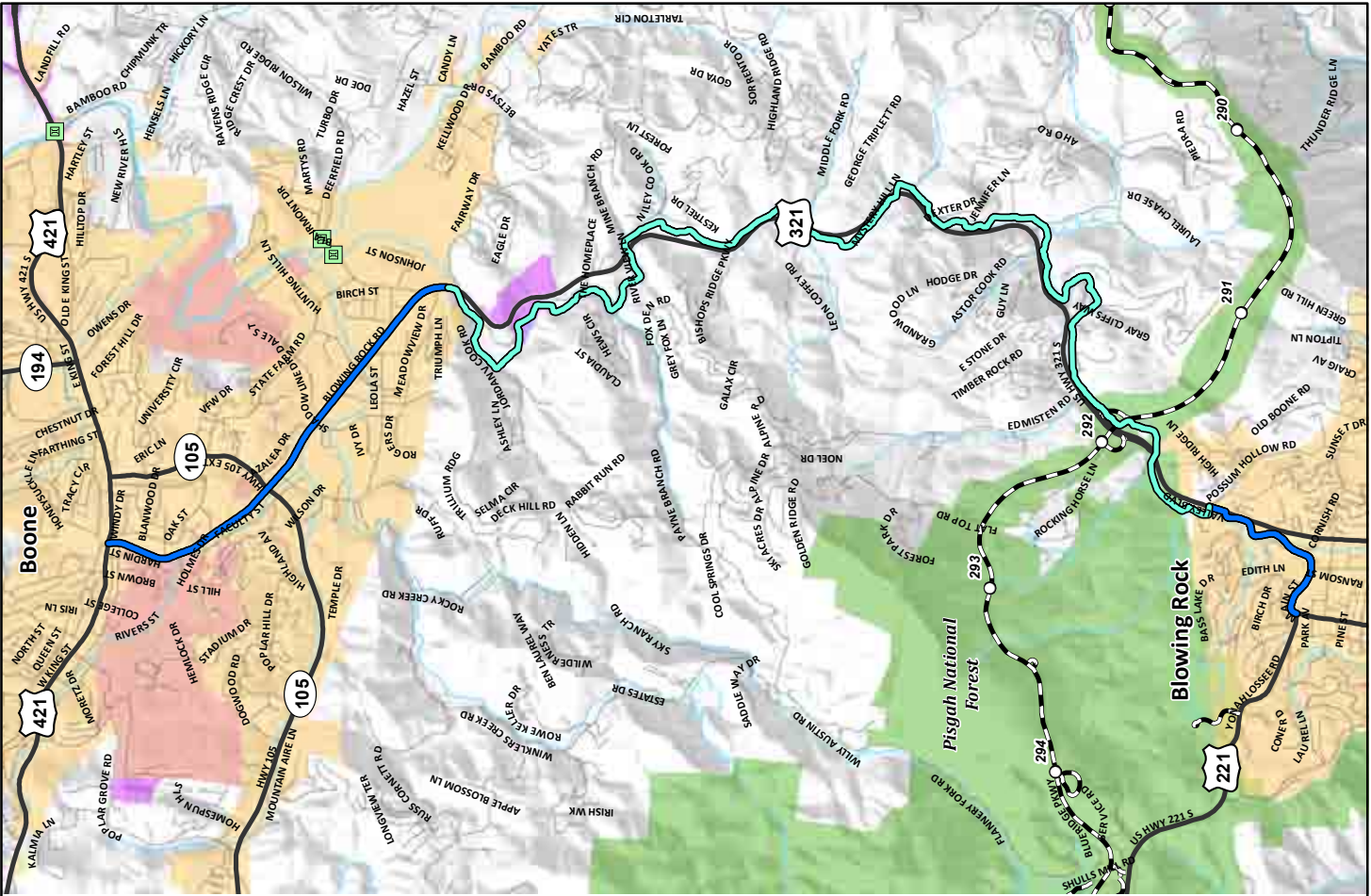
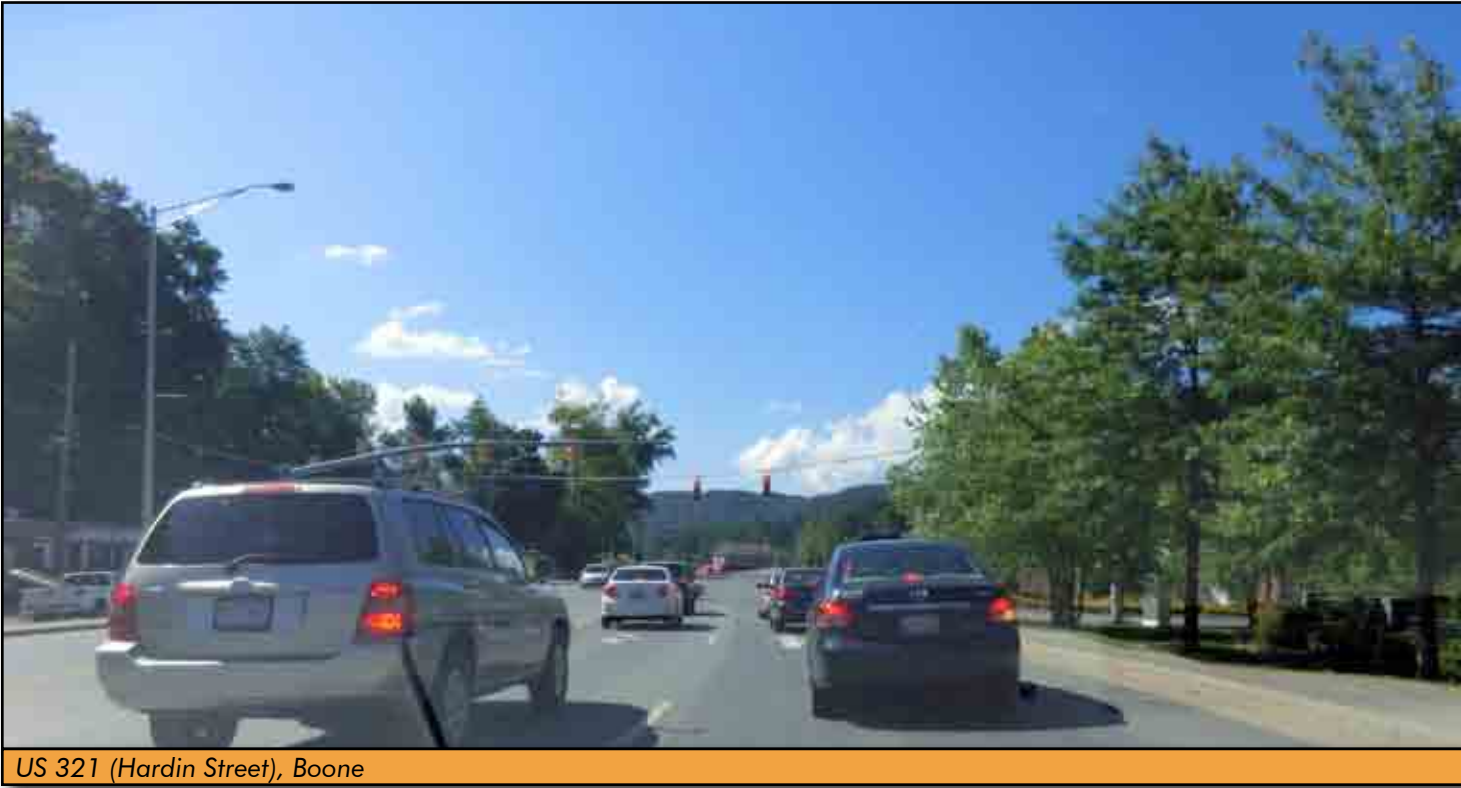
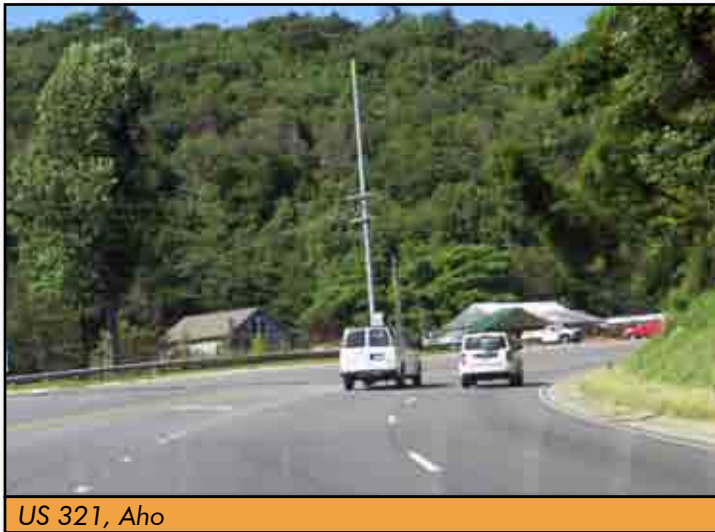
The recommendation for Route Segment #20 is for 4-foot bike lanes within Boone and Blowing Rock Town Limits, and an off-road paved path (Middle Fork Greenway) between the Towns.

Priority
High

Roads :: US 321, US 321 Business

Segment Limits :: From US 421 in Boone to US 221 in Blowing Rock

Length :: 8.0 Miles



High Country Regional Bike Plan

Route Segment #20

Watauga County

Route Segment #20 Inset Map

Route Segment #20 Improvement Recommendation

4' BIKE LANE

OFF-ROAD PAVED PATH

NCDOT Bridges (Bike Routes Only)

Community Crossroads

Blue Ridge Parkway

Blue Ridge Parkway Milepost

Major Roads

Hydrology

State Land

Federal Land

Municipal Boundaries

County Boundaries

Route Segment #21

Current Conditions
Deerfield Road and Bamboo Road have narrow lanes and no paved shoulders. Posted speed limit is 35 mph. No 2012 AADT data is available for the route segment.

Justification
Route Segment #21 connects the Town of Boone to the Blue Ridge Parkway. The entire route segment is included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP).

Recommendation
The recommendation for Route Segment #21 is for 4-foot paved shoulders, and 4-foot bike lanes within Boone Town Limits.

Priority
Medium

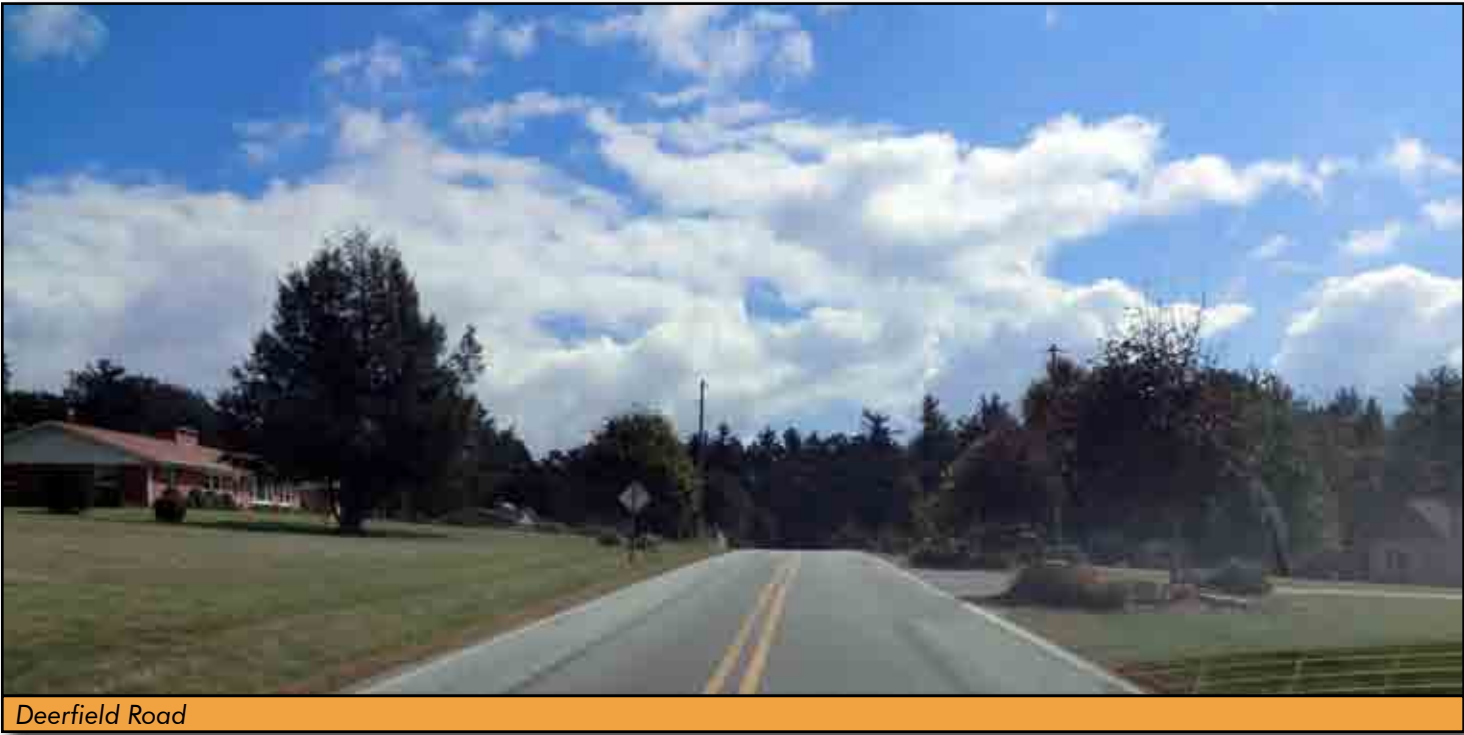
Roads :: Deerfield Road, Bamboo Road

Segment Limits :: From US 321 to Blue Ridge Parkway

Length :: 3.4 Miles



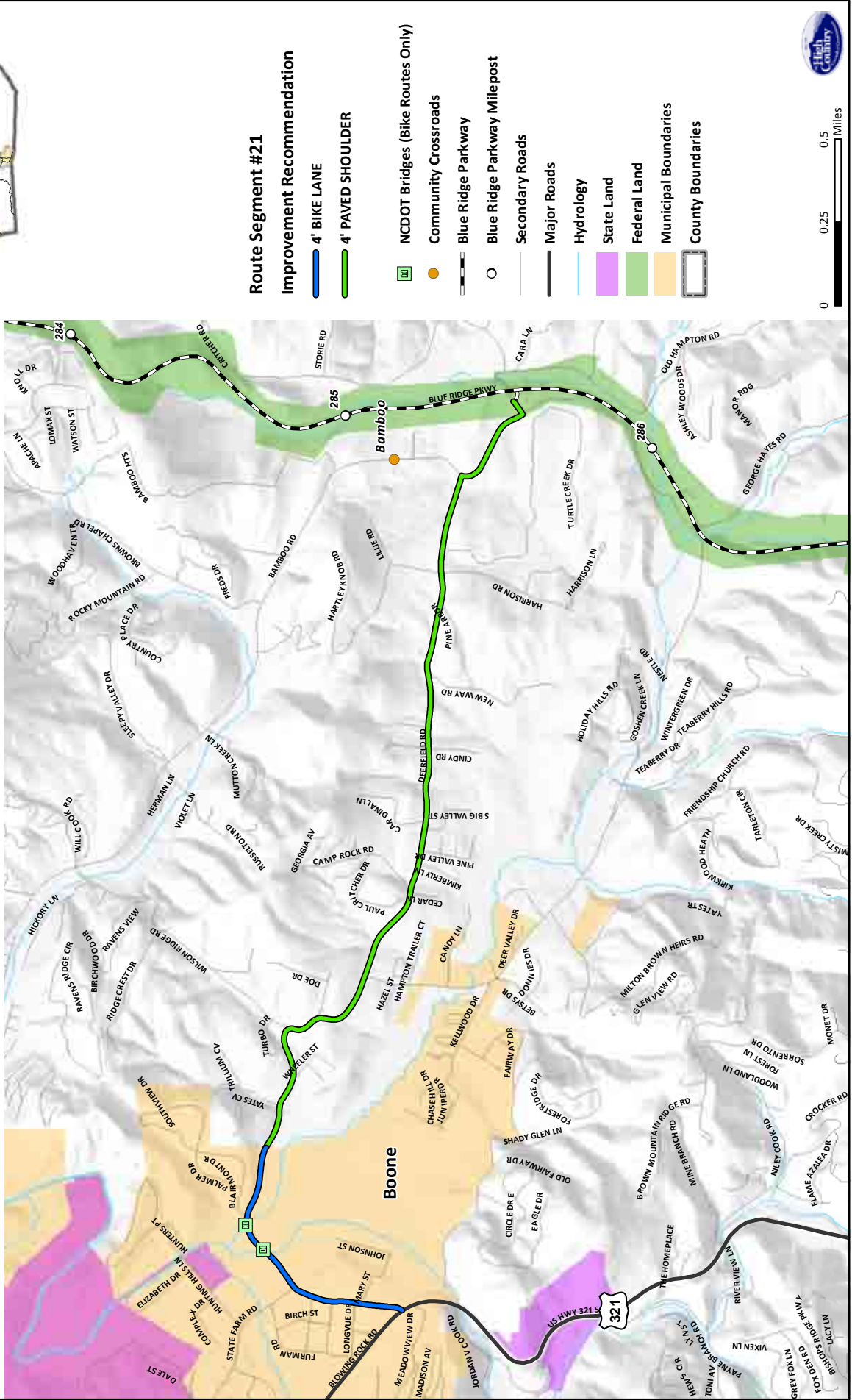
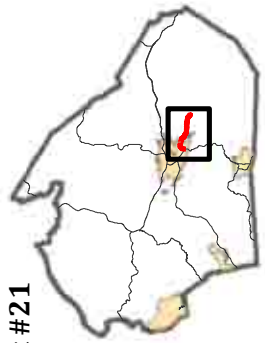
Deerfield Road, Boone



Deerfield Road

High Country Regional Bike Plan
Route Segment #21
Watauga County

Route Segment #21
Inset Map



Route Segment #22

Current Conditions
US 421 in Boone (King Street) includes a variety of cross sections. The eastern end of Route Segment #22 was recently upgraded as NCDOT Project R-4020. The project consisted of a multi-lane divided facility with bike lanes from NC 194 to US 321. Through downtown Boone, US 421 is 2-lane with curb and gutter and sections of on-street parking. From Boone west, US 421 is 2-lane with several sections that include climbing lanes. A portion of Route Segment #22 is currently included in the STIP. NCDOT Project R-2615 consists of widening US 421 to multi-lanes from US 321 to proposed Boone Bypass. The project is currently unfunded in the STIP. Posted speed limits on US 421 range from 20 mph in downtown Boone to 55 mph on the northern end of the route segment. The highest 2012 AADT count on the route segment is 16,000; the average of the 2012 AADT counts along the route segment is 11,950.

Justification
Route Segment #22 connects the Town of Boone to other route segments. The route also connects residential and commercial areas within Boone. The majority of Route Segment #22 is included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP), and is included in the NC Statewide Bicycling Highways network.

Recommendation
The recommendation for Route Segment #22 is for 4- to 5-foot bike lanes within Boone Town Limits and west to SR 1107, and 4- to 6-foot paved shoulders from SR 1107 to Tennessee State Line. No improvements are recommended on sections posted at 25 mph or less (downtown Boone).

Priority
Medium



US 421 near NC 194 in Boone

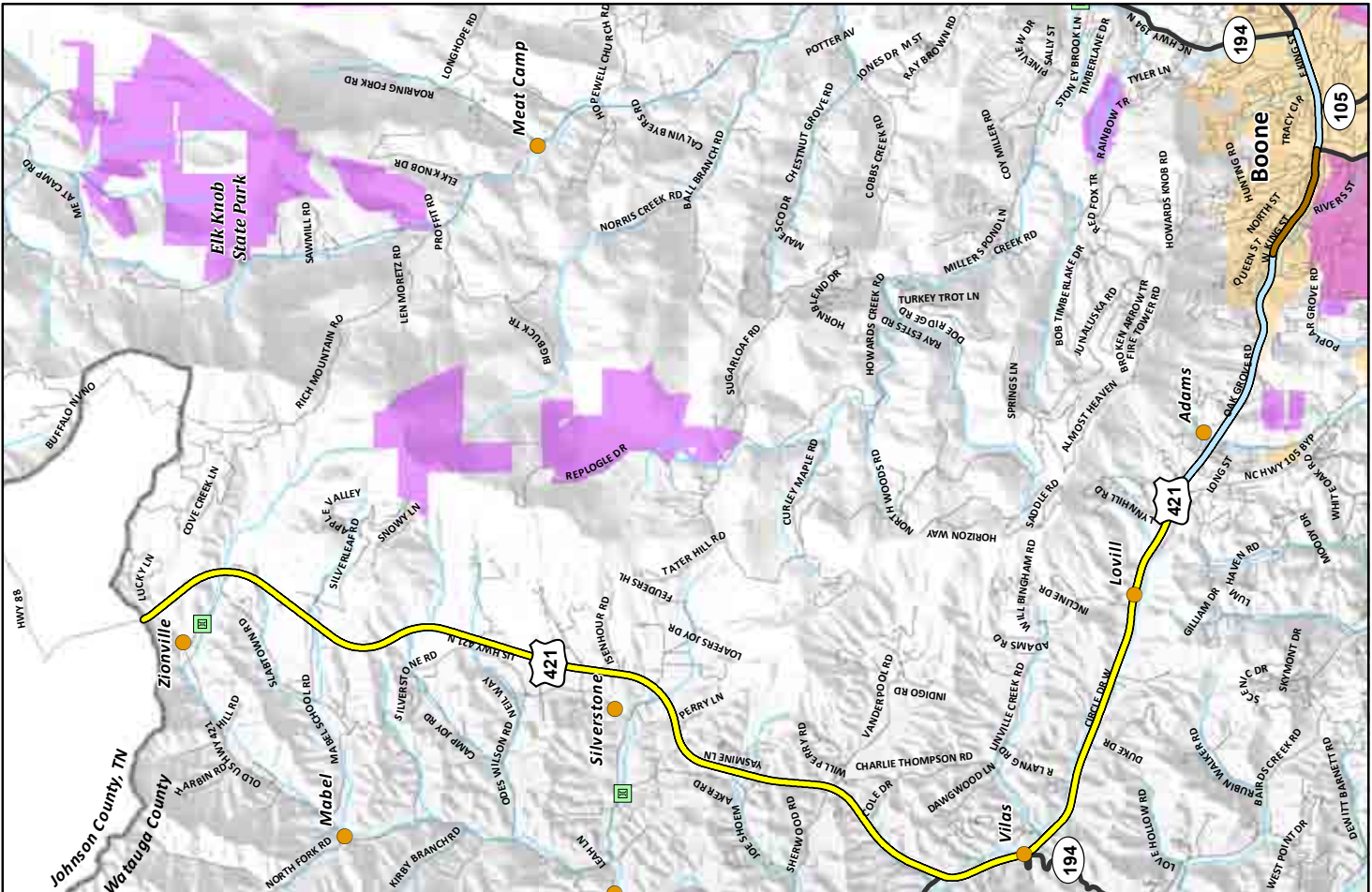
Roads :: US 421

Segment Limits :: From NC 194 in Boone to Tennessee State Line

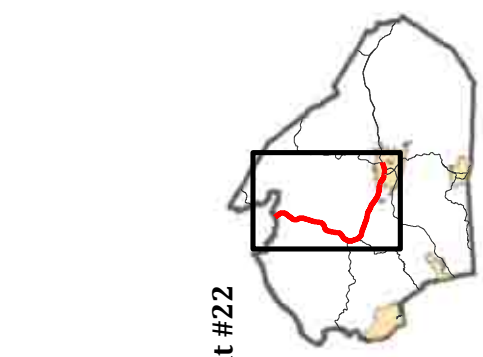
Length :: 14.9 Miles



US 421 near TN Line



High Country Regional Bike Plan
Route Segment #22
Watauga County



- Route Segment #22**
- Improvement Recommendation**
- 4-5' BIKE LANE
 - 4-6' PAVED SHOULDER
 - NO IMPROVEMENT
- Legend**
- NCDOT Bridges (Bike Routes Only)
 - Community Crossroads
 - Major Roads
 - Hydrology
 - State Land
 - Federal Land
 - Municipal Boundaries
 - County Boundaries



Route Segment #23

Current Conditions

The US 421 portions of Route Segment #23 are multi-lane (5-lane with curb and gutter within Town of Boone, and 4-lane divided east of Boone). Old US 421 has narrow lanes and no paved shoulders. Posted speed limits on the route segment include 35 mph in Boone Town Limits; 45 mph and 55 mph on US 421, and 45 mph on Old US 421. The highest 2012 AADT count on the route segment is 22,000; the average of the 2012 AADT counts along the route segment is 11,450.

Justification

Route Segment #23 connects the Town of Boone to other route segments. The US 421 sections of Route Segment #23 are included in the Bicycle Element of the 2013 Watauga County Comprehensive Transportation Plan (CTP). Portions of Route Segment #23 (US 421 outside Boone Town Limits) are designated as NC Scenic Byway (US 421 Scenic Byway).

Recommendation

The recommendation for Route Segment #23 is for 4-foot bike lanes within Boone Town Limits; 4- to 6-foot paved shoulders on US 421; and 4-foot paved shoulders on Old US 421.

Priority

High from NC 194 to Elk Creek Road, Medium from Elk Creek to US 221

Roads :: US 421, Old US 421

Segment Limits :: From NC 194 in Boone to US 221 in Deep Gap

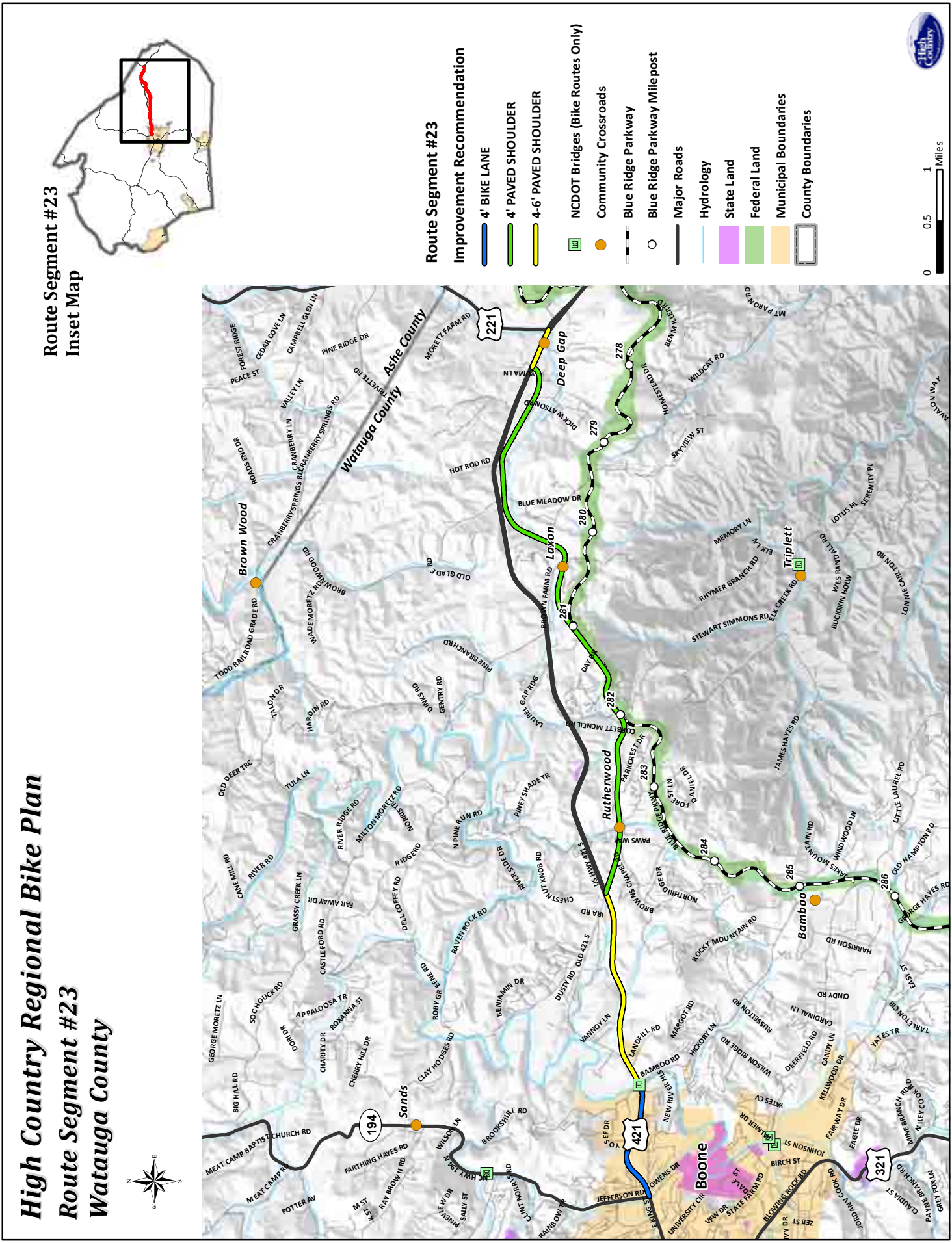
Length :: 14.9 Miles



Old US 421, Deep Gap



US 421, Boone



Route Segment #24

Current Conditions

NC 194 has narrow lanes with no paved shoulder. Posted speed limits along the route segment include 35 mph, 45 mph, and 55 mph. The highest 2012 AADT count on the route segment is 9,800; the average of the 2012 AADT counts along the route segment is 4,910.

Justification

Route Segment #24 connects the Town of Boone to the Todd Community, and to other route segments. The entire route segment is included in the Bicycle Elements of the 2013 Watauga County Comprehensive Transportation Plan (CTP) and the 2010 Ashe County CTP. NC 194 is designated as NC Scenic Byway (New River Valley Byway).

Recommendation

The recommendation for Route Segment #24 is for 4-foot bike lanes within Boone Town Limits; 4- to 5-foot paved shoulders from Boone Town Limits north to Castle Ford Road; and 4-foot paved shoulders from Castle Ford Road to US 221.

Priority
High

Roads :: NC 194

Segment Limits :: From US 421 in Boone to US 221 in Fleetwood

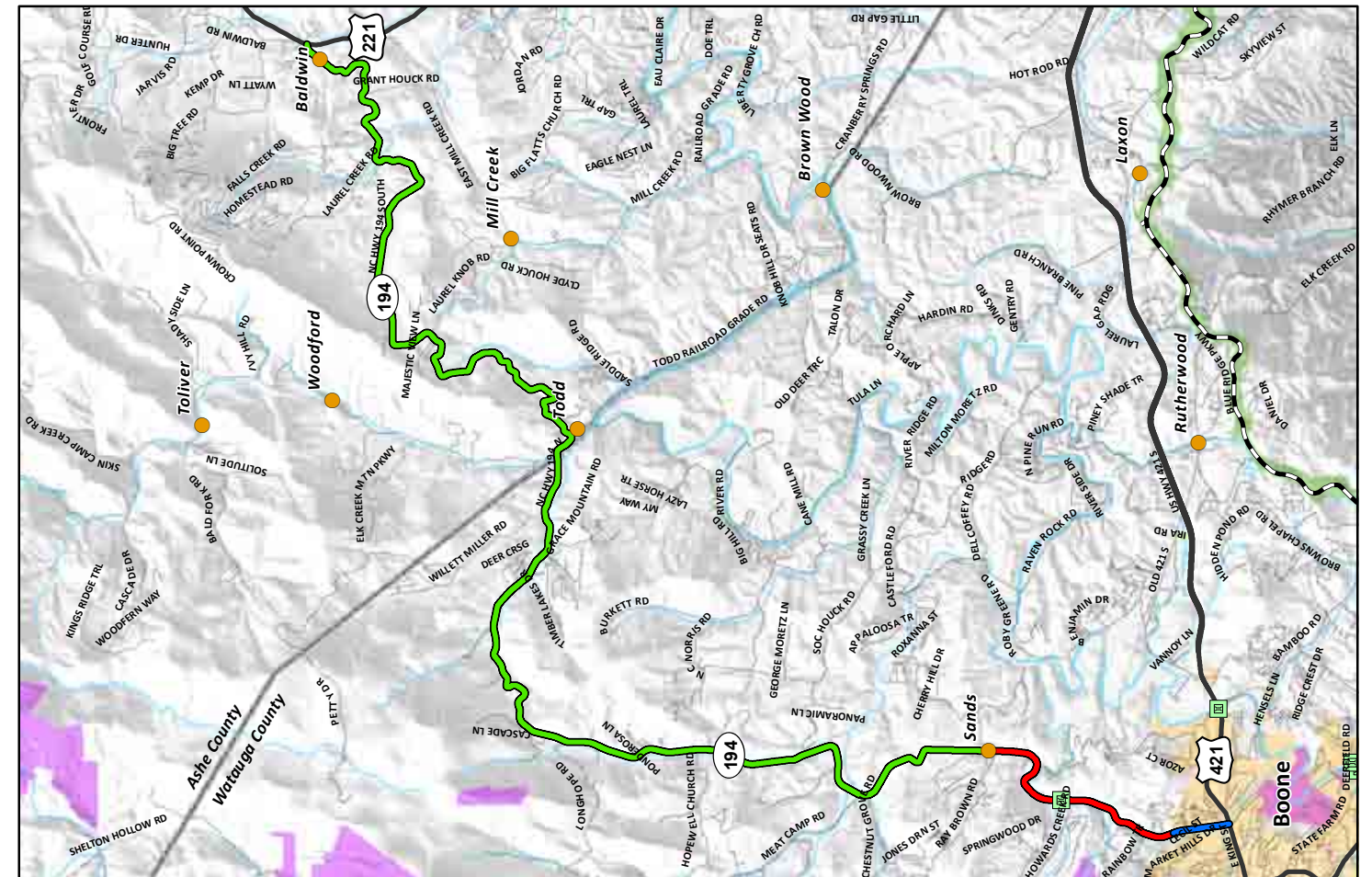
Length :: 18.1 Miles



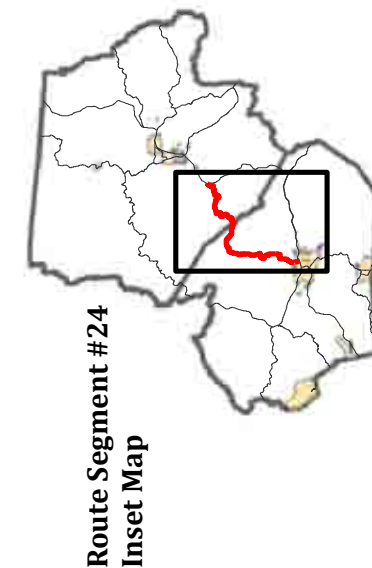
NC 194 near US 221 in Fleetwood



NC 194 near US 421 in Boone



High Country Regional Bike Plan Route Segment #24 Ashe & Watauga Counties



- Route Segment #24**
- Improvement Recommendation**
- 4' BIKE LANE
 - 4' PAVED SHOULDER
 - 4-5' PAVED SHOULDER
- Legend**
- NCDOT Bridges (Bike Routes Only)
 - Community Crossroads
 - Blue Ridge Parkway
 - Major Roads
 - Hydrology
 - Federal Land
 - Municipal Boundaries
 - County Boundaries

0 0.5 1 Miles



Route Segment #25

Current Conditions

Elk Creek Road has narrow lanes with no paved shoulder. It includes approximately four miles of gravel surface. NC 268 has a variety of cross-sections, including 2-lane with no paved shoulders, 5-lane, and 2-lane curb and gutter. It includes Main Street in Wilkesboro. Posted speed limits along the route segment include 25 mph, 35 mph, 45 mph, and 55 mph. The highest 2012 AADT count on the route segment is 19,000; the average of the 2012 AADT counts along the route segment is 6,633. 2012 AADT counts outside of Wilkesboro Town limits are all below 4,000.

Justification

Route Segment #25 connects the Towns of Wilkesboro and North Wilkesboro; makes connections to other route segments; provides access to W. Kerr Scott Reservoir recreation facilities; and provides an alternative to US 421 to connect the Towns of Boone and Wilkesboro. The NC 268 portion of Route Segment #25 is designated as NC Scenic Byway (Upper Yadkin Way), and is included in the NC Statewide Bicycling Highways network.

Recommendation

The recommendations for Route Segment #25 include 2-foot paved shoulders on Elk Creek Road; 4-foot paved shoulders on NC 268 from Elk Creek Road to YMCA Boulevard; and 4-foot bike lanes from US 421 through Towns of Wilkesboro and North Wilkesboro. No improvements are recommended from YMCA Boulevard to US 421.

Priority
High

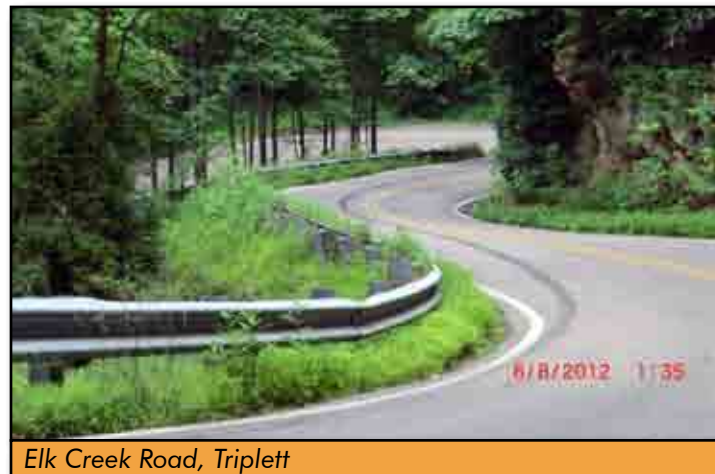


Main Street, Wilkesboro

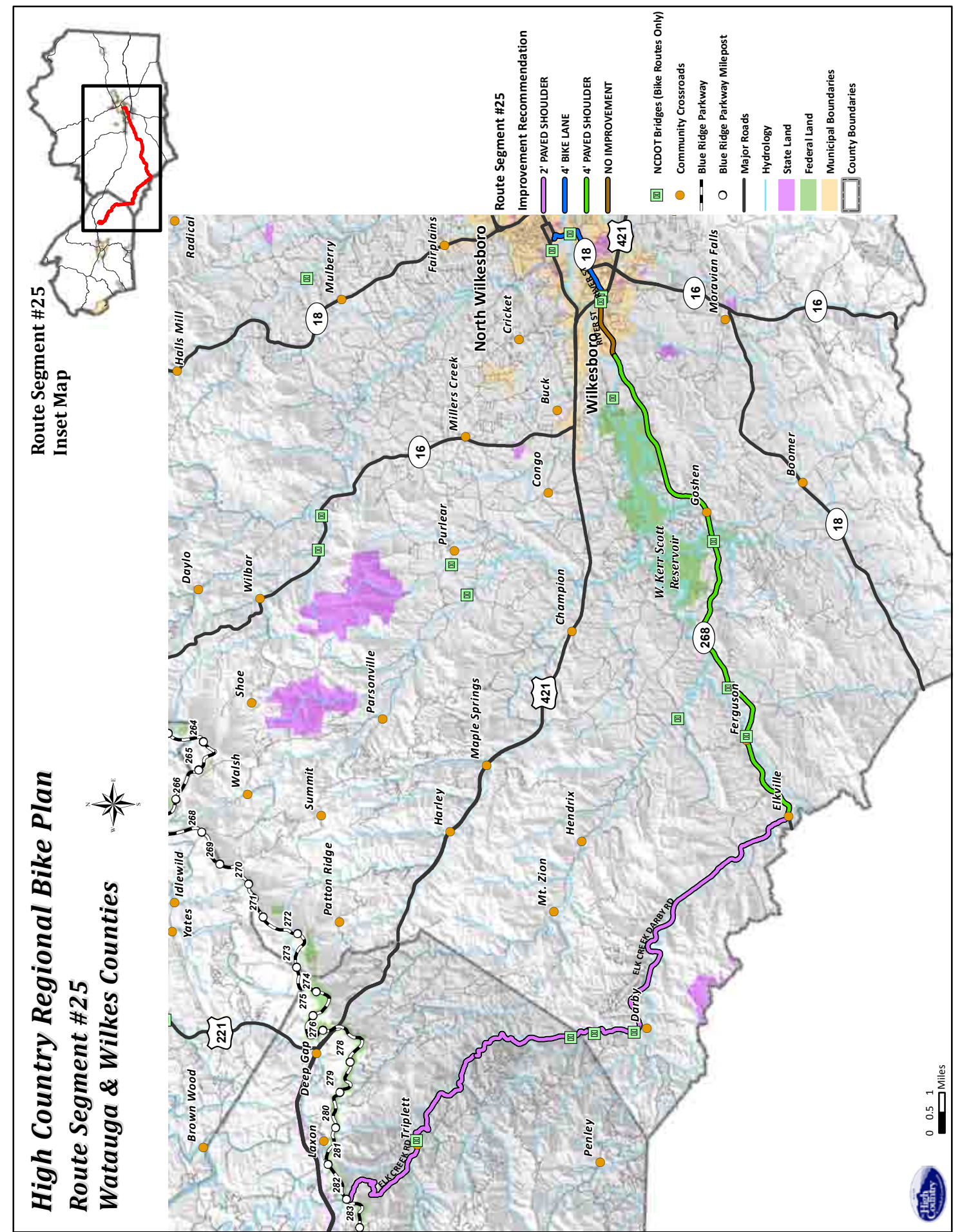
Roads :: Elk Creek Road, NC 268

Segment Limits :: From Old US 421 to CBD Loop in North Wilkesboro

Length :: 38.8 Miles



Elk Creek Road, Triplett



Route Segment #25A

Current Conditions

The Yadkin River Greenway currently includes six separate sections. The Greenway has a typical cross-section of 10-foot paved trail. The existing Greenway sections comprising Route Segment #25A begin at the north end of YMCA Boulevard, and end approximately 600 feet north of NC 268.

Justification

Route Segment #25A provides an alternative to NC 268 on Route Segment #25. The Greenway provides access to Rivers Edge Park and businesses located along the abandoned Wilkes County Airport runway.

Recommendation

The recommendation for Route Segment #25A is extension of the existing Greenway to NC 268.

Priority
High

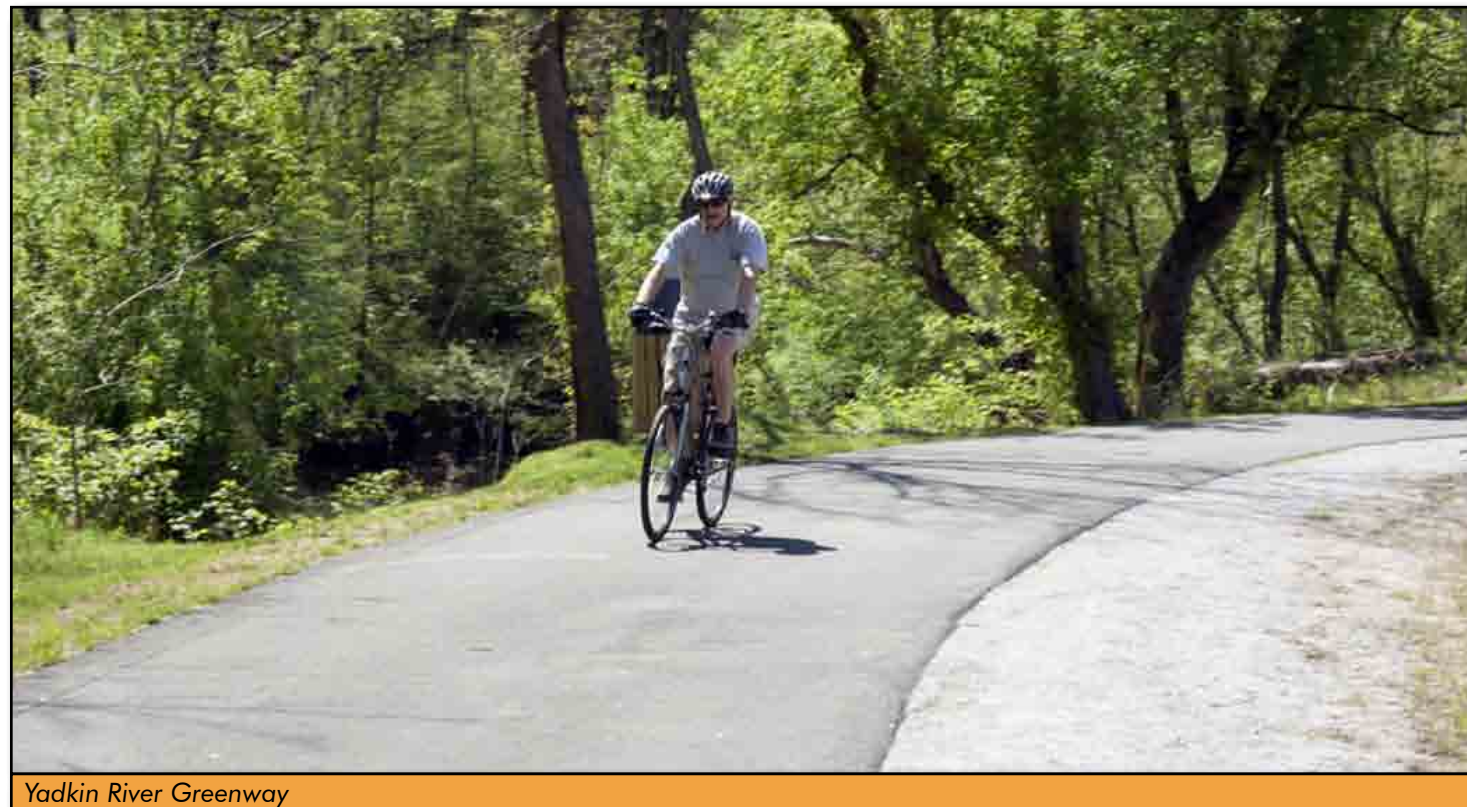
Roads :: Yadkin River Greenway

Segment Limits :: YMCA Boulevard to NC 268

Length :: 2.2 Miles

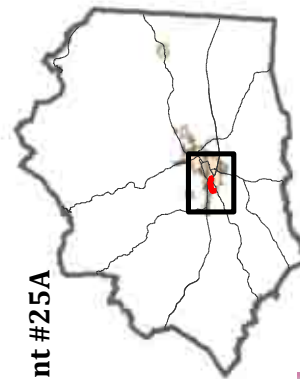


Yadkin River Greenway Construction



Yadkin River Greenway

Route Segment #25A
Inset Map



High Country Regional Bike Plan
Route Segment #25A
Wilkes County



Route Segment #25A

Improvement Recommendation

EXTENSION OF EXISTING GREENWAY

NCDOT Bridges (Bike Routes Only)

Community Crossroads

Major Roads

Hydrology

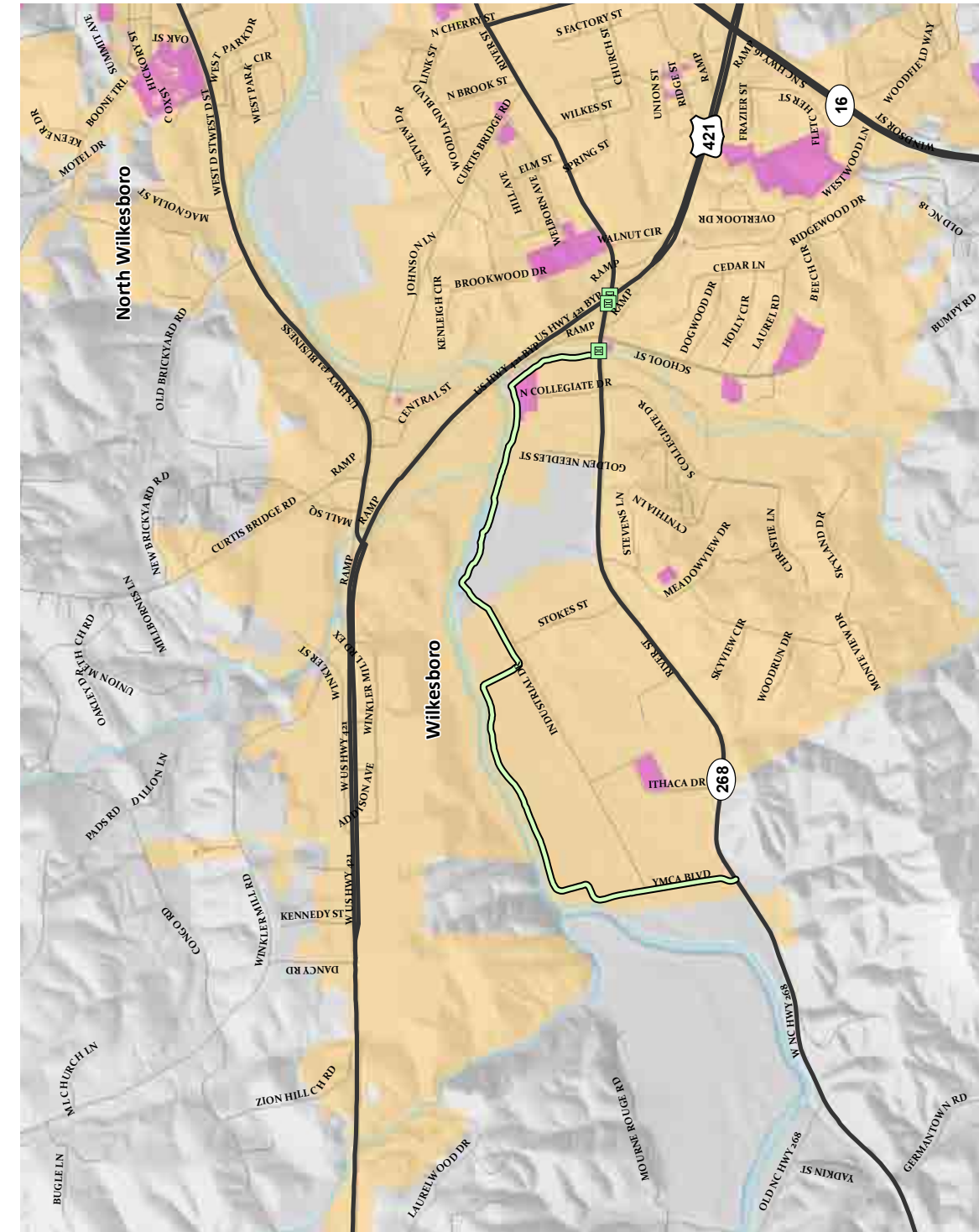
State Land

Federal Land

Municipal Boundaries

County Boundaries

0 0.25 0.5 Miles



Route Segment #26

Current Conditions

NC 88 has narrow lanes with no paved shoulder. Posted speed limit is 55 mph, with a short 45 mph zone in the Warrensville Community. The highest 2012 AADT count on the route segment is 4,000; the average of the 2012 AADT counts along the route segment is 1,272.

Justification

Route Segment #26 connects other route segments. It is scenic and popular with recreational cyclists. All of Route Segment #26 is included in the NC Statewide Bicycling Highways network.

Recommendation

The recommendation for Route Segment #26 is for 4-foot paved shoulders.

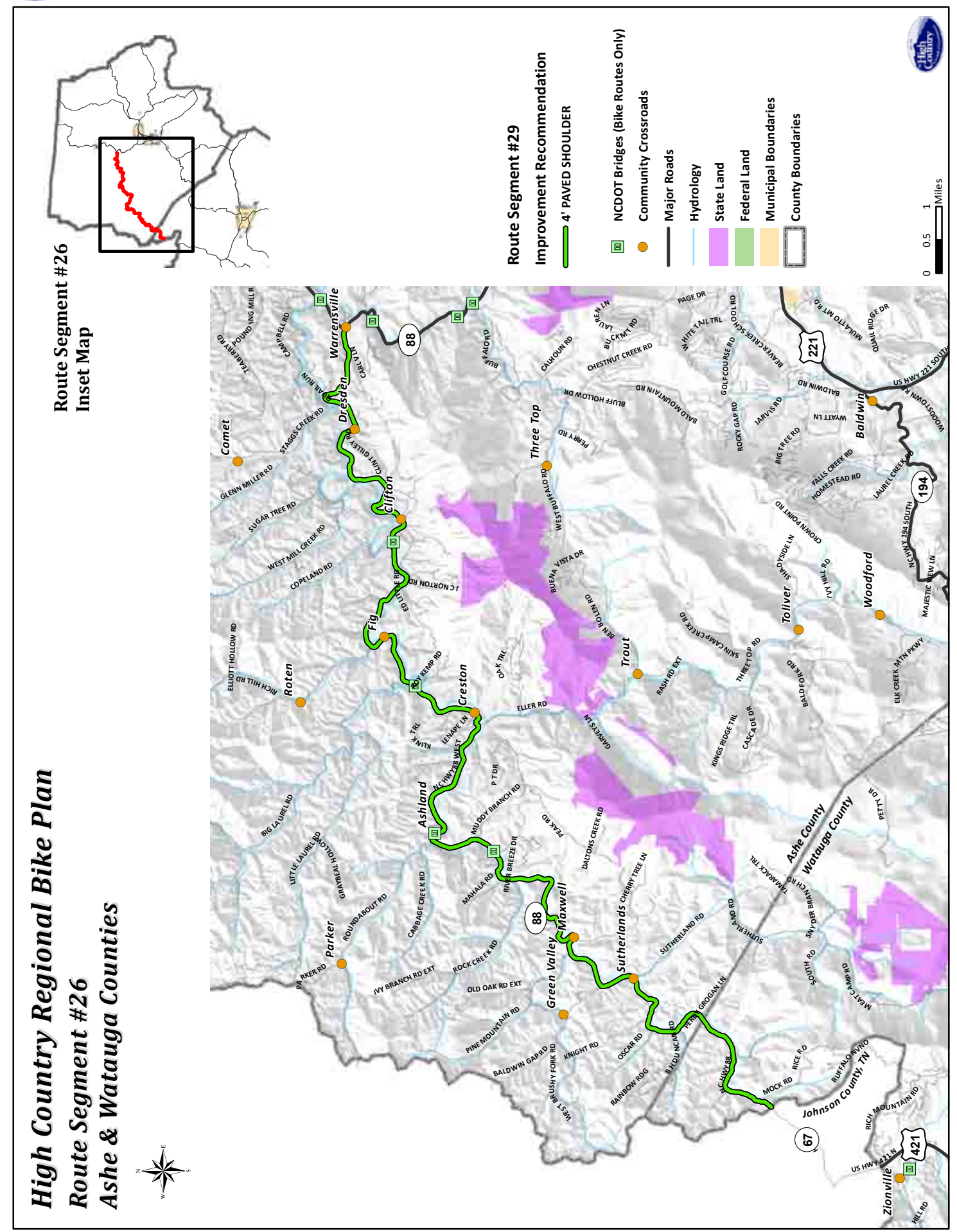
Priority

Medium

Roads :: NC 88

Segment Limits :: From Tennessee State Line to NC 194

Length :: 22.5 Miles



Route Segment #27

Current Conditions

US 221 from US 421 to Jefferson is currently included in the STIP as NCDOT Project R-2915. The project consists of widening US 221 to a 4-lane divided facility in five sections. The first section is programmed in the STIP to begin construction in 2015. The recommended cross-section for NCDOT Project R-2915 (as approved in the Environmental Assessment dated October 2012) is 4-lane divided facility with 4-foot paved shoulders. Posted speed limit on the entire route segment is 55 mph. The highest 2012 AADT count on the route segment was 11,000; the average of the 2012 AADT counts along the route segment was 8,013.

Justification

Route Segment #27 connects the Town of West Jefferson to Watauga County, and to other route segments. The entire route segment is included in the Bicycle Elements of the 2013 Watauga County Comprehensive Transportation Plan (CTP) and the 2010 Ashe County CTP.

Recommendation

The recommendation for Route Segment #27 is for 4- to 6-foot paved shoulders.

Priority

Medium from US 421 to NC 194 (Baldwin Community); High from NC 194 to West Jefferson

Roads :: US 221

Segment Limits :: From US 421 to NC 163

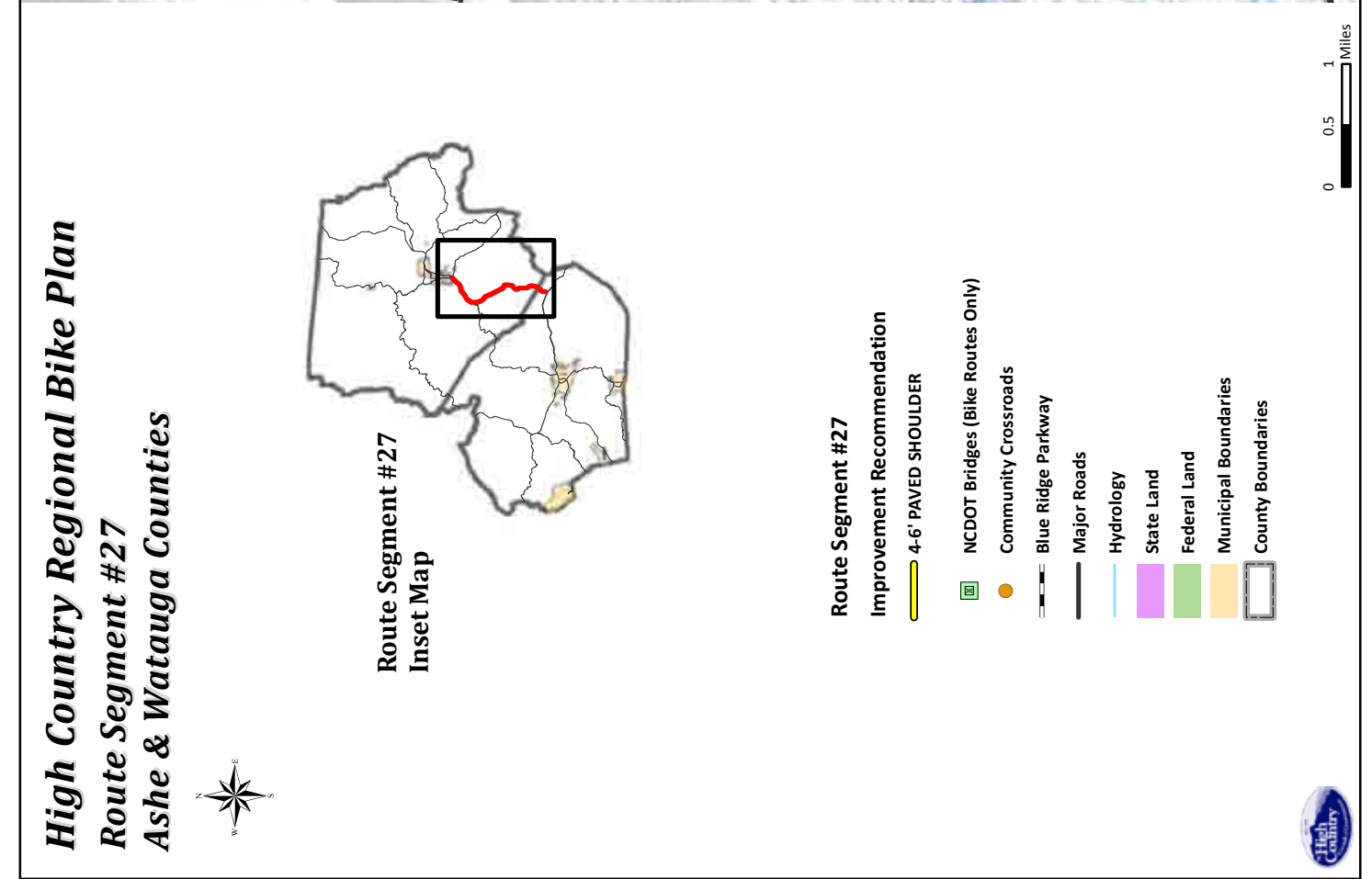
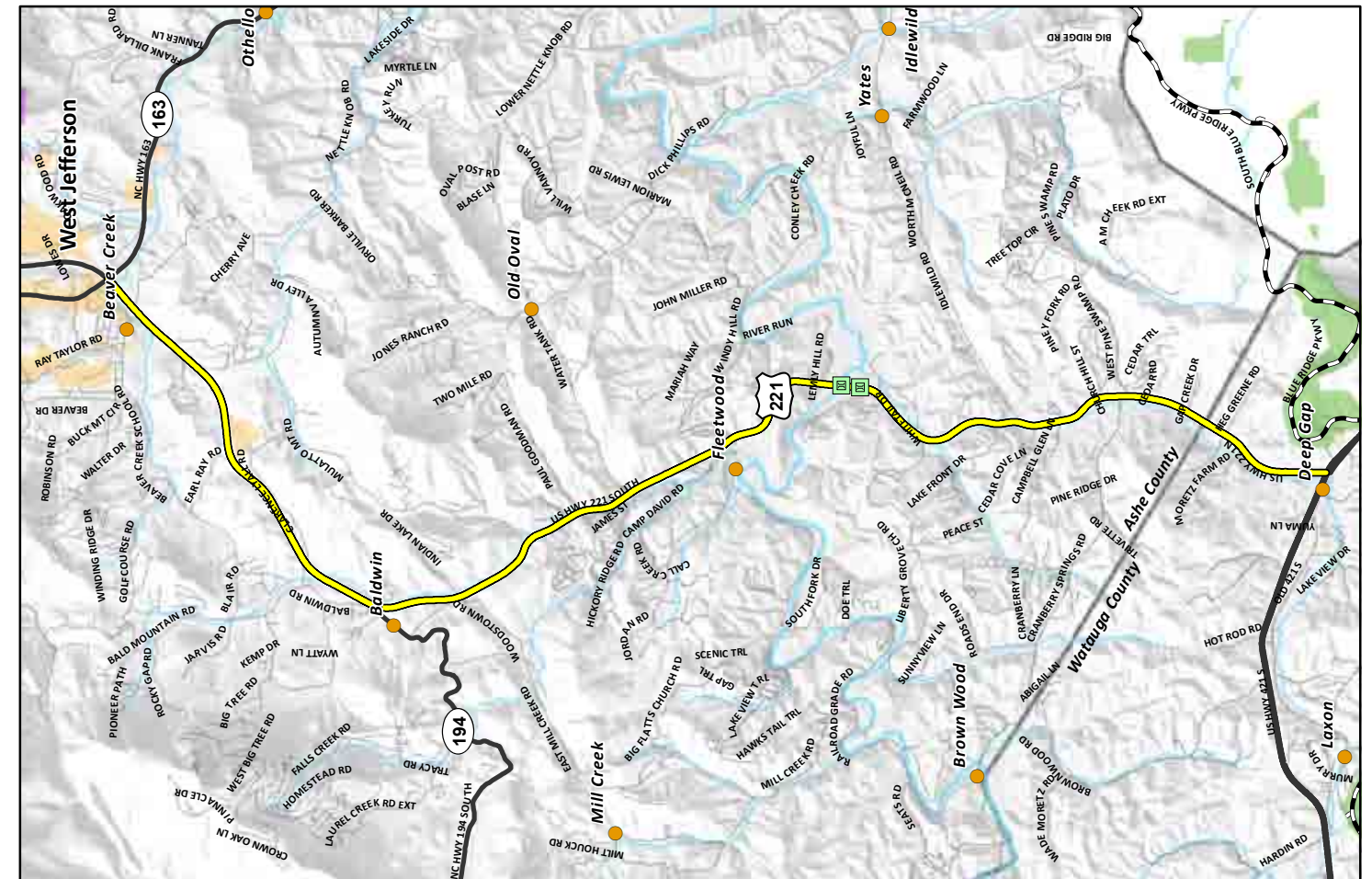
Length :: 12.4 Miles



US 221 at West Jefferson



US 221 near US 421



Route Segment #28

Current Conditions

NC 88 from US 221 Business to NC 194 is currently being upgraded through NCDOT Project U-3812. The upgraded facility will include sections of curb and gutter, 4-foot paved shoulders, and no paved shoulders. NC 194 from NC 88 in Smethport to Virginia State Line has narrow lanes with no paved shoulder. Posted speed limits along the route segment include 55 mph, 45 mph, 35 mph, and 20 mph (downtown Lansing). The highest 2012 AADT count on the route segment is 8,700; the average of the 2012 AADT counts along the route segment is 4,131.

Justification

Route Segment #28 connects the Towns of Jefferson and Lansing. It also connects to other route segments, and connects to Virginia approximately 5 miles south of US Bicycle Route 76 (US Highway 58). The section of Route Segment #28 from Jefferson to Lansing is included in the Bicycle Element of the 2010 Ashe County Comprehensive Transportation Plan (CTP). NC 194 from Warrentsville Community to Lansing is being considered by NCDOT for designation as NC Scenic Byway. A portion of Route Segment #28 is included in the NC Statewide Bicycling Highways network.

Recommendation

The recommendation for Route Segment #28 is for 4- to 5-foot paved shoulders on NC 88 and 4-foot paved shoulders on NC 194.

Priority

Medium from Jefferson to Lansing; Low from Lansing to Virginia.



NC 88 at US 221 Business, Jefferson

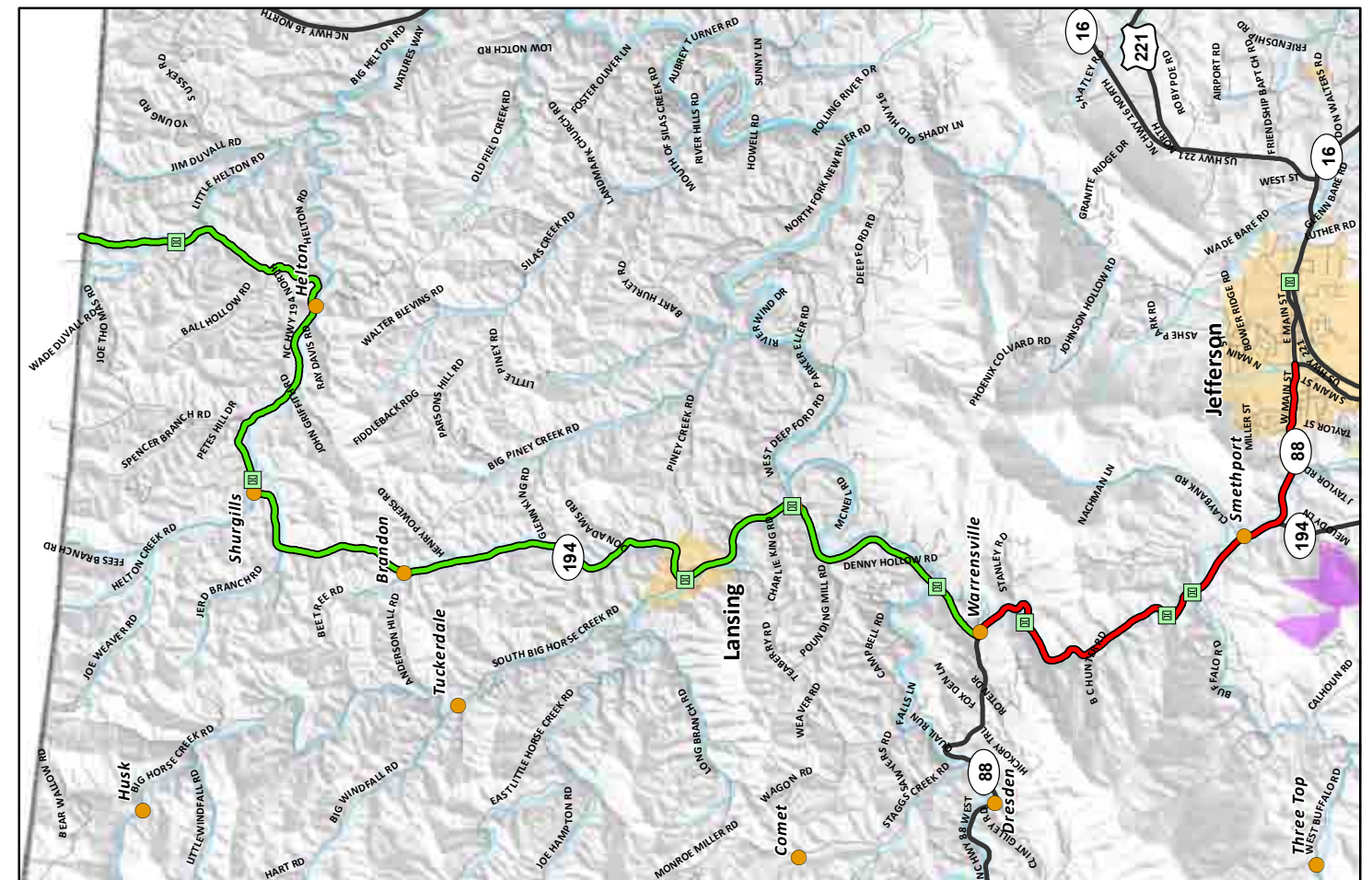
Roads :: NC 194, NC 88

Segment Limits :: From US 221 Business in Jefferson to Virginia State Line

Length :: 18.5 Miles

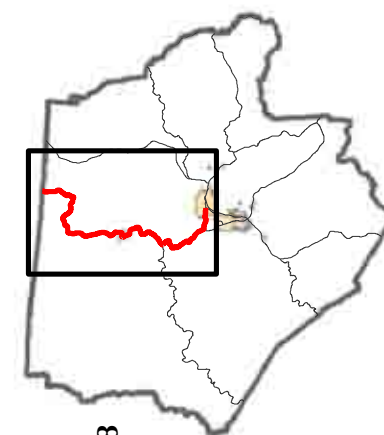


NC 194 near VA State Line



High Country Regional Bike Plan Route Segment #28 Ashe County

Route Segment #28 Inset Map



- Route Segment #28
Improvement Recommendation**
- 4' PAVED SHOULDER (Green line)
 - 4-5' PAVED SHOULDER (Red line)
- Legend**
- NCDOT Bridges (Bike Routes Only) (Green square)
 - Community Crossroads (Orange dot)
 - Major Roads (Black line)
 - Hydrology (Blue line)
 - State Land (Purple square)
 - Federal Land (Green square)
 - Municipal Boundaries (Yellow square)
 - County Boundaries (Grey outline)

Route Segment #29

Current Conditions

US 221 Business is 4-lane undivided with curb and gutter. Through downtown West Jefferson (Jefferson Avenue), the facility is 2-lane with on-street parking. Posted speed limits along the route segment include 35 mph, 25 mph, and 20 mph (downtown West Jefferson). The highest 2012 AADT count on the route segment is 15,000; the average of the 2012 AADT counts along the route segment is 9,286.

Justification

Route Segment #29 connects the Towns of West Jefferson and Jefferson. It also connects to other route segments, and makes connections within the Towns. All of Route Segment #29 is included in the Bicycle Element of the 2010 Ashe County Comprehensive Transportation Plan (CTP).

Recommendation

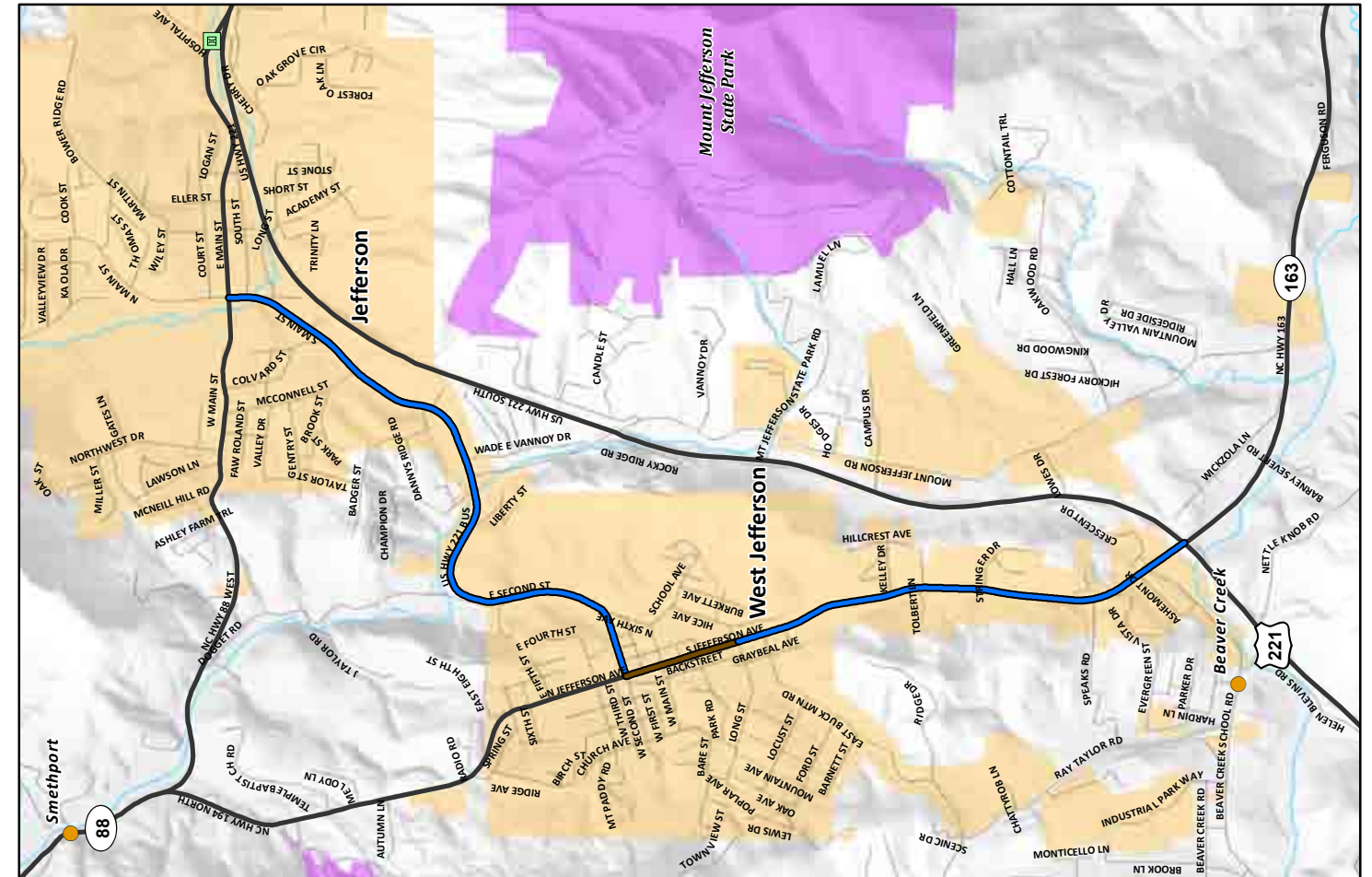
The recommendation for Route Segment #29 is for 4-foot bike lanes, except for downtown West Jefferson where no improvements are recommended from Long Street to Second Street.

Priority
High

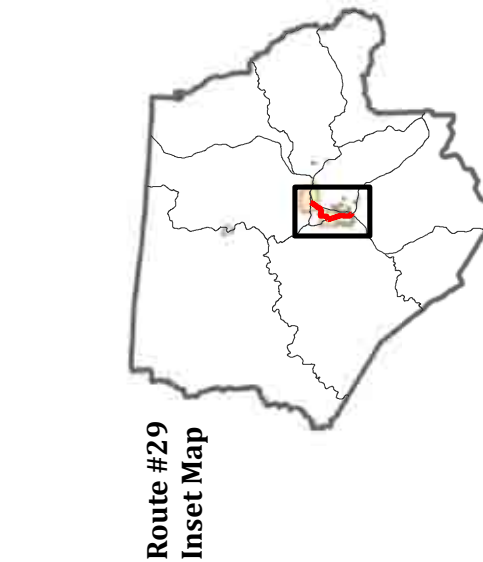
Roads :: US 221 Business

Segment Limits :: From NC 163 in West Jefferson to NC 88 in Jefferson

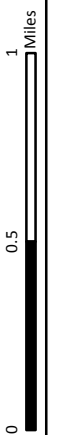
Length :: 3.6 Miles



High Country Regional Bike Plan Route Segment #29 Ashe County



- Bike Route #29**
- Improvement Recommendation**
- 4' BIKE LANE
 - NO IMPROVEMENT
 - NCDOT Bridges (Bike Routes Only)
 - Community Crossroads
 - Blue Ridge Parkway
 - Major Roads
 - Hydrology
 - State Land
 - Federal Land
 - Municipal Boundaries
 - County Boundaries



Route Segment #30

Current Conditions

NC 163 has narrow lanes and no paved shoulders. Posted speed limits along the route segment include a section of 45 mph adjacent to West Jefferson, and 55 mph for the remainder. The highest 2012 AADT count on the route segment is 5,300; the average of the 2012 AADT counts along the route segment is 3,475.

Justification

Route Segment #30 connects the Town of West Jefferson to NC 16, and indirectly to the Blue Ridge Parkway. All of Route Segment #30 is included in the Bicycle Element of the 2010 Ashe County Comprehensive Transportation Plan (CTP).

Recommendation

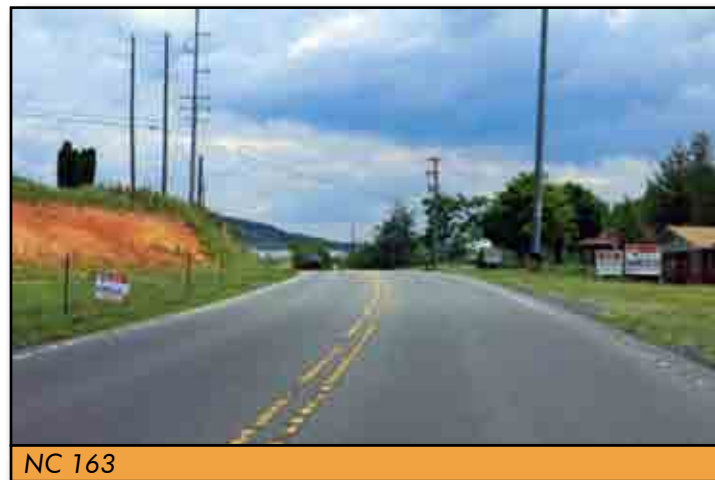
The recommendation for Route Segment #30 is for 4-foot paved shoulders.

Priority
High

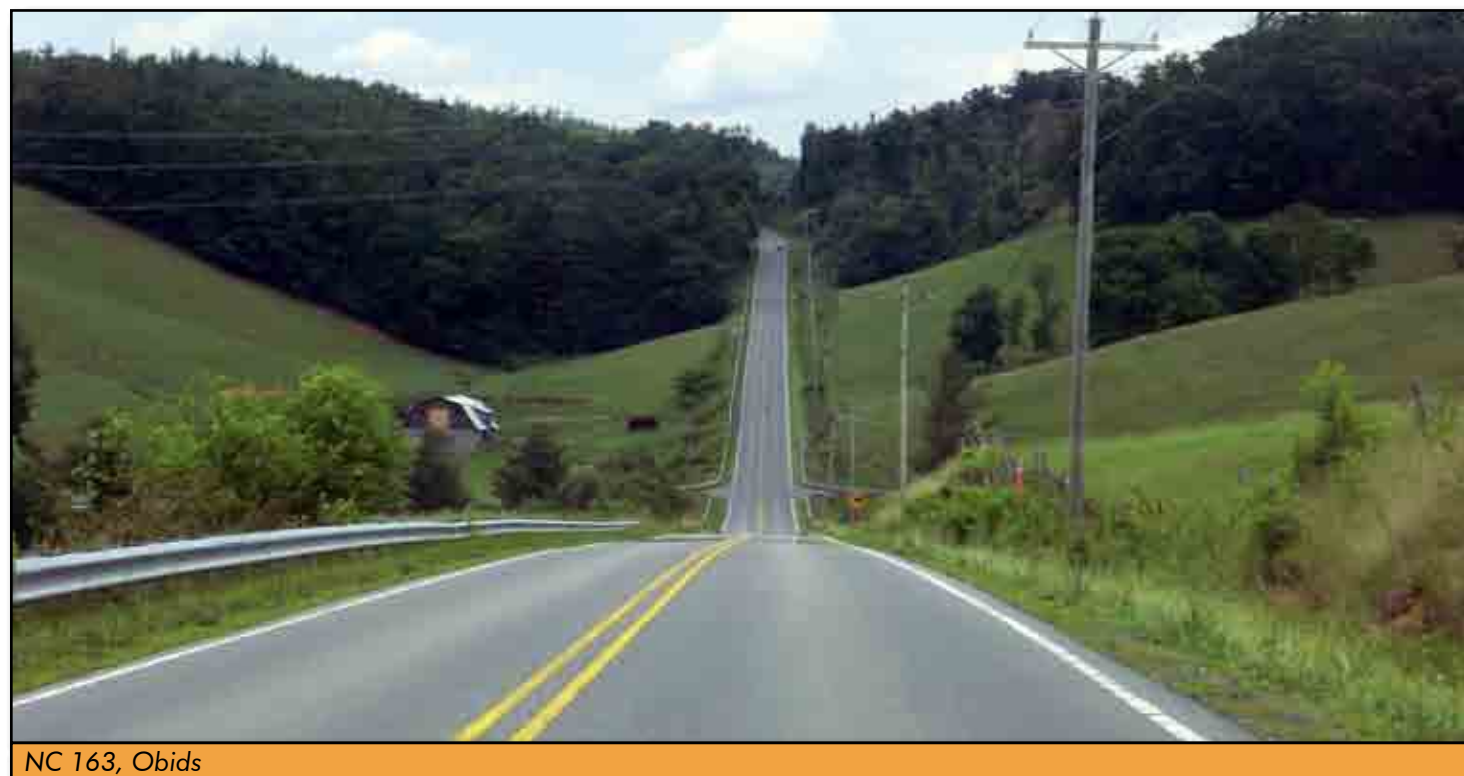
Roads :: NC 163

Segment Limits :: From US 221 to NC 16

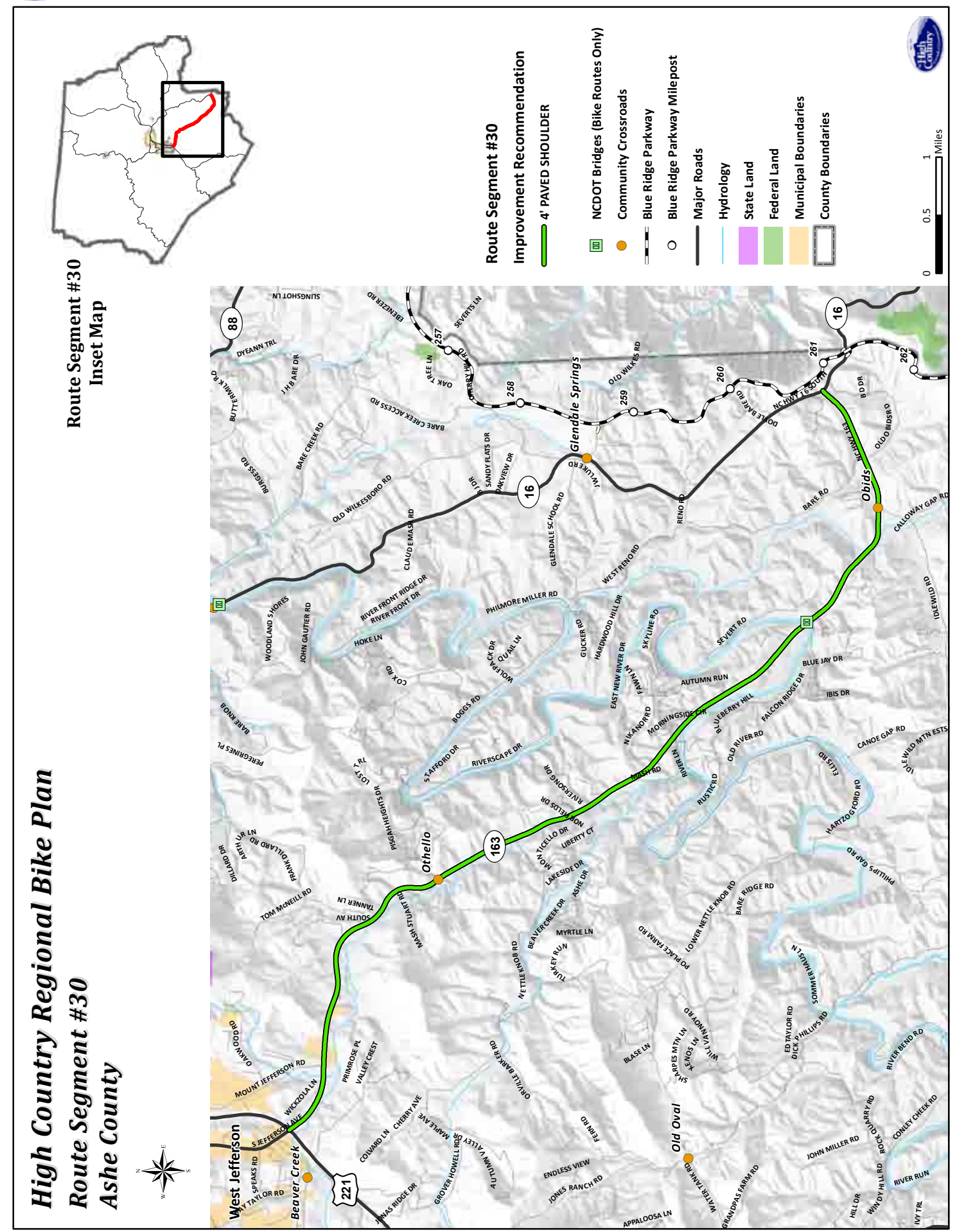
Length :: 9.1 Miles



NC 163



NC 163, Obids



Route Segment #31

Current Conditions

NC 16 from NC 88 to the Blue Ridge Parkway was recently upgraded through NCDOT TIP Project #R-2100. The project included 2-foot paved shoulders. NC 16 from the Blue Ridge Parkway to Boone Trail has narrow lanes with no paved shoulders. Boone Trail also has narrow lanes with no paved shoulders. D Street is 5-lane with curb and gutter. Posted speed limits on Route Segment #31 include 55 mph, and sections of 35 mph and 45 mph close to the Glendale Springs Community and the Town of North Wilkesboro. The highest 2012 AADT count on the route segment is 19,000; the average of the 2012 AADT counts along the route segment is 5,383.

Justification

Route Segment #31 connects the Town of North Wilkesboro to the Millers Creek Community, the Glendale Springs Community, the Blue Ridge Parkway, and to other route segments. The route also connects residential and commercial areas within North Wilkesboro.

Recommendation

The recommendation for Route Segment #31 is for 4- to 5-foot paved shoulders on NC 16; 4-foot paved shoulders on Boone Trail; and 4- to 5-foot bike lanes on D Street.

Priority

Medium from NC 88 to NC 163; High from NC 163 to CBD Loop

Roads :: NC 16, Boone Trail, D Street

Segment Limits :: NC 88 to CBD Loop in North Wilkesboro

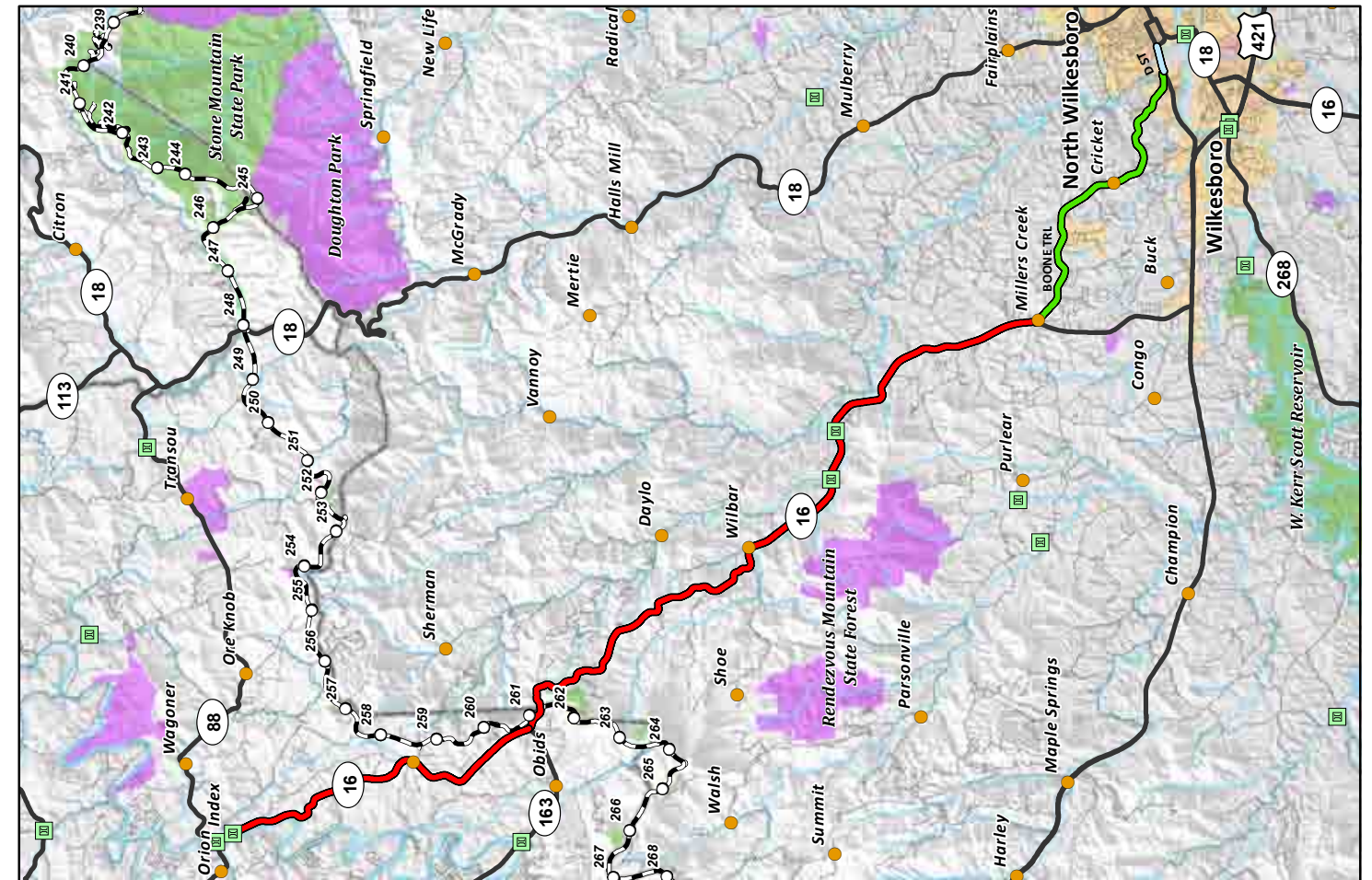
Length :: 26.2 Miles



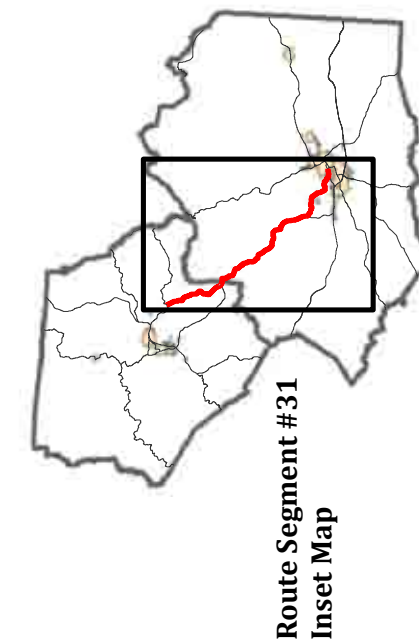
D Street, North Wilkesboro



NC 16, Ashe County



High Country Regional Bike Plan Route Segment #31 Ashe & Wilkes Counties



- Route Segment #31**
- Improvement Recommendation**
- 4' PAVED SHOULDER
 - 4-5' BIKE LANE
 - 4-5' PAVED SHOULDER
- Legend**
- NCDOT Bridges (Bike Routes Only)
 - Community Crossroads
 - Blue Ridge Parkway
 - Blue Ridge Parkway Milepost
 - Major Roads
 - Hydrology
 - State Land
 - Federal Land
 - Municipal Boundaries
 - County Boundaries

0 0.5 1 Miles



Route Segment #31A

Current Conditions

US 421 Business is 3-lane with no paved shoulders. Posted speed limit is 35 mph. The highest 2012 AADT count on the route segment is 18,000; the average of the 2012 AADT counts along the route segment is 16,250.

Justification

Route Segment #31A connects downtown North Wilkesboro to a commercial area of Wilkesboro.

Recommendation

The recommendation for Route Segment #31A is for 4- to 5-foot bike lane.

Priority
Medium

Roads :: US 421 Business

Segment Limits :: From US 421 to Boone Trail

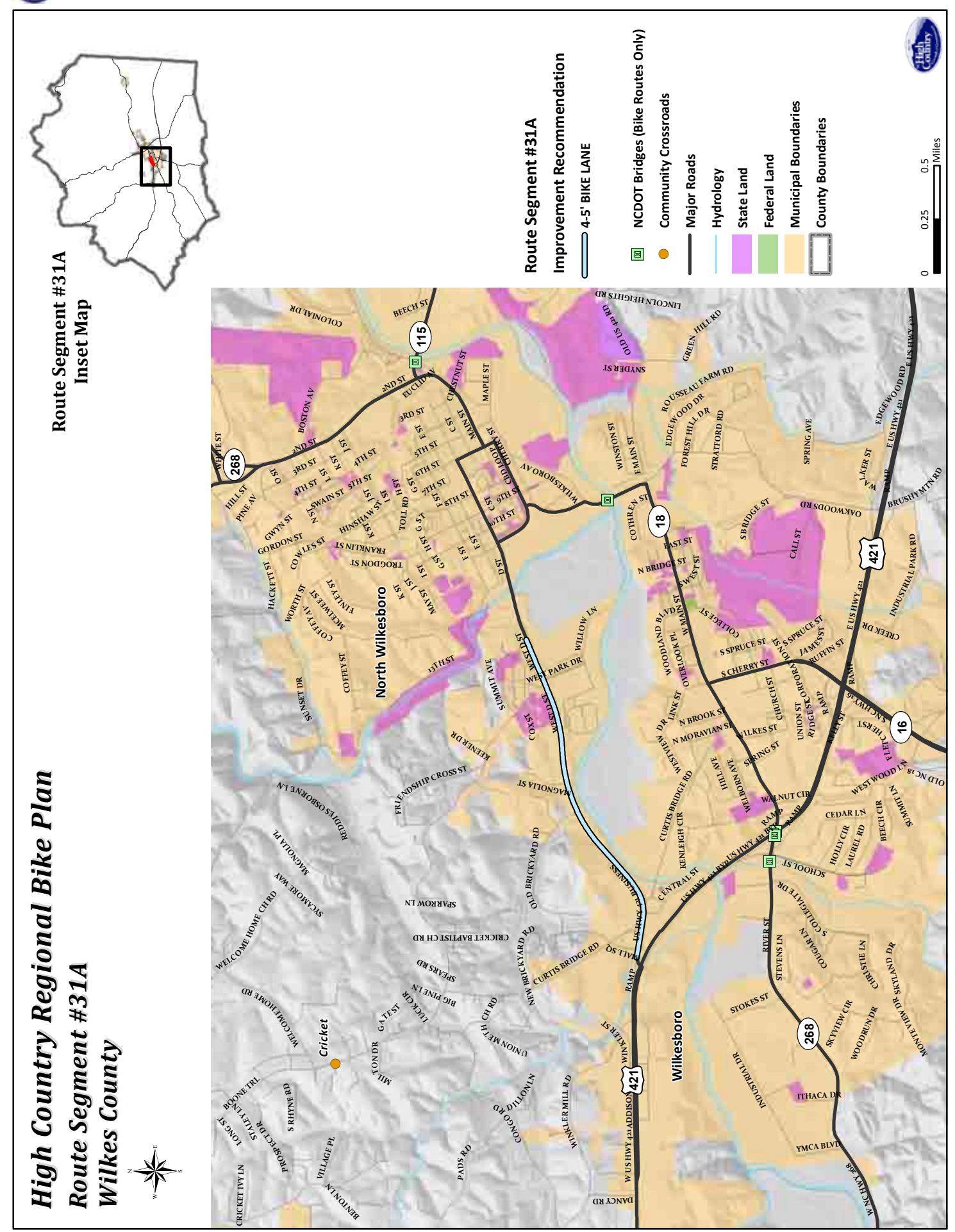
Length :: 1.6 Miles



US 421 Business near Boone Trail



US 421 Business near US 421



Route Segment #32

Current Conditions

US 221 from Jefferson to NC 16 has 2-foot paved shoulders. US 221 from NC 16 to US 21 has variable lane width and no paved shoulders. The posted speed limits along the entire route segment is 55 mph. The highest 2012 AADT count on the route segment is 9,400; the average of the 2012 AADT counts along the route segment is 1,746.

Justification

Route Segment #32 connects the Town of Jefferson to other route segments, and indirectly to the Town of Sparta. The route segment also provides access to New River State Park. The section of Route Segment #32 from Jefferson to NC 16 is included in the Bicycle Element of the 2010 Ashe County Comprehensive Transportation Plan (CTP).

Recommendation

The recommendation for Route Segment #32 is for 4- to 6-foot paved shoulders.

Priority

Medium

Roads :: US 221

Segment Limits :: From NC 16 north of Jefferson to US 21 in Alleghany County

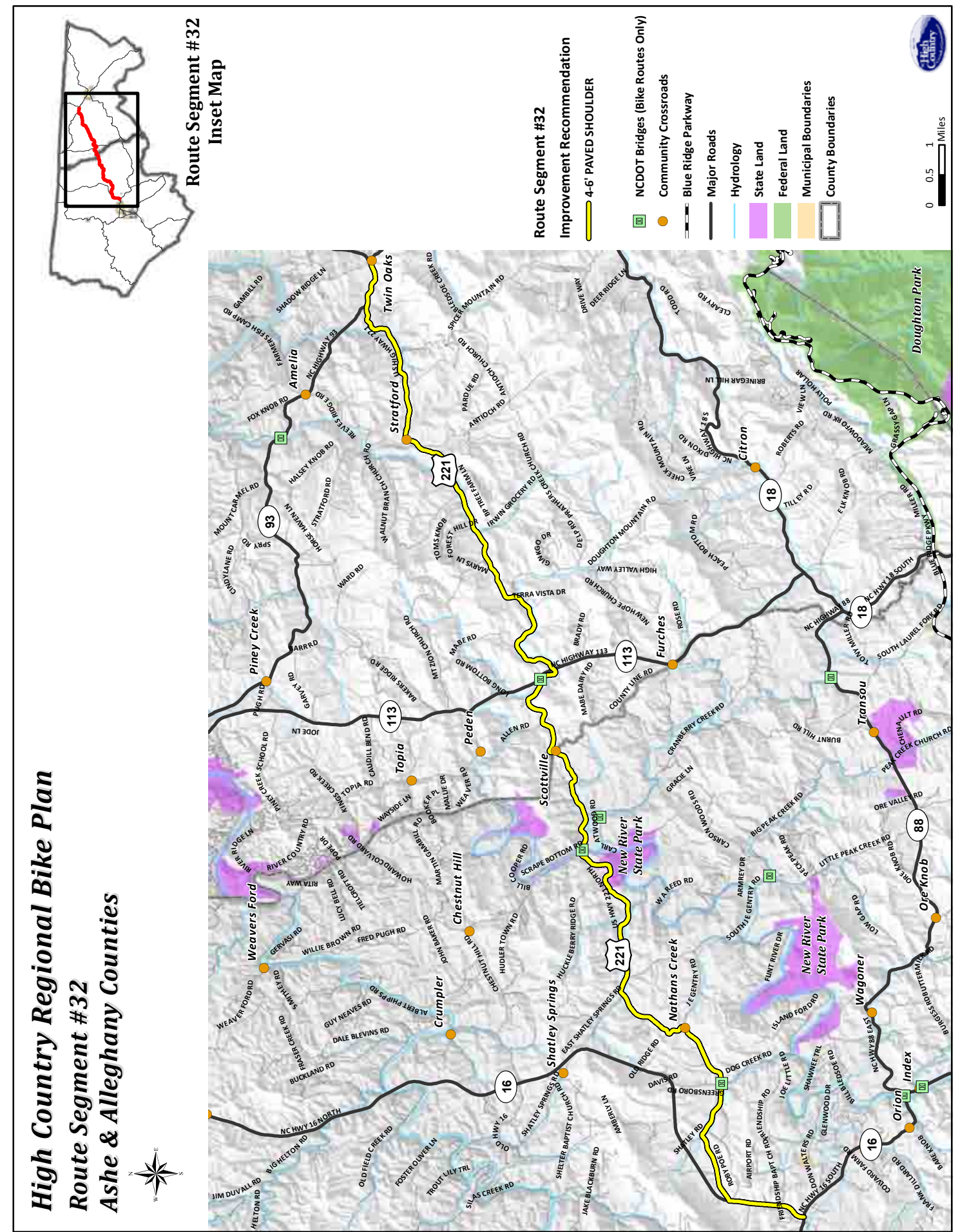
Length :: 21.9 Miles



US 221, Jefferson



US 221, Twin Oaks



Route Segment #33

Current Conditions

NC 113 has narrow lanes with no paved shoulder. Posted speed limits along the entire route segment is 55 mph. The highest 2012 AADT count on the route segment is 600; the average of the 2012 AADT counts along the route segment is 427.

Justification

Route Segment #33 connects to other route segments. It also connects to Virginia approximately one mile south of US Bicycle Route 76 (US Highway 58). All of Route Segment #33 is included in the Bicycle Element of the 2012 Alleghany County Comprehensive Transportation Plan (CTP).

Recommendation

The recommendation for Route Segment #33 is for 4- to 5-foot paved shoulders.

Priority

Low

Roads :: NC 113

Segment Limits :: From NC 18 to Virginia State Line

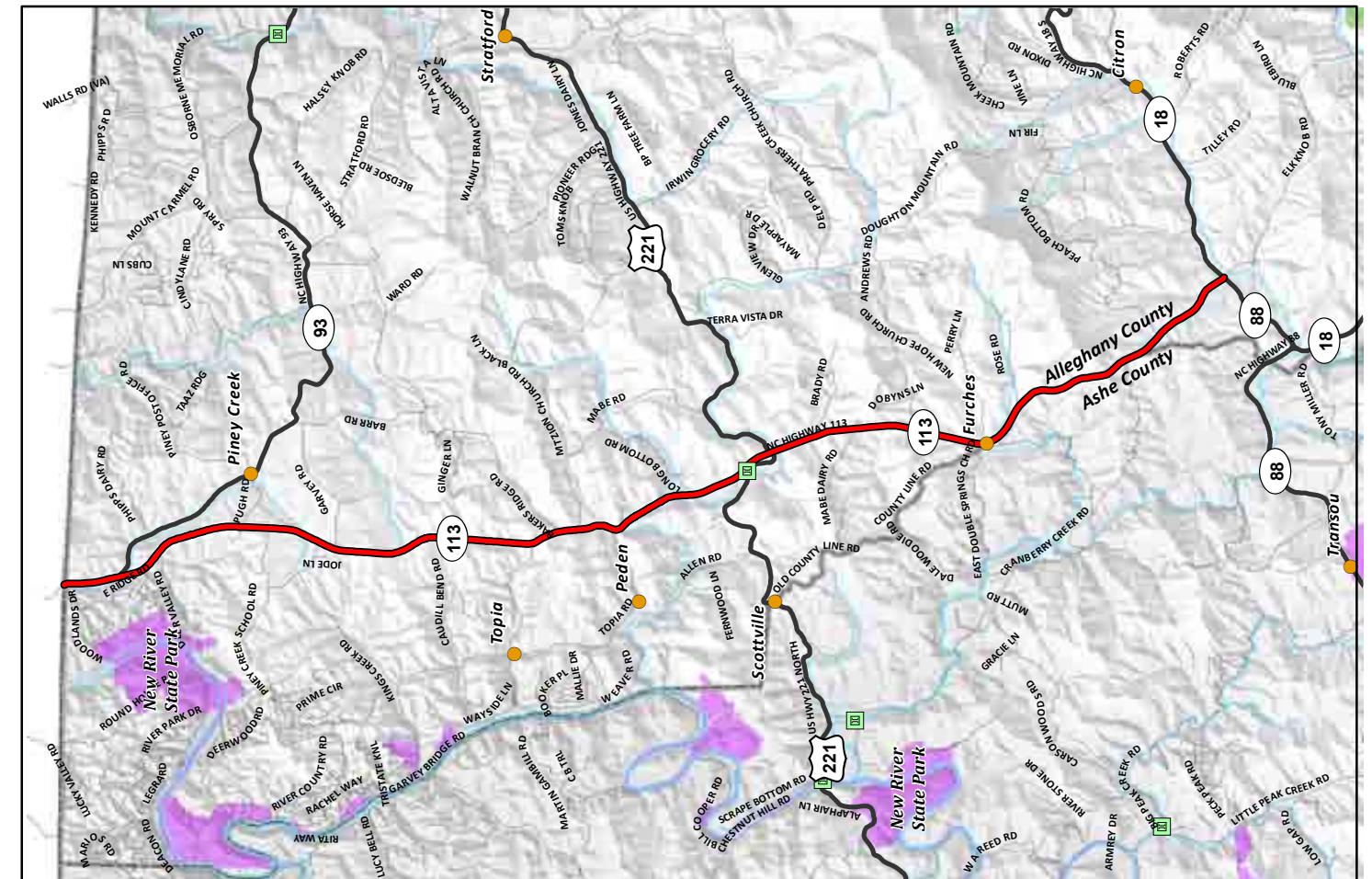
Length :: 11.7 Miles



NC 113 near VA State Line



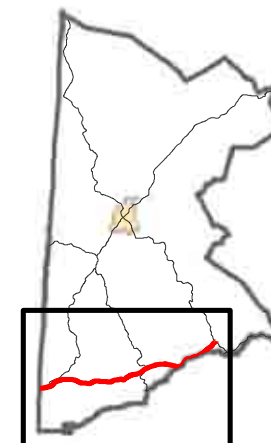
NC 113 near NC 18



High Country Regional Bike Plan Route Segment #33 Alleghany County



Route Segment #33
Inset Map



Route Segment #33

Improvement Recommendation

4-5' PAVED SHOULDER

- NCDOT Bridges (Bike Routes Only)
- Community Crossroads
- Major Roads
- Hydrology
- State Land
- Federal Land
- Municipal Boundaries
- County Boundaries



Route Segment #34

Current Conditions

NC 93 has narrow lanes with no paved shoulder. Posted speed limit along the entire route segment is 55 mph. The highest 2012 AADT count on the route segment is 1,300; the average of the 2012 AADT counts along the route segment is 768.

Justification

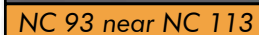
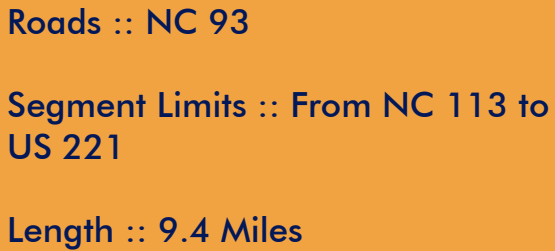
Route Segment #34 connects to other route segments. All of Route Segment #34 is included in the Bicycle Element of the 2012 Allegheny County Comprehensive Transportation Plan (CTP). NC 93 is part of NC Bicycle Highway #4 (North Line Trace).

Recommendation

The recommendation for Route Segment #34 is for 4-foot paved shoulders.

Priority

Low



Route Segment #35

Current Conditions

US 21 in Sparta is primarily 3-lane with curb and gutter. From Sparta to US 221, US 21 has 2-3 foot paved shoulders. From US 221 to Virginia, US 21 has narrow lanes with no paved shoulders. Posted speed limits along the route segment include 20 mph and 35 mph in Sparta, and 45 mph and 55 mph outside Sparta. The highest 2012 AADT count on the route segment is 9,700; the average of the 2012 AADT counts along the route segment is 4,575.

Justification

Route Segment #35 connects the Town of Sparta to Virginia, and to other route segments. The section of Route Segment #35 from Sparta to US 221 is included in the Bicycle Element of the 2012 Alleghany County Comprehensive Transportation Plan (CTP).

Recommendation

The recommendation for Route Segment #35 is for 4- to 5-foot paved shoulders from western Sparta Town Limits to Virginia; 4-foot bike lanes from western Sparta Town Limits to Wee Care Avenue; and no improvement from Wee Care Avenue to NC 18.

Priority

Medium from Sparta to US 221; Low from US 221 to Virginia

Roads :: US 21

Segment Limits :: From NC 18 in Sparta to Virginia State Line

Length :: 6.1 Miles



US 21, Sparta



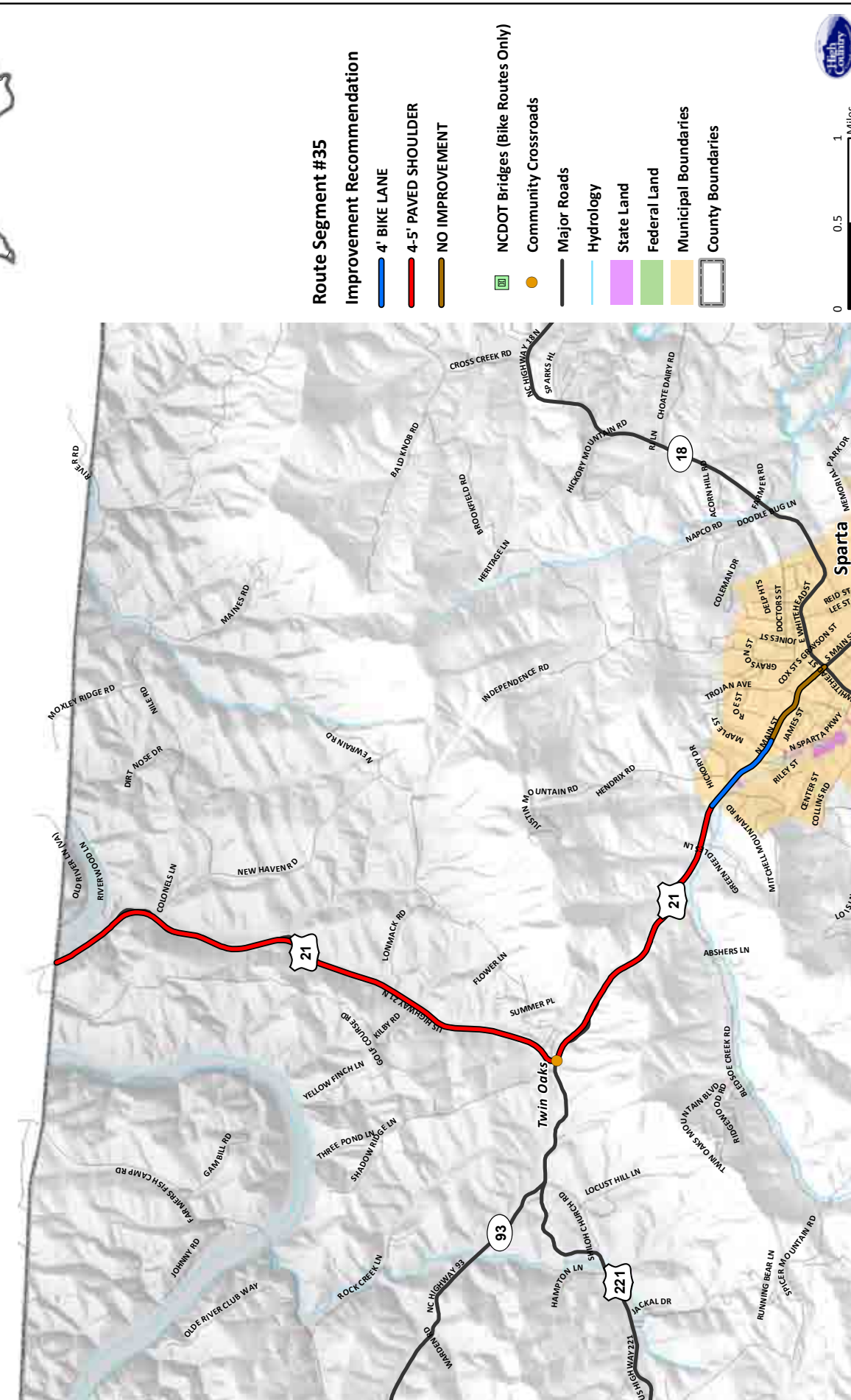
US 21 near VA State Line



High Country Regional Bike Plan Route Segment #35 Alleghany County



Route Segment #35
Inset Map



Route Segment #36

Current Conditions

NC 88 (Main Street) and US 221 in Jefferson are 4-lane facilities with curb and gutter. NC 16/88 from US 221 to NC 16 is 2-lane with 2-foot paved shoulders. NC 88 from NC 16 to NC 18 has narrow lanes with no paved shoulder. NC 18 from NC 88 to Sparta also has narrow lanes with no paved shoulder. Posted speed limits on Route Segment #36 include 55 mph, 45 mph, and 35 mph. The highest 2012 AADT count on the route segment is 15,000; the average of the 2012 AADT counts along the route segment is 4,439.

Justification

Route Segment #36 connects the Towns of Jefferson and Sparta. It also connects to other route segments. The portion of Route Segment #36 within the Town of Jefferson is included in the Bicycle Element of the 2010 Ashe County Comprehensive Transportation Plan (CTP). NC 88 from US 221 to NC 18 is designated as NC Scenic Byway (New River Valley Byway). All of Route Segment #36 is included in the NC Statewide Bicycling Highways network.

Recommendation

The recommendation for Route Segment #36 is for 4- to 5-foot bike lanes from US 221 Business to US 221 in Jefferson; 4-foot paved shoulders from US 221 to Sparta; and 4-foot bike lanes in Sparta Town Limits.

Priority
High



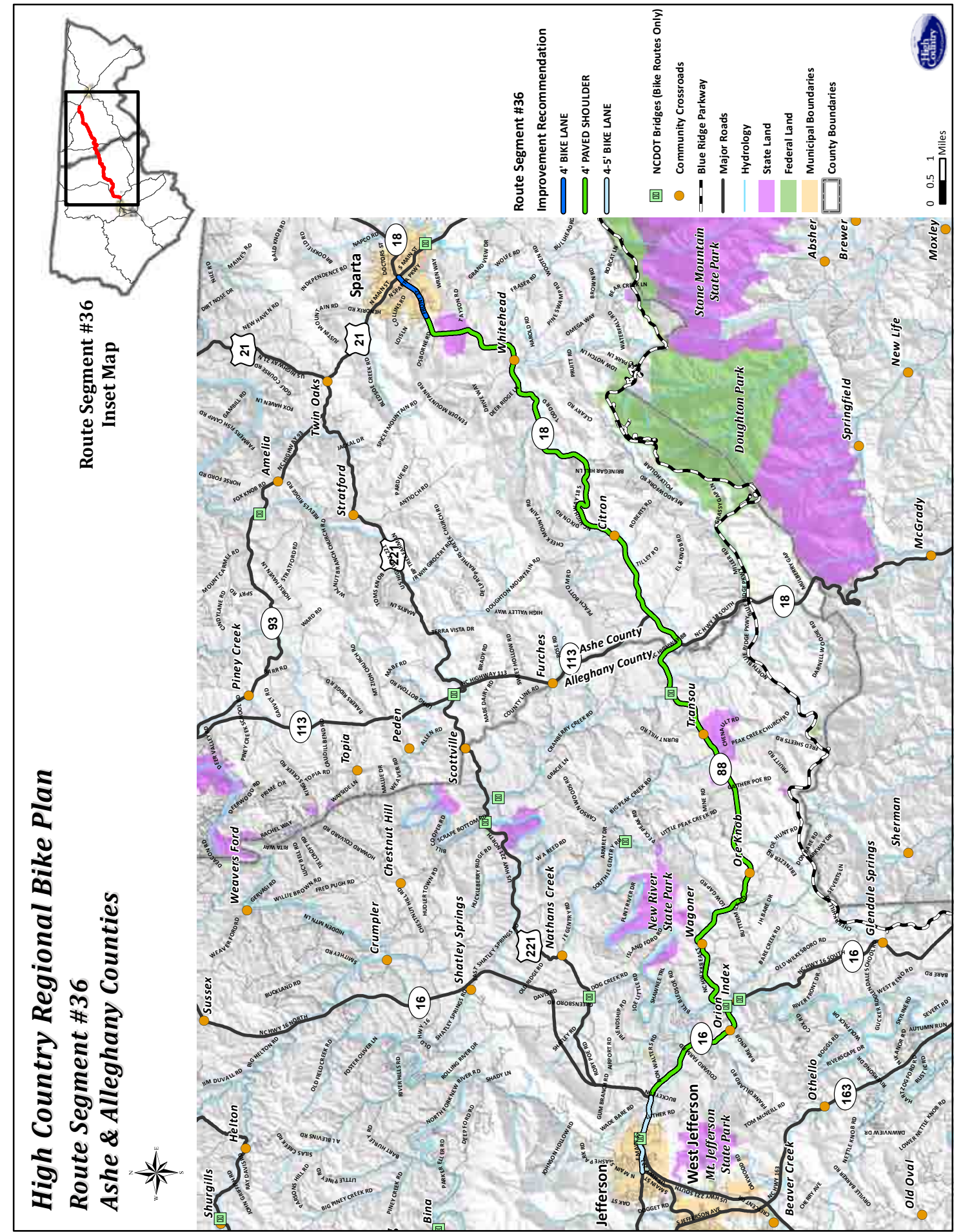
Roads :: NC 88, NC 18

Segment Limits :: From US 221 Business in Jefferson to US 21 in Sparta

Length :: 27.5 Miles



High Country Regional Bike Plan Route Segment #36 Ashe & Alleghany Counties



Route Segment #36A

Current Conditions

Route Segment #36A has narrow lanes and no paved shoulder. Posted speed limit is 55 mph, with a 45 mph zone in the Laurel Springs Community. The only 2012 AADT count on the route segment is 870.

Justification

Route Segment #36A connects Route Segment #36 to the Blue Ridge Parkway.

Recommendation

The recommendation for Route Segment #36A is for 4- to 5-foot paved shoulders.

Priority

Medium



Segment Limits :: From NC 88 to the Blue Ridge Parkway

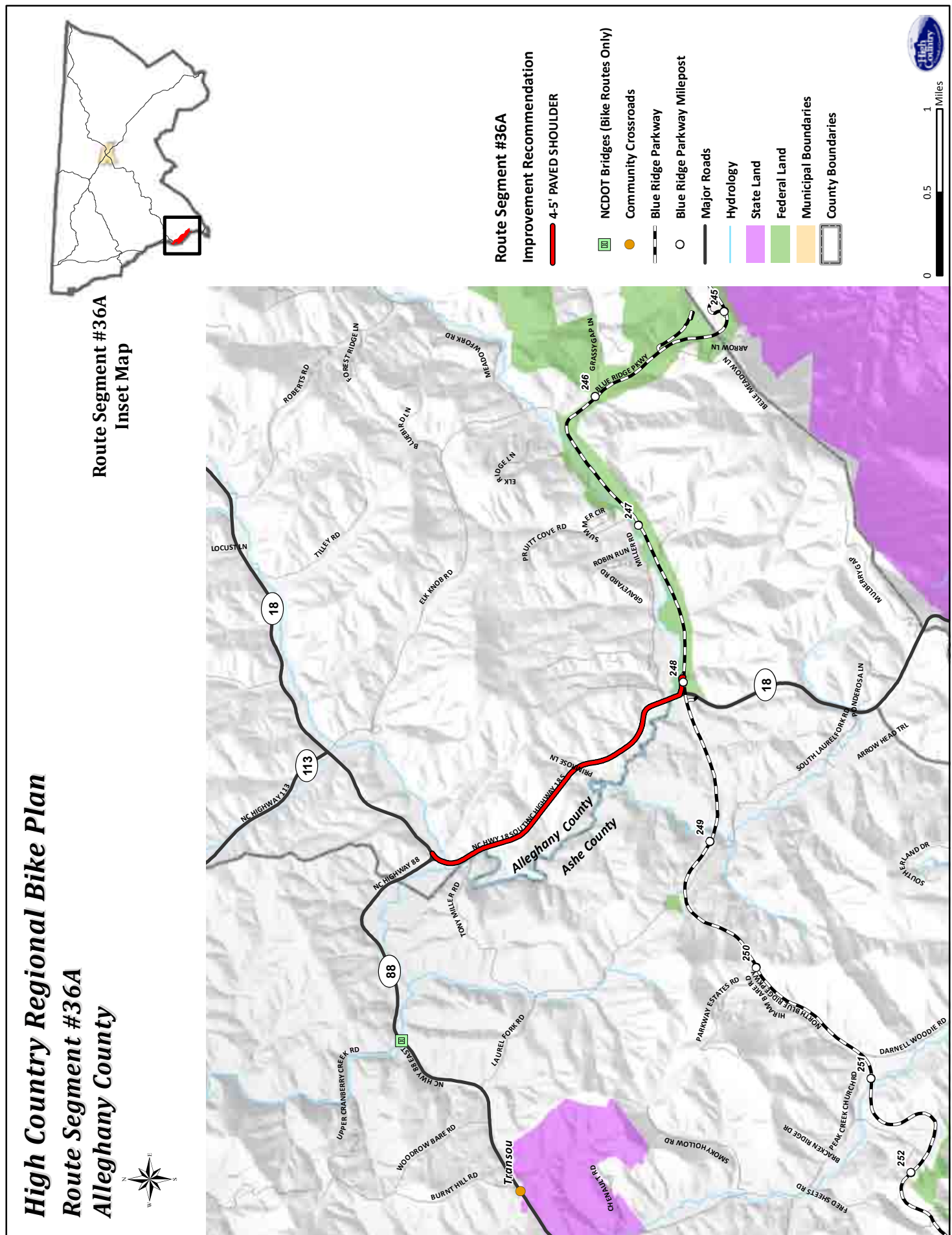
Length :: 2 Miles



NC 18 near Blue Ridge Parkway



NC 18 near NC 88



Route Segment #37

Current Conditions

NC 18 in Sparta (Whitehead Street) has a short section of curb and gutter and a short section with paved shoulders. The remainder of Route Segment #37 has narrow lanes with no paved shoulders. Posted speed limits along the route segment include 35 mph in Sparta, and 45 mph and 55 mph outside Sparta. The highest 2012 AADT count on the route segment is 3,700; the average of the 2012 AADT counts along the route segment is 2,150.

Justification

Route Segment #37 connects the Town of Sparta to the Blue Ridge Parkway and Virginia. All of Route Segment #37 is included in the proposed NC Bike Route network. A short section of the route segment adjacent to the Blue Ridge Parkway is included in the Bicycle Element of the 2012 Alleghany County Comprehensive Transportation Plan (CTP).

Recommendation

The recommendation for Route Segment #37 is for 4-foot paved shoulders, and 4-foot bike lanes within Sparta Town Limits.

Priority
Medium

Roads :: NC 18

Segment Limits :: From Sparta to Blue Ridge Parkway near Cumberland Knob

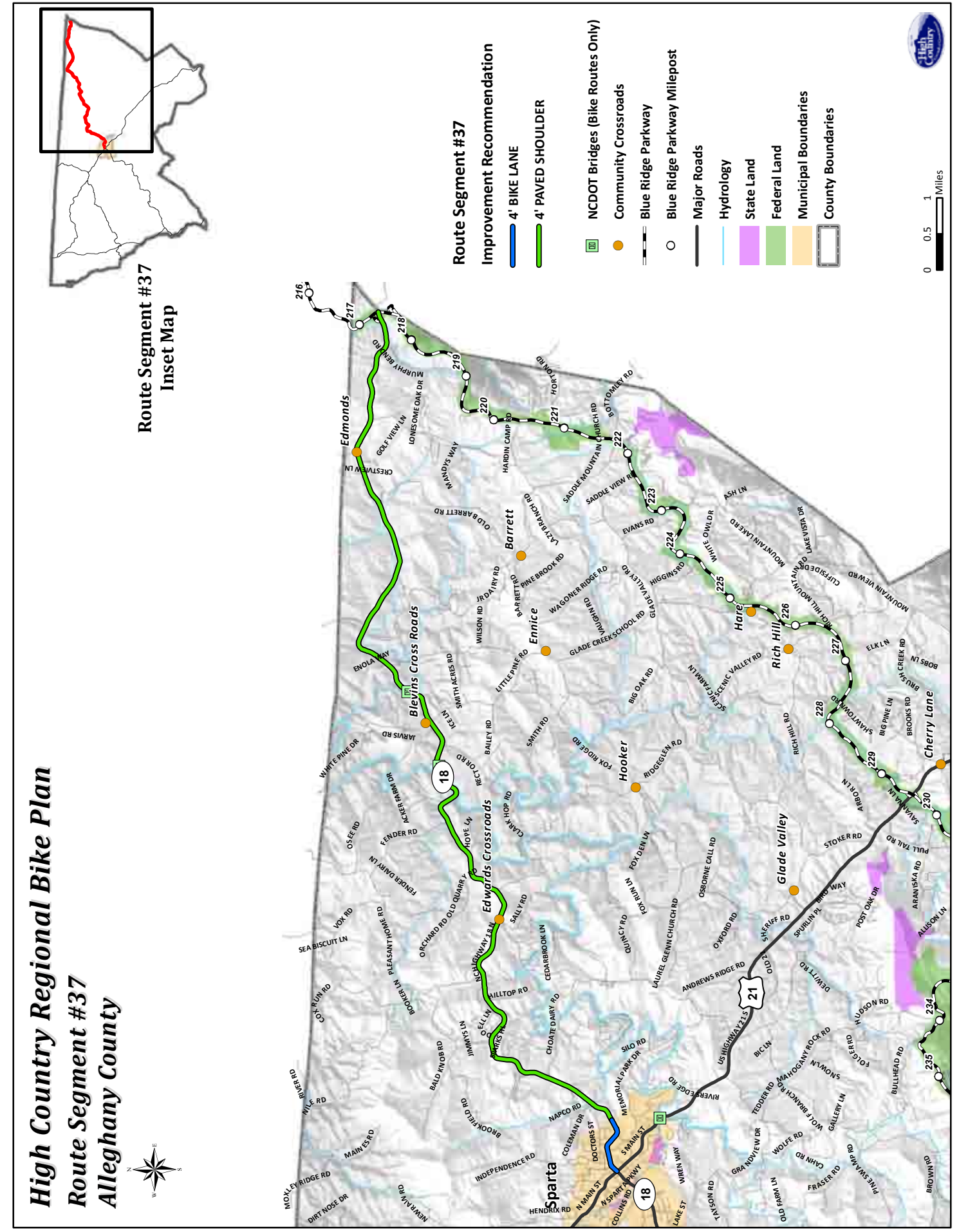
Length :: 14.9 Miles



NC 18 near the Blue Ridge Parkway



NC 18 near Sparta



Route Segment #38

Current Conditions

US 21 in Sparta (South Main Street) is primarily 3-lane with curb and gutter. US 21 from Sparta to Roaring Gap Community is currently included in the STIP. NCDOT TIP Project R-3101 consists of upgrading the facility to 24 feet with 2-foot paved shoulders. The project is scheduled in the STIP for construction to begin in 2013. US 21 from Roaring Gap to US 21 Business in Elkin (North Bridge Street) is primarily 2-lane with 0- to 1-foot paved shoulders. US 21 Business (North Bridge Street) is a combination of 3-lane and 5-lane with curb and gutter. Posted speed limits along the route segment include 35 mph, 45 mph, and 55 mph. The highest 2012 AADT count on the route segment is 11,000; the average of the 2012 AADT counts along the route segment is 4,446.

Justification

Route Segment #38 connects the Town of Sparta to the Town of Elkin. It also makes connections to the Blue Ridge Parkway and to other route segments, and provides indirect access to Stone Mountain State Park. All of Route Segment #38 within Alleghany County is included in the Bicycle Element of the 2012 Alleghany County Comprehensive Transportation Plan (CTP). Two separate sections of US 21 along the route segment are part of NC Bicycle Highway #4 (North Line Trace).

Recommendation

The recommendation for Route Segment #38 is for 4- to 5-foot paved shoulders, and 4-foot bike lanes within Sparta and Elkin Town Limits. No improvement is recommended from NC 18 in Sparta to Memorial Park Drive.

Priority

High from Sparta to Blue Ridge Parkway; Medium from Blue Ridge Parkway to Elkin



US 21 Business, Elkin

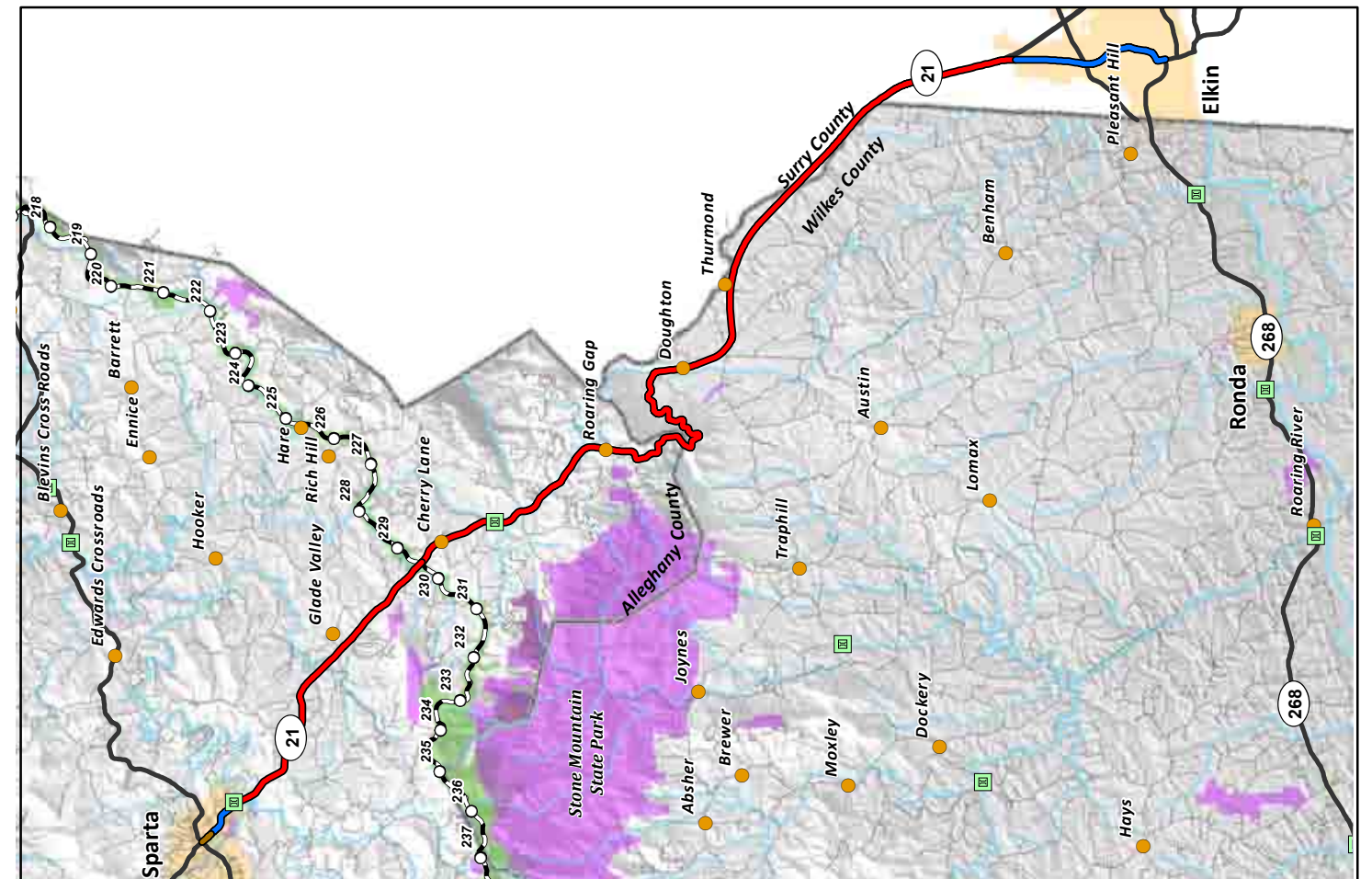
Roads :: US 21, US 21 Business

Segment Limits :: From NC 18 in Sparta to NC 268 Business in Elkin

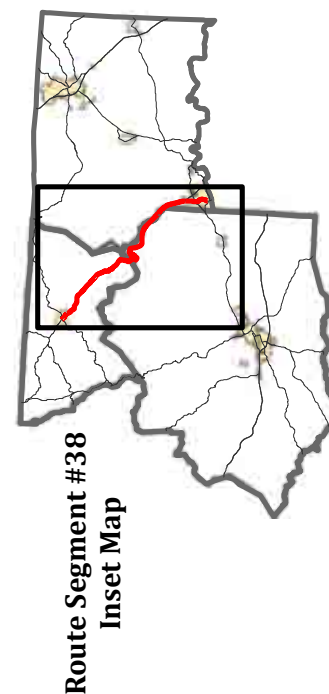
Length :: 28.6 Miles



US 21 Business, Elkin



High Country Regional Bike Plan Route Segment #38 Alleghany, Surry & Wilkes Counties



Route Segment #38
Inset Map

- Route Segment #38**
- Improvement Recommendation**
- 4' BIKE LANE
 - 4-5' PAVED SHOULDER
 - NO IMPROVEMENT
- Legend**
- NCDOT Bridges (Bike Routes Only)
 - Community Crossroads
 - Blue Ridge Parkway
 - Blue Ridge Parkway Milepost
 - Major Roads
 - Hydrology
 - State Land
 - Federal Land
 - Municipal Boundaries
 - County Boundaries

0 0.5 1 Miles



Route Segment #39

Current Conditions
NC 18 in North Wilkesboro includes sections of 4-lane with curb and gutter and 5-lane with curb and gutter. NC 18 from Mountain View Road to Yellow Banks Road is currently included in the STIP. NCDOT TIP Project R-3405 consists of upgrading and widening the facility. The project will include a curb and gutter section, and a section with 2-foot paved shoulders. The project is currently under construction. Yellow Banks Road and Traphill Road both have narrow lanes with no paved shoulder. Posted speed limits on Route Segment #39 include 25 mph, 35 mph, 45 mph, and 55 mph. The highest 2012 AADT count on the route segment is 21,000; the average of the 2012 AADT counts along the route segment is 7,517.

Justification
Route Segment #39 connects the Town of North Wilkesboro to many unincorporated communities to the north, and connects residential and commercial areas within North Wilkesboro. It also provides access to Stone Mountain State Park, and connects to other route segments.

Recommendation
The recommendation for Route Segment #39 is for 4- to 5-foot paved shoulders on NC 18; 4-foot paved shoulders on Yellow Banks Road and Traphill Road; and 4- to 5-foot bike lanes within North Wilkesboro Town Limits.

Priority
Medium

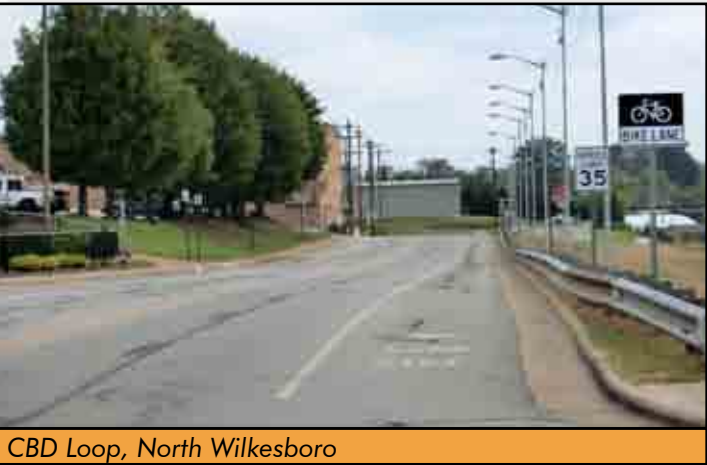


Traphill Road, Traphill

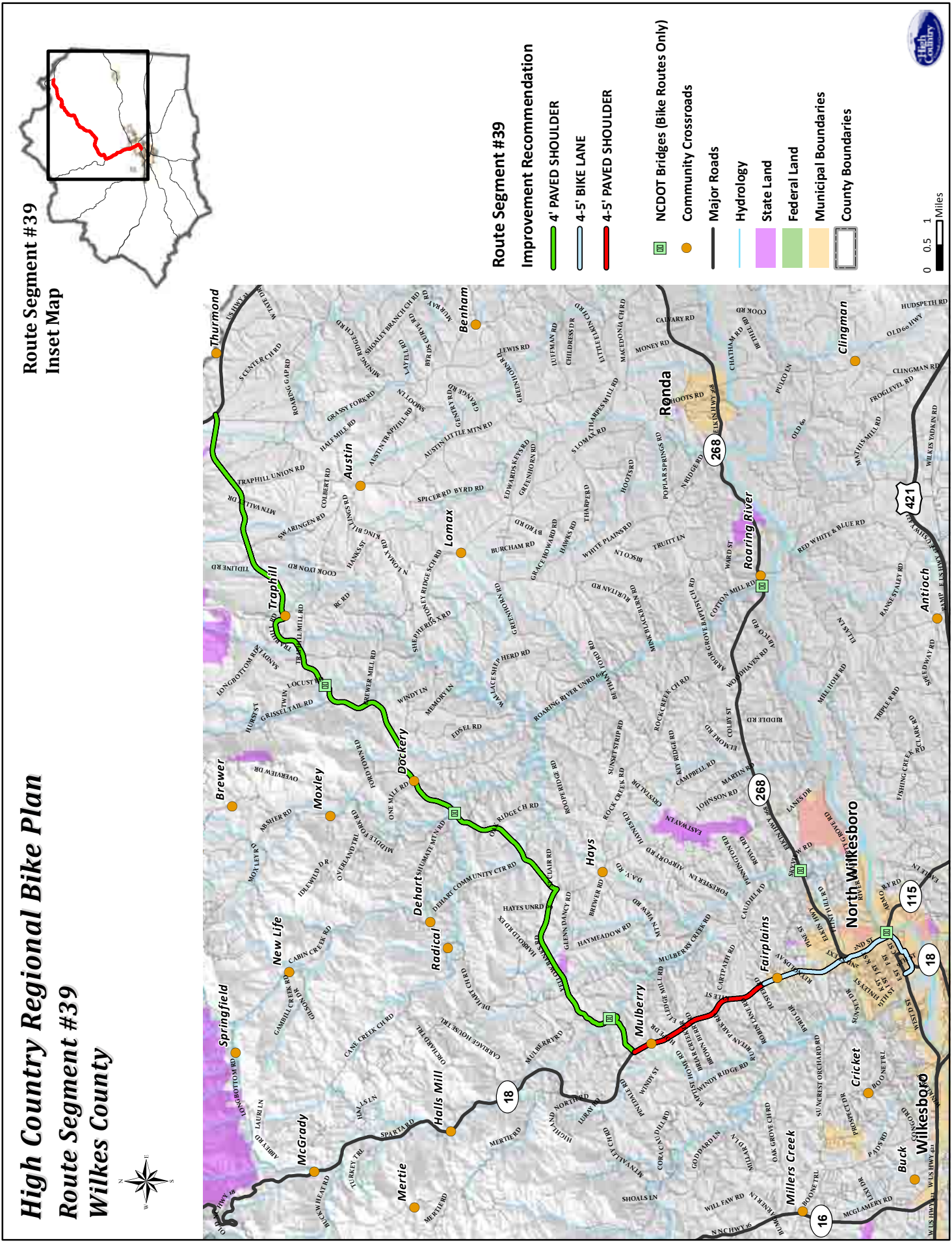
Roads :: NC 18, Yellow Banks Road, Traphill Road

Segment Limits :: From CBD Loop in North Wilkesboro to US 21

Length :: 25.1 Miles



CBD Loop, North Wilkesboro



Route Segment #40

Current Conditions

NC 268 in North Wilkesboro is currently included in the STIP. NCDOT TIP Project R-2603 consists of widening NC 268 from the existing 5-lane section to Airport Road. The project will include a 5-lane section with wide outside lanes, and a 4-lane section with 4-foot paved shoulders. The project is scheduled in the STIP for construction to begin in 2015. NC 268 from Airport Road to US 21 Business has narrow lanes and no paved shoulders. Posted speed limits along the route segment range from 30 mph to 55 mph. The highest 2012 AADT count on the route segment is 18,000; the average of the 2012 AADT counts along the route segment is 8,540.

Justification

Route Segment #40 connects the Towns of North Wilkesboro, Ronda, and Elkin.

Recommendation

The recommendation for Route Segment #40 is for 4- to 5-foot paved shoulders; 4- to 5-foot bike lanes within North Wilkesboro Town Limits; and 4-foot bike lanes within Ronda Town Limits.

Priority
High

Roads :: NC 268, NC 268 Business

Segment Limits :: From NC 18 in North Wilkesboro to US 21 Business in Elkin

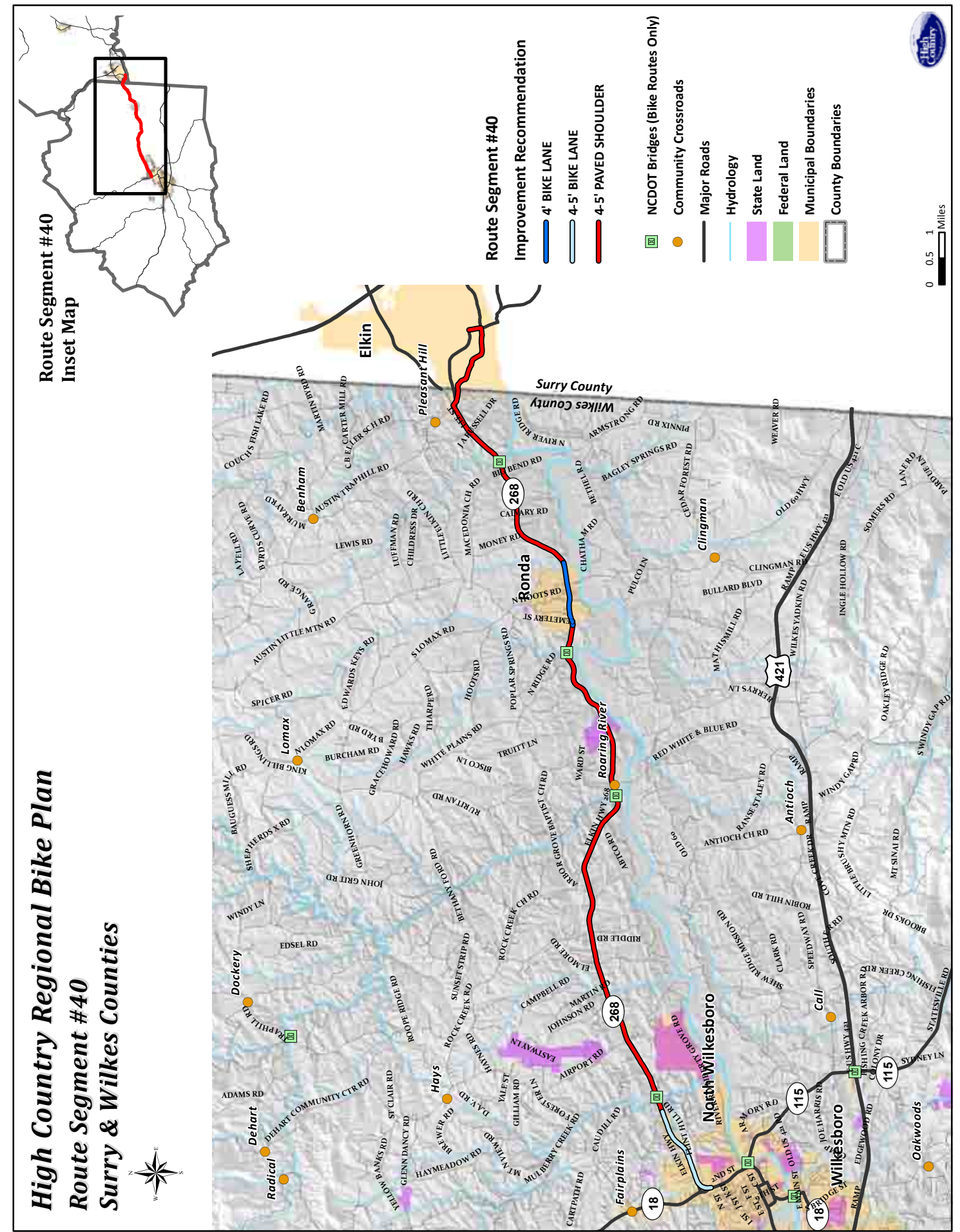
Length :: 19.1 Miles



NC 268, Roaring River



NC 268, North Wilkesboro



Route Segment #41

Current Conditions

NC 115 in North Wilkesboro includes 4-lane and 2-lane sections. NC 115 outside North Wilkesboro is 2-lane with varying paved shoulders (0- to 2-foot). Posted speed limits along the route segment include 35 mph, 45 mph, and 55 mph. The highest 2012 AADT count on the route segment is 8,500; the average of the 2012 AADT counts along the route segment is 6,175.

Justification

Route Segment #41 connects the Town of North Wilkesboro to residential areas south of Town, and to Iredell County.

Recommendation

The recommendation for Route Segment #41 is for 4- to 5-foot paved shoulders.

Priority
Low

Roads :: NC 115

Segment Limits :: From NC 268 in North Wilkesboro to Iredell County

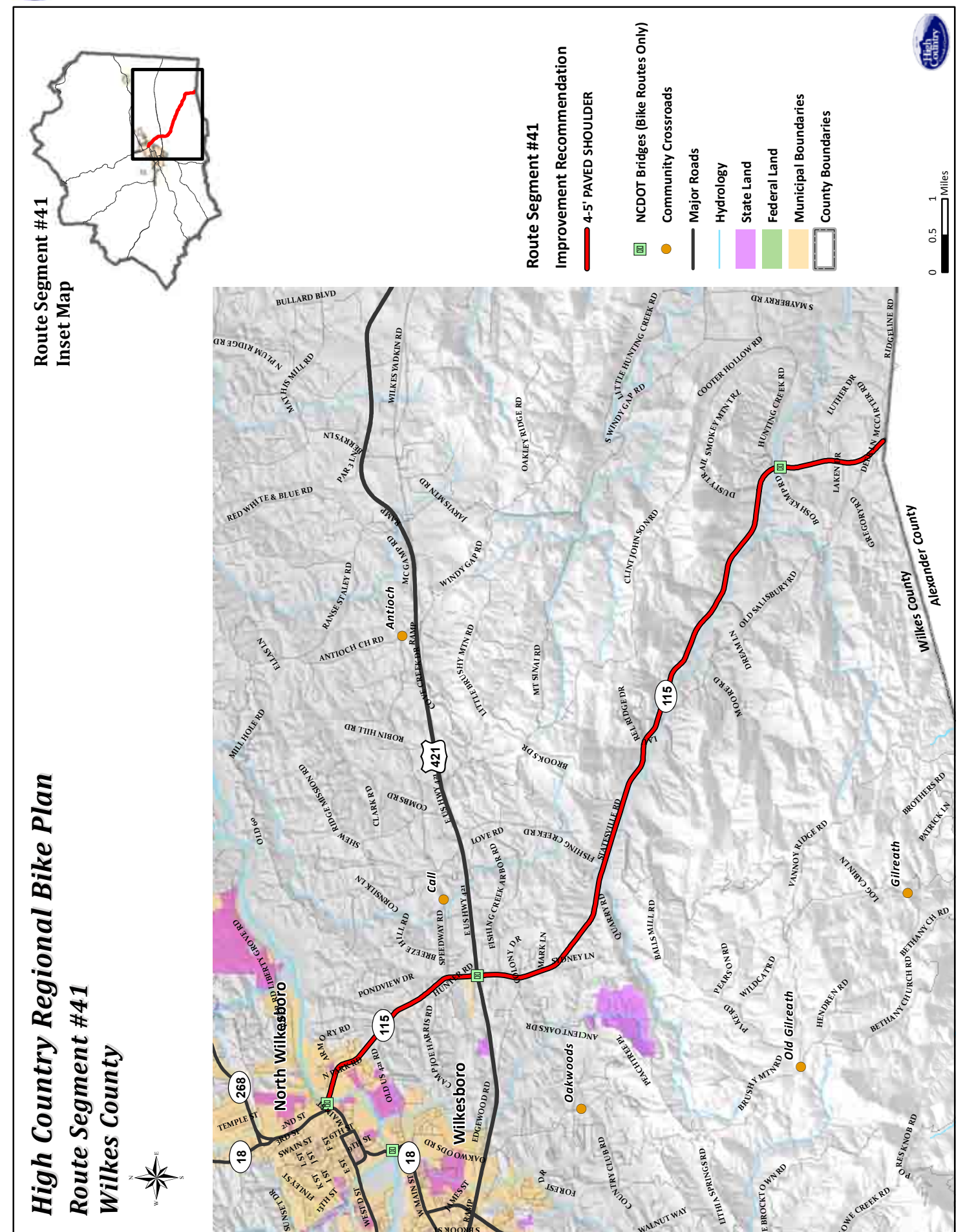
Length :: 13.3 Miles



NC 115 at Alexander County Line



NC 115, North Wilkesboro



Route Segment #42

Current Conditions
NC 16 has 12-foot lanes with 2-foot paved shoulders. New Browns Ford Road and Old NC 268 have narrow lanes and no paved shoulder. Posted speed limits on Route Segment #42 include 50 mph and 35 mph. Only two 2012 AADT counts are available for the route. Both counts are on NC 16, and both are 13,000.

Justification
Route Segment #42 connects Route Segments #31 and #25, and provides access to W. Kerr Scott Reservoir.

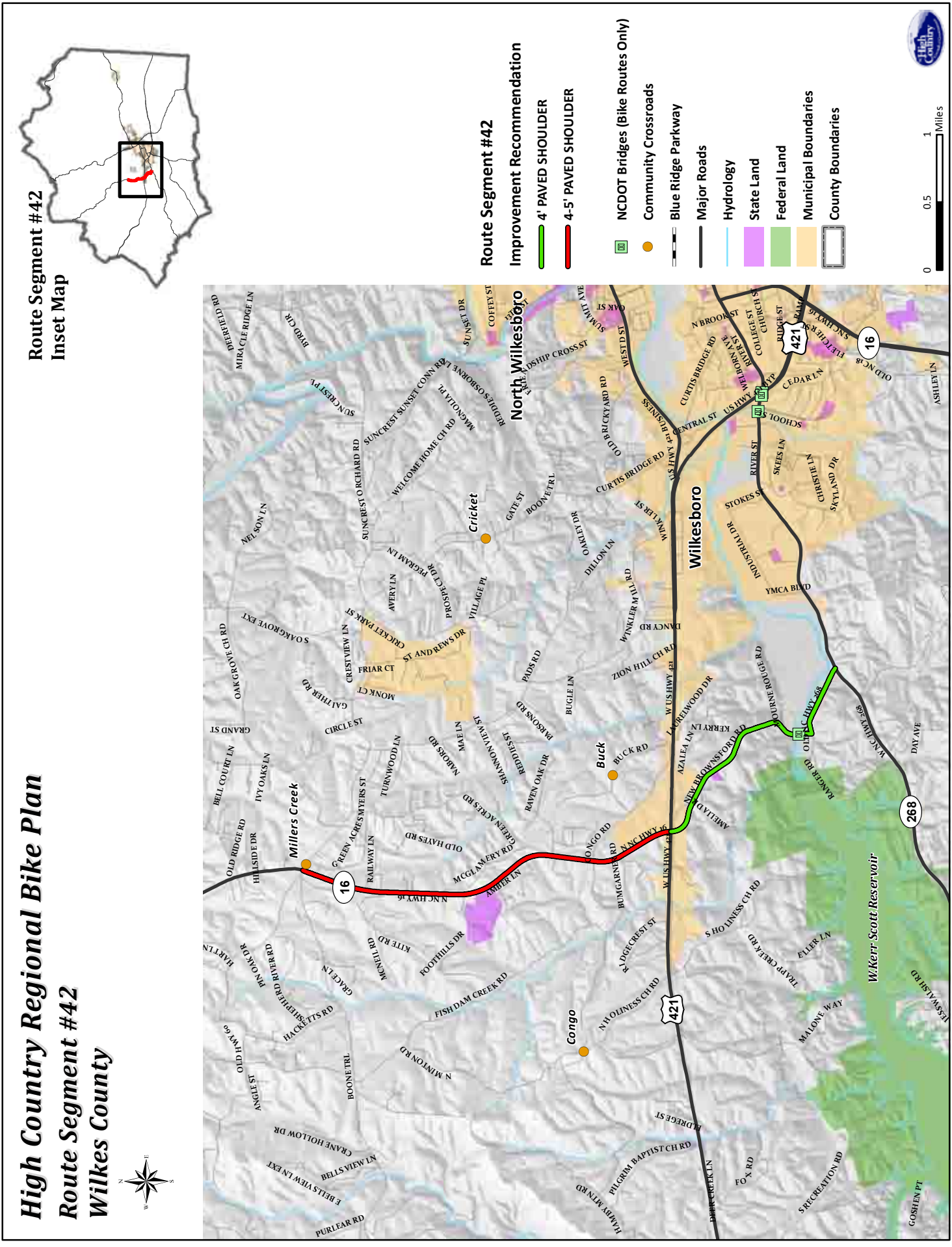
Recommendation
The recommendation for Route Segment #42 is for 4- to 5-foot paved shoulders on NC 16, and 4-foot paved shoulders on New Browns Ford Road and Old NC 268.

Priority
Medium

Roads :: NC 16, New Browns Ford Road, Old NC 268

Segment Limits :: From Boone Trail in Millers Creek to NC 268

Length :: 4.9 Miles



Section 9

Recreational Cycling Routes



The High Country Regional Bike Plan identifies seven Recreational Routes (one per county). The following pages detail the individual Recreational Cycling Routes. Map #11 shows the seven routes at a regional scale. The Recreational Cycling Routes are intended to be used as a tourism-promotion tool.

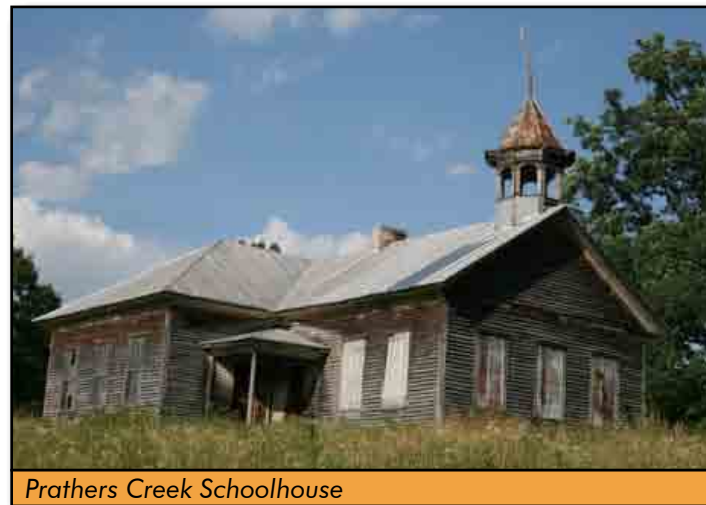
Alleghany County Recreational Cycling Route

Roads Utilized

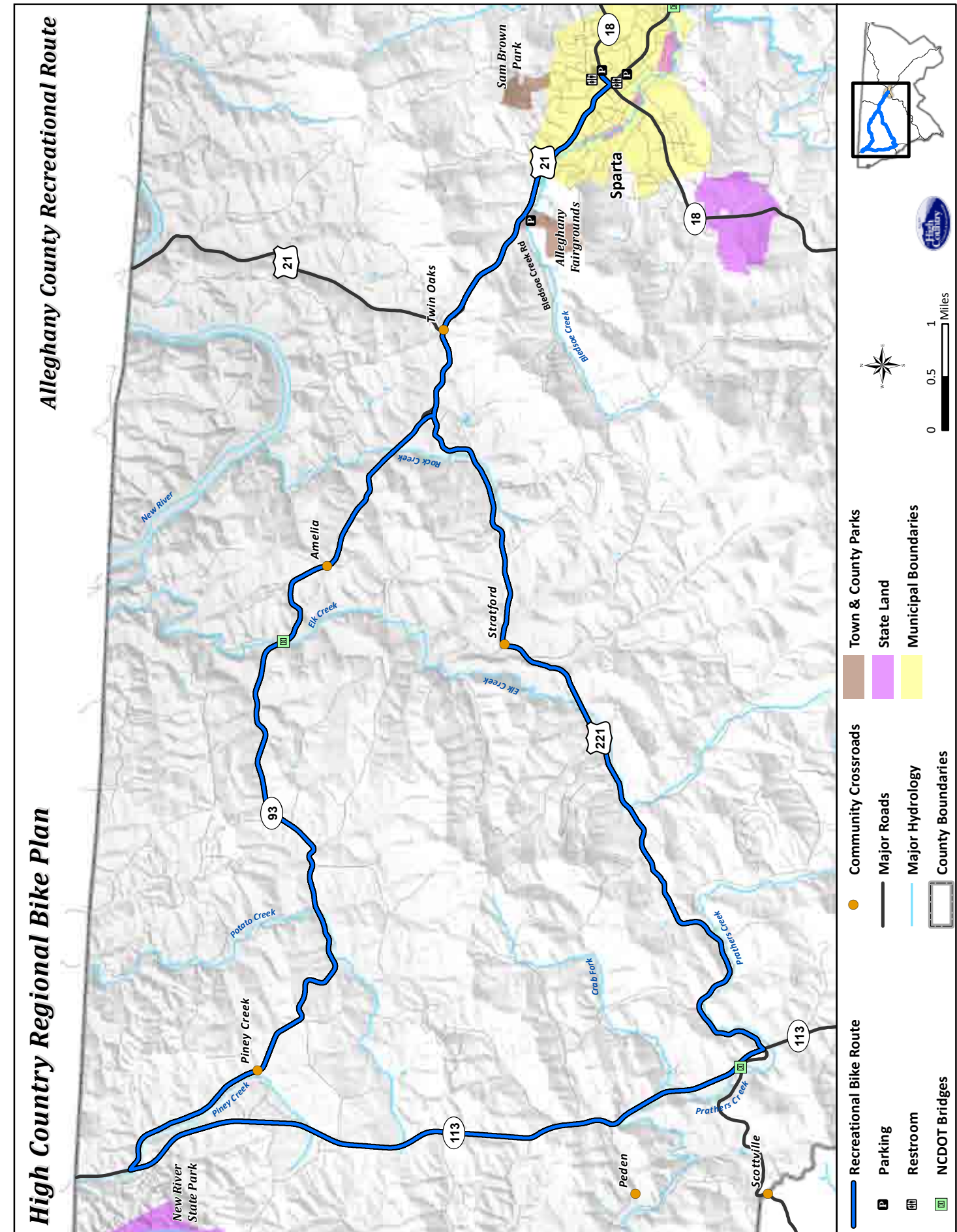
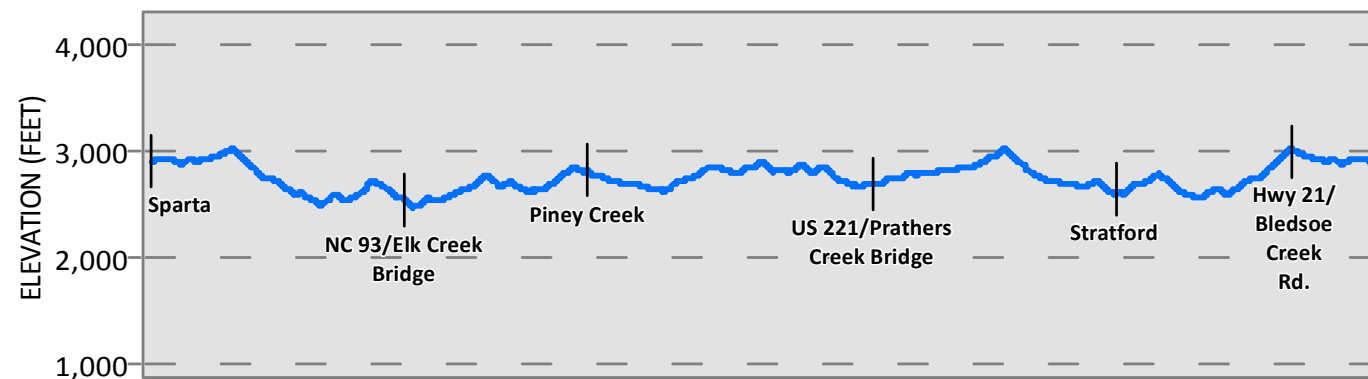
- US 21
- NC 93
- NC 113
- US 221

Route Length – 31 Miles

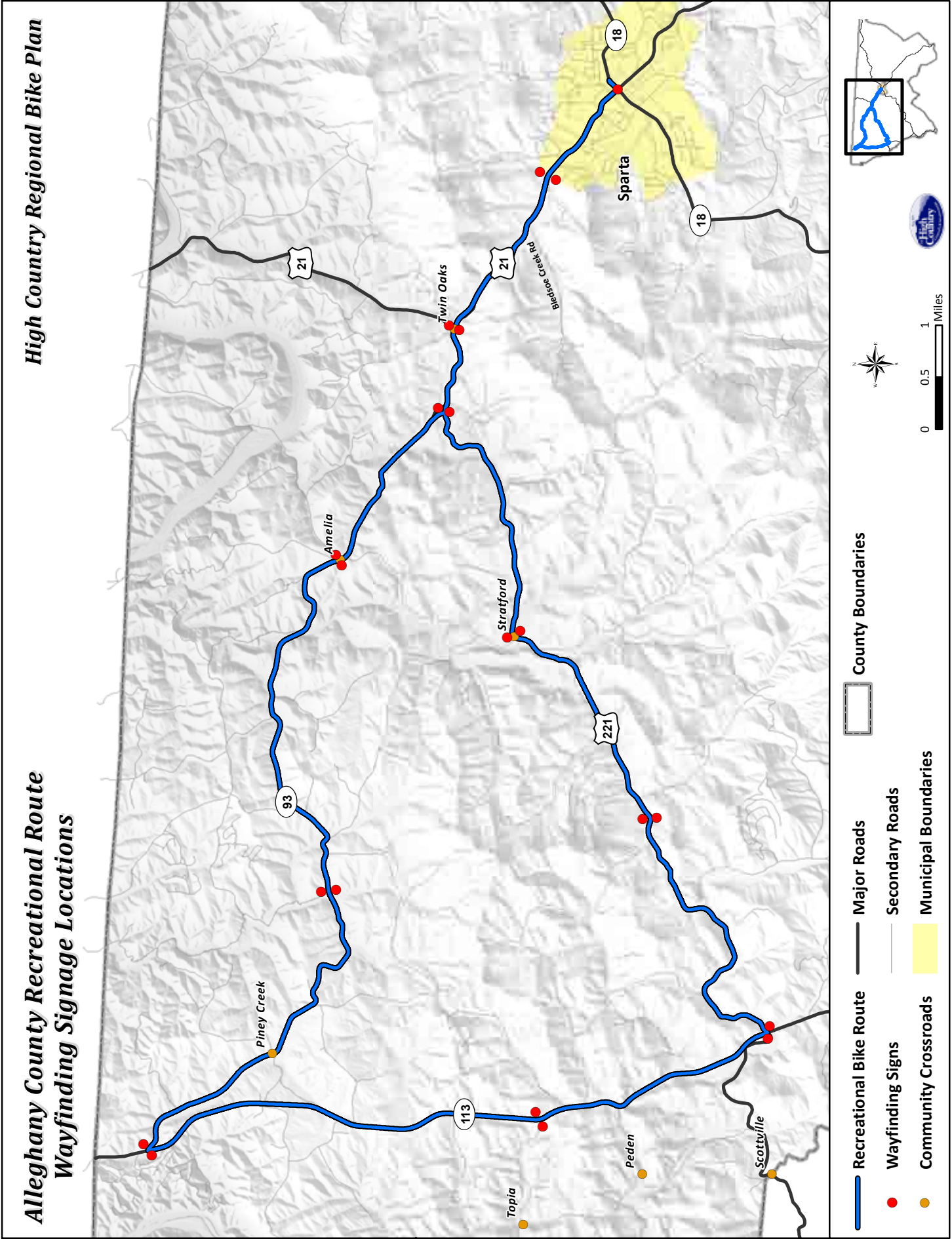
The Alleghany Recreational Cycling Route starts and ends in downtown Sparta. The route is characterized by open pasture, low grades, and good sight distances. The Alleghany Recreational Cycling Route provides indirect access to New River State Park. The NC 93 and US 21 sections of the route are part of NC Bicycling Highway #4, North Line Trace.



Alleghany County Recreational Bike Route



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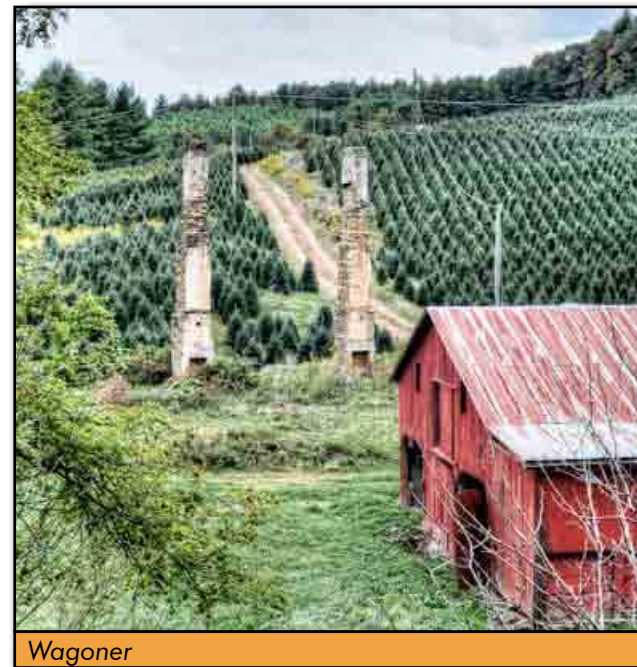
Ashe County Recreational Cycling Route

Roads Utilized

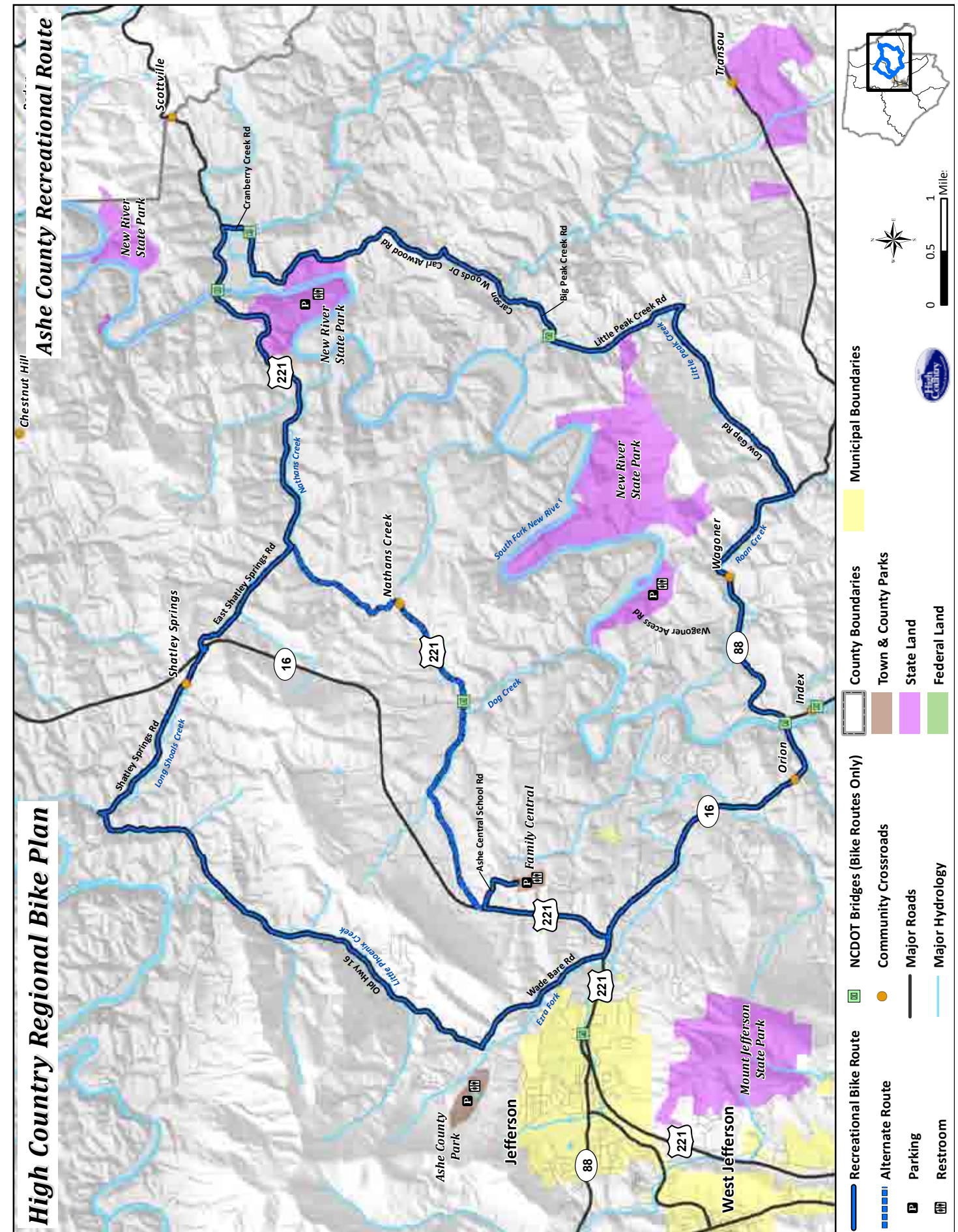
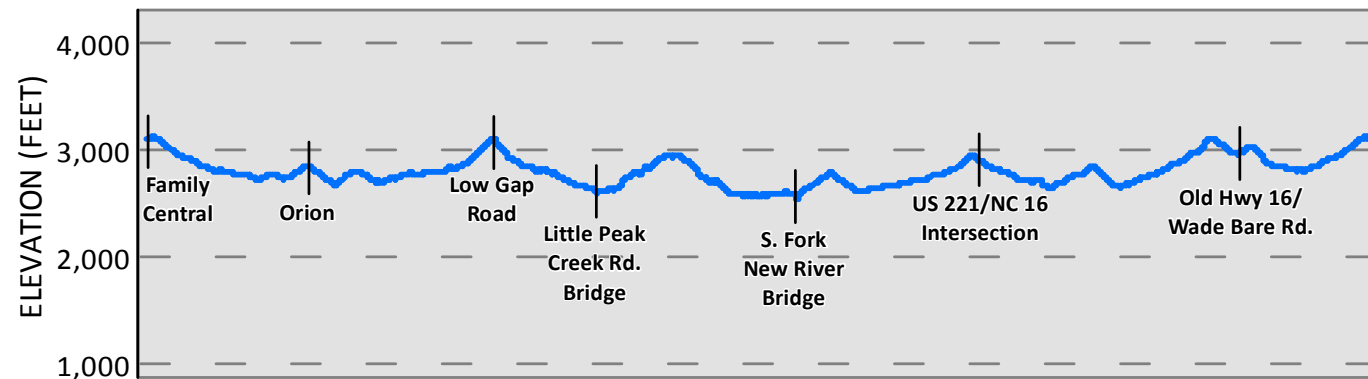
- US 221
- NC 16
- NC 88
- Low Gap Road
- Little Peak Creek Road
- Big Peak Creek Road
- Carson Woods Road
- Carl Atwood Road
- Cranberry Creek Road
- East Shatley Springs Road
- Shatley Springs Road
- Old Highway 16
- Wade Bare Road
- Ashe Central School Road

Route Length – 31 Miles

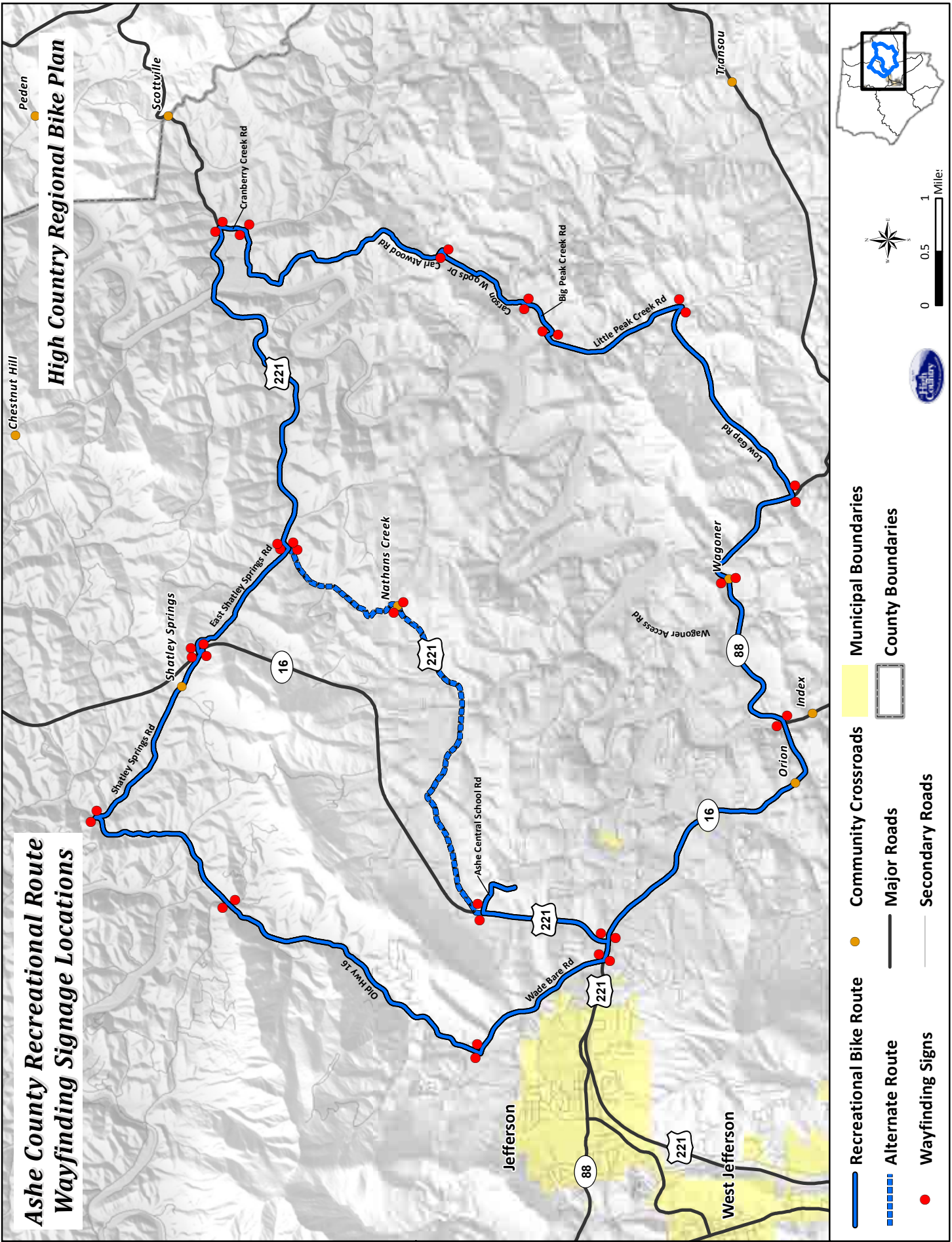
The Ashe Recreational Cycling Route is a loop with many options for starting/ending points, and can be modified for shorter rides. The full loop provides access to Ashe County Park, Ashe Family Central, and two separate areas of New River State Park. The Ashe Recreational Cycling Route is within 0.5 mile of downtown Jefferson and approximately 3 miles from Mt. Jefferson State Park and downtown West Jefferson. The NC 88 section of the route is designated as NC Scenic Byway (New River Valley Byway).



Ashe County Recreational Bike Route



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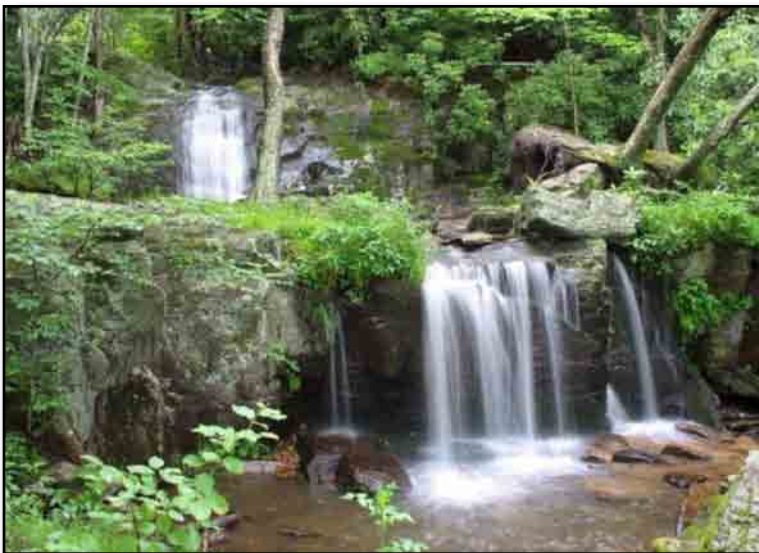
Avery County Recreational Cycling Route

Roads Utilized

- NC 181
- NC 194
- NC 184
- Hickory Nut Gap Road
- Watauga Street
- Avery County High School Road
- Spanish Oak Road
- Cow Camp Road
- Vale Road
- Old Vale Road

Route Length – 28 Miles

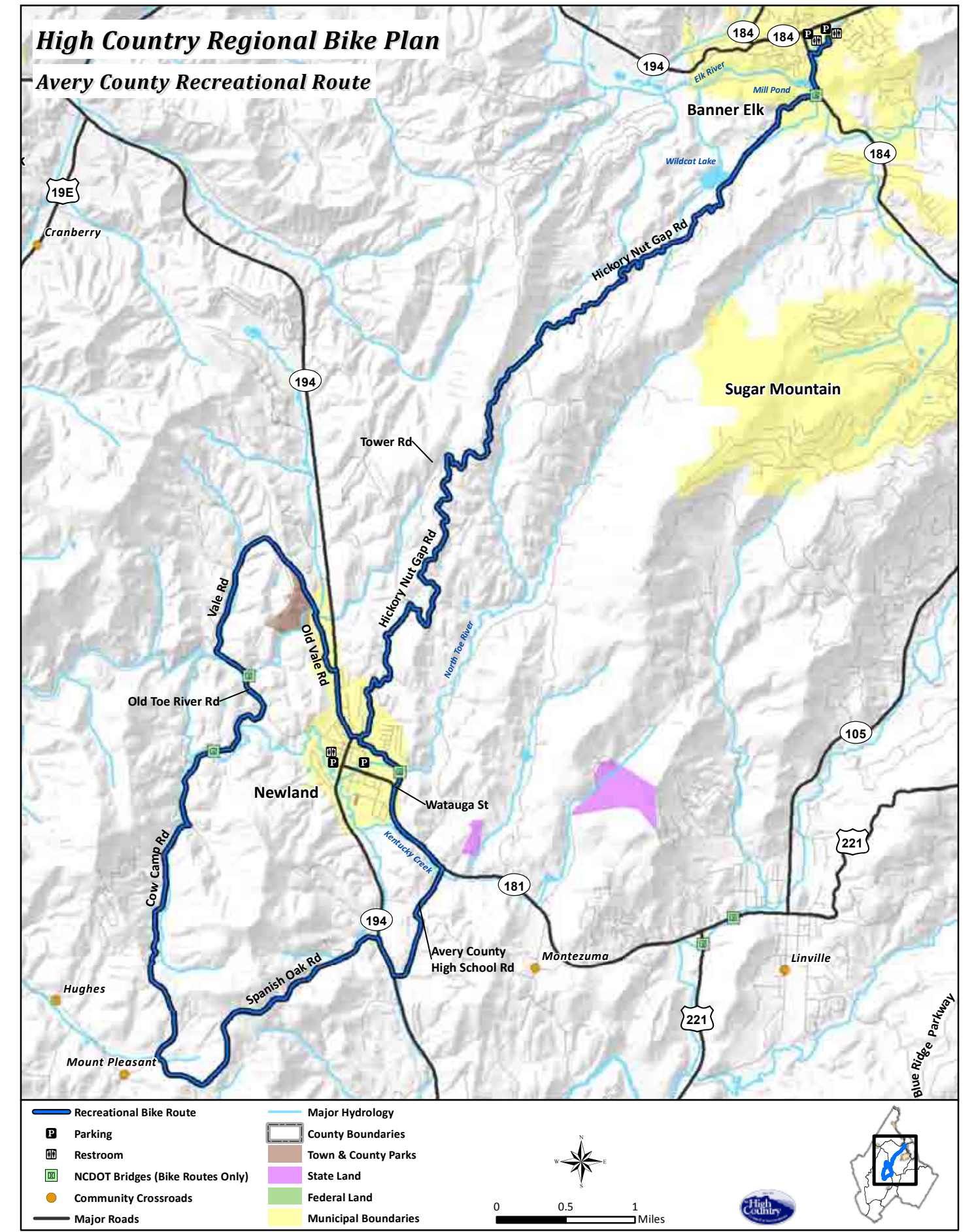
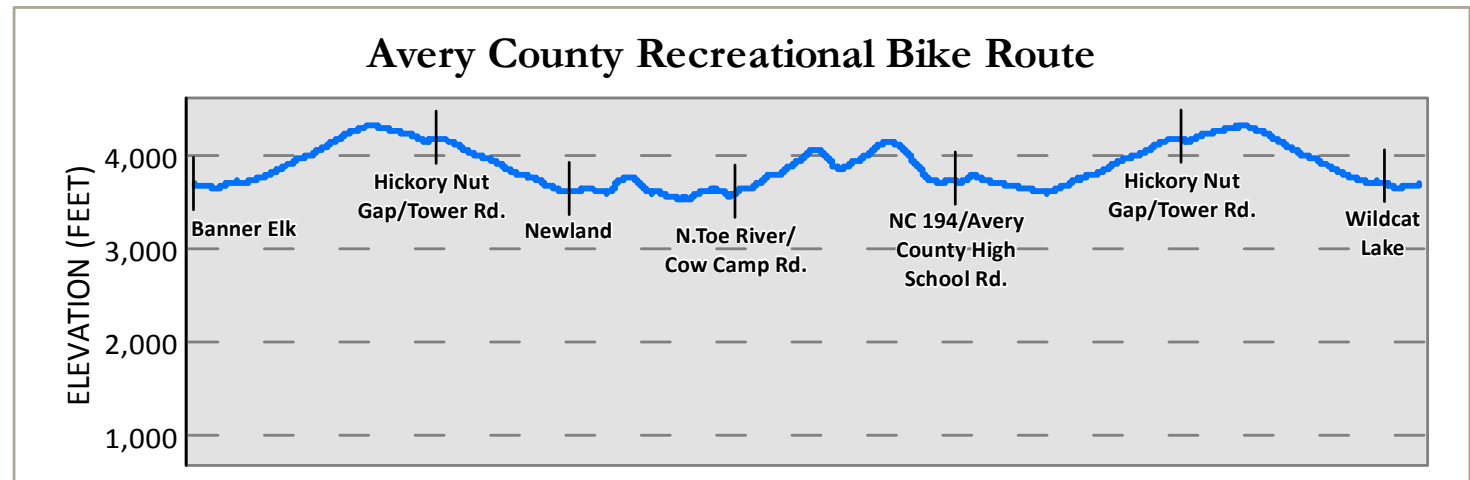
The Avery Recreational Cycling Route has logical starting points in either the Town of Banner Elk or the Town of Newland. The route accesses local recreation sites including Tate-Evans Park and Wildcat Lake in Banner Elk, and the River Walk and Waterfalls Park in Newland. The Avery Recreational Cycling Route also features the Avery Historical Museum/Jail and the Banner House Museum, both of which highlight the history of the area. The Hickory Nut Gap Road section of the route is a popular road for cyclists due to the presence of the acclaimed Lees McCrae College Cycling Team.



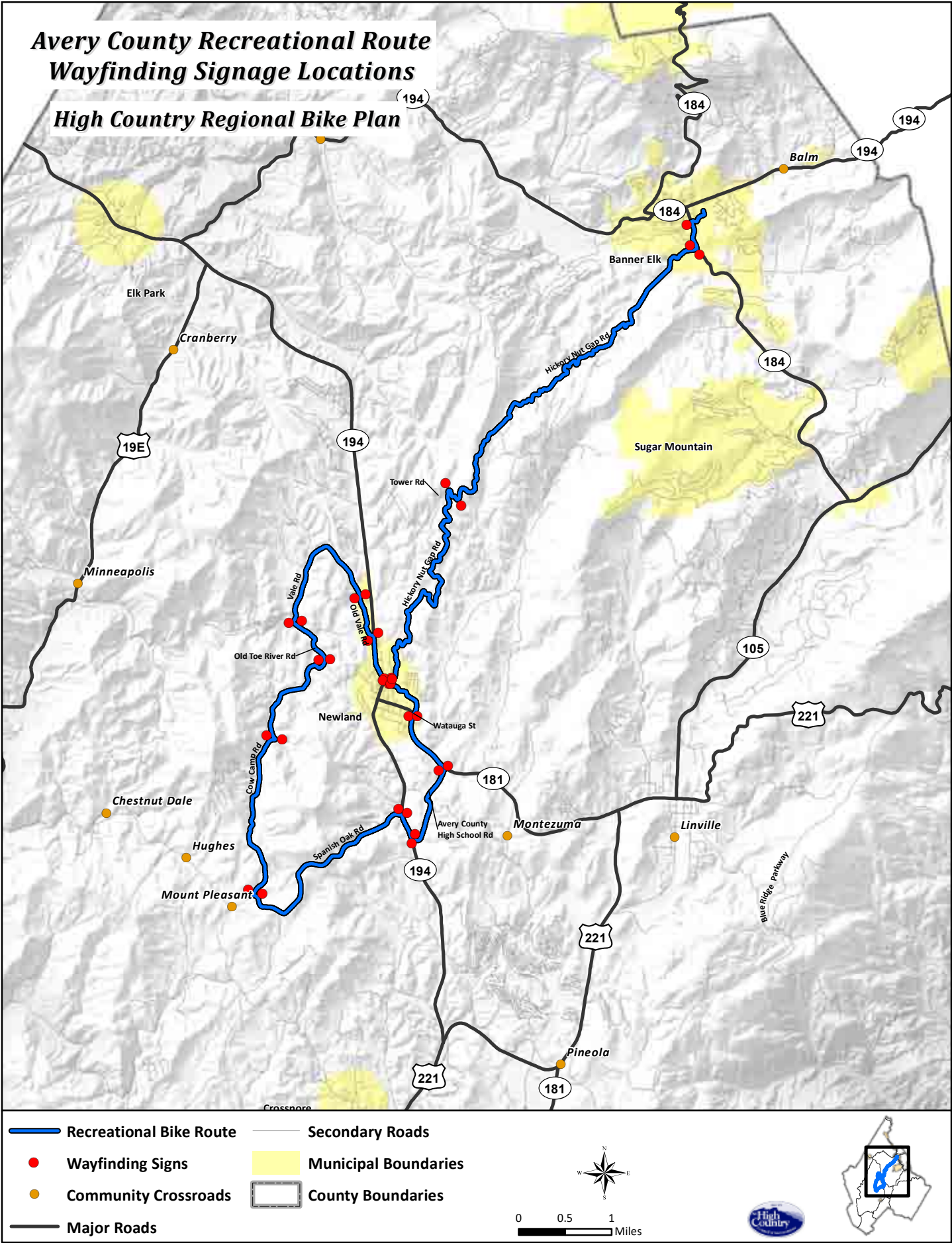
Waterfalls Park, Newland



Solar Farm Off Spanish Oak Road



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Mitchell County Recreational Cycling Route

Roads Utilized

- NC 226
- NC 80
- Dale Hill Road
- Snow Creek Road
- Slagle Road
- Snow Hill Road

Route Length – 20 Miles

The Mitchell Recreational Cycling Route starts in the Town of Bakersville. The route is locally known as the Frankie and Johnny Silver Loop, referring to the story of Frankie Silver who was hanged for murdering her abusive husband in the Kona Community. The Mitchell Recreational Cycling Route features many artist studios highlighted in the Toe River Arts Council's Studio Tour.

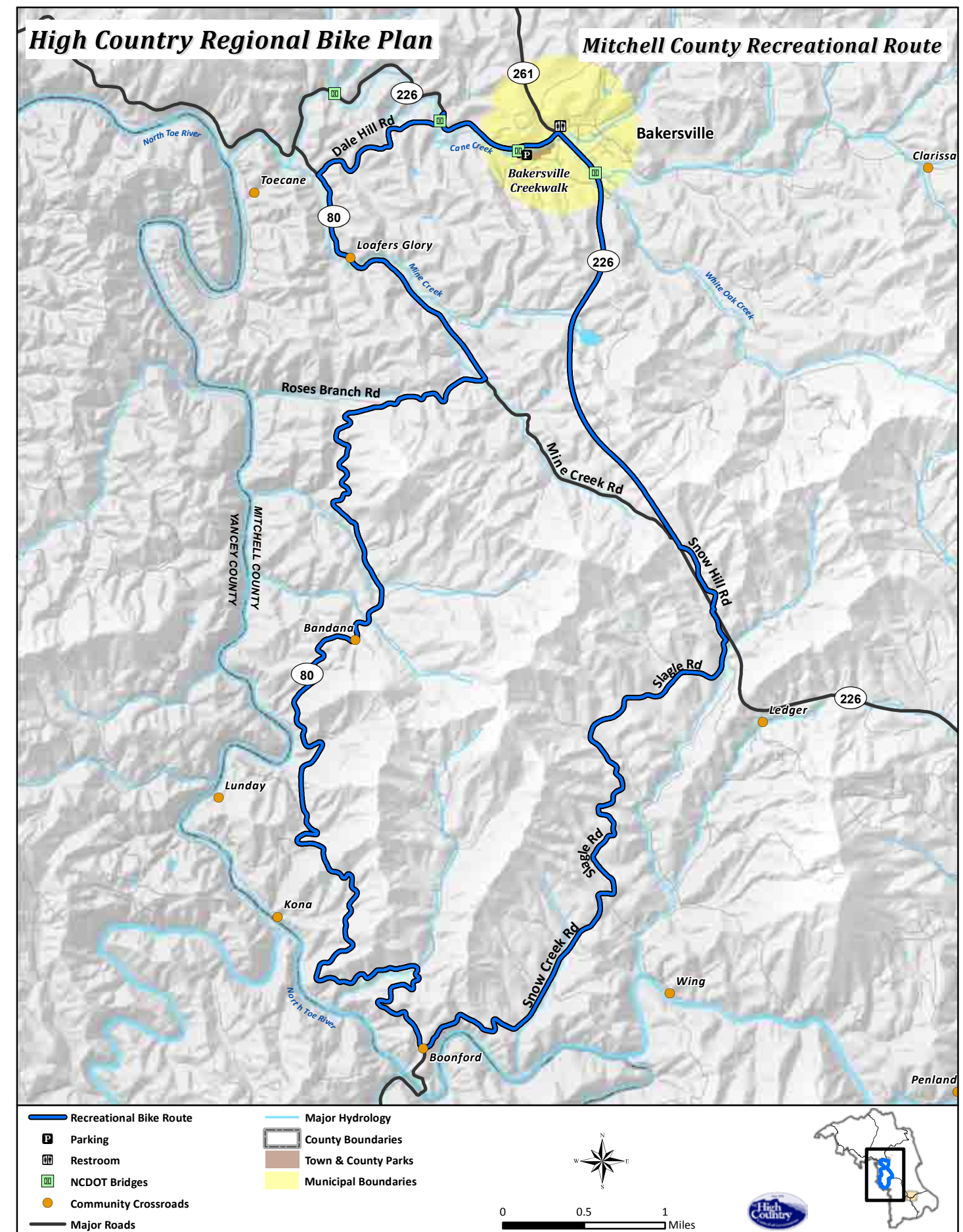
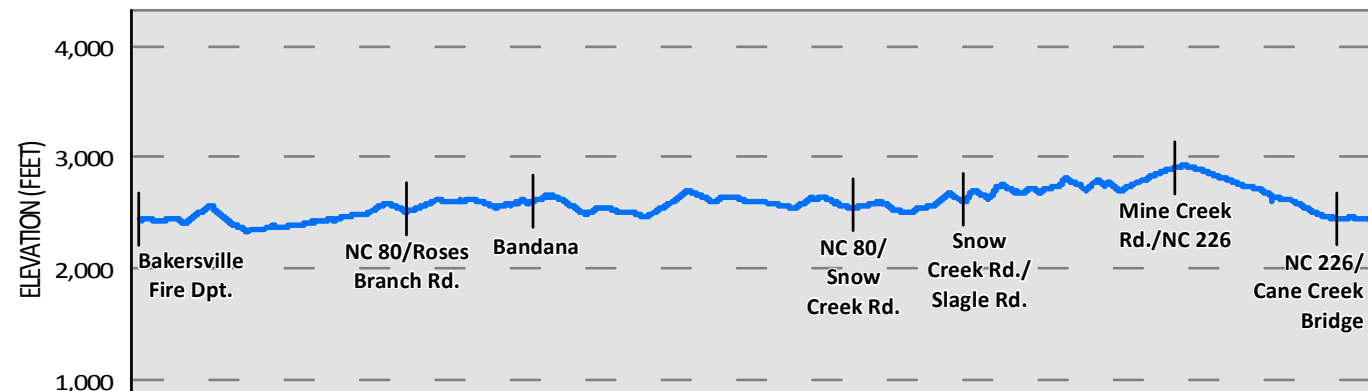


Historic Mitchell County Courthouse, Bakersville

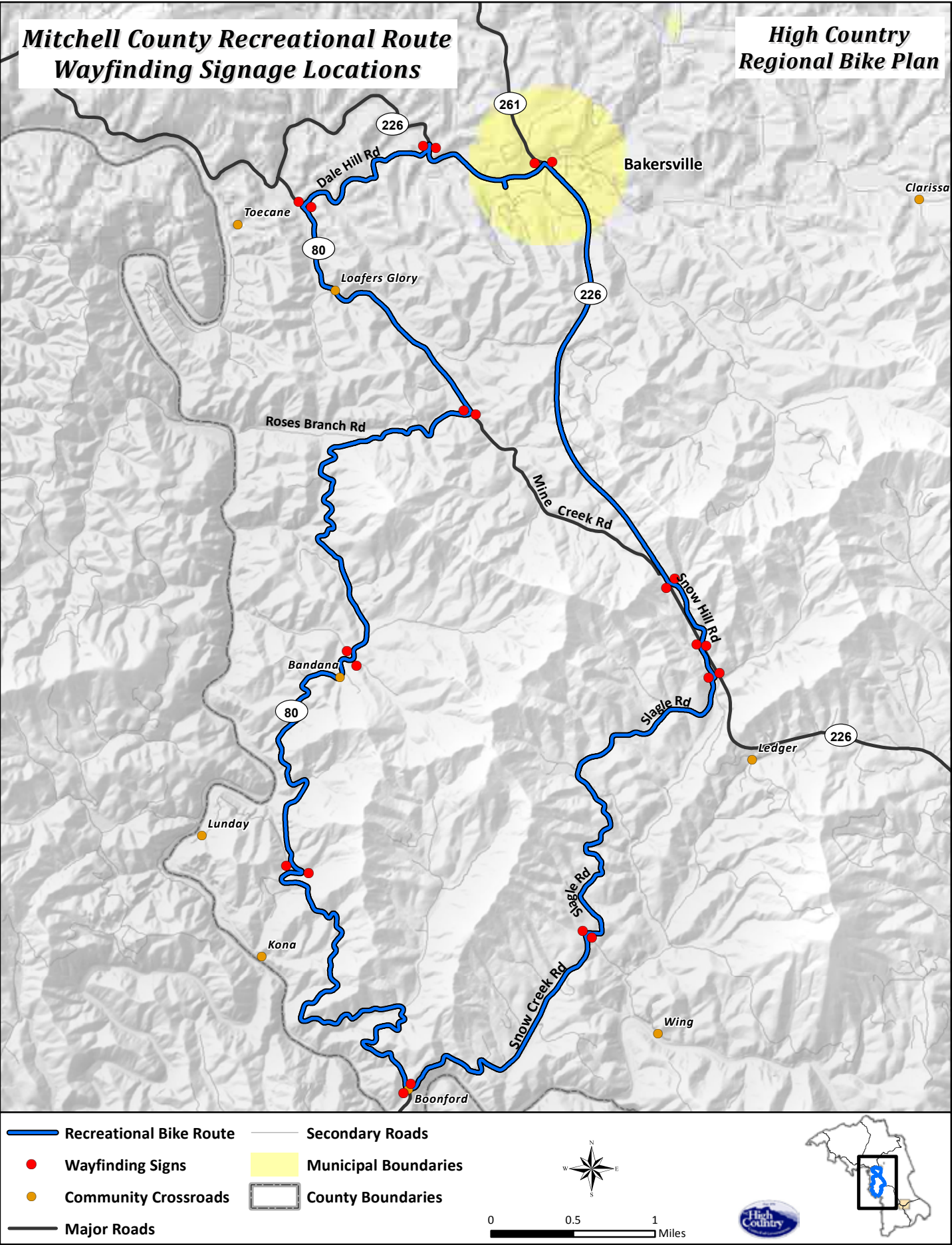


Silver Home, Kona

Mitchell County Recreational Bike Route



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Watauga County Recreational Cycling Route

Roads Utilized

- NC 194
- US 321
- Old US Highway 421
- Mast Gap Road
- Emory Greer Road
- Slabtown Road
- Silverstone Road
- Joe Shoemaker Road

Route Length – 25 Miles

The Watauga Recreational Cycling Route starts and ends at the Valle Crucis Community Park. A shorter loop variation originates at the historic Old Cove Creek School. The Old US Highway 421 section of the route has been a popular ride for Watauga County cyclists for many years.

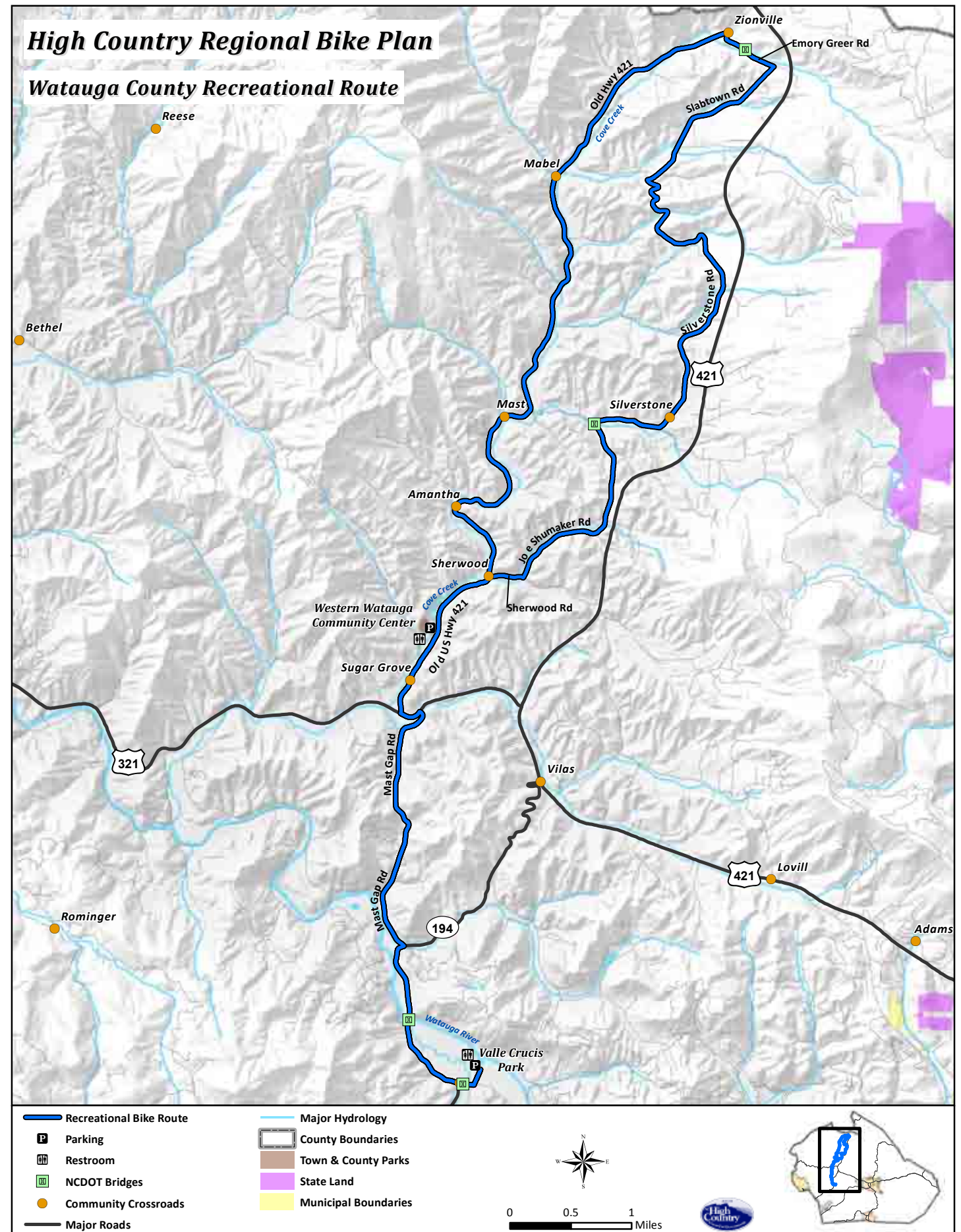
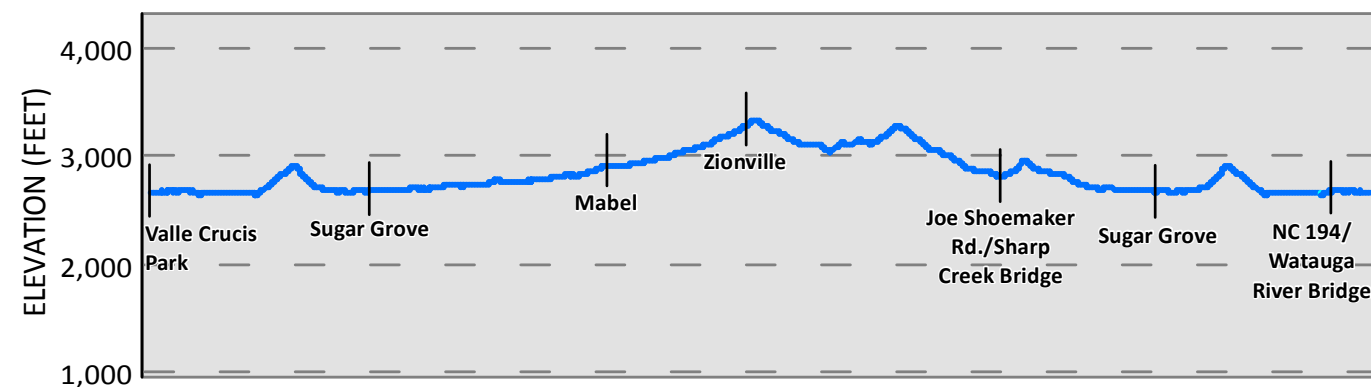


Henson Chapel United Methodist Church

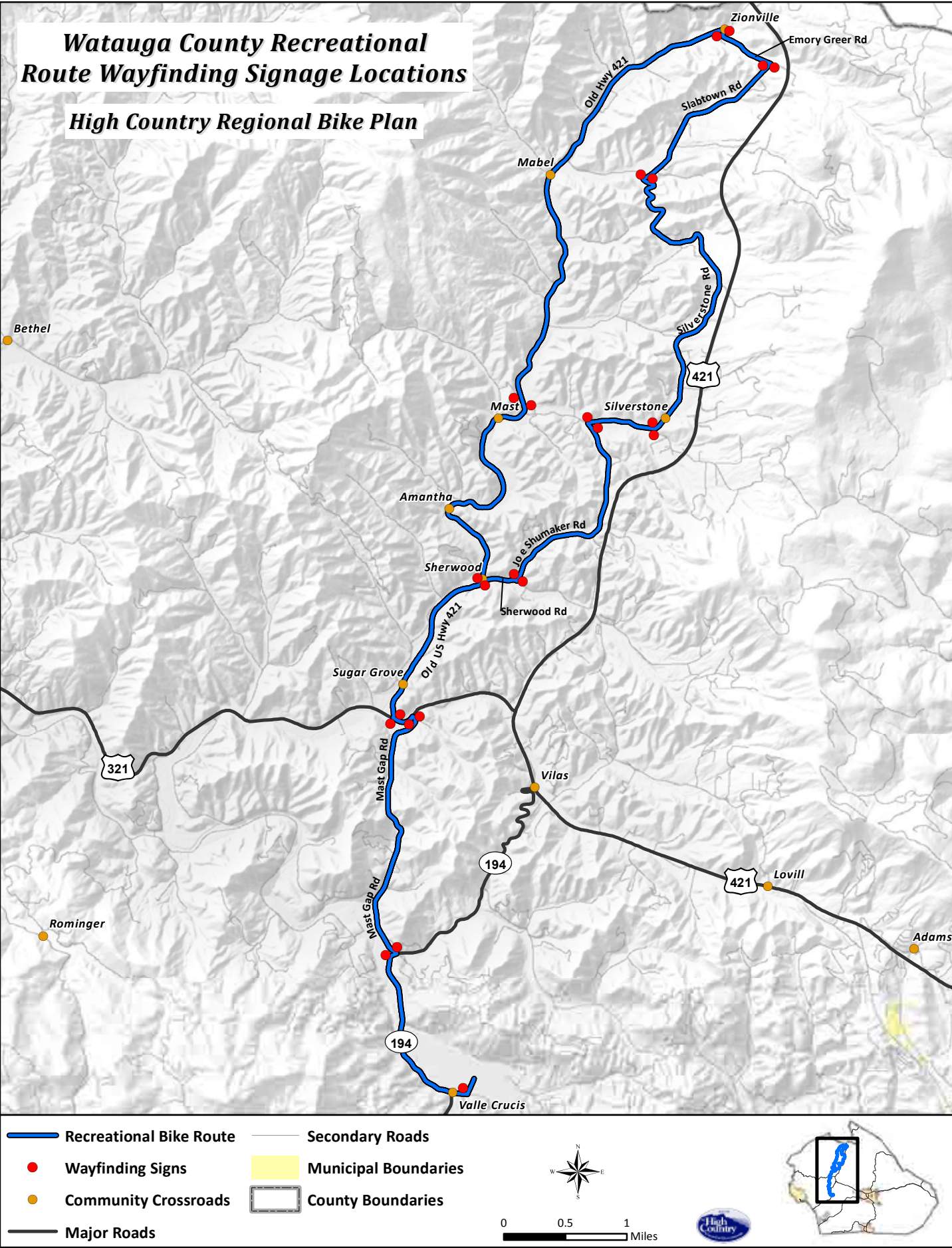


Mast General Store, Valle Crucis

Watauga County Recreational Bike Route



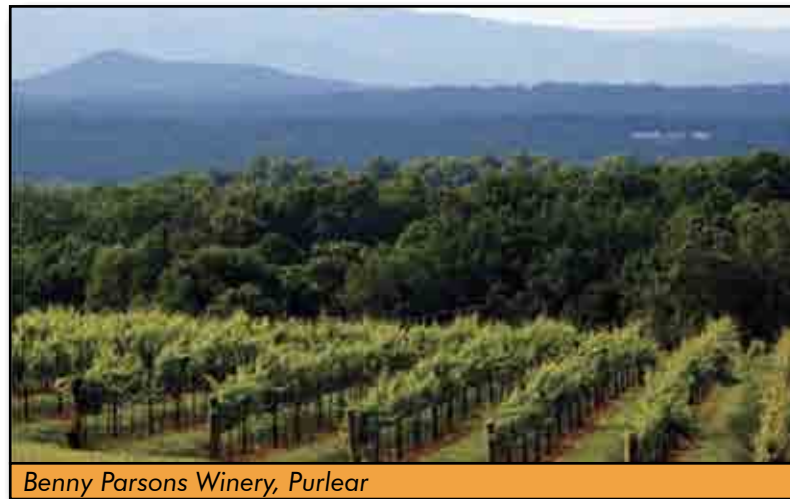
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Wilkes County Recreational Cycling Route

Roads Utilized

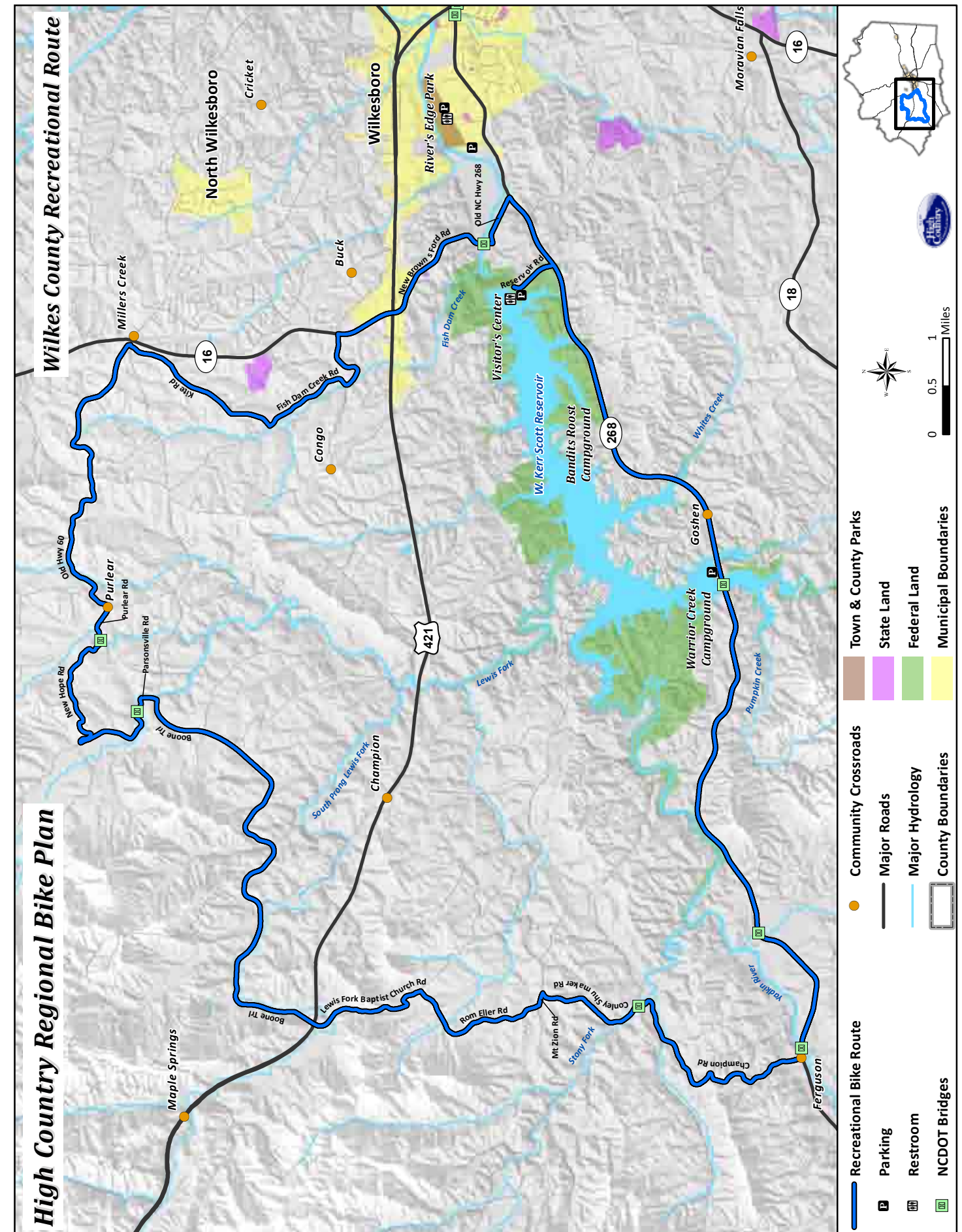
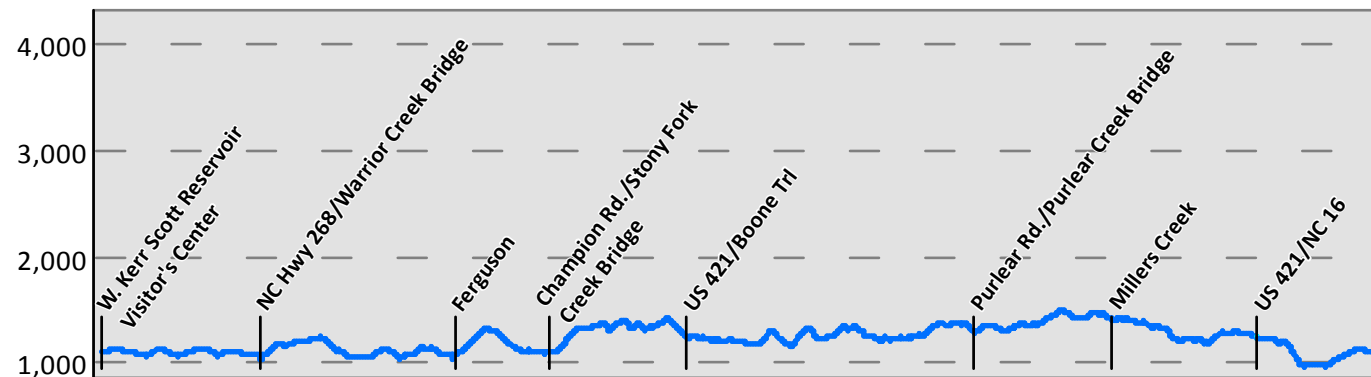
- NC 268
- Champion Road
- Conley Shumaker Road
- Mt. Zion Road
- Rom Eller Road
- Lewis Fork Baptist Church Road
- Boone Trail
- Parsonville Road
- New Hope Road
- Purlear Road
- Old NC Highway 60
- Kite Road
- Fish Dam Creek Road
- Congo Road
- NC 16
- New Browns Ford Road
- Old NC Highway 268



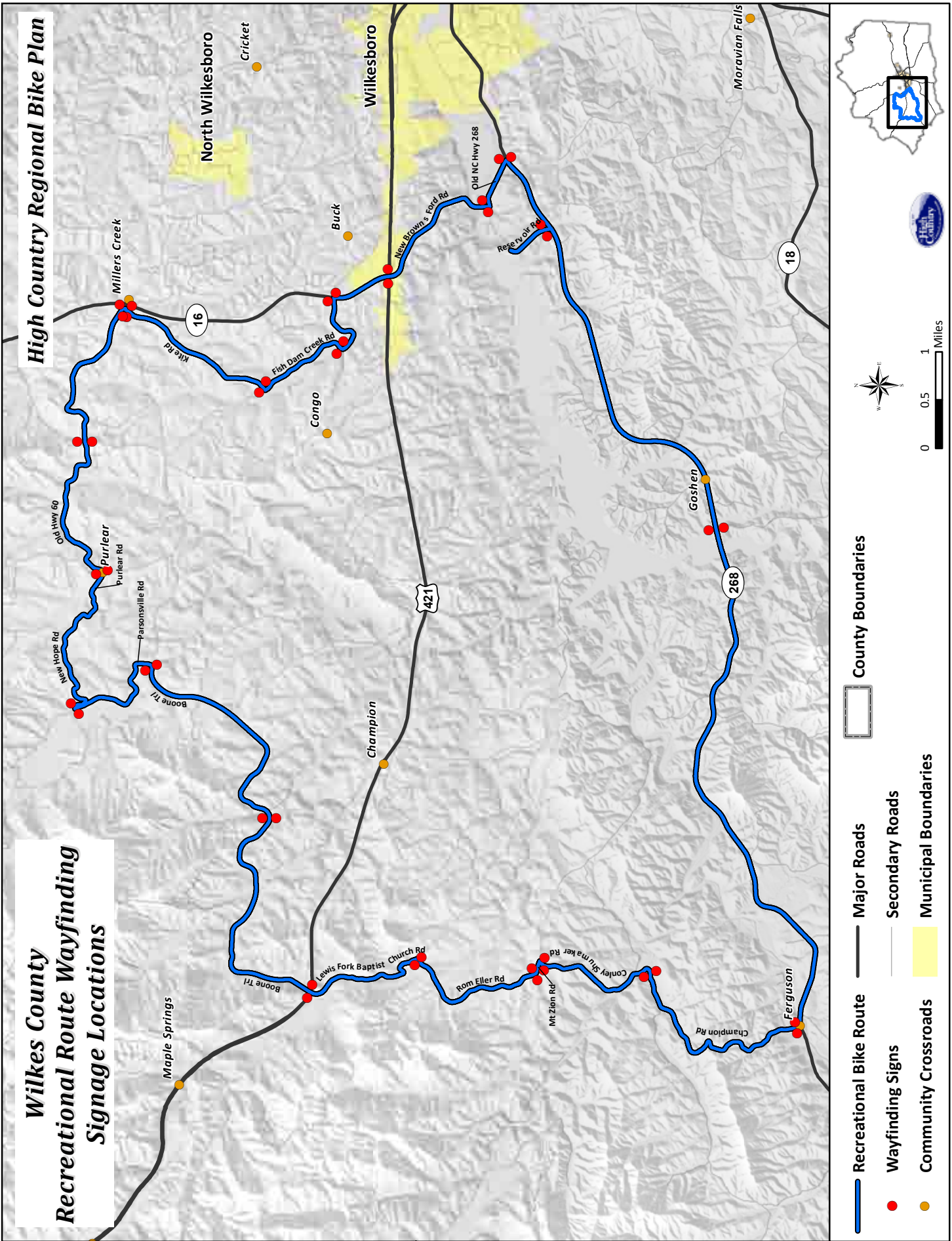
Route Length – 36 Miles

The Wilkes Recreational Cycling Route is a variation of a popular ride known as Lake Loop. The route accesses numerous recreation opportunities at the W. Kerr Scott Reservoir, including mountain biking, camping, boating, and fishing. The Wilkes Recreational Cycling Route provides indirect access to Rendezvous Mountain State Educational Forest, and is 0.5 miles from the Yadkin River Greenway which connects to Wilkes Community College and downtown Wilkesboro. The NC 268 section of the route is designated as NC Scenic Byway (Upper Yadkin Way).

Wilkes County Recreational Bike Route



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Yancey County Recreational Cycling Route

Roads Utilized

- West Main Street
- US 19E
- Cane River School Road
- US 19W
- Hunt Dale Road
- NC 197
- Toe River Road
- Jacks Creek Road

Route Length – 43 Miles

The Yancey Recreational Cycling Route starts and ends in downtown Burnsville. Downtown Burnsville features numerous historic buildings, including the Yancey County Courthouse, the Nu-Wray Inn, and the McElroy House (History Museum). The route follows a series of streams, including the Cane River, Toe River, and Jacks Creek. The Yancey Recreational Cycling Route also accesses the County Recreation Grounds. The West Main Street and US 19E sections of the route are designated as NC Scenic Byway (Mt. Mitchell Scenic Drive).

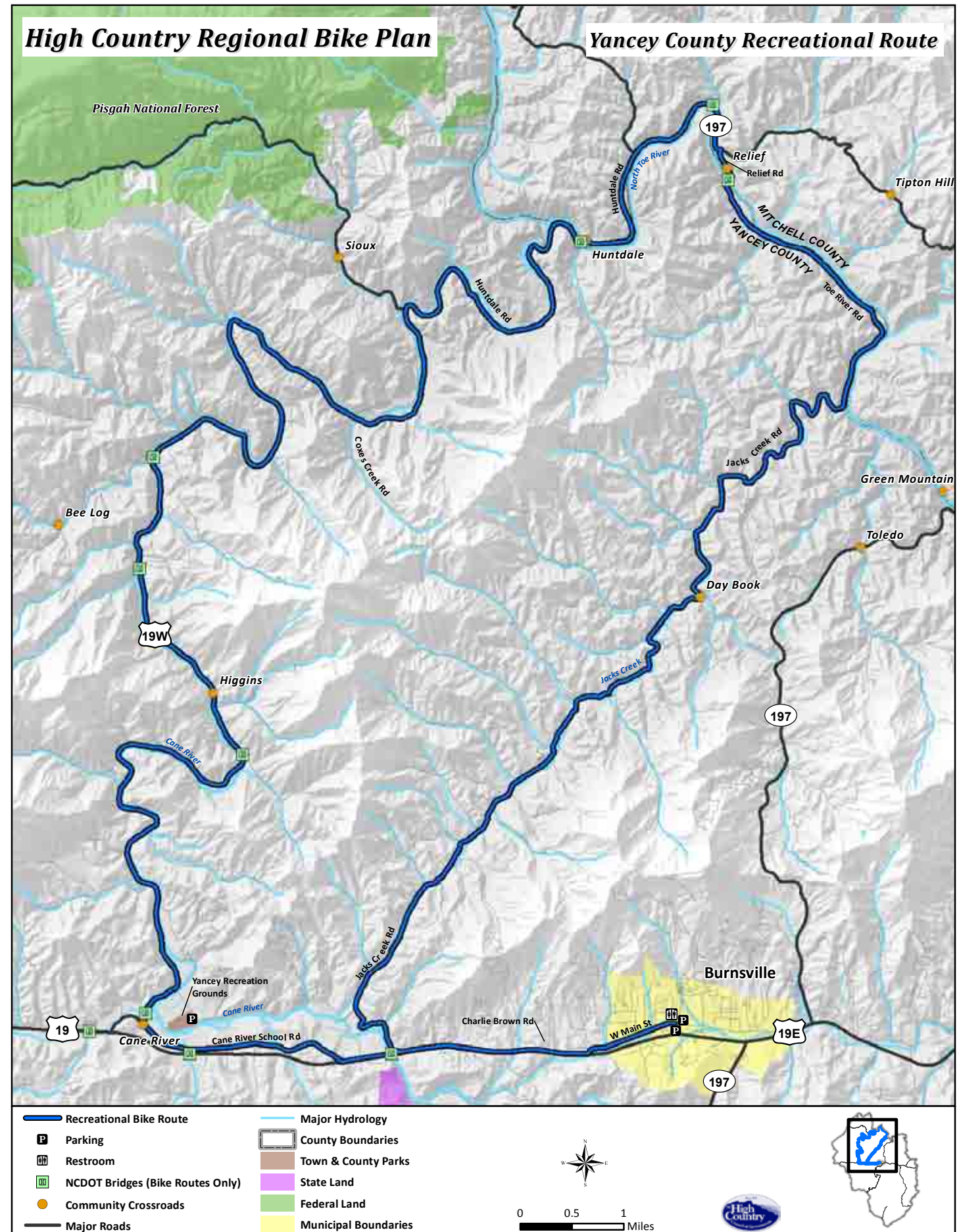
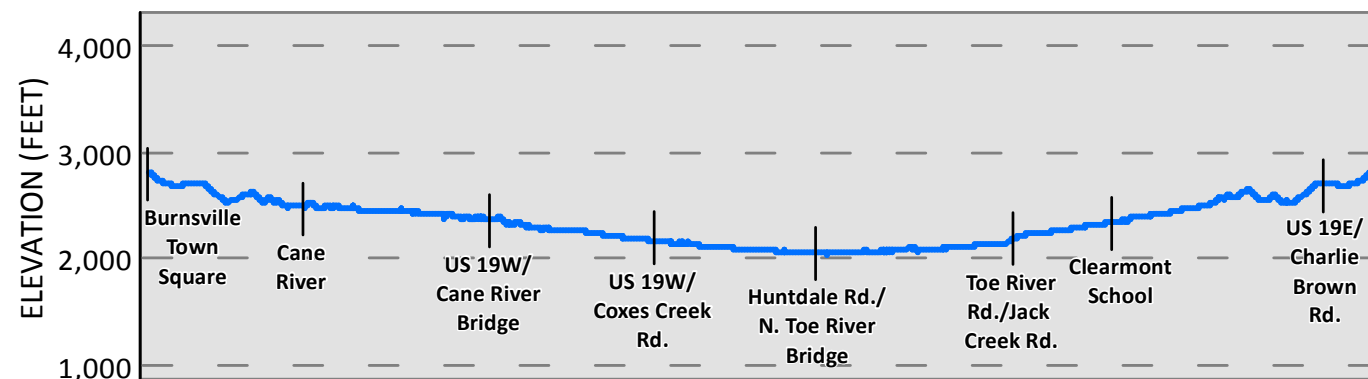


Yancey Barn Quilt

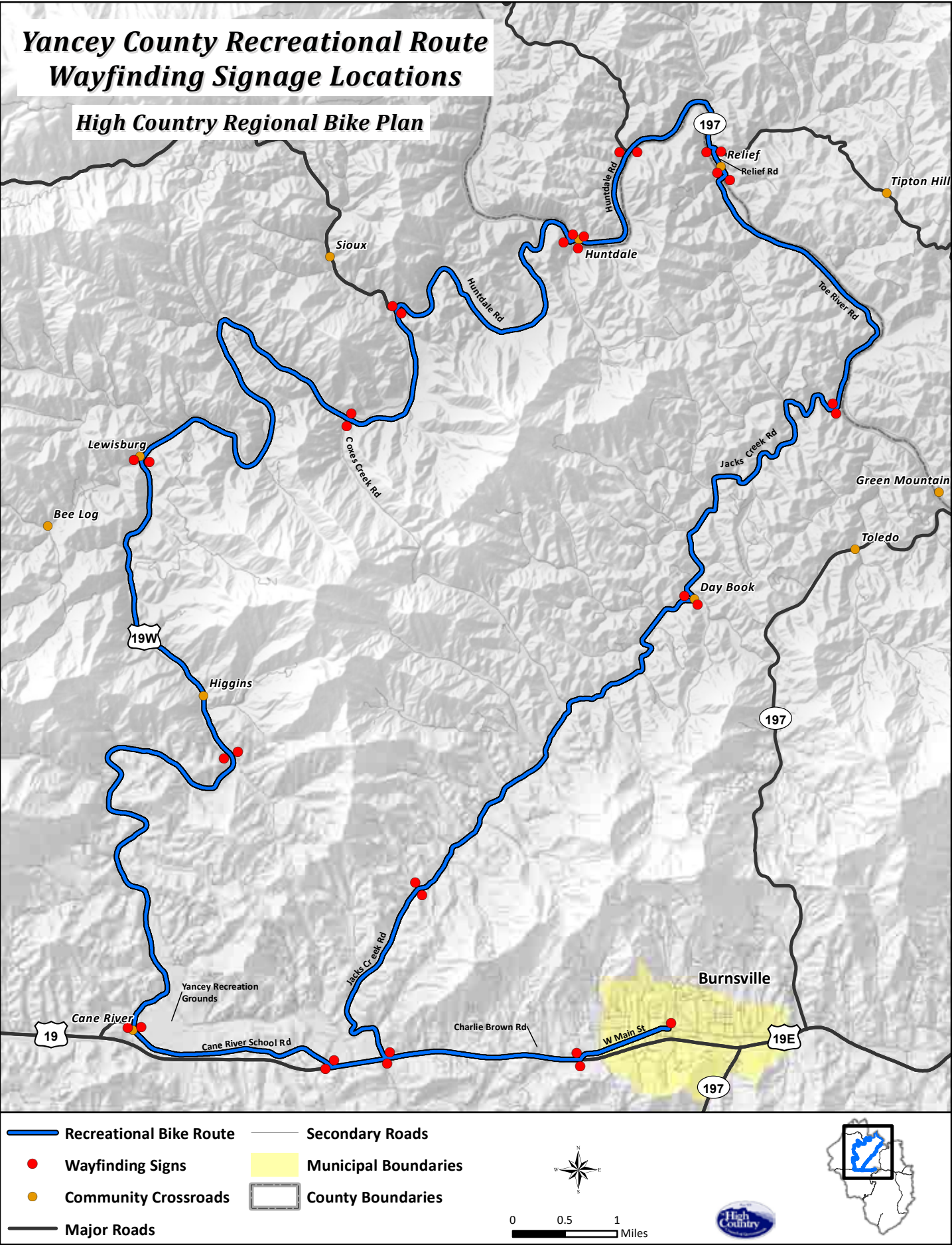


Yancey Visitor Center

Yancey County Recreational Bike Route



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Section 10

Implementation



Implementation

The High Country Regional Bike Plan contains recommendations in the following seven areas:

1. Bicycle transportation route network – The Plan makes facility improvement recommendations for 620 miles of roadway.
2. Recreational Routes – The Plan recommends designation, promotion, and directional signage for 7 recreational cycling routes.
3. Enforcement – The Plan makes 4 recommendations aimed to improve awareness and enforcement of existing NC laws affecting cyclists and motorists.
4. Transit Interface – The Plan recommends that all local transit agencies accommodate bicycles.
5. Economic Development – The Plan recommends that existing bicycle events be facilitated and promoted as a means to increase tourism.
6. Education – The Plan makes 3 recommendations related to education of cyclists and motorists.
7. Policies – The Plan makes 5 recommendations regarding land-use policies aimed to improve cyclists’ safety and access.

Implementation strategies for each of the seven areas is described below.

1. Bicycle Transportation Route Network

The High Country Regional Bike Plan makes facility improvement recommendations for 620 miles of roadway. With the exception of the following, the entire recommended bike route network is owned and maintained by NCDOT:

- 11.3 miles of Blue Ridge Parkway (Route Segment #6)
- 4.9 miles of Middle Fork Greenway (Route Segment #20)
- 0.3 miles of Deerfield Road in Boone (Route Segment #21)
- 2.2 miles of Yadkin River Greenway (Route Segment #25A)

Therefore, NCDOT will be involved in almost all aspects of implementation. It is anticipated that the majority of the facility improvements will be incorporated into roadway projects. The following opportunities exist for project implementation:

- NCDOT’s Transportation Planning Branch uses the facility improvement recommendations as the basis for the Bicycle Element of Comprehensive Transportation Plans (CTPs).
- NCDOT’s Program Development Branch uses the Plan to justify inclusion of projects in the State Transportation Improvement Program (STIP).
- NCDOT’s Division of Bicycle and Pedestrian Transportation (DBPT) uses the Plan in recommending bicycle projects for inclusion in the STIP.
- DBPT uses the Plan in advocating for inclusion of bicycle improvements as part of STIP Highway projects.
- NCDOT’s Project Development and Environmental Analysis Branch considers the Plan when developing roadway designs.
- NCDOT Divisions 11 and 13 reference the Plan in planning spot improvements, changes in traffic control, resurfacing, and Division design and construct projects.
- NCDOT Division 11 uses the Plan to justify funding to pave the unpaved portion of Elk Creek Road.
- High Country Rural Planning Organization uses the Plan in developing Priority Needs Lists.
- Local Governments coordinate development of county or town-level bicycle plans with the High Country Regional Bike Plan.
- Greenway groups use the Plan in gaining support, leveraging funds, and designing future greenway projects. Future greenway projects that are at least 10 feet wide and serve the same purpose as recommended bicycle transportation route segments can alleviate the need for a parallel roadway improvement.

2. Recreational Routes

The High Country Regional Bike Plan includes 7 Recreational Cycling Routes. No facility improvements are recommended except on portions of the Recreational Cycling Routes that coincide with the bicycle

transportation route segments. To utilize the routes, directional signage is needed at intersections. Location and number of directional signs are included in Section 9—Recreational Cycling Routes. Funding will be sought from NCDOT and local governments for the sign installation, and it is anticipated that NCDOT Divisions 11 and 13 will manage encroachment agreements and sign installation. Local governments and other entities involved in tourism can promote the routes.

3. Enforcement

Implementation of the recommendations related to bicycle laws/enforcement can be achieved by the High Country RPO through its annual Planning Work Program.

4. Transit Interface

The 7 county transit agencies in the region should either continue or begin accommodating bicycles to the extent possible with current fleets.

5. Economic Development

Section 5—Existing Conditions contains descriptions of existing bicycle rides and races (events), and the economic impact of cycling. All seven counties in the High Country region have established tourism economies, and there are existing cycling events throughout the region. The economic impact from future events can be increased though promotion by local governments and other agencies involved in tourism. The existing events can be facilitated by NCDOT and local law enforcement agencies through permitting and traffic control.

6. Education

Section 7—Recommendations includes three educational recommendations. The first two can be implemented by County School Systems. The third, the Watch for Me NC campaign, can be implemented by local governments.

7. Policies

The land-use policy recommendations included in Section 7—Recommendations should be considered by local governments during development or amendment of land-use plans, comprehensive plans, subdivision regulations, and zoning ordinances.

Implementation Table

Recommendation	Responsible Party / Parties	Time Frame
Route Segment #20	High Country Pathways; Watauga County	Long-term
Route Segment #21	Town of Boone	Long-Term
Route Segment #25A	Yadkin River Greenway Council	Short-Term (2014)
All other Route Segments	NCDOT	Long-Term (Section 8 assigns priority to each of the 46 segments)
Recreational Routes	County Governments; Tourism Development Authorities	Short-Term (2014–2016)
Enforcement	High Country RPO; local law enforcement agencies	Short-Term (2014–2016)
Transit Interface	County transit agencies	Short-Term (2014–2016)
Economic Development (organized events)	Event organizers; local governments; Tourism Development Authorities	Short-Term (2014–2016)
Phys. Ed. Curriculum	County School Systems	Short-Term (2014–2016)
Driver's Ed. Curriculum	County School Systems	Short-Term (2014–2016)
Watch for Me NC Campaign	Local Governments	Short-Term (2014–2016)
Land-Use Policies	Local Governments	Short-Term (2014–2016)

Available Funding

Federal

- MAP-21 – authorizes funding for federal surface transportation programs; funds administered by State DOTs; includes Transportation Alternatives funds, Surface Transportation Program funds, and Highway Safety Improvement Program funds, all of which are applicable to bicycle facility projects.
<http://www.fhwa.dot.gov/map21/summaryinfo.cfm>
- Land and Water Conservation Fund – provides funds for recreation projects, including trails
http://www.ncparks.gov/About/grants/lwcf_main.php
- National Scenic Byways Discretionary Grant Program – available for projects on State Scenic Byways as well as Federal Scenic Byways
<http://www.bywaysonline.org/grants/>

State

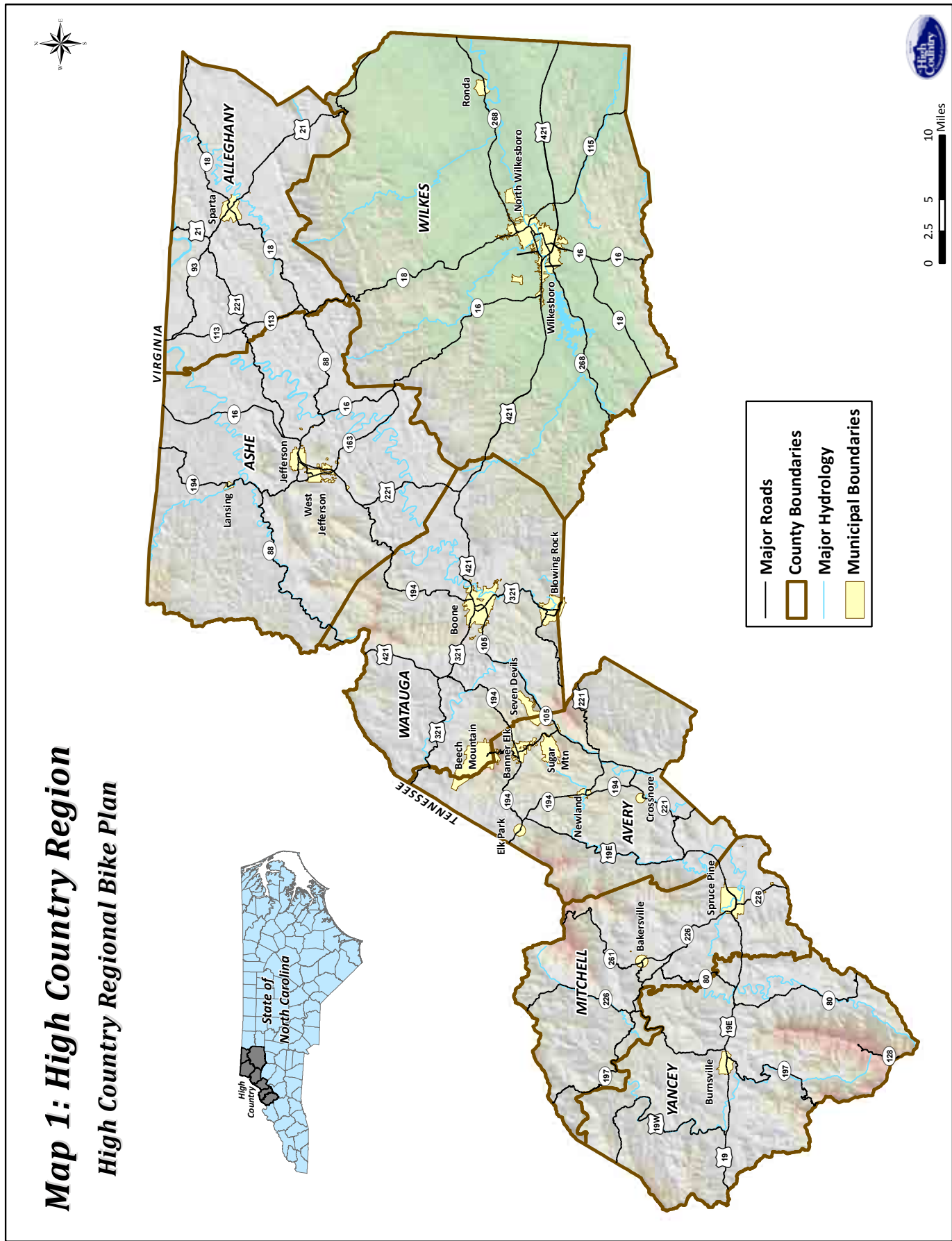
- STIP – NCDOT's funding and scheduling program; can provide funds for incidental or independent bicycle projects
<https://connect.ncdot.gov/projects/planning/Pages/default.aspx#0>
- NC Parks and Recreation Trust Fund – provides funds for recreation projects, including trails
http://www.ncparks.gov/About/grants/partf_main.php
- Powell Bill – State allocations to municipalities; may be used for bicycle facilities
<https://connect.ncdot.gov/municipalities/State-Street-Aid/Pages/default.aspx>
- NC Clean Water Management Trust Fund – provides funds for water-quality projects, including greenways
<http://www.cwmtf.net/>
- NC Recreational Trails Program – Provides funds to construct trails and greenways
http://www.ncparks.gov/About/trails_RTP_project.php

Section 11 Maps

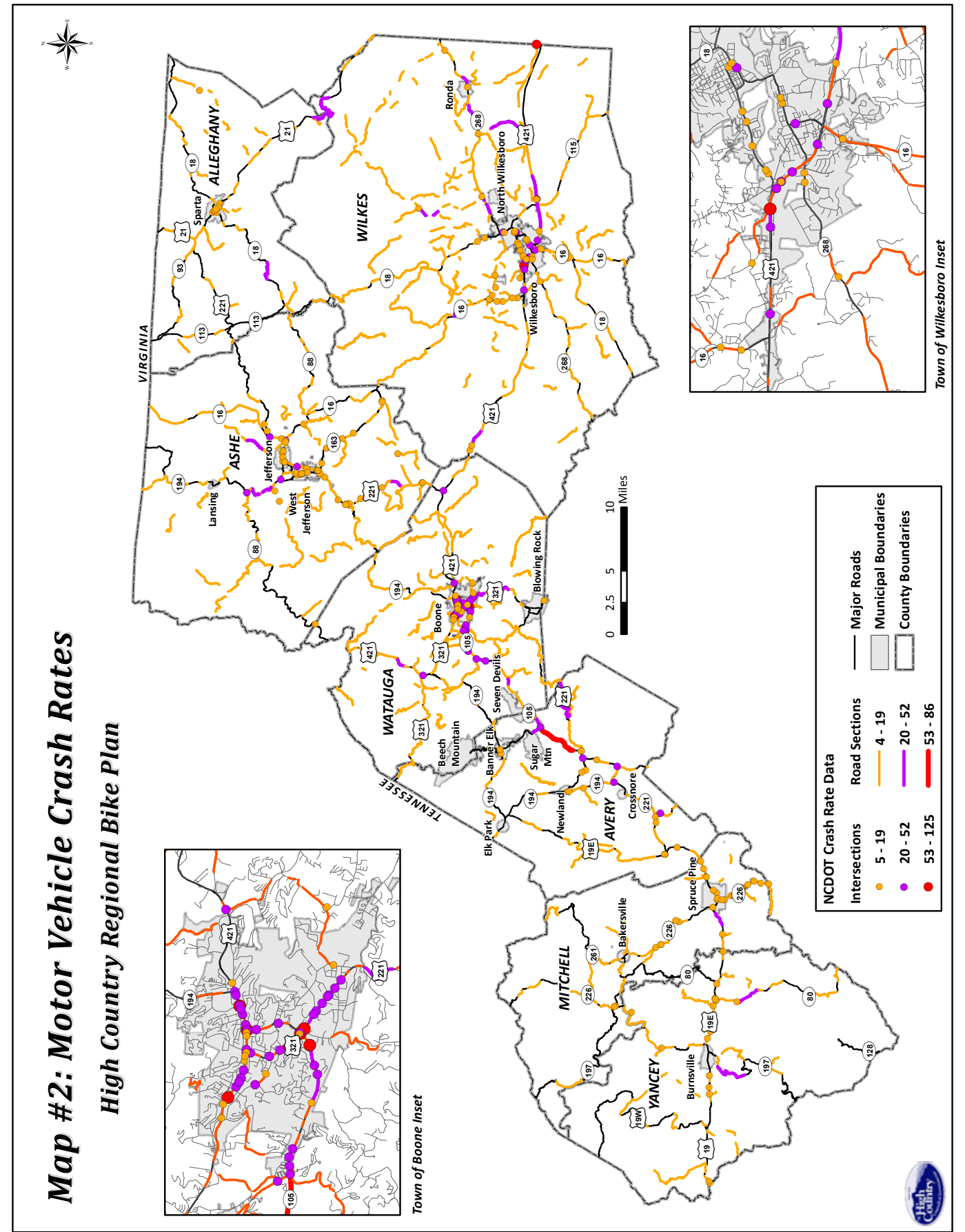


Map 1: High Country Region

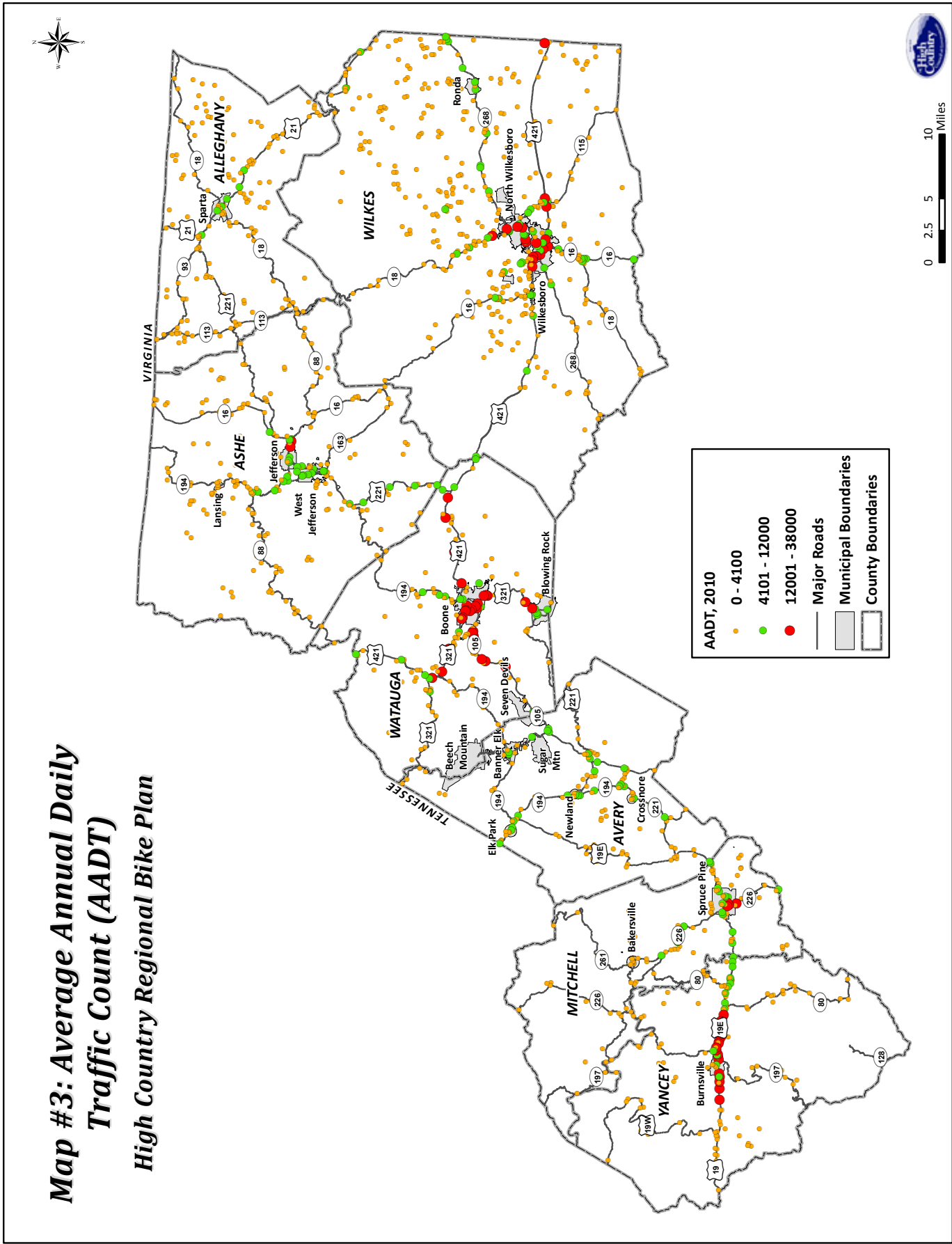
High Country Regional Bike Plan



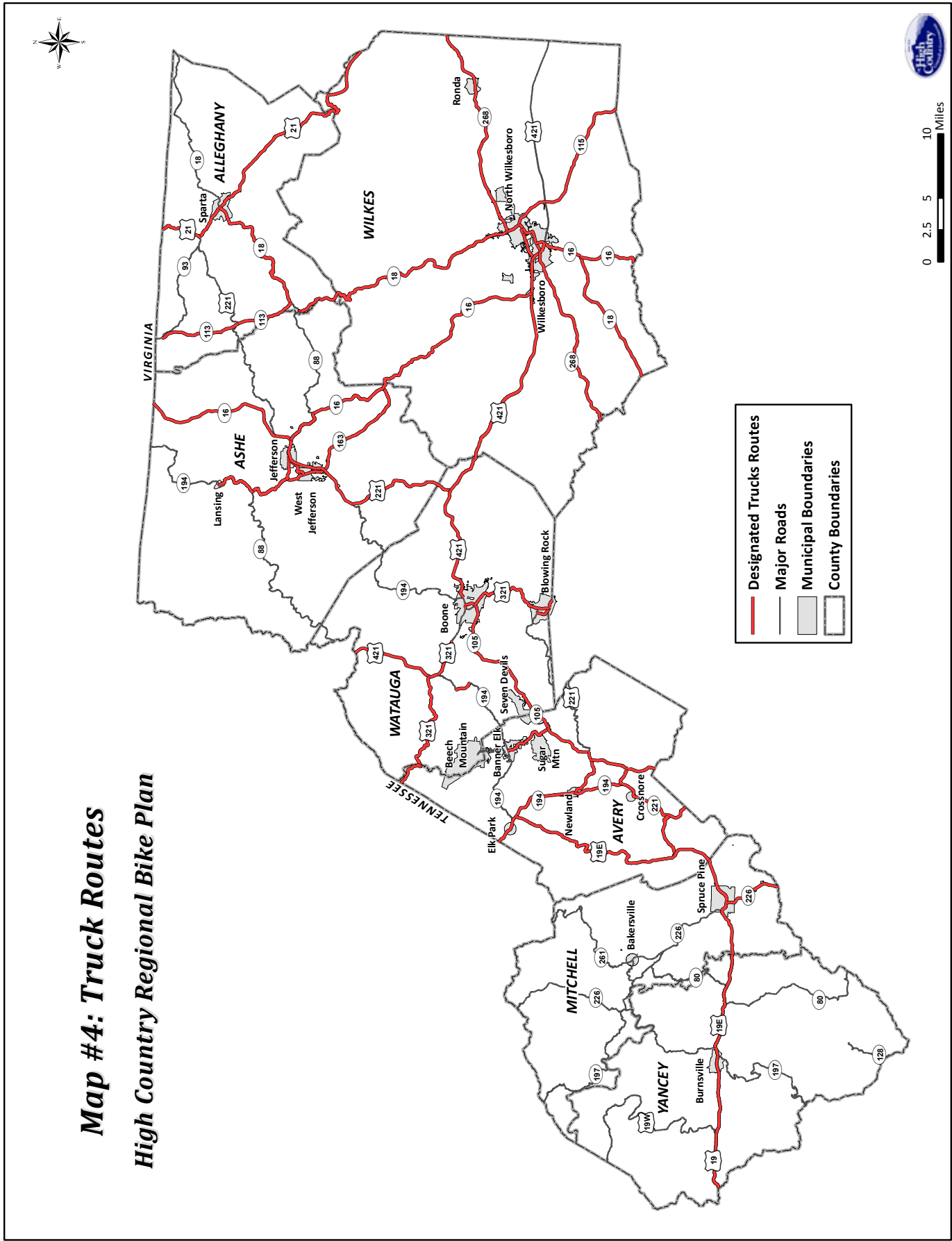
Map #2 – Motor Vehicle Crash Rates



Map #3 – Average Annual Daily Traffic Count (AADT)

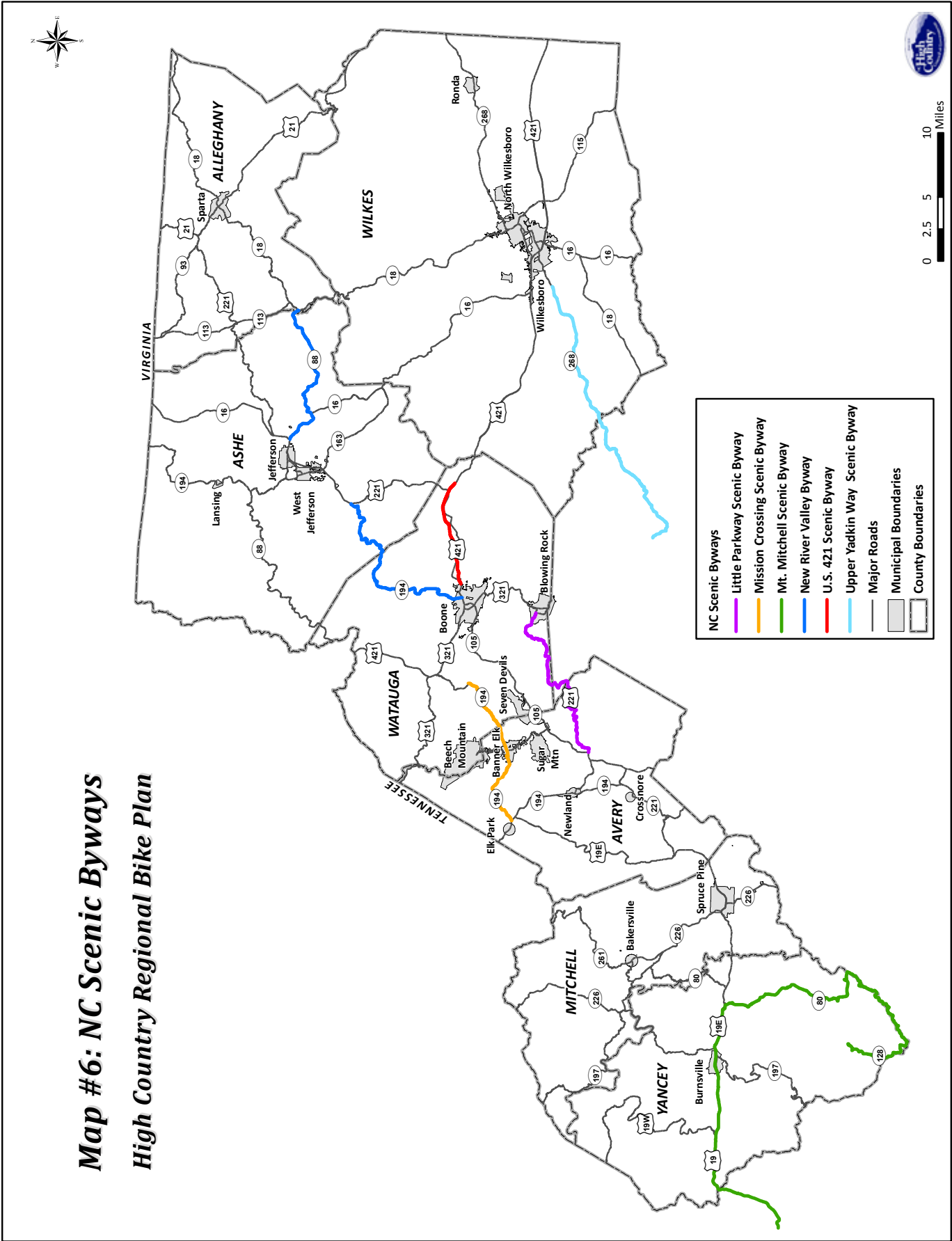
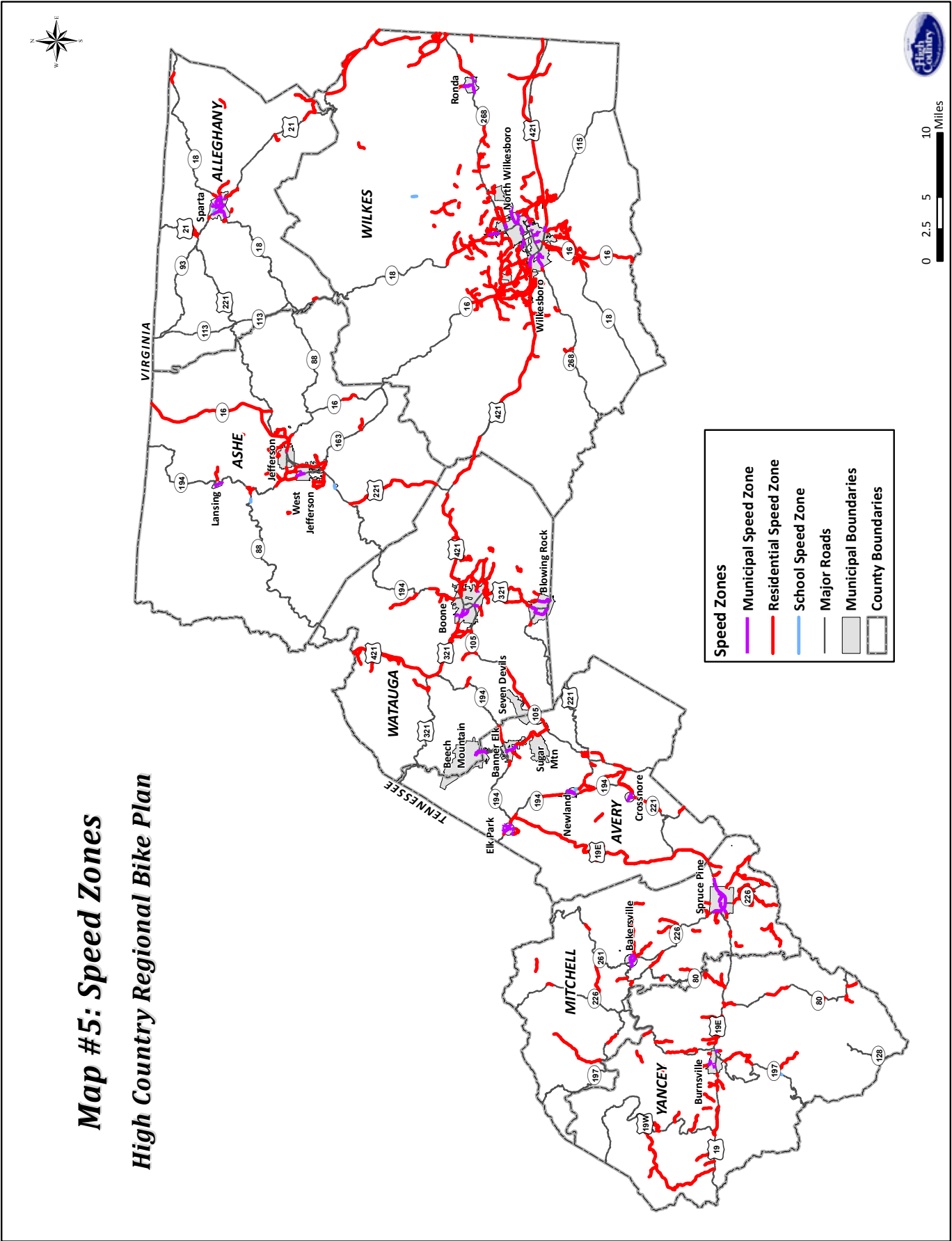


Map #4 – Truck Routes



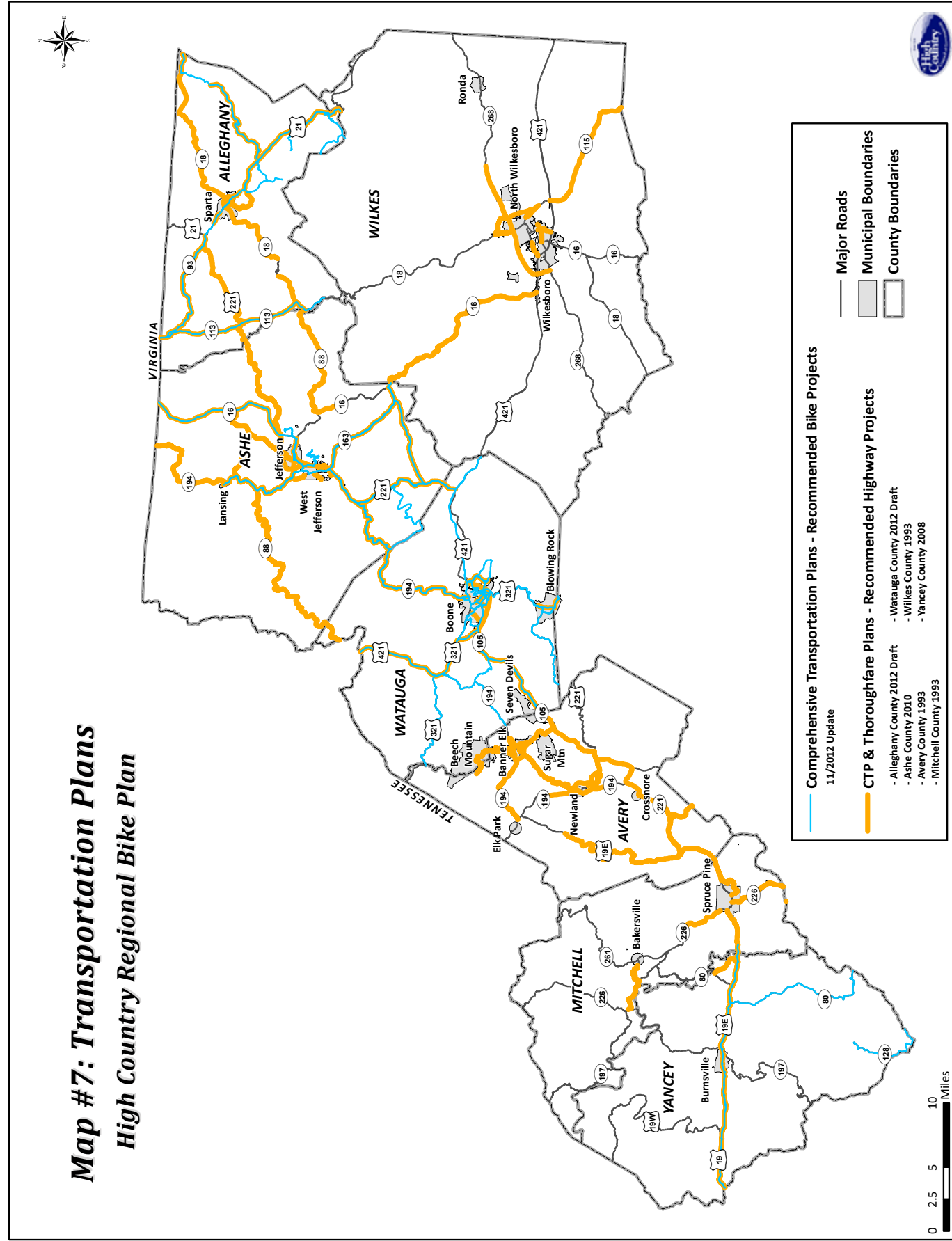
Map #5 – Speed Zones

Map #6 – NC Scenic Byways

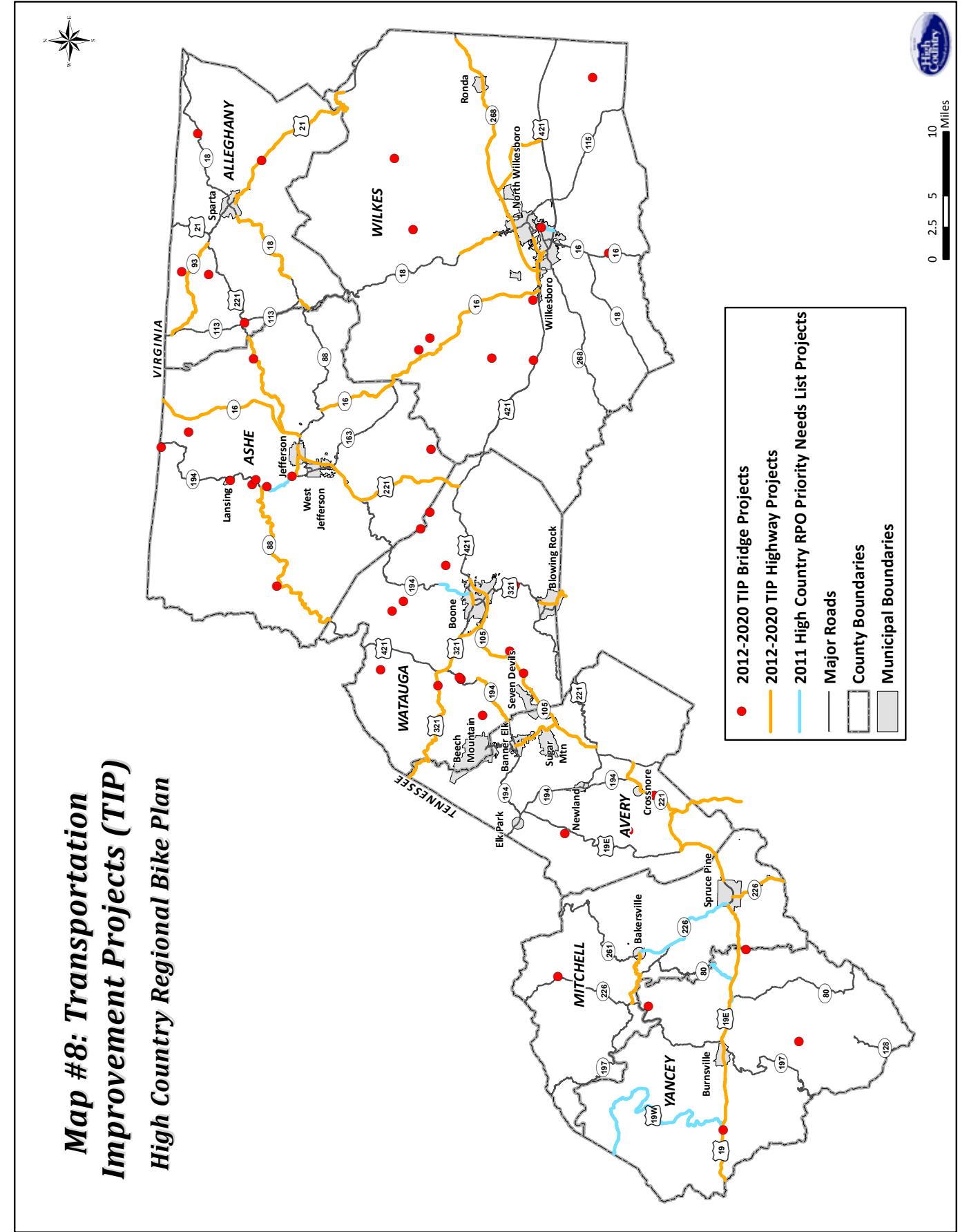


Map #7: Transportation Plans
High Country Regional Bike Plan

Map #7 – Transportation Plans

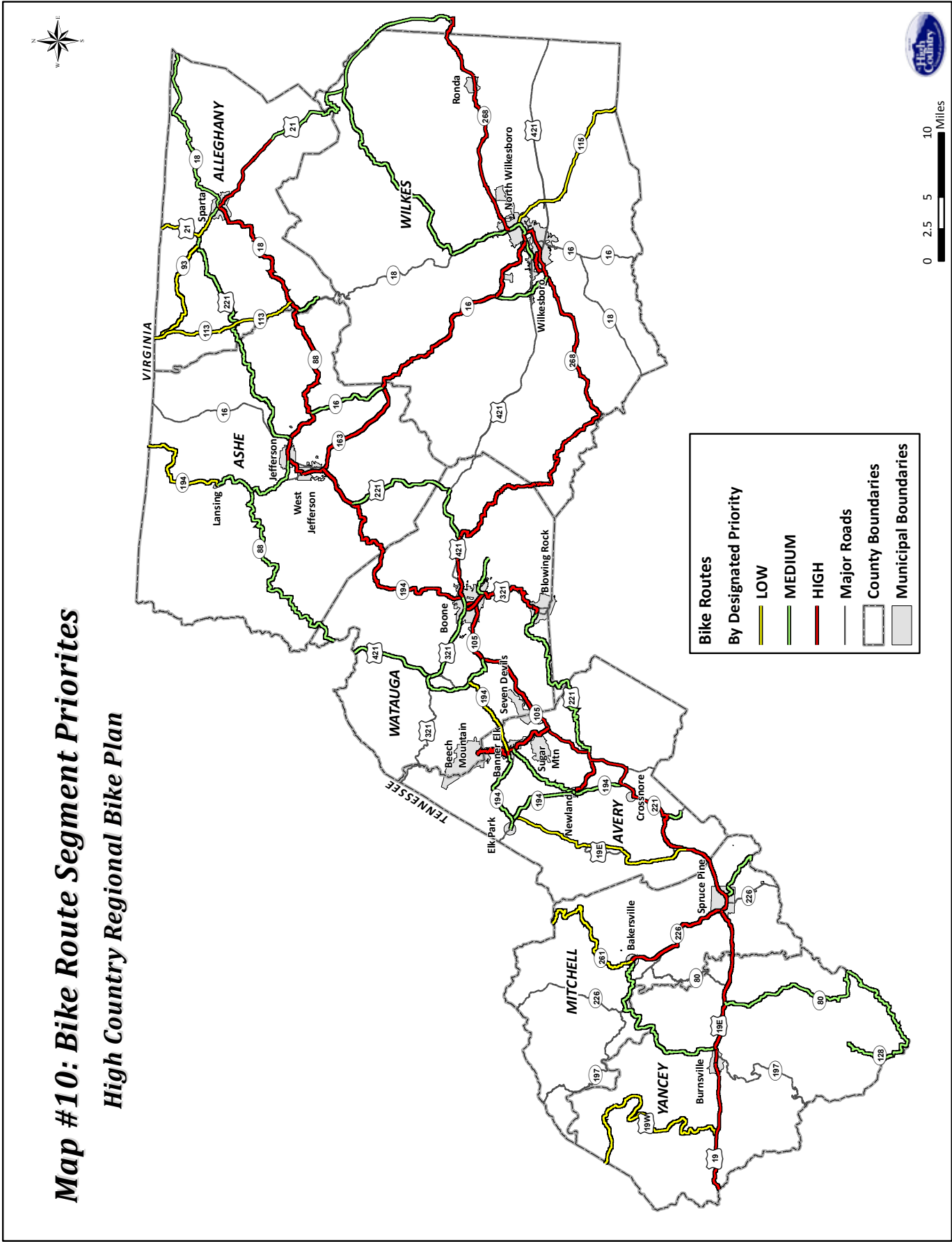
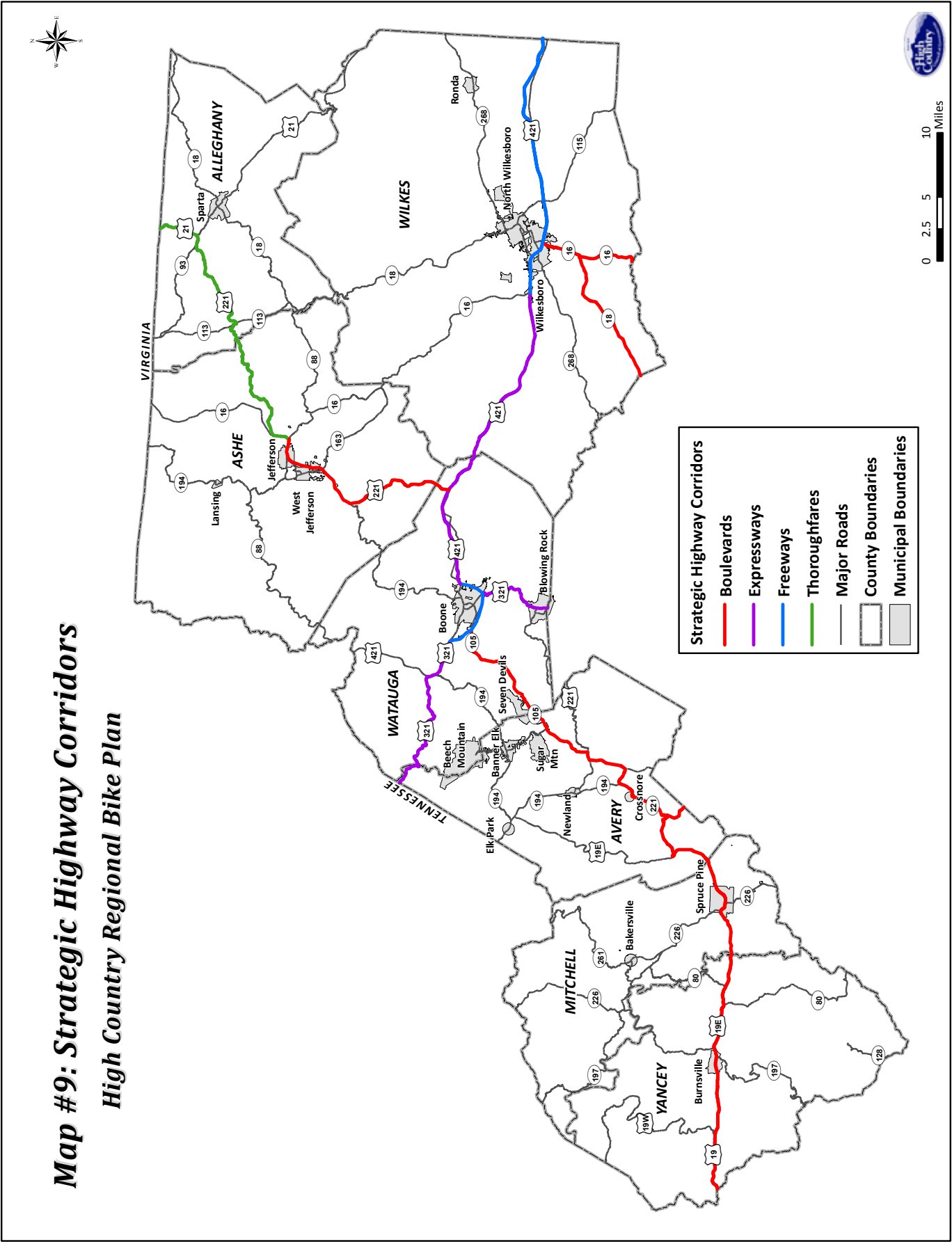


Map #8 – Transportation Improvement Projects

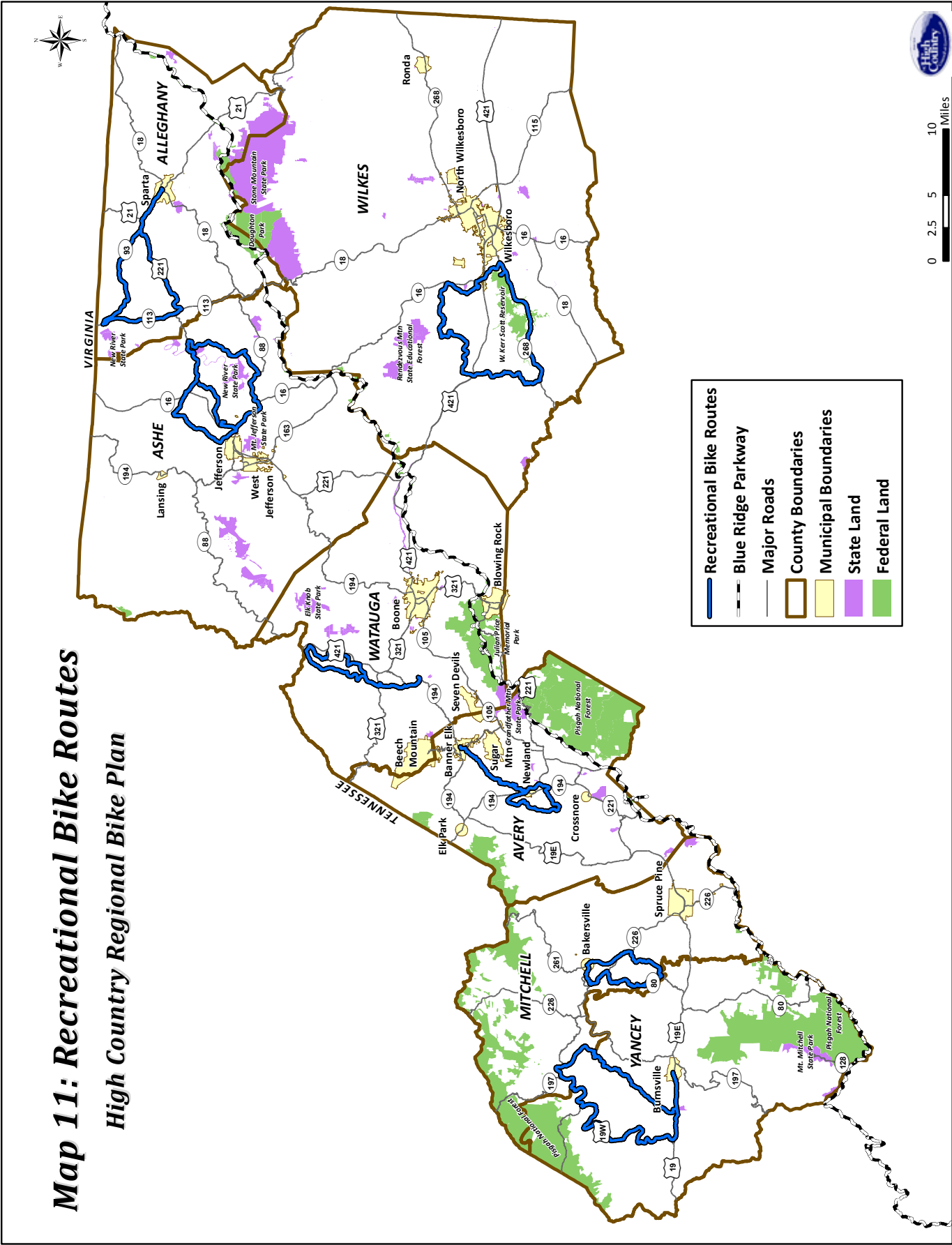


Map #9 – Strategic Highway Corridors

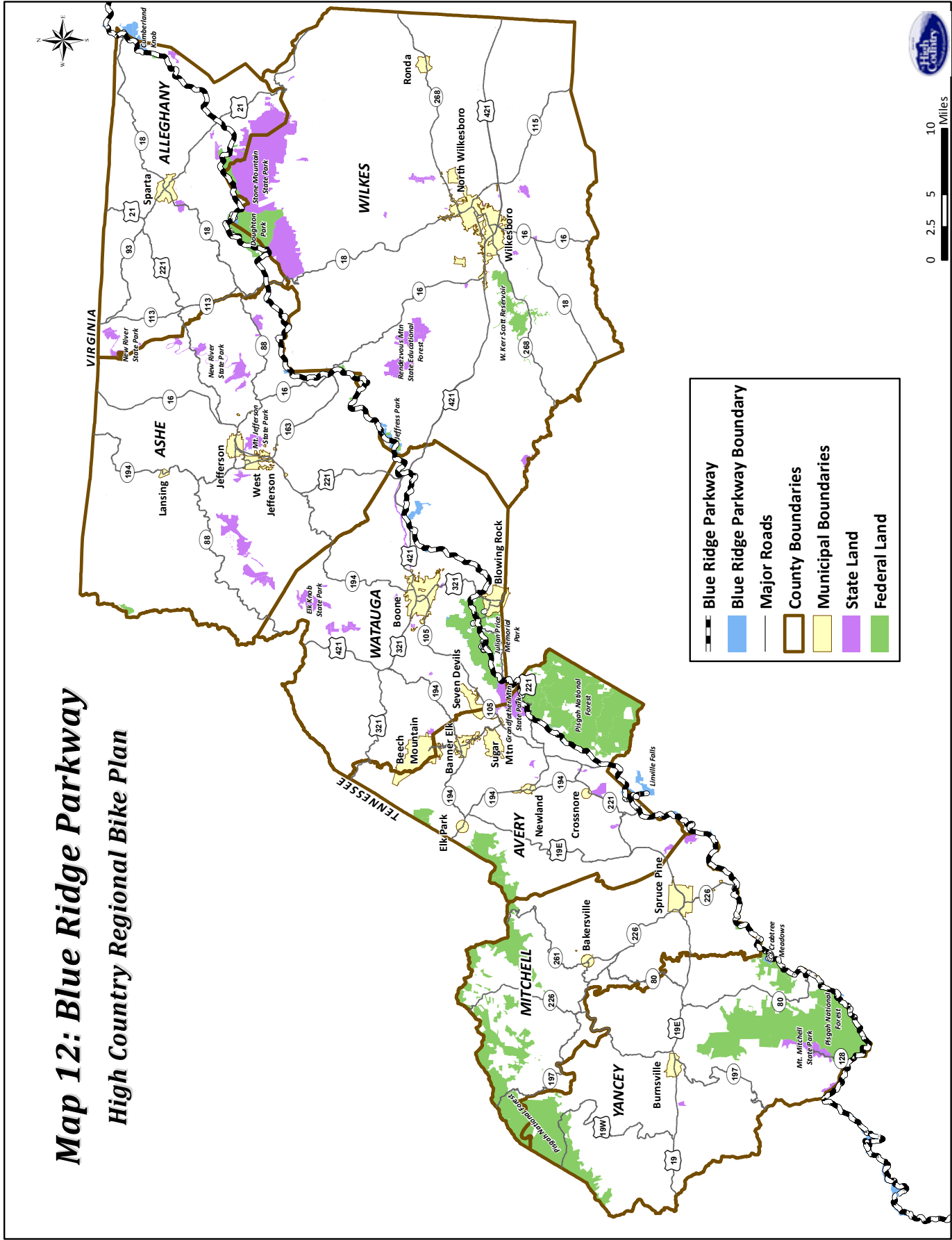
Map #10 – Bike Route Segment Priorities



Map #11 – Recreational Bike Routes

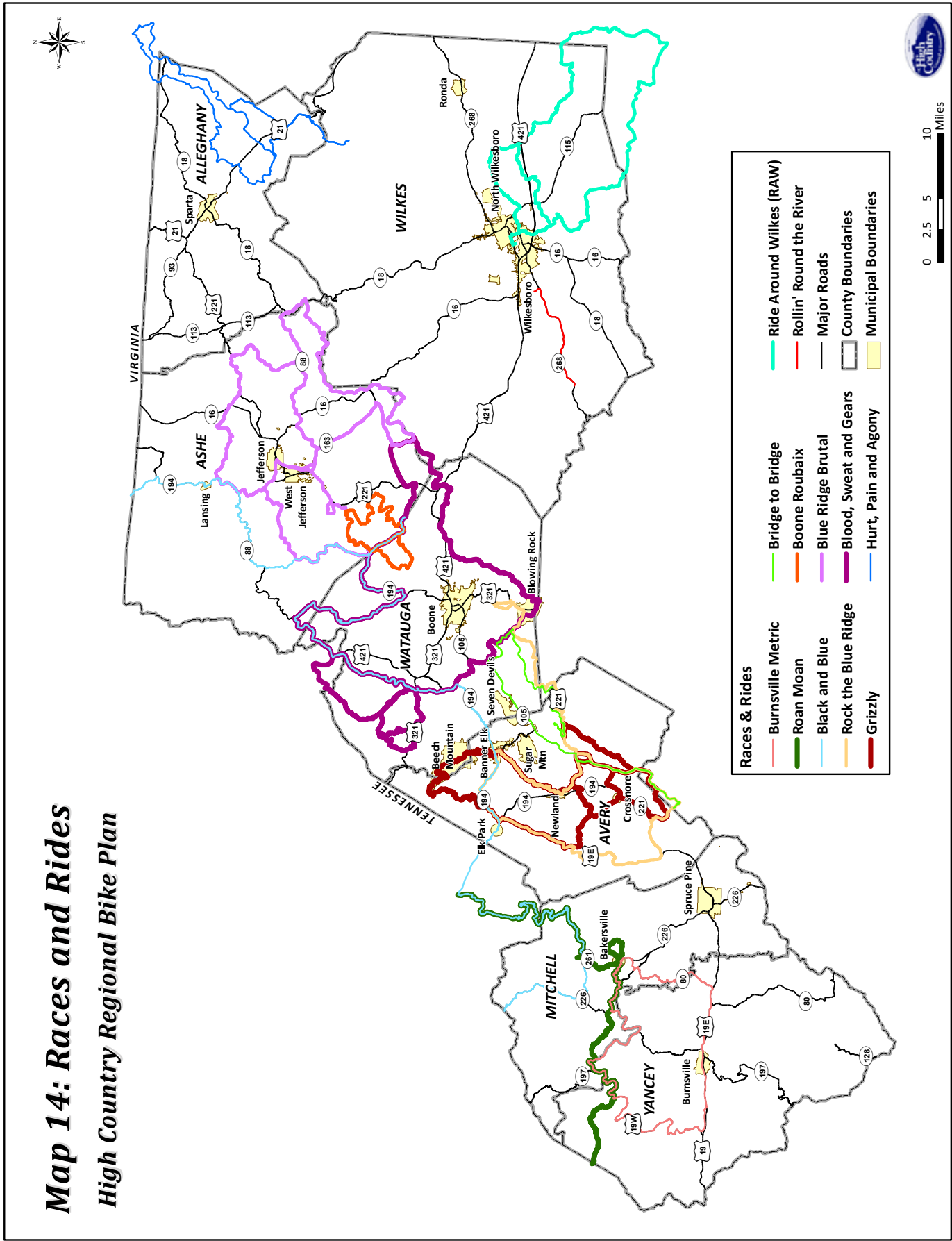
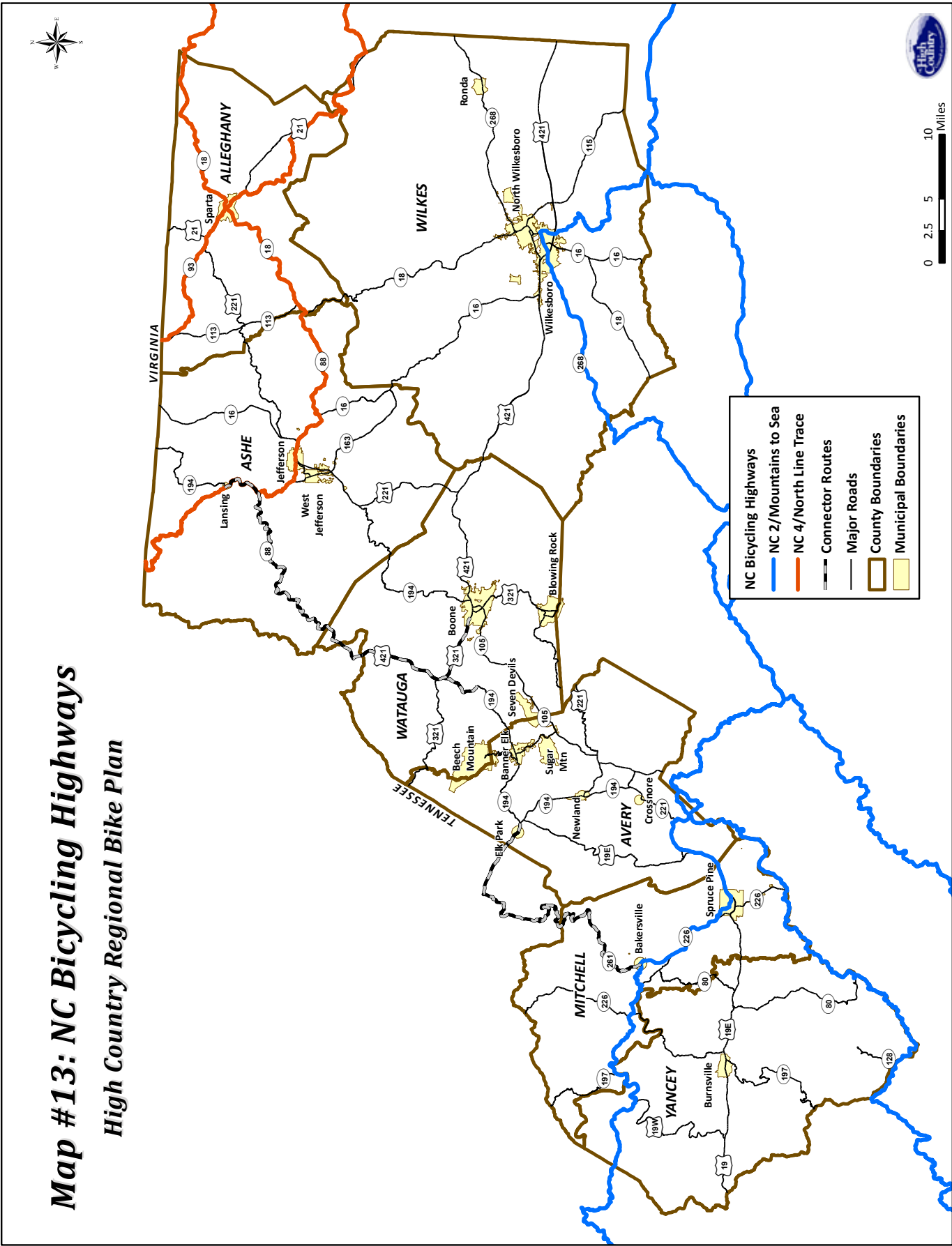


Map #12 – Blue Ridge Parkway



Map #13 – NC Bicycling Highways

Map #14 – Races and Rides



Section 12

Appendices



Appendix 1 – Cost Estimates

NC-DOT
Contract Standards and Development Unit
Preliminary Estimate Section

December 15, 2012

Memo To: Ron Davenport, Jr, PE
State Estimating Engineer

From: Doug Lane

Subject: Statewide - Adding Bike Lanes to Existing Roadway.

CONSTRUCTION COST PER MILE FOR ADDING BIKE LANES

SCENARIO	LENGTH (Miles)	CONSTR.COST (Per Mile)
#1	1.00	\$300,000
#2	1.00	\$400,000
#3	1.00	\$600,000
#4	1.00	\$700,000

Note: Right of Way, Right of Way Utilities, and Utility Construction Costs are not included.

- Scenario #1 Widen 3' Each Side
- Scenario #2 Widen 4' Each Side
- Scenario #3 Widen 3' Each Side and Move Ditches Out
- Scenario #4 Widen 4' Each Side and Move Ditches Out

CC: Ricky Greene, PE

Appendix 1 – Cost Estimates (Scenario #1)

North Carolina Department of Transportation
Preliminary Estimate

TIP No. Statewide

Route Add Bike Lanes to Existing Roadway

From

Typical Section Widen Existing Pavement 3' on Each Side

Scenario #1

County: N / A

CONSTR.COST

\$300,000

Prepared By: Doug Lane 12/14/12
Requested By: Ron Davenport, Jr, PE 12/14/12

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Earthwork				
			Trenching for Widening	1,030	CY	\$ 20.00	\$ 20,600.00
			Drainage				
							\$ -
			Fine Grading	4,110	SY	\$ 3.00	\$ 12,330.00
			Pavement				
			5.0" B 25.0 B	1,010	Tons	\$ 60.00	\$ 60,600.00
			1.5" S 9.5 B	300	Tons	\$ 100.00	\$ 30,000.00
			PG 64-22	62	Tons	\$ 650.00	\$ 40,300.00
			Shoulder Reconstruction	2	ShMi	\$ 2,500.00	\$ 5,000.00
			Erosion Control		Acres	\$ 15,000.00	\$ -
			Traffic Control	1	LS	\$ 20,000.00	\$ 20,000.00
			Thermo & Markers (Edge Lines & Bk S	1	LS	\$ 8,336.00	\$ 8,336.00
			Utility Construction				
	?		Relocate Existing Water Line		LF		\$ -
			Misc. & Mob 10% Util	1	LS		
			Misc. & Mob 35% Roadway	1	LS		\$ 68,834.00

Lgth 1.00 Miles	Contract Cost.....	\$ 266,000.00
	E. & C. 15%.....	\$ 34,000.00
	Construction Cost.....	\$ 300,000.00

Appendix 1 – Cost Estimates (Scenario #2)

North Carolina Department of Transportation
Preliminary Estimate

TIP No.
Route
From
Typical Section

Statewide
Add Bike Lanes to Existing Roadway

Widen Existing Pavement 4' on Each Side

Scenario #2

County: N / A

CONSTR.COST
\$400,000

Prepared By: Doug Lane
Requested By: Ron Davenport, Jr, PE

12/14/12
12/14/12

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Earthwork				
			Trenching for Widening	1,320	CY	\$ 20.00	\$ 26,400.00
			Drainage				\$ -
			Fine Grading	5,280	SY	\$ 3.00	\$ 15,840.00
			Pavement				
			5.0" B 25.0 B	1,350	Tons	\$ 60.00	\$ 81,000.00
			1.5" S 9.5 B	400	Tons	\$ 100.00	\$ 40,000.00
			PG 64-22	84	Tons	\$ 650.00	\$ 54,600.00
			Shoulder Reconstruction	2	ShMi	\$ 2,500.00	\$ 5,000.00
			Erosion Control		Acres	\$ 15,000.00	\$ -
			Traffic Control	1	LS	\$ 20,000.00	\$ 20,000.00
			Thermo & Markers (Edge Lines & Bk S	1	LS	\$ 8,336.00	\$ 8,336.00
			Utility Construction				
	?		Relocate Existing Water Line		LF		\$ -
			Misc. & Mob 10% Util	1	LS		
			Misc. & Mob 35% Roadway	1	LS		\$ 87,824.00
Lgth 1.00 Miles							Contract Cost \$ 339,000.00
							E. & C. 15% \$ 61,000.00
							Construction Cost \$ 400,000.00

Appendix 1 – Cost Estimates (Scenario #3)

North Carolina Department of Transportation
Preliminary Estimate

TIP No.
Route
From
Typical Section

Statewide
Add Bike Lanes to Existing Roadway

Widen Existing Pavement 3' on Each Side
Move Ditches Out

Scenario #3

County: N / A

CONSTR.COST
\$600,000

Prepared By: Doug Lane
Requested By: Ron Davenport, Jr, PE

12/14/12
12/14/12

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Earthwork				
			Excavation and Embankment	7,040	CY	\$ 12.00	\$ 84,480.00
			Drainage (10 Locations / Mile @ 16' Each)				
			24" RC Pipe, Class III	160	LF	\$ 40.00	\$ 6,400.00
			Fine Grading	14,080	SY	\$ 3.00	\$ 42,240.00
			Pavement				
			5.0" B 25.0 B	1,010	Tons	\$ 60.00	\$ 60,600.00
			1.5" S 9.5 B	300	Tons	\$ 100.00	\$ 30,000.00
			PG 64-22	62	Tons	\$ 650.00	\$ 40,300.00
			Shoulder Reconstruction		ShMi	\$ 2,500.00	\$ -
			Erosion Control	3.64	Acres	\$ 15,000.00	\$ 54,600.00
			Traffic Control	1	LS	\$ 50,000.00	\$ 50,000.00
			Thermo & Markers (Edge Lines & Bk S	1	LS	\$ 8,336.00	\$ 8,336.00
			Utility Construction				
	?		Relocate Existing Water Line		LF		\$ -
			Misc. & Mob 10% Util	1	LS		
			Misc. & Mob 35% Roadway	1	LS		\$ 132,044.00
Lgth 1.00 Miles							Contract Cost \$ 509,000.00
							E. & C. 15% \$ 91,000.00
							Construction Cost \$ 600,000.00

Appendix 1 – Cost Estimates (Scenario #4)

North Carolina Department of Transportation
Preliminary Estimate

TIP No.	<u>Statewide</u>	Scenario #4	County:	<u>N / A</u>
Route	Add Bike Lanes to Existing Roadway			
From				
Typical Section	Widen Existing Pavement 4' on Each Side Move Ditches Out			CONSTR.COST \$700,000

Prepared By: Doug Lane 12/14/12
Requested By: Ron Davenport, Jr, PE 12/14/12

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			<u>Earthwork</u>				
			Trenching for Widening	7,440	CY	\$ 12.00	\$ 89,280.00
			<u>Drainage (10 Locations / Mile @ 20' Each)</u>				
			24" RC Pipe, Class III	200	LF	\$ 40.00	\$ 8,000.00
			Fine Grading	15,260	SY	\$ 3.00	\$ 45,780.00
			<u>Pavement</u>				
			5.0" B 25.0 B	1,350	Tons	\$ 60.00	\$ 81,000.00
			1.5" S 9.5 B	400	Tons	\$ 100.00	\$ 40,000.00
			PG 64-22	84	Tons	\$ 650.00	\$ 54,600.00
			Shoulder Reconstruction		ShMi	\$ 2,500.00	\$ -
			Erosion Control	3.64	Acres	\$ 15,000.00	\$ 54,600.00
			Traffic Control	1	LS	\$ 50,000.00	\$ 50,000.00
			Thermo & Markers (Edge Lines & Bk Symbols)	1	LS	\$ 8,336.00	\$ 8,336.00
			<u>Utility Construction</u>				
	?		Relocate Existing Water Line		LF		\$ -
			Misc. & Mob 10% Util	1	LS		
			Misc. & Mob 35% Roadway	1	LS		\$ 151,404.00

Lgth 1.00 Miles	Contract Cost	\$ 583,000.00
	E. & C. 15%	\$ 117,000.00
	Construction Cost	\$ 700,000.00

Appendix 2 – High Country Regional Bike Plan Survey

Regional Bike Survey

High Country Regional Bicycle Transportation Plan Survey

High Country Council of Governments is developing a Regional Bicycle Transportation Plan for Alleghany, Ashe, Avery, Mitchell, Watauga, Wilkes, and Yancey Counties. The Plan is intended to improve safety, access, and mobility for cyclists by designating logical routes that connect municipalities and other major destinations in the region. The Plan will identify needed improvements to existing roadways, prioritize the improvements, and develop a signage plan to mark the identified routes.

This survey is designed to gather information on cycling habits, roadways needing improvement, and ideas on reducing conflicts between cyclists and motorists. We are looking for input from cyclists as well as non-cyclists. Questions 7-14 are specific to cyclists, but the others are applicable to all roadway users. Thank you for your input.

1. What County do you live in?

- ☐ Alleghany
- ☐ Ashe
- ☐ Avery
- ☐ Mitchell
- ☐ Watauga
- ☐ Wilkes
- ☐ Yancey
- ☐ Other (enter below)

County

2. Gender

- ☐ Male
- ☐ Female

3. Age

- ☐ Under 16
- ☐ 16-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65 or over

Regional Bike Survey

4. Employment

☐ Employed full time

☐ Employed part time

☐ Unemployed

☐ Retired

5. Do you own a bicycle?

☐ Yes

☐ No

6. How often do you ride a bicycle?

☐ Never

☐ Rarely (5-6 times/year)

☐ Occasionally (1-2 times/month)

☐ Frequently (1-2 times/week)

☐ Regularly (5-7 times/week)

☐ Seasonally (I only ride in warmer months)

7. Are you a member of a bicycling club, organization, or advocacy group?

☐ yes

☐ no

8. For what reasons do you regularly ride a bicycle (choose all that apply)?

☐ Commute to work

☐ Commute to school

☐ Shopping/errands

☐ Exercise

☐ Recreation/enjoyment

☐ To save money

☐ Lack of car parking at destination

☐ Competition/training for rides

☐ Environmental considerations

Other (please specify)

Regional Bike Survey

9. What is the average distance of your bicycle trips?

☐ Under 2 miles

☐ 2-5 miles

☐ 6-10 miles

☐ 11-20 miles

☐ Over 20 miles

☐ I don't ride

10. When choosing a bike route, how do the following factors influence your decision?

not a factor at all

minor consideration

major consideration

Destination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic volume	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shortest distance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pavement/shoulder condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aesthetics/scenery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grade/exertion needed to travel route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<div></div>		

11. What factors discourage you from cycling more often?

not a factor at all

minimally limiting

significantly limiting

prevents me from riding

Traffic speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic volume	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driver behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weather	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Topography (i.e. hills)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My fitness level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pavement/shoulder conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distance to destinations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No place to park bike at destination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<div></div>			

Regional Bike Survey

12. List up to five common destinations for your bicycle trips (for example, Towns [please name], Appalachian State University, State Park [please name], Park, Blue Ridge Parkway, etc.).

1

2

3

4

5

13. When cycling for transportation purposes, which roads do you use? (list from most used to least; use road name or route number, and indicate which County) If you only bicycle for recreation, go to next question.

1

2

3

4

5

14. When cycling for recreation and/or exercise, which roads do you use? (list from most used to least; use road name or route number, and indicate which County)

1

2

3

4

5

15. List up to five roads/locations in your local area where current conditions make cycling dangerous (list from most dangerous to least dangerous; use road name or route number, and indicate which County).

1

2

3

4

5

Regional Bike Survey

16. Rate the following challenges to cycling in the High Country region.

	not a factor	minor challenge	major challenge
Narrow roads/no shoulders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heavy automobile traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Curvy roads (poor visibility)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dangerous intersections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rough pavement conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driver behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Curb-cuts/driveways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Steep hills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other

17. Pick 3 of the following bicycle infrastructure improvements that are most important to increase safety.

☐ Striped bike lanes on roads

☐ Wide outside lanes

☐ Paved multi-use path separated from motor traffic

☐ Off-road trails or greenways

☐ Wider bridges

☐ Shared-use sidewalks

☐ Other

(please specify)

Regional Bike Survey

18. Pick 3 of the following improvements, actions, and programs that are most important to increase safety.

- ☐ Cyclist education programs
- ☐ Motorist education programs
- ☐ Increased law enforcement
- ☐ Lower speed limits
- ☐ Traffic calming (speed bumps, traffic circles, etc.)
- ☐ Signage (designated bike route, share the road)
- ☐ Other

(please specify)

19. List 3 actions cyclists can take to make roadways safer for all users.

- 1
- 2
- 3

20. List 3 actions motorists can take to make roadways safer for cyclists.

- 1
- 2
- 3

21. Rank your preferences for the following strategies for bicycle infrastructure improvements, with 1 being the most preferred, and 5 being the least.

- Make improvements on the major traffic corridors that offer the quickest routes between destinations
- Establish alternate routes away from the major traffic corridors in order to avoid heavy motor traffic
- Establish a network of off-road bike paths that connect destinations
- Concentrate on spot improvements at intersections, bridges, and other site-specific locations
- Make no improvements



Regional Bike Survey

22. Which funding options would you support to pay for bicycle infrastructure improvements? (choose all that apply)

- ☐ Local bond referendum
- ☐ Private fundraising
- ☐ Occupancy tax (lodging tax)
- ☐ State general fund
- ☐ County/Town general fund
- ☐ Gas tax
- ☐ Fees tied to bike sales/bike registration
- ☐ I do not support any expenditures for bicycle infrastructure

Other (please specify)

23. Use the following comment section if you wish to express an opinion, comment on an issue not addressed in this survey, or clarify your answers to any of the above questions.

ROUTE EVALUATION CRITERIA
High Country Regional Bike Plan

1. High Frequency Crash Locations

- data from 01/01/2006 through 12/31/2010
- includes intersections and road segments
- ranges from 4-86 crashes on road segments; 5-125 crashes at intersections

Measure will be lack of crash locations
Weight: high

2. Truck Routes

- designated by NCDOT, as of March 2012

Measure will be avoidance of truck routes
Weight: low

3. Automobile Traffic

- Average Annual Daily Traffic (AADT) counts – 2010 data
- ranges from 0-38,000 vehicles/day

Measure will be avoidance of roads with high AADT
Weight: high

4. Roadway Conditions

- Shoulder Width
- Pavement condition
- Bridge width
- Horizontal curve
- Vertical curve (hills)
- Lane width
- Grade
- Number of lanes
- Access control/access points
- Existence of bike lanes

Measure will be avoidance of:

- **Narrow/no shoulders**
- **Broken pavement**
- **Narrow (<24 feet) bridges**
- **Excessive horizontal and vertical curves**
- **Narrow (<10 feet) lanes**
- **Grades > 5%**
- **Segments with excessive access points**

Weight: low

5. Speed Limit

Measure will be avoidance of segments with speed limit > 45 mph
Weight: low

6. Connections of Origins and Destinations

Measures will be:

- **connections between municipalities**
- **connections to other origins and destinations**

Weight: high

7. Bicycle Traffic

- no bicycle traffic data available; will use survey responses and input from stakeholders to identify roads with significant bicycle traffic
- existing NC Bicycle Highways

Measure will be presence of significant existing bicycle traffic
Weight: low

8. Tourism Development Potential

- NC Scenic Byways

Measure will be whether route is on a State Scenic Byway
Weight: low

9. Long-Range Plans

- Yancey County Comprehensive Transportation Plan (CTP) – 2008
- Ashe County CTP – 2010
- Watauga County CTP (Draft) – 2012
- Alleghany County CTP (Draft) – 2012
- Region D Thoroughfare Plan – 1993
- Wilkesboro/North Wilkesboro Thoroughfare Plan - 1993
- Banner Elk Thoroughfare Plan – 1985
- Newland Thoroughfare Plan – 1994
- Beech Mountain Thoroughfare Plan – 2003
- Spruce Pine Thoroughfare Plan – 1994
- Boone/Blowing Rock Alternative Transportation Plan – 1993

Measure will be inclusion of route on long-range plan
Weight: high

10. Bicycle Plans

- Bicycle Element of Yancey County Comprehensive Transportation Plan (CTP) – 2008
- Bicycle Element of Ashe County CTP – 2010
- Bicycle Element of Watauga County CTP (Draft) – 2012
- Bicycle Element of Alleghany County CTP (Draft) – 2012
- Boone/Blowing Rock Alternative Transportation Plan – 1995
- Town of Boone Greenway plans (ongoing)
- Crossnore Alternative Transportation Plan – 2010
- Yadkin River Greenway Plan – 2012
- Middle Fork Greenway Plan

Measure will be inclusion of route on existing bicycle plan
Weight: high

11. NCDOT Transportation Improvement Program (TIP)

- 2012-2020 TIP – will evaluate projects on TIP that have Construction dates after 2013

Measure will be inclusion of route on TIP (with right-of-way scheduled for 2013 or later)
Weight: high



High Country Regional Bike Plan

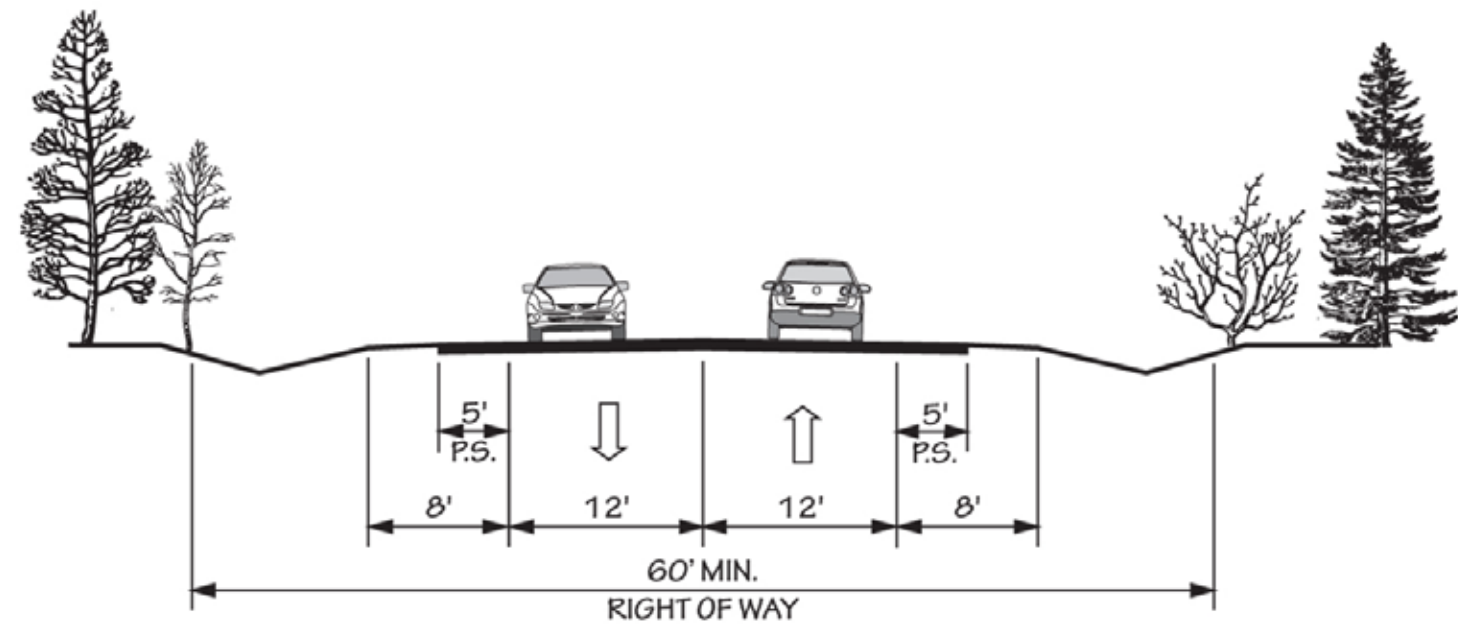
Segment Evaluation Form

Segment Description:

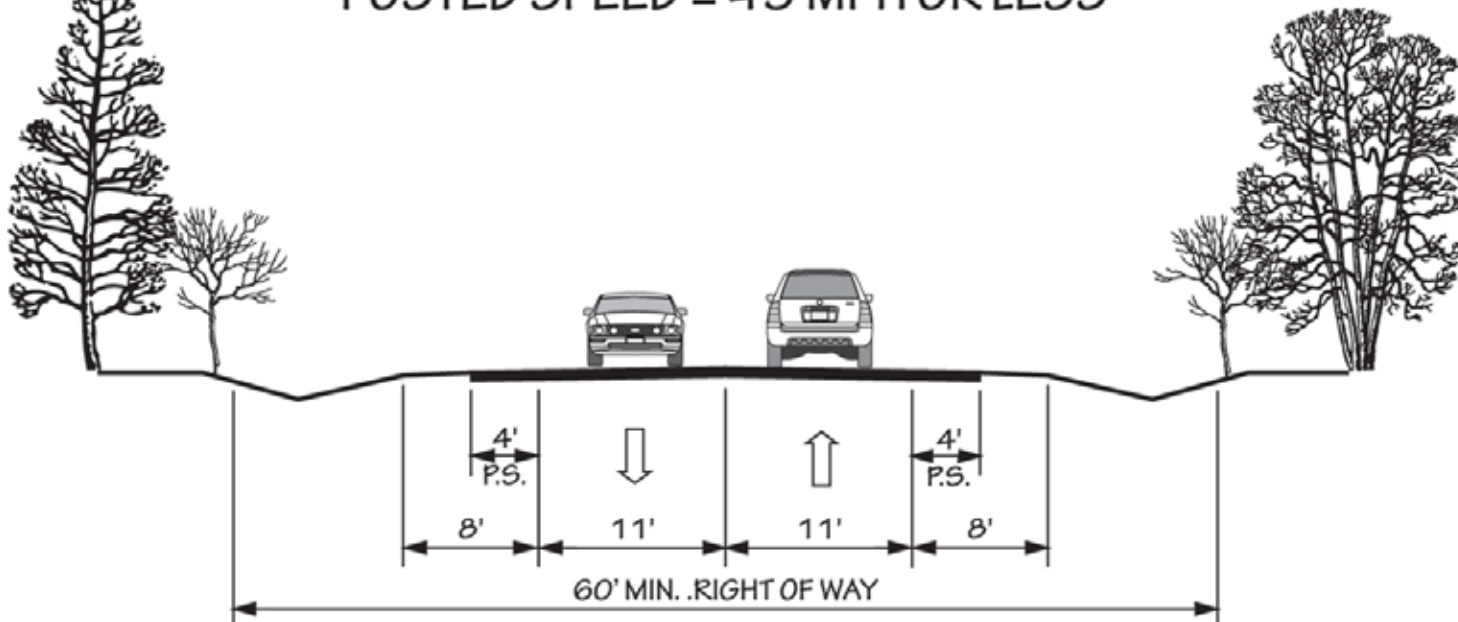
Date:

ISSUE	CRITERIA	METRIC	SCORE POTENTIAL	SCORE	WEIGHT	WEIGHTED SCORE
Safety	Crash Locations	crashes - highest count on segment	2, 1, or 0 follows natural breaks of data		2	
	Truck Traffic	NCDOT Designated Truck Route	1 - no 0 - yes		1	
	Automobile Traffic	AADT - highest count on segment	2, 1, or 0 follows natural breaks of data		2	
	Roadway Conditions	existence of 7 hazardous conditions	2 - no hazardous conditions 1 - < four hazardous conditions 0 - => four hazardous conditions		1	
	Speed Limit	posted speed limit	1 - <= 45 mph 0 - >45 mph		1	
	Connections to Origins and Destinations	connection of identified origins and destinations	3 - route connects Towns 2 - route connects Town to other O&D 1 - route connects other O&Ds 0 - no connection		2	
Connectivity	Bicycle Traffic	current bicycle traffic as determined by local stakeholders; route is included in NC Bicycle Highway	1 - significant bicycle traffic; or inclusion in NC Bicycle Highway 0 - no significant bicycle traffic		1	
	Tourism Development Potential	part of NC Scenic Byway	1 - yes 0 - no		1	
	Inclusion in long-range plan	identification in plan	1 - yes 0 - no		2	
Planning	Inclusion in bicycle plan	identification in plan	1 - yes 0 - no		2	
	Inclusion in TIP	identification in TIP	1 - yes 0 - no		2	

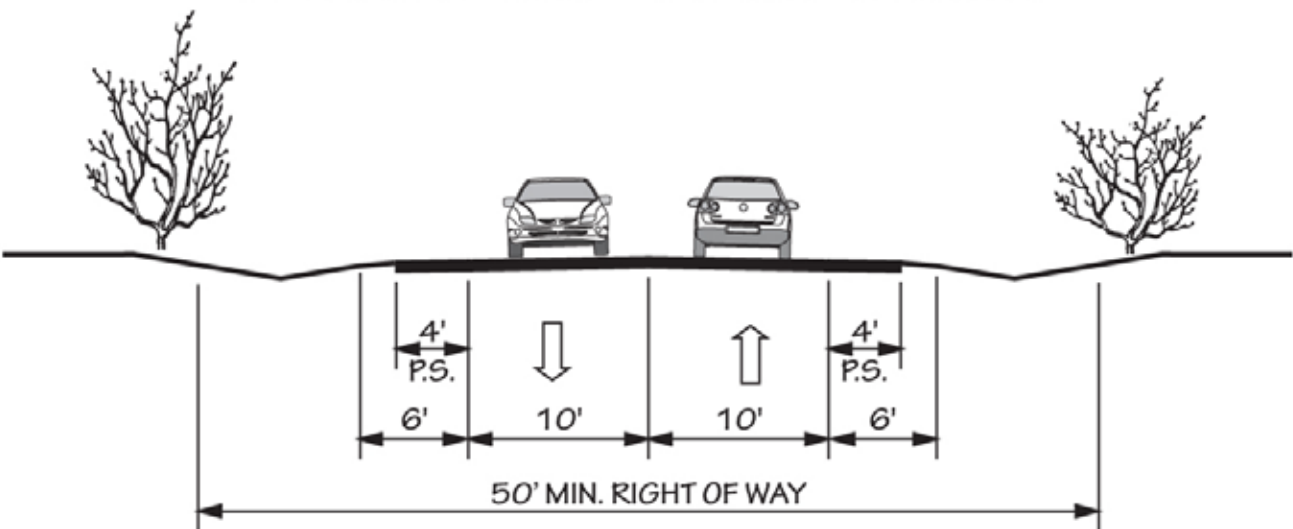
WIDE PAVED SHOULDERS
POSTED SPEED = 55 MPH



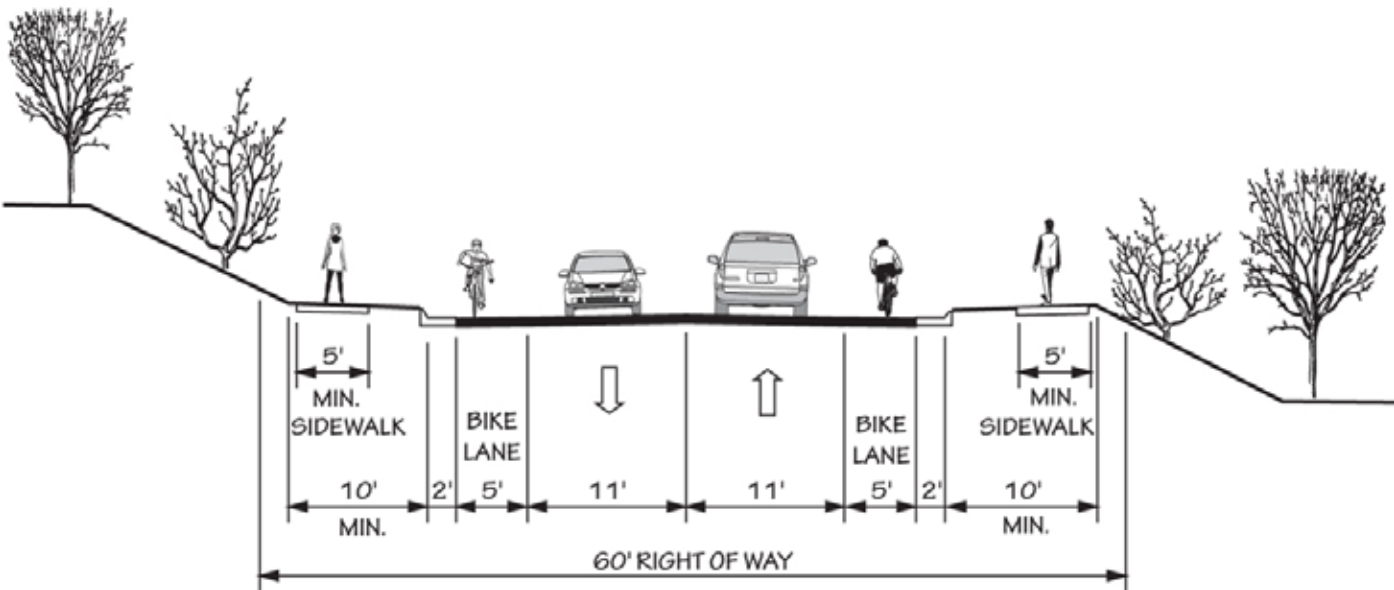
WIDE PAVED SHOULDERS
POSTED SPEED = 45 MPH OR LESS



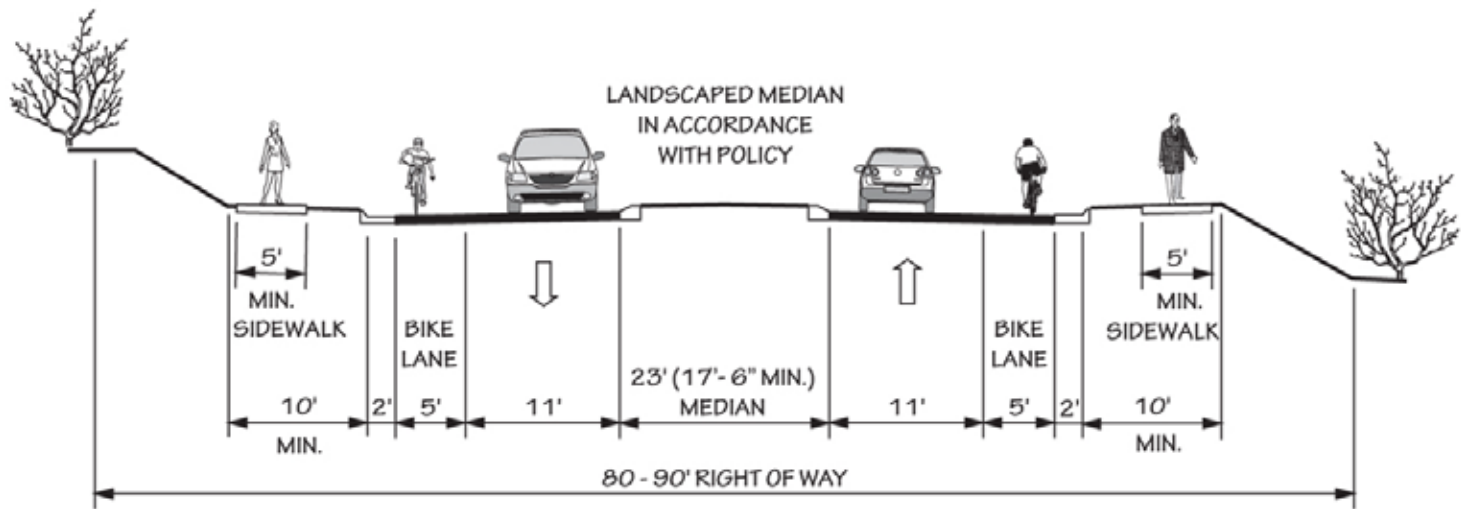
WIDE PAVED SHOULDERS
POSTED SPEED = 35 MPH OR LESS



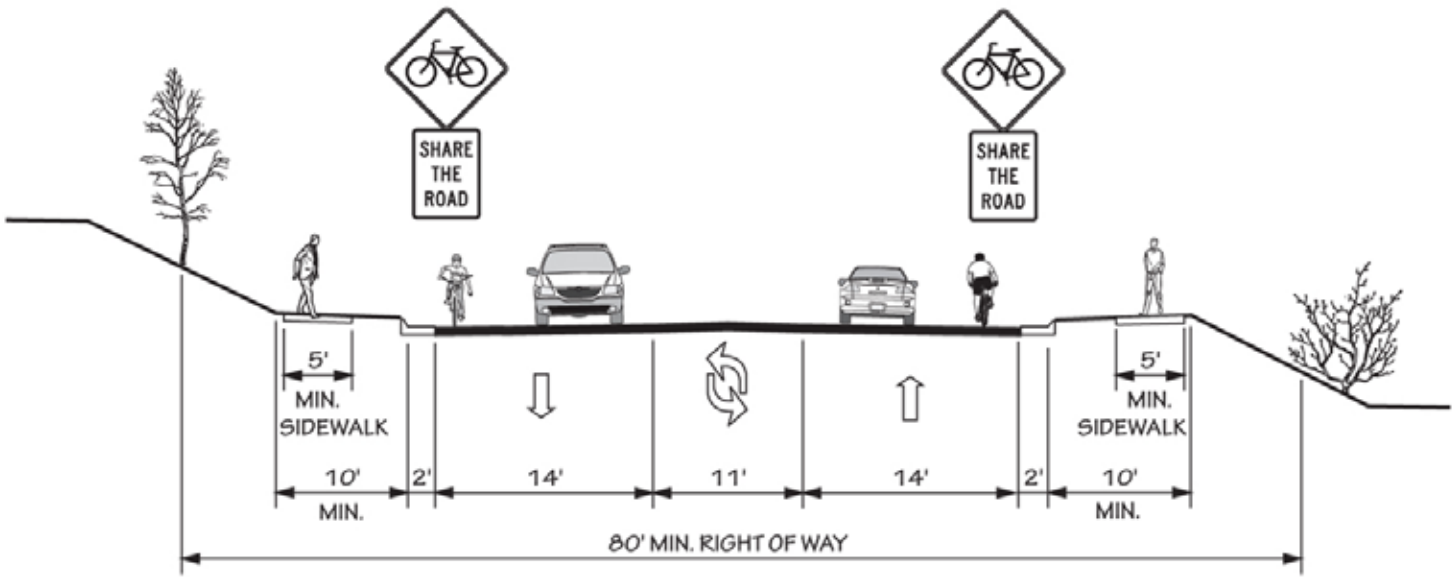
CURB AND GUTTER
WITH BIKE LANES AND SIDEWALKS



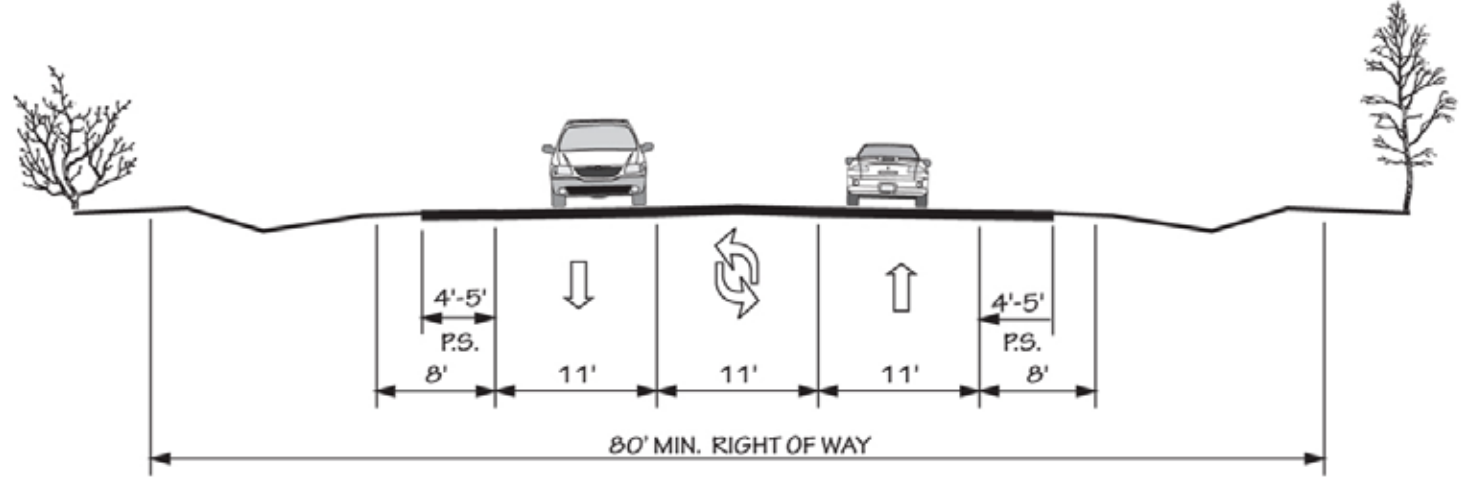
RAISED MEDIAN WITH CURB & GUTTER



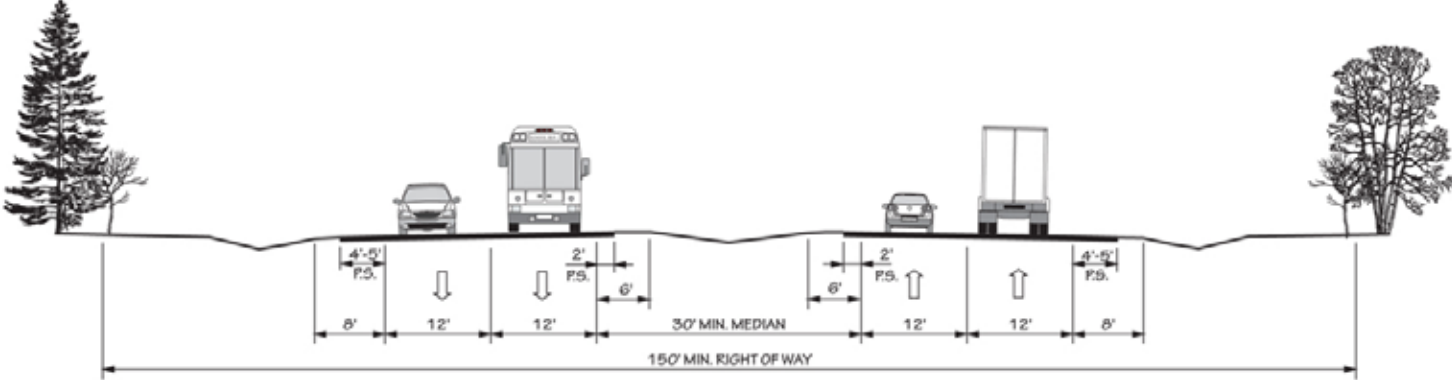
CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS

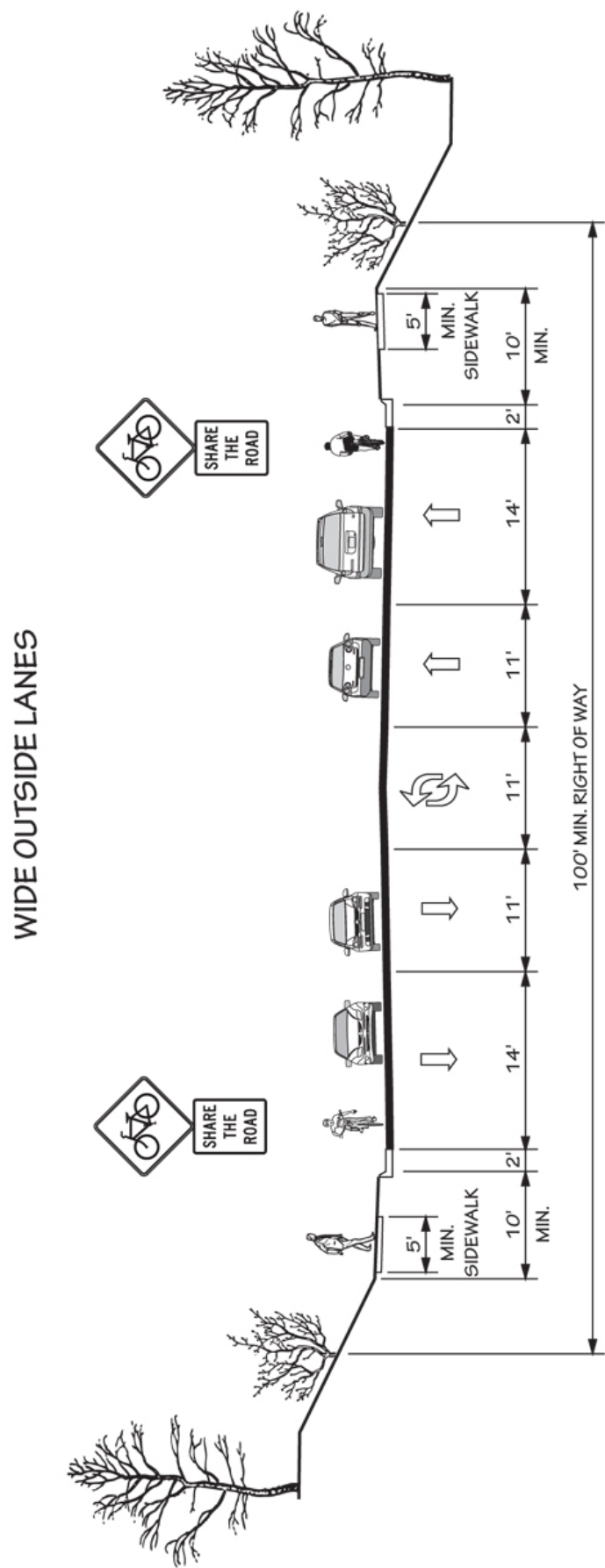
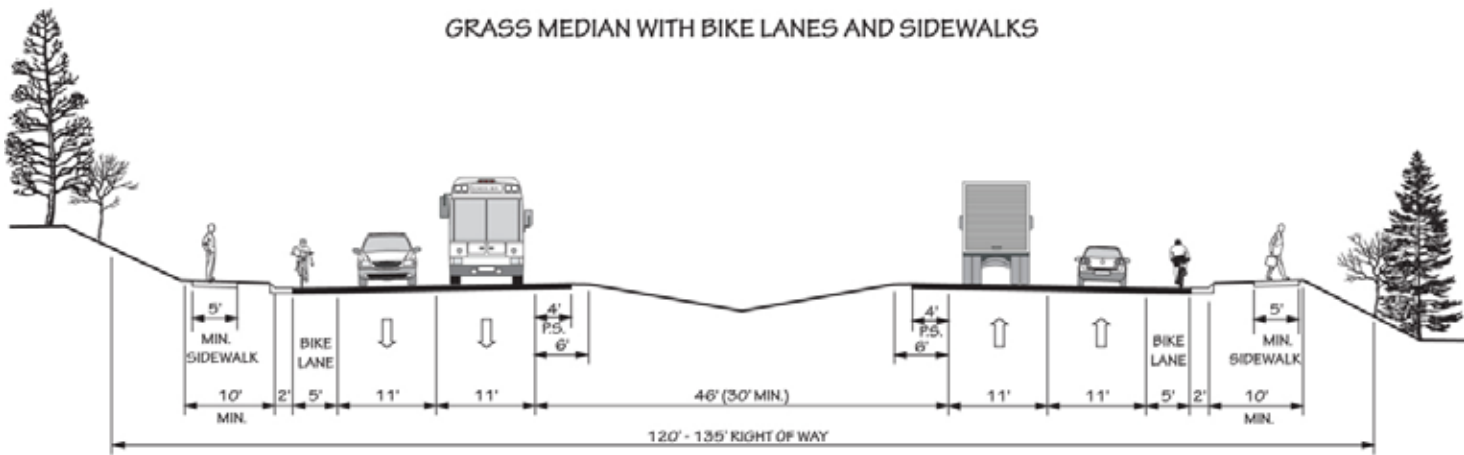
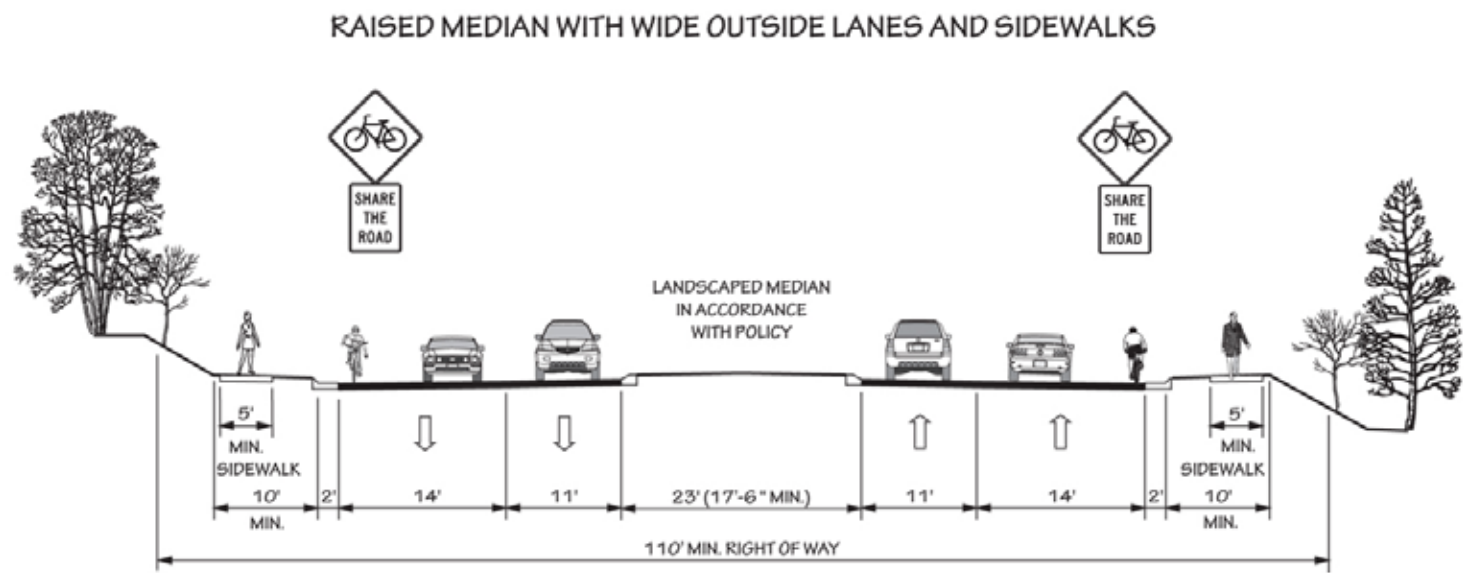


WIDE PAVED SHOULDERS

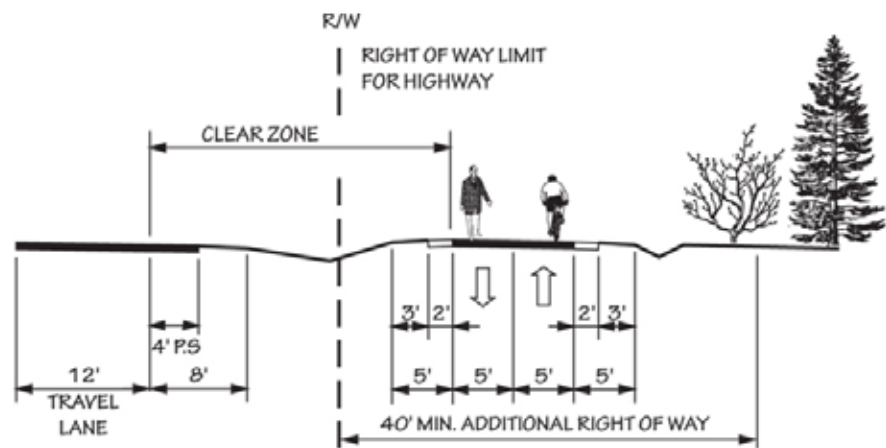


DIVIDED WITH MEDIAN - NO CURB & GUTTER
PARTIAL CONTROL OF ACCESS

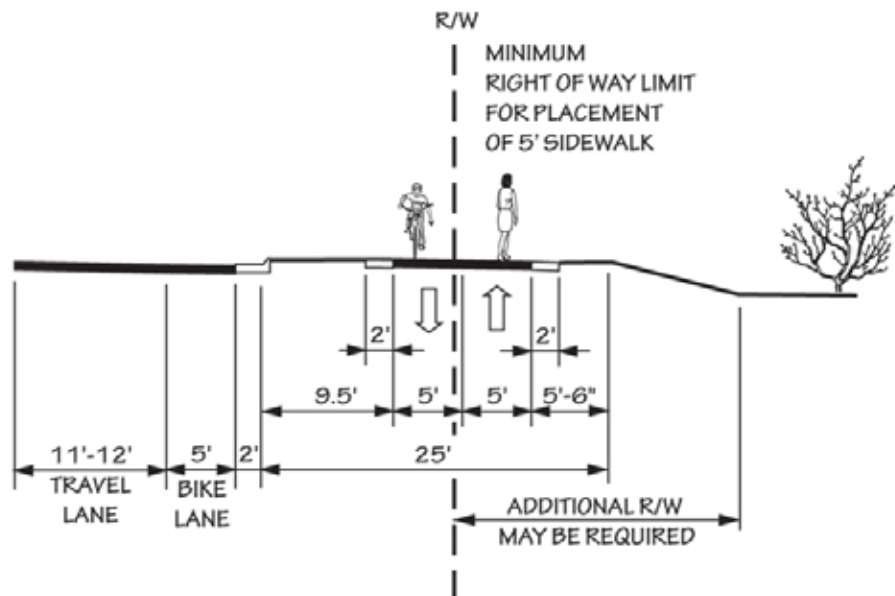




MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY



MULTI - USE PATH ADJACENT TO CURB AND GUTTER



Law Enforcement Survey for Regional Bicycle Transportation Plan

1. Name of law enforcement agency

2. Name and title of person completing this survey

3. Phone number or email address of person completing this survey.

4. Which of the following best describes how often you see cyclists on the road in your jurisdiction?

☐ almost never

☐ occasionally (weekly)

☐ frequently (daily)

☐ almost constantly (throughout the day)

5. Is the number of cyclists on the road in your jurisdiction

☐ increasing

☐ decreasing

☐ staying about the same

6. Which of the following best describes the number of complaints you receive in a year regarding cyclists (either from cyclists or about cyclists)?

☐ none

☐ a few (2 or 3 times a year)

☐ several (once a month)

☐ many (once a week)

Law Enforcement Survey for Regional Bicycle Transportation Plan

7. Which of the following statements is true for your jurisdiction?

☐ Cyclists are not a significant concern for law enforcement in my jurisdiction.

☐ We occasionally have a serious incident involving a cyclist, but overall cyclists are not a significant concern for law enforcement in my jurisdiction.

☐ Cyclists are a significant concern for law enforcement in my jurisdiction.

☐ Cyclists are a major concern for law enforcement in my jurisdiction.

Other or comment

8. Which of the following best describes the relationship between cyclists and vehicular traffic in your jurisdiction?

☐ generally not a problem; not many conflicts

☐ a few conflicts at times and in certain locations, but not a major concern

☐ conflicts occur repeatedly at certain locations

☐ conflicts are common throughout my jurisdiction; a significant concern

Other (please describe)

9. Which of the following statements about the causes of conflicts best describes the situation in your jurisdiction?

☐ Most conflicts involving cyclists are due to road conditions (narrow shoulders, curves, heavy traffic, etc.).

☐ Most conflicts involving cyclists are due to driver/cyclist behavior.

☐ Most conflicts involving cyclists usually involve a combination of both road conditions and behavior.

☐ The cause of conflicts is divided about equally between road conditions and behavior.

Please specify other significant causes or a different ratio of road conditions/behavior.

10. If numerous accidents involving bicycles occur in your jurisdiction, is there a pattern (e.g. fault, location, etc.)?

☐ yes

☐ no

If yes, please describe the pattern.

Law Enforcement Survey for Regional Bicycle Transportation Plan

11. Which of the following situations contribute to conflicts/accidents involving cyclists in your jurisdiction?

	generally not a cause	minor cause	major cause
narrow roads/no shoulder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
heavy automobile traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
curvy roads (poor visibility)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dangerous intersections	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
rough pavement conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
driver behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
cyclist behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
curb-cuts/driveways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Please list the location(s) where problems are frequent between cyclists and vehicular traffic. Also state the cause of the problem (e.g. narrow shoulder, blind curve, etc.)

Location

Cause

Location

Cause

Location

Cause

13. Does your local government have ordinances or policies (in addition to state laws) regarding cycling in your jurisdiction?

☐ yes

☐ no

14. Which of the following best describes your agency's enforcement of bicycle laws?

☐ a low priority compared to other concerns

☐ when we observe a dangerous situation

☐ a significant concern, but time and resources limit our activities

☐ we strive to consistently enforce bicycle laws the same as other laws

☐ a high priority

Other (please specify)

Law Enforcement Survey for Regional Bicycle Transportation Plan

15. Which of the following statements regarding bike laws is true for your jurisdiction?
(check all that apply)

☐ I would be interested in receiving training on bike laws and how to effectively enforce them

☐ Because cyclists are not a significant concern in my jurisdiction, training on bike laws is not needed

☐ My officers are adequately trained on bike laws and how to effectively enforce them

Other (please specify)

16. When an incident (e.g. harassment, dangerous maneuver, accident) involving a bicycle is reported to your agency, which of the following best describes your response in writing?

☐ we produce a written report on all incidents reported to my agency

☐ we produce a written report only on the most serious incidents

☐ we produce a written report only on accidents involving an automobile

Other (please describe)

17. Do you provide traffic control for any organized bicycle rides or races?

☐ yes

☐ no

If yes, please specify

18. Do your officers ride bicycles when engaged in law enforcement duties such as in congested areas, for special events, etc.?

☐ yes

☐ no

If yes, please specify

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Law Enforcement Survey for Regional Bicycle Transportation Plan

19. Does your agency promote cycling safety in any way?

☐ yes

☐ no

If yes, please specify

20. In your jurisdiction, which of the following bicycle infrastructure improvements do you think would both significantly increase safety AND be feasible in your jurisdiction? (check all that apply)

☐ striped bike lanes on roads

☐ wide outside lanes

☐ paved multi-use path separated from motor traffic

☐ off-road trails or greenways

☐ wider bridges

☐ shared-use sidewalks

Other (please specify)

21. Pick 3 of the following improvements, actions, and programs that you think would most effectively increase safety.

☐ cyclist education programs

☐ motorist education programs

☐ increased law enforcement

☐ lower speed limits

☐ traffic calming (speed bumps, traffic circles, etc.)

☐ signage (designated bike route, share the road)

Other (please specify)

Law Enforcement Survey for Regional Bicycle Transportation Plan

22. Use the space below to elaborate on any question, comment on any issue not covered in this survey, or offer suggestions that you think would be relevant in developing the regional bicycle transportation plan.

☐ Comments

Comments

Division of
Bicycle &
Pedestrian
Transportation

NCDOT, DIVISION OF BICYCLE AND PEDESTRIAN TRANSPORTATION

LAWS & POLICIES

NCDOT BICYCLE POLICY

General

Pursuant to the Bicycle and Bikeways Act of 1974, the Board of Transportation finds that bicycling is a bonafide highway purpose subject to the same rights and responsibilities and eligible for the same considerations as other highway purposes, as elaborated below.

1. The Board of Transportation endorses the concept that bicycle transportation is an integral part of the comprehensive transportation system in North Carolina.
2. The Board of Transportation endorses the concept of providing bicycle transportation facilities within the rights-of-way of highways deemed appropriated by the Board.
3. The Board of Transportation will adopt Design Guidelines for Bicycle Facilities. These guidelines will include criteria for selecting cost-effective and safety-effective bicycle facility types and a procedure for prioritizing bicycle facility improvements.
4. Bicycle compatibility shall be a goal for state highways, except on fully controlled access highways where bicycles are prohibited, in order to provide reasonably safe bicycle use.
5. All bicycle transportation facilities approved by the Board of Transportation shall conform with the adopted "Design Guidelines for Bicycle Facilities" on state-funded projects, and also with guidelines published by the American Association of State Highway and Transportation Officials (AASHTO) on federal aid projects.

Planning and Design

It is the policy of the Board of Transportation that bicycle facility planning be included in the state thoroughfare and project planning process.

1. The intent to include planning for bicycle facilities within new highway construction and improvement projects is to be noted in the Transportation Improvement Program.
2. During the thoroughfare planning process, bicycle usage shall be presumed to exist along certain corridors (e.g., between residential developments, schools, businesses and recreational areas). Within the project planning process, each project shall have a documented finding with regard to existing or future bicycling needs. In order to use available funds efficiently, each finding shall include measures of cost-effectiveness and safety-effectiveness of any proposed bicycle facility.

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NCDOT Bicycle Policy

Appendix 6 – NCDOT Bicycle Policy (pg. 2)



- 3. If bicycle usage is shown likely to be significant, and it is not prohibited, and there are positive cost-effective and safety-effective findings; then, plans for and designs of highway construction projects along new corridors, and for improvement projects along existing highways, shall include provisions for bicycle facilities (e.g., bike routes, bike lanes, bike paths, paved shoulders, wide outside lanes, bike trails) and secondary bicycle facilities (traffic control, parking, information devices, etc.).
- 4. Federally funded new bridges, grade separated interchanges, tunnels, and viaducts, and their improvements, shall be designed to provide safe access to bicycles, pursuant to the policies of the Federal Highway Administration.
- 5. Barriers to existing bicycling shall be avoided in the planning and design of highway projects.
- 6. Although separate bicycle facilities (e.g., bike paths, bike trails) are useful under some conditions and can have great value for exclusively recreational purposes, incorporation of on road bicycle facilities (e.g., bicycle lanes, paved shoulders) in highway projects are preferred for safety reasons over separate bicycle facilities parallel to major roadways. Secondary complementary bicycle facilities (e.g., traffic control, parking, information devices, etc.) should be designed to be within highway rights-of-way.
- 7. Technical assistance shall be provided in the planning and design of alternative transportation uses, including bicycling, for abandoned railroad rights-of way. This assistance would be pursuant to the National Trails act Amendment of 1983, and the resultant national Rails to Trails program, as will the Railway Revitalization Act of 1975.
- 8. Wherever appropriate, bicycle facilities shall be integrated into the study, planning, design, and implementation of state funded transportation projects involving air, rail, and marine transportation, and public parking facilities.
- 9. The development of new and improved bicycle control and information signs is encouraged for the increased safety of all highway users.
- 10. The development of bicycle demonstration projects which foster innovations in planning, design, construction, and maintenance is encouraged.
- 11. Paved shoulders shall be encouraged as appropriate along highways for the safety of all highway users, and should be designed to accommodate bicycle traffic.

Appendix 6 – NCDOT Bicycle Policy (pg. 3)



- 12. Environmental Documents/Planning Studies for transportation projects shall evaluate the potential use of the facility by bicyclists and determine whether special bicycle facility design is appropriate.
- 13. Local input and advice shall be sought, to the degree practicable, during the planning stage and in advance of the final design of roadway improvements to ensure appropriate consideration of bicycling needs, if significant.
- 14. On highways where bicycle facilities exist, (bike paths, bike lanes, bike routes, paved shoulders, wide curb lanes, etc.), new highway improvements shall be planned and implemented to maintain the level of existing safety for bicyclists.
- 15. Any new or improved highway project designed and constructed within a public-use transportation corridor with private funding shall include the same bicycle facility considerations as if the project had been funded with public funds. In private transportation projects (including parking facilities), where state funding or Department approval is not involved, the same guidelines and standards for providing bicycle facilities should be encouraged.

Construction

It is the policy of the Board of Transportation that all state and federally funded highway projects incorporating bicycle facility improvements shall be constructed in accordance with approved state and federal guidelines and standards.

- 1. Bicycle facilities shall be constructed, and bicycle compatibility shall be provided for, in accordance with adopted Design Guidelines for Bicycle Facilities and with guidelines of the American Association of State Highway and Transportation Officials.
- 2. Rumble strips (raised traffic bars), asphalt concrete dikes, reflectors, and other such surface alterations, where installed, shall be placed in a manner as not to present hazards to bicyclists where bicycle use exists or is likely to exist. Rumble strips shall not be extended across shoulder or other areas intended for bicycle travel.
- 3. During restriping operations, motor vehicle traffic lanes may be narrowed to allow for wider curb lanes.

Appendix 6 – NCDOT Bicycle Policy (pg. 4)



Maintenance

It is the policy of the Board of Transportation that the state highway system, including state-funded bicycle facilities, shall be maintained in a manner conducive to bicycle safety.

- 1. State and federally funded and built bicycle facilities within the state right-of-way are to be maintained to the same degree as the state highway system.
- 2. In the maintenance, repair, and resurfacing of highways, bridges, and other transportation facilities, and in the installation of utilities or other structures, nothing shall be done to diminish existing bicycle compatibility.
- 3. Rough road surfaces which are acceptable to motor vehicle traffic may be unsuitable for bicycle traffic, and special consideration may be necessary for highways with significant bicycle usage.
- 4. For any state-funded bicycle project not constructed on state right-of-way, a maintenance agreement stating that maintenance shall be the total responsibility of the local government sponsor shall be negotiated between the Department and the local government sponsor.
- 5. Pot-holes, edge erosion, debris, etc., are special problems for bicyclists, and their elimination should be a part of each Division's maintenance program. On identified bicycle facilities, the bike lanes and paths should be routinely swept and cleared of grass intrusion, undertaken within the discretion and capabilities of Division forces.

Operations

It is the policy of the Board of Transportation that operations and activities on the state highway system and bicycle facilities shall be conducted in a manner conducive to bicycle safety.

- 1. A bicyclist has the right to travel at a speed less than that of the normal motor vehicle traffic. In exercising this right, the bicyclist shall also be responsible to drive his/her vehicle safely, with due consideration to the rights of the other motor vehicle operators and bicyclists and in compliance with the motor vehicle laws of North Carolina.
- 2. On a case by case basis, the paved shoulders of those portions of the state's fully controlled access highways may be studied and considered as an exception for usage by bicyclists where adjacent highways do not exist or are more dangerous for bicycling. Pursuant to federal highway policy, usage by bicyclists must receive prior approval by the Board of Transportation for each specific segment for which such usage is deemed appropriate, and those segments shall be appropriately signed for that usage.

Appendix 6 – NCDOT Bicycle Policy (pg. 5)



- 3. State, county, and local law enforcement agencies are encouraged to provide specific training for law enforcement personnel with regard to bicycling.
- 4. The use of approved safety helmets by all bicyclists is encouraged.

Education

It is the policy of the Board of Transportation that education of both motorists and bicyclists, regarding the rights and responsibilities of bicycle riders, shall be an integral part of the Department's Bicycle Program. School systems are encouraged to conduct bicycle safety education programs as a part of and in addition to the driver's education program, to the maximum extent practicable, and in conjunction with safety efforts through the Governor's Highway Safety Program. The Division of Motor Vehicles is also urged to include bicycle safety and user information in its motor vehicle safety publications.

Parking

It is the policy of the Board of Transportation that secure and adequate bicycle parking facilities shall be provided wherever practicable and warranted in the design and construction of all state-funded buildings, parks, and recreational facilities.

Appendix 7 – NCDOT Bicycle Racing Guidelines



BICYCLE RACING GUIDELINES

Legislation passed in 1977 by the North Carolina General Assembly requires that all bicycle races involving state and local roads must be authorized by designated state and local authorities:
North Carolina General Statute (GS) 20-171.2 reads as follows:

Bicycle Racing

a. Bicycle racing on the highways is prohibited except as authorized in this section. b. Bicycle racing on a highway shall not be unlawful when a racing event has been approved by State or local authorities on any highway under their respective jurisdictions. Approval of bicycle highway racing events shall be granted only under conditions which assure reasonable safety for all race participants, spectators and other highway users, and which prevent unreasonable interference with traffic flow which would seriously inconvenience other highway users. c. By agreement with the approving authority, participants in an approved bicycle highway racing event may be exempted from compliance with any traffic laws otherwise applicable thereto, provided that traffic control is adequate to assure the safety of all highway users. The North Carolina Department of Transportation has worked with the North Carolina State Highway Patrol and North Carolina representatives of the United States Cycling Federation to develop the following guidelines for bicycle racing on public roads.

Explanation of GS 20-171.2(b) and Guidelines for Bicycle Races in NC

The authorities who can approve racing events are local governing bodies and/or the NC Department of Transportation. These authorities will seek the advice of law enforcement agencies since the safety of all road users is affected. Approval for a racing event will be granted when plans for that event have been received and found satisfactory by the appropriate authorities. Reasonable safety implies that the racers, spectators, and other highway users have been accommodated so as not to place one in conflict with another. Racers must have a well-defined course to follow as well as specifications as to where on the highway they are to ride and where not. Special attention should be given to the volume of normal auto traffic and road conditions. Details of race format must be clear and easily understandable by everyone. Disqualification of race rule-breakers and stragglers, if applicable, must be clarified. Plans must include provisions for spectators, with special areas noted where congregation will occur. The other highway users are of most concern. If the racecourse is totally closed, what type of race does this entail? How will the closing be enforced? How long will the race last? Are alternate routes for non-race traffic suggested? If the race is open or partially open to other traffic, how is this traffic controlled and what safety guarantees are provided for both racers and non-racers?

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Prevention of unreasonable interference with the traffic flow indicates that a small volume of traffic is involved with the race route; that a short period of time is taken for the race; that alternate traffic routes are provided for and that traffic is directed to these alternatives; that ease of other traffic flow along with the conduct of the race is provided for; and/or no major business services of traffic generated are affected by the race course.

Explanation of GS 20-171.2(c)

If all prior safety measures have been provided for and approved, specific traffic controls enforceable under the law (stop signs, traffic signals, etc.) may be waived, where necessary to the operation of the race, acceptable by the approving authority, and enforced by adequate traffic controls or personnel.

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