Thomas Jefferson
Planning District Commission

Bike Route 76 Corridor Study

September, 2015

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Introduction

In 2012, the Thomas Jefferson Planning District Commission (TJPDC), also known as Region 10, started an initiative to study, promote and improve its portion of U.S. Bicycling Route 76 (BR 76). This report is the first step in this initiative, creating an inventory of existing conditions and highlighting recommendations for improving the safety and recreational value of the Route.

Figure 1: TJPDC's Bike Route 76 Initiative

Purpose and Audience

This report is a technical document, intended to highlight roadway deficiencies that diminish cycling safety along BR 76, in Region 10. As a technical document, the intended audience includes regional and state transportation planners, along with cycling advocates. This report is intended to document cycling compatibility, with a secondary goal of recording cycling amenities and tourist destinations.

This report may also serve as a guide to local officials, to aid in decision-making for transportation-related investments. Since BR 76 is also a recreational and tourist amenity, this report may also be helpful for identifying strategies for supporting tourism efforts.

Goals and Objectives

This report is intended to fulfill four main goals:

Goal A: Inventory Road Conditions

Inventory all roadway conditions along the Region 10 portion of BR 76.

Goal B: Safety Recommendations

Develop recommendations for improving overall cycling compatibility along the corridor.

Goal C: Recreational Value

Identify strategies for improving the recreational experience along BR 76.

Goal D: Data Collection

Collect data and develop maps that will assist with subsequent efforts to promote BR 76.

U.S. Bicycling Route 76

U.S. Bicycling Route 76 is an on-road Bike Route that spans the eastern half of the Country, from Missouri to eastern Virginia, in Yorktown. The concept for BR 76 originated with a large cycling event in 1976, which celebrated the Country's bicentennial. As part of the event, the Adventure Cycling Association (at that time known as Bikecentennial) first mapped a cross-country bike route named the TransAmerican Bicycle Trail. That trail still exists today and stretches from Oregon to Virginia, spanning approximately 4,242 miles from coast to coast. While the Adventure Cycling Association acts as overseer to this trail, there were no official bike route designations until 1982.

In 1978, the American Association of State Highway and Transportation Officials (AASHTO) established the U.S. Bicycling Route System (USBRS), the cycling equivalent to the numbering system for highways and interstates. The purpose of these route numberings and markings is to facilitate recreational riding between states, by way of roadways that are reasonably suitable for bicycling. While U.S. Bike Routes include off-road paths, the vast majority of route mileage consists of on-road facilities (public highways).

In 1982, AASHTO designated the first two U.S. Bicycling Routes (Routes 1 and 76), both of which pass through Virginia. This made the Commonwealth one of the first states with a USBR and the first with two routes. In recent years, AASHTO approved additional Bike Routes and there are more under review. At this time, there are over 6,200 miles of approved Bike Routes, spanning 12 states.

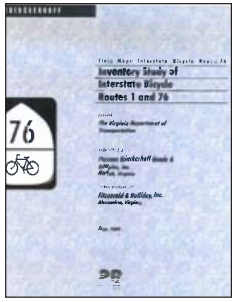
TransAmerican Trail - Courtesy Adventure Cycling Assocation

Route 76 and Route 1 Bike Routes in Virginia

There is common confusion between BR 76 and the TransAmerican Trail. While the TransAmerican Trail spans the entire country, AASHTO officially designated only the eastern portion of that trail (Missouri to Virginia) as BR 76. While the USBR and TransAmerican Trail are related and overlap in most cases, there are areas where these routes diverge.

Bicycling Route 76 in Virginia

In Virginia, BR 76 accounts for 559 miles of roadways, from the Cumberland Plateau and Appalachian Mountains to the lowlands of Hampton Roads. Along its path, BR 76 traverses 23 counties, including: Dickenson, Buchanan, Russell, Washington, Smyth, Grayson, Wythe, Pulaski, Montgomery, Roanoke, Botetourt, Rockbridge, Augusta, Nelson, Albemarle, Fluvanna, Goochland, Louisa, Hanover (overlaps with U.S. Bicycling Route 1), Henrico, Charles City, James City, and York. The Bike Route also passes through four of Virginia's cities: Radford, Lexington, Charlottesville, and Williamsburg – before the eastern terminus at Yorktown.



Across the Commonwealth, there have been several studies and initiatives to improve BR 76. In 1999, VDOT completed the Inventory Study of Interstate Bicycle Routes 1 and 76. This study provided a general snapshot of existing conditions along the entire length of both bike routes in Virginia. In 2012, the Department of Conservation and Recreation (DCR) and Virginia Department of Transportation (VDOT) released the Official State Bicycle Map: Bicycling in Virginia, which featured BR 76. The map included information on public destinations along the Route, along with road profiles that illustrated changes in topography.

Project Study Area

The study area of this report includes all sections of BR 76 in Region 10, including small portions in Augusta and Goochland Counties. Within the TJPDC boundaries, BR 76 accounts for over 135 miles of roadway that include:

Nelson County
Route 48: Blue Ridge Parkway
Route 250: Rockfish Gap Turnpike
Route 6: Afton Mountain Road
Route 750: Old Turnpike Road
(See Map 2)

Western Albemarle County
Route 750: Old Turnpike Road
Route 250: Rockfish Gap Turnpike
Route 796: Brooksville Road
Route 690: Newtown Road
Route 691: Greenwood Road
Route 691: Jarmans Gap Road
Route 684: Lanetown Road
Route 788: Railroad Avenue
Route 789: Buck Road
Route 810: White Hall Road
Route 614: Garth Road
Route 676: Garth Road
Route 601: Garth Road
Route 601: Old Garth Road
Route 601: Old Ivy Road
(See Map 3)

Charlottesville
Route 250: Ivy Road
Route 250: University Avenue
Route 250: West Main Street
Route 652: Water Street
Route 3413: Second Street SE
Route 620: Garrett Street
Route 20: Avon Street
Route 20: Monticello Avenue

Eastern Albemarle County
Route 20: Scottsville Road
Route 53: Thomas Jefferson Parkway
Route 795: James Monroe Parkway
Route 620: Rolling Road
Route 619: Ruritan Lake Road
(See Map 4)

Fluvanna
Route 619: Ruritan Lake Road
Route 660: Ruritan Lake Road
Route 53: Thomas Jefferson Parkway
Route 15: James Madison Highway
Route 601: Courthouse House
Route 608: Wilmington Road
Route 601: Venable Road
Route 603: Tabscott Road
Enter Goochland County
(See Map 5)

Louisa
Enter Goochland County
Route 605: Shannon Hill Road
Route 605: Willis Proffitt Road
Route 522: Pendleton Road
Route 522: Mineral Avenue
Route 522: East 1st Street
Route 618: East 1st Street
Route 618: Fredericks Hall Road
Route 700: Johnson Road
Route 652: Kentucky Springs Road
Route 650: Pottiesville Road
Route 618: Fredericks Hall Road
Route 618: Belsches Road
(See Map 6)

Since AASHTO established BR 76 in 1982, traffic conditions along these roadways have changed significant. In the past 33 years, traffic counts have continued to increase, while roadway dimensions remained unchanged in many areas. Consequently, there are several dangerous corridors in this Region as seen throughout this report.

Process

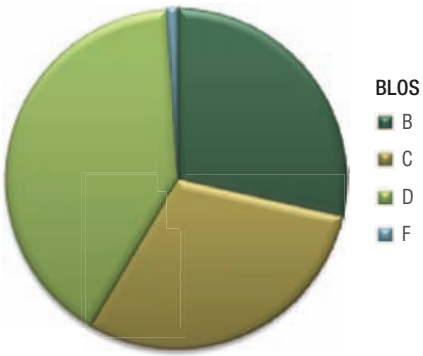
In 2012, the TJPDC proposed an initiative to study, promote and improve its portion of BR 76. This work fell under the TJPDC's Transportation Programs, which are funded annually by VDOT. Since most of the study area is within the region's rural boundaries, TJPDC staff designated its Rural Technical Advisory Committee (RTAC) as the Project Steering Committee for this report. The Committee's first meeting on the corridor study took place in November of 2013, with follow-up meetings every other month. The Committee reviewed draft documents and provided guidance on subsequent phases of the overall BR 76 initiative.

At the beginning of 2014, the TJPDC established an online presence for the project. Staff developed a project website that included drafts of deliverables, agendas and minutes from the Steering Committee. The site also provided opportunities for public comment. In March, staff created a Facebook® page for the study, as another tool for collecting feedback and distributing information. By the end of March, the TJPDC began an outreach effort to engage local bicycle shops, clubs and advocates from across the region. Staff conducted several one-on-one interviews with those in the local cycling community. In April, staff developed an online survey that helped gather detailed input from riders, which included questions on how to improve cycling safety. TJPDC staff worked with bike clubs to distribute the online survey to the cycling community.

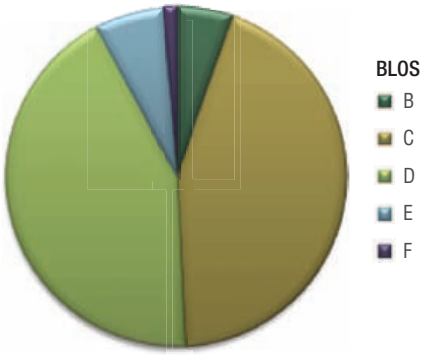
TJPDC staff attended additional cycling meetings to discuss the Corridor Study and collect feedback. In May of 2014, staff made a presentation to the Charlottesville/Albemarle Bicycle Advisory Committee and held a lengthy discussion on the project. Starting that month, staff began to participate in meetings held by the Charlottesville/Albemarle Visitor's Bureau, to discuss promotion of BR 76.

In the summer of 2014, the TJPDC assembled a Bicycle Technical Committee, consisting of cycling experts from around the region, along with a representative from the Virginia Bicycling Federation and VDOT. The group also included stakeholders from tourism groups.

Current BLOS by Mileage



2035 BLOS by Mileage



Methodology

TJPDC staff worked closely with VDOT on data collection and conducted multiple site visits of the study area. VDOT representatives provided their expertise on roadway conditions and cycling deficiencies along the corridor. The Statewide Planning System (SPS) data was critical for this analysis, providing roadway dimensions, traffic counts and Level of Service information. If any roadway data seemed inaccurate, staff would verify dimensions with site visits and measurements from aerial photography. The Bicycle Technical Committee was another valuable resource for data collection.

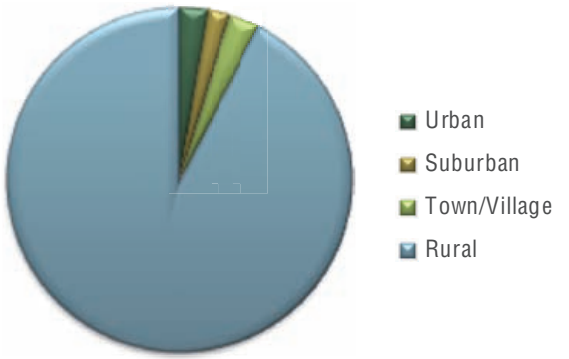
Bike Level of Service

Staff used a Bike Level of Service (BLOS) calculator from the League of Illinois Bicyclists (LIB), as recommended by VDOT, to calculate bike compatibility. The equation provided a general score of bike compatibility for a given roadway. The calculator requires inputs on 8 critical indicators, which included:

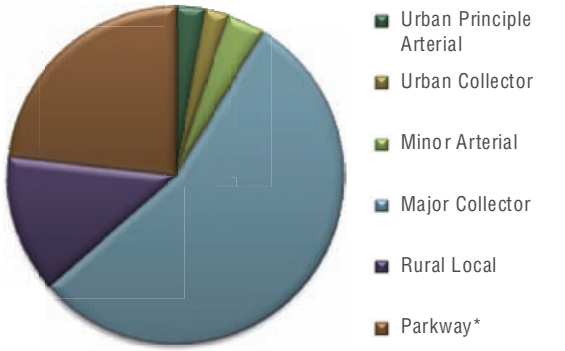
1. Number of through-lanes per direction: (Default = 1 feet)
2. Width of outside lane, to outside stripe, in feet: (Default = 12 feet)
3. Paved shoulder, bike lane, OR marked parking area - outside lane stripe to pavement edge, in feet: (Default=0 feet)
4. Bi-directional Traffic Volume in ADT: (Default = 4000 ADT)
5. Posted speed limit in mph: (Default = 30 mph)
6. Percentage of heavy vehicles: (Default = 2%)
7. FHWA's pavement condition rating: (5 = Best, 1 = Worst; Default = 4)
8. Percentage of road segment with occupied on-street parking: (Default = 0%)

http://www.bikelib.org/

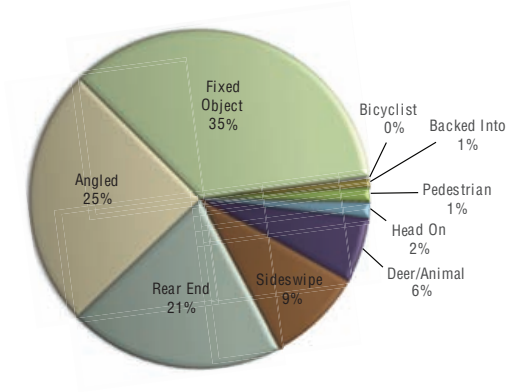
Road Mileage by Environment



Mileage by Road Classification



Traffic Accidents by Type (2005-2011)



The BLOS equation provided a score between 'A' and 'F'. According to LIB, a score of 'A' through 'C' indicated roadways that were compatible or "comfortable enough" for experienced cyclists. The worst score is an 'F', representing a roadway that is not compatible for cycling.

BLOS scores and definitions:
BLOS A: High Level of Bike Compatibility
BLOS B: Compatible
BLOS C: Moderate Compatibility
BLOS D: Moderately Low Compatibility
BLOS E: Low Bike Compatibility
BLOS F: Extremely Low Compatibility

Overview

Environments

Across the study area, a rural landscape frames BR 76. Over 93 percent of the Route is within this rural environment. The remaining 7 percent of road mileage passes through small villages, the Town of Mineral, suburban areas and the City of Charlottesville. Consequently, cycling safety is linked with the challenges of rural transportation: high travel speeds, poor sight-distances and curvy roadways. Conversely, rural environments typically translate into lower traffic counts, which is why AASHTO targets rural roadways from the USBRS.

Functional Classifications

Due to the rural nature of the study area, BR 76 consists mostly of rural road-types, including rural collectors and local roads. Those roadways typically have fewer traffic counts and serve more local traffic, rather than higher speed through traffic. Since relatively small portions of the route are in urbanized areas, there are few urban roadway classifications in the study area.

Crash Data

The environments and roadway functions influence the types of safety issues along the corridor. Traffic accident data for the study area reveals that many accidents involve off-road collisions with fixed objects. This may be the result of narrow travel lanes on rural highways, a condition that can be particular hazardous to cyclists, since riders travel along the road's edge. The roadways of BR 76 also experience several angled collisions and sideswipes at intersections, which are where most cycling-related crashes occur. A positive from the crash data is the lack of collisions between motorists and bicyclists. The only bike-related crashes are in the City of Charlottesville, where vehicular and bike traffic is high. There may be bike-related crashes in the rural areas, but recording is generally less accurate.

Bike Level of Service (BLOS)

Using the LIB equations, TJPDC staff calculated the BLOS for all roadways along the Region 10 portion of BR 76. This report provides a detailed description of the scores for all roadways in the study area. Overall, approximately 42% of road mileage in the study area is incompatible for cycling (BLOS D-F).

VDOT's traffic forecasts show significant increases in Annual Average Daily Trips (AADT) along the corridor, for 2035. Without highway improvements to address cycling and road safety, the bike compatibility of BR 76 will noticeably decline. By 2035, 51% of the Bike Route will be incompatible for cycling. Additionally, there would also be a 24% decrease in road miles scoring a BLOS B.

Traffic Counts

The BLOS results are tied to the roadway geometries and traffic counts. While traffic heavily influences bike compatibility, Chart 1 implies that there are other factors involved as well.

Countywide Overview

Nelson County

In Nelson County, BR 76 accounts for over 32 miles of roadway, primarily along the Blue Ridge Parkway (Map 1). In terms of cycling safety, there are several locations with limited sight-lines, particularly the areas referenced in Map 2. The Nelson County map also illustrates the various overlooks along the Parkway and proximity to destinations, such as Wintergreen Resort and wineries. There is a short section of BR 76 on US 250, in the Afton area. This roadway is one of the most dangerous in the corridor and scored an 'F' on the BLOS calculations.

Western Albemarle County

The western side of Albemarle County is home to some of the most valued scenic vistas on BR 76, along with several tourist destinations. In terms of safety, the over 26 miles of BR 76 also presents frequent cycling hazards. Map 3illustrates the various safety deficiencies, involving sight-distances, uneven road surfaces, dangerous intersections and guardrails.

City of Charlottesville

While the study area consists mostly of rural roadways, the streets in Charlottesville present a unique experience for cyclists. On the City's 3.5 mile section, riders have access to numerous services and resources, as well as historic landmarks. Consequently, this corridor can serve as a destination for most cyclists.

Additionally, the League of American Bicyclists identified Charlottesville as a Silver Level, Bicycle Friendly City. This is the highest rated locality on the Virginia portion of BR 76, whereas Williamsburg, Richmond, and Roanoke received Bronze ratings.

Eastern Albemarle County

In the eastern half of Albemarle County, BR 76 meanders 13 miles, between the City of Charlottesville and Fluvanna County. The curvy roadway creates several deficiencies with sight-distances, as seen in Map 4. In terms of recreation and tourism, this area has some of the most desirable destinations, with the homes of two presidents and proximity to local wineries.

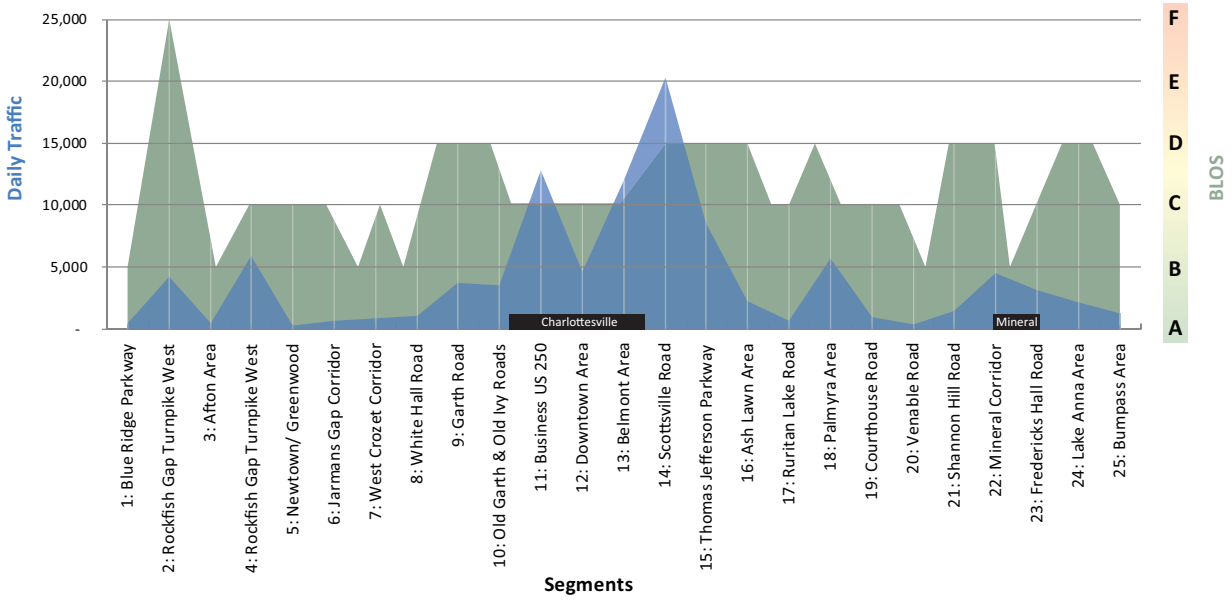
Fluvanna County

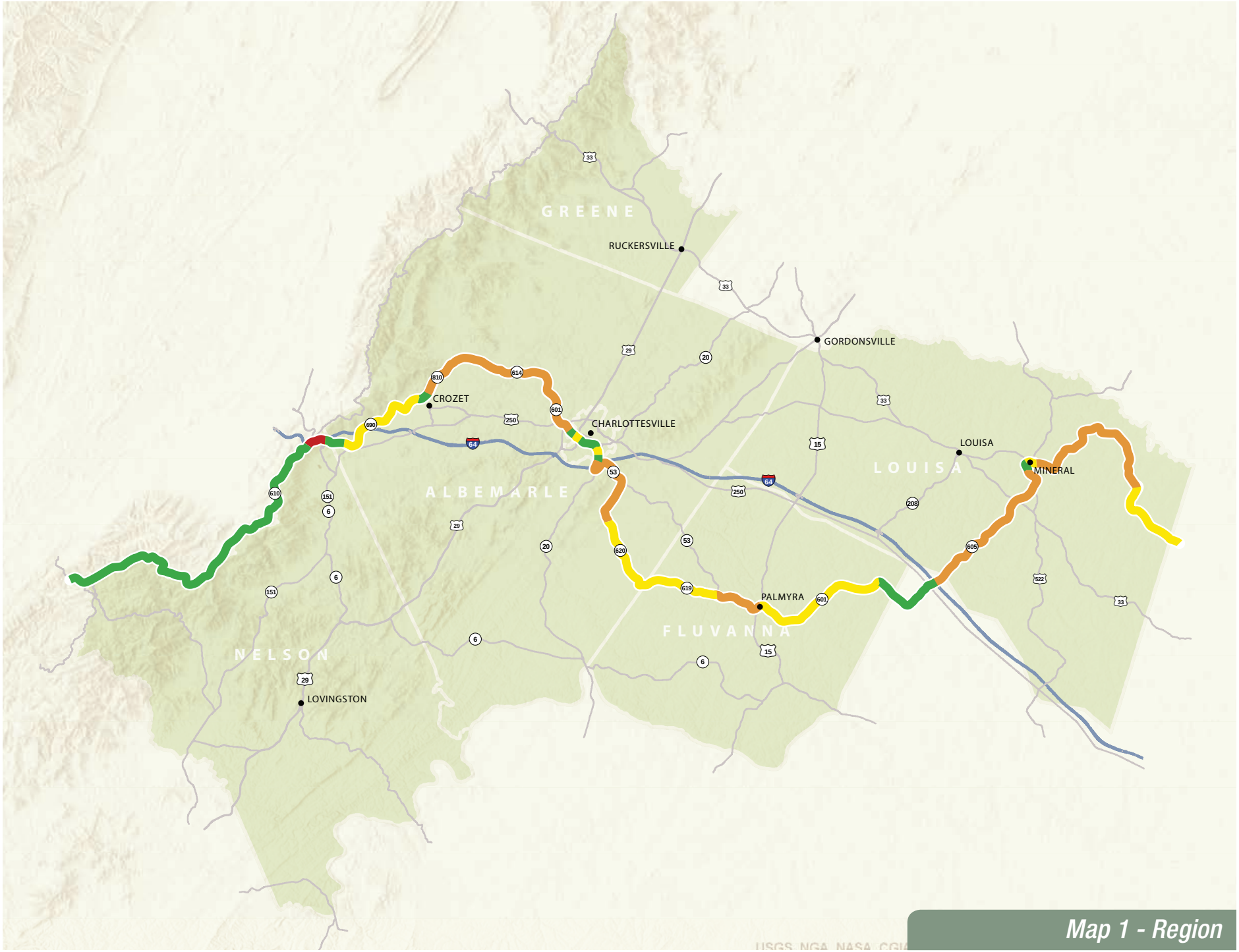
In Fluvanna County, BR 76 passes through the Village of Palmyra and several small crossroads. The route accounts for over 23 miles of roadway. Most cycling hazards involve sight-distances and guardrails. Refer to Map 5.

Louisa County

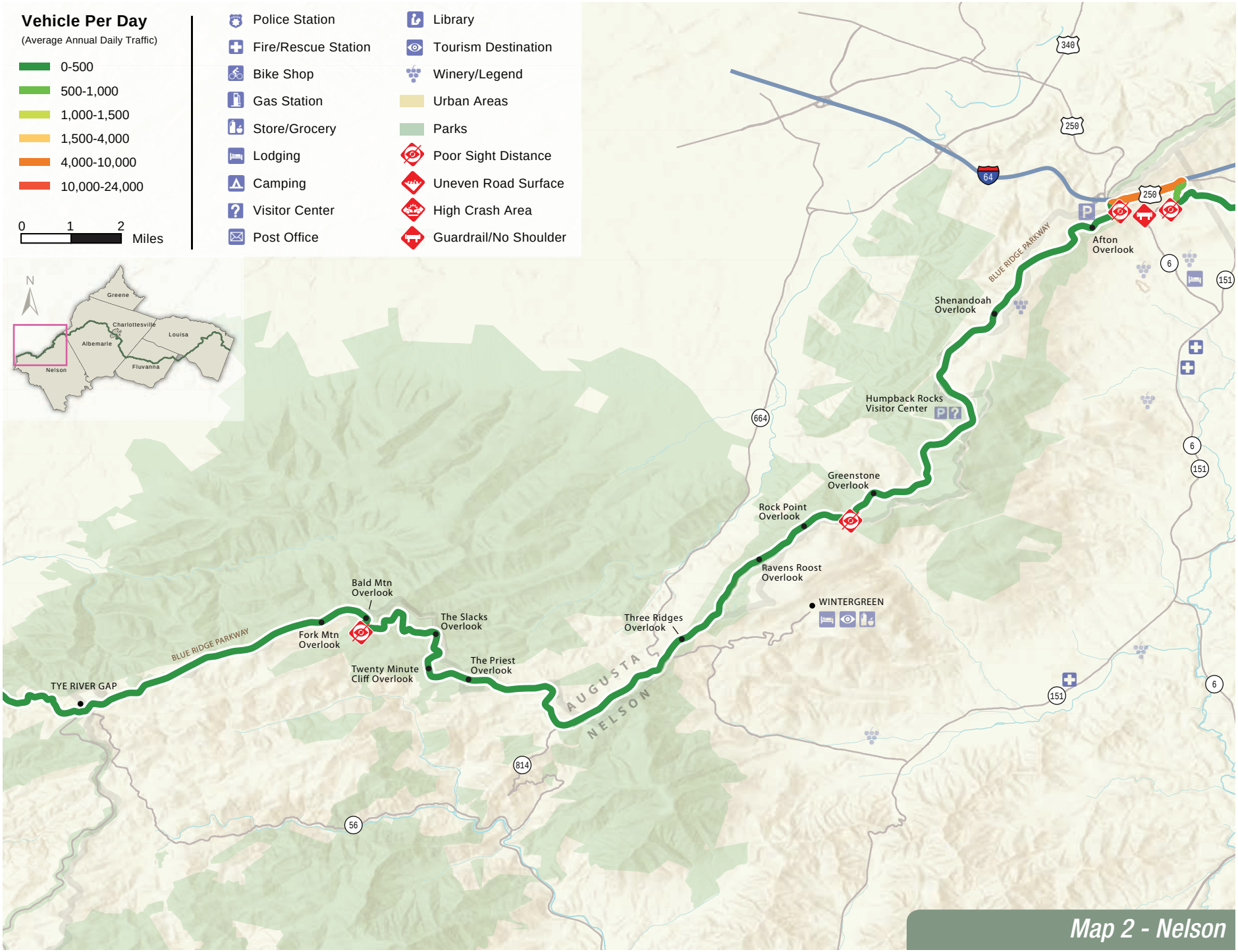
There are nearly 35 miles of BR 76 in Louisa County, passing through the only incorporated town along the study area. In Louisa County, the most common road hazards are narrow roadways with guardrails. Refer to Map 6.

Annual Average Daily Traffic (AADT) and Bike Level of Service (BLOS) by Roadway Segments



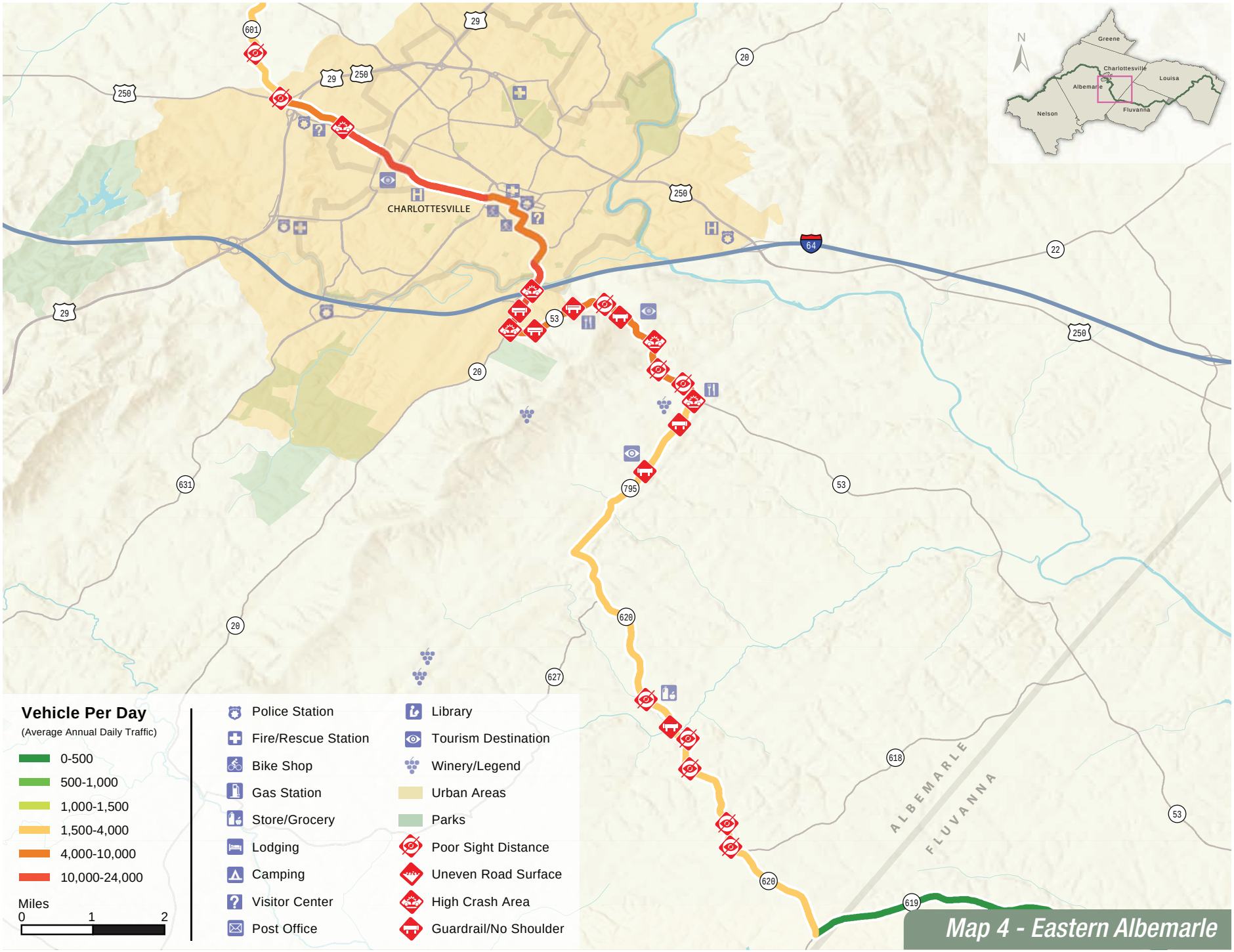

GREENE
RUCKERSVILLE
GORDONSVILLE
CROZET
CHARLOTTESVILLE
LOUISA
MINERAL
ALBEMARLE
LOUISA
PALMYRA
FLUVANNA
NELSON
LOVINGSTON
USGS, NGA, NASA, CGIA

Map 1 - Region

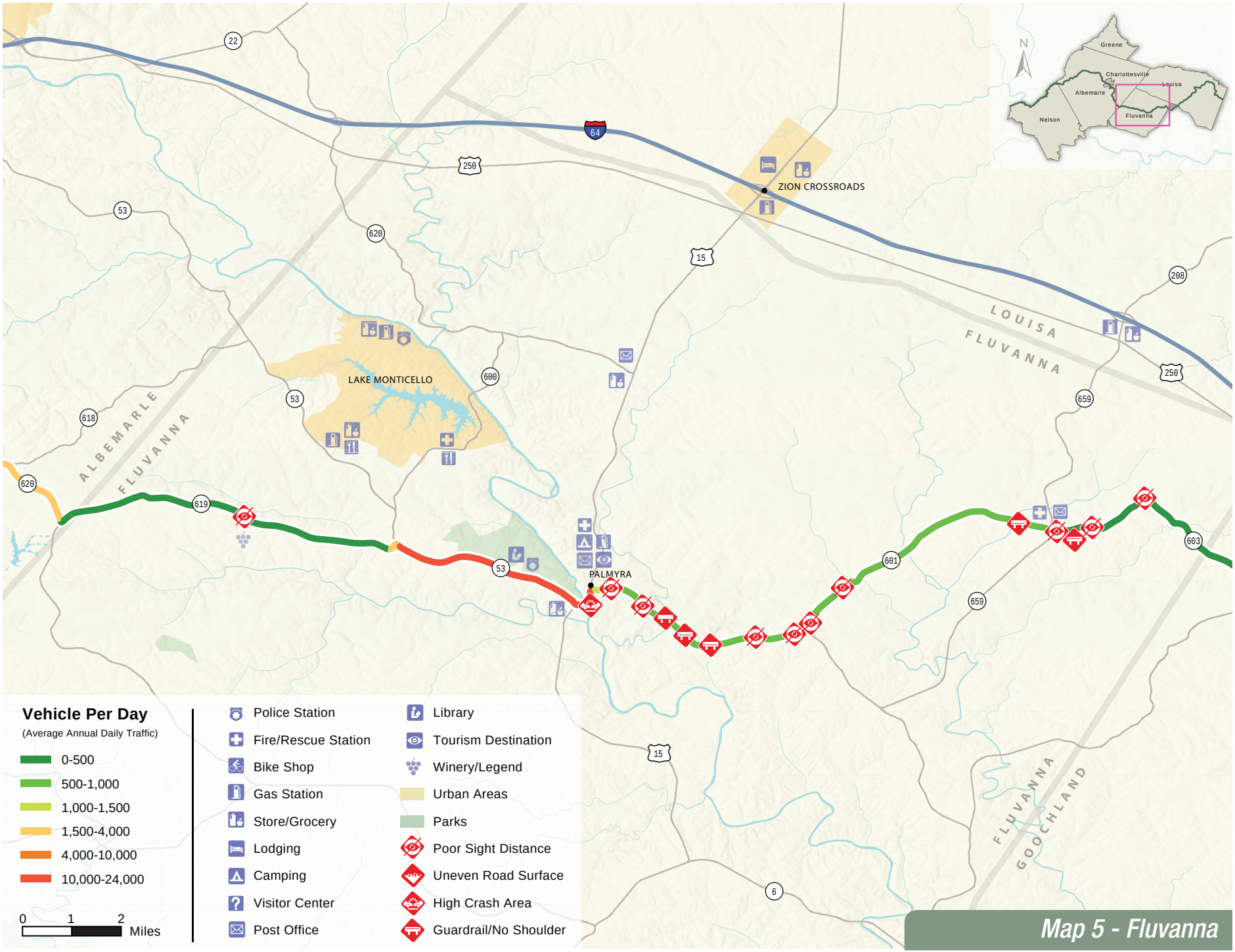

Vehicle Per Day
(Average Annual Daily Traffic)
0-500
500-1,000
1,000-1,500
1,500-4,000
4,000-10,000
10,000-24,000
0 1 2 Miles
Police Station
Fire/Rescue Station
Bike Shop
Gas Station
Store/Grocery
Lodging
Camping
Visitor Center
Post Office
Library
Tourism Destination
Winery/Legend
Urban Areas
Parks
Poor Sight Distance
Uneven Road Surface
High Crash Area
Guardrail/No Shoulder
N
Greene
Charlottesville
Albemarle
Louisa
Nelson
Fluvanna
BLUE RIDGE PARKWAY
TYE RIVER GAP
Fork Mtn Overlook
Bald Mtn Overlook
The Slacks Overlook
Twenty Minute Cliff Overlook
The Priest Overlook
Three Ridges Overlook
Ravens Roost Overlook
Rock Point Overlook
Greenstone Overlook
Humpback Rocks Visitor Center
Shenandoah Overlook
Afton Overlook
WINTERGREEN
AUGUSTA
NELSON
340
250
64
664
814
56
6
151

Map 2 - Nelson

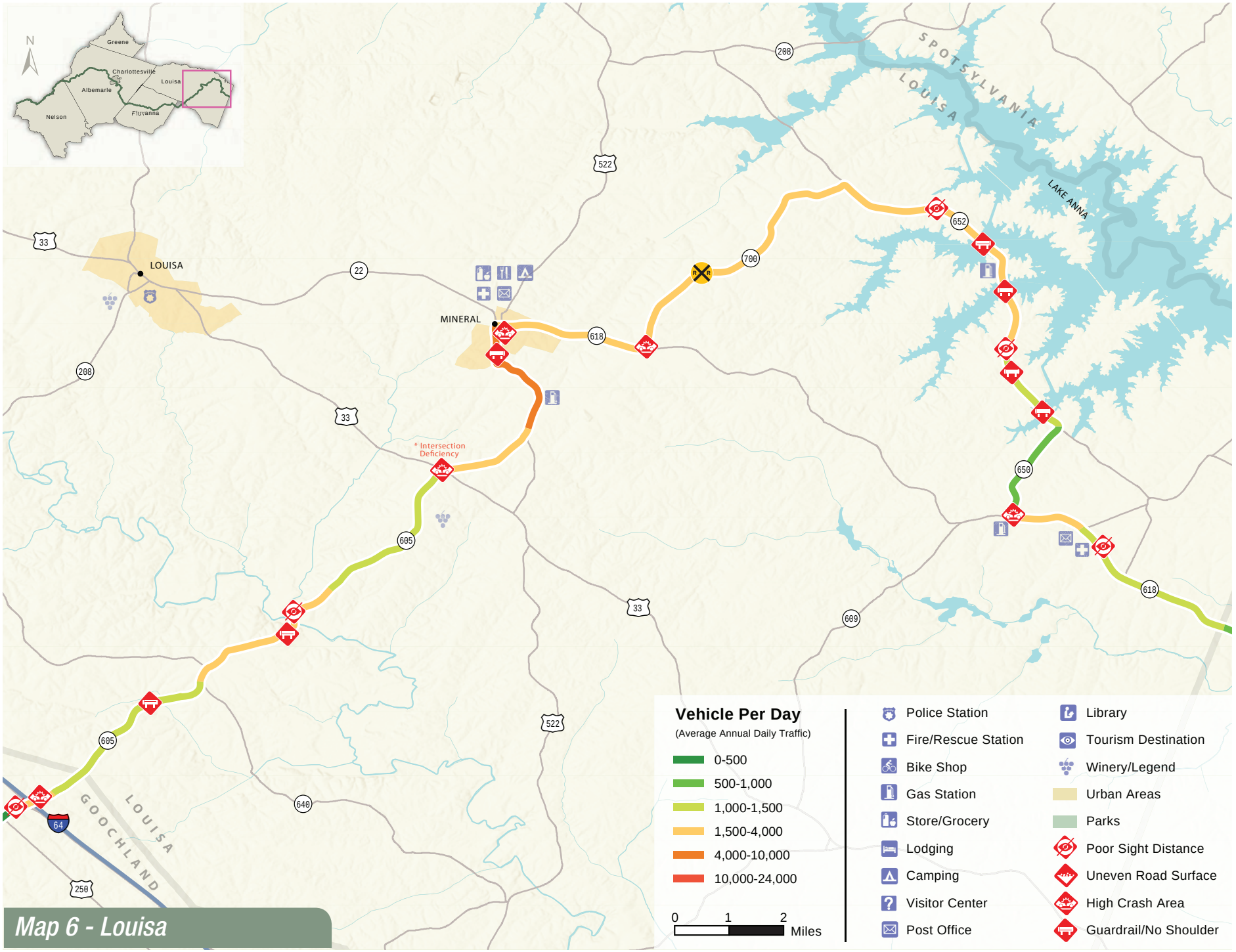
Map 3 - Western Albemarle



Map 4 - Eastern Albemarle



Map 5 - Fluvanna


N
Greene
Charlottesville
Albemarle
Louisa
Nelson
Fluvanna
LOUISA
MINERAL
SPOTSYLVANIA
LOUISA
LAKE ANNA
* Intersection Deficiency
GOOCHLAND
LOUISA
Vehicle Per Day
(Average Annual Daily Traffic)
0-500
500-1,000
1,000-1,500
1,500-4,000
4,000-10,000
10,000-24,000
0 1 2
Miles
Police Station
Fire/Rescue Station
Bike Shop
Gas Station
Store/Grocery
Lodging
Camping
Visitor Center
Post Office
Library
Tourism Destination
Winery/Legend
Urban Areas
Parks
Poor Sight Distance
Uneven Road Surface
High Crash Area
Guardrail/No Shoulder

Map 6 - Louisa

Segment Corridors

The following segments are the main deliverables of this report, providing a detailed inventory of all road, traffic and recreational conditions along this portion of BR 76. This existing conditions inventory is divided into 25 segments, or sub-corridor studies.* Each segment includes roadways that are grouped together based on functional classifications, road dimensions and general corridor characteristics. The goal is to have concise but comprehensive assessments for every segment of BR 76 in the region. Each segment functions as its own mini-plan, with a detailed inventory, assessments and recommendations. Stakeholders can refer to a given segment to find information and recommendations on these targeted areas.

In every segment, there are six (6) sections, to provide an overview of the cycling conditions and recreational value of each corridor. These sub-headings cover:

- Segment characteristics,
- Road features,
- Traffic conditions,
- Recreational,
- Cycling Assessment, and
- Recommendations.

** Customized versions of this report were created for each of the five localities in the study area. This version may not include all 25 segments.*

Segment Characteristics

Each segment begins with a general description of the corridor. This includes an overview of the roadway designations and adjacent land uses, along with feedback from local cyclists.

Environment

Roadways are classified as either rural or urban, based on VDOT and AASHTO definitions. These classifications determine whether AASHTO's rural or urban cycling standards should be applied to the corridor (Refer to Appendix).

Functional Classification System

The functional classification system identifies the function and design of roadways. For the purposes of this report, these classifications help to highlight how motorists use the roadways and whether the corridor is intended to serve high-speed, through-traffic or low-speed, local trips. The categories include:

- Urban principal arterial
- Urban minor arterial
- Urban collector
- Urban local
- Rural principal arterial
- Rural minor arterial
- Rural major collector
- Rural minor collector
- Rural local

(Refer to Glossary)

Roadways

A list of roadways helps to define the boundaries of each segment. This list includes mileage to communicate the length of each corridor. Please note that the distances are measured in road-miles, not lane-miles.

Land Uses

Land use is a critical component to transportation and can heavily influence recreational cycling. Consequently, the segments include a description of the land uses along each corridor. (For a more detailed look at existing land uses, refer to the appendix).

Public Comments

While local cyclists are aware of BR 76, many do not intentionally target their rides for those roadways. Instead, local riders pick unofficial routes that provide the safest and most satisfying rides. At the same time, local riders will know the existing roadway and traffic conditions better than out-of-town riders. Consequently, feedback from locals was critical to the review of existing conditions.

Road Features

The assessment of road features is the first of two sections that identify bike compatibility of each road section Roadway widths and geometrics are critical considerations for cycling.

Road Sections

Road widths are the simplest and fundamental aspect of roadway geometries. Under each segment, there are detailed measurements of the travel lanes and shoulders. Each segment also includes assessments of existing bike facilities. While shared use lanes are the most common facility along BR 76, there are also bike lanes, wide shoulders, and wide outside lanes. (Refer to Glossary.)

Bike Signage

Signage can direct cyclists along the Bike Route; provide information or warnings to riders; and, inform motorists of areas with heavy bike traffic. In each segment, there is a count of all bike-related signs that are currently in the corridor.

Featured Intersections

Intersections are the most dangerous places for cyclists and are where most bike-related accidents occur. Due to this importance, each segment includes a list of intersections in the corridor. The text includes a brief description of the intersections and identifies any apparent deficiencies.

Sight Distance

Particularly on rural roads, sight-lines can be fundamental to cycling safety. Under each segment, there is an overview of sight distances throughout the featured roadways.

Additional Road Hazards

In certain segments, there are additional road hazards that do not fall under a specific section heading. The report identifies any of these additional hazards, road surfaces, guardrails, or dangerous curves.

Planned Road Improvements

The segments include lists of any existing recommendations, projects, assessments or studies that may influence road conditions on BR 76. In many cases, existing recommendations will benefit cycling safety. These findings help to feed into the action items of this study, guiding VDOT and other stakeholders to give priority to projects along BR 76.

Traffic Conditions

The traffic conditions assessment is the second part to the equation for bike compatibility. Traffic flow is one of the most important characteristics that affect cycling safety.

Traffic Counts

The ADT data in this report originates from VDOT's 2012 traffic counts. The segments also include 20-year forecasts from VDOT, to anticipate future traffic volumes. These future counts help to prioritize roadway improvements and determine whether portions of BR 76 should be rerouted to lower volume roads.

Truck Traffic

The amount of truck traffic can greatly influence bike compatibility. Truck blast occurs when heavy vehicles generate high winds that can blow cyclists off-balance. Other than safety, heavy vehicles can also diminish overall comfort for riders. The truck traffic assessment is expressed as a percentage of total ADT, as seen in the sub-headings.

Travel Speeds

The segments include inventories on the posted speed limits. Due to traffic congestion and road conditions, the actual travel speeds may be lower or higher than what is posted. Consequently, the segments include estimates of those actual speeds.

Level of Service

The Level of Service (LOS) serves as a congestion standard for roadways (refer to glossary). The existing LOS data originates from VDOT's 2012 records. The segments also include VDOT forecasts for the year 2035.

Traffic Accidents

Crash data is a key indicator of general roadway safety, especially if the accidents involve cyclists. VDOT provided crash data, for the years 2005 to 2011. In each segment, there is an analysis that shows a breakdown of crash types and locations.

Additional Traffic Hazards

This final section addresses any miscellaneous traffic hazards, such as distracted drivers, high levels of pedestrian and bus traffic or other traffic conditions that could endanger cyclists.

Recreational

Since BR 76 serves mostly recreational purposes, the location and quality of attractions is an important consideration. In each segment, there is an assessment of historic and scenic resources, tourist destinations, cycling services and resources, access points and terrain.

Historic Resources

Whether open to the public or visible from the roadway, historic resources can be an important part of recreational cycling. These resources give the Bike Route a unique character and allow cyclists to connect with the history of our region, state and nation. The Virginia Department of Historic Resources (VDHR) provided mapping data on the sites along the corridors.

Highway Markers

At the roadside, highway markers can be valuable resources, allowing visitors to pause and learn more about historic places and famous residents who lived in the area. The 25 segments include a list of any highway markers or historic plaques on or near the Route.

Scenic Resources

Scenic resources are difficult to measure but provide great value to recreational riding. While a corridor can be attractive to visitors, there may not be any identified vistas or views from the roadway. The segments indicate any official designation or scenic byways. There is also a short description of notable views.

Other Destinations

Other than historic sites, there may be other destinations that interest cyclists. These destinations could include wineries, orchards, parks, trails, small towns and other interesting places.

Cycling Services & Resources

For long distance riders, there is great interest in cycling services and resources. These amenities may include items such as: restrooms, food and water, air pumps, medical services, post offices and internet access, along with bike shops, information centers and lodging.

Access Points

Access is an important consideration for recreational cycling. While some cyclists attempt to complete BR 76 at once, others may break this ride into multiple trips. There are still others who may want to access BR 76 for a shorter rider, with no intention of completing other portions of the Route. In addition to short route cycling, long distance riders frequently have support and gear (SAG) vehicles that need short term parking, as cyclists often "leap frog" the SAG vehicle, taking turns driving. Each segment includes an inventory of these public parking areas.

Topography

In this region, cyclists experience frequent changes in topography, as the Route passes through the foothills and into the Blue Ridge Mountains. The segments include a cross-section of the terrain in each corridor, along with a brief description.

Cycling Assessment

The cycling assessment provides an overview of the inventory found in each segment corridor. This includes a score of bike compatibility and recreational value. The recreational assessment is less scientific, resulting in a general range of values from low to high. The recreational range is based on the presence and quality of destinations and amenities in the segment.

Recommendations

The recommendations section includes a preliminary list of actions that can improve cycling safety and experience in the segment corridors. A more thorough, in-depth list of recommendations is included in a consolidated project list, found at the back of the report.

Overview of Segments

To provide a quick reference of the conditions throughout the study area, the following matrix highlights the key indicators. This data feeds into the BLOS equations, to identify an overall bike compatibility rating. Since road and traffic conditions can vary within a segment, some BLOS scores may be displayed in a range. The 25 segments are listed in order, from west to east.

BLOS Key Indicators

	Segment	BLOS	Road Conditions		Traffic Conditions		
			Lane Widths (Feet)	Width of Shoulder/Bike Lane (Feet)	Annual Average Daily Trips (AADT)	Truck Traffic (% of AADT)	Posted Speed (MPH)
Rural	1: Blue Ridge Parkway	B*	10	None	440	0%	45
Rural	**2: Rockfish Gap Turnpike West**	**F**	10	0 – 2	8,450	7%	35 – 55
Rural	3: Afton Area	B – C*	8 – 11	0 – 2	435	1%	55 (NP)
Rural	4: Rockfish Gap Turnpike East	C	10 – 12	1 – 2	5,890	4%	55
Rural	5: Newtown/Greenwood	C	9	None	290	0%	55 (NP)
Rural	6: Jarmans Gap Corridor	C	8	None	635	1%	40
Rural	7: West Crozet Corridor	B – C	9	None	875	.5%	40
Rural	**8: White Hall Road**	**D**	9	.5	2,020	2%	45
Rural	**9: Garth Road**	**D**	9 – 10	0 – .5	3,700	1.5%	35 – 50, 45 (TR)
SU	**10: Old Garth & Old Ivy Roads**	**D**	9 – 11	0 – .5	3,495	1%	30
Urban	11: Business US 250	B – C	10 – 14	5 + 8(Parking)	12,850	2%	25 – 35
Urban	12: Downtown Area	B – C	9 – 12	8 (Parking)	4,625	3%	25
Urban	13: Belmont Area	B – C	10 – 12	8 (Parking)	12,000	2%	25 – 35
SU	**14: Scottsville Road**	**D**	12	0 – 12	20,345	2%	45
Rural	**15: Thomas Jefferson Parkway**	**D**	10	1 – 2	8,525	3%	45
Rural	**16: Ash Lawn Area**	C – **D**	10	None	2,200	1%	45 - 55
Rural	17: Ruritan Lake Road	C	9	None	600	0%	45
Rural	**18: Palmyra Area**	C – **D**	11	.5 – 10	5,650	8%	35 – 55
Rural	19: Courthouse Road	C	9	None	980	0%	40
Rural	20: Venable Road	B – C	9	None	385	0%	55
Rural	**21: Shannon Hill Road**	**D**	9 – 10	None	1,470	4%	45 – 50
Rural	**22: Mineral Corridor**	B – **D**	12	1 – 3	4,535	3.5%	25 – 55
Rural	**23: Fredericks Hall Road**	C – **D**	10	None	3,100	2%	25 – 45
Rural	**24: Lake Anna Area**	**D**	10	0 – 1	2,160	3%	55
Rural	25: Bumpass Area	C	9 – 10	None	1,255	1%	35 – (55) NP

*Other conditions may diminish BLOS; **SU** = Suburban; **NP** = Not Posted; **TR** = Trucks

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Segment A1:
Rockfish Gap Turnpike East

Albemarle County

Segment A1 evaluates the cycling environment on the eastern portion of US 250 (Rockfish Gap Turnpike). This half-mile segment of Rockfish Gap Turnpike passes along the border between Nelson and Albemarle counties, from VA 750 (Old Turnpike Road) to VA 796 (Brookville Road). While not ideal for cycling, this portion of US 250 serves as an important connection on BR 76, providing a brief passage through this busy highway.

Segment Characteristics

Rural Environment

- Minor Arterial
- Major Collector
- Primary Route

Roadway

» *Total Road Mileage: .6 Mile*

- US 250 (Rockfish Gap Turnpike) - .6 Mile

Land Uses

» *Rural*

This corridor consists of farms, pastures, and large residential estates. Overall, there are no significant traffic generators or destinations within this segment.

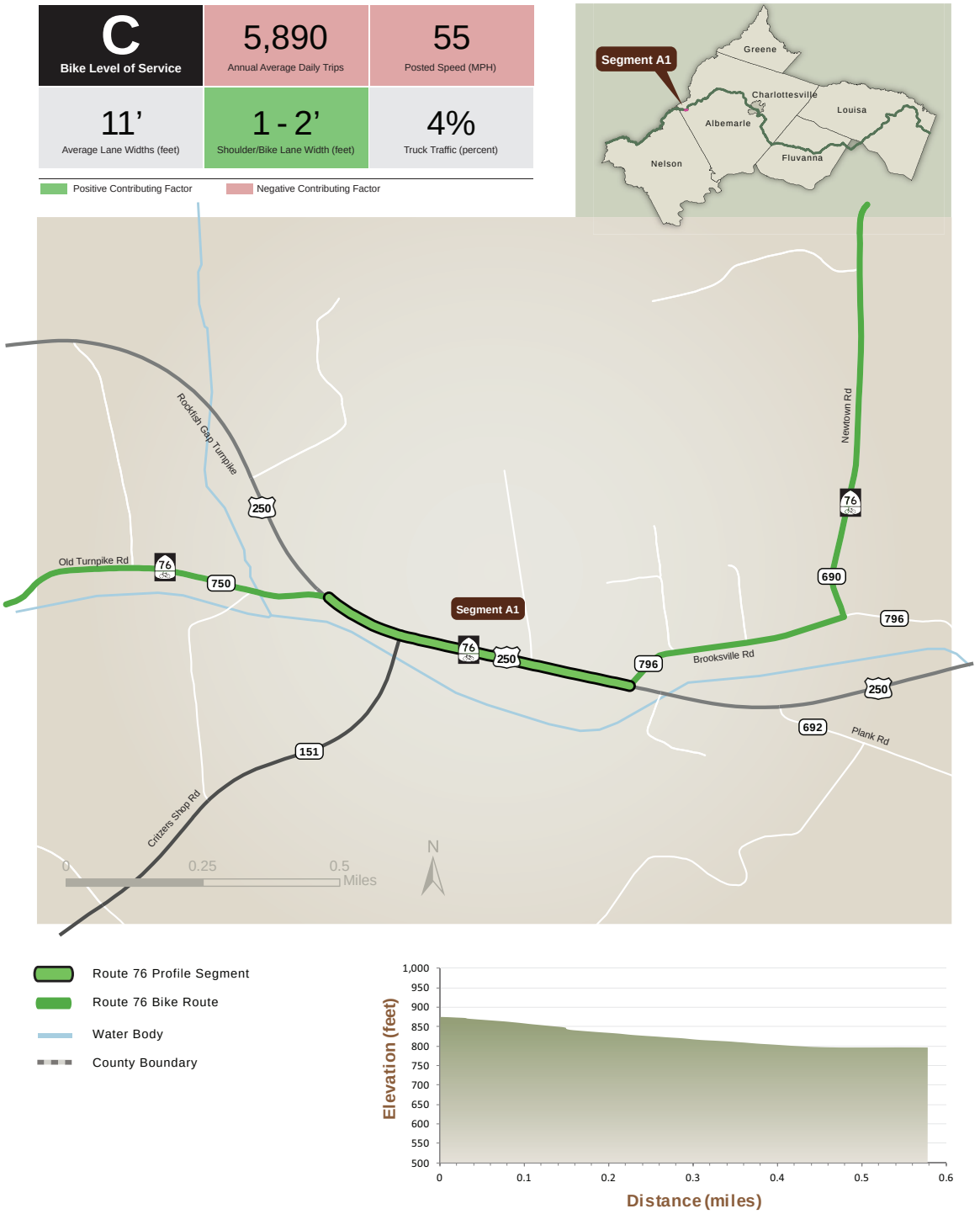
Public Comment

» *Safety Concerns*

Several local cyclists communicated concerns with Rockfish Valley Turnpike. Riders mentioned that the volume and speed of traffic were dangerous to cyclists. One respondent mentioned that shoulder improvements could address these concerns.

C Bike Level of Service	5,890 Annual Average Daily Trips	55 Posted Speed (MPH)
11’ Average Lane Widths (feet)	1 - 2’ Shoulder/Bike Lane Width (feet)	4% Truck Traffic (percent)

Positive Contributing Factor Negative Contributing Factor



Road Features

Road Sections

» *Rural Two-Lane/Two-Lane with Median*

The road section for this corridor varies. The roadway west of the US 151 intersection is a three (3)-lane configuration, consisting of two (2) travel lanes and a flush median. *(Figure 4-1).* At the US 151 intersection, the median serves as a turn-lane. Each of the travel lanes (and median) are ten (10) feet wide. The roadway east of US 151 is a two (2)-lane road section with 24 feet of paved travel-way, consisting of two 12-foot lanes. *(Figure 4-2)*

» *Wide Outside Lane/Shared Lane Bike Facility*

Cyclists share the same travel lanes as motorists, though cyclists have additional room with the paved shoulders. The eastbound lane has two (2)-foot paved shoulders, whereas the average shoulder on the westbound lane appears to be one (1)-foot in width. The shoulder conditions vary at different locations. Immediately east of the US 151 intersection, the shoulders are wider but consist entirely of gravel.

Bike Signage

» *Sufficient Signage*

In this corridor, there are four (4) road signs that indicate BR 76 and direct cyclists through this segment of the study area. There are no other bike-related signs on this roadway.

Featured Intersections

» *US 151 (Critzers Shop Road)*

The T-Intersection with US 151 is a major area of study for VDOT. Due to high traffic volumes, the existing intersection configuration experiences periods of long traffic queues, as vehicles attempt to turn onto other legs of the intersection. In terms of crashes, there were 26 recorded accidents, between 2005 and 2011. Most of these crashes were directly related to the intersection. *(Figure 4-3)*

» *VA 796 (Brooksville Road)*

Since traffic counts on VA 796 are low (less than 400 ADT), there are fewer turning movements at this T-intersection. In terms of sight-distance, there are long, unobstructed views for motorists and cyclists turning onto US 250. *(Figure 4-4)*

Despite these features, there were six (6) crashes at this intersection, between 2005 and 2011, including one (1) fatal accident. Most of these incidents were rear-end collisions, as motorists in the eastbound lane waited to make a left turn onto Brooksville Road.

Sight Distance

» *Clear Sight-Lines*

Additional Road Hazards

» *Inconsistent Shoulders*

Other than the high volume and speed of traffic, the main cycling hazard in this corridor is the inconsistent shoulder widths. When shoulder widths vary, cyclists may need to swerve in and out of the travel lane, creating unpredictable movements. Particularly with higher travel speeds, these movements can be extremely hazardous to cyclists. *(Figure 4-5)*

Planned Road Improvements

» *Intersection & Shoulders Improvements*

The Route 151 Corridor Study (2013) includes detailed analysis of the intersection of VA 151 and US 250. The analysis includes traffic counts, turning movements and forecasts for future traffic volumes. (Refer to the appendix a copy of this analysis). This study also includes recommendations for improving the intersection, by extending the westbound left turn lane. The recommendation includes an offset of the eastbound right turn bay by 12 feet to improve the visibility of eastbound through-vehicles. The Route 151 Corridor Study includes considerations for a roundabout or signalization with a northbound right turn lane. *(Figure 4-6)* If that improvement is not constructed, then there may be consideration for a northbound, right turn lane with an acceleration lane on US 250.

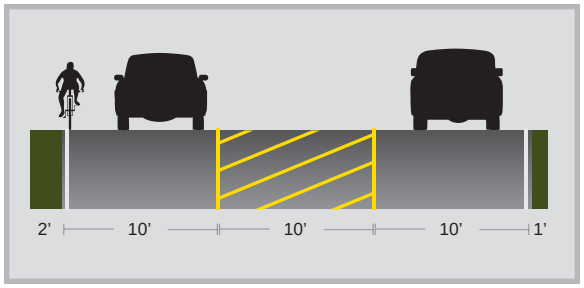


Figure 4-1: Typical Road Section (West of US 151)

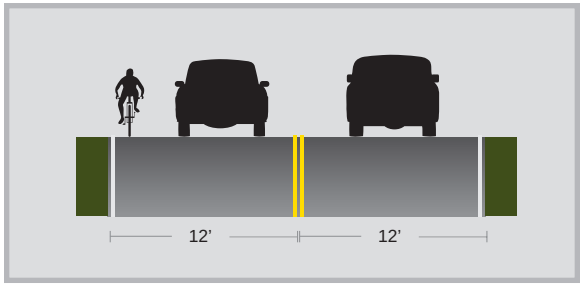


Figure 4-2: Typical Road Section (East of US 151)

Figure 4-3: US 151 Intersection, Looking West

Figure 4-4: VA 976 Intersection

The Rural Long Range Transportation Plan (RLRP) indicated safety deficiencies with this intersection and recommends traffic control improvements, with a possible signal and northbound turn lane or roundabout.

The RLRP also identifies operational deficiencies along this segment of US 250. The plan calls for spot safety improvements and paved shoulders for bicycles. These improvements are listed as long-term recommendations.

Traffic Conditions

Traffic Counts

» *5,850 to 5,930 ADT*

Rockfish Gap Turnpike carries relatively high traffic volumes, for a rural segment of the study area. Traffic counts are slightly higher on the segment west of US 151, where Rockfish Gap Turnpike has 5,931 ADT. On both sides of this intersection, VDOT predicts that there will continue to be a significant increase in traffic along US 250. By the year 2035, the forecast shows that ADT will almost double, to 10,000 ADT.

Truck Traffic

» *2 to 6 Percent*

The percent of heavy vehicles varies, with 6 percent on the roadway west of US 151 and 2 percent on the area east of US 151. The 6 percent truck traffic is a contributing factor to the diminished BLOS on the western roadway.

Travel Speeds

» *Speed Limit: 55 MPH*

Though the speed limit is posted at 55 MPH, traffic generally travels at a higher speed, particularly on straight stretches of roadway. Consequently, average travel speeds are assumed to be closer to 65 MPH.

Level of Service

» *C - Stable Flow, at or Near Free Flow*

On this segment of US 250, motorists may notice restrictions with maneuvering through lanes. There may be traffic queues at intersections, as vehicles attempt left-hand turns. Most drivers are comfortable and the road remains safely below capacity. VDOT forecasts show that LOS will degrade to a D over the next twenty years. Consequently, travel speeds will begin to decrease and motorists will experience greater traffic congestion.

Traffic Accidents

» *45 crashes, 1 fatal*

Between 2005 and 2011, this portion of US 250 has a relatively high occurrence of accidents. Rear end collisions were the most common crash-type. Angled collisions were also common, along with off-road crashes. *Note: there are no records of crashes between motorists and cyclists, between 2005 and 2011.*

Recreational

Historic Resources

» *Historic District*

This area is within the Greenwood-Afton Rural Historic District.

Scenic Resources

» *Virginia Byway*

As a Virginia Byway, there are vistas of mountains and fields, seen from the roadway.

Other Destinations

» *No Cycling Destinations*

Cycling Services & Resources

» *Food, Water & Restroom*

The Rockfish Gap Country Store has a parking area, where cyclists can pull-off to rest. The store also sells general supplies.

Figure 4-5: Shoulders on US 250

Figure 4-6: Roundabout Concept

Access Points

» *No Access*

Topography

» *Flat*

Route Assessment

Bike Compatibility: BLOS C

Overall, this roadway is relatively compatible for cycling. While the compatibility varies, as the shoulder conditions and truck traffic changes, the average score is a BLOS C. The speeds and traffic volumes are the main safety concerns. The existing shoulders provide space for cyclists, but there would ideally be six (6)-foot paved shoulders, according to AASHTO. There are clear sight-lines, but there were

also several traffic accidents, indicating deficiencies with the roadway.

Recreational: Low Value

As a connector route, this corridor will have a low recreational value. There are no accessible historic resources in this corridor and no major destinations. While there are views of mountains and fields, these vistas are limited.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Albemarle County to install additional bike signage. Those signs can inform cyclists and warn motorists of frequent bike traffic.

Road Improvements

Improved shoulders would be the most effective way of enhancing the cycling environment. The TJPDC should work with VDOT and Albemarle County to implement the recommendations to widen and pave shoulders along this segment. These additional shoulders would provide space for cyclists and improve overall road safety.

Intersection Improvements

Improvements at the US 151 intersection would greatly improve overall safety of the corridor. The TJPDC should work with VDOT and Albemarle County to implement the recommendations listed in the Route 151 Corridor Study and RLRP.

Segment A2: Newtown/ Greenwood Corridor

Albemarle County

Segment A2 evaluates the cycling environment on over three (3) miles of roadway in western Albemarle County, between US 250 (Rockfish Gap Turnpike), to the southwest, and VA 691 (Greenwood Road), to the northeast. This corridor includes narrow rural roadways that are consistent with the intended design of a US Bike Route, though there are safety concerns. With a rural setting and access to agritourism, this area could be a destination for cyclists on BR 76 as well.

Segment Characteristics

Rural Environment

- Rural Local
- Secondary Routes

Roadways

» *Total Road Mileage: 3.19 Miles*

- VA 796 (Brooksville Road) – .43 Mile
- VA 690 (Newtown Road) – 2.15 Miles
- VA 690 (Greenwood Station Road) – .61 Mile

Land Uses

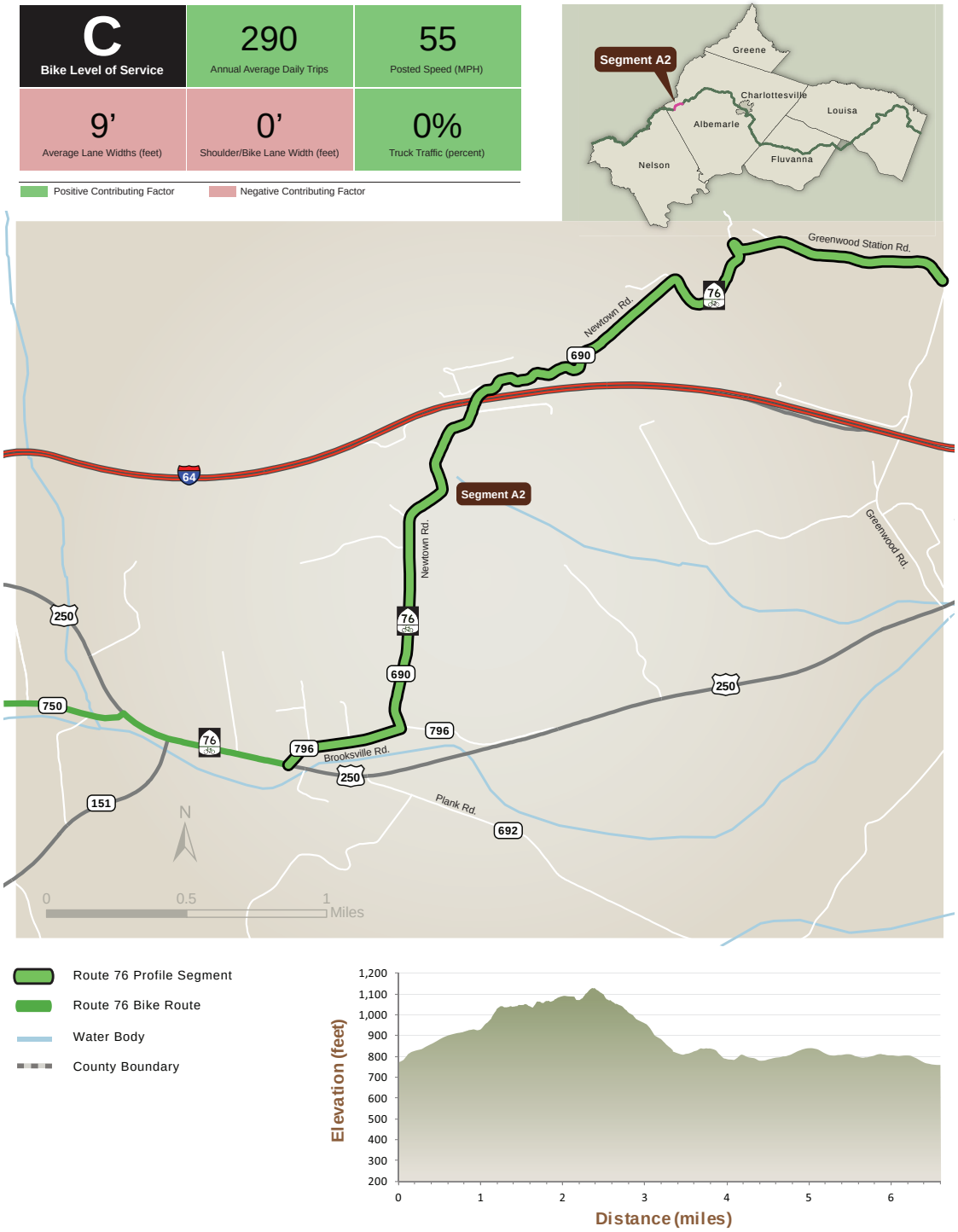
» *Rural*

This corridor consists of a rural landscape, with farms, pastures, wooded properties and single-family homes. The residential density is slightly higher on Brooksville Road and the southern end of Newtown Road. The northern end of Newtown Road climbs onto foothills, surrounded by wooded areas.

Public Comment

» *Mixed Comments*

In an online questionnaire, two (2) local cyclists provided comments on this corridor. One respondent said that New-



town and Greenwood Station Roads may have the poorest road surfaces in the study area. However, another respondent mentioned that he frequently cycled in this area, because of the low traffic counts and pleasant environment.

Road Features

Road Sections

» *Rural Two-Lane*

On this corridor, BR 76 is a narrow two-lane road. These roads are 18 feet wide, consisting of nine (9)-foot travel lanes.

» *Shared Lane Bike Facility*

There are no shoulders on this portion of BR 76. Instead, the road edge is framed by vegetative ditches, embankments or drop-offs. *(Figure 5-1)*

Bike Signage

» *Sufficient Signage*

In this corridor, there are eight (8) road signs that indicate BR 76 and direct cyclists through this section of the study area. While there are sufficient markings of the Bike Route, there are no other bike-related signs on these roadways.

Featured Intersection

» *VA 691 (Greenwood Road)*

There are geometric deficiencies at the Greenwood Road intersection. From VA 691 (Greenwood Road – South) vegetation obstructs sight-lines to the east, on Greenwood Station Road. There is also potential for access management issues, as three (3) properties have ingress/egress within the intersection. These properties include an antique store, single-family home and the post office. While this can create additional conflict points within the intersection, these are low-volume access points. *(Figure 5-2)*

Sight Distance

» *Minor Issues at Curves*

There are select curves with poor horizontal sight distance. Most of these areas are located on the northern end of Newtown Road, as the roadway climbs and descends on the side of Bear Den Mountain. At the turn onto Greenwood Station Road, the sight-lines are blocked by an embankment.

Additional Road Hazards

» *Surface Conditions and Shoulder Drop-Offs*

In this corridor, the pavement surface is in poor condition, especially on Newtown Road. There are cracks in the pavement and gashes that can catch a cyclist's tire. On the road edge, shoulders tend to break from the road and there are ledges with drop-offs of several inches. In other locations, the road surface has a rough texture, where the pavement is worn and consists of patches of asphalt. There are frequently pieces of gravel or broken asphalt that litter the roadway. Adjacent to the road surface, there are ditches, embankments or steep drop-offs. *(Figure 5-3)*

Planned Road Improvements

» *None Planned*

Traffic Conditions

Traffic Counts

» *200 to 380 ADT*

This corridor has one of the lowest traffic counts in the study area. The southern end of the corridor carries the higher counts, with 381 ADT on Brooksville Road. There is no anticipated increase in ADT for the foreseeable future.

Truck Traffic

» *0 Percent*

Travel Speeds

» *Not Posted – Default 55 MPH*

Though the speed limit in this area is not posted, the default speed is 55 MPH, per state regulations and local code.

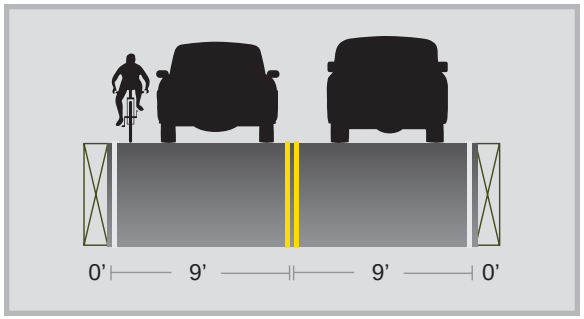


Figure 5-1: Typical Road Section

Figure 5-2: Sight Distance on VA 691

Figure 5-3: Road Edge on Newtown Road

Since the roads are narrow and curvy, many vehicles may travel below 55 MPH in many areas.

Level of Service

» *A – Free Flow*

On this corridor, traffic flows freely and there are no travel

delays from congestion. VDOT forecasts show that LOS will remain at A over the next twenty years.

Traffic Accidents

» *8 crash, 0 fatal*

Between 2005 and 2011, there were eight (8) crashes on this corridor. At the US 250/VA 796 intersection there were an additional six (6) accidents that were just outside of this profiled area. *Note: there are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Historic District*

This segment is within the Greenwood-Afton Rural Historic District.

Scenic Resources

» *No Designation*

While this corridor is an attractive rural area, the densely wooded roadside prevents scenic vistas.

Other destinations

» *Agri-Tourism*

There is a vineyard on Newtown Road that can provide a rest stop for cyclists, as there are restrooms for patrons. *(Figure 5-4)*

Cycling Services & Resources

» *Food, Beverages & Restrooms*

The vineyard provides opportunities for cyclists to rest.

Access Points

» *Post Office*

At the post office, there is parking that could allow cyclists to access BR 76.

Topography

» *Mountainous*

While this corridor includes several relatively flat stretches of roadway, there are challenging climbs, as well. On Brooksville Road, the average slope is less than 2 percent. At the southern end of Newtown Road, there is a steadily 4 percent grade, climbing northward towards Bear Den Mountain. The topography then drops 80 feet towards the turn onto Greenwood Station Road. This section of road has a 9 percent slope. From that turn, the topography continues to slope downward at 5 percent, toward the intersection with Greenwood Road.

Difficulty Levels

» *High Difficulty*

Route Assessment

Bike Compatibility: BLOS C

This corridor is relatively compatible for cycling.

While the roadway is narrow, the traffic counts are among the lowest in the study area. There is no truck traffic. Also, there were relatively few crashes reported on these roads.

There are several features that diminish cycling safety and comfort. A combination of relatively high travel speeds and narrow lanes can cause discomfort and hazards for cyclist. Added to this is the lack of shoulders. Most importantly, the road surface is in poor conditions.

Recreational: Moderate Value

The recreational value is moderate in this corridor. There are limited historic and scenic resources, but there is popular winery along the route. Also, the topography makes for an interesting ride and would be appealing to some cyclists.

Figure 5-4: Agri-Tourism Destinations

Figure 5-5: Existing Surface Conditions

Recommendations

Additional Signage

The TJPDC should work with VDOT and Albemarle County to install additional bike signage. Those signs can inform cyclists and warn motorists of frequent bike traffic.

Surface Improvements

The TJPDC should conduct a more in-depth inventory of surface conditions on Newtown and Greenwood Station Roads and work with VDOT to repair damaged pavement. *(Figure 5-5)*

Speed Limit Reductions

The existing speeds are relatively high, considering the road widths and areas with high egress/ingress. The TJPDC should work with VDOT to study the feasibility and effects of reducing speed limits in these areas.

Additional Road Width

The TJPDC should work with VDOT to determine if there are spot improvements, particularly on curves, where additional shoulders would allow more maneuverability for motorists and cyclists.

Segment A3: Jarmans Gap Corridor

Albemarle County

Segment A3 evaluates the cycling environment in the corridor of Greenwood and Jarmans Gap Roads, between VA 690 (Greenwood Station Road), to the west, and VA 684 (Lanetown Road), to the east. This portion of BR 76 consists of narrow rural roadways, which are consistent with the intended design of a US Bike Route. The rural setting and access to agri-tourism make this corridor a destination for cyclists.

Segment Characteristics:

Rural Environment

- Major Collectors
- Secondary Routes

Road Segments

» *Total Road Mileage: 2.5 Miles*

VA 691 (Greenwood Road) – 1.39 Miles

VA 691 (Jarmans Gap Road) – 1.11 Miles

Land Uses

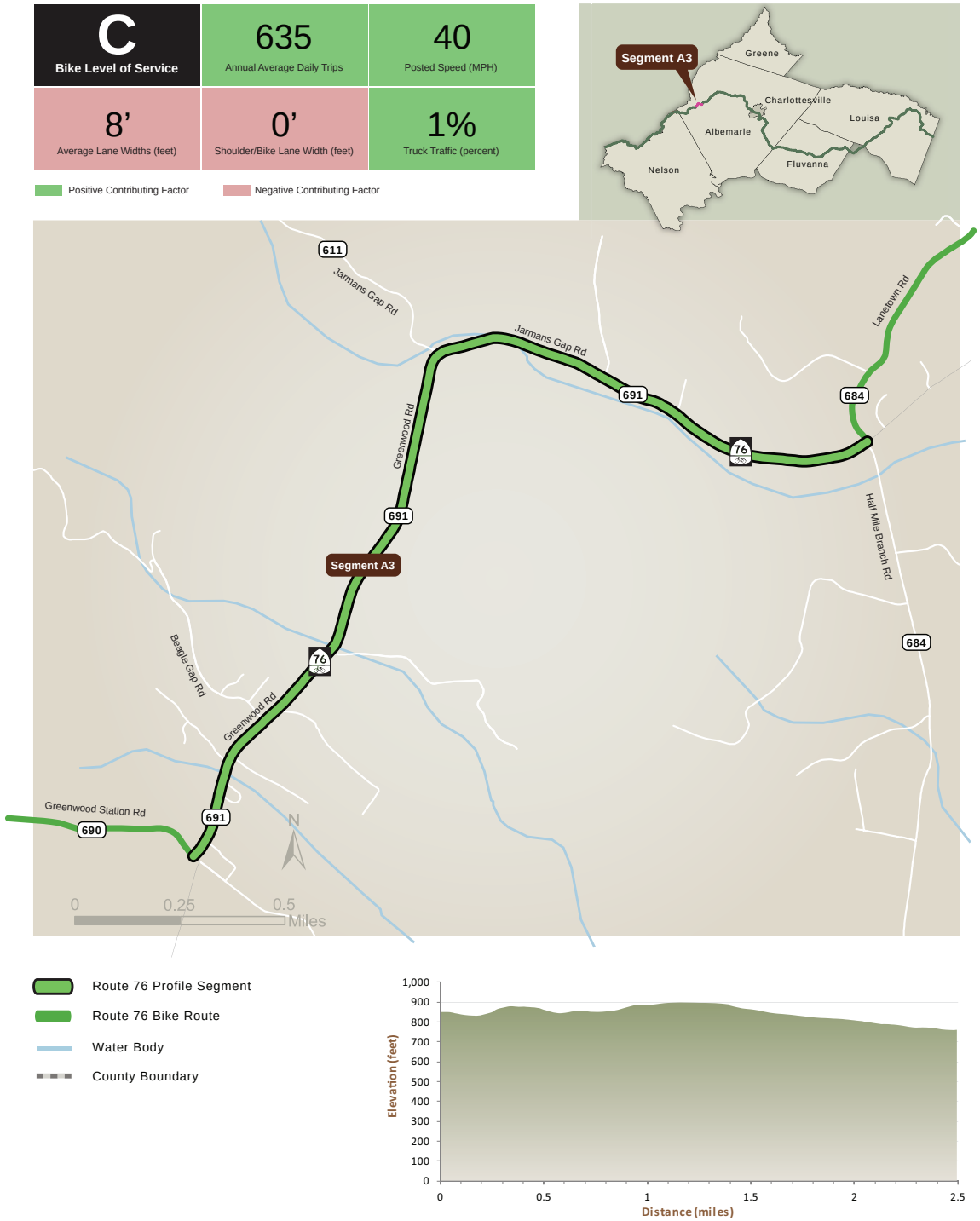
» *Rural*

This corridor consists of a rural landscape of farms, agri-tourism destinations and single-family homes. The Greenwood area has a higher density of residences, with at least two small subdivisions, along with several homes that connect directly to Greenwood Station Road. The land adjacent to Jarmans Gap Road is used mostly for agricultural purposes.

Public Comment

» *Favorite Place to Ride*

One local cyclist commented on this corridor, via an online questionnaire. That individual listed these roadways as a favorite place to cycle.



Road Features

Road Sections

» *Rural Two-Lane*

The roadways in this corridor are narrow, with a 16-foot paved surface. The travel lanes are eight (8) feet wide and there are no paved shoulders.

» *Shared Lane Bike Facility*

Along several sections, the roadway is flanked by vegetative ditches and small embankments. In some instances, trees and other vegetation are less than five (5) feet from the pavement. *(Figure 6-1)*

Bike Signage

» *Sufficient Signage*

There are four (4) road signs indicating BR 76, directing cyclists through this portion of the study area. At the intersection with Lanetown Road, one of the Route 76 signs can be partially blocked by vegetation. While there are markings for BR 76, there is no other bike-related signage.

Featured Intersections

» *VA 611 (Jarmans Gap Road)*

This Y-Intersection includes a channelize turn onto VA 691. The intersection lies on a curve, where Greenwood Road changes into Jarmans Gap Road. The only potential deficiency is sight distance. When vegetation in the island is overgrown, wild grasses can limit sight-lines. There was only one (1) recorded crash within this intersection, between 2005 and 2011. This crash did not involve cyclists. *(Figure 6-2)*

» *VA 684 (Lanetown Road/Half Mile Branch Road)*

This is a four-way intersection, with the VA 684 legs offset by a short road segment. Generally, sight distances are sufficient and there are relatively low traffic volumes that pass through the intersection. The offset legs from VA 684 may cause some confusion with motorists. Between 2005 and 2011, there were eight (8) crashes at this intersection. Most of those crashes involved vehicles running off the roadway. *(Figure 6-3)*

Sight Distance

» *Clear Sight-Lines*

There are no identified deficiencies with sight distance in this corridor. While there are obstructed views on several curves, motorists have sufficient sight-lines to avoid cyclists. *(Figure 6-4)*

Additional Road Hazards

» *Surface Conditions*

There are several locations where the road surfaces are in poor condition, with multiple occurrences of potholes and cracked pavement near the road edge.

Planned Road Improvements

» *Road Widening*

The region's Rural Long Range Plan (RLRP) identifies geometric deficiencies on Greenwood Road. The plan calls for 11-foot travel lanes, expanding each lane by 3 feet. There are no funds or timelines assigned to this widening.

Traffic Conditions

Traffic Counts

» *450 to 820 ADT*

Greenwood and Jarmans Gap Roads carry traffic volumes that are favorable to cycling. Currently, Greenwood Road serves 448 ADT and VDOT does not anticipate significant increases in traffic volumes for the foreseeable future. Jarmans Gap Road carries 816 ADT. In this area, travel is anticipated to increase to 1,500 ADT by 2035.

Truck Traffic

» *1 Percent*

Travel Speeds

» *40 MPH*

While the posted speed limit is 40 MPH, the actual travel speeds are likely closer to 50 MPH, due to the low traffic counts and sight distances.

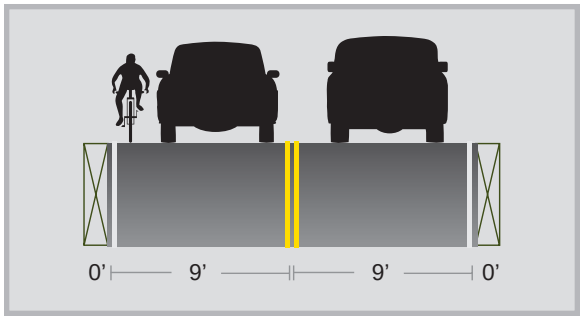


Figure 6-1: Typical Road Section

Figure 6-2: VA 611 Intersection

Figure 6-3: VA 684 Intersection

Level of Service

» *A – Free Flow*

» *B - Reasonably Free Flow*

On Greenwood Road, traffic flows freely and vehicles are

able to travel at or above the posted speed limit. VDOT forecasts show that the LOS will degrade slightly by 2035 (to LOS B), though this still represents free-flowing traffic. On Jarmans Gap Road, the traffic already functions at a LOS B and will continue on that level for the foreseeable future.

Traffic Accidents

» *18 crash, 0 fatal*

From 2005 to 2011, there was one (1) crash on Greenwood Road (an angled collision between vehicles). On Jarmans Gap Road, accidents were more frequent with 17 crashes. Most of these accidents occurred at either the western end of the corridor, near Greenwood Road, or the eastern end, at the intersection with Lanetown Road. Overall, the most common crash type on Jarmans Gap Road involved off-road collision with objects (such as trees road signs) adjacent to the roadway. *Note: there are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Historic District*

This area is within the Greenwood-Afton Rural Historic District.

Scenic Resources

» *No Designation*

At the northern end of Greenwood Road, near a peach orchard, there are scenic vistas of the mountains. On Jarmans Gap Road, there are views of the mountains from the westbound lane. *(Figure 6-5)*

Other Destinations

» *Agri-Tourism*

In this corridor, there are two (2) agri-businesses, including a peach orchard and winery. Both could serve as destinations for cyclists.

Cycling Services & Resources

» *Food, Water & Restroom*

At the agri-tourism destinations, cyclists could make use of restrooms and replenish on food/water.

Access Points

» *No Access*

Topography

» *Rolling*

The topography in this corridor is relatively flat, with subtle rolling hills along Greenwood Road.

Route Assessment

Bike Compatibility: BLOS C

The roads in this corridor are relatively compatible for cycling. While the road surface is narrow, the traffic volumes and speeds are favorable to cyclists. There are clear sight-lines and few conflict points between bikes and vehicles. Also, there is a low level of truck traffic and few reported accidents in the corridor.

Despite the advantages, there are safety concerns for cycling, as well. The narrow travel lanes and lack of shoulders can be hazards. Also, the pavement conditions are poor in several locations. *(Figure 6-6)*

Recreational: High Value

The recreational value in this corridor is high. There are scenic vistas, a forgiving topography and agri-tourism opportunities that would interest cyclists. Overall, these factors affirm that these roads are effective and appropriate as a US Bike Route.

Recommendations

Additional Signage

Figure 6-4: Sight-lines at Curves

Figure 6-5: View from Bike Route 76

Figure 6-6: Road and Shoulder Conditions

The TJPDC should work with VDOT and Albemarle County to install additional bike signage. Those signs can inform cyclists and warn motorists of frequent bike traffic.

Vegetation Maintenance

Vegetation may block views at the VA 611 intersection and obstruct the Route 76 sign at the intersection of Lanetown

Road. The TJPDC should work with VDOT to determine the schedule for maintenance and whether additional action is needed.

Repair to Surface Conditions

The TJPDC should work with VDOT to conduct a detailed inventory of road surfaces and determine a schedule for repairing damaged pavement.

Spot Improvements to Shoulders

The TJPDC should work with VDOT to determine if there is need for spot improvements to shoulders, particularly on curves where additional widths would allow more maneuverability for motorists and cyclists.

Segment A4: West Crozet Corridor

Albemarle County

Segment A4 evaluates the cycling environment on Lanetown Road, Railroad Avenue and Buck Road – located on the west side of Crozet, a small village in western Albemarle County. This corridor includes numerous recreational amenities that would interest cyclists. Crozet also serves as one of the few town-like environments in the larger area, making this corridor a destination on BR 76. In terms of road and traffic conditions, these narrow roads also offer a relatively safe environment for cycling.

Segment Characteristics

Rural Environment

- Rural Local
- Secondary

Road Segments

» *Total Road Mileage: 2.13 Miles*

- VA 684 (Lanetown Road) – 1.2 Miles
- VA 788 (Railroad Avenue) – .28 Mile
- VA 789 (Buck Road) – .65 Mile

Land Uses

» *Rural/Small Town*

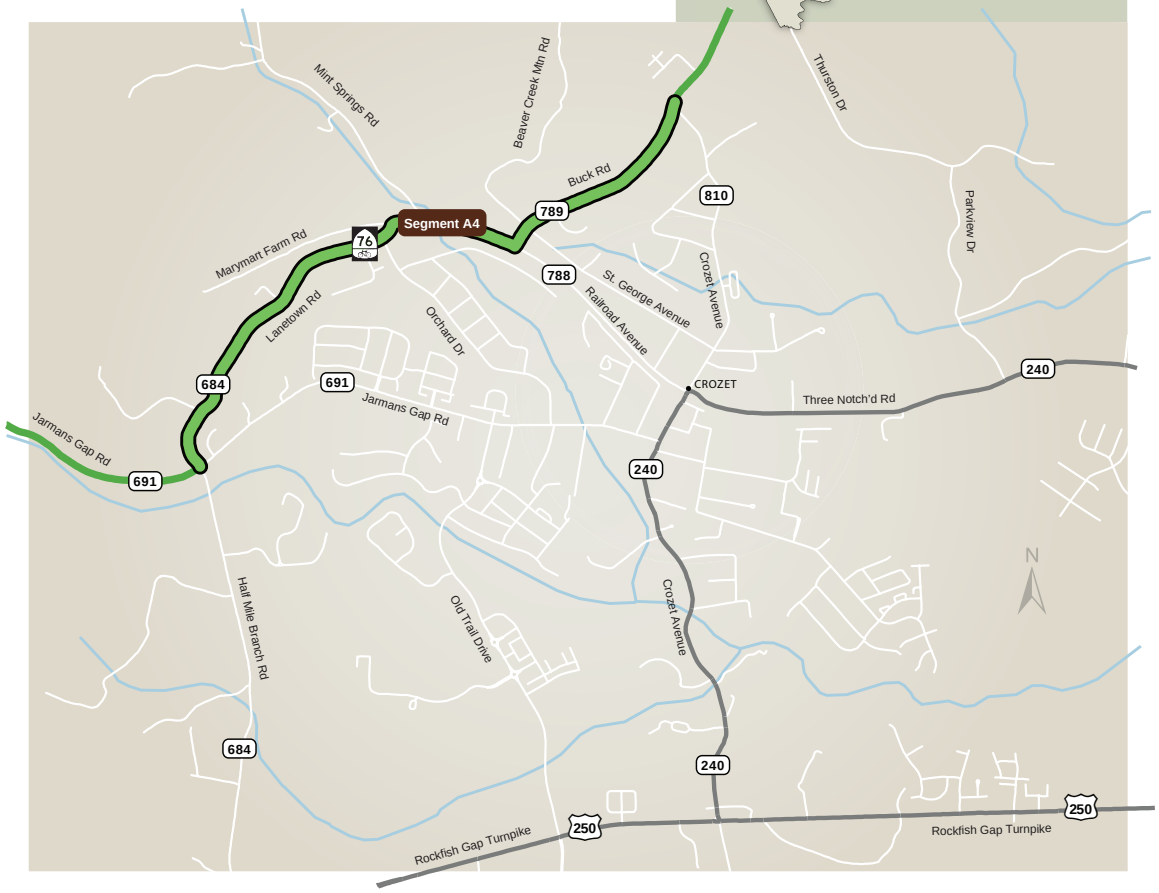
The West Crozet Corridor consists mostly of residential properties, on a town scale. There are several residential subdivisions in this area, with relatively small lots. Along Lanetown Road, there are also farms and pastures in the corridor.

Public Comment

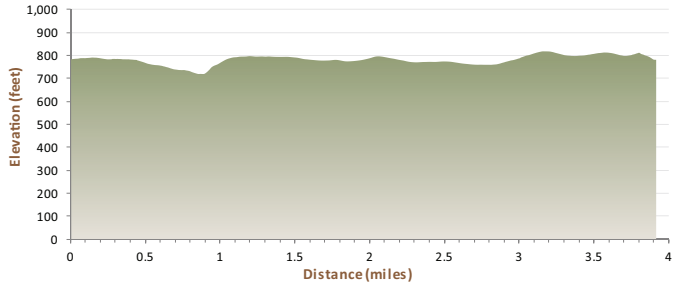
» *No Comments*

B-C	875	40
Bike Level of Service	Annual Average Daily Trips	Posted Speed (MPH)
9’	0’	.5%
Average Lane Widths (feet)	Shoulder/Bike Lane Width (feet)	Truck Traffic (percent)

Positive Contributing Factor Negative Contributing Factor



Route 76 Profile Segment
Route 76 Bike Route
Water Body
County Boundary



Road Features

Road Sections

» *Rural Two-Lane*

On this corridor, Bike Route 76 is a narrow two-lane road with 18 feet of pavement. This includes nine (9)-foot travel lanes.

» *Shared Lane Bike Facility*

There are no shoulders on this portion of BR 76. Instead, the road is framed by vegetated ditches, embankments or drop-offs. *(Figure 7-1)*

Bike Signage

» *Additional Signage Needed*

In this corridor, there are seven (7) road signs indicating BR 76, directing cyclists through this section of the study area. Currently, there is no signage to direct cyclists from Buck Road onto Railroad Avenue. Additionally, there is no other bike-related signage.

Featured Intersection

» *VA 810 (White Hall Road)*

White Hall Road forms a Y-Intersection with Buck Road. While the sight-distances are not idea, there appears to be sufficient sight-lines for turning vehicles. From 2005 to 2011, there were two (2) off-road collisions at the intersection. *(Figure 7-2)*

» *Other intersections in this corridor include:*

- VA 691 (Jarmans Gap Road)
- VA 684 (Mint Springs Road)
- VA 788 (Railroad Avenue)/VA 789 (Buck Road)
- VA 1202 (St. George Avenue)

Sight Distance

» *Clear Sight-Lines*

There are no identified deficiencies with sight-distance in this corridor, though there are minor issues at the White Hall Road intersection.

Additional Road Hazards

» *Railroad Crossing*

Near the Mint Springs Road intersection, there is a railroad crossing that could be hazardous for cyclists. The railroad and roadway cross at a slight angle, which increases the chance of a bike tire slipping into openings along the railroad flangeway. *(Figure 7-3)*

Planned Road Improvements

» *None Planned*

Traffic Conditions

Traffic Counts

» *430 to 1,320 ADT*

While the traffic volume in this corridor varies, the overall ADT is conducive for cycling. The lowest traffic counts are on Buck Road (437 ADT), which mostly serves the adjacent residential properties. Lanetown Road carries 602 ADT. Railroad Avenue has the highest volumes in this corridor, with 1,322 ADT.

According to VDOT forecasts, traffic counts will increase slightly for Buck Road and Railroad Avenue. The largest increase in traffic may occur on Lanetown Road, where VDOT forecasts indicate that counts will more than double by 2035, to 1,400 ADT.

Truck Traffic

» *0 to 1 Percent*

Travel Speeds

» *40 MPH*

While the posted speed limit is 40 MPH, the actual travel speeds are likely closer to 50 MPH, accept in the village, where there are additional cross streets.

Level of Service

» *A – Free Flow*

Within this corridor, traffic flows freely and vehicles are able to travel at or above the posted speed limit. VDOT forecasts show that the LOS will degrade slightly in some areas, to LOS B by 2035, but this still represents free-flowing traffic.

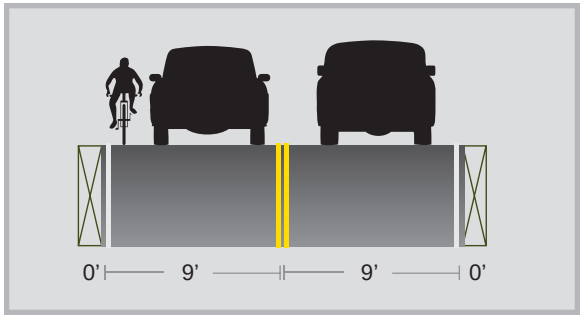


Figure 7-1: Typical Road Section

Figure 7-2: VA 810 Intersection

Figure 7-3: Railroad Crossing

Traffic Accidents

» *29 crashes, 0 fatal*

From 2005 to 2011, there were 29 reported crashes along

this corridor. Lanetown Road had the highest occurrence of crashes, with 18 vehicular accidents. There were five (5) crashes on Railroad Avenue and another six (6) on Buck Road.

The most common crash involved vehicles that collided with fixed objects (such as trees or street signs) adjacent to the roadway. On Buck Road, one (1) accident involved a vehicle that struck a pedestrian. *Note: There are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Historic District*

Within this corridor, BR 76 passes through the Crozet Historic District, which was established to recognize the historic significance of the village of Crozet. Along Buck Road, there are several older homes that could be eligible for historic designations.

Scenic Resources

» *No Designation*

From Railroad Avenue, there are scenic vistas of the mountains to the west. Along the remaining road segments, roadside trees mostly block these views.

Other Destinations

» *Village Destination & Agri-Tourism*

Crozet is home to several restaurants and small-scale businesses. Cyclists can visit these businesses to rest and replenish on supplies. To the south of this corridor, there is a popular vineyard that could be a destination for cyclists, as well.

Cycling Services & Resources

» *All Services*

There are numerous commercial destinations and restaurants in Crozet. In terms of public resources, there is a new library located on Crozet Avenue. The County plans to provide cycling services in the library, such as bike repair stations and information on cycling in the area. All of these resources will be within close proximity to BR 76.

Access Points

» *On-Street Parking*

Topography

» *Rolling*

The terrain in this corridor is relatively flat, with subtle changes in elevation. The grade of Lanetown Road gradually slopes upwards, towards the railroad crossing. Railroad Avenue is relatively flat, while there are small hills on Buck Road.

Difficulty Level

» *Low Difficulty*

The relatively flat terrain and straight roadways make for an easy ride for cyclists. Additionally, the road and traffic conditions provide comfort to cyclists.

Route Assessment

Bike Compatibility: BLOS B – C

Overall, this corridor is compatible for cycling. While the road widths are narrow, traffic volumes are relatively low. There is essentially no truck traffic. The road surfaces are in fair condition. Vehicles generally travel at speeds that are favorable to cyclists and there are clear sight-lines.

Recreational: Moderate Value

There are also several attractions within this corridor, most notably the village of Crozet. The topography is forgiving and there is a winery that may interest cyclists. Overall, these factors affirm that these roads are effective and appropriate as a US Bike Route.

Recommendations

Additional Signage

The TJPDC should work with VDOT to install an additional BR 76 sign, at the intersection of Buck Road and Railroad Avenue. Additionally, the TJPDC should work with VDOT and Albemarle County to install bike signage that informs cyclists and warn motorists of frequent bike traffic.

Railroad Crossing

TJPDC staff should conduct further inspection of the railroad crossing, near Mint Springs Road, to determine the likelihood of cycling accidents due to gaps in the flangeway.

Spot Improvements to Shoulders

The TJPDC should work with VDOT to identify spot improvements, particularly on curves, where additional shoulders would allow more maneuverability for motorists and cyclists.

Routing Changes

There are rerouting opportunities within and adjacent to this profiled corridor. The TJPDC should work with stakeholders to explore the feasibility and benefits of rerouting.

To the southeast of this corridor, there are significant roadway improvements that included bike and pedestrian facilities along Jarmans Gap Road. These improvements could provide added safety to cyclists on BR 76. This would also link the Bike Route to Crozet Library, where the County plans to provide cycling-related services, such as repair stations and route information.

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Segment A5: White Hall Road

Albemarle County

Segment A5 evaluates the cycling conditions on White Hall Road, located just north of the Crozet community. This corridor includes the roadway between VA 789 (Buck Road), to the south, and VA 614 (Garth Road), to the north. While there are tourist destinations in the corridor, White Hall Road serves as a connector for BR 76, linking Garth Road to the village of Crozet. With a relatively narrow road surface, the roadway carries relatively high traffic volumes, which diminishes cycling safety and comfort in the corridor.

Segment Characteristics

Rural Environment

- Major Collector
- Secondary Route

Road Segments

- Total Road Mileage: 4.41 Miles
- VA 810 (White Hall Road) – 4.41 Miles

Land Uses

» *Rural*

In this profiled corridor, the landscape consists mostly of farms, pastures and large lot residential properties. Other notable uses include two (2) wineries and a country store, located at the northern end of White Hall Road.

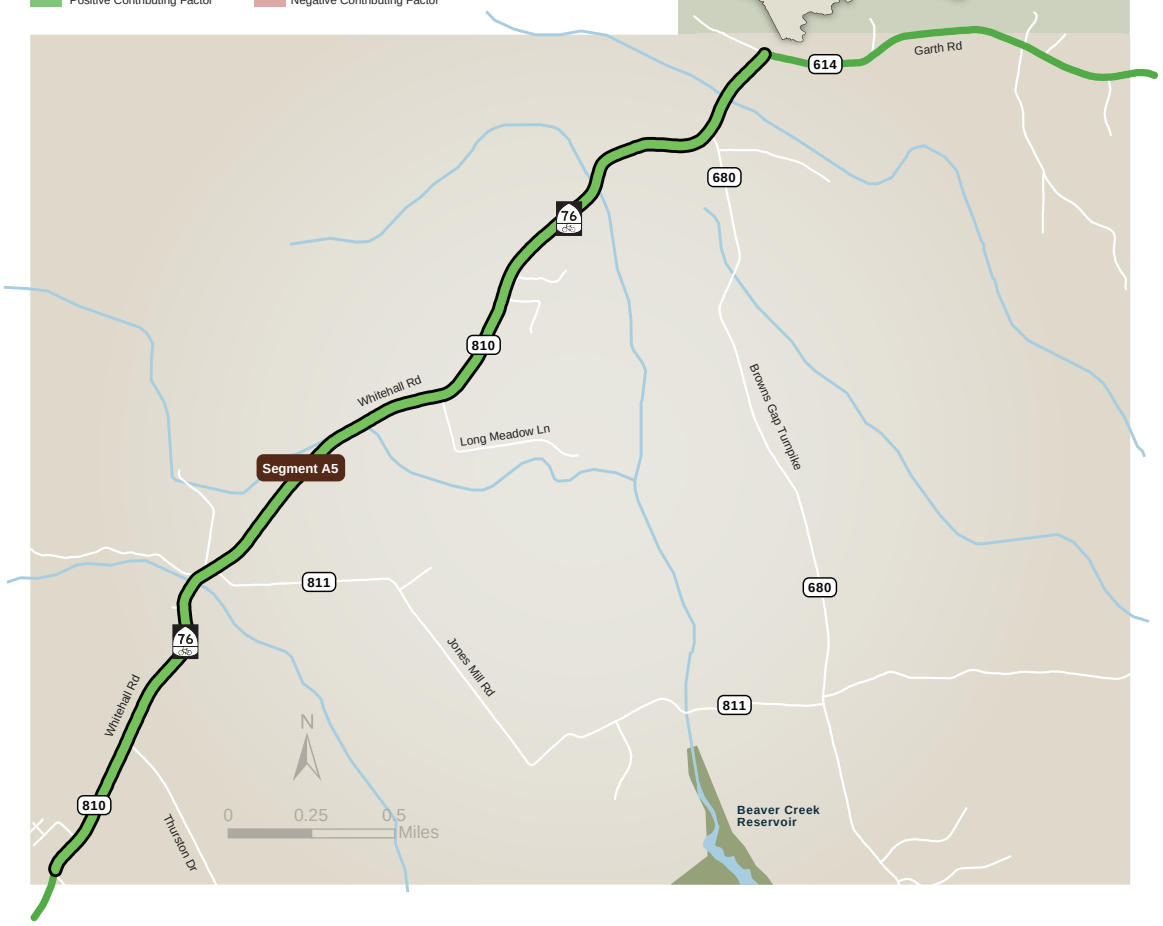
Public Comment

» *Safety Concerns*

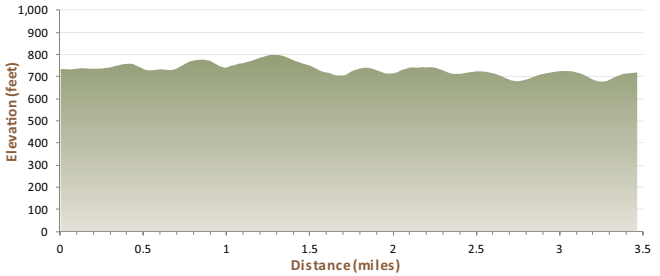
In an online questionnaire, several local cyclists communicated their concerns with cycling safety on White Hall Road. One respondent said that the road was too narrow, with poor sight-lines. Another cyclist said that the traffic counts and speeds were too high. Overall, respondents felt that VA 810 was dangerous to cyclists.

D	2,020	45
Bike Level of Service	Annual Average Daily Trips	Posted Speed (MPH)
9’	.5’	2%
Average Lane Widths (feet)	Shoulder/Bike Lane Width (feet)	Truck Traffic (percent)

Positive Contributing Factor Negative Contributing Factor



Route 76 Profile Segment
Route 76 Bike Route
Water Body
County Boundary



Road Features

Road Sections

» *Rural Two-Lane*

On this corridor, BR 76 is a narrow two-lane road, 19 feet wide. This includes 9-foot travel lanes and narrow paved shoulders.

» *Shared Lane Bike Facility*

With limited shoulders, the road edge is mostly flanked by vegetated ditches or small embankments. *(Figure 8-1)*

Bike Signage

» *Sufficient Signage*

In this corridor, there are four (4) road signs indicating BR 76. Additional, there is one (1) "Share the Road" sign, which is located on the northbound lane.

Featured Intersection

» *VA 614 (Garth Road)*

For a rural segment, a relatively high volume of traffic passes through this T-Intersection. A country store essentially creates a fourth leg at the intersection and attracts small amounts of traffic. The main issue at this location is sight distance from White Hall Road, looking east. There is vegetation that obstructs the view of oncoming westbound traffic. These sight-lines may have been a contributing factor in the five (5) crashes that occurred at this intersection, between 2005 and 2011. *(Figure 8-2)*

Sight Distance

» *Minor Issues at Curves*

Other than the Garth Road intersection, there are limited sight-lines on several curves. Despite the obstructed views, motorists have sufficient sight-lines to avoid cyclists. *(Figure 8-3)*

Additional Cycling Hazards

» *Lack of Shoulders*

VA 810 is a narrow roadway that carries significant ADT. Without shoulders, cyclists have little room to maneuver with this traffic and are exposed to several roadside ditches. *(Figure 8-4)*

Planned Road Improvements

» *Road Widening*

The RLRP identified geometric deficiencies along White Hall Road and recommended full-width lanes and shoulders to accommodate bikes. These were listed as lower priority, long-term improvements. Currently, there are no funds or timelines assigned to improvements on the corridor.

The Crozet Master Plan recommends a two-lane urban street section for portions of Route 240 in the Downtown area, just outside of the BR 76 study area. These improvements include bike lanes or bike facilities/multipurpose paths. If these improvements are made, there would be opportunities for routing changes, onto those safer roads.

Traffic Conditions

Traffic Counts

» *2,020 ADT*

Traffic counts on White Hall Road are high for the existing road widths. This traffic pattern continues on Garth Road and into Charlottesville, as this route serves as a link between Crozet and the City. VDOT forecasts show that traffic will steadily increase on While Hall Road, with 3,700 ADT by 2035, indicating that traffic counts are a growing threat to cycling safety in the corridor.

Truck Traffic

» *2 Percent*

Traffic from heavy vehicles is negligible, accounting for 2 percent of total ADT. This percentage is conducive to cycling, considering all other factors.

Travel Speeds

» *45 MPH*

While the posted speed limit is 45 MPH, the actual travel speeds are likely closer to 55 MPH, due to the lack of congestion.

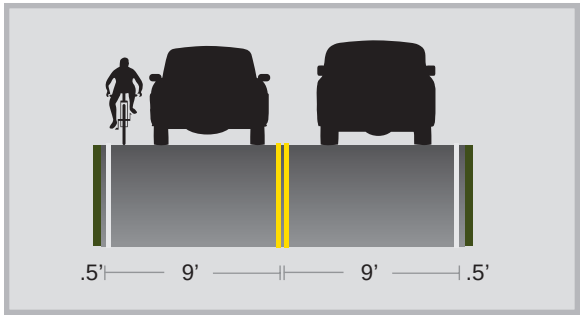


Figure 8-1: Typical Road Section

Figure 8-2: VA 614 Intersection

Figure 8-3: Sight-lines at Curve

Level of Service

» *B - Reasonably Free Flow*

On VA 810, motorists are able to travel at or above the posted speed limit. Motorists have a high level of comfort and

there are no notable travel delays. VDOT forecasts show that the LOS will degrade slightly by 2035 (to LOS C).

Traffic Accidents

» *49 crashes, 0 fatal*

From 2005 to 2011, there were 49 crashes on White Hall Road. The most common crashes were off-road collisions with trees, road signs or other roadside features. These accidents tend to reoccur in specific areas, such as the area near Long Meadow Lane. *Note: There are no recorded crashes between motorists and cyclists during this time. (Figure 8-5)*

Recreational

Historic Resources

» *Private Resources*

While no properties in this corridor are on the State or National Historic registries, there are properties with historic significance. Near the intersection with Garth Road, there are several notable structures, such as Mount Moriah Methodist Church, Wyant's Store and older homes.

Scenic Resources

» *Connector to Scenic Road*

Nearly the entire stretch of White Hall Road offers scenic vistas of mountains and farmland. This corridor also connects with Garth Road, one of the most scenic roadways in the study area. *(Figure 8-6)*

Other Destinations

» *Village Destination & Agri-Tourism*

Within this corridor, there are two (2) popular vineyards may be of interest to cyclists, as a destination. Also, the village of Crozet is home to several restaurants and small-scale commercial development.

Cycling Services & Resources

» *Food, Water & Restrooms*

At the agri-tourism destinations, patrons can make use of restrooms and replenish on supplies.

Access Points

» *No Access*

Topography

» *Rolling*

There are continuous changes in elevation on VA 810. Some of these hills can be challenging to less experienced riders.

Cycling Assessment

Bike Compatibility: BLOS D

Overall, White Hall Road is incompatible for cycling. Ideally, this road would have 4-foot shoulders, given the current speeds and traffic volumes. Instead, cyclists have little room to maneuver, particularly on uphill lanes. As traffic counts continue to increase, cycling compatibility will continue to decline. There are also limited sight-lines and locations with frequent traffic accidents.

Despite these concerns, there are benefits to cycling in this corridor. There are relatively few turning movements on the roadway, as the area consists of farms and low-density residential. While sight distances are not ideal, there are no major deficiencies.

Recreational: Moderate Value

As a connector, White Hall Road has a moderate recreational value. The greatest value is in scenic vistas, which are prevalent in the corridor. Cyclists can also access agri-tourism destinations and a country store for provisions and restrooms.

Recommendations

Additional Signage

Figure 8-4: Lack of Shoulders on VA 810

Figure 8-5: Location with Recurring Crashes

Figure 8-6: Views from White Hall Road

The TJPDC should work with VDOT and Albemarle County to install additional bike signage. Those signs can inform cyclists and warn motorists of frequent bike traffic.

Vegetation Maintenance

Vegetation may block views at the Garth Road intersection. The TJPDC should work with VDOT to explore these defi-

ciencies and whether there is a need to hold discussions with the private property owner, concerning maintenance.

Spot Improvements

Given that most of the crashes in this area involve off-road collisions, there may be geometric deficiencies with road widths, particularly at curves. The TJPDC should work with VDOT and Albemarle County to make safety improvements to high accident areas.

Road Widening

As traffic counts are predicted to increase, there will be even greater need for added road widths. The TJPDC should work with VDOT and Albemarle County to forward efforts to widen White Hall Road. While widening would improve cycling safety, it would also benefit motorists and reduce the occurrence of traffic accidents.

Segment A6: Garth Road

Albemarle County

Segment A6 evaluates the cycling conditions on Garth Road, between VA 810 (White Hall Road) and VA 601 (Old Garth Road). While there are recreational amenities in this corridor, Garth Road serves as a connector on BR 76, allowing cyclist to access destinations in western Albemarle and the City of Charlottesville. Despite the need for this important link, there are numerous safety conditions that make the corridor incompatible for cycling.

Segment Characteristics

Rural Environment

- Major Collectors
- Secondary Routes

Road Segments

» *Total Road Mileage: 9.1 Miles*

- VA 614 (Garth Road) – 5.31 Miles
- VA 676 (Garth Road) – 1.08 Miles
- VA 601 (Garth Road) – 2.71 Miles

Land Uses

» *Rural*

Within the Garth Road corridor, the landscape consists mostly of farmland, pastures and large lot residential properties. There are also several residential neighborhoods along Garth Road, which generate additional traffic at the subdivision entrances.

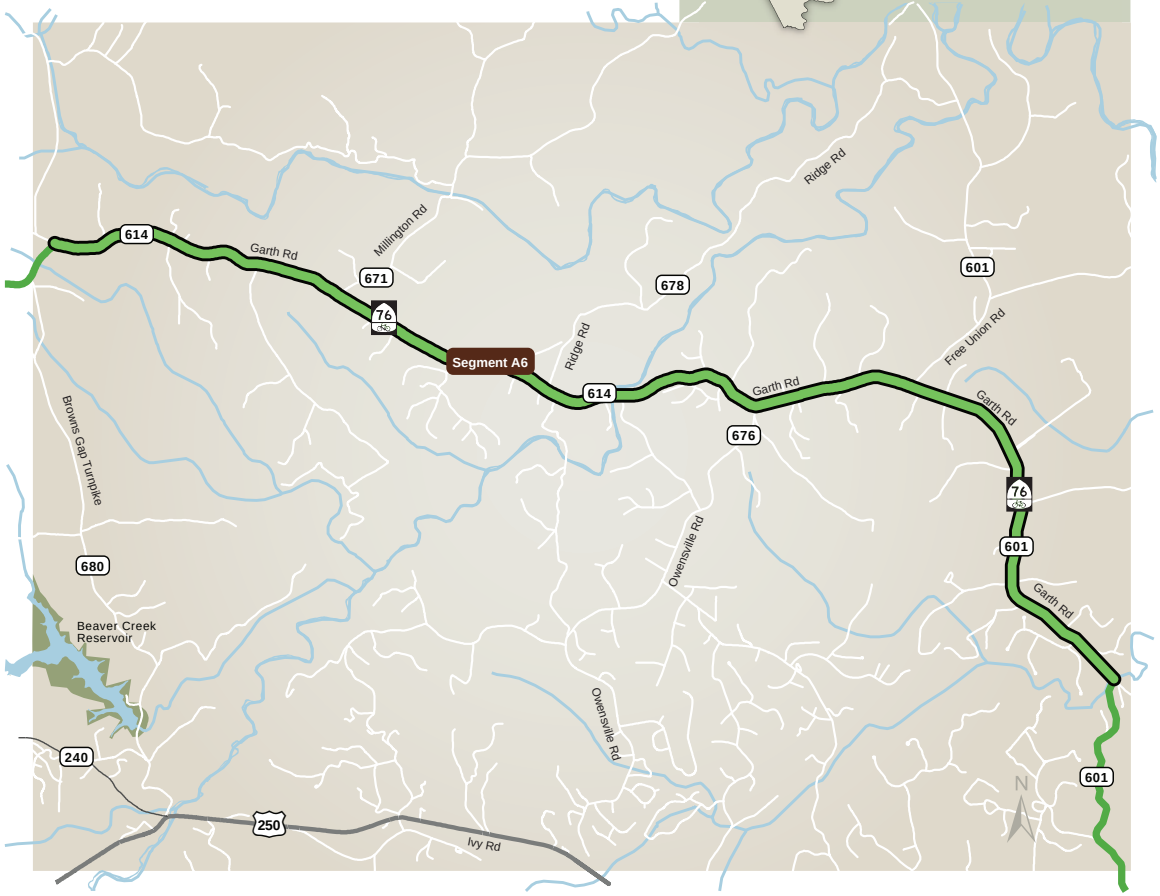
Public Comment

» *Safety Concerns*

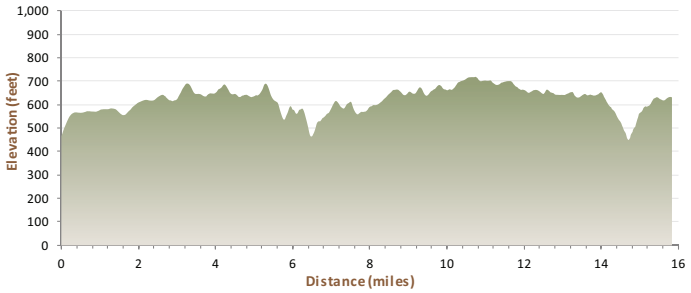
Through an online questionnaire, local cyclists focused mostly on Garth Road. All of the comments were related to safety. Local cyclists described Garth Road as being "insanely dangerous", "crazy", and "very unsafe".

D	3,700	35 - 50
Bike Level of Service	Annual Average Daily Trips	Posted Speed (MPH)
9.5'	0 - .5'	1.5%
Average Lane Widths (feet)	Shoulder/Bike Lane Width (feet)	Truck Traffic (percent)

Positive Contributing Factor Negative Contributing Factor



Route 76 Profile Segment
Route 76 Bike Route
Water Body
County Boundary



Specifically, cyclists commented on issues related to roadway geometry and traffic movements. Respondents said that the shoulders were insufficient and there were no margins for error. There were several comments about the excessive speed and volume of traffic. One respondent highlighted the Old Garth Road intersection as a concern.

There were comments about rerouting Bike Route 76 or providing an alternate route, in order to avoid Garth Road. One suggestion was to reroute through Batesville to Dick Woods Road and Bloomfield Road.

Road Features

Road Sections

» *Rural Two-Lane*

On Garth Road, the road section varies slightly. West of Owensville Road, the pavement is 19 feet wide, consisting of nine (9)-foot travel lanes and narrow shoulders. East of the Owensville intersection, the road widens to 20 feet, consisting of ten (10)-foot travel lanes.

» *Shared Lane Bike Facility*

Along all sections, the road edge is mostly framed by vegetated ditches, lawns or small embankments. *(Figure 9-1)*

Bike Signage

» *Sufficient Signage*

In this corridor, there are six (6) road signs that indicate BR 76. Additionally, there were three (3) "Share the Road" signs. For a rural corridor, Garth Road has the most comprehensive bike signage of the study area.

Featured Intersections

» *VA 671 (Millington Road)*

Over 2,000 vehicles pass through this T-intersection per day, but there were only two (2) recorded accidents, between 2005 and 2011. The only potential deficiencies are sight distances on the northwest corner of the intersection. Vegetation obstructs sight-lines from Millington Road, looking west.

» *VA 601 (Free Union Road)*

Between 2005 and 2011, there were ten (10) recorded crashes at this T-intersection. A country store on the northeast corner introduces additional turning movements and conflict points. An embankment in front of the store also creates obstructions to sight-lines. There should be additional study of this intersection to identify deficiencies. *(Figure 9-2)*

» *VA 601 (Old Garth Road)*

Local cyclists expressed concern about this T-Intersection with Old Garth Road. The intersection lies at the bottom of a ravine, which creates higher travel speeds as vehicles gather momentum on the downhill lanes. This may be a contributing factor to the seven (7) vehicular crashes that occurred within this intersection, between 2005 and 2011. *Note: there were no reported crashes that involved cyclists. (Figure 9-3)*

» *Other intersections in this corridor include:*

- VA 810 (White Hall Road)
- VA 839 (Whippoorwill Road)
- VA 676 (Owensville Road)

Sight Distance

» *Blind Curves*

There are select curves with poor horizontal sight distance. These sight-lines are more problematic to cyclists on the uphill side of the road. As cyclists climb, they require additional room to maneuver and travel at lower speeds.

Additional Cycling Hazards

» *Narrow Shoulders & Guardrails*

There are multiple cycling hazards on Garth Road, but the most notable is the lack of shoulders. Along the roadside, there are few places for a cyclist to bail from the travel lane, in cause of emergency. The roadsides are commonly flanked by ditches, small embankments or trees that stand close to the road's edge. *(Figure 9-4)*

There are also locations with guardrails, which limit the ability of cyclists to maneuver away from the road. These conditions are particularly hazardous on climbs. *(Figure 9-5)*

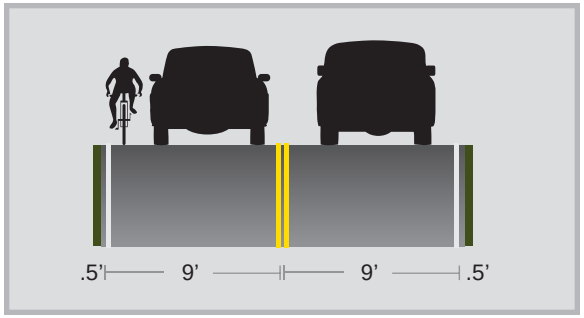


Figure 9-1: Typical Road Section

Figure 9-2: Free Union Road Intersection

Figure 9-3: Old Garth Road Intersection

Planned Road Improvements

» *Road Widening*

The 2010 RLRP identified geometric deficiencies along Garth Road. The plan recommended full-width lanes and shoulders to accommodate bikes. Currently, there are no specific funds or timelines assigned to road improvements.

Traffic Conditions

Traffic Counts

» *2,250 to 5,150 ADT*

This corridor carries some of the highest traffic volumes in the rural portions of the study area. On the western end of VA 614, volumes range from 2,251 to 2,445 ADT. Between VA 676 (Owensfield Road) and VA 601 (Free Union Road), traffic counts double to 5,146 ADT. From Free Union to Old Garth Road, counts fall again to 3,376 ADT.

Most cyclists avoid Garth Road during peak hour travel, by riding early in the mornings. During peak hours, the cycling conditions are too dangerous for many riders, as was event from in the online questionnaire.

If VDOT forecasts prove to be accurate, traffic will steadily and significantly increase on Garth Road. On the western end of this corridor, counts would double by the year 2035, reaching 5,000 ADT. In that same timeframe, the eastern road segments could experience traffic volumes that are double to triple the current counts, to 8,200 and 16,865 ADT. If these increases occur, it would require a complete reassessment of Garth Road, from a road engineering perspective.

Truck Traffic

» *1 to 2 Percent*

While traffic volumes are high, truck traffic is negligible.

Travel Speeds

» *35 to 50 MPH*

While the posted speed limit is 50 MPH, the actual travel speeds are likely closer to 60 MPH. In the White Hall area, to the west, the speed limit reduces to 35 MPH. For trucks, the speed limit is set at 45 MPH, which helps to reduce truck blast on cyclists.

Level of Service

» *B - Reasonably Free Flow &*

» *C - Stable Flow, at or Near Free Flow*

The LOS along Garth Road varies, depending on location. To the west, between VA 810 (White Hall Road) and VA 676 (Ownsfield Road), motorists experience LOS B. VDOT forecasts show that the LOS will degrade slightly by 2035 (to LOS C).

East of VA 676 (Ownsfield Road), the roadway already scores a LOS C. For the section between Ownsfield and Free Union Roads, VDOT forecasts indicate that LOS will degrade to a D over the next twenty years. Consequently, travel speeds will begin to decrease and motorists may experience travel delays in peak-hours. On the segments east of Free Union Road, forecasts show that LOS will degrade further, to an E. Consequently, motorist in these congested areas may experience “stop-and-go traffic”.

Traffic Accidents

» *177 crashes, 0 fatal*

Between 2005 and 2011, there were 177 crashes along Garth Road. Per ADT, this was the second most accident-prone corridor in the rural portions of the study area. The most common crashes were off-road collisions. Rear-end collisions were also common. *Note: There were no recorded crashes between motorists and cyclists, between 2005 and 2011.*

Recreational

Historic Resources

» *Private Resources*

Figure 9-4: Roadside Vegetation

Figure 9-5: Guardrails on Uphill Lane

Along Garth Road, there are two (2) properties that are on the State and National Registers. One is Saint James Episcopal Church, located near the Owensville Road intersection. The second is a private historic property, set back from the roadway. There are several other properties in this corridor that have historic significance. From the roadway, there are views of traditional homes and farms.

Scenic Resources

» *Virginia Byway*

Garth Road is one of the most scenic roadways in the study area. There are ample views of the mountains, farmland and historic estates.

Other Destinations

» *Agri-Tourism*

There are two (2) wineries just west of this corridor, near

the White Hall Road intersection. These agri-businesses could serve as destinations for touring cyclists.

Cycling Services & Resources

» *Food, Water & Restrooms*

There are three (3) commercial properties along this corridor. This includes two (2) country stores, one at White Hall Road and another at Free Union Road.

Access Points

» *No Access*

Topography

» *Rolling*

There are continuous changes in elevation on Garth Road, including several false flats and more significant hills. Some of these areas can be challenging to less experienced riders.

Among the rolling terrain, there are two (2) notable climbs. To the west, there are large hills on either side of the Mechums River Bridge. The average grade of these hills is approximately 10 percent. There are no shoulders on these climbs. With guardrails adjacent to the roadway, cyclists have limited room to maneuver. The second notable climb is near the Old Garth Road intersection. This hill has a grade of approximately 8 percent. It also lacks shoulders and has guardrails and deep ditches on the roadside.

Route Assessment

Bike Compatibility: BLOS D

Overall, Garth Road is incompatible for cycling. There are several deficiencies with this corridor that contribute to its poor rating. First, the roadway is too narrow for the existing traffic counts and travel speeds. Under the existing traffic conditions, the shoulders would ideally be 6 feet wide. Second, the traffic on Garth Road will only continue to rise, meaning that the only solution is to widen the roadway. Third, there are a significant number of traffic accidents in the corridor, indicating poor overall road safety. There are also blind curves and guardrails that cause safety concerns for cyclists.

Recreational: Moderate Value

As a connector, Garth Road has a moderate recreational value. This corridor is one of the most scenic roadways in the study area. There are views of historic properties, including pastoral farms. Cyclists can also access country stores for provisions and restrooms.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Albemarle County to install additional bike signage to inform cyclists and warn motorists of frequent bike traffic.

Vegetation Maintenance

Vegetation may block views at multiple intersections. The TJPDC should work with VDOT to determine whether there is a need to discuss the issue of maintenance with private property owners.

Spot Improvements

Given that most of the crashes in this area involve off-road collisions, there may be geometric deficiencies with road widths, particularly at curves. The TJPDC should work with VDOT and Albemarle County to make safety improvements to high accident areas.

Road Widening

As traffic counts are predicted to increase, there will be even greater need for added road widths. The TJPDC should work with VDOT and Albemarle County to forward efforts to widen Garth Road. While widening would improve cycling safety, it would also benefit motorists and reduce the occurrence of traffic accidents.

Alternate Routing

Local cyclists recommended an alternate route to this corridor, for cyclists who would like to avoid this segment. There are several options for bypassing Garth Road or shortening ride-time in this corridor, while sustaining the link to western Albemarle County. An alternate loop to the south of Charlottesville could take advantage of access to an existing campground and Walnut Creek Park, on Red Hill Road. A southern alternate could also provide access to Charlottesville on Old Lynchburg Road. The TJPDC should study these options for an alternate route, while improving the existing route on Garth Road.

Segment A7:
Old Garth & Old Ivy Roads

Albemarle County

Segment A7 evaluates the cycling environment on Old Garth and Old Ivy Roads. This corridor acts as a gateway between the rural areas of western Albemarle and the more urban streets of Charlottesville, to the east. While these roads provide an important connection for BR 76, the road conditions are generally incompatible for cycling.

Segment Characteristics

Rural & Urban Environment

- Urban Collector
- Secondary Routes

Road Segments

» *Total Road Mileage: 2.75 Miles*

- VA 601 (Old Garth Road) – 1.95 Miles
- VA 601 (Old Ivy Road) – .8 Mile

Land Uses

» *Suburban*

This corridor ties the rural and urban environments, between Garth Road and the City of Charlottesville. The corridor includes a suburban environment, consisting of residential subdivisions and low-profile office buildings.

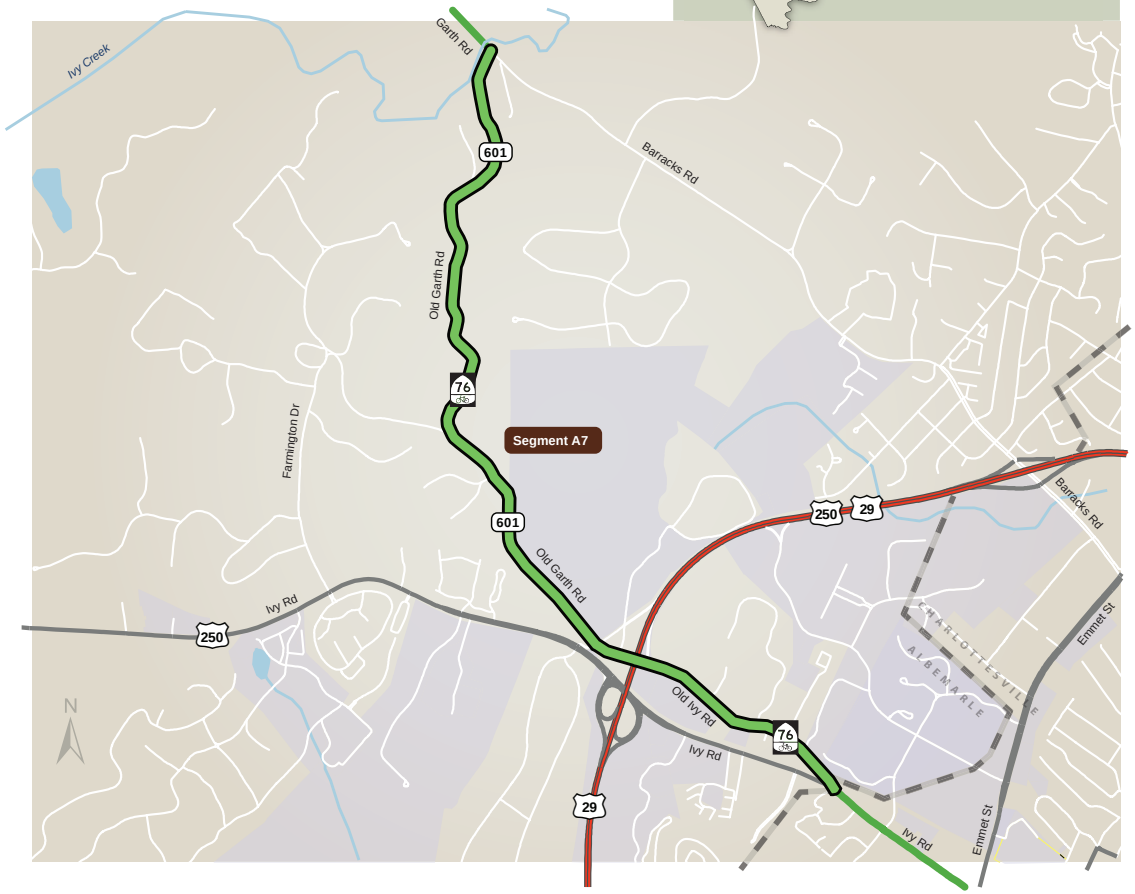
Public Comment

» *No Comment*

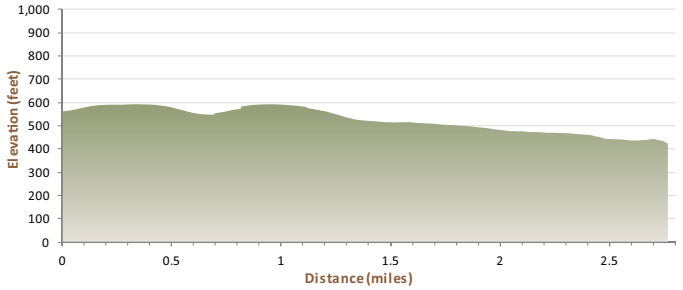
In an online questionnaire, none of the respondents commented specifically on VA 601, though one respondent highlighted safety concerns at the Garth/Old Garth Road intersection.

D	3,495	30
Bike Level of Service	Annual Average Daily Trips	Posted Speed (MPH)
10’	0 - .5’	1%
Average Lane Widths (feet)	Shoulder/Bike Lane Width (feet)	Truck Traffic (percent)

Positive Contributing Factor Negative Contributing Factor



Route 76 Profile Segment
Route 76 Bike Route
Water Body
County Boundary



Road Features

Road Sections

» *Rural Two-Lane, Suburban Two-Lane*

» *Shared Lane Bike Facility*

Old Garth Road is a narrow, two-lane roadway, with 18 feet of pavement. Each travel lane is nine (9) feet wide. The road edge is defined by embankments, steep drop-offs or ditches. *(Figure 10-1)*

Old Ivy Road is in a more suburban environment, with a wider roadway of 22 feet, which consists of 10 to 11-foot travel lanes. The roadside is framed with shallow ditches and grass shoulders, along with curbing in some areas. *(Figure 10-2)*

Bike Signage

» *Additional Signage*

In this corridor, there are six (6) road signs indicating BR 76. There are also two (2) "Share the Road" signs.

Featured Intersections

» *VA 846 (Bypass Off Ramp)*

There are two (2) ramps associated with a grade separated overpass for the US 250/29 Bypass. VA 846 serves as the northern ramp, allowing westbound traffic to exist the Bypass. This ramp also forms a four-way intersection with Old Garth/Old Ivy Road.

This is potentially one of the more dangerous intersections in the study area, with high traffic volumes and travel speeds. Additionally, there are major deficiencies with sight distances. From the western leg of Old Garth Road (eastbound), the railroad bridge and embankment to the south blocks views of oncoming traffic. *(Figure 10-3)*

» *VA 855 (Faulconer Drive)*

There are minor concerns with the T-intersection at Faulconer Drive. While there is sufficient sight-distance, there are features that diminish cycling safety. With several office buildings surrounding this intersection, there are additional conflict points from various entrances. This can cause confusion for cyclists, if there are multiple vehicles in this intersection at one time. *(Figure 10-4)*

» *US 29 (Bypass – East Ramp)*

The south ramp on Old Ivy Road allows motorists to access the Bypass, traveling eastbound, creating a T-intersection. Overall, sight-distances are adequate. There are additional turning movements at this intersection, because of two (2) entrances from an office building, introducing possible conflict points.

» *US 250 (Ivy Road)*

There were 24 crashes at this Y-intersection, between 2005 and 2011. This includes an incident where a vehicle struck a pedestrian. Over half of the intersection crashes were rear-end collisions. Another eight (8) crashes were angled collisions between vehicles. *(Figure 10-5)*

There are several dangers to cyclists at this intersection. First, the railroad bridge narrows the roadway, which squeezes cyclists and vehicles into a confined space. Second, Old Garth Road slopes up to the intersection. When cyclists stop at the light, the uphill lane creates difficulties for cyclists trying to begin peddling from a dead stop. Third, the peak-hour volume and speed of traffic on Ivy Road can cause safety issues for cyclists.

Sight Distance

» *Poor Sight Distance*

There are several deficiencies with sight-distance throughout this corridor. On Old Garth Road, there are multiple blind curves, due to embankments that obstruct views. This is particularly troublesome on the uphill lanes, where cyclists travel at slower speeds and require more room to maneuver. Also, the intersection with VA 846 presents one of the main hazards in this corridor, due to poor sight-lines. *(Figure 10-6)*

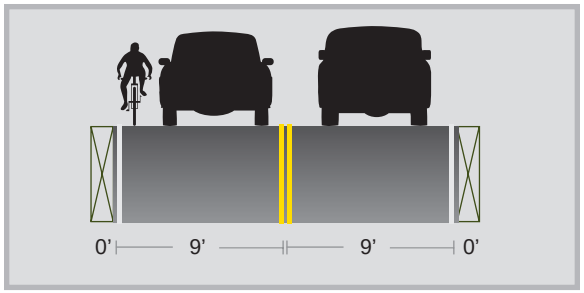


Figure 10-1: Typical Road Section on Old Garth

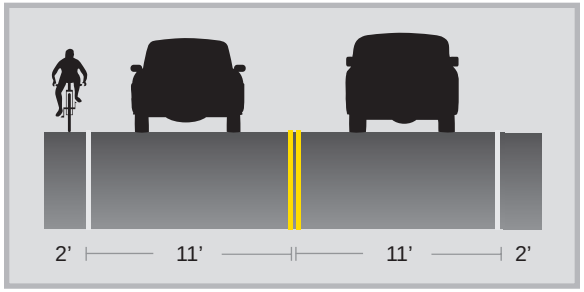


Figure 10-2: Typical Road Section on Old Ivy

Figure 10-3: Sight-Distances at VA 846

Figure 10-4: VA 855 Intersection

Additional Cycling Hazards

» *Road Surfaces*

VDOT resurfaced the northern end of Old Garth Road, but the remaining road surfaces are in poor condition, with potholes, cracks and worn asphalt.

Planned Road Improvements

» *No Planned Improvements*

Traffic Conditions

Traffic Counts

» *1,740 to 5,250 ADT*

Old Garth Road carries 1,736 ADT, a relatively high count for the roadway dimensions. To the east, those counts significantly increase to 5,247 ADT, on Old Ivy Road. This increase in ADT is likely due to motorists traveling to and from the US250/29 Bypass interchange and the local office buildings.

VDOT Forecasts show that traffic will continue to increase in this corridor. In the next twenty years, traffic on Old Garth Road may increase to 2,457 ADT. On Old Ivy Road, the forecast indicates 7,104 ADT.

Truck Traffic

» *1 Percent*

Travel Speeds

» *30 MPH*

While the posted speed limit is 30 MPH, the actual travel speeds are likely closer to 40 MPH, particularly on Old Garth Road. Due to traffic on Old Ivy Road, vehicles likely travel closer to posted speeds.

Level of Service

» *B - Reasonably Free Flow*

» *C - Stable Flow, at or Near Free Flow*

On Old Garth Road, motorists are able to travel at or above the posted speed limit. VDOT forecasts show that the LOS will degrade slightly by 2035 (to LOS C).

Old Ivy Road already has a LOS C, but the roadway remains safely below capacity. Despite increases in traffic, VDOT forecasts show that LOS will remain at C over the next twenty years.

Traffic Accidents

» *87 Crashes, 0 Fatal*

On Old Garth Road, there were 20 crashes, from 2005 to 2011. Nearly half of those crashes were off-road collisions. The remaining accidents were rear-end and angled collisions. In the same time period, there were 67 crashes on Old Ivy Road. These were mostly rear-end and angled collisions between vehicles. *Note: There were no recorded crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Private Resources*

In this corridor, there are two (2) properties listed on the State and National Historic Registry, though neither is open to the public. There are views of other homes and properties with historic significance.

Scenic Resources

» *Virginia Byway*

This corridor is listed as a Virginia Byway, but the densely wooded areas along Old Garth and development on Old Ivy Road blocks scenic resources from the roadway.

Highway Markers

» *Civil and Revolutionary Wars*

The two (2) historic markers in this area are on US 250, just south of BR 76. The markers describe the Union occupation of Charlottesville during the Civil War, and documents graves of soldiers from the Revolutionary War.

Figure 10-5: US 250 Intersection

Figure 10-6: Sight-Distance on Old Garth Road

Other Destinations

» *No Cycling Destinations*

Cycling Services & Resources

» *No resources*

Access Points

» *No Access*

Topography

» *Rolling*

From Garth Road, cyclists have a long climb up Old Garth Road. While the average grade is approximately 2 percent, the terrain continues upward for more than 1.5 miles. The

road then drops at VA 846, where there is a second long hill. The terrain drops a second time, before the Ivy Road intersection.

Cycling Assessment

Bike Compatibility: BLOS D

Overall, the roads in this corridor are incompatible for cycling, as there are several conditions that diminish cycling safety and comfort. On Old Garth Road, the road widths are narrow and there is a lack of shoulders. With the existing travel speeds and traffic volumes, the travel lanes should ideally be 14 feet wide, to accommodate cycling safety. The traffic volumes are relatively high and there are poor sight-distances at curves and intersections. On Old Ivy Road, there are multiple conflict points where cyclists and vehicles could cross paths.

VA 601 provides some cycling benefits. It allows for a more direct connection to Garth Road and western Albemarle County. This route also allows cyclists to avoid the higher volume/speed conditions on US 250.

Recreation: Low Value

As a connector route, this corridor has low recreational value. While there are historic resources, none are open to the public and few are visible from the roadway. There are no other destinations, services or resources for cyclists. Also, there are no public parking areas to access the Bike Route. The terrain can be challenging for some riders, but others may prefer these long climbs.

Recommendations

Additional Signage

The TJPDC should work with VDOT, the City, and Albemarle County to install additional bike signage, to inform cyclists and warn motorists of frequent bike traffic.

Spot Improvements to Shoulders

Given that most of the crashes on Old Garth Road involve off-road collisions, there may be geometric deficiencies with road widths, particularly at curves. The TJPDC should work with VDOT and Albemarle County to make safety improvements to high accident areas.

Study of Intersections

The TJPDC should work with VDOT, the City and Albemarle County to identify ways to further study the deficiencies at intersections within this corridor.

Alternate Routes

The TJPDC should explore opportunities to establish alternative routes that bypass the City, for cyclists who would like to remain on rural roadways. While alternate routes would provide an option to bypass the City, BR 76 should continue to access the City for its services and destinations.

Segment A8: Scottsville Road

Albemarle County

Segment A8 evaluates the cycling environment on Scottsville Road, between the City/County line and VA 53 (Thomas Jefferson Parkway). US 20 serves an important role with BR 76, connecting the City of Charlottesville with eastern Albemarle County, with its tourism destinations. Despite the need for this connection, Scottsville Road is one of the most dangerous roadways in the study area. These deficiencies create difficult challenges for meeting the goals of a US Bike Route.

Segment Characteristics

Rural Environment

- Urban Principal Arterial
- Urban Minor Arterial
- Primary Route

Road Segments

» *Total Road Mileage: .78 Mile*

- US 20 (Scottsville Road) - .78 Mile

Land Uses

» *Suburban*

The Interstate 64 interchange occupies much of the land in this corridor. South of the interchange, adjacent properties are either wooded or part of the region's community college. Just south of the US 53 intersection, there are residential areas that include apartments and townhomes. At the northern end of the corridor, US 20 enters the more urban environment of Charlottesville.

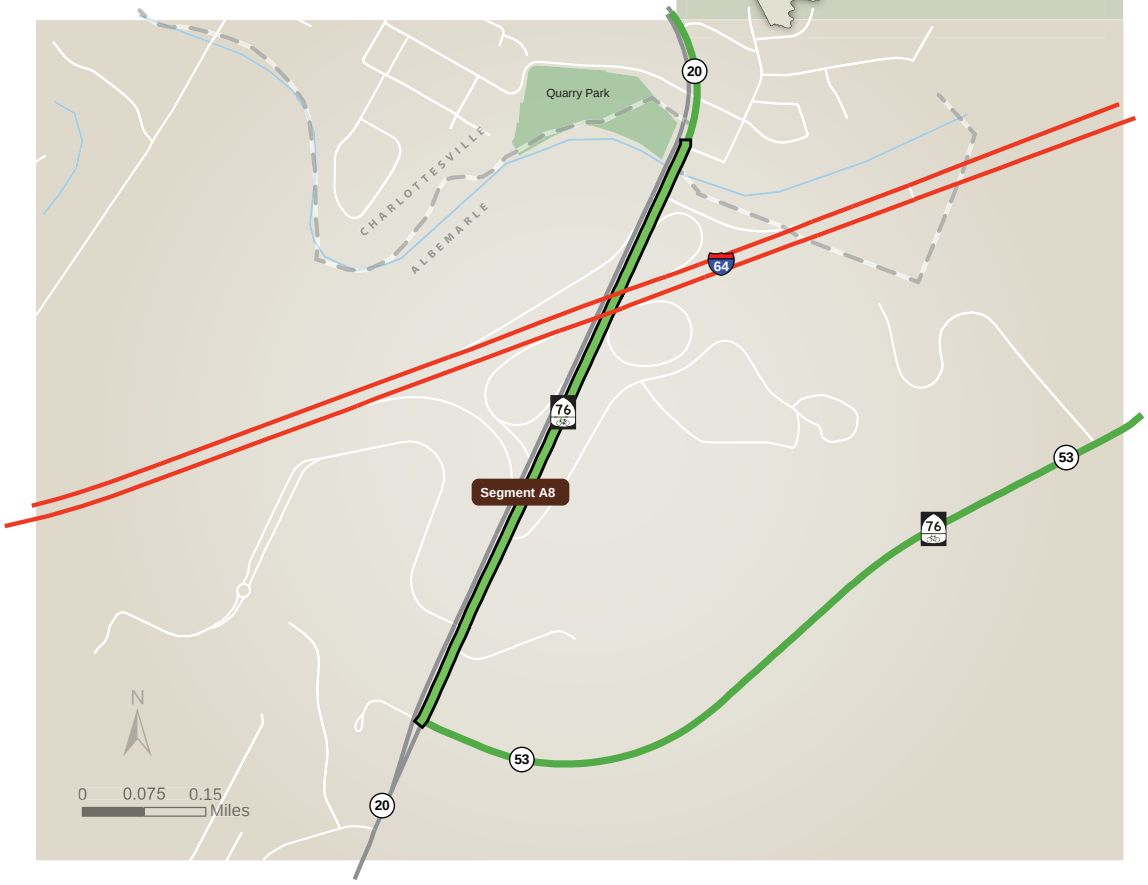
Public Comment

» *Safety Concerns*

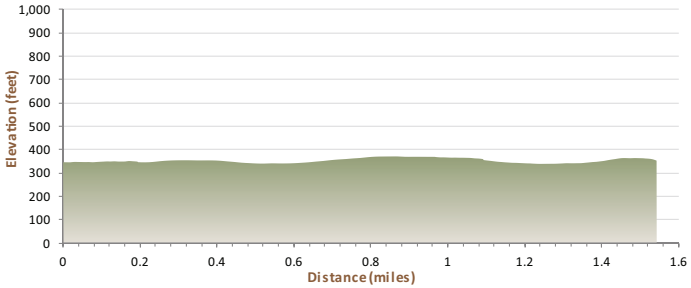
In an online questionnaire, local cyclists expressed concerns about Scottsville Road. Respondents said they try to avoid this road, due to excessive traffic and the shoulder

D	20,345	45
Bike Level of Service	Annual Average Daily Trips	Posted Speed (MPH)
12'	0 - 12'	2%
Average Lane Widths (feet)	Shoulder/Bike Lane Width (feet)	Truck Traffic (percent)

Positive Contributing Factor Negative Contributing Factor



Route 76 Profile Segment
Route 76 Bike Route
Water Body
County Boundary



conditions. One local cyclist said this was the most hazardous road in the BR 76 study area.

Road Features

Road Sections

» *Rural Multi-Lane*

Scottsville Road is the only four-lane road in the study area (excluding turn lanes). Each travel lane is 12 feet. Separating the north- and southbound lanes, there is a grass median that is 40 feet wide. On the outside lanes, the shoulders vary greatly throughout this corridor. There are no paved shoulders on the southern section, with a guardrail that is directly adjacent to the road pavement. Near the intersection with College Drive, the shoulders widen to 12 feet, though the surface is gravel. The widest shoulders are near the Interstate 64 interchange, where there are 12-foot, paved shoulders. There are no shoulders in the remaining sections of the corridor. *(Figure 14-1)*

» *Wide Outside Lane & Shared Lane Bike Facility*

The bike facilities vary in this corridor. Along some segments, cyclists share the same travel lanes as motorists. In other locations, cyclists can use of paved shoulders on the outside lanes. *(Figure 14-2)*

Bike Signage

» *Adequate Signage*

There are two (2) BR 76 signs, guiding cyclists through this corridor. While these signs are effective at guiding cyclists, there were no other bike-related signs.

Featured Intersections

» *Interstate 64*

This is one of the most dangerous intersections for cyclists in the BR 76 study area. This corridor is one of two interstate interchanges found the study area. The other interchange is in Goochland, seen under the Shannon Hill Segment. In both instances, the interchange design presents numerous hazards to cyclists. There is a high volume and speed of traffic that must weave on/off the ramps. These traffic movements introduce conflict points, where vehicles cross paths with cyclists. *(Figure 14-3)*

There were 46 crashes at the interchange, between 2005 and 2006. Most of those accidents were rear-end or angled collisions at the ramps. None of those crashes involved cyclists.

» *VA 338 (College Drive)*

College Drive serves as the only ingress/egress for Piedmont Community College (PVCC). While sight distance and access management are sufficient in this area, the volume of turning movements increases the chances of crashes. Between 2005 and 2011, there were 43 traffic accidents at this location. Most of these crashes were rear-end or angled collisions.

» *US 53 (Thomas Jefferson Parkway)*

The T-intersection at US 53 is one of the more dangerous intersections for cyclists in the study area. While sight distances and access management are adequate, there are high volumes of traffic that travel through this intersection on a daily basis. On US 20, there are multiple lanes of traffic, with vehicles traveling at high speeds. The signalization helps to improve safety for cyclists, but the paths of vehicles and bicycles overlap at multiple points. Note: There were recent improvements to this intersection, including installation of a channelized turn. These improvements will help to improve cycling and overall road safety. *(Figure 14-4)*

Sight Distance

» *Clear Sight-Lines*

Additional Cycling Hazards

» *Guardrails*

Along Scottsville Road, there are several road sections with guardrails. In some locations, there are no paved shoulders between the travel lane and guardrail. Those conditions limit the ability of cyclists to maneuvering away from heavy traffic on US 20. Guardrails can also cause cyclists to feel confined in heavy traffic. *(Figure 14-5)*

» *Shoulder Conditions*

The shoulders on Scottsville Road are inconsistent, pre-

Figure 14-1: Typical Road Section

Figure 14-2: Typical Section with Wide Shoulder

Figure 14-3: I-64 Interchange

Figure 14-4: US 20/53 Intersection

Figure 14-5: Guardrails

Figure 14-6: Shoulder Conditions

senting cyclists with unexpected changes in road conditions. In some locations there are wide, paved shoulders, while in other road sections the shoulders are gravel or nonexistent. Additionally, the surface conditions vary, as there are potholes and broken pavement along the road edge. *(Figure 14-6)*

Planned Road Improvements

» *Trail Improvements*

The City and County are discussing the potential for a multi-use trail that would pass underneath Interstate 64, to connect Saunders Trail with the City. If this project moves forward, it would create a safer link between US 53 and the City, avoiding US 20.

Traffic Conditions

Traffic Counts

» *17,260 to 23,430 ADT*

Scottsville Road carries the highest traffic counts in the BR 76 study area, with 8,000 ADT over the second most traveled corridor. The largest volumes of traffic are south of Interstate 64, near US 53. In the future, traffic will likely continue to increase. VDOT forecasts show that there will be over 40,000 ADT on this portion of Scottsville Road, by the year 2035.

Truck Traffic

» *2 Percent*

Travel Speeds

» *45 MPH*

The speed limit in this corridor is set at 45 MPH, but the actual travel speeds are likely closer to 55 MPH.

Level of Service

» *B - Reasonably Free Flow*

On Scottsville Road, motorists are able to travel at or above the posted speed limit. VDOT forecasts show that the segment north of Interstate 64 will experience a LOS D within the next twenty years, due to the increases in traffic. Consequently, travel speeds will begin to decrease, because of the congestion. In the section between Interstate 64 and US 53, forecasts show a LOS F by 2035. This will result in a breakdown in travel flow, also known as stop-and-go traffic.

Traffic Accidents

» *171 crashes, 0 fatal*

Scottsville Road is one of the most crash-prone areas in the study area, with 171 crashes between 2005 and 2011. Rear-end collisions were the most common crash type, accounting for 68 accidents. The second most common were angled crashes, which included 58 occurrences. The crashes were clustered at the three (3) intersections. Despite the number of crashes, there were no recorded collisions between vehicles and bicycles.

Recreational

Historic Resources

» *No Historic Resources*

Scenic Resources

» *Virginia Byway*

While Scottsville Road is designated as a Virginia Byway, there are no identified scenic vistas on this corridor.

Other Destinations

» *No Cycling Destinations*

Cycling Services & Resources

» *No Identified Resources*

Access Points

» *Kemper Park*

There is a parking lot at Kemper Park, near the intersection with US 53. Cyclists could use this public parking to access BR 76.

Topography

» *Flat*

Route Assessment

Bike Compatibility: BLOS D

Overall, Scottsville Road is incompatible for cycling. The road and traffic conditions on Scottsville Road result in an unsafe environment for cyclists. The traffic counts are the highest in the entire study area and forecasts show that these counts will continue to increase. There is a relatively high occurrence of traffic accidents. The intersections are among the most dangerous (for cyclists) in the study area. Guardrails confine the movement of cyclists. The inconsistent shoulders can mislead riders, who will eventually find themselves at a road section with no space from traffic. Finally, the surface conditions on the roadside can result in unexpected falls.

There are some features that improve safety in the corridor. The sight distances are clear. Truck traffic is moderate and some road sections include wide shoulders.

Recreation: Low Value

The recreational amenities in this area are low. There are no historic resources available to the public. There are no scenic resources or other destinations that would interest cyclists, though there is public parking available.

Recommendations

In terms of improving cycling safety, many of the following recommendations include rerouting or alternate routes. Due to the existing and future traffic counts, the bike compatibility score will likely worsen with time. Also, the I-64 interchange is a permanent feature that presents the greatest dangers to cyclists. Due to the permanence of these hazards, the only option may be to provide alternative routes or to pursue a rerouting.

Additional Signage

The TJPDC should work with VDOT and Albemarle County to install additional bike signage. Those signs can inform cyclists and warn motorists of frequent bike traffic.

Coordinate on Tunnel Project – Rerouting

The TJPDC should coordinate with the City and County, offering any assistance with planning the tunnel under I-64 that would connect the City and Saunders-Monticello Trail.

PVCC – Alternate Route

The TJPDC should coordinate with Albemarle County and PVCC to study a rerouting, from Avon Street extended. This reroute would allow cyclists to travel through the Community College, avoiding the I-64 interchange.

Alternate Routes

The TJPDC should explore opportunities to establish alternative routes that bypass US 53, per the comments from local cyclists, while improving the existing route.

Explore Shoulder Improvements

The TJPDC should work with VDOT and Albemarle County to explore the need for shoulder improvements that would provide additional space for cyclists and increase overall road safety. The highest priority should be given to areas with guardrails.

Information Center

The TJPDC will explore the potential of providing a cycling information center at the former Bicentennial Center building or on the PVCC Campus.

Segment A9: Thomas Jefferson Parkway

Albemarle County

Segment A9 evaluates the cycling conditions on US 53 (Thomas Jefferson Parkway), in the area between US 20 (Scottsville Road) and VA 795 (James Monroe Parkway). This is a critical link for BR 76, connecting the City of Charlottesville with eastern Albemarle County and providing access to historic destinations with national significance. Despite the great importance of this area as a tourism destination, there are numerous cycling hazards along the Thomas Jefferson Parkway that diminish cycling safety and comfort.

Segment Characteristics

Rural Environment

- Major Collector
- Primary Route

Road Segments

» *Total Road Mileage: 3.17 Miles*

- US 53 (Thomas Jefferson Parkway) – 3.17 Miles

Land Uses

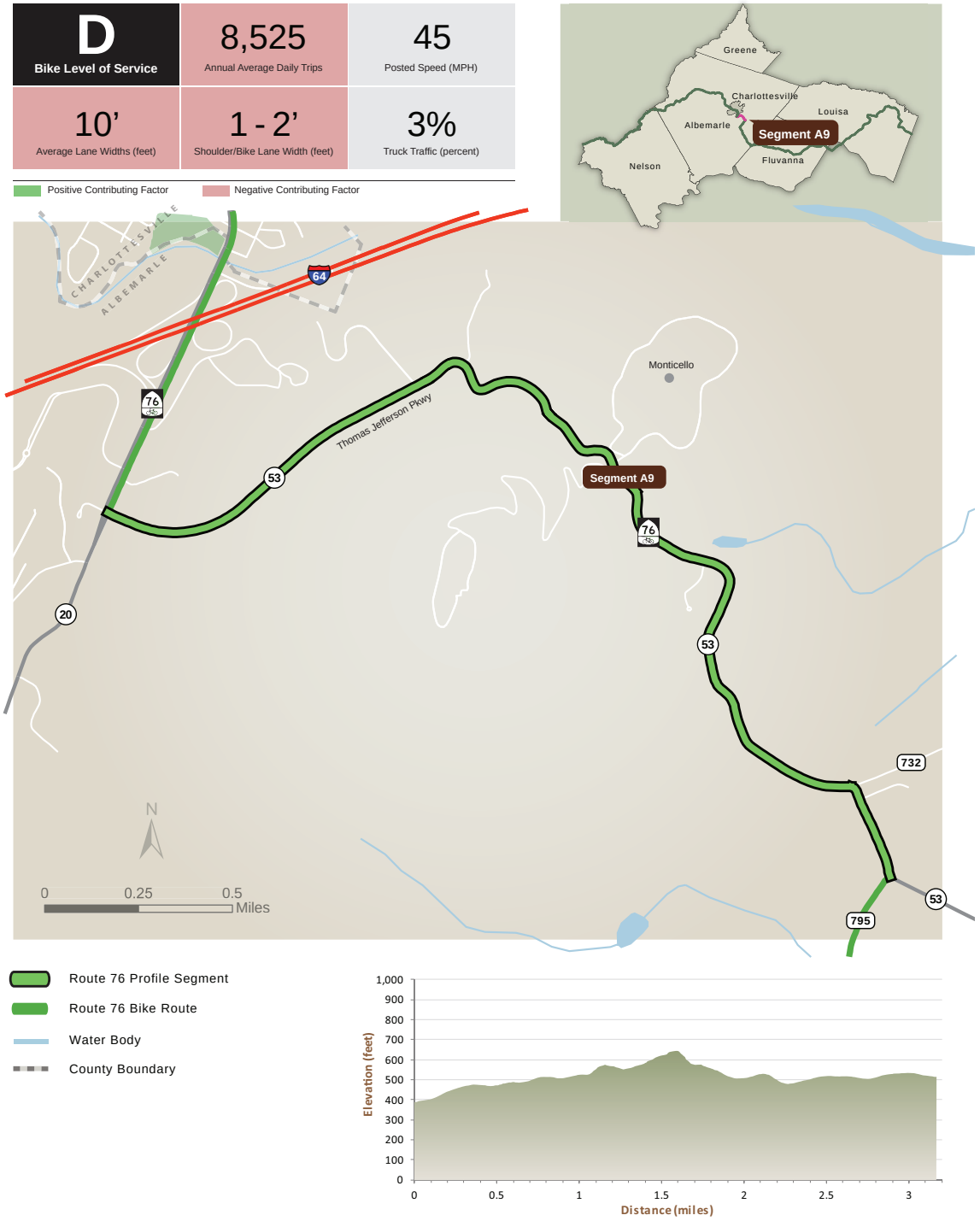
» *Rural*

This rural corridor consists mostly of large farms and wooded tracts, along with popular destinations for locals and tourists. Those destinations include a vineyard and orchard, along with multi-use trails and historic landmarks. These destinations attract large numbers of visitors, especially during the warmer months of the year.

Public Comment

» *Safety Concerns*

In an online questionnaire, the US 53 corridor received the most comments from local cyclists. Out of those who commented on US 53, all cyclists felt that this corridor was



incompatible with cycling. Respondents described US 53 as "incredibly more dangerous than other roads in the County" or the "least safe sections of Route 76."

There were several specific comments about the conditions on US 53. Local cyclists said that the roadway is too busy for cycling and that the travel speeds are too high. Respondents also said that the road was too narrow and there needed to be wider shoulders. There was also a comment about the challenging climbs and poor sight-lines.

While local cyclists thought that US 53 was inappropriate for cycling, they conceded that it is one of the only routes for reaching rural roadways in eastern Albemarle. There were several respondents who recommended that there be a study on alternative routes, to bypass US 53.

Road Features

Road Sections

» *Rural Two-Lane*

The Thomas Jefferson Parkway is a two-lane, rural road that consists of a 22-foot, paved surface. Within those 22 feet, there are 10-foot travel lanes and paved shoulders that range from 1 to 2 feet. *(Figure 15-1)*

» *Shared Lane Bike Facility*

The roadside features vary, including vegetated ditches, large embankments, guardrails, drop-offs and grass shoulders.

Bike Signage

» *Additional Signage Needed*

While there are four (4) BR 76 signs, there are none at the Milton Road intersection. Without those signs, there could be confusion among cyclists on which direction to travel. Additional, there are no other bike-related signs in this corridor.

Featured Intersections

» *Monticello Loop*

On US 53, there is one (1) ingress and one (1) egress from Monticello. Monticello Loop serves as the ingress, with a grade separated bridge over US 53. The egress is located nearly 300 feet south of the ramp. On busy weekends, there can be a significant amount of traffic that turns in and out of these access points. Overall, these areas generally have clear sight-lines and minimal conflict points.

» *VA 732 (Milton Road)*

Milton Road connects with US 53 at a curve, creating a T-intersection. While the sight distances are relatively clear, there are additional access points within the intersection, for a church and the Simeon Market, creating additional conflict points on the curve. Generally, vehicles tend to take this curve at higher than recommended speeds. *(Figure 15-2)*

Between 2005 and 2011, there were 16 crashes at the intersection with Milton Road. Most of those accidents were angled collisions between vehicles. *Note: there were no reported traffic accidents involving bicycles.*

» *VA 795 (James Monroe Parkway)*

VA 795 forms a T-intersection with US 53, marking the eastern boundary of Segment A9. While there are no immediate deficiencies at this intersection, there appear to be minor safety issues. While sight distances are adequate, there are limited sight-lines from VA 795, looking west on US 53. Along this area of US 53, there is a business entrance less than 200 feet from the intersection, which could create additional conflict points and confusion between cyclists and motorists. Another issue is the large amount of traffic that passes through the intersection. Between 2005 and 2011, there were at least 17 crashes at this location, making it one of the most accident prone intersections in the Bike Route 76 study area. *(Figure 15-3)*

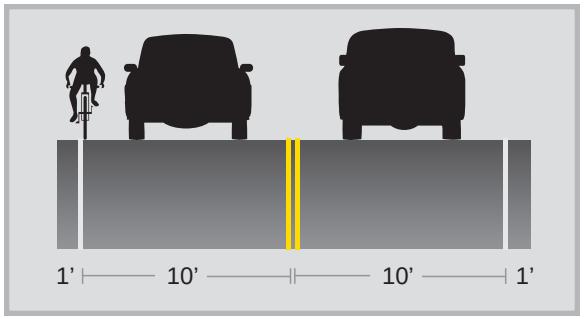


Figure 15-1: Typical Road Section

Figure 15-2: Milton Road Intersection

Figure 15-3: James Monroe Parkway Intersection

Sight Distance

» *Blind Curves*

There are curves with poor horizontal sight distance. These issues are more problematic to cyclists when motorists have blocked sight-lines on the uphill side of the road. *(Figure 15-4)*

Figure 15-4: Sight Distance at Curve

Figure 15-5: Guardrails on US 53

Figure 15-6: Saunders/Monticello Trail

Additional Cycling Hazards

» *Guardrails*

Along US 53, there are several road sections that include guardrails, which can limit the ability of cyclists to maneuver away from the road in cases of emergency. *(Figure 15-5)*

» *Shoulder Conditions*

Occasionally, there are large potholes or wide cracks in the pavement, located within the 40 inches of the roadside where cyclists ride. These surface deficiencies could cause cyclists to lose control, resulting in a collision with vehicles or a roadside feature, such as a guardrail.

Planned Road Improvements

» *Recent Should Improvements*

The SYIP includes two (2) projects to widen shoulders on both sides of Thomas Jefferson Parkway. These projects focused on safety improvements and are already completed.

» *Trail Improvements*

In 2011, the MPO supported a recommendation to reroute BR 76, from US 53 onto the Saunders/Monticello Trail, but due to several concerns regarding compatibility with hikers, VDOT did not adopt this rerouting. While this trail may not be appropriate as a reroute, it could serve as an alternate, so that cyclists could avoid the hazards along US 53. *(Figure 15-6)*

Traffic Conditions

Traffic Counts

» *8,000 – 9,050 ADT*

For a rural corridor, Thomas Jefferson Parkway has the second highest traffic counts in the study area. It is likely that a significant share of this traffic originates from commuting between Fluvanna County (particularly Lake Monticello) and the City of Charlottesville. This stretch of road also provides access to major destinations that attract traffic. The highest counts (9,050 ADT) are on the western side of US 53, near Scottsville Road. To the east, traffic counts decrease to 8,057 ADT.

VDOT forecasts show significant increases in vehicular travel on US 53. Counts on the western end could increase to 16,000 ADT by the year 2035. The eastern segments are forecasted to increase even more, to 23,300 ADT.

Truck Traffic

» 3 Percent

The percentage of heavy vehicles is moderate and does not significantly affect cycling compatibility.

Travel Speeds

» *45 MPH*

The posted speed on Thomas Jefferson Parkway is 45 MPH. Typically, vehicles travel close to this speed, due to traffic congestion and winding segments of roadway.

Level of Service

» *D - Approaching Unstable Flow*

On this section of US 53, travel speeds may occasionally decrease due to increased traffic volumes. Motorists may experience travel delays from congestion. Over the next twenty years, VDOT anticipates that the LOS will remain at a D, for the area between Monticello and VA 795. On the western segment, between US 20 and Monticello, the forecasts show a LOS E by 2035. Consequently, traffic flow may become irregular, with stop and go traffic.

Since shoulders are limited in areas, traffic may not be able to passing cyclists, resulting in long traffic queues along US 53. This can greatly congest the roadway for motorists and decrease overall LOS.

Traffic Accidents

» *207 crashes, 3 fatal*

This portion of US 53 is one of the most dangerous roadways in the study area. There were 207 reported crashes along this corridor, between 2005 and 2011. This includes three (3) fatal accidents, which all occurred near the curve at Kenwood Farm. In general, most crashes occur at the various bends and curves in the roadway. Most of the crashes on US 53 fall under one of three groups: rear-end, off-road and angled collisions. Rear-end collisions were the most common, with 62 occurrences.

There are several hotspots for crashes. At the US 20 intersection, there were 79 crashes. At the curve in front of

Michie Tavern, there were 27 crashes. There were eight (8) crashes near the curve at Kenwood Farm. There were 16 crashes at the intersection with Milton Road, with most involving angled collisions. There were 17 crashes in and around the intersection with James Monroe Parkway, where off-road crashes were the most common. Despite these incidents, there were no reported collisions between motorists and cyclists.

Recreational

Historic Resources

» *Historic Properties and Districts*

The US 53 corridor may have the richest history of any other segment in the BR 76 Study area. There are at least 20 properties with historic significance. Michie Tavern is on the Virginia Registry and is a popular lunch destination. In the Simeon area, a private residence, called Sunnyfields, is on the State and National Registries. Monticello, home to Thomas Jefferson, is included on those registries and the World Heritage List. Monticello is also one of the most visited historic destinations in the state, attracting more than 500,000 visitors annually.

Highway Markers

» *The Collie House*

There is one historic marker in this area, located on the eastern end of the corridor. On this marker, there is a written background of the Collie House, built in 1770 by workmen who also helped build Monticello.

Scenic Resources

» *No Designation*

On the eastern sections of this corridor, there are views of farms, pastures and of the foothills. On the western end of the segment, trees block views, though there are occasional vistas of Charlottesville between boughs.

Other Destinations

» *Agri-tourism & Trails*

Other than the historic destinations in this corridor, there are other destinations that could be draws to tourists and cyclists. On the eastern end of this corridor, a vineyard offers wine tasting and other amenities to patrons. Near Michie Tavern, Carters Mountain Orchard also offers wine tasking, along with seasonal produce, such as peaches or apples. For cyclists, it is difficult to reach the orchard, since bike access is currently restricted on the access road, which winds up the mountain. The Saunders-Monticello Trail, a 2-mile multi-use trail, also curves along the side of Carters Mountain. The eastern trailhead is the Monticello ticket office. The western trailhead ends at Kemper Park, located near the US 53/US 20 intersection. That trail and park includes an arboretum of native trees and shrubs, an overlook, and a small parking lot.

Cycling Services & Resources

» *Restrooms, Food, Water & Rest Stops*

There are several resources in this area that would benefit cyclists. The numerous destinations have restrooms that are either public or available to patrons. In terms of food, Michie Tavern is a restaurant and the Monticello property includes a snack bar.

Access Points

» *Parking at Saunders Trailhead*

At the western end of the Saunders Trail, there are two (2) public parking areas. A tunnel that passes under US 53 connects those lots.

Topography

» *Rolling*

There are significant terrain changes on the western end of this corridor. Monticello Loop is the highest point on US 53. Between US 20 and the Monticello entrance, elevation changes by nearly 260 feet. This equates to a 3 percent climb over a 1.6 mile stretch. On the east side of Monticello Loop, the climb is steeper but over a short distance. Heading towards the Simeon area from Monticello, the elevation drops over 120 feet, with a grade of almost 8 percent.

Cycling Assessment

Bike Compatibility: BLOS D

Overall, US 53 is incompatible for cycling. Even experienced cyclists feel uncomfortable traveling along this roadway. The traffic counts are among the highest in the study area and VDOT forecasts suggest that these counts will increase significantly. During peak hours, the roadway can become congested. The shoulders are limited, squeezing cyclists into a narrow space between traffic and guardrails. The actual BLOS score may be even lower than the calculations show, since there are additional cycling hazards that are not included in the equation. With consideration of those hazards, the actual score may be closer to BLOS E. With future traffic counts and LOS, the compatibility score will worsen in time.

Recreation: Very High Value

US 53 offers some of the best recreational opportunities along the BR 76 study area. There are significant historic destinations, such as Monticello and Michie Tavern. There are opportunities to visits wineries and an orchard. Also, there is sufficient parking, along with access to a trail system and park.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Albemarle County to install additional BR 76 signs at the Milton Road intersection. The TJPDC should also work with these groups to install other signage, to inform cyclists and warn motorists of frequent bike traffic.

Officially Designate the Saunders-Monticello Trail as a Spur Route

The TJPDC should work with the Monticello Foundation and VDOT to further explore the possibility of establishing the Saunders-Monticello Trail as an alternate route for BR 76. If this designation is desirable, then there should be efforts to install appropriate signage, directing cyclists onto the trail.

Alternate Routes

The TJPDC should explore opportunities to establish alternative routes that bypass US 53, for cyclists who would like to avoid the hazards on this corridor. Many touring cyclists will want to visit Monticello and Ash Lawn Highland, so there will always be a need for BR 76 to access these destinations.

Explore Shoulder Improvements

The TJPDC should work with VDOT to explore the need for shoulder improvements, to provide addition space for cyclists and increase overall road safety. The highest priority should be given to areas with guardrails and on sharp curves.

Spot Improvements

Given that there are locations with high occurrence of crashes, there may be geometric deficiencies with road widths, particularly at curves. The TJPDC should work with VDOT and Albemarle County to make safety improvements to high accident areas.

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Segment A10: Ash Lawn Area

Albemarle County

Segment A10 evaluates the cycling environment on VA 795 (James Monroe Parkway) and VA 620 (Rolling Road), near Ash Lawn-Highlands. James Monroe Parkway and Rolling Road provide an alternate path through eastern Albemarle County, bypassing segments of US 53 that are less bike-friendly. While the existing route helps cyclists to avoid dangerous road sections, there are still hazards within the corridor. Despite those dangers, the existing route also provides access to several important landmarks, making this a destination on BR 76.

Segment Characteristics

Rural Environment

- Major Collectors
- Secondary Routes

Road Segments

» *Total Road Mileage: 9.29 Miles*

- VA 795 (James Monroe Parkway) – 3.4 Miles
- VA 620 (Rolling Road) – 5.89 Miles

Land Uses

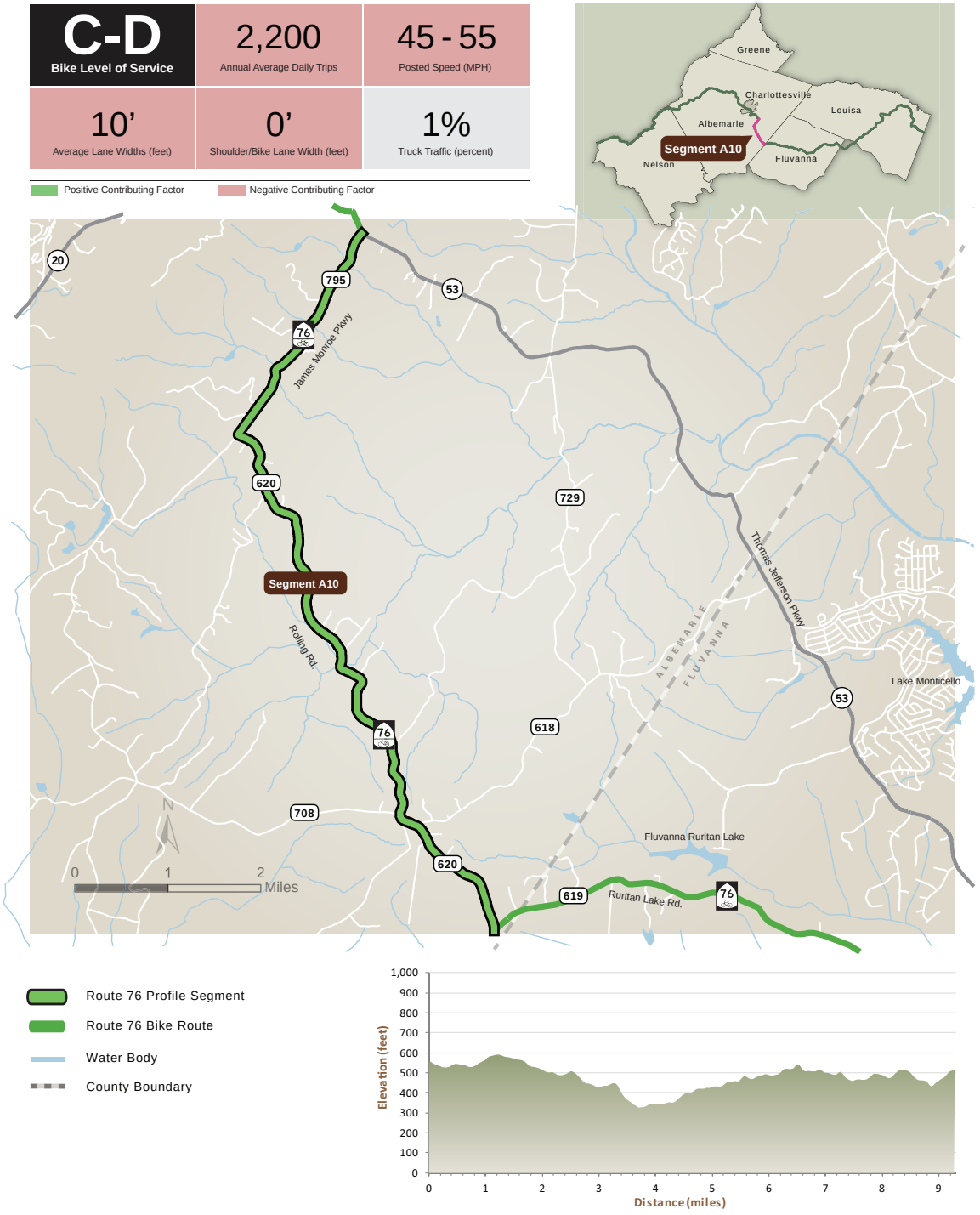
» *Rural*

The Ash Lawn area consists mostly of wooded tracts and large farms, though there are numerous residential properties as well. The highest concentration of residential lots is near the intersection with Ruritan Lake Road.

Public Comment

» *Mixed Comments*

In the online questionnaire, there were mixed comments about the Ash Lawn corridor. While some local cyclists listed Rolling Road as a favorite place to ride, others said there was “very heavy traffic and very narrow” road widths. One respondent said he was nearly hit by cars on at least two



occasions. Another cyclist said he tries to avoid Rolling Road and James Monroe Parkway altogether.

Road Features

Road Sections

» *Rural Two-Lane*

The road profiles vary slightly throughout the Ash Lawn area. James Monroe Parkway is a 20-foot wide roadway, consisting of ten (10)-foot lanes. Rolling Road has the same dimensions, except for a segment between Presidents Road and the Woodridge area, where the road has 11-foot travel lanes. *(Figure 16-1)*

» *Shared Lane Bike Facility*

At the road edge, there are narrow grass shoulders, vegetated ditches, embankments or lawns from adjacent properties.

Bike Signage

» *Additional Signage Needed*

There are seven (7) BR 76 signs. At the Martin King Road intersections, there is one (1) directional sign missing. If cyclists are traveling northbound into this area, there are no signs directing them to continue west onto Rolling Road. Additional, there are no other bike-related signs.

Featured Intersections

» *VA 795 (Presidents Road)*

There are minor issues at the T-intersection of Presidents and Rolling Roads. From Presidents Road, there are obstructed sight-lines to the south, along VA 620, due to foliage from trees. In terms of crash history, there were at least six (6) accidents recorded at this intersection, between 2005 and 2011. None of those crashes involved cyclists.

» *Woodridge Area*

In the Woodridge area, there are three (3) Y-intersections along a 630-foot stretch of Rolling Road. The intersecting roads include VA 708 (Secretarys Road), VA 618 (Jefferson Mill Road) and VA 618 (Martin Kings Road). This cluster of intersections can result in confusion and additional conflict points. There are also limited sight-lines in some locations, due to vegetation or intersection geometry. Between 2005 and 2011, there were 11 crashes in this area. *(Figure 16-2)*

» *Other intersections in this corridor include:*

- US 53 (Thomas Jefferson Parkway)
- VA 795 (James Monroe Parkway)/ VA 620 (Rolling Road)
- VA 619 (Ruritan Lake Road)

Sight Distance

» *Blind Curves*

There are select curves with poor horizontal sight distances. The issues are more problematic to cyclists when motorists have blocked sight-lines on the uphill side of the road. *(Figure 16-3)*

Additional Road Hazards

In addition to the road and traffic condition discussed in this profile, there are two (2) additional hazards for cyclists: guardrails and curves.

» *Guardrails*

On James Monroe Parkway, there are three (3) locations with guardrails, which limit the ability of cyclists to maneuvering away from the road in case of emergency. These conditions are particularly hazardous on climbs, where cyclists travel at slower speeds and require additional space to maneuver. *(Figure 16-4)*

» *Curves*

On Rolling Road, there are several winding road segments with relatively sharp curves. With higher travel speeds, these curves create hazardous areas where motorists have limited time to react to cyclists in blind spots around the curve.

Planned Road Improvements

» *No Planned Improvements*

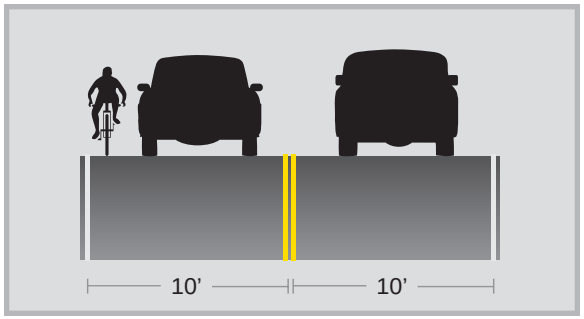


Figure 16-1: Typical Road Section

Figure 16-2: Woodridge Intersections

Traffic Conditions

Traffic Counts

» *1,700 to 2,700 ADT*

James Monroe Parkway has significantly lower traffic counts than US 53, but the traffic volume is still relatively high (2,691 ADT) for the roadway features. By 2035, VDOT forecasts show volumes of 5,400 ADT on VA 795. Rolling Road has more moderate traffic counts, with 1,700 ADT, but those counts could increase to 2,800 ADT in the next twenty years.

Truck Traffic

» *1 Percent*

Figure 16-3: Blind Curve

Figure 16-4: Guardrails

Travel Speeds

» *45 – 55 MPH*

The posted speed limit in this corridor is 55 MPH, though the speed briefly drops to 45 MPH on Rolling Road. The reduced speed limit applies to the roadway between Presidents Road and the Woodridge area. Generally, the actual travel speed is 10 MPH higher than what is posted.

Level of Service

» *C - Stable Flow, at or Near Free Flow*

In the Ashlawn area, Roads remain safely below capacity and motorists are able to travel at or above the posted speed limit. VDOT forecasts show that LOS will remain at a 'C' over the next twenty years.

Traffic Accidents

» *141 Crashes, 0 Fatal*

There were 141 reported traffic accidents in this corridor, between 2005 and 2011. This includes 45 crashes on James Monroe Parkway and 96 crashes on Rolling Road. The most common accidents were off-road collisions with trees or roadside features. Overall, most crashes occurred at bends or curves in the roadway. *Note: There are no records of crashes between motorists and cyclists, between 2005 and 2011.*

Recreational

Historic Resources

» *Historic District and Properties*

In this Segment, there are numerous properties with historic significance, including two (2) properties and one (1) historic district that are listed on the State and National Registries. One of the properties, Ash Lawn-Highlands, was home of James Monroe, fifth president of the United States. Additionally, the Southern Albemarle Rural Historic District encompasses this area and the southeastern quadrant of Albemarle County. This district helps to preserve the rural character of Albemarle County and recognize the historic properties of this area.

Highway Markers

» *Ash Lawn-Highlands*

There is one (1) historic marker in this area, located on James Monroe Parkway. This marker provides a brief written history of the Ash Lawn-Highlands property.

Scenic Resources

» *No Designation*

While this corridor is an attractive rural setting, there are no identified scenic vistas. Most views are of wooded tracts and small fields.

Other Destinations

» *Agri-Tourism and Historic Site*

This area is home to two (2) destinations. Ash Lawn-Highlands is open to the public and offers tours. There is also a vineyard at the northern end of the corridor, which can serve as an agri-tourism destination for cyclists.

Cycling Services & Resources

» *Restrooms and Food*

Jefferson Vineyards and Ash Lawn Highlands are open to the public and have restrooms for patrons. On Rolling Road, there are two (2) country stores, offering opportunities for cyclists to restock on supplies.

Access Points

» *No Access*

There are no official parking areas that allow cyclists to access BR 76. There are parking areas at destinations in this corridor that could allow for access, though these areas are not officially public.

Topography

» *Rolling*

The rolling topography in this area includes several small hills and false flats.

Route Assessment:

Bike Compatibility: BLOS C – D

The cycling equations indicated that James Monroe Parkway is incompatible for cycling, with a BLOS D. Since Rolling Road has lower traffic counts, by 1,000 ADT, the cycling conditions improve to BLOS C.

Overall, safety is relatively poor in this corridor. The roadways lack shoulders, which creates safety concerns with the relatively high traffic counts and speeds. There are several blind curves along Rolling Road, along with guardrails in several locations. There are also locations with reoccur-

ring traffic accidents, highlighting general safety concerns. With a forecast of higher traffic counts, cycling compatibility could continue to diminish over the next 20 years.

There are two positive safety features. First, the truck traffic is limited, minimizing truck blast. Second, there are relatively few conflict points, where vehicles and bicycles could cross paths.

Recreation: Very High Value

Overall, the recreational amenities in this area are excellent. There is a significant historic destination, with Ash Lawn-Highlands. Just outside of this profiled area, BR 76 connects James Monroe's home with Monticello, located on US 53. There is a vineyard between these destinations, as well. There are country stores that offer opportunities for cyclists to rest and resupply. While there are no identified scenic vistas, this area does provide an attractive rural environment.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Albemarle County to install an additional BR 76 sign at the Martin King Road intersection. The TJPDC should also work with these groups to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Alternate Routes

The TJPDC should explore opportunities to establish alternative routes that bypass US 53, for cyclists who would like to avoid the hazards on this corridor. Many touring cyclists will want to visit Monticello and Ash Lawn-Highland, so there will always be a need for BR 76 to access these destinations.

Explore Shoulder Improvements

The TJPDC should work with VDOT and Albemarle County to explore the need for shoulder improvements, to provide additional space for cyclists and increase overall road safety. The highest priority should be given to areas with guardrails, on sharp curves and locations with reoccurring traffic accidents.

Reduction of Speed Limits

TJPDC should work with VDOT to assess the effects of reducing the speed limit to 45 MPH, in order to provide a safer environment for cycling.

Study of Intersections

The TJPDC should work with VDOT and Albemarle County to conduct further analysis on the intersection at US 53, along with the intersections at Woodridge. This review should include a more detailed assessment of sight distances and geometries.