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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



TransAmerica Trail - Courtesy Adventure Cycling Association

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.



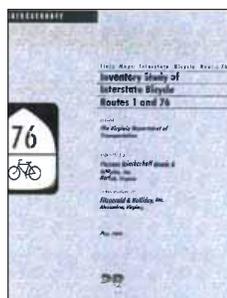
Route 76 and Route 1 Bike Routes in Virginia

There is common confusion between BR 76 and the Trans-American 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 op-

portunities 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.

Methodology

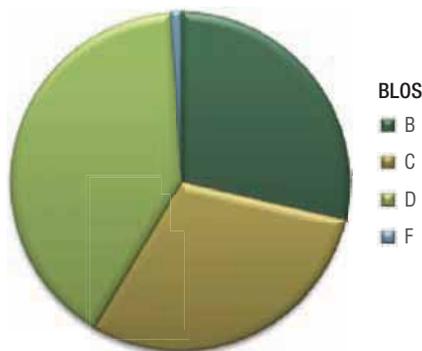
TJPDC staff worked closely with VDOT on data collection and conducted multiple site visits of the study area. VDOT representatives provided their expertise on roadway conditions and cycling deficiencies along the corridor. The Statewide Planning System (SPS) data was critical for this analysis, providing 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

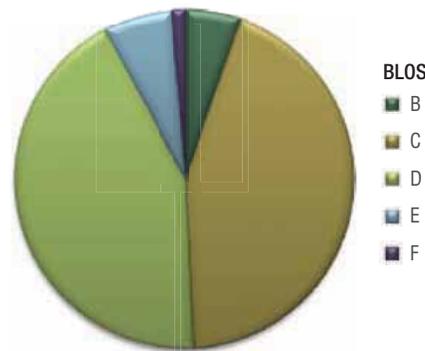
Staff used a Bike Level of Service (BLOS) calculator from the League of Illinois Bicyclists (LIB), as recommended by VDOT, to calculate bike compatibility. The equation provided a general score of bike compatibility for a given roadway. The calculator requires inputs on 8 critical indicators, which included:

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%)

Current BLOS by Mileage

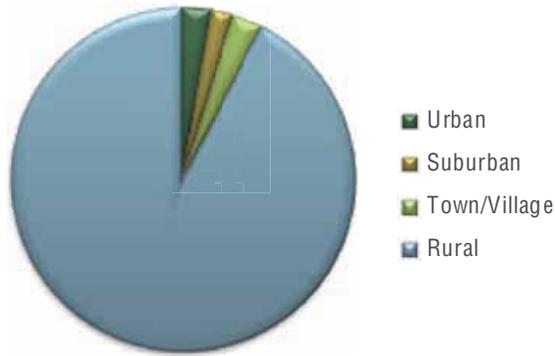


2035 BLOS by Mileage



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

Road Mileage by Environment



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

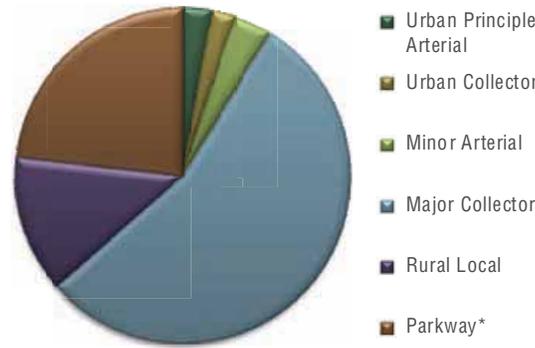
BLOS F: Extremely Low Compatibility

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

Mileage by Road Classification



into lower traffic counts, which is why AASHTO targets rural roadways from the USBRS.

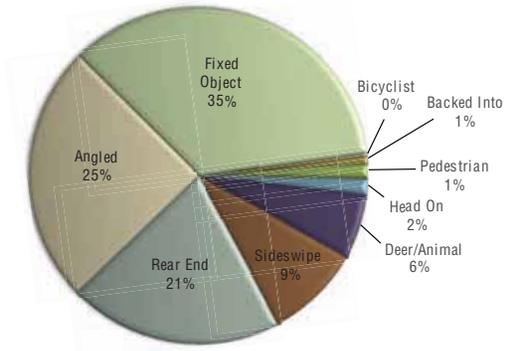
Functional Classifications

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

Traffic Accidents by Type (2005-2011)



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 3 illustrates 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.

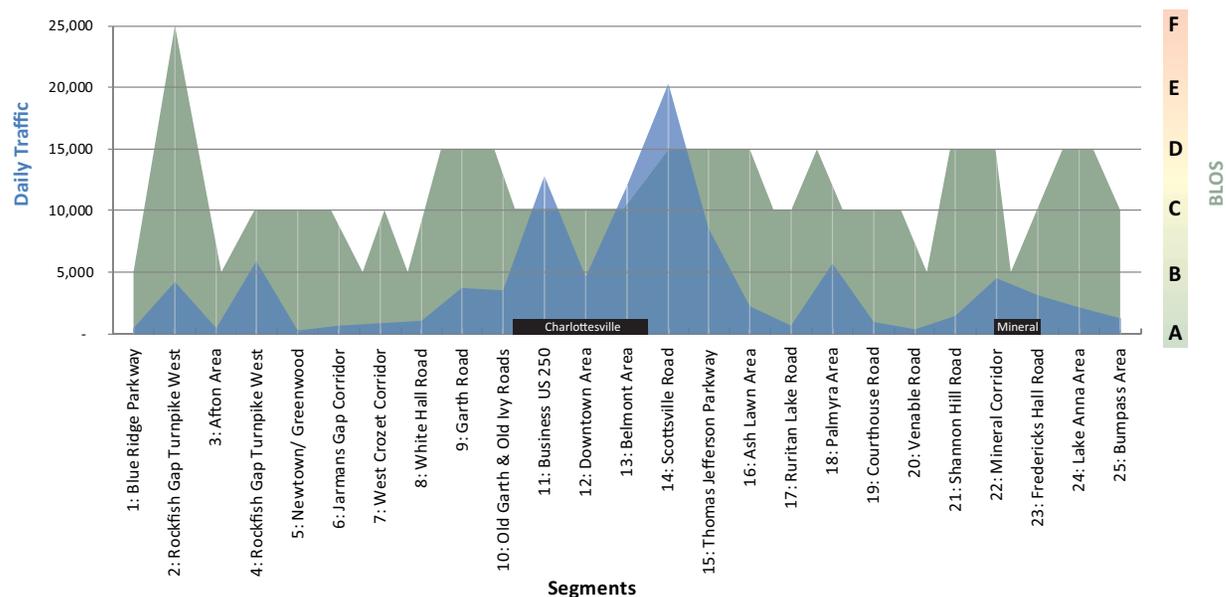
Fluvanna County

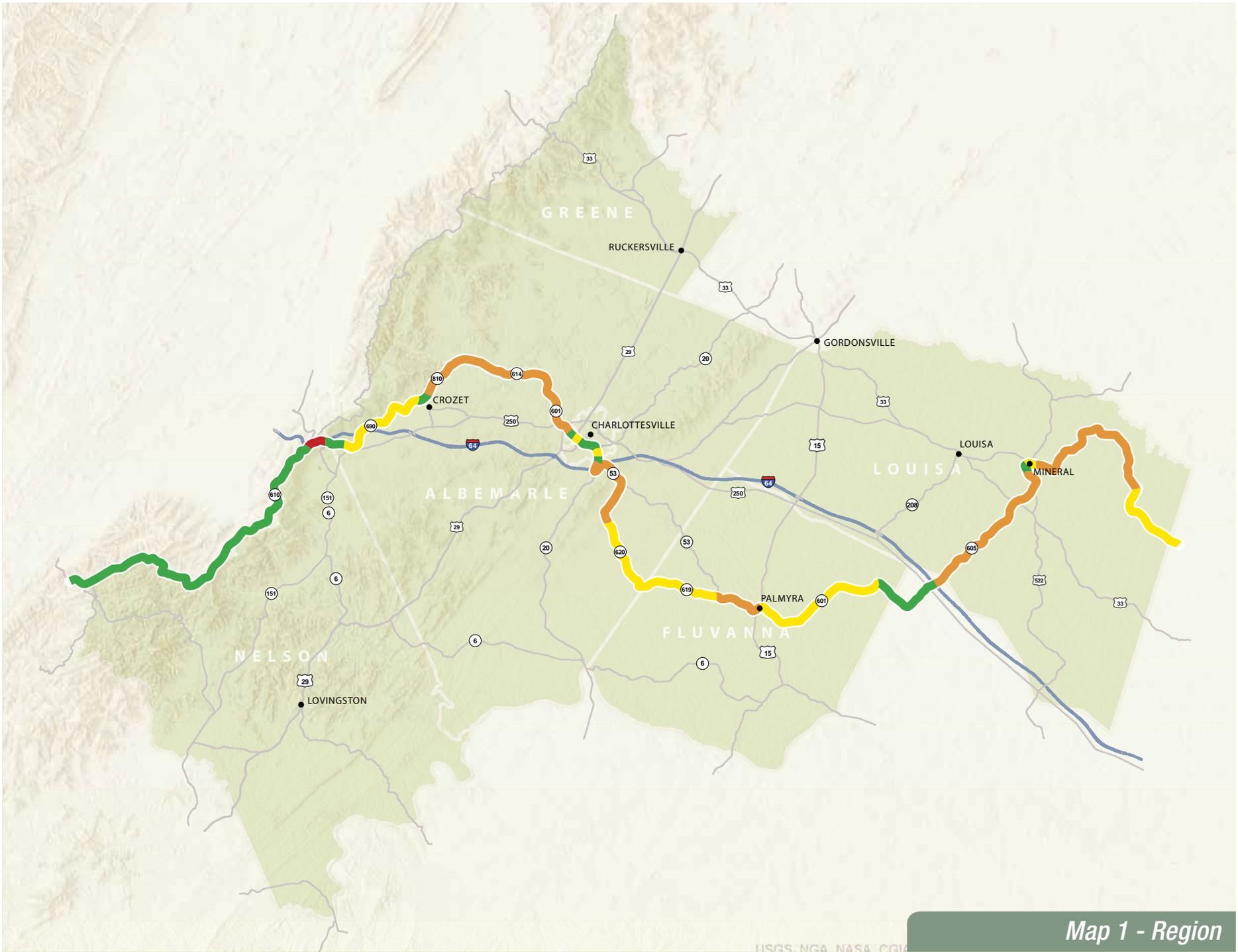
In Fluvanna County, BR 76 passes through the Village of Palmyra and several small crossroads. The route accounts for over 23 miles of roadway. Most cycling hazards involve sight-distances and guardrails. Refer to Map 5.

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.

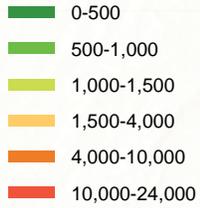
Annual Average Daily Traffic (AADT) and Bike Level of Service (BLOS) by Roadway Segments



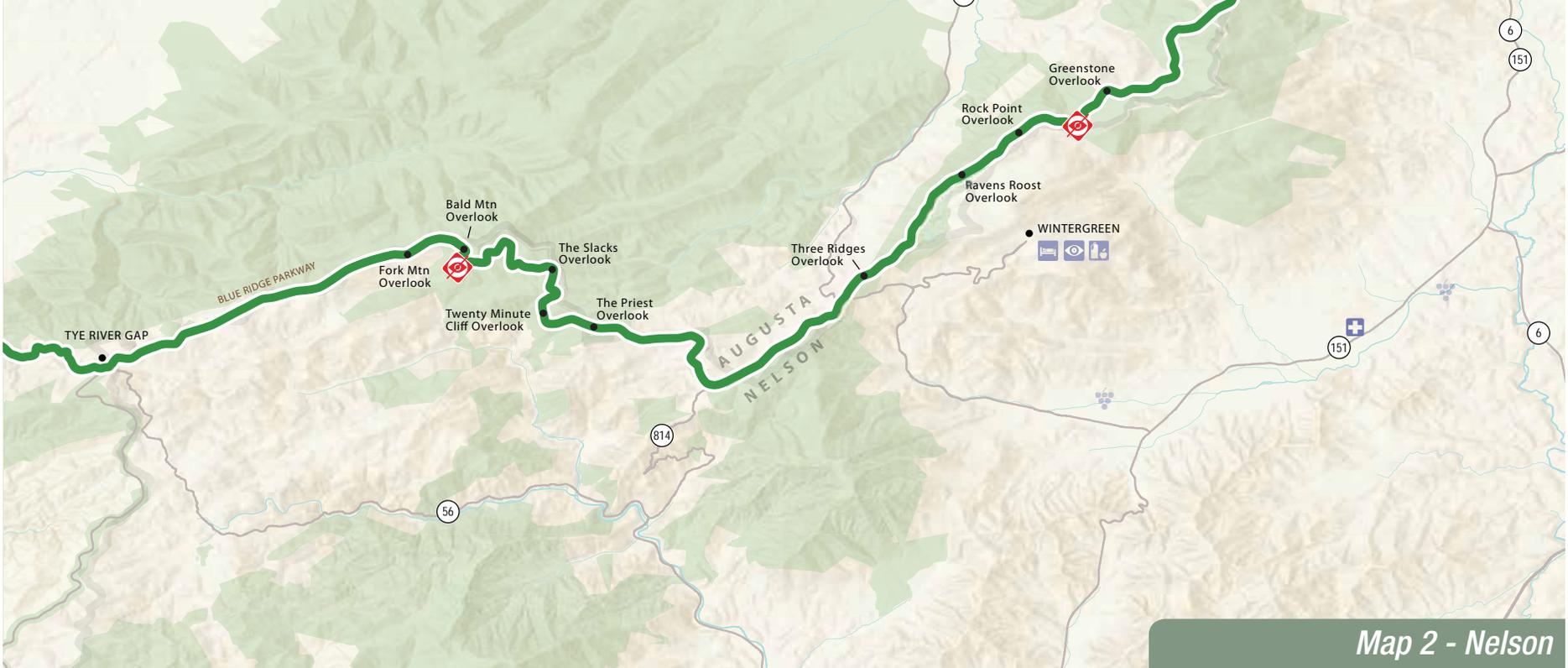
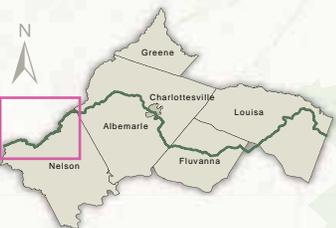


Vehicle Per Day

(Average Annual Daily Traffic)



- | | |
|---------------------|-----------------------|
| Police Station | Library |
| Fire/Rescue Station | Tourism Destination |
| Bike Shop | Winery/Legend |
| Gas Station | Urban Areas |
| Store/Grocery | Parks |
| Lodging | Poor Sight Distance |
| Camping | Uneven Road Surface |
| Visitor Center | High Crash Area |
| Post Office | Guardrail/No Shoulder |

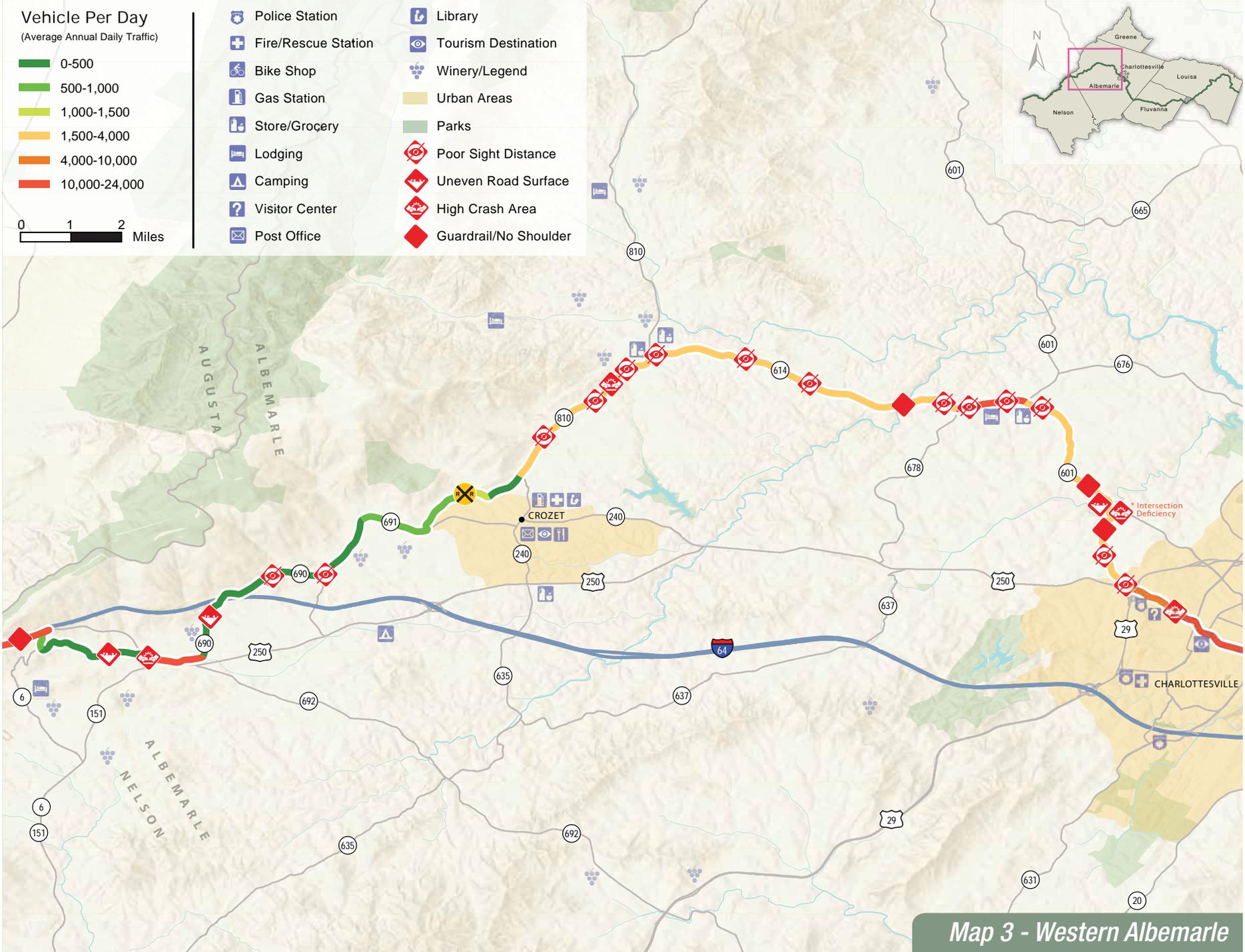


Map 2 - Nelson

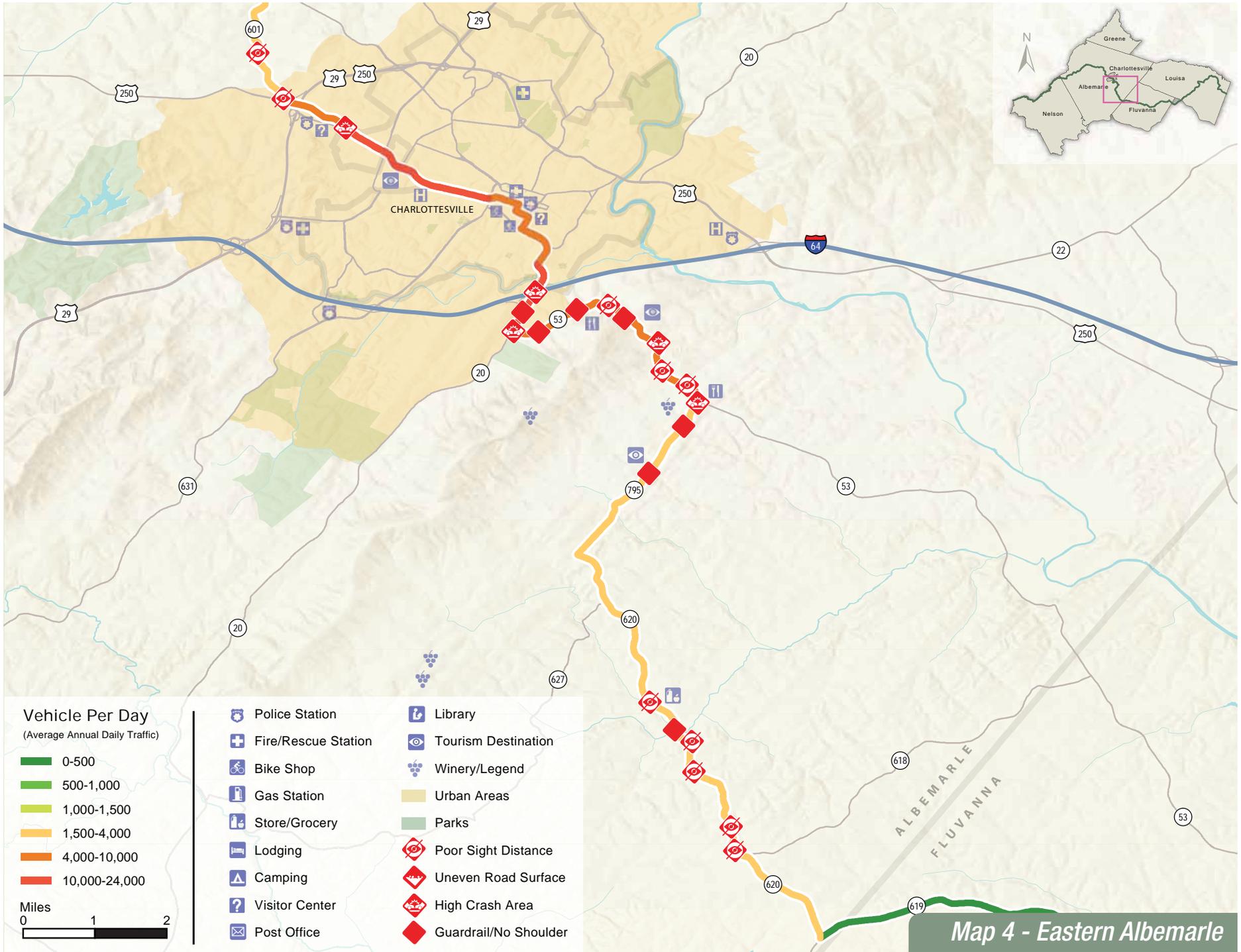
Vehicle Per Day
(Average Annual Daily Traffic)

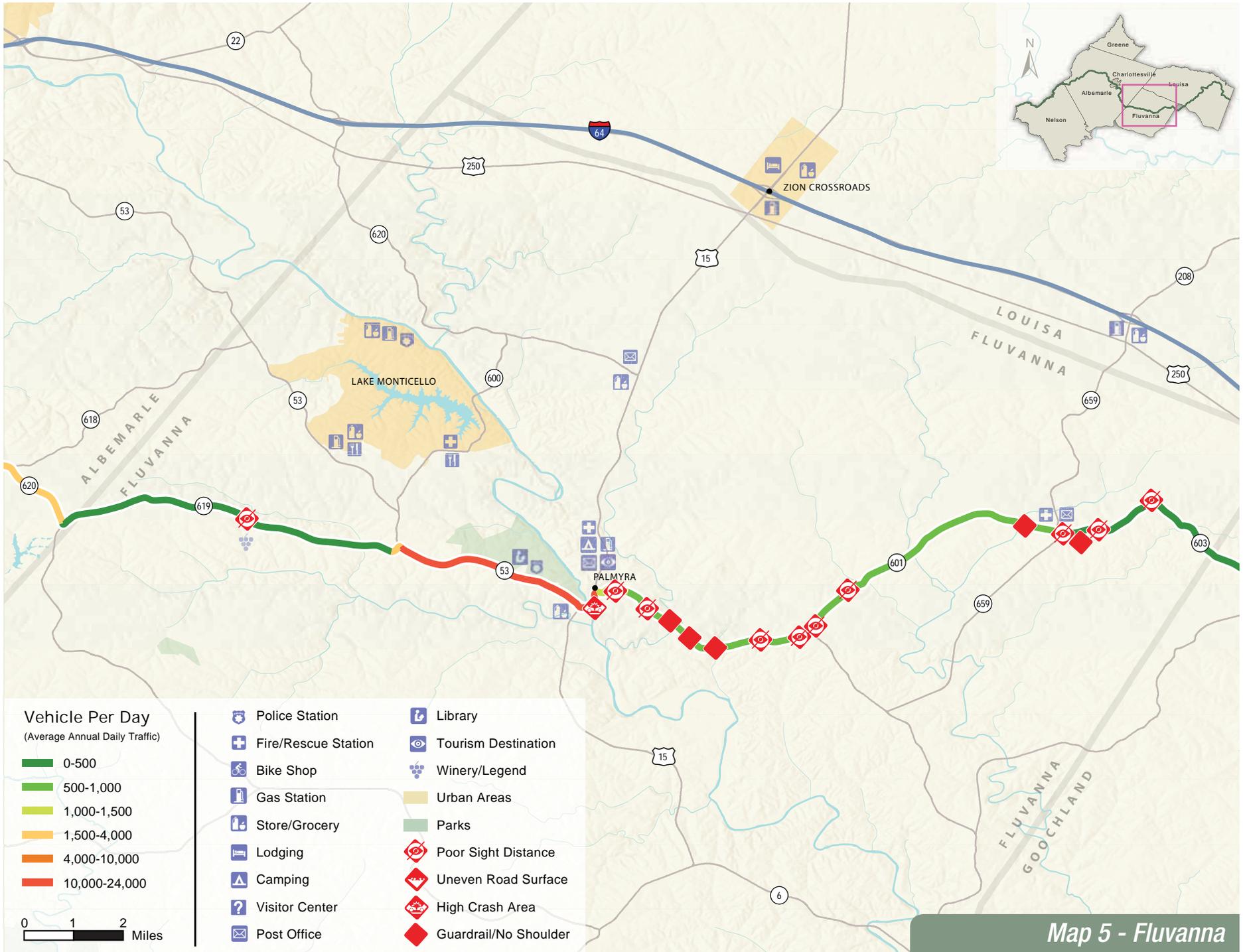


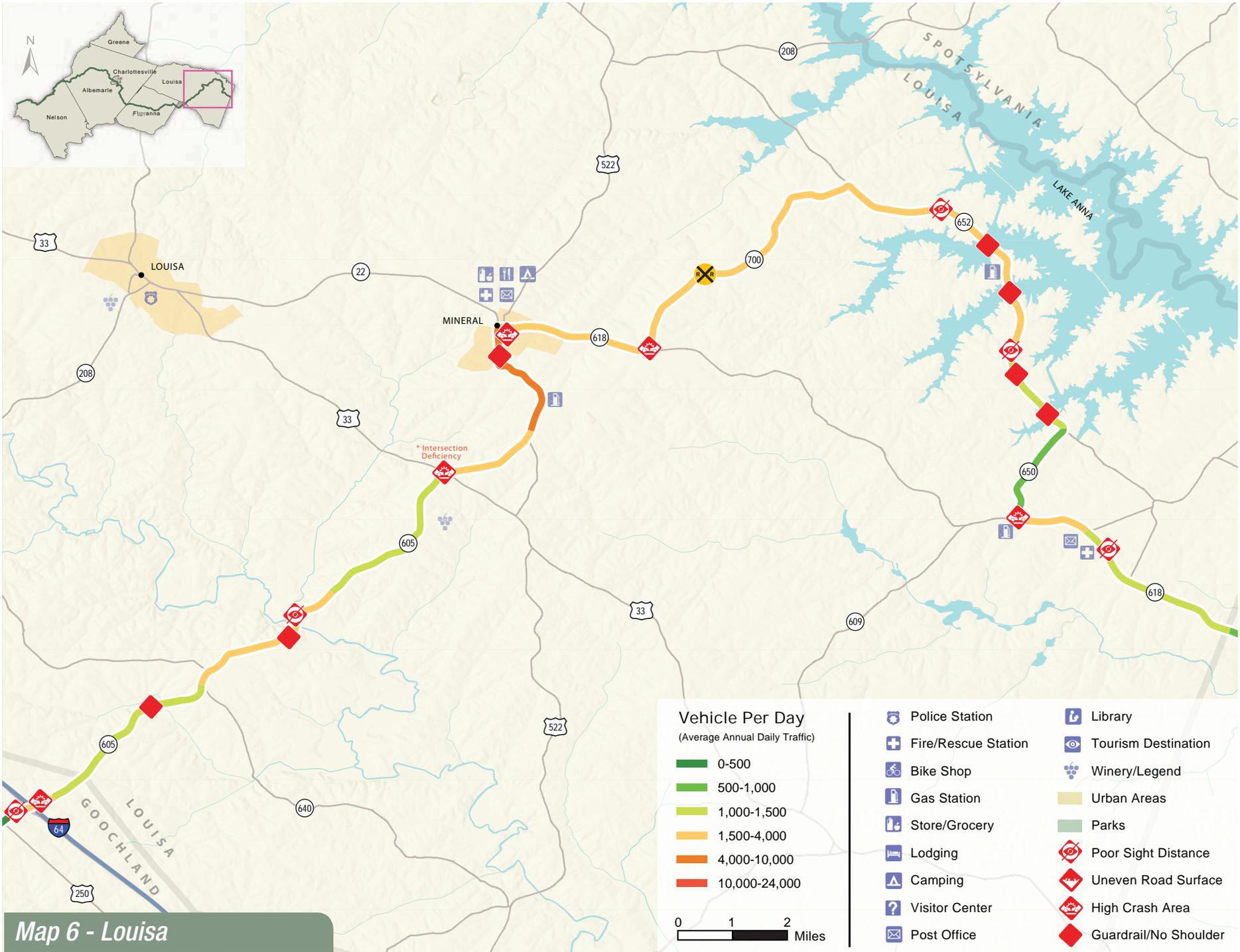
- | | |
|---------------------|-----------------------|
| Police Station | Library |
| Fire/Rescue Station | Tourism Destination |
| Bike Shop | Winery/Legend |
| Gas Station | Urban Areas |
| Store/Grocery | Parks |
| Lodging | Poor Sight Distance |
| Camping | Uneven Road Surface |
| Visitor Center | High Crash Area |
| Post Office | Guardrail/No Shoulder |



Map 3 - Western Albemarle







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 deter-

mine 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 stan-

dard 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
	2: Rockfish Gap Turnpike West	F	10	0 – 2	8,450	7%	35 – 55
	3: Afton Area	B – C*	8 – 11	0 – 2	435	1%	55 (NP)
	4: Rockfish Gap Turnpike East	C	10 – 12	1 – 2	5,890	4%	55
	5: Newtown/Greenwood	C	9	None	290	0%	55 (NP)
	6: Jarmans Gap Corridor	C	8	None	635	1%	40
	7: West Crozet Corridor	B – C	9	None	875	.5%	40
	8: White Hall Road	D	9	.5	2,020	2%	45
	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
	12: Downtown Area	B – C	9 – 12	8 (Parking)	4,625	3%	25
	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
	16: Ash Lawn Area	C – D	10	None	2,200	1%	45 - 55
	17: Ruritan Lake Road	C	9	None	600	0%	45
	18: Palmyra Area	C – D	11	.5 – 10	5,650	8%	35 – 55
	19: Courthouse Road	C	9	None	980	0%	40
	20: Venable Road	B – C	9	None	385	0%	55
	21: Shannon Hill Road	D	9 – 10	None	1,470	4%	45 – 50
	22: Mineral Corridor	B – D	12	1 – 3	4,535	3.5%	25 – 55
	23: Fredericks Hall Road	C – D	10	None	3,100	2%	25 – 45
	24: Lake Anna Area	D	10	0 – 1	2,160	3%	55
	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

Segment N1: Blue Ridge Parkway

Nelson & Augusta Counties

Segment N1 explores the cycling environment along the Blue Ridge Parkway, which zigzags along the border of Nelson and Augusta Counties. This corridor includes the areas between US 56 (Tye River Turnpike), to the southwest, and US 250 (Rockfish Gap Turnpike), to the northeast. All told, this segment includes over 30 miles of BR 76 and is a critical section of the Bike Route, since the Parkway is a destination for many cyclists.

The Blue Ridge Parkway was designed and built in the 1930s and early 1940s to provide access to the scenic resources of the Blue Ridge Mountains. The National Parks Service (NPS) maintains the roadway and adjacent parkland. The Parkway is designated as a National Parkway, National Scenic Byway, All-American road and a Virginia Scenic Parkway.

Segment Characteristics

Rural Environment

- Minor Arterial
- Primary Route

Roadways

- » *Total Road Mileage: 31.33 Miles*
- US 48 (Blue Ridge Parkway) – 31.33 Miles

Land Uses

» Rural

As a parkway, the land directly adjacent to US 48 is parkland managed by the NPS. Setback from the parkway, the area includes forests, farms and large lot residential properties. There are neighborhoods that connect with the parkway indirectly, through low-volume rural roads, such as the Wintergreen Resort and community. While Wintergreen includes a higher density of residential and resort uses, there is no direct access point to US 48.

440 Annual Average Daily Trips	45 Posted Speed (MPH)
10 Average Lane Widths (feet)	0 Shoulder/Bike Lane Width (feet)
0 Truck Traffic (percent)	

■ Positive Contributing Factor
 ■ Negative Contributing Factor



Public Comments

» Positive Feedback

In an online survey, local cyclists mentioned that the Blue Ridge Parkway is a favorite place to ride.

Road Features

Road Sections

» Rural Two Lane

US 48 consists of a 20-foot, asphalt road surface, with ten (10)-foot travel lanes. Adjacent to the road edges, there are grass shoulders that are typically at least four (4) feet. In several areas, the side ditches are lined with asphalt (3-foot width), which is approximately two (2) feet from the road edge.

» Shared Lane Bike Facility

Throughout this segment, cyclists share the same travel lanes as motorists. (Figure 1-1)

Bike Signage

» No Signage for Cyclists

Currently, there are no signs indicating BR 76 on the Blue Ridge Parkway. While there are signs that direct cyclists onto the parkway, from Tye River and Rockfish Gap Turnpikes, there is no signage on US 48. Additionally, there are no other bike-related signs in this segment. The main reason for the lack of BR 76 signage is the NPS policy to minimize signage on the parkway, in order to preserve the natural character of the corridor.

Featured Intersections

» US 56 (Crabtree Falls Highway)

This is a grade-separated rural interchange, marking the southwestern end of this corridor. With low traffic volumes and sufficient sight distances, there are no immediate deficiencies apparent in this area. (Figure 1-2)

» VA 664 (Beech Grove/Reed Gap Road)

There do not appear to be any deficiencies at this four-way

intersection. It provides an indirect connection between the Wintergreen area and Parkway. Overall, there are good sight distances and limited conflict points.

» US 250 (Rockfish Gap Turnpike)

This is a grade-separated interchange, with two (2) ramps. The northern ramp is part of BR 76 and serves as one of the most dangerous intersections in the study area.

There are obstructed views looking east, due to an embankment adjacent to the west-bound lane. This visual obstacle allows for less than 250 feet of sight distance. If traffic on US 250 is moving at 45 MPH, then a cyclist would have less than 4 seconds to complete a left turn onto US 250 before an approaching vehicle reached the intersection. There are also obstructed views to the west, due to vegetation on the northwest corner of the intersection ramp. This obstruction allows for less than 200 feet of sight distance, looking west from the ramp. That sight-line gives cyclists 3 seconds to complete a left turn from the ramp. (Figure 1-3)

Despite these deficiencies, there were relatively few traffic accidents, considering the travel volumes, at this intersection. Between 2005 and 2011, there were two (2) recorded crashes associated with this ramp.

Sight Distance

» Minor Issues at Curves

There are select curves with poor horizontal sight distance. These hazards are more problematic to cyclists when motorists have blocked sight-lines of the uphill lane. As cyclists climb, they travel at lower speeds and typically require additional room to maneuver. (Figure 1-4)

Planned Road Improvements

» Surface Treatments

The is repaving the Parkway road surface to address wear and tear of the existing pavement. (Figure 1-5)

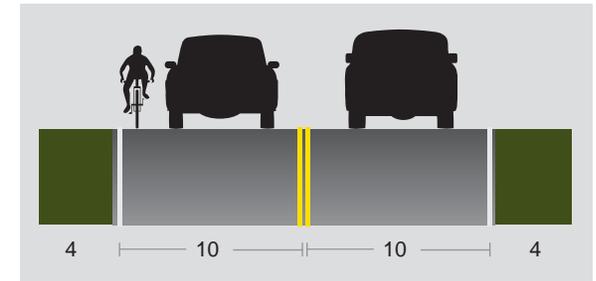


Figure 1-1: Typical Road Section



Figure 1-2: Crabtree Falls Intersection



Figure 1-3: Sight-Lines at US 250



Figure 1-4: Problematic Sight-Lines

Traffic Conditions

Traffic Counts

» 400 to 480 ADT

The Blue Ridge Parkway carries one of the lowest traffic volumes in the study area. VDOT's twenty year forecast shows that these volumes could increase, particularly on the northern end of the parkway, where counts are estimated to reach 1,300 ADT.

Travel Speeds

» Speed Limit: 45 MPH

The NPS set the speed limit to 45 MPH, though there are areas where this drops to 35 MPH. With the mountainous terrain, motorists tend to travel slower than the posted limit on uphill lanes and faster on downhill lanes.

Level of Service

» A – Free Flow

On the Blue Ridge Parkway, traffic flows freely and vehicles are able to travel at or above the posted speed limit. While VDOT forecasts show that the LOS will degrade slightly by 2035 (to LOS B), traffic will continue to be free-flowing with no congestion.

Traffic Accidents

» No Data Available

Additional Traffic Hazards

» Distracted Drivers

Because there are scenic vistas along the Parkway, there is a greater chance of distracted drivers on US 48. The greatest dangers are at curves, where motorists have restricted sight-lines.

Recreational

Historic Resources

» Public Sites

There are two significant historic resources along US 48.

This includes the Parkway itself, which is on the Virginia Landmarks and National Registers. Near the Intersection with US 250, there is an historic home called Swannanoa, which dates to 1913. Currently, the owners provide limited access for public tours.

Scenic Resources

» Virginia & National Scenic Parkway

Nearly the entire Parkway provides access to scenic vistas of the Shenandoah Valley or Rockfish Valley. There are also hiking areas like Humpback Rock that provide scenic visits. (Figure 1-6)

Other Destinations

» Parkway & Trail

The Blue Ridge Parkway is a destination, though there is also easy access to the Appalachian Trail.

Cycling Services & Resources

» Restrooms & Pull-Off Areas

The overlooks can serve as pull-offs for cyclists. There is at least one rest area that provides restrooms (located at coordinates: 37 58'23.28"N, 78 53'54.95"W), the Humpback Rock Visitor Center and picnic area.

Lodging

There are lodging and camping options in close proximity to the parkway, with more options in the Tye River Valley and Rockfish Valley.

Access Points

» Parking at Overlooks

There are 16 public parking areas along the Parkway where people can access BR 76. Overall, this is the most accessible segment in the study area, depending on the season. There are challenges to maintaining the Parkway, due to the mountainous terrain and weather. Sections which pass over especially high elevations and through tunnels are often impassable and closed from late fall through early spring.



Figure 1-5: Poor Surface Conditions



Figure 1-6: Scenic Resources

Topography

» Mountainous

The topography on the parkway is continuously changing. There are climbs throughout the corridor that can be challenging to cyclists, but the downhill lanes provide opportunities to recover.

Road Assessment

Bike Compatibility: BLOS B*

The BLOS equations suggest that the parkway is one of the most bike compatible corridors in the study area, but there are several factors that are not included in these calculations. Overall, this roadway is moderately compatible for cycling. Challenges to cycling include narrow travel lanes, inconsistent road surfaces and blind curves. These hazards

are exacerbated by distracted drivers who are sight-seeing along the Parkway. With these considerations, the BLOS is better expressed with a C rating.

Recreational: Very High Value

In terms of recreation, the parkway is the highest valued corridor in the study area. The Parkway provides the best scenic vistas in the region. There is abundant public access. There are several pull-offs and benches, where cyclists can rest. Finally, there is access to the famous Appalachian Trail, along with a restroom area and camping sites.

Recommendations

Additional Signage

The TJPDC should work with the NPS and Virginia Cycling Federation to encourage installation of bike signage along the Parkway, to inform cyclists and warn motorists of frequent bike traffic.

Segment N2: Rockfish Gap Turnpike West

Nelson

Segment N2 explores the cycling environment on the Rockfish Gap Turnpike, located at the northern tip of Nelson County, in the Afton area. This segment includes the roadway between US 48 (the Blue Ridge Parkway), to the west, and US 6 (Afton Mountain Road), to the east. The Rockfish Turnpike is a three-lane road and one of the most dangerous areas for cyclists in the study area. Consequently, this corridor primarily serves as a connector between the Blue Ridge Parkway and rural roads to the east.

Segment Characteristics

Rural Environment

- Minor Arterial
- Primary Route

Roadways

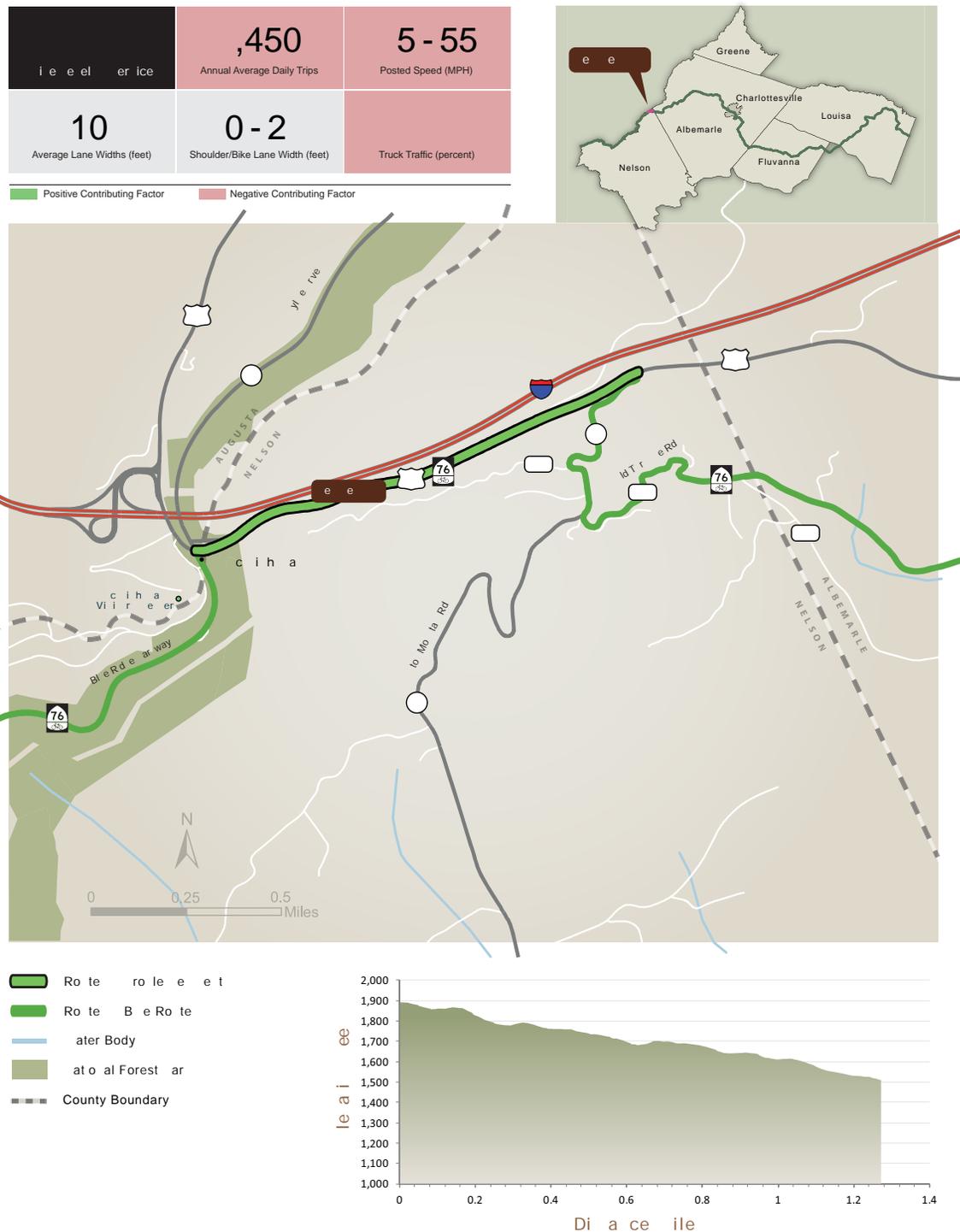
- » *Total Road Mileage: 1.27 Miles*
- US 250 (Rockfish Gap Turnpike) – 1.27 Mile

Land Uses

- » *Rural*
- The area around Rockfish Gap Turnpike is rural in nature, flanked by mountainous terrain and wooded properties. There are also several single-family resident properties, with access on the eastbound lane.

Public Comments

- » *Safety Concerns*
- In an online questionnaire, several local cyclists communicated their concern with this road section. Cyclists indicated that the traffic speeds and volumes were too high for safe cycling. Respondents felt that motorists in this corridor were generally oblivious to bicycles. Many cyclists try to avoid this area, but it is the only local access point to the Blue Ridge Parkway.



Road Features

Road Sections

» Rural Three Lane

While the road widths and configuration vary slightly, this portion of US 250 is a three lane highway. The uphill side includes two (2) westbound lanes, allowing motorists to pass slower moving vehicles, such as tractor-trailers. Each travel lane averages ten (10) feet in width. On the eastbound lane, there is a four (4)-foot, gravel shoulder with a guardrail on the outer edge. On the west-bound lane, there is a paved shoulder of approximately two (2) feet. Adjacent to the shoulder is a vegetated ditch and embankment. (Figure 2-1)

» Shared Lane Bike Facility

Cyclists share the same travel lanes as motorists, though cyclists on the westbound lane have additional room with the paved shoulder.

Bike Signage

» Sufficient Signage

In this corridor, there are two (2) “Share the Road” signs and five (5) road signs indicating BR 76.

Featured Intersection

» US 6 (Afton Mountain Road)

Sight-lines are the main issues at this T-intersection. From US 6, there are several road signs on the southwest corner of the intersection that may obstruct views of oncoming vehicles that are eastbound on US 250. In terms of crash history, there were four (4) vehicular crashes that occurred at the intersection, between 2005 and 2011.

Sight Distance

» Deficiencies at Intersections

The main sight distance deficiencies are located at the intersections with US 48 and US 6. Aside from those areas, this corridor allows for adequate sight-lines. (Figure 2-2)

Planned Road Improvements

» Road Widening

The Rural Long Range Transportation Plan (RLRP) identifies operational and geometric deficiencies along Rockfish Gap Turnpike. The plan recommends widening of the roadway (including full-width lanes and shoulders). The plan lists this recommendation as a long-term project, but there are no specific timelines or funds assigned to the work. With the terrain, road widening would be very difficult in this area.

Traffic Conditions

Traffic Counts

» 8,450 ADT

For a rural segment, this corridor has one of the highest traffic counts in the study area. Through-trips account for most of this traffic, as motorists travel between the Piedmont and Shenandoah Valley. VDOT forecasts show an increase in traffic, with 9,900 ADT by the year 2035.

Truck Traffic

» 7 Percent

US 250 serves as a major corridor for freight, as trucks traffic accounts for 7 percent of total ADT. This is one of the highest percentages in the study area. (Figure 2-3)

Travel Speeds

» Speed Limit: 55 MPH/35 MPH

Though the speed limit is posted at 55 MPH, traffic generally travels at a higher speed, particularly on the downhill lane, where vehicles build momentum. The average travel speed is assumed to be closer to 65 MPH, though congestion may slow speeds at peak hours. The speed limit drops to 35 MPH near the intersection with US 48.

Level of Service

» D - Approaching Unstable Flow

With a LOS D, travel speeds may decrease slightly due to

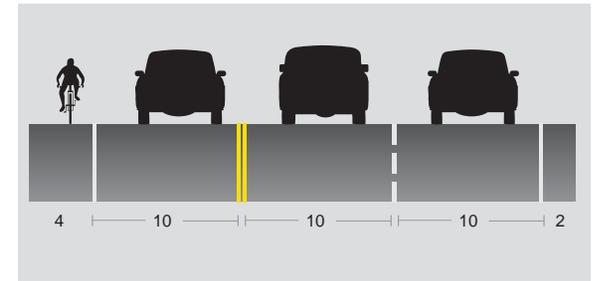


Figure 2-1: Typical Road Section



Figure 2-2: Sight Distance



Figure 2-3: Truck Traffic

increased traffic congestion, during high volume hours. VDOT forecasts show that LOS will remain at D over the next twenty years.

Traffic Accidents

» 24 crashes, 2 fatal

Between 2005 and 2011, there were 24 vehicular crashes on this 1.27-mile corridor. Over 30 percent were off-road collisions. The remaining crashes occurred between ve-

hicles, including rear-end, sideswipe, head-on, and angled collisions. *Note: there are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Public & Private Sites*

This portion of US 250 is a major access point for the Blue Ridge Parkway and the Appalachian Trail, but also marks the western edge of the Greenwood-Afton Rural Historic District, which encompasses approximately 16,300 acres in Virginia's Piedmont region. There is one (1) historic structure on this section of Rockfish Gap Turnpike, the Blue Ridge Tavern Inn.

Highway Markers

» *Nelson County*

Near the US 48 intersection, there is a marker that tells the history of Nelson County.

Scenic Resources

» *Virginia Byway*

US 250 is designated as a Virginia Byway, because of its views and rural character. On the eastbound lane, there is an overlook that provides views of the Rockfish Valley. (Figure 2-4)

Other Destinations

» *Parkway and Trail*

There are no specific destinations for cyclists within this corridor, though US 250 connects to the Blue Ridge Parkway and Appalachian Trail, to the west.

Cycling Services & Resources

» *Food & Pull-Off Area*

On the eastbound lane, there is a stand that once served cyclists with baked goods. This stand may still be in opera-

tion. The overlook area provides views and an opportunity for cyclists to rest.

Access Points

» *Parking at Overlook*

While the overlook provides an opportunity to access the BR 76, most would rather park at the Parkway, to the west.

Topography

» *Mountainous*

There is a relatively consist 5 percent grade throughout this segment. From US 48 to US 6, the topography drops by over 300 feet, from an elevation of 1860 to 1540 feet.

Cycling Assessment

Bike Compatibility: BLOS F

On this portion of US 250, the cycling compatibility is extremely low and has the worst BLOS score in the study area. The roadway presents several dangers to cyclists. With the existing traffic counts and speeds, the existing shoulders are inadequate. (The shoulders should be at least a 6 feet wide, according to AASTHO standards). There is significant truck traffic. There are hazards from poor sight distance. There are also areas with guardrails, exposing cyclists to high speed traffic. Overall, this section of Rockfish Gap Turnpike is dangerous for cycling. Consequently, the cyclists that use this roadway generally ride early in the morning, to avoid high traffic volumes.

Recreational: Low Value

While there are recreational amenities in this corridor, the overall value is low. There are scenic vistas of the Rockfish Valley, but access to the overlook can be dangerous for cyclists. There are no cycling destinations and limited historic resources. The main purpose of this segment of BR 76 is to connect cyclists to the Blue Ridge Parkway.



Figure 2-4: US 250 Overlook



Figure 2-5: Blue Ridge Tunnel

Recommendations

As one of the most dangerous roads in the study area, this corridor requires significant safety improvements. There are also options to reroute cyclists, in order to bypass this segment altogether.

Additional Signage

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

Road Widening

The TJPDC should work with VDOT to review and determine the feasibility of the RLRP recommendation that calls for widening of US 250.

Additional Study: Rerouting

With the reopening of the Blue Ridge Tunnel as a bike and

pedestrian resource, there may be opportunities to reroute BR 76 away from this road segment, using trails to access the Parkway and the Shenandoah Valley. (Figure 2-5)

Coordinate with USBR 11

There is initial planning underway to add a new USBR that would extend from the Great Smoky Mountain National Park, in the south, along the Blue Ridge Parkway and Skyline Drive through the Shenandoah National Park, to Harpers Ferry and the C&O Canal National Park in the north. Rockfish Gap would be a key intersection of USBR11. This would offer looping opportunities for Nelson, Albemarle and Greene counties with the Amtrak access in Charlottesville (refer to Segment 11). The looping could complement the effort by the Central Shenandoah PDC and Northern Shenandoah Valley Regional Commission to develop a Valley Road Bike Route, west of the Blue Ridge Mountains. The TJPDC should work with the Shenandoah Valley PDCs and cycling groups to make this connection between BR 76 and 11.



Segment N3: Afton Area Corridor

Nelson and Albemarle County

Segment N3 evaluates the cycling environment on US 6 (Afton Mountain Road) and VA 750 (Old Turnpike Road). This includes over 2 miles of rural roadways in the Afton Area, between the western and eastern segments of US 250 (Rockfish Gap Road). This area spans Nelson and Albemarle Counties, serving as an important link between these communities and creating a bypass from several miles of US 250, to help cyclists avoid the high volume/speed conditions on that highway.

Segment Characteristics

Rural Environment

- Minor Arterial
- Rural Local
- Primary Route
- Secondary Route

Roadways

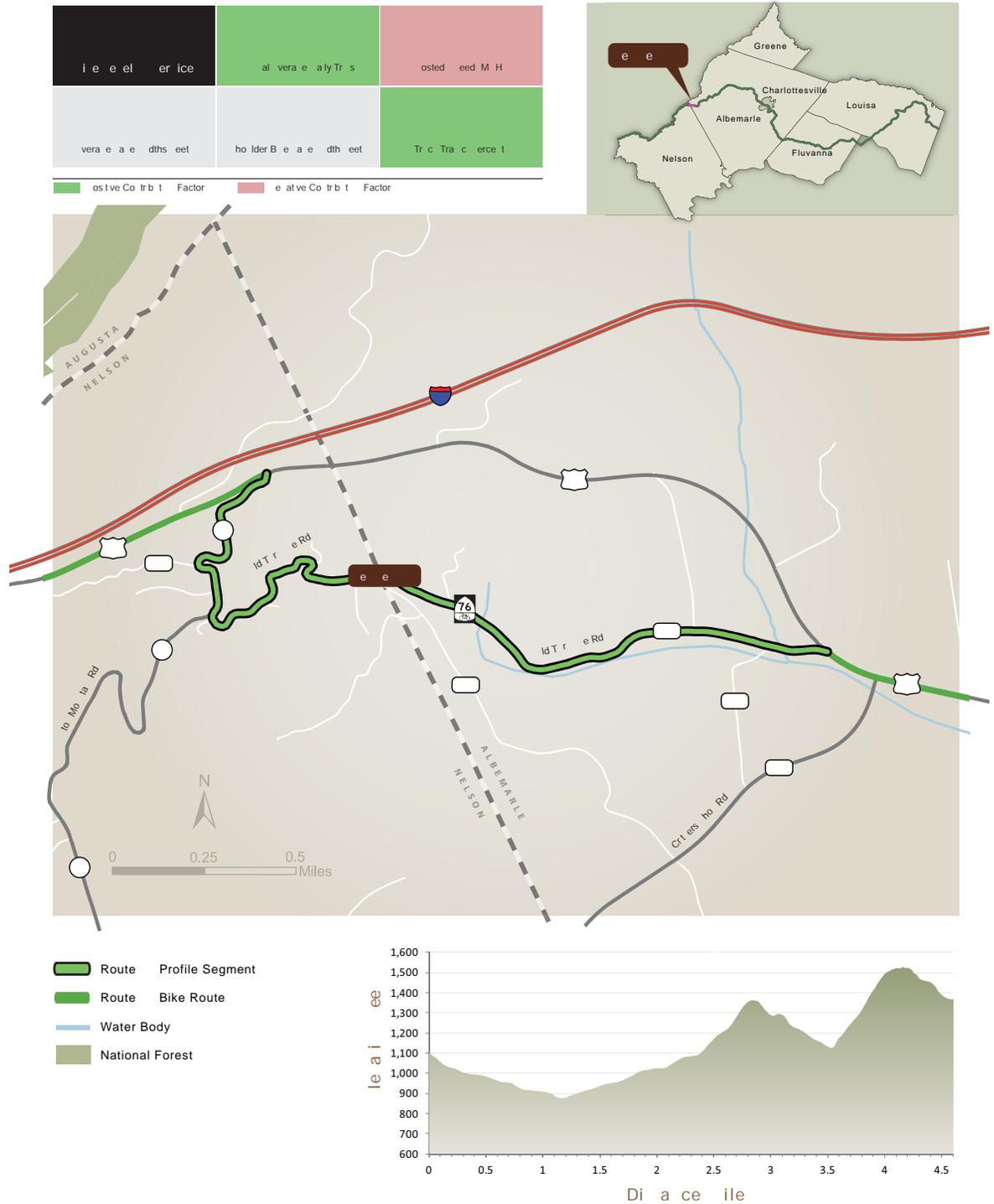
- » **Total Road Mileage: 2.47 Miles**
- US 6 (Afton Mountain Road) – .56 Mile
- VA 750 (Old Turnpike Road) – 1.91 Miles

Land Uses

- » **Rural**
- The Afton area is a rural landscape, consisting mostly of large residential properties and pastures. Within the village of Afton, there is a slightly higher density of homes.

Public Comment

- » **Mixed Comments**
- In an online questionnaire, several local cyclists mentioned that they ride in the Afton area. One respondent recalled that the pavement on VA 750 was in poor condition and needed resurfacing.



Road Features

Road Sections

» Rural Two-Lane

The road section varies in this corridor. Afton Mountain Road has a 22-foot paved surface, consisting of 11-foot travel lanes. The shoulders vary in width. On curves and within the village of Afton, the shoulders are at least 2 feet wide. Along other road sections, the shoulders narrow to less than a foot. (Figure 3-1)

Old Turnpike Road is narrower, with a 16-foot paved surface, allowing for 8-foot travel lanes. There are no shoulders, with vegetated ditches directly adjacent to the pavement. (Figure 3-2)

» Wide Outside Lane/Shared Lane Bike Facility

Cyclists share the same travel lanes as motorists, though cyclists on US 6 have additional room with the paved shoulders.

Bike Signage

» Sufficient Signage

There are five (5) road signs indicating BR 76, directing cyclists through this segment of the study area. There are no other bike-related signs in this corridor.

Featured Intersections

» US 6 (Afton Mountain Road)/ VA 750 (Old Turnpike Road)

US 6 and VA 750 form a T-Intersection, located along a curve in the road, within the village of Afton. Since there are low traffic counts in this area, there is a lower potential for conflicts between motorists and cyclists. Currently, there are no identified deficiencies or crashes at this intersection.

» US 250 (Rockfish Gap Turnpike) East

Old Turnpike Road forms a Y-Intersection with US 250, with channelized lanes. The traffic counts on VA 750 are considered low, resulting in fewer turning movements. There

are no deficiencies with sight-distance and only one (1) recorded accident, a rear-end collision on VA 750.

Sight Distance

» Minor Issues at Curves

There are select curves with poor horizontal sight distance. The issues are more problematic to cyclists when obstructed sight-lines occur on uphill lanes. With a speed limit of 55 MPH, there is less time for motorists to react to those slower-moving cyclists. (Figure 3-3)

Additional Cycling Hazards

» Poor Surface Conditions & Shoulder Drop-Offs

On VA 750, the pavement surface is in fair condition, but there are locations where the asphalt is cracked or broken. Additional, there are several areas where ditches or embankments are directly adjacent to the roadway. This gives no room for cyclists to maneuver or bail from the roadway. (Figure 3-4)

Planned Road Improvements

» None Planned

Traffic Conditions

Traffic Counts

» 150 to 720 ADT

These winding country roads carry low traffic volumes, with 720 ADT on US 6 and 152 to 211 ADT on US 750. In the forecast year 2035, VDOT estimates that these roads will continue to experience relatively low traffic volumes. VDOT anticipates that counts on US 6 may increase to 1,100 ADT. For VA 750, there are no anticipated increases in traffic.

Truck Traffic

» 0 to 2 Percent

There are no significant levels of traffic from heavy vehicles in this segment. On US 6, trucks account for approximately 2 percent of existing trips. On VA 750, there are no records of truck traffic.

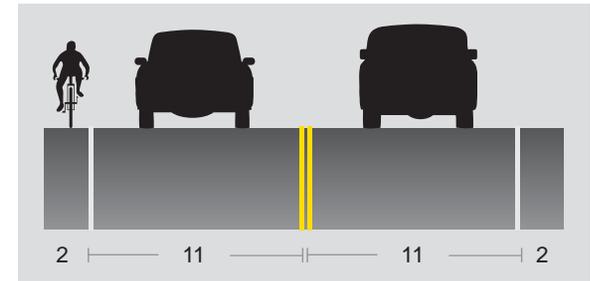


Figure 3-1: (US 6) Typical Road Section

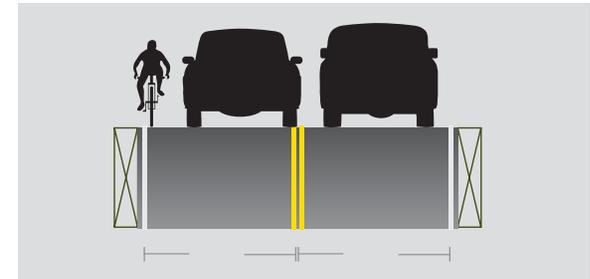


Figure 3-2: (VA 750) Typical Road Section



Figure 3-3: Sight Distances on US 750



Figure 3-4: Example of Poor Surface Conditions

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.

Level of Service

» *A – Free Flow*

On US 6 and VA 750, traffic flows freely. VDOT forecasts show that LOS will remain at this level over the next twenty years.

Traffic Accidents

» *14 crashes, 0 fatal*

Between 2005 and 2011, there were 11 crashes on Afton Mountain Road. Nearly 50 percent of those accidents were off-road collisions. The remaining crashes were angled collisions between vehicles or other miscellaneous accidents. On Old Turnpike Road, there were three (3) crashes. *Note: there were no recorded crashes between motorists and cyclists, from 2005 to 2011.*

Recreational

Historic Resources

» *Historic District*

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

Scenic Resources

» *Virginia Byway*

While this corridor is an attractive rural area with a Virginia Byway designation, there are no identified scenic vistas.

Other Destinations

» *No Cycling Destinations*

Cycling Services & Resources

» *No Resources*

Access Points

» *No Access*

There are no public parking areas that allow cyclists to access BR 76, though there is a Post Office near the intersection of US 6 & VA 750. There may be opportunities to allow for public parking at this site.

Topography

» *Mountainous*

The topography creates several challenging climbs for cyclists in this area. On US 6, the elevation drops over 160 feet in a half mile, from US 250 to VA 750. While the average slope is 6 percent, there are areas with steeper grades, specifically on the switchbacks located near the higher elevations. VA 750 has an average 5 percent grade, though there are also shorter climbs with steeper grades.

Cycling Assessment

Bike Compatibility: BLOS B – C*

Generally, the roadways in this corridor are compatible for cycling. While the BLOS equations show that US 6 is reasonably suited for cycling, the calculations do not account for the winding travel lanes on the northern end of the corridor.* Overall, the main safety concern is travel speed, plus the lack of shoulders on VA 750. Also, the surface conditions can be a serious danger for cyclists. The main benefits to cycling in this corridor are the low traffic counts and lack of heavy vehicles.

Recreational: Low Value

As a connector route, this corridor will have a low recreational value. There are few historic or scenic resources and no major destinations for riders.

Recommendations

Additional Signage

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

Speed Limit Reductions

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

Surface Improvements

The TJPDC should conduct a more in-depth inventory of surface conditions on VA 750 and work with VDOT to repair damaged pavement.

Additional Study: Rerouting

With the reopening of the Blue Ridge Tunnel as a bike and pedestrian resource, there may be opportunities to reroute Bike Route 76, to avoid US 250 and the curving switchbacks on the northern end of US 6. The TJPDC should partner with Nelson County and the Central Shenandoah PDC to study the feasibility of rerouting this portion of BR 76.



Figure 3-5: Blue Ridge Tunnel

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

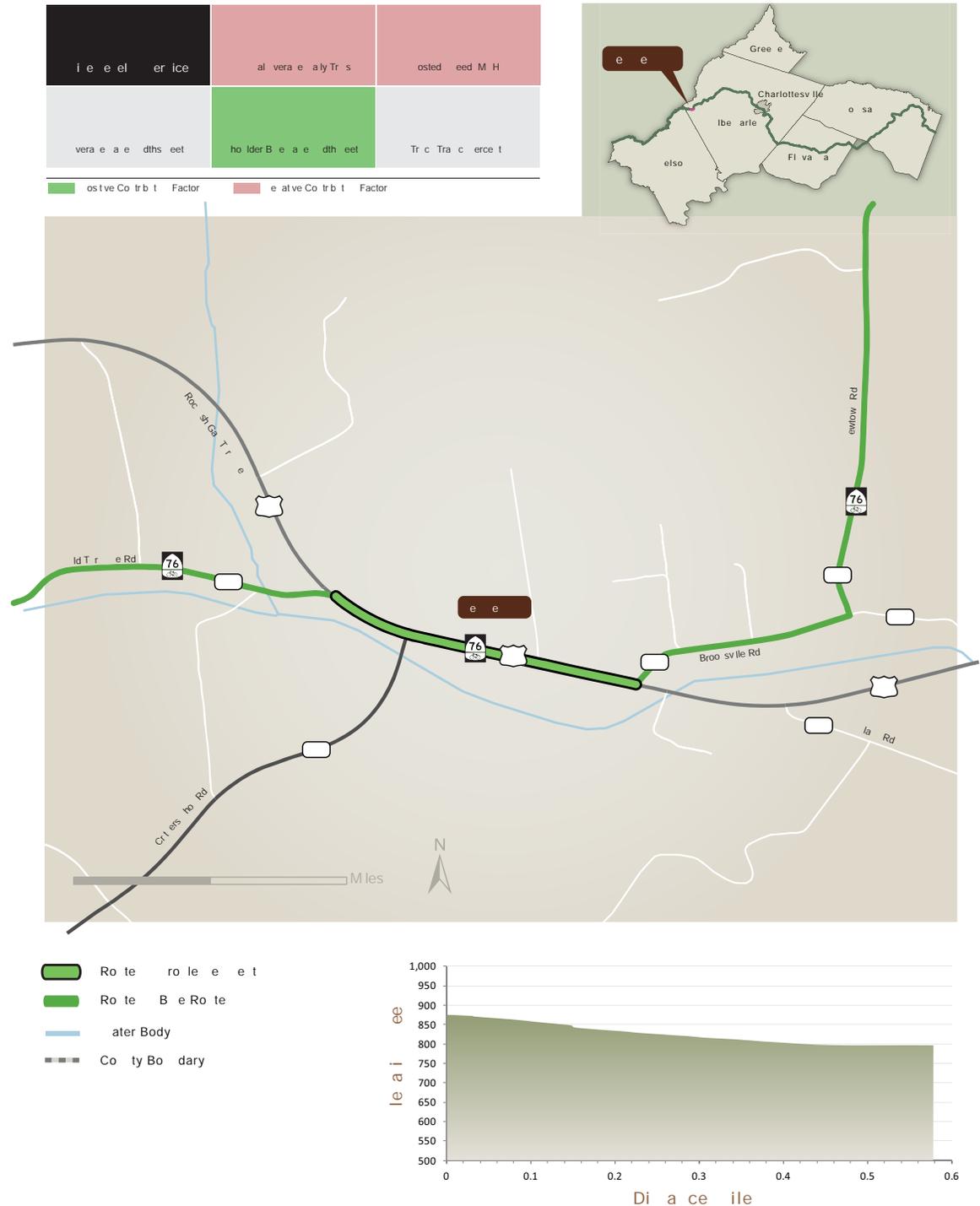
- » *Total Road Mileage: .6 Mile*
- US 250 (Rockfish Gap Turnpike) - .6 Mile

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.



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.

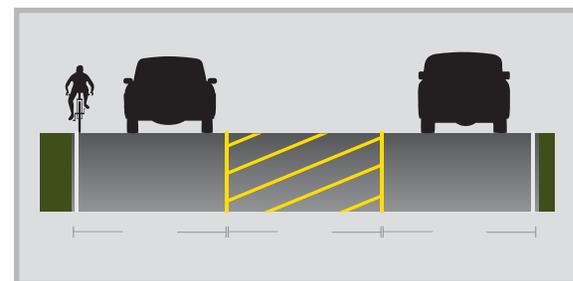


Figure 4-1: Typical Road Section (West of US 151)

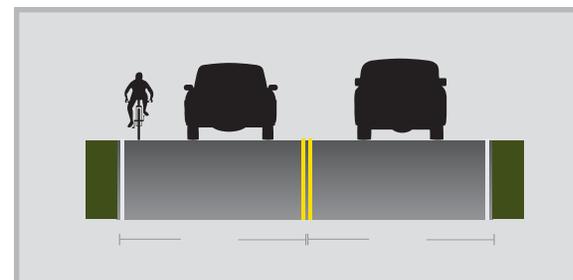


Figure 4-2: Typical Road Section (East of US 151)



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 agri-tourism, this area could be a destination for cyclists on BR 76 as well.

Segment Characteristics

Rural Environment

- Rural Local
- Secondary Routes

Roadways

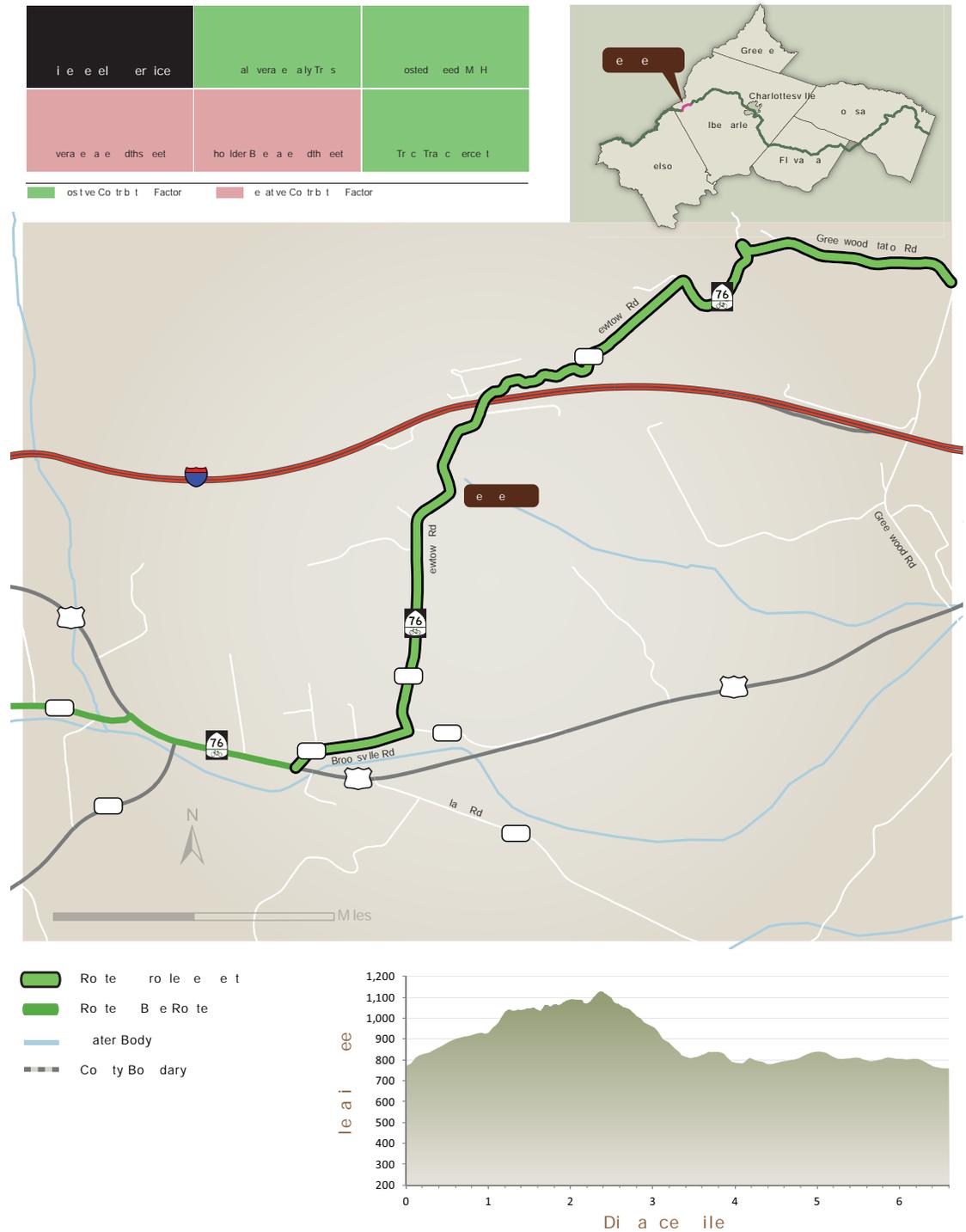
- » **Total Road Mileage: 3.19 Miles**
- VA 796 (Brooksville Road) – .43 Mile
- VA 690 (Newtown Road) – 2.15 Miles
- VA 690 (Greenwood Station Road) – .61 Mile

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.

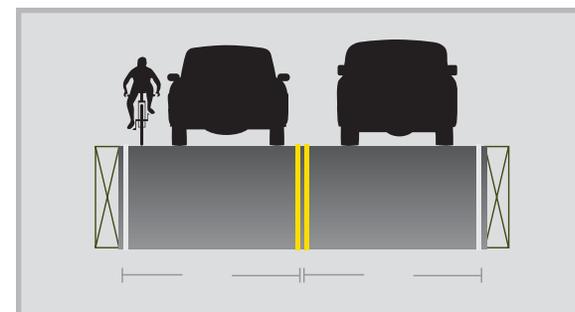


Figure 5-1: Typical Road Section

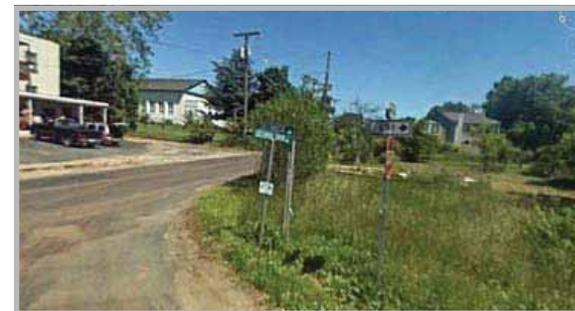


Figure 5-2: Sight Distance on VA 691

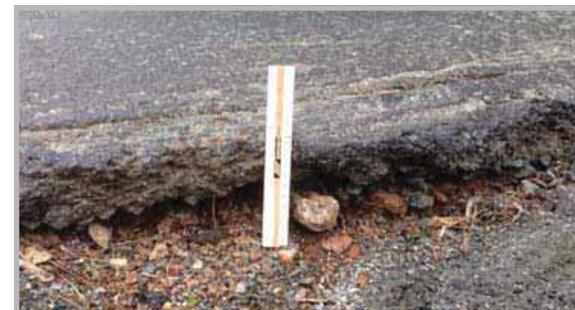


Figure 5-3: Road Edge on Newtown Road

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 steady 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

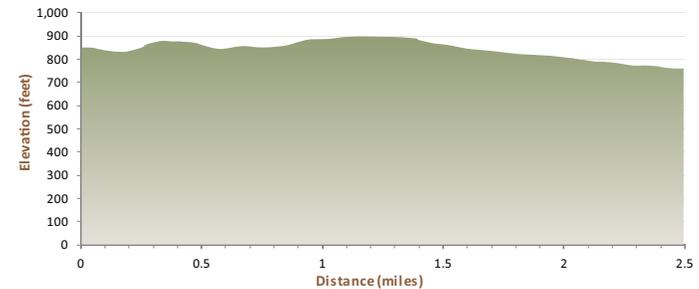
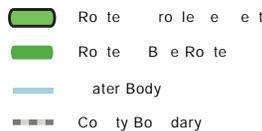
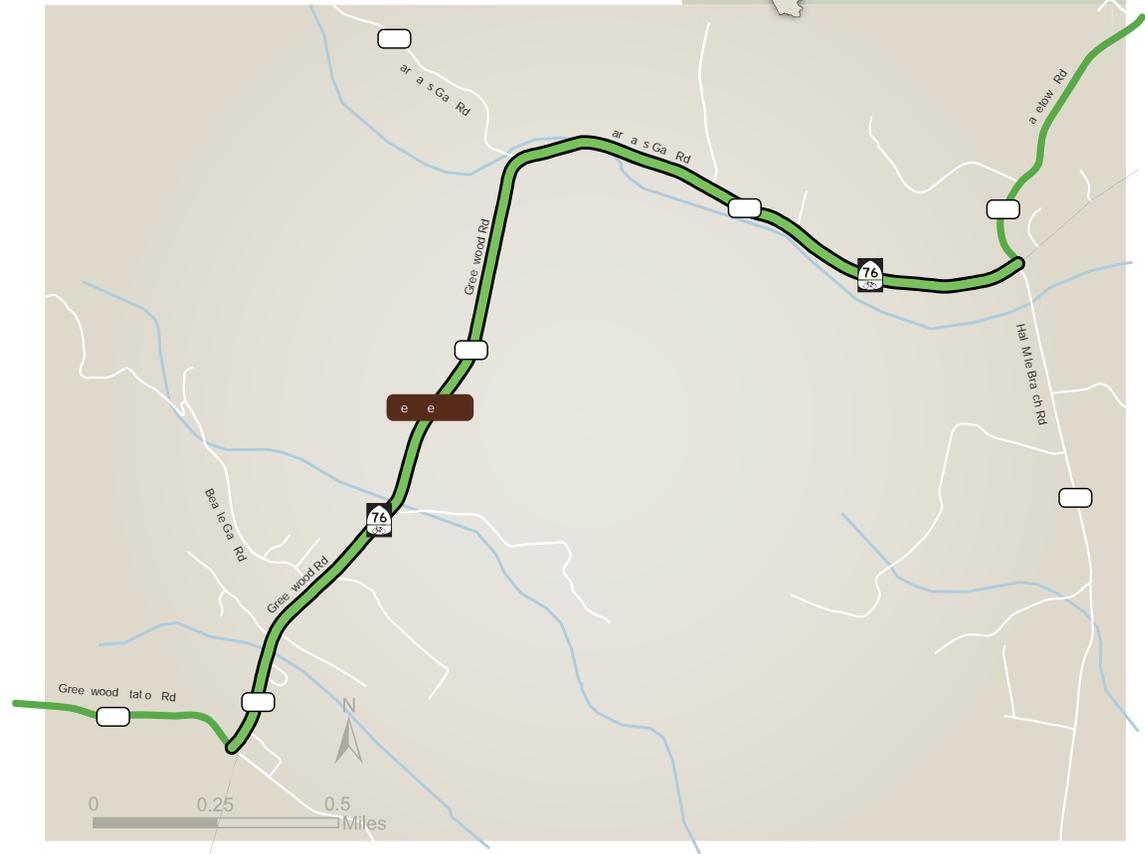
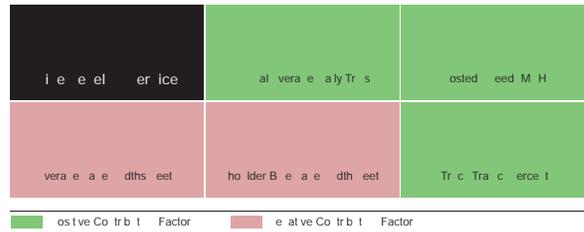
» Rural

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 intersec-

tion. 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

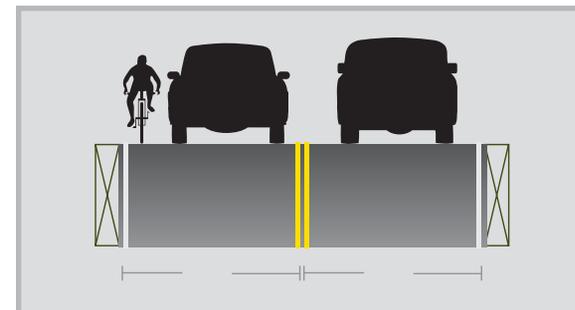


Figure 6-1: Typical Road Section



Figure 6-2: VA 611 Intersection



Figure 6-3: VA 684 Intersection

speeds are likely closer to 50 MPH, due to the low traffic counts and sight distances.

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

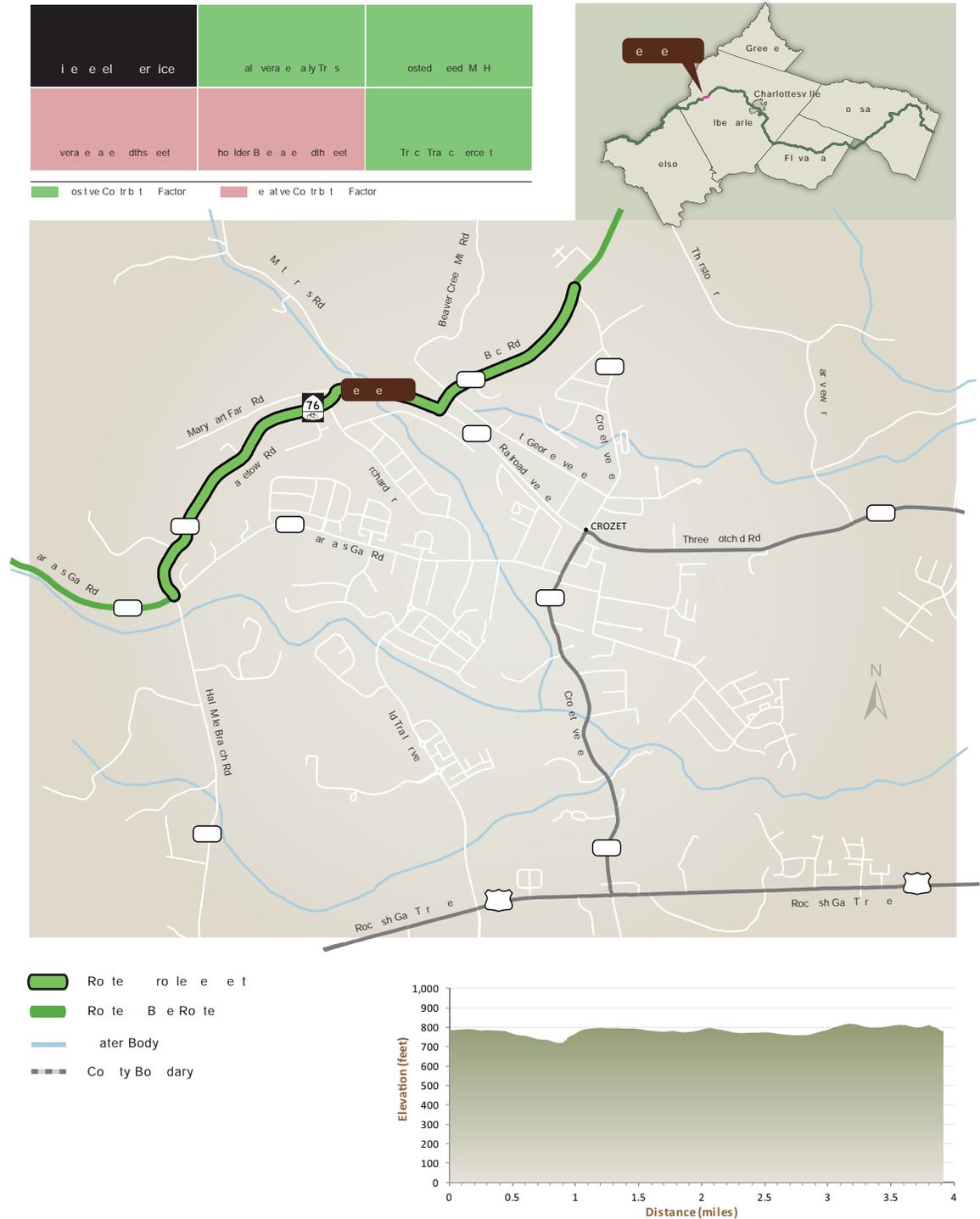
Land Uses

» *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*



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 ideal, 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, except 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

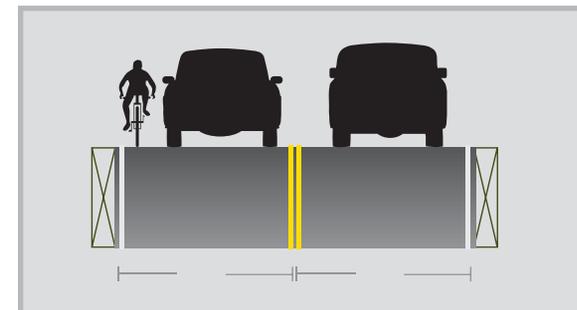


Figure 7-1: Typical Road Section



Figure 7-2: VA 810 Intersection



Figure 7-3: Railroad Crossing

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.

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 res-

taurants 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 Jarman's 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.

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

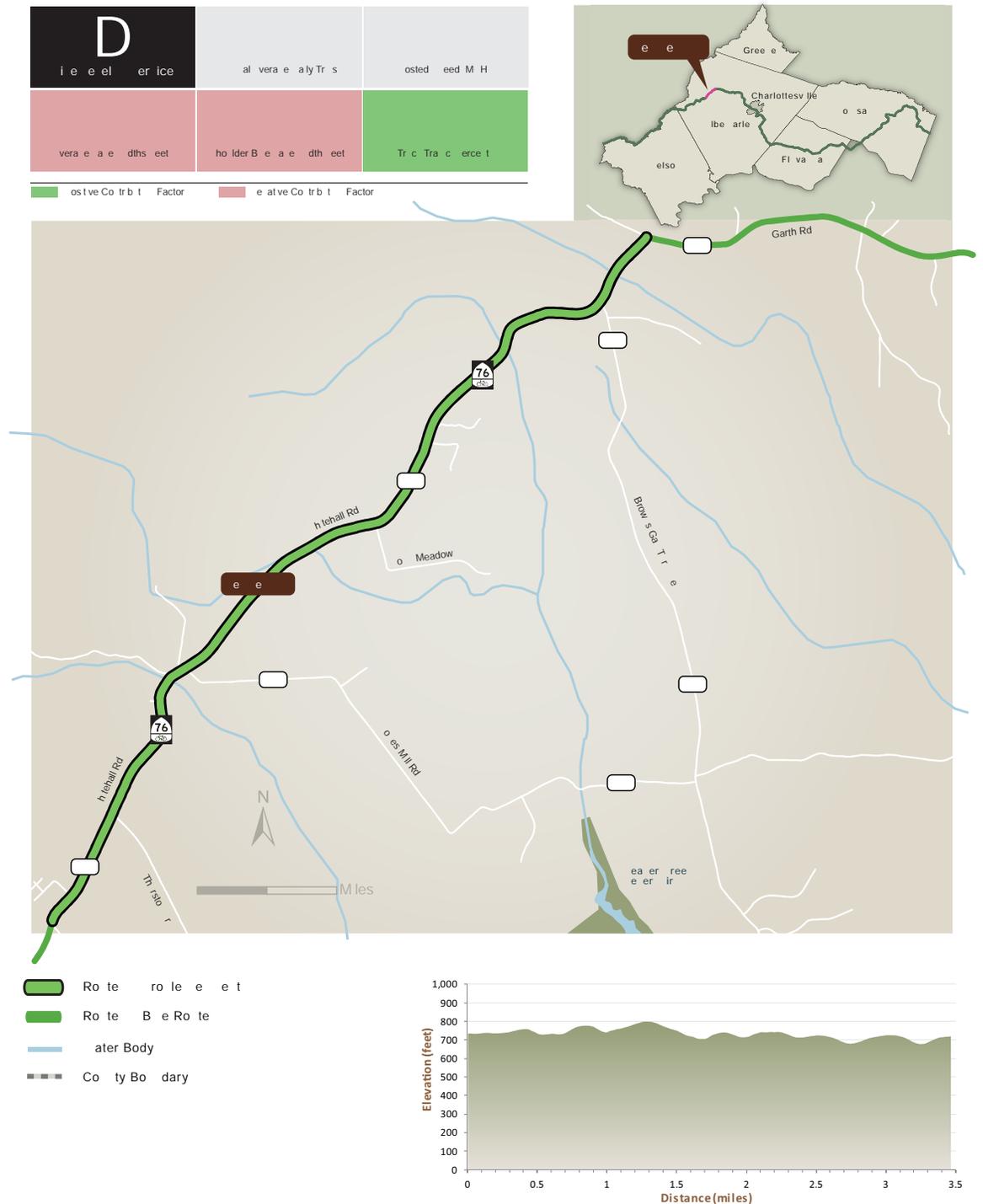
» Rural

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.



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 White 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

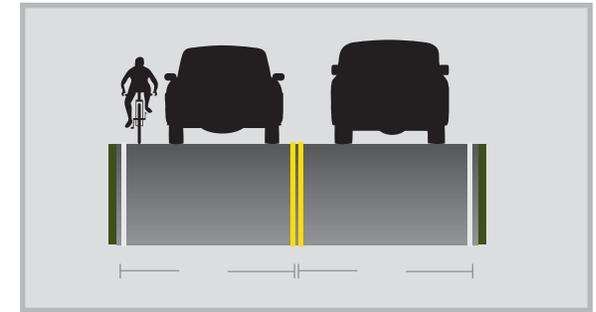


Figure 8-1: Typical Road Section



Figure 8-2: VA 614 Intersection



Figure 8-3: Sight-lines at Curve

speeds are likely closer to 55 MPH, due to the lack of congestion.

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

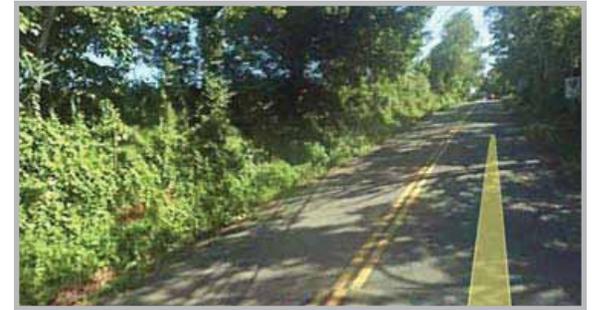


Figure 8-4: Lack of Shoulders on VA 810

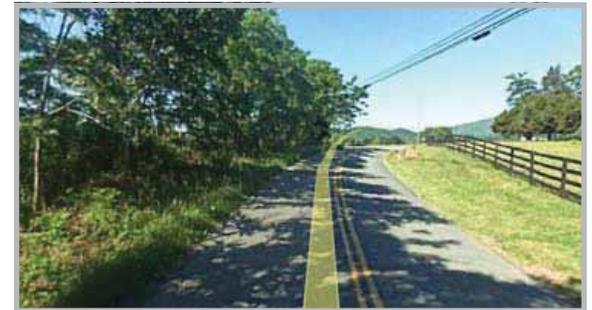


Figure 8-5: Location with Recurring Crashes



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-

iciencies 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

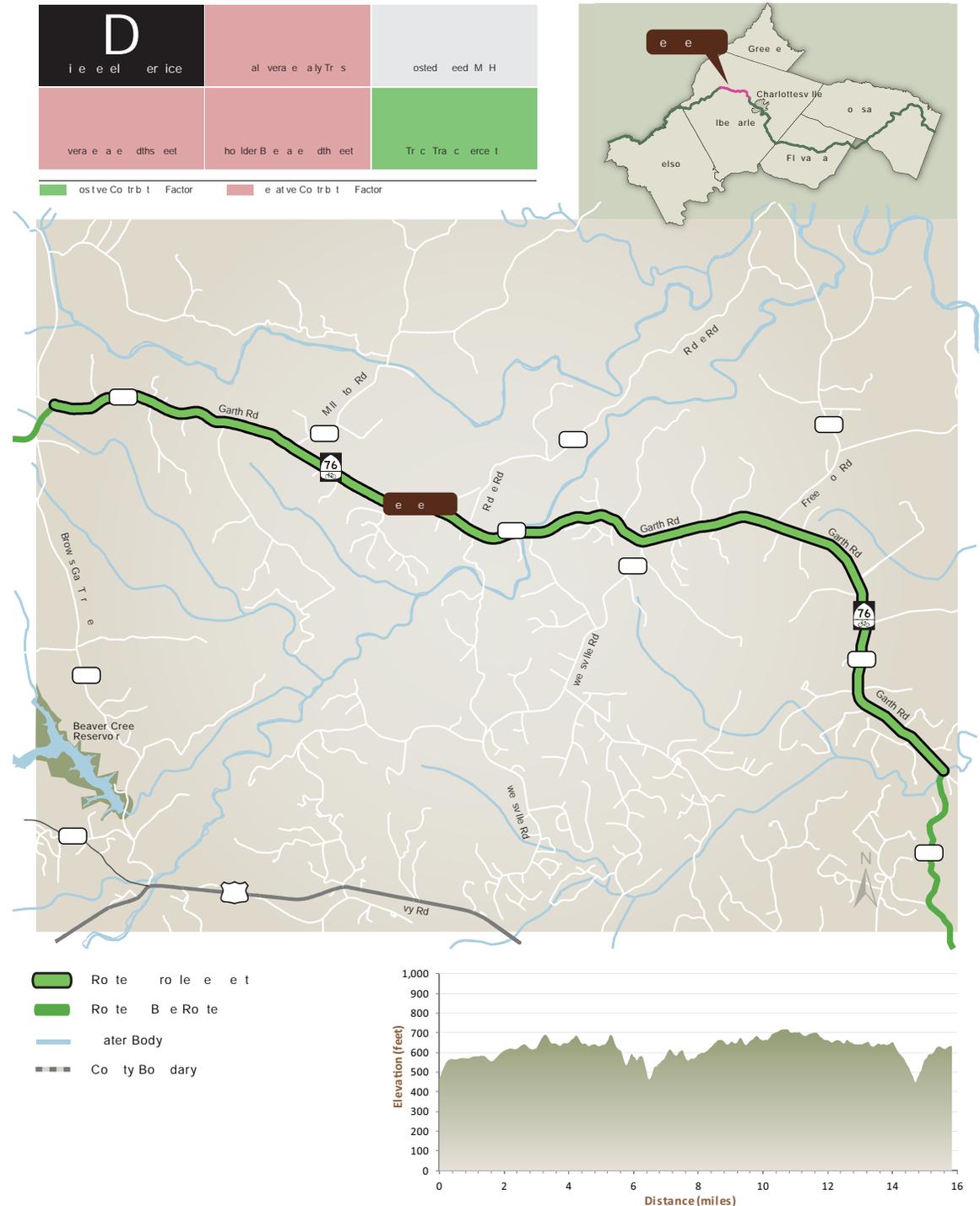
- » **Total Road Mileage: 9.1 Miles**
- VA 614 (Garth Road) – 5.31 Miles
- VA 676 (Garth Road) – 1.08 Miles
- VA 601 (Garth Road) – 2.71 Miles

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”.



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 intersec-

tion. 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

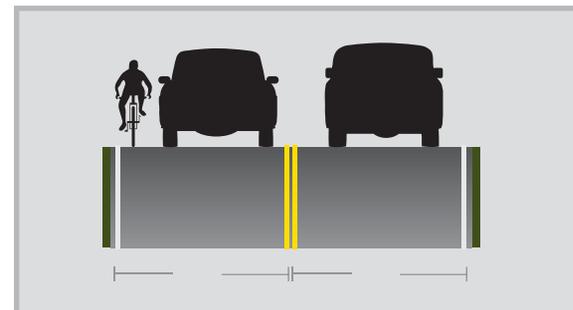


Figure 9-1: Typical Road Section



Figure 9-2: Free Union Road Intersection

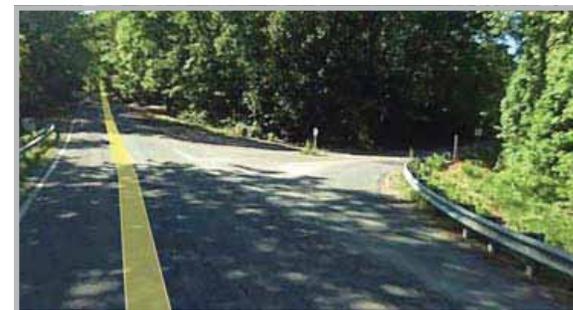


Figure 9-3: Old Garth Road Intersection

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)

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 (Owensfield Road), motorists experience LOS B. VDOT forecasts show that the LOS will degrade slightly by 2035 (to LOS C).

East of VA 676 (Owensfield Road), the roadway already scores a LOS C. For the section between Owensfield 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, motorists 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

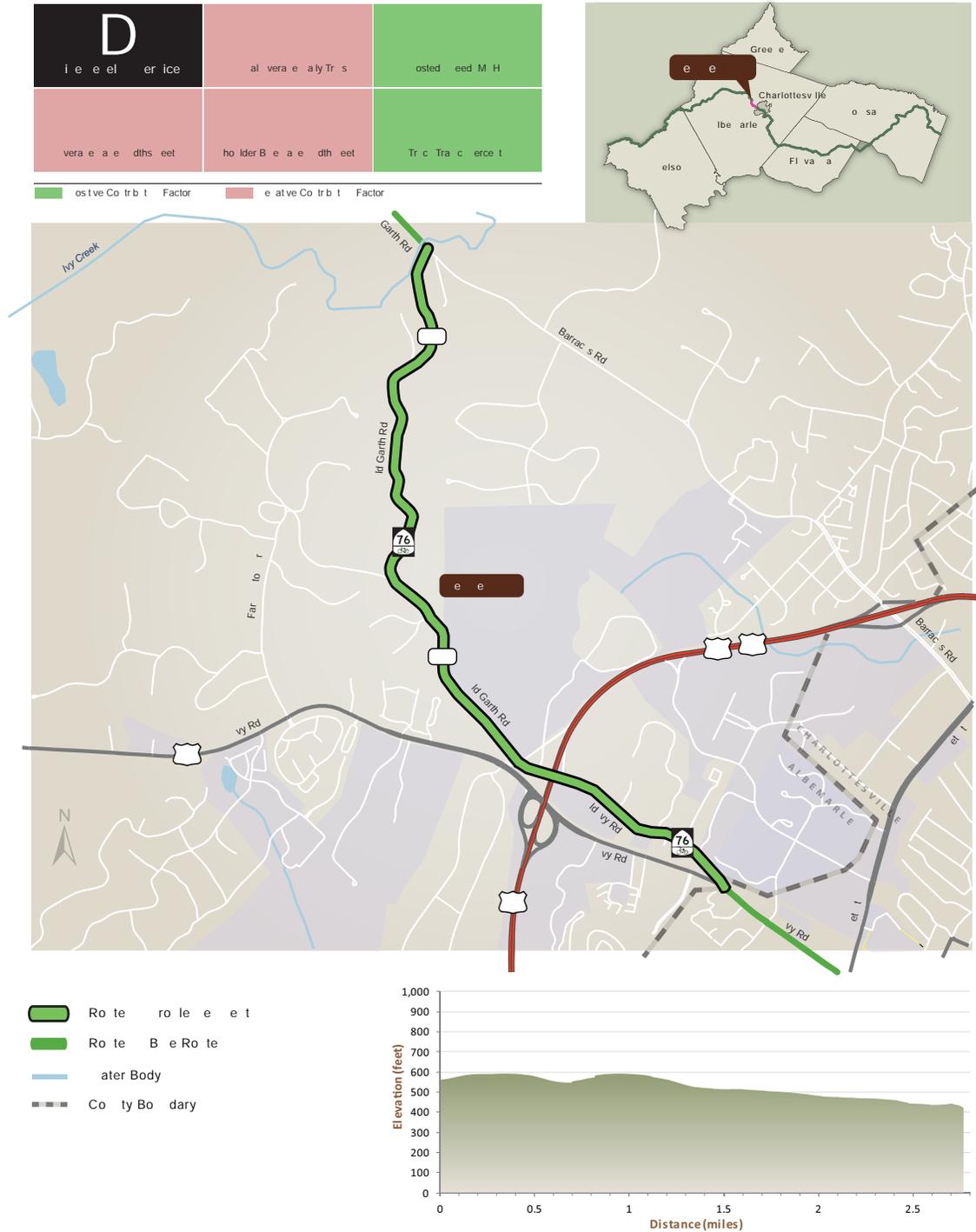
- » **Total Road Mileage: 2.75 Miles**
- VA 601 (Old Garth Road) – 1.95 Miles
- VA 601 (Old Ivy Road) – .8 Mile

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.



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)

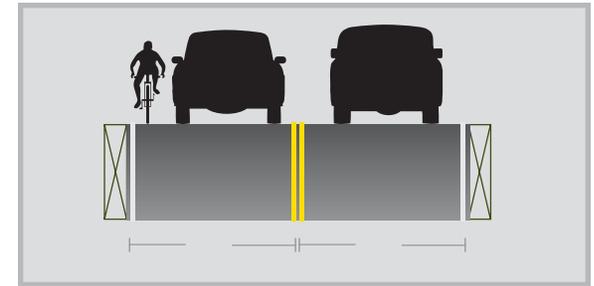


Figure 10-1: Typical Road Section on Old Garth

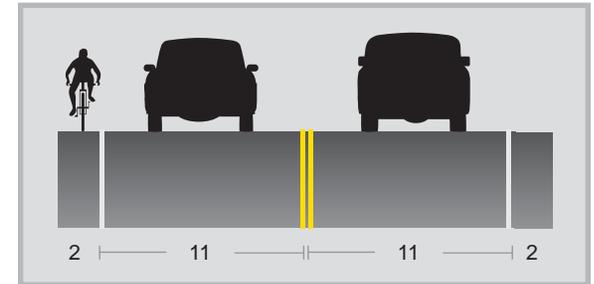


Figure 10-2: Typical Road Section on Old Ivy



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.

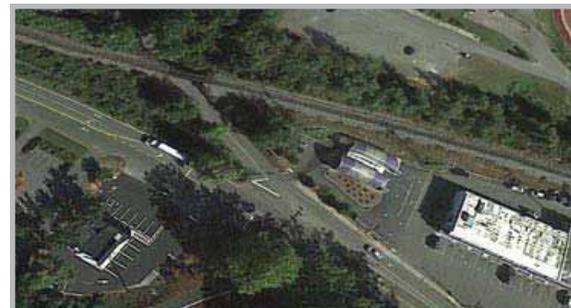


Figure 10-5: US 250 Intersection

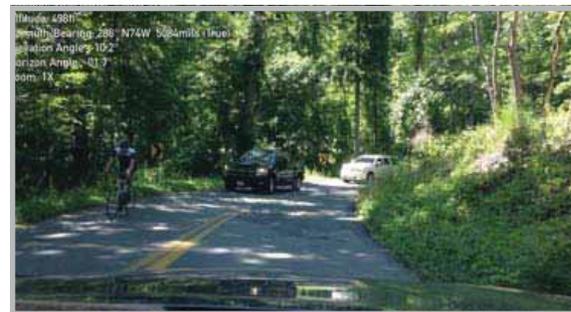


Figure 10-6: Sight-Distance on Old Garth Road

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 alternate 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 C1: Business US 250

City of Charlottesville

Segment C1 evaluates the existing cycling environment on Business US 250, through the City of Charlottesville. While the study area consists mostly of rural roadways, the streets in Charlottesville present a unique experience for cyclists. On these streets, riders have access to numerous services and resources, as well as historic landmarks. Consequently, this corridor can serve as a destination for most cyclists.

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. Despite the City's successes, urban environments come with inherent hazards for cyclists. To help mitigate those challenges, the City is undergoing several efforts to address cycling conditions in this corridor and community-wide. In those efforts, the City already conducted extensive assessments of the cycling conditions. Consequently, there is less emphasis on recommendations for this segment.

Segment Characteristics

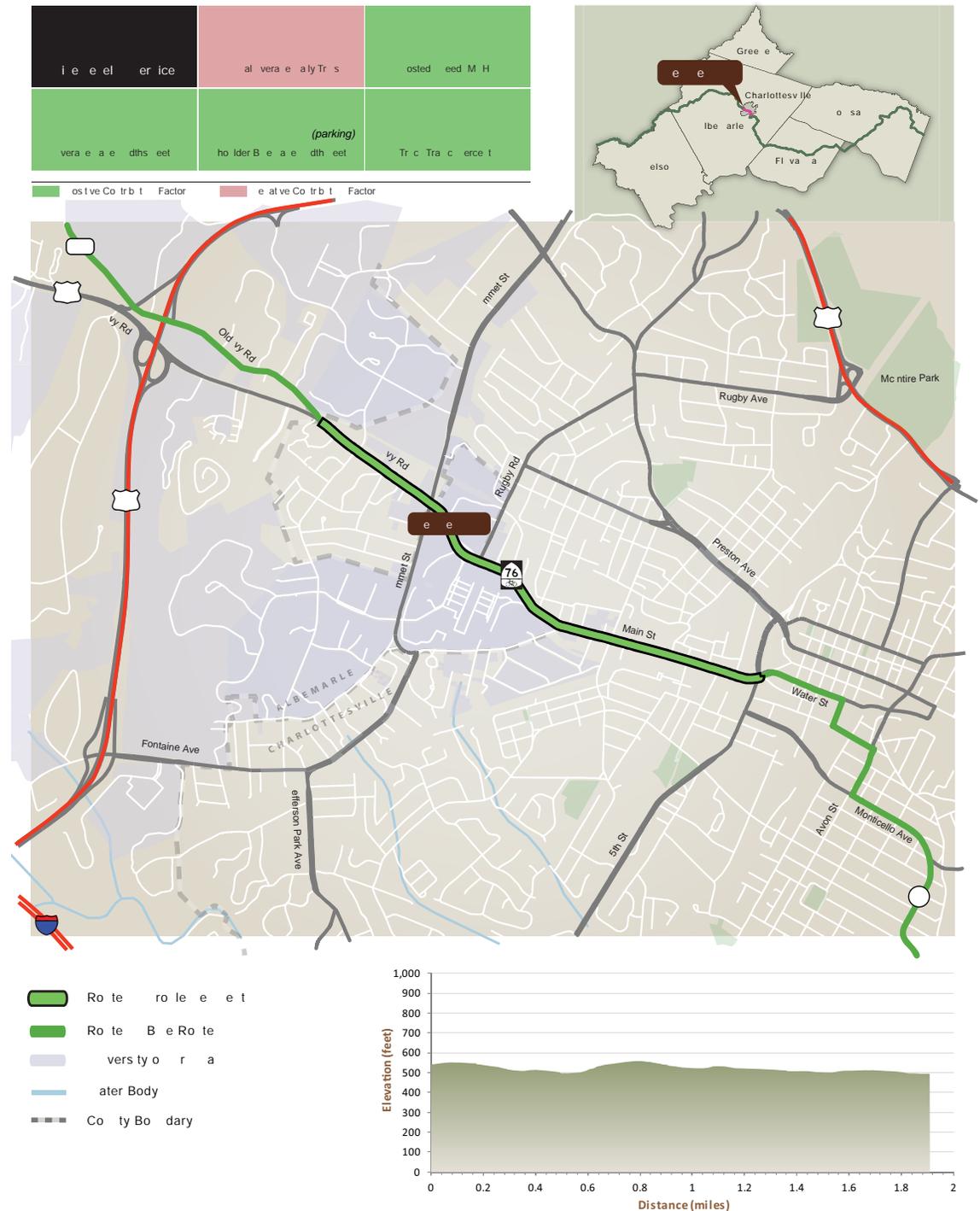
Urban Environment

- Urban Principal Arterial
- Primary Route

Road Segments

» Total Road Mileage: 1.91 Miles

- US 250 (Ivy Road) - .5 Mile
- US 250 (University Avenue) - .59 Mile
- US 250 (West Main Street) - .82 Mile



Land Uses

» Urban

This segment is an urban environment, with one of the most diverse mixes of land uses in the project study area. BR 76 passes through strip commercial on Ivy Road. It then climbs up to the University of Virginia and the urban-scaled commercial properties along University Avenue. On West Main Street, cyclists enter one of the most active corridors in the City, as there are apartment buildings, storefronts, restaurants and multi-storied/mixed use buildings.

Public Comment

» Bypass Urban Cycling

In an online questionnaire, local cyclists said that they preferred to avoid riding in the City. Respondents would rather ride on low-volume, rural roads. Consequently, local cyclists recommended that an alternate route bypass the City, using rural roads (such as Plank Road) to the south. It is important to note that these comments came from local cyclists. Touring cyclists would see Charlottesville as one of the few cities along the route and would mark this area as a valued destination.

Road Features

Road Sections

For an urban environment, this profiled corridor is relatively long, with a great diversity of street sections. Those variations roughly correspond to the road segments of Ivy Road, University Avenue and West Main Street.

» Urban, Three-Lane Street (Bike Lanes)

While Ivy Road generally has three (3) travel lanes (one eastbound, two westbound) there can be multiple turn lanes in any given sections. At its widest point (the Alderman Road intersection), the road surface is nearly 70 feet wide. Generally, the turn lanes are ten (10) feet wide, while the travel lanes are 12 to 14 feet wide. Between Alderman

and Rothery Road, the street section includes five (5)-foot bike lanes that are clearly marked. (Figure 11-1)

» Urban, Two-Lane Street (Bike & Shared-Use Lanes)

The street section on University Avenue varies from west to east. The widest point is at the Emmet Street intersection, where the road reaches approximately 50 feet. This section includes two (2) turn lanes, two (2) through lanes and a bike lane. To the east, closer to the university, the road begins to narrow to 40 feet. On the eastbound side, the section consists of an 11-foot travel lane, four (4)-foot bike lane and eight (8) feet of on-street parking. The westbound side consists of an 11-foot travel lane and five (5)-foot bike lane. The narrowest street section is at the UVA Corner, where the road is 26 feet wide, with on-street parking cut into the sidewalk. The eastbound lane is 14 feet, while the westbound lane is 12 feet. There is a stone wall on the eastbound lane, which creates a hard edge to the road. At the edge of the westbound lane, there is a curb and wide sidewalks (approximately 20 feet) or on-street parking. (Figure 11-2)

» Urban, Two-Lane Street (Bike Lanes)

The easternmost street in this corridor is West Main Street. While the arrangement of travel and turn lanes vary, the road on West Main Street is generally 45 feet wide. The two (2) travel lanes are 11 feet wide. On the east- and westbound sides, there is seven (7) feet for on-street parking, which leaves room for four (4)-foot bike lanes in both directions. (Figure 11-3)

Bike Signage

» Sufficient Signage

This corridor has the most comprehensive bike signage in the project study area. There are eight (8) BR 76 signs. Additionally, there are 32 other bike-related signs and 25 sharrows stenciled on the road surface.



Figure 11-1: Typical Road Section



Figure 11-2: Typical Road Section



Figure 11-3: West Main Street

Intersections

» VA 302 (Alderman/Copeley Road)

There are no identified deficiencies with this four-way, signalized intersection. Although, there is a large volume of vehicular and pedestrian traffic, which creates greater chances of accidents. Between 2005 and 2011, there were 36 reported crashes at this location. Reportedly, 16

of those crashes were related to the intersection. None of those accidents involved cyclists.

» **US 29 (Emmet Street)**

The Emmet Street intersection poses several dangers for cyclists, as there is heavy traffic. The only bike lane is on the eastern leg, University Avenue. Vehicles must cut across the bike lane, to reach the right turn lane. Between 2005 and 2011, there were 23 intersection-related crashes, including a bike-automobile collision.

» **US 250 (Rugby Road)**

The City recently implemented a pilot project with this intersection, installing bike boxes and painted bike lanes. This constitutes the most innovative cycling accommodation in the study area.

» **Typical Intersection on the UVA Corner**

There are three (3) alleys that intersection with University Avenue, along with several smaller intersections in the “Corner” area. There are no identified deficiencies at these intersections, though sight distance is a common concern. Motorists can have difficulty spotting cyclists, due to visual obstacles, such as buildings, on-street parking, traffic, pedestrians and other features.

» **VA 607 (14th Street NW)**

The high volume of vehicular, pedestrian and bus traffic at this T-Intersection introduces greater potential of collisions with cyclists. Overall, this location has a relatively high concentration of traffic accidents, with at least 18 reported crashes, between 2005 and 2011, though none involved pedestrian or cyclists. There are also limited sight-lines in the area, due to features along the street, such as the railroad bridge. (Figure 11-4)

» **VA 625 (Jefferson Park Avenue)**

This Y-intersection can be challenging for cyclists, as there are multiple turn lanes and relatively heavy traffic volumes. Between 2005 and 2011, there were ten (10) crashes at

this intersection, including three (3) vehicle/pedestrians collisions. Recent improvements to this intersection helped to increase cycling safety.

» **VA 606 (10th Street NW)**

10th Street NW forms a four-way, signalized intersection with West Main Street. There are well-marked bike lanes on West Main Street, helping improve cycling safety. Between 2005 and 2011, there were 18 crashes associated with this intersection, including a collision with a cyclist.

» **Typical West Main Street Intersections**

There are at least 12 intersections along West Main Street. The high volume of vehicles, pedestrians and cyclists make these intersections difficult for cycling. There are multiple turning movements and modes of travel at each intersection. In terms of accident data, most of the crashes in this corridor occur at these intersections. The six (6) accidents that involved vehicles/cyclists appear to have taken place at intersections. This included a cycling fatality.

» **US 250 (Ridge McIntire Road)**

The Ridge McIntire Road intersection presents many hazards for cyclists. With 5 legs, there are multiple turning movements and conflict points where vehicles and bikes could cross paths. There are additional conflict points at turn lanes, where cyclists must merge into and cut across traffic. With the numerous turn lanes, the intersection is relatively large. Consequently, cyclists must travel greater distances to clear the intersection between lighting cycles. Despite these issues, there were no recorded traffic accidents that involved bicycles, between 2005 and 2011.

Sight Distance

» **Obstructed Sight-Lines at Intersections**

The sight distances in this corridor are generally clear, but there are obstructed sight-lines at some intersections. Obstacles that block sight-lines include: vegetation, signs, buildings and on-street parking. Sight distance issues are most apparent at 4th and 8th Street. (Figure 11-5)



Figure 11-4: 14th Street NW



Figure 11-5: Obstructed Sight-Lines

Additional Road Hazards

» **On-Street Parking**

On-street parking presents many difficulties for cyclists. Parked vehicles narrow the street section but also create dangers as motorists can unexpectedly open car doors.

» **Variable Road Widths**

Cyclists prefer to have consistent, predictable bike facilities. When the widths of travel and bike lanes vary, cyclists need to continuously adjust. In choke points, where the roads narrow, cyclist must merge in and out of traffic. Overall, these conditions can confuse motorists and cyclists, increasing the chances of collisions.

Planned Road Improvements

» **Planning Efforts**

The City of Charlottesville updated its Bike and Pedestri-

an Plan, which includes additional assessments of these areas. Additionally, the City is involved with an extensive planning effort for West Main Street. In that process, the City is weighing several options for improving bike and pedestrian facilities. Recommendations will include improved bike lanes and other cycling accommodations.

» *Other Improvements*

In VDOT's Six-Year Improvement Program, there is a project that includes Bike and Pedestrian Improvements at the Buckingham Branch railroad line. These are listed as safety improvements. To date, preliminary engineering work is complete.

Additional Traffic Hazards

» *Pedestrians & Buses*

In this urban environment, there is a greater occurrence of pedestrian traffic, compared to the rural areas of BR 76. As pedestrians cross the street, there are added conflict points for cyclists. Additionally, there are frequent bus routes on these streets. As buses arrive at stops, there are greater chances of collisions with cyclists.

Traffic Conditions

Traffic Counts

» *12,400 to 13,300 ADT*

This corridor is the third most traveled area in the project study area. As an urban environment, these higher traffic volumes are expected. On Ivy Road, counts range from 12,439 to 13,264 ADT. The traffic counts on University Avenue are similar, between 12,390 to 13,052 ADT. West Main Street carries 13,052 ADT.

VDOT estimates that traffic counts will continue to increase over the next twenty years. On Ivy Road, counts could reach 15,000 ADT. University Avenue and West Main Street would also experience increases, as traffic counts are estimated to reach 15,500 ADT or more.

Truck Traffic

» *1 to 3 Percent*

Truck traffic is negligible in most part of the corridor, though University Avenue and West Main Street have a 3 percent rate from heavy vehicles. Note: buses and emergency vehicles can also present dangers to cyclists, even if they are not defined as truck traffic.

Travel Speeds

» *25 to 35 MPH*

On Ivy Road, the posted speed limit is 35 MPH. On University Avenue and West Main Street, the speed limit reduces to 25 MPH. Due to congestion and frequent stops at intersections, the actual travel speeds are at or below posted limits.

Level of Service

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

» *D - Approaching Unstable Flow*

On Ivy Road and West Main Street, congestion levels are high, LOS D. Consequently, travel speeds begin to decrease due to increased traffic volumes. On portions of University Avenue, congestion is slightly improved, with a LOS C.

According to VDOT forecasts, Ivy Road will remain at a LOS D in the next twenty years. On University Avenue, forecasts show that LOS will degrade to an F, resulting in a breakdown of travel flow, also known as stop-and-go traffic or a traffic jam. West Main Street would have LOS F and E. Actual congestion in the future may be difficult to calculate, as the City will likely take actions to mitigate traffic along this corridor.

Traffic Accidents

» *272 Crashes (8 Bicycles), 1 Fatal (Bicyclist)*

This is the most crash-prone corridor in the study area, though not because of road deficiencies. This corridor has the third highest traffic counts of the 25 segments in this study. This area also has the highest counts of cyclists and pedestrians. Consequently, large volumes of people are crossing paths on various travel modes. Additionally,

reporting of accidents in the City is likely more accurate and inclusive.

On Ivy Road, there were nearly 100 crashes, between 2005 and 2011. This count includes four (4) vehicle/pedestrian collisions and one (1) vehicle/bicyclist collision. On University Avenue, there were close to 70 crashes, including another collision with a cyclist. There were also six (6) instances where vehicles struck pedestrians.

West Main Street had over 100 automobile accidents. This street has the most accidents involving cyclists and pedestrians. In six years, there were at least seven (7) pedestrians that were struck and injured by vehicles. Three (3) of these accidents occurred in the vicinity of Jefferson Park Avenue. Another three (3) occurred between 4th and 6th Street NW. During the same time, there were six (6) vehicular crashes involving cyclists. Most of these accidents occurred at intersections, including two (2) at the 7th Street crossing. While most of these cyclists escaped with injuries, there was one (1) fatality at the intersection of 4th Street NW.

Recreational

Historic Resources

» *Historic District and Properties*

This corridor has more historic resources than any other corridor in the project study area. There are four (4) historic districts, including the Rugby Road/University Corner, University of Virginia, the 10th & Page and the Fifeville Districts. Historic buildings are visible from the roadway, including the UVA Rotunda, which is on the World Heritage List.

Highway Markers

» *5 Historic Markers*

There are 5 historic markers along this corridor. The western most highway marker is at the intersection with US

29 (Emmet Street). The text honors a local World War II hero, Technical Sergeant, Frank D. Peregory, who landed at Omaha Beach in the Normandy invasion. The next highway marker is in front of the UVA Rotunda and provides a brief history of the University of Virginia. At the intersection of Jefferson Park Avenue, a marker provides a history for the old Charlottesville Hospital. On West Main Street, there is a marker that provides history of the First Baptist Church of West Main. Finally, there is an historic plaque at the Lewis and Clark Statue, in the Ridge/McIntire intersection. The marker honors Sacajawea, who guided the Lewis and Clark Expedition.

Scenic Resources

» *Scenic Road*

These streets are designated as Scenic, because of the historic properties in the corridor. Despite this designation, there are no identified scenic vistas.

Other Destinations

» *Downtown Pedestrian Mall*

This corridor is full of destinations that could interest cyclists who are passing through town on BR 76. Downtown Charlottesville is home to one of the only pedestrian malls in the country. In the 1970s, the City designated eight (8) blocks for a pedestrian only street. This area developed into the cultural center for the city.

» *University of Virginia*

The UVA Lawn and Rotunda is a popular tourism destinations because of its architectural and historical significance.

» *Local Businesses*

Throughout this corridor, there are several other businesses and restaurants that would interest cyclists.

Cycling Services & Resources

» *Lodging, Restrooms, Food & Bike Racks*

Commercial properties allow cyclists to resupply on food and water. Many businesses also have restrooms for pa-

trons. With bike racks throughout the university and West Main Street area, cyclists can easily secure their bikes. There are also multiple hotels in this corridor, providing valuable lodging opportunities to cyclists.

» *Amtrak Service*

The Amtrak station provides a unique service for cyclists. Charlottesville is one of only two Amtrak stations nationwide on BR 76 with full checked baggage service. For a small charge, Amtrak passengers can have their bike delivered with their checked luggage in a recyclable box. The only other full checked baggage service directly on BR 76 is in LaJunta, Colorado.

Along the TransAmerican Trail, the only other on-route locations with Amtrak stations include Williamsburg, VA; Ashland, VA; Carbondale, IL; and Eugene, OR.

Access Points

» *On-Street & Public Parking*

There are numerous locations in the City where someone can access BR 76.

Topography

» *Rolling*

While there are flat sections, this corridor include several significant hills. The most challenging climb is on University Avenue, from US 29 (Emmet Street). University Avenue climbs in elevation, with a long slope greater than 3 percent. The road then drops in elevation to 14th Street NW, also at a 3 percent grade. After another small climb, West Main Street is relatively flat.

Route Assessment

Bike Compatibility: BLOS B – C

Ivy Road, University Avenue and West Main Street are reasonably compatible for cycling. While traffic counts are relatively high, travel speeds are low and the travel lanes are

wider than on most rural roadways. Many sections have bike lanes, which are ideal in this urban environment.

Despite the cycling accommodations, there are also dangers to cyclists. At intersections, riders have limited sightlines and must travel across turn- and travel lanes. Also, on-street parking and varied street dimensions can serve as cycling hazards.

Recreation: Very High Value

While the US Bike Route System is intended for rural roadways, this urban setting provides abundant recreational amenities. There are historic resources to view from the roadway. The University of Virginia is a popular tourist destination, for its architectural and historical significance. There are also abundant bike racks in the area, allowing cyclists to access destination, resources and services by foot. Finally, the Amtrak services provides one of the more unique and valued services along the entire route.

Recommendations

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 maintaining the existing route through the City.

Segment C2: Downtown Area

City of Charlottesville

Segment C2 evaluates the existing cycling conditions on the downtown portion of BR 76. This is the commercial and cultural center of the City, providing cyclists and visitors with one of the more unique experiences along the entire route, nationwide. While the City continues to implement innovative bike accommodations and while the streets are relatively safe for cycling, there are inherent features of urban environments that can be hazardous to riders. Despite those challenges, this corridor services as a destination for cyclists on BR 76.

Segment Characteristics

Urban Environment

- Urban Collector
- Urban Local
- Secondary Routes

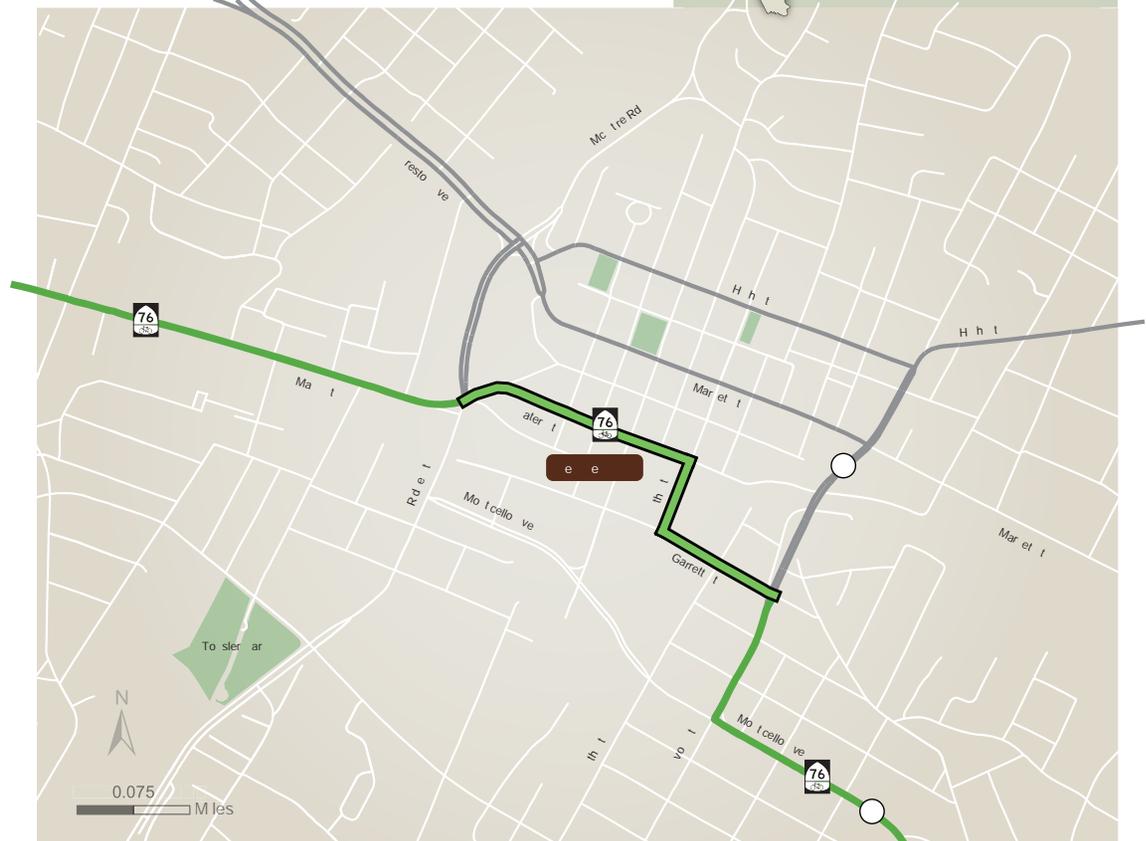
Road Segments

- » Total Road Mileage: .58 Mile
- VA 652 (Water Street) - .32 Mile
- VA 3413 (4th Street SE) - .10 Mile
- VA 620 (Garrett Street) - .16 Mile

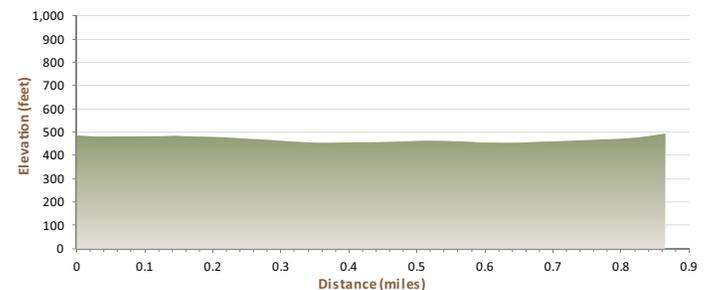
Land Uses

» Urban
 Downtown is the most urban environment in the BR 76 study area. The route passes by high density areas, with multi-storied buildings and a diverse mixture of uses. North of the railroad tracks, cyclists ride past the downtown mall (the central business district and mixed-use center for the City). South of the railroad track, on Garrett Street, the surrounding properties include multi-family and commercial/industrial buildings.

10.5 Average Lane Widths (feet)	4, 25 Annual Average Daily Trips	25 Posted Speed (MPH)
	(parking) Shoulder/Bike Lane Width (feet)	Truck Traffic (percent)
Positive Contributing Factor		Negative Contributing Factor



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



Public Comment

» *Bypass Urban Cycling*

In an online questionnaire, local cyclists said that they preferred to avoid riding in the City. Respondents would rather ride on low-volume, rural roads. Consequently, local cyclists recommended that an alternate route bypass the City, using rural roads (such as Plank Road) to the south. It is important to note that these comments came from local cyclists. Touring cyclists would see Charlottesville as one of the few cities along the route and would mark this area as a valued destination.

Road Features

Road Sections

» *Urban, Two-Lane Street (Shared-Lane)*

On Garrett Street, the roadway consists of a 40-foot paved surface. The travel lanes are approximately 12 feet wide, with an additional eight (8) feet on the outside edge of both lanes for on-street parking. None of the on-street parking is marked. Adjacent to the road is curb and gutter, along with a five (5)-foot planting strip and five (5)-foot sidewalk. (Figure 12-1)

The road surface on 4th Street SE is narrower, due to a small railroad bridge, with approximately 35 feet. With on-street parking, the travel lanes are approximately nine (9) feet. On the northbound lane, some of the on-street parking is framed by bulb-outs. This section also includes curb and gutter, along with five (5)-foot sidewalks.

The street section on Water Street varies, as turn lanes appear and taper away. Generally, the roadway is 35 to 40 feet wide. There is on-street parking (marked) on the westbound lane, claiming eight (8) feet of the road surface. With a turn lane, the east- and westbound lanes are generally ten (10) feet wide. There is curb and gutter, along with five (5) to eight (8)-foot sidewalks. (Figure 12-2)

Note: When the on-street parking is unoccupied, the street section essentially includes a wide outside lane for cyclists.

Bike Signage

» *Additional Signage Needed*

There are six (6) signs that mark BR 76, though no signage that directs cyclists onto Garrett Street from Avon Street. Aside from BR 76, there are eight (8) bike sharrows on Water Street, indicating shared use lanes. (Figure 12-3)

Featured Intersections

» *Typical Intersection*

There are five (5) intersections on Water Street, with cross streets from the downtown pedestrian mall. Only two (2) of those intersections have 4 legs, while the other three (3) essentially function as T-intersections. The T-intersections on Garrett Street tend to have poor sight-lines, due to on-street parking and other features that obstruct sight distance.

» *VA 652 (Water Street)/ VA 3413 (4th Street SE)*

There are several features at this four-way intersection that are challenging to cycling safety and comfort. With relatively high traffic counts and frequent pedestrian crossings at the crosswalks, there are greater chance of accidents and difficult sight-lines for cyclist from 4th Street SE. (Figure 12-4)

» *VA 3413 (4th Street SE)/ VA 620 (Garrett Street)*

Sight distance is the main concern for cyclists at this T-intersection. On-street parking along Garrett Street blocks sight-lines from 4th Street SE.

» *US 20 (Avon Street)*

The intersection at Garrett and Avon creates challenges for cyclists. With 5 legs, there are additional turning movements and potential conflict points between vehicles and bicycles. On Avon Street, cyclists must cut across travel lanes in order to make a left turn onto Garrett Street, crossing paths with motorists. (Figure 12-5)



Figure 12-1: Typical Road Section on Garrett Street



Figure 12-2: Typical Road Section on Water Street



Figure 12-3: Bike Sharrows

Sight Distance

» *Obstructed Sight-Lines at Cross Streets*

Commonly, there are obstructed sight-lines at many intersections. Visual obstructions include vegetation, signs and on-street parking.



Figure 12-4: Intersection of Water and 4th Streets



Figure 12-5: Avon Street

Additional Road Hazards

» Variable Road Widths

Cyclists prefer to have consistent, predictable bike facilities. When the widths of travel and bike lanes vary, cyclists need to continuously adjust. In choke points, where the roads narrow, cyclist must merge in and out of traffic. Overall, these conditions can confuse motorists and cyclists, increasing the chances of collisions.

Planned Road Improvements

» Road Improvements

There are two (2) road projects that could influence the BR 76 sections. The City is in the process of replacing the Belmont Bridge, just north of BR 76, on Avon Street. In the final designs, construction may require minor redesigns of the Avon/Garrett Street intersection. On South Street, the City installed a contraflow bike facility. While this is a one-

way street, cyclists will legally be able to travel east- and westbound. While this street is not part of BR 76, it is one of the legs in the Ridge McIntire intersection.

Traffic Conditions

Traffic Counts

» 3,250 to 6,000 ADT

In this urban environment, traffic volumes are relatively high (5,997 ADT), compared to the rest of the study area. The VDOT forecast for 2035 indicates that ADT could increase to nearly 10,000 ADT along Water Street. Traffic counts on Garrett Street shows slight increases in traffic over the next twenty years, reaching 3,250 ADT.

Truck Traffic

» 3 Percent

The percentage of heavy vehicles is moderate, having a slight effect on the bike compatibility score.

Travel Speeds

» 25 MPH

The posted speed is 25 MPH. Due to frequent intersections and stops, actual speed is likely similar to posted speeds.

Level of Service

» B - Reasonably Free Flow

» A - Free Flow

On Water Street, motorists are able to travel at or above the posted speed limit, but maneuverability within the traffic stream is slightly restricted. VDOT forecasts show that LOS will remain at B over the next twenty years. On Garrett Street, traffic also flows freely. VDOT forecasts show that LOS will remain at A over the next twenty years.

Traffic Accidents

» 10 crashes, 0 fatal

Between 2005 and 2011, VDOT records show at least 10 crashes in this area. On Water Street, the intersection with

McIntire Road had the highest number of crashes, with six (6) accidents. The most common crash type was angled collisions between vehicles. While there was one vehicular accident that involved a pedestrian, there were no crashes between motorists and cyclists.

Additional Traffic Hazards

» Pedestrians & Buses

In this urban environment, there is a greater occurrence of pedestrian traffic, compared to the rural areas of Bike Route 76. As pedestrians cross the street, there are added conflict points for cyclists. Additionally, there are frequent bus routes on these streets. As buses arrive at stops, there are greater chances of collisions with cyclists.

Recreational

Historic Resources

Historic District

In this corridor, there is an abundance of structures and properties with historic significance. This is evident from the local designation of the Courthouse Historic District. From the street, cyclists can see a wide range of architectural styles from various historical periods.

Scenic Resources

» No Designation

While this area provides an interesting urban environment, such as the Downtown Mall, there are no identified scenic vistas or resources in this corridor.

Other Destinations

» The Downtown Pedestrian Mall

Downtown Charlottesville is home to one of the only pedestrian malls in the country. This area developed into the cultural center for the city, as well as the central business district. While cycling is not allowed on the mall, there are several bike racks in the area. The restaurants, stores and overall environment make this corridor a great destination on BR 76.

Cycling Services & Resources

» All Services

Commercial properties allow cyclists to resupply on food and water. Many businesses also have restrooms for patrons. With bike racks and fix-it racks throughout the downtown area, cyclists can easily secure and maintain their bikes. South of Garrett Street is the only bike shop along the BR 76 study area, providing a unique and critical resource for cyclists. In the summer months, there is also a farmers market along Water Street. The City offers various parks that may be of interest to cyclists. With a post office, medical services, bike repair, a library and numerous other resources, this is a critical designation for cyclists on BR 76.

Access Points

» On-Street & Public Parking

There are several locations in the City where someone can access BR 76.

Topography

» Rolling

While the Downtown area is relatively flat, there are two (2) hills. On Water Street, the terrain slopes downward from Ridge McIntire. On Garret Street, there is a hill that climbs up to Avon Street. These climbs can be difficult, as there is no designated bike space for the climbs. On-street parking and busy traffic leave little room for cyclists to maneuver on these climbs.

Route Assessment

Bike Compatibility: BLOS B – C

The streets in downtown Charlottesville are reasonably compatible for cycling. While there are higher traffic counts than in other segments, travel speeds are low and the travel lanes are wider than on most rural roadways. There are also dangers to cyclists on these streets. At intersections, cyclists have limited sight-lines and must travel across turn and travel lanes.

Recreation: High Value

While the US Bike Route System is intended for rural roadways, this urban corridor is a definite designation for riders. This corridor has all of the resources and services that touring cyclists may need.

Recommendations

Additional Signage

The City should install an additional BR 76 sign at the Garrett/Avon Street intersection.

Other Signage

There should also be discussions of road stencils at crosswalks, warning pedestrians of cyclists. (Figure 12-6)



Figure 12-6: Road Stencil

Segment C3: Belmont Area

City of Charlottesville

Segment C3 evaluates the existing cycling environment on Bike Route 76, near the Belmont neighborhood of Charlottesville. As with segments C1 and C2, there are challenges to cycling safety that are inherent to urban areas. At the same time, the City also has the most innovative approaches to improving the cycling environment. Regardless of the conditions, this corridor is a destination for cyclists on BR 76.

Segment Characteristics

Urban Environment

- Urban Principal Arterials
- Primary Routes

Road Segments

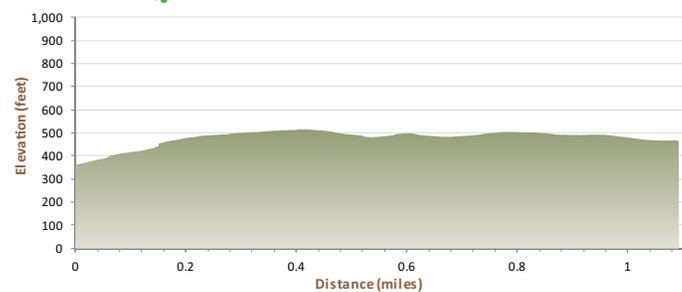
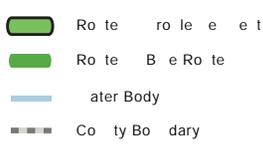
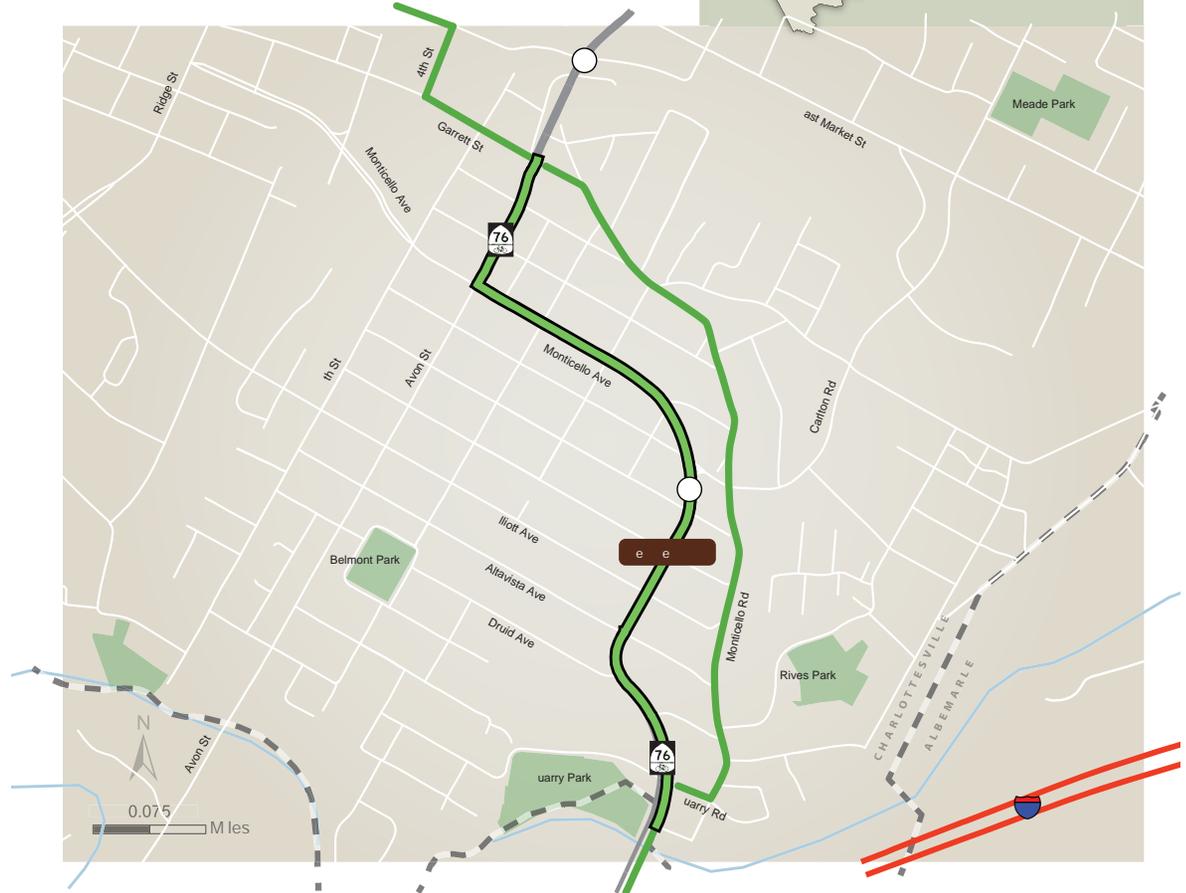
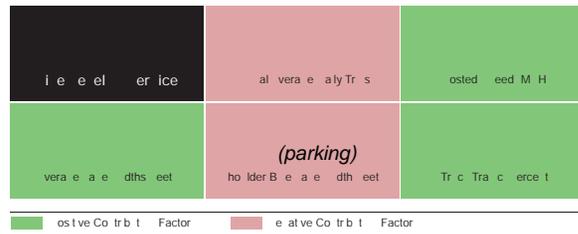
- » **Total Road Mileage: 1.07 Miles**
- US 20 (Avon Street) - .18 Mile
- US 20 (Monticello Avenue) - .89 Mile

For cyclists traveling northbound on Monticello Avenue, BR 76 diverts riders onto less-traveled roads that provide an easier climb. The Uphill Route includes: Levy Avenue (.06 mile), Monticello Road (.91 mile) and Quarry Road (.06 mile).

Land Uses

» Urban

The Belmont corridor is an urban setting, with a well-defined grid network. While there is a mix of land uses, most properties in this corridor are small, single-family lots. The area also includes several churches, a school, small commercial properties and multi-family residential.



Public Comment

» *No additional Comments*

There were no additional comments from those provided for segments C1 and C2.

Road Features

Road Sections

» *Urban, Two-Lane Street (Shared Lane & Bike Lanes)*

The street section varies, as the roadway transitions to the wider widths on Scottville Road or as turn lanes appear and taper away. Overall, the roadway is typically 44 feet wide on Monticello Avenue and Avon Street. The travel lanes are approximately 12 feet wide, with an additional eight (8) feet on the outside edge for on-street parking. None of the on-street parking spaces are marked. Adjacent to the road pavement, there is curb and gutter, along with 5-foot sidewalks. On Avon, the City recently created bike lanes, narrowing the travel lanes but creating a much improved cycling environment. (Figure 13-1)

On the uphill route, the roadway ranges in width, from 20 to 25 feet. There is sporadic on-street parking on these streets, along with crosswalks and sidewalks. (Figure 13-2)

Bike Signage

» *Additional Signage Needed*

There are multiple signs that mark BR 76, though there is additional signage needed in locations. Currently, there is no signage that directs cyclists onto Garrett Street from Avon Street. There is also additional signage needed for the uphill route. Aside from BR 76, there are also two (2) “Share the Road” Signs.

Featured Intersections

» *Typical Intersection*

There are numerous intersections in this corridor. Since the urban street plan consists of regular, rectangular blocks,

most intersections are evenly spaced. Most intersections have 4 legs, which includes lower volume cross streets. There are instances of poor sight-lines at these intersections. (Figure 13-3)

» *US 20 (Avon Street)/ US 20 (Monticello Avenue)*

The City of Charlottesville is studying this intersection and exploring several innovative approaches to improving cycling safety. Westbound, on Monticello Avenue, cyclists must take a channelized right turn onto Avon Street. With this movement, cyclists merge into the same lane as motorists, who are turning left on Avon Street from the western leg of Monticello Avenue. For bikes traveling southbound on Avon Street, cyclists must turn left onto Monticello Avenue, crossing multiple lanes. (Figure 13-4)

Between 2005 and 2011, there were 12 crashes at this intersection. These incidents included a collision involving a pedestrian and a separate accident involving a cyclist. The pedestrian and cyclists were both injured.

» *VA 615 (Bolling Avenue/Carlton Road)*

The City of Charlottesville is also studying this intersection and developing strategies to improve cycling safety. In terms of BR 76, cyclists pass directly through the intersection, without taking turning movements. The uphill route is 280 feet to the east, passing through another intersection with Carlton Road.

Sight Distance

» *Obstructed Sight-Lines at Cross Streets*

Typically, there are obstructed sight-lines at cross streets. Obstacles include vegetation, signs and on-street parking.

Additional Road Hazards

» *On-Street Parking*

On-street parking presents many difficulties for cyclists. (Figure 13-5)



Figure 13-1: Typical Road Section



Figure 13-2: Typical Road Section - Uphill



Figure 13-3: Sight-Lines at Cross Streets

Planned Road Improvements

» *Study of Cycling Improvements*

The City is assessing bike and pedestrian improvements on Monticello Avenue, weighing several options, such as marked bike lanes and removal of on-street parking. There are also efforts to make improvements at intersections, to improve cycling safety. (Figure 13-6)



Figure 13-4: Avon Street/Monticello Avenue Concept

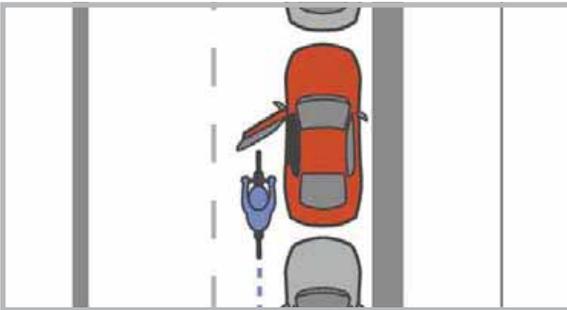


Figure 13-5: Dangers of On-Street Parking



Figure 13-6: Road Improvements

Traffic Conditions

Traffic Counts

» 9,000 to 15,000 ADT

Avon Street is a major artery into the downtown area, carrying 14,182 ADT. The traffic counts on Monticello Avenue

vary. As a major gateway into the City, it also has relatively high traffic counts (9,096 to 15,015 ADT), compared to other segments. The higher volumes are at the southern end of Monticello Avenue, near Interstate 64.

VDOT forecasts show large increases in traffic for this area. For Avon Street, volumes could increase by approximately 50 percent by the year 2035, to 21,500 ADT. The northern end on Monticello Avenue may increase to at least 12,000 ADT, whereas the southern segment may reach 40,000 ADT in the next twenty years.

Truck Traffic

» 2 Percent

Travel Speeds

» 25 to 35 MPH

The posted speed varies from 25 to 35 MPH. The higher speed is designated for the southeast segments of Monticello Avenue. Due to congestion and frequent stops on these roads, actual speed is likely similar to posted speeds.

Level of Service

» C - Stable Flow, at or Near Free Flow

» D - Approaching Unstable Flow

On Avon Street, the roadway is safely below capacity. VDOT forecasts show that LOS will remain at C over the next twenty years. On Monticello Avenue, speeds may decrease due to increased traffic volumes. Motorists have limitations to maneuver freely and driver comfort levels decrease. In the northern segments, between Avon Street and Altavista Avenue, VDOT forecasts show that LOS will remain at a D. For the area closer to the Interstate 64 interchange, the twenty year forecasts show a LOS F. This will result in a breakdown in travel flow, also known as stop-and-go traffic or a traffic jam.

Traffic Accidents

» 75 Crashes, 1 Fatal

Between 2005 and 2011, there were 75 crashes in this

corridor. The records include 13 crashes on Avon Street. Most of the crashes occurred at intersections. There was one fatal accident, between Levy Street and Hinton Avenue, where a vehicle struck and killed a pedestrian. The City has since made pedestrian improvements in this area, including installation of a crosswalk with LED lights.

There were 51 recorded crashes along Monticello Avenue, including an incident involving a pedestrian. The most common crash type was angled collisions between vehicles. The second most common was rear-end collisions.

Recreational

Historic Resources

» Historic District

There is an abundance of structures and properties with historic significance. This is captured with the local designation of the Belmont Historic District. From the street, cyclists can see a wide range of architectural styles from various historical periods.

Highway Markers

» City of Charlottesville

There is an historic marker near the Bolling Avenue/Carlton Road intersection. The marker provides a brief written history of the founding of Charlottesville.

Scenic Resources

» Virginia Byway

While this area is not known for its scenic resources, there are narrow views of the mountains to the east and west. These views are on Monticello Avenue, South of the Bolling Avenue/Carlton Road intersection.

Other Destinations

» Urban Destination

As the only urban environment in the BR 76 study area, the City of Charlottesville serves as a destination for cyclists.

Cycling Services & Resources

» *All Services*

Access Points

» *On-Street Parking*

There are several locations in the City where someone can access BR 76.

Topography

» *Rolling*

The terrain in this area varies, between flat and rolling. Avon Street is generally flat, but there is a small hill on the west end of Monticello Avenue. On the southeast end of this corridor, there is a significant hill that can be challenging to cyclists. From Scottsville Road, US 20 climbs 130 feet as a cyclist travels northbound. The average grade is nearly 9 percent. Consequently, BR 76 detours through more favorable roads, but only for the uphill lane.

Cycling Assessment

Bike Compatibility: BLOS B - C

The BLOS equation indicates that Monticello Avenue and Avon Street are generally compatible for cycling. While there are high traffic counts, the travel speeds are low and travel lanes are relatively wide. There are also low percentages of truck traffic. The most prominent hazards are on-street parking and sight-distances at intersections.

Recreation: High Value

While the US Bike Route System is intended for rural roadways, this urban corridor is a definite designation for riders. This corridor has all of the resources and services that touring cyclists may need.

Recommendations

Additional Signage

The City should install an additional BR 76 sign at the Garrett/Avon Street intersection.

Other Signage

There should also be discussions of road stencils at crosswalks, warning pedestrians of cyclists.

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

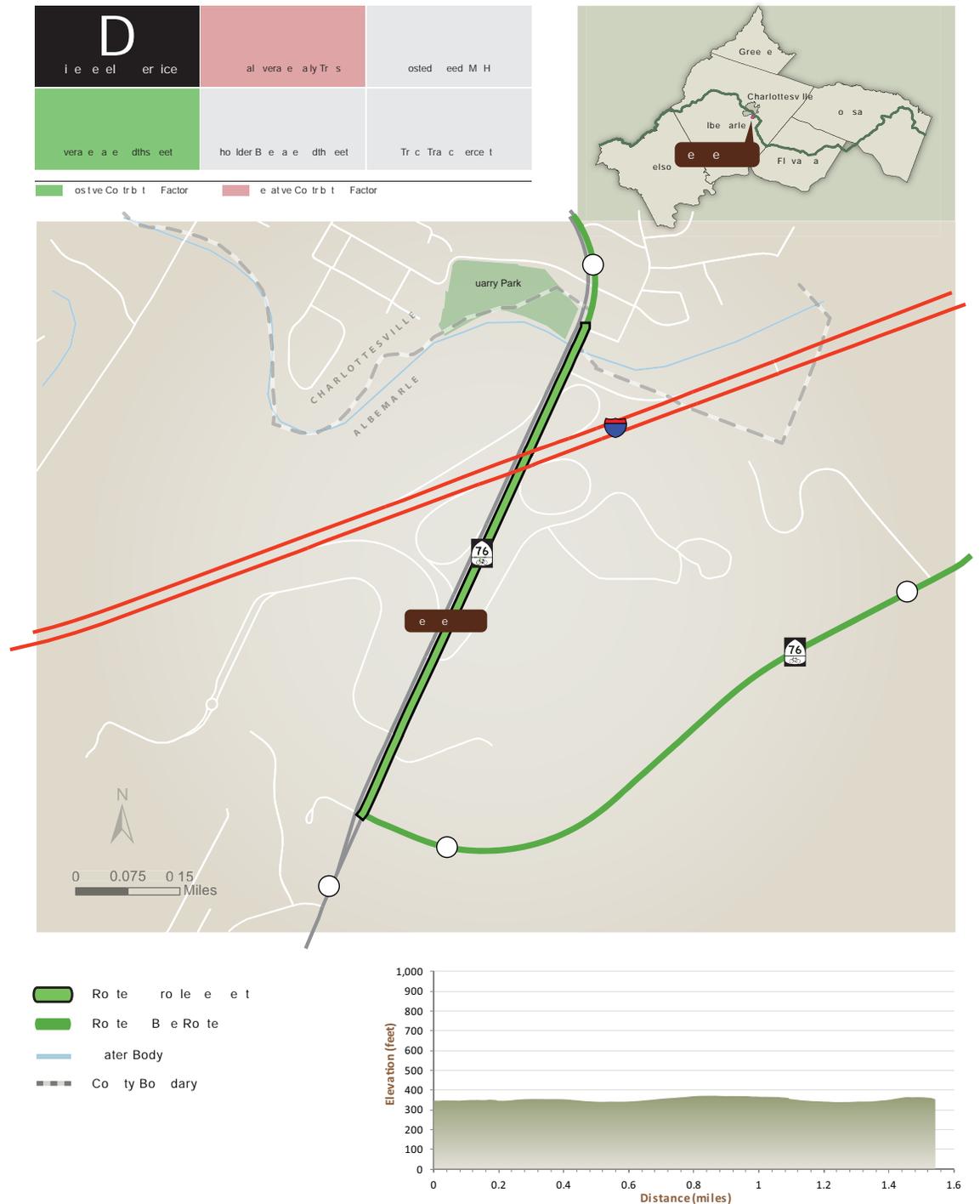
» *Suburban*

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



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



Figure 14-1: Typical Road Section



Figure 14-2: Typical Section with Wide Shoulder



Figure 14-3: I-64 Interchange

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 14-4: 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

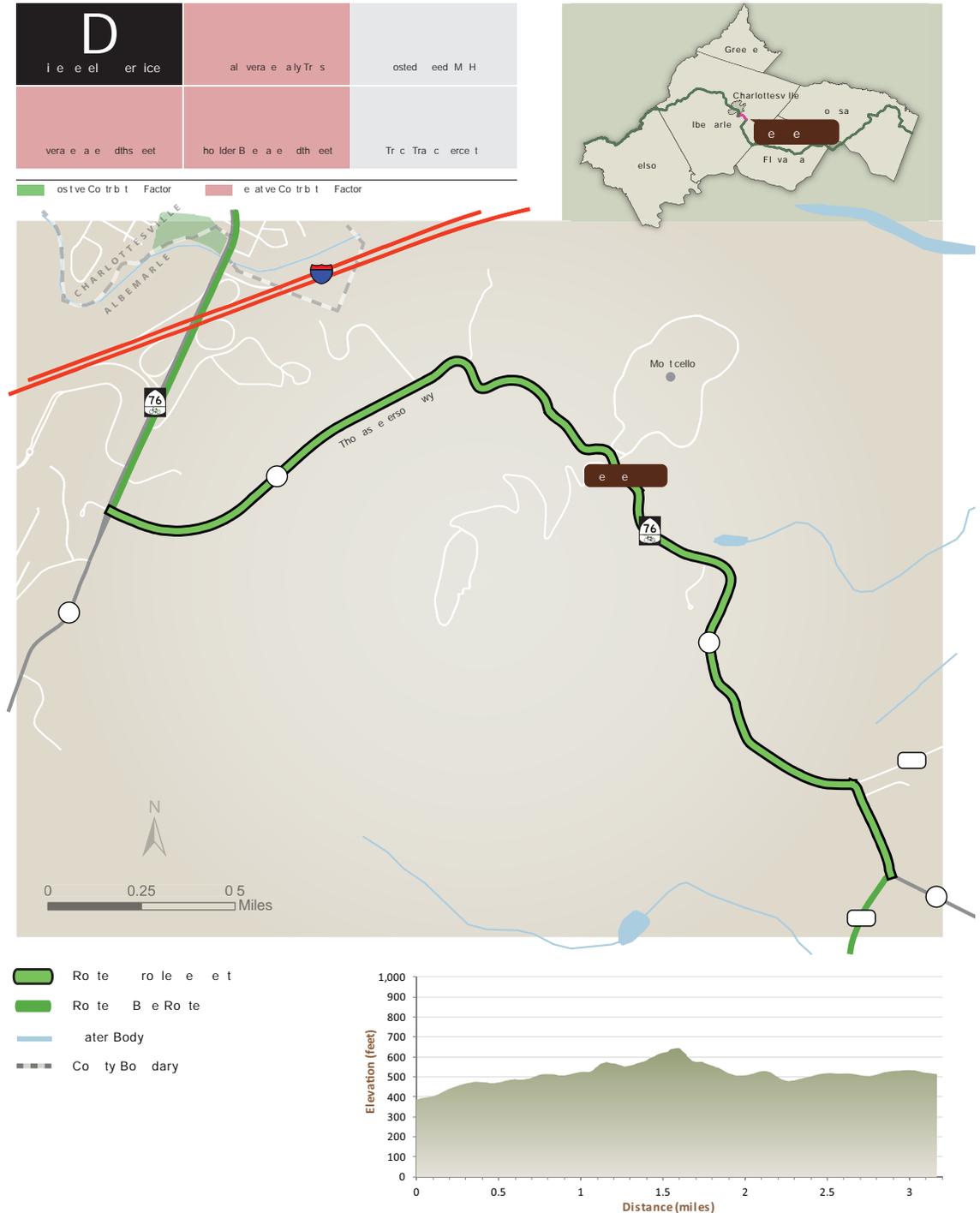
» **Total Road Mileage: 3.17 Miles**
 - US 53 (Thomas Jefferson Parkway) – 3.17 Miles

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. Additionally, 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)

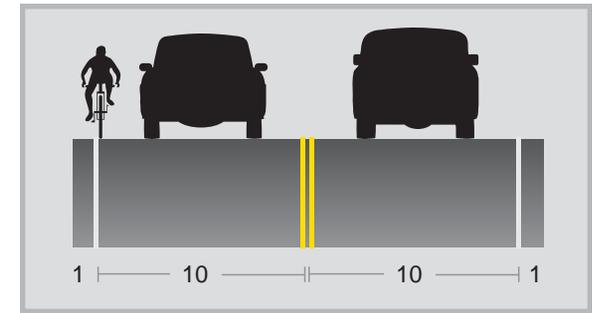


Figure 15-1: Typical Road Section



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)

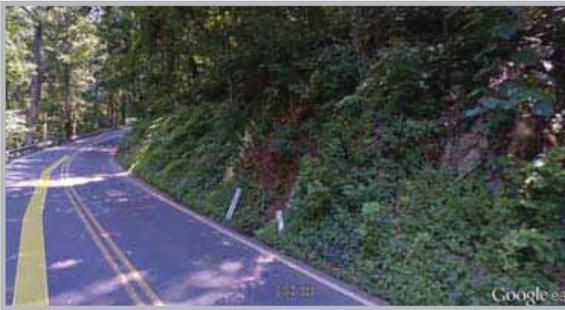


Figure 15-4: Sight Distance at Curve

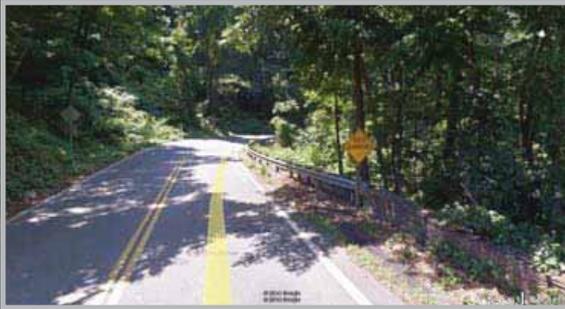


Figure 15-5: Guardrails on US 53



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 tasting, 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. Head-

ing 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 visit 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 additional 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.



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

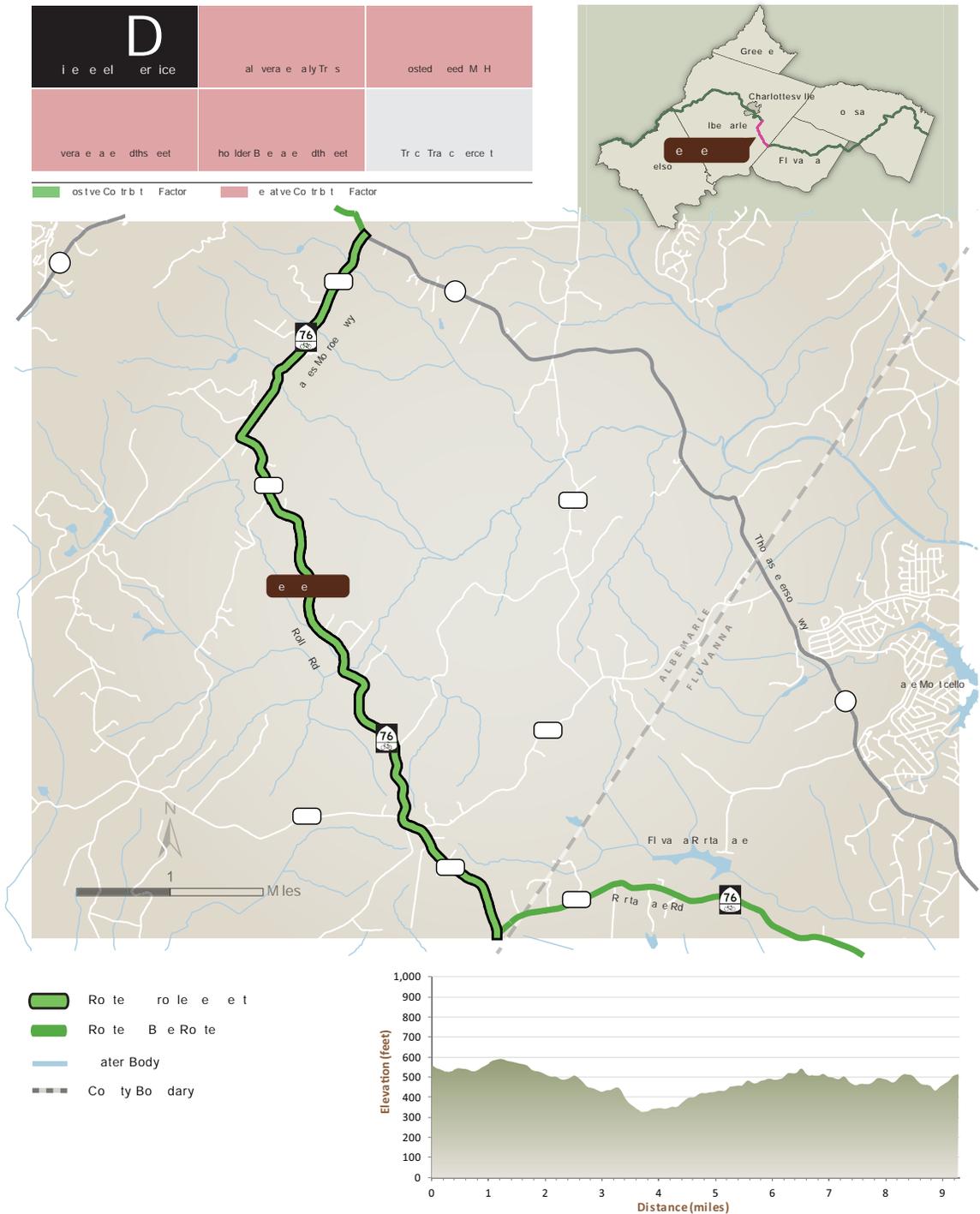
» Rural

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 maneuver 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

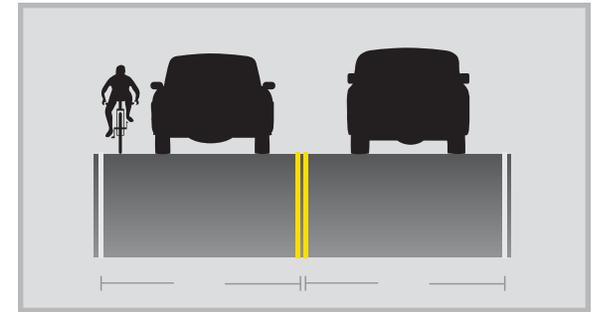


Figure 16-1: Typical Road Section



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.

Segment F1: Ruritan Lake Road

Albemarle & Fluvanna Counties

Segment F1 evaluates the existing cycling conditions on Ruritan Lake Road, between VA 620 (Rolling Road), to the west, and US 53 (Thomas Jefferson Parkway), to the east. Ruritan Lake Road provides an alternate path through western Fluvanna County, bypassing sections of US 53 that are less bike-friendly. Consequently, this corridor serves as an important role as a safer alternative for linking Albemarle and Fluvanna Counties.

Segment Characteristics

Rural Environment

- Rural Local
- Secondary Routes

Road Segments

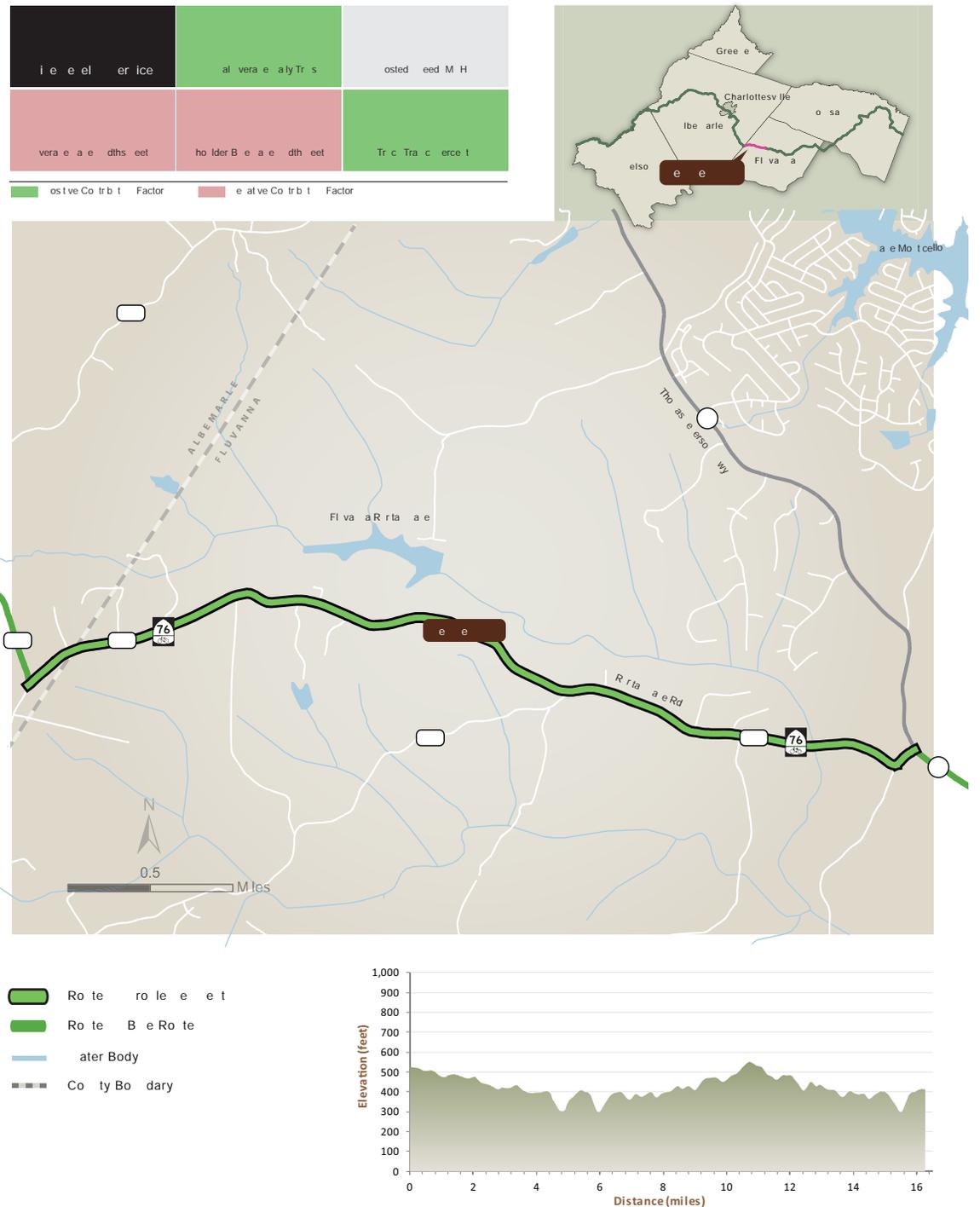
- » *Total Road Mileage: 5.74 Miles*
- VA 619 (Ruritan Lake Road) – 5.6 Miles
- VA 660 (Ruritan Lake Road) - .14 Mile

Land Uses

» *Rural*
This corridor consists mostly of wooded tracts, pastures and large residential properties with agricultural uses. There are also several smaller residential lots that have access directly to Ruritan Lake Road.

Public Comment

» *General Comments*
There were only two comments from local cyclists about Ruritan Lake Road. In the online questionnaire, both cyclists listed this road as a place where they commonly ride.



Road Features

Road Sections

» Rural Two-Lane

Ruritan Lake Road is a narrow rural roadway, with an 18-foot road surface that consists of two nine (9)-foot travel lanes. (Figure 17-1)

» Shared Lane Bike Facility

At the road edge, there are narrow grass shoulders, vegetated ditches and lawns.

Bike Signage

» Adequate Signage

There are eight (8) BR 76 signs, guiding cyclists through this corridor. While these signs are effective at directing cyclists, there were no other bike-related signs.

Featured Intersection

» US 53 (Thomas Jefferson Parkway)

There do not appear to be any immediate deficiencies at this T-intersection. There is a relatively high volume of vehicles that pass through this area, which increases the chances for crashes. Despite those counts, there were three (3) crashes reported at this intersection, between 2005 and 2011.

» Other intersections in this corridor include:

- VA 660 (Sclaters Ford Road)
- VA 620 (Rolling Road)
- VA 761 (Branch Road)

Sight Distance

» Clear Sight-Lines

Additional Road Hazards

» No Additional Hazards

Planned Road Improvements

» No Planned Improvements

Traffic Conditions

Traffic Counts

» 500 to 700 ADT

The traffic counts on Ruritan Lake Road are among the lowest in the BR 76 study area. The section in Albemarle County carries 715 ADT, whereas the Fluvanna County portion carries 488 ADT. VDOT forecasts for this corridor suggest a total of 1,000 ADT by the year 2035.

Truck Traffic

» 0 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

» A – Free Flow

On VA 619, traffic flows freely and vehicles are able to travel at or above the posted speed limit. For the segment in Albemarle County, VDOT forecasts show that the LOS will degrade to LOS B, though there should still be free flowing traffic.

» C - Stable Flow, at or Near Free Flow

On VA 660, the roadway remains safely below capacity, though motorists may experience limited congestion. VDOT forecasts show that LOS will remain at a 'C' over the next twenty years.

Traffic Accidents

» 18 Crashes, 0 Fatal

Between 2005 and 2011, there were 18 recorded crashes on Ruritan Lake Road. Off-road collisions were the most common crash type. Deer collisions were also common. Note: There are no records of crashes between motorists and cyclists.

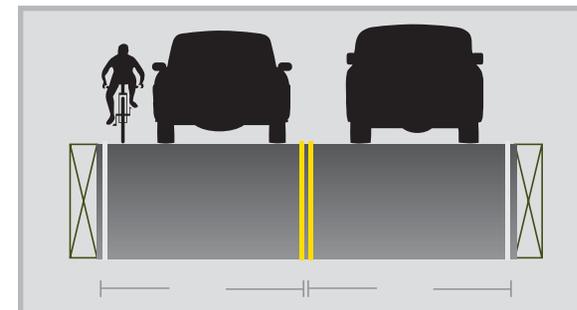


Figure 17-1: Typical Road Section

Recreational

Historic Resources

» No Identified Resources

Scenic Resources

» No Designations

Other Destinations

» No Cycling Destinations

Cycling Services & Resources

» No Identified Resources

Access Points

» No Access

Topography

» Flat

Route Assessment

Bike Compatibility: BLOS C

Overall, Ruritan Lake Road provides a reasonably safe environment for cyclists. While the travel lanes are narrow, traffic counts and speeds are favorable to cycling. There

are no immediate deficiencies at intersections. There are clear sight distances and no truck traffic. There are minimal crashes in this area. The road surfaces are in good condition and there are no additional hazards, such as guardrails. The only safety concern is the lack of shoulders.

Recreational: Low Value

While this Ruritan Lake Road passes through a rural corridor, there are neither recreational amenities nor cycling resources in this area. There are no historic resources and a lack of scenic vistas, as well.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Fluvanna County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Explore Shoulder Improvements

The TJPDC should work with VDOT and Fluvanna County to explore the need for shoulder improvements that would create additional space for cyclists.

Segment F2: Palmyra Area

Fluvanna County

Segment F2 evaluates the existing cycling conditions on US 53 (Thomas Jefferson Parkway) and US 15 (James Madison Highway). This corridor includes the area between VA 660 (Ruritan Lake Road), to the west, and VA 601 (Court-house Road), to the east. Segment F2 passes through central Fluvanna County, including the village of Palmyra. While there are services and recreational opportunities in the area, there are several dangers on the roadways that threaten cycling safety and comfort levels. Despite those road hazards, this corridor (especially the Village of Palmyra) serves as a destination for cyclists.

Segment Characteristics

Rural Environment

- Major Collector
- Minor Arterial (US 15)
- Primary Routes

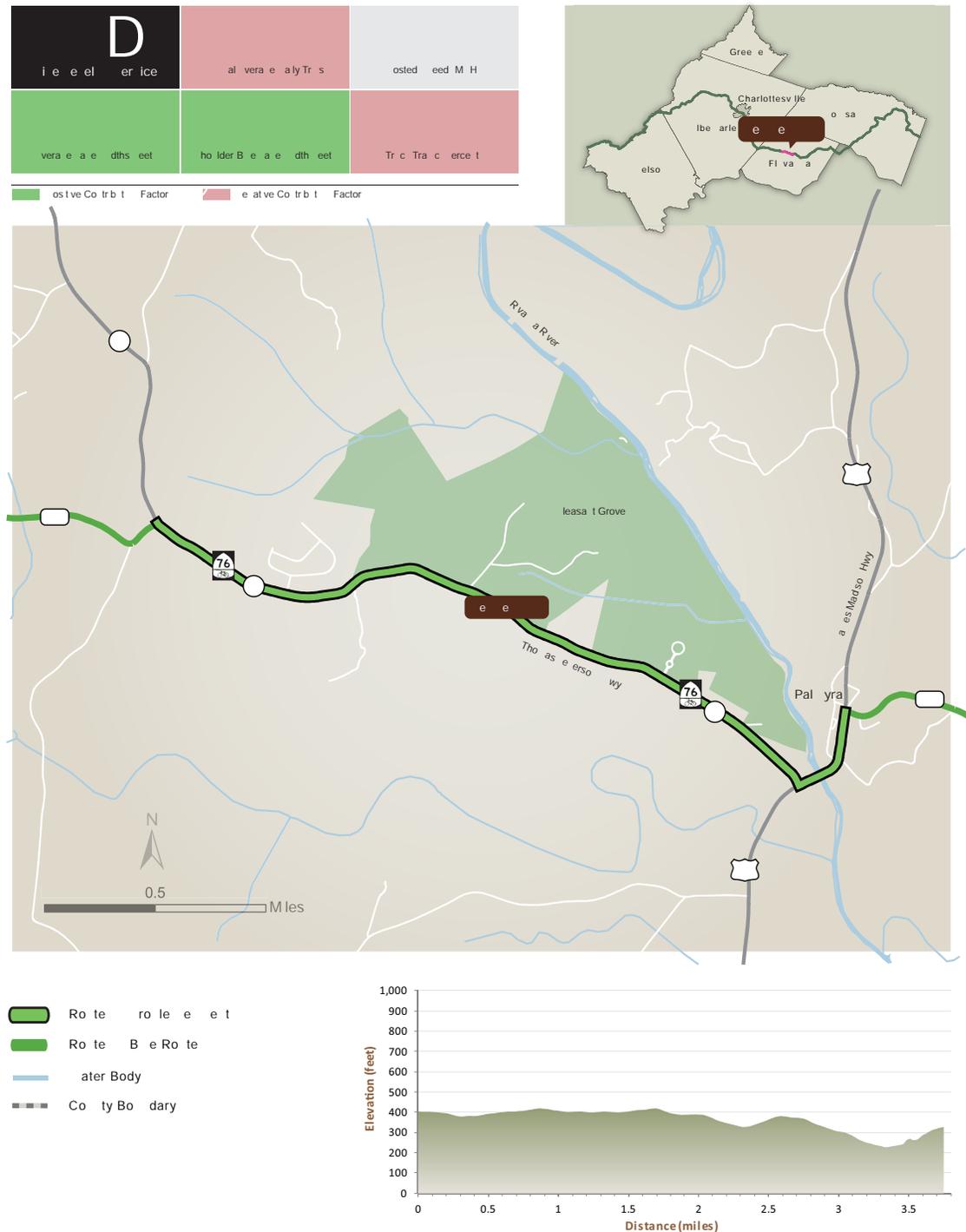
Road Segments

- » *Total Road Mileage: 3.76 Miles*
- US 53 (Thomas Jefferson Parkway) – 3.32 Miles
- US 15 (James Madison Highway) - .44 Mile

Land Uses

» Rural & Small Town

There is a mix of land uses in this area. On US 53, most of the adjacent properties are large wooded tracts, farms and smaller residential properties. There are also several public properties, including the Fluvanna County High School, a local library, police offices and Pleasant Grove Park. The setting around US 15 is consistent with a small town environment. The Village of Palmyra consists of a mixture of land uses, including commercial services, parkland, small residential properties and the County Office Building.



Public Comment

» *Safety Concerns*

In an online questionnaire, local cyclists said that US 53 was “incredibly” dangerous, though it is likely that respondents were referring to the segment of US 53 in eastern Albemarle County.

Road Features

Road Sections

» *Rural Two-Lane*

While US 53 and US 15 have the same lanes widths, the shoulders of these roads vary significantly. On US 53, the road surface is 22 feet wide, consisting of two 11-foot lanes. At the road edge, there may be a narrow grass shoulder or vegetated ditches. (Figure 18-1)

» *Wide Outside Lane*

On US 15, there are seven (7) to ten (10)-foot paved shoulders, except for the section between the County Office Building and Courthouse Road, where there is no shoulder. (Figure 18-2)

» *Shared Lane Bike Facility*

For much of this corridor, cyclists share the same travel lanes as motorists, except for those parts of US 15 with wide shoulders.

Bike Signage

» *Adequate Signage*

There are six (6) BR 76 signs. While these signs are effective at directing cyclists, there are no other bike-related signs.

Featured Intersections

» *VA 1001 (Main Street)/ VA 1007 (Stoneleigh Road)*

VDOT recommends that this four-way intersection be designed as a roundabout. The main issue with the intersection is the volume of traffic, which is relatively high. (Figure 18-3)

» *VA 601 (Courthouse Road)*

Courthouse Road forms a T-intersection with US 15, though there are additional legs that are close to this intersection. Those additional legs include Church Street, Palmyra Way and Court Square. With these additional legs and entrances, there is potential for conflict points, where motorists and cyclists could cross paths. Five (5) crashes that occurred at this intersection, between 2005 and 2011, though none involved cyclists. (Figure 18-4)

» *Other intersections in this corridor include:*

- US 53 (Thomas Jefferson Highway)/ US 15 (James Madison Highway)
- VA 619 (Ruritan Lake Road)

Sight Distance

» *Clear Sight-Lines*

Additional Cycling Hazards

» *Guardrail*

There are several locations where the road section includes guardrails. These hazards are minimal on US 53, because of a wide grass shoulder. On US 15, the wide paved shoulder narrows between the County Office Building and Courthouse Road. In that area, there is a 200-foot long guardrail on the northbound lane, with no shoulder. Since this guardrail is on the uphill side of the road, it is particularly hazardous because cyclists travel at slower speeds and require additional space to maneuver. (Figure 18-5)

Planned Road Improvements

» *Byway Status*

The Virginia Outdoors Plan recommends an evaluation of VA 53 for consideration as a Virginia Scenic Byway.

» *Road Widening*

The RLRP identifies operations and geometric deficiencies along the US 53 (Thomas Jefferson Parkway). The plan recommends full-width lanes and shoulders. This recom-

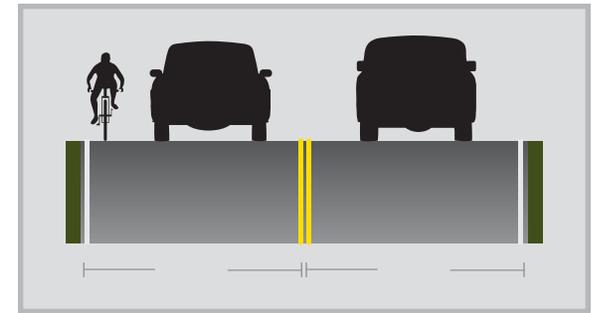


Figure 18-1: Typical Road Section



Figure 18-2: Road Section with Wide Shoulder



Figure 18-3: Main Street/Stoneleigh Road

mendation is listed as a local priority, but is also described as a long-term project.

» *Intersection Improvements*

Improvements to the VA 53/US 15 intersection are listed in the Comprehensive Plan, RLRP and SYIP. In the SYIP, the project includes the addition of a rural, single lane round-



Figure 18-4: Courthouse Road Intersection



Figure 18-5: Guardrails on US 15

about. The preliminary engineering is completed. The project is a local priority, per the RLRP. The Fluvanna County Comprehensive Plan also recommends a new roundabout or signalized intersection at South Main Street.

The Palmyra Community Plan includes a recommendation to construct a roundabout or other safety and capacity improvements at the intersection of US 15 and VA 601.

» *Bike and Pedestrian Facilities*

The Fluvanna County Comprehensive Plan includes recommendations for roadway/ streetscape improvements along US 15. The plan recommends the addition of a median for a three-lane commercial boulevard with gateways. The Palmyra Community Plan calls for the installation of curb and gutters along Route 15 through the commercial district. That plan recommends pedestrian and bicycle features

similar to those on the new Route 15 Bridge, for the north- and southbound sections of US 15.

» *Bike Signage*

The Fluvanna County Comprehensive Plan recommends cautionary signs to alert motorists where frequent bicycle travel exists. The plan also states that BR 76 should be more clearly marked for the safety of cyclists.

Traffic Conditions

Traffic Counts

» *4,900 to 6,400 ADT*

The traffic volumes along these roads are among the highest in the rural segments of the study area. On US 53, volumes reach 4,907 ADT, while on US 15 those counts are even higher, with 6,414 ADT. The high volume of traffic is the main contributing factor for the poor bike compatibility score for this corridor.

Since VDOT predicts that traffic will continue to rise over the next twenty years, the bike compatibility score will continue to diminish. By 2035, volumes on US 53 could reach 10,000 ADT. For US 15, VDOT predicts that traffic counts could reach 12,500 ADT. These forecasts indicate a doubling in traffic.

Truck Traffic

» *3 to 13 Percent*

The percent of truck traffic varies in this corridor. On US 53, there is a moderate amount of traffic from heavy vehicles, representing 3 percent of total ADT. Along US 15, truck traffic is considerably higher, accounting for 13 percent of total ADT. This is the highest percent of truck traffic in the BR 76 study area and a major contributor to the poor bike compatibility score on US 15.

Travel Speeds

» *35 to 55 MPH*

The speed limit varies throughout this corridor. On US 53,

the speed is set at 55 MPH, though it drops to 35 MPH near the new Fluvanna County High School. On US 15, the speed limit is 35 MPH, through the village of Palmyra. Overall, the actual travel speeds can be 10 MPH higher than the posted limit, when congestion is low.

Level of Service

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

Throughout this corridor, roads remain safely below capacity, and motorists are able to travel at or above the posted speed. VDOT forecasts show that LOS will degrade to a 'D' over the next twenty years, where the roadway will begin to reach capacity.

Note: VDOT records indicate that US 15 has a LOS E, indicating the presence of traffic jams or stop-and-go traffic. This is likely an error and it is more likely that US 15 has a LOS C.

Traffic Accidents

» *46 Crashes, 0 Fatal*

Between 2005 and 2011, there were 46 crashes in this corridor. Most of those crashes occurred on US 53, where there were 39 recorded traffic accidents. Off-road collisions were the most common accidents. There were seven (7) crashes on US 15. Most Of those incidents occurred at the Courthouse Road intersection. *Note: There were no records of crashes between motorists and cyclists in these areas.*

Recreational

Historic Resources

» *Historic Properties*

There are several farms and homes with historic significance but none are open to the public, except for the Pleasant Grove Farm property on US 53. In Palmyra, there are several historic resources, including the historic courthouse and jail, which is on the State and National Registers.

Highway Markers

» *Palmyra Courthouse*

There is one historic marker in this area. Near the intersection at Courthouse Road, a marker describes the history of the Palmyra Courthouse.

Scenic Resources

» *No Designations*

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

Other Destinations

» *Village Destination & Parks*

Palmyra offers a town environment, filled with services and destinations. Cyclists can also find a park along the Rivanna River, which includes several trails and River access.

Cycling Services & Resources

» *Town-Level Services*

With a grocery store and other establishments, there are ample opportunities to resupply on food and water. There is one (1) service station in the corridor, with an air pump available. A library on US 53 allows visitors to access the internet and restrooms. A post office in Palmyra may be useful to cyclists, who need to send/receive equipment, emergency repair parts and other supplies. At Pleasant Grove Park, there are opportunities for cyclists to rest.

Access Points

» *Palmyra & Pleasant Grove*

There are several opportunities for cyclists to access BR 76. There is ample parking in the Village of Palmyra. On US 53, there is public parking at the local library and Pleasant Grove Park.

Topography

» *Rolling*

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

Route Assessment

Bike Compatibility: BLOS C - D

Overall, this corridor is incompatible for cycling, as cyclists must adapt to several hazardous conditions. On US 53, the lack of shoulders confines riders to the travel lanes, where traffic volumes and speeds can be high. On US 15, the high percentage of truck traffic and presence of guardrails creates significant dangers for cyclists. With increases in traffic predicted for the next twenty years, cycling safety will continue to diminish.

In the corridor, there are positive features for cycling. On the US 15 bridge, the paved shoulders are wide and provide significant room for cyclists. The travel speeds are lower in Palmyra. The road surfaces are generally in good condition and there are limited conflict points, where vehicles and cyclists could cross paths.

Recreation: High Value

The Palmyra area may be a destination for cyclists. There are views of historic properties. There are abundant services for cyclists, including access to supplies, restrooms and other resources. The rolling topography can create interesting hills and challenges some cyclists. There is also abundant parking to access the Bike Route.

Recommendations

Additional Signage

The TJPDC should also work with VDOT and Fluvanna County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Designate Shoulders as Bike Lanes

The TJPDC should work with VDOT to determine the feasibility of designating the shoulders on US 15 as official bike lanes. If those bike lanes are established, then the TJPDC

should coordinate efforts to install bike sharrows and signage.

Road Widening

The TJPDC should work with VDOT and Fluvanna County to provide further study on the road widening recommendations for US 53, listed on the RLRP.

Intersection Improvements

The TJPDC should work with VDOT and Fluvanna County to study the proposed intersection improvements, listed in the RLRP. Staff should also ensure that cycling accommodations are considered in the designs.

Shoulders at Guardrails

The TJPDC should work with VDOT and Fluvanna County to install additional shoulders on US 15, at the guardrails south of Courthouse Road.

Rerouting/Alternate Routes

The TJPDC should explore opportunities for alternate routes in this area. With minor rerouting, there may be inexpensive ways of avoiding areas that are dangerous to cyclists.

Camping at Pleasant Grove Park

The TJPDC should work with Fluvanna County to consider camping opportunities for cyclists, at Pleasant Grove Park. There may be opportunities to limit camping to cyclists.

Information Center

The TJPDC should work with Fluvanna County to consider a BR 76 information center at the Pleasant Grove Library. The center could include cycling information and access to cycling repair kits.

Segment F3: Courthouse Road

Fluvanna County

Segment F3 evaluates the existing cycling environment on Courthouse Road, between US 15 (James Madison Highway), to the west, and VA 608 (Wilmington Road), to the east. Courthouse Road serves as a connector for BR 76, linking the Village of Palmyra with eastern Fluvanna County and beyond. This corridor has relatively low traffic counts and includes roadway features that are friendly to cyclists. While this area does not offer abundant destinations or services, the traffic conditions are ideal for a US Bike Route.

Segment Characteristics

Rural Environment

- Major Collectors
- Secondary Routes

Road Segments

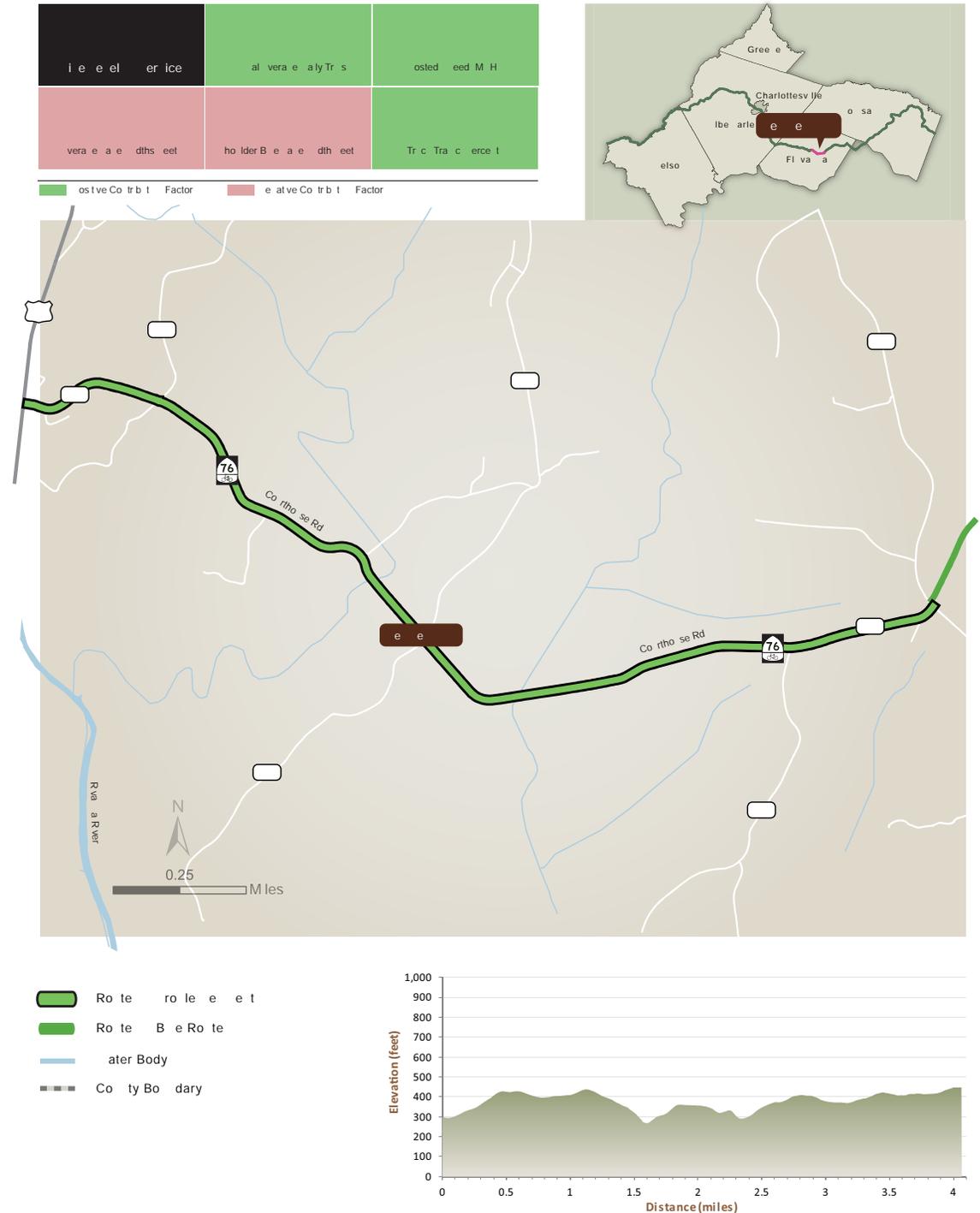
- » **Total Road Mileage: 4.23 Miles**
- VA 601 (Courthouse Road) – 4.21 Miles
- VA 608 (Wilmington Road) - .02 Mile

Land Uses

» **Rural**
This rural setting consists mostly of large wooded tracts, farms and large residential properties. To the west, the Village of Palmyra includes a wide variety of land uses, as is described in Segment F2.

Public Comment

» **No Comments**



Road Features

Road Sections

» Rural Two-Lane

Courthouse Road is relatively narrow, with an 18-foot paved surface that includes 9-foot travel lanes. (Figure 19-1)

» Shared Lane Bike Facility

There are no paved shoulders in this corridor. The road edge varies from grass shoulders to small embankments, vegetated ditches or drop-offs with guardrails.

Bike Signage

» Adequate Signage

There are four (4) BR 76 signs. While these signs are effective at guiding cyclists, there are no other bike-related signs.

Featured Intersection

» VA 608 (Wilmington Road)

At the intersection with Wilmington Road, VA 601 essentially creates two (2) T-intersections. Between those intersections, there are two (2) structures that are directly adjacent to the roadway. The home at the corner abuts the road, obstructing sight-lines. There is also a driveway behind this corner lot, creating additional conflict points near the intersection. Despite these concerns, there are relatively few accidents in this area, with 3 recorded crashes. (Figure 19-2)

» Other intersections in this corridor include:

- US 15 (James Madison Highway)
- VA 663 (Georges Mill Road)/ VA 1007 (Stoneleigh Road)
- VA 625 (Oak Creek Road)
- VA 615 (Carysbrook Road)

Sight Distance

» Clear Sight-Lines

There are no identified deficiencies with sight-distance in this corridor, except for minor issues at select intersections.

While there are obstructed views on several curves, motorists have sufficient sight-lines to avoid cyclists.

Additional Cycling Hazards

» Guardrails

There are four (4) locations where the road section includes guardrails, which limits the ability of cyclists to maneuver away from the road in case of emergency. (Figure 19-3)

Planned Road Improvements

» Road Widening

The RLRP identifies geometric deficiencies along VA 601. The plan recommends road reconstruction that includes full-width lanes and shoulders. This is listed as a long-term project, but there are no specific funds or timelines assigned to the work.

» Intersection Improvements

In the Palmyra Community Plan, there is a recommendation to construct a roundabout or other safety/capacity improvements at the intersection of US 15 and VA 601.

Traffic Conditions

Traffic Counts

» 660 to 1,300 ADT

Courthouse Road has relatively low traffic counts, with lower volumes on the eastern end of Segment F3. VDOT forecasts that traffic counts will not change significantly for the eastern end of Courthouse Road. Over the next twenty years, the segment closer to Palmyra may increase to 2,600 ADT, doubling the current traffic volumes.

Truck Traffic

» 0 percent

Travel Speeds

» 40 MPH

While the posted speed limit is 40 MPH, the actual travel speeds are likely closer to 50 MPH.

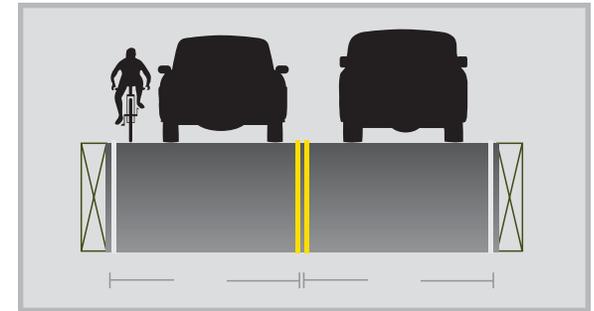


Figure 19-1: Typical Road Section



Figure 19-2: Structures at Wilmington Intersection



Figure 19-3: Guardrails on Courthouse Road

Level of Service

» A – Free Flow &

» B – Reasonably Free Flow

Currently, motorists are able to travel at or above the posted speed limit. VDOT forecasts show no change in LOS over the next twenty years.

Traffic Accidents

» *15 crashes, 0 fatal*

Between 2005 and 2011, there were 15 crashes on Courthouse Road. Most of these accidents involved deer or off-road collisions, where vehicles struck trees or signs on the roadside. *Note: There are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Historic Properties*

There are several farms and homes with historic significance but none are open to the public.

Scenic Resources

» *No Designations*

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

Other Destinations

» *Village Destination*

At the western end of this corridor, the Village of Palmyra offers several potential destinations for cyclists, as described in Segment F2.

Cycling Services & Resources

» *No Services*

Access Points

» *Palmyra*

In the Village of Palmyra, at the western end of this corridor, there are several opportunities for cyclists to access BR 76.

Topography

» *Rolling*

The topography on Courthouse Road consists of a rolling terrain, along with at least two (2) larger hills. Those hills

are on either side of Ballinger Creek and include seven (7) percent grades.

Route Assessment

Bike Compatibility: BLOS C

Courthouse Road is moderately compatible for cycling, offering a relatively safe environment for riders. There are limited conflict points. Sight-lines are generally clear. Traffic counts, congestions and travel speeds are relatively low. Also, there is no recorded truck traffic and the roadway surface is in good condition.

While Courthouse Road is generally safe, there are features that diminish cycling safety. The travel lanes are narrow and there are no paved shoulders. There are also spot dangers, such as guardrails that limit the ability of cyclists to bail from the roadway.

Recreation: Low Value

Courthouse Road offers little in the way of recreational assets. There are no destinations, services or scenic resources.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Fluvanna County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Maintenance of Vegetation

The TJPDC should work with VDOT to examine the need to address vegetation at intersections, which may obstruct sight-lines.

Road Widening

The TJPDC should work with VDOT and Fluvanna County to

provide further study on the road widening recommendations listed on the RLRP.

Spot Improvements

The TJPDC should work with VDOT and Fluvanna County to establish recommendations for shoulders or bike lanes at the road sections that include guardrails. Additional space would increase comfort and safety for cyclists.

Segment F4: Venable Road

Fluvanna and Goochland* County

Segment F4 evaluates the existing cycling conditions on Venable and Tabscott Roads, between VA 608 (Wilmington Road), to the west, and VA 605 (Shannon Hill Road), to the east. This segment of BR 76 serves as a connector, linking eastern portions of Fluvanna County with Louisa County. This corridor has the lowest traffic counts in the study area, providing a relatively safe and comfortable ride for cyclists. While this area does not offer abundant destinations or services, the traffic conditions are ideal for a US Bike Route.

Segment Characteristics

Rural Environment

- Major Collector
- Local Road (VA 603)
- Secondary Routes

Road Segments

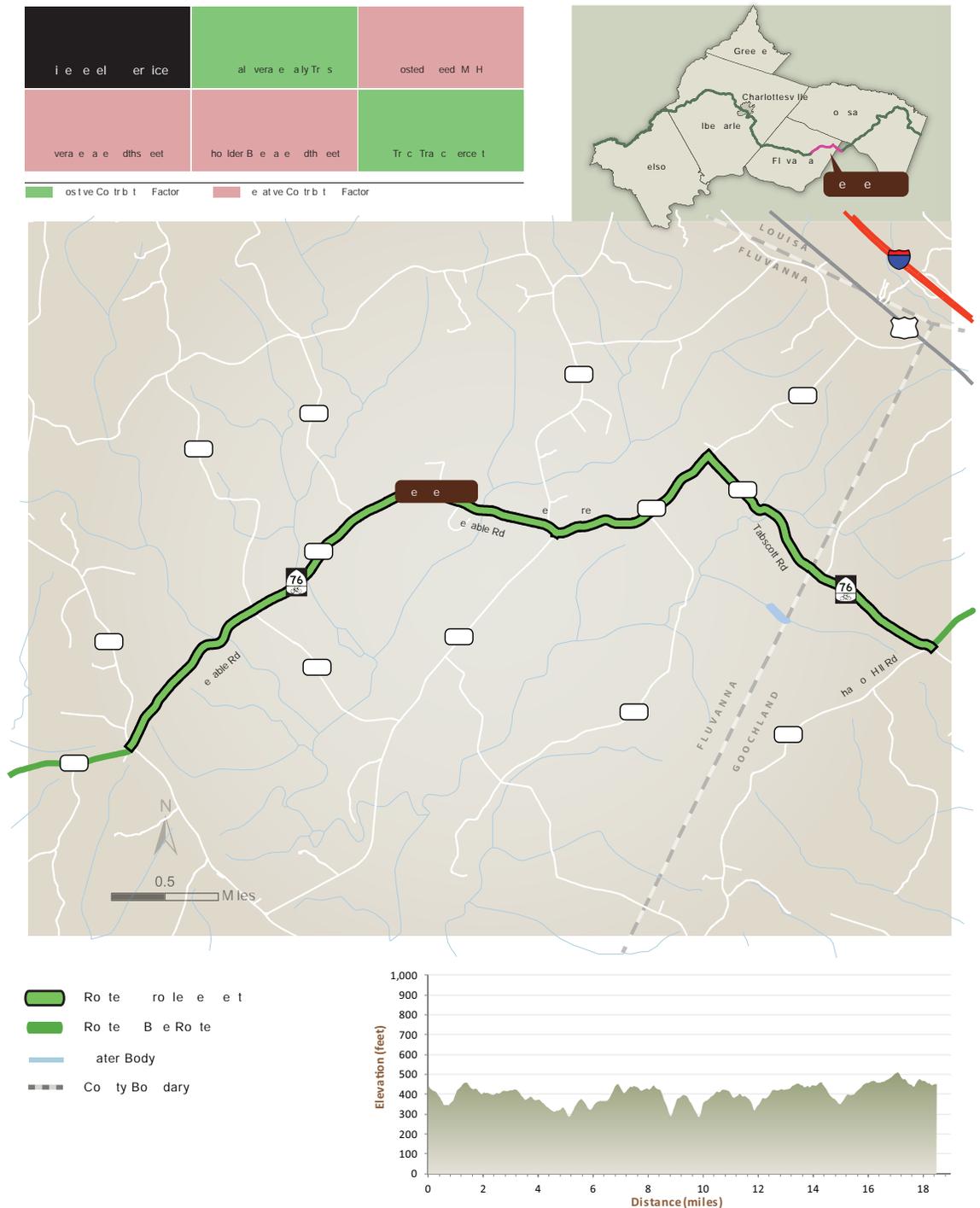
- » **Total Road Mileage: 9.78 Miles**
- VA 601 (Venable Road) – 7.03 Miles
- VA 603 (Tabscott Road) – 1.5 Miles
- VA 603 (Tabscott Road)* – 1.25 Miles

Land Uses

» **Rural**
 This rural setting consists mostly of large wooded tracts, farms and large residential properties. The Kents Store intersection has the greatest diversity in land use categories, with the presence of a community center, post office, fire station and other services.

Public Comment

» **No Comments**



Road Features:

Road Sections

» Rural Two-Lane

Venable and Tabscott Roads are relatively narrow, with an 18-foot, paved surface (9-foot travel lanes). In the Goochland County section of VA 603, the roadway is narrower, consisting of a 16-foot paved surface (8-foot travel lanes). (Figure 20-1)

» Shared Lane Bike Facility

Along most road sections, there are no paved shoulders, so cyclists must share the same travel lanes as traffic. The road edge is framed by shallow ditches and lawns.

» Bike Lanes

There are two (2) sections of Venable Road with bike lanes, both coinciding with culverts that span creeks (Phils Creek and Kent Branch). The bike lanes create additional space for cyclists, as there are guardrails on the road edges. The bike lanes are generally four (4) feet wide. (Figure 21-2)

Bike Signage

» Adequate Signage

There are eight (8) BR 76 signs. While these signs are effective at guiding cyclists, there are no other bike-related signs.

Featured Intersections

» Kents Store

The two (2) intersections at Kents Store are within 500 feet of each other. To the west, VA 659 (Kents Store Way) creates a Y-intersection with Venable Road. To the east, Cedar Lane Road forms a T-intersection.

There are no immediate deficiencies at these intersections, other than seasonal issues with sight-distance due to vegetation. There are multiple entrances near the intersections and the general roadway design can cause confusion between cyclists and motorists. Although, the low

traffic counts limit the number of accidents, as there were no recorded crashes in this area between 2005 and 2011. At the southwest corner of the Cedar Lane Road intersection, tall grasses can obstruct views from Venable Road, looking south.

» VA 601 (Venable Road)/ VA 603 (Tabscott Road)

There are potential sight distance issues at this T-intersection. From Tabscott Road, there are limited sight-lines to the southwest, requiring vehicles to pull into the intersection before gaining a clear line of sight. Between 2005 and 2011, there were no recorded crashes at this intersection.

» Other intersections in this corridor include:

- VA 608 (Wilmington Road)
- VA 630 (Mountain Laurel Road/Plain Dealing Road)
- VA 631 (Dogwood Drive)
- VA 604 (Covered Bridge Road)
- VA 646 (Duval Road)
- VA 605 (Shannon Hill Road)

Sight Distance

» Clear Sight-Lines

Additional Road Hazards

» Guardrails

There are three (3) locations with guardrails in this corridor, but only one location presents hazards to cyclists. At the other locations, the addition of bike lanes provides space for cyclists. At the Phils Creel culvert, there is 1,650 feet of bike lanes, in each travel lane. At the Kent Branch culvert, there is 850 feet of bike lanes. (Figure 20-3)

Planned Road Improvements

» No Planning Improvements

»

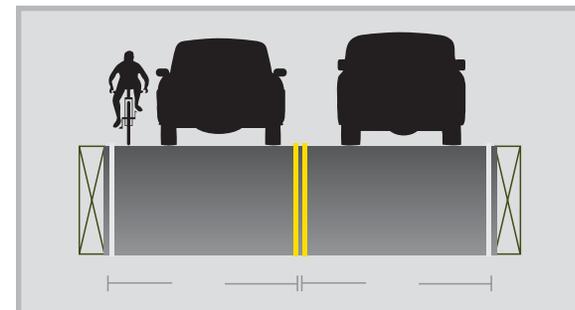


Figure 20-1: Typical Road Section



Figure 20-2: Bike Lanes



Figure 20-3: Hazardous Guardrails on Venable Road

Traffic Conditions

Traffic Counts

» 100 to 670 ADT

This corridor has the lowest traffic counts in the study area. On Venable Road, volumes range from 423 to 673 ADT, while VDOT records show 114 ADT on Tabscott Road.

VDOT's forecast for 2035 shows that traffic counts will remain low or even decrease along these roads.

Truck Traffic

» *0 Percent*

Travel Speeds

» *55 MPH*

With a 55 MPH speed limit and low congestion, actual travel speeds are closer to 60 or 65 MPH.

Level of Service

» *A – Free Flow*

On VA 601 and VA 603, traffic flows freely and vehicles are able to travel at or above the posted speed limit. VDOT forecasts show that LOS will remain at A over the next twenty years.

Traffic Accidents

» *19 crashes, 1 fatal*

Between 2005 and 2011, there were 19 crashes on Venable Road. The majority of these crashes were off-road collisions. In 2008, one of these off-road collisions was fatal. *Note: There are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Historic Structures*

There are several historic homes that are visible from the roadway. Only one (1) of these properties is officially designated historic under the Virginia and National Historic Registries.

Scenic Resources

» *No Designations*

Other Destinations

» *No Cycling Destinations*

Cycling Services & Resources

» *First Aid & Post Office*

There is a fire station in the Kents Store area. Since emergency response personnel are trained in first aid, this station can be a valuable resource for cyclists. In the same area, a post office may be useful to cyclists, who need to send/receive equipment, emergency repair parts and other supplies.

Access Points

» *Post Office*

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

Topography

» *Flat & Rolling*

The topography in this area is relatively flat, with subtle rolling hills, near the small creeks that pass through culverts under VA 601. On Tabscott Road, the terrain is flat.

Route Assessment

Bike Compatibility: BLOS B – C

While the BLOS varies, this corridor is compatible for cycling. While the roadways are narrow, the traffic counts are among the lowest in the study area. Without heavy vehicles, there are minimal hazards from truck blast. There are also clear sight distances and relatively few conflict points. Due to these conditions, crashes and traffic congestion is essentially nonexistent. Finally, while there are guardrails, those locations pose few hazards for cyclists.

There are only a few safety concerns in this corridor. The travel speeds are relatively high for the lane widths. There are also minor deficiencies with sight distance at intersections, which could be hazardous to cyclists.

Recreational: Low Value

This corridor does not offer much in the way of recreational

assets. There are no destinations for cyclists, other than the roadway itself. There are no scenic vistas and there are limited resources for cyclists.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Fluvanna County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Maintenance of Vegetation

The TJPDC should work with VDOT to identify areas where vegetation obstructs sight-lines at intersections. The next step would be to improve sight distances by removing or trimming vegetation.

Partner with Richmond Regional

The TJPDC should coordinate with Richmond Regional Planning District Commission to explore any potential road improvements on the Goochland County section of Bike Route 76.

Segment L1: Shannon Hill Corridor

Louisa and Goochland* Counties

Segment L1 evaluates the existing cycling conditions on Shannon Hill and Willis Proffitt Roads, between VA 603 (Tab-scott Road), to the south, and US 522 (Pendleton Road), to the north. This corridor is an important connector for BR 76, linking eastern Fluvanna County with the Town of Mineral. While there are safety concerns and limited recreational attractions in this corridor, there are limited alternatives for this connection.

Segment Characteristics

Rural Environment

- Major Collector
- Secondary Route

Road Segments

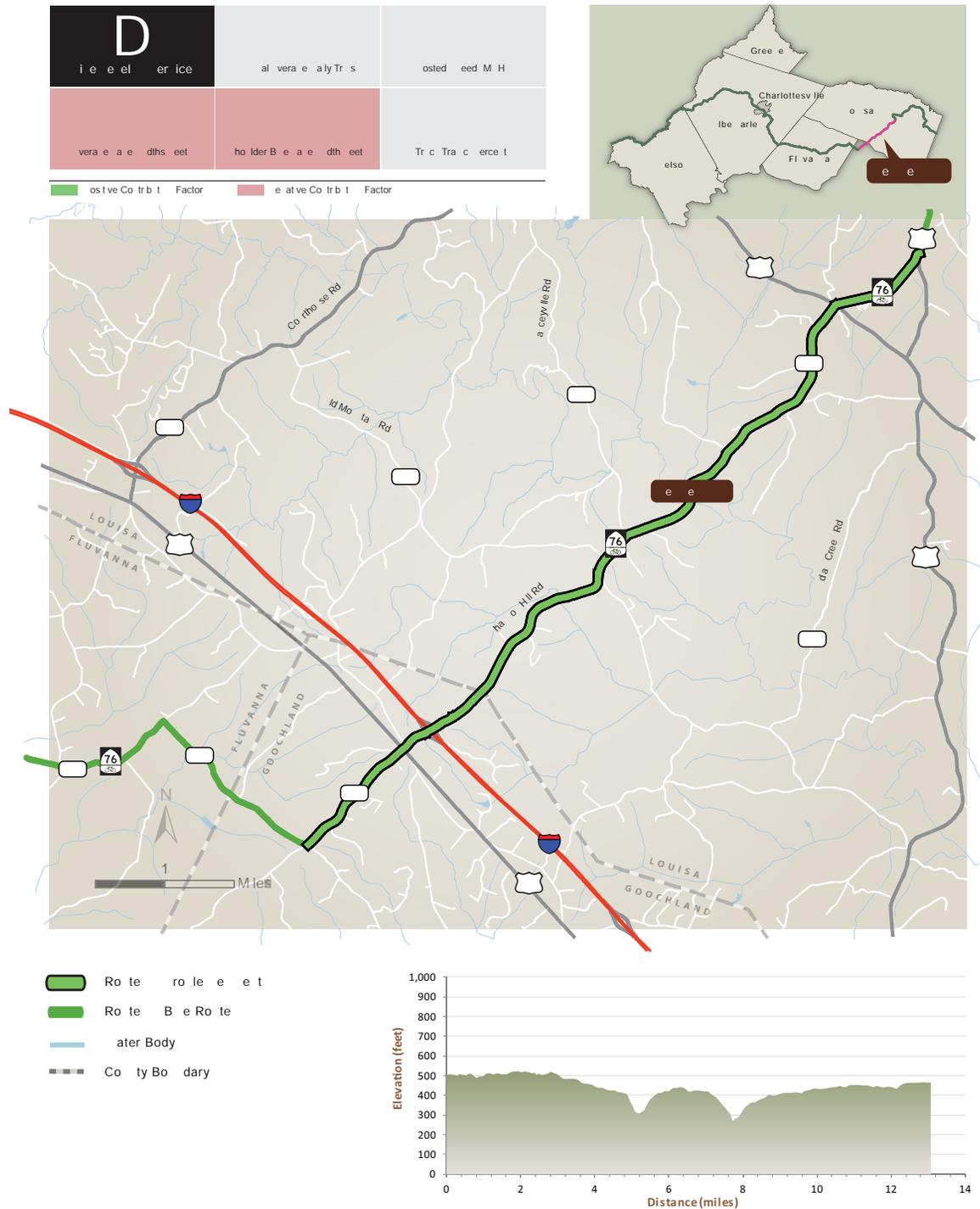
- » *Total Road Mileage: 13.71 Miles*
 - VA 605 (Shannon Hill Road)* – 3.4 Miles
 - VA 605 (Shannon Hill Road) – 8.86 Miles
 - VA 605 (Willis Proffitt Road) – 1.45 Miles
- *In Goochland County*

Land Uses

» *Rural*
The Shannon Hill corridor is a rural area, consisting of forests, farms and low-density residential subdivisions. There is a winery in this corridor, along with a couple of churches, as well.

Public Comment

» *No Comments*



Road Features

Road Sections

» Rural Two-Lane

Around the Interstate 64 interchange, VA 605 widens to a paved surface of 22 feet. This road section consists of 10 to 11-foot travel lanes and limited, paved shoulders. Besides this section, most of VA 605 is a narrow rural roadway, consisting of 9-foot travel lanes, with a total paved surface of 18 feet. (Figure 21-1)

» Shared Lane Bike Facility

In the typical road section, there are no paved shoulders. In general, the roadside consists of vegetated ditches, along with narrow bands of gravel in some areas.

Bike Signage

» Adequate Signage

There are ten (10) BR 76 signs. While these signs are effective at guiding cyclists, there is no other bike-related signage.

Featured Intersections

» Interstate 64

This is one of two (2) interstate interchanges within the BR 76 study area. The interchange at Shannon Hill Road is a hazardous environment for cyclists, as there are guardrails and retaining walls at the roadside. There are also high travel speeds and traffic volume. Additionally, the four (4) interchange ramps produce potential conflict points between cyclists and vehicles. (Figure 21-2)

Note: This interchange is also within Goochland County, which is part of Richmond Regional Planning District.

» US 33 (Jefferson Highway)

This four-way intersection is the most accident prone location in the Shannon Hill corridor, with at least 20 crashes between 2005 and 2011. Most of those accidents were angled collisions between vehicles. Additionally, VDOT

identified sight-distance issues at this intersection, including obstructed views from vegetation and issues related to vertical sight distance. (Figure 21-3)

» Other intersections in this corridor include:

- VA 603 (Tabscott Road)
- US 250 (Broad Street)
- VA 693 (Martin Road)
- VA 653 (Shannon Hill)
- VA 640 (East Old Mountain Road)
- VA 640 (West Old Mountain Road)
- VA 646 (Yanceyville Road)
- VA 644 (Mount Airy Road)
- VA 643 (Cuckoo Road)
- US 522 (Pendleton Road)

Sight Distance

» Clear Sight-Lines

Additional Road Hazards

» Guardrails

There are three (3) locations where guardrails frame the roadway, limiting the ability of cyclists to maneuver away from the road in case of emergency. Locations where guardrails are on the uphill lanes are particularly hazardous to cyclists. (Figure 21-4)

Planned Road Improvements

» General Road Improvements

The Louisa County Comprehensive Plan states that there are future needs related to Shannon Hill and Willis Profit Road. There are no specific recommendations on what those improvements would entail.

» Road Widening

The RLRP identifies operational and geometric deficiencies on the southern segments of VA 605 and for Willis Profit Road. The plan recommends road reconstruction that includes full-width lanes and shoulders. These improvements are listed as long-term alternatives.

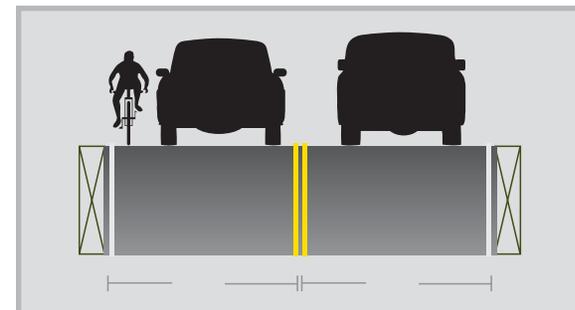


Figure 21-1: Typical Road Section



Figure 21-2: Interstate 64 Interchange

» Intersection Improvements

The RLRP identifies safety deficiencies with the US 33 intersection. The plan includes short-, mid- and long-term recommendations to address these deficiencies. In the short-term, the plan calls for improved maintenance of roadside vegetation for sight-distance. The mid-term recommendation is to consider reducing the speed limit. The long-term recommendation is to consider reconstruction to a lower vertical curve, to improve vertical sight distance.

Traffic Conditions

Traffic Counts

» 1,380 to 1,560 ADT

Shannon Hill Road has moderate to high traffic counts, considering the roadway geometries. Volumes range from



Figure 21-3: Jefferson Highway Intersection



Figure 21-4: Guardrails

1,376 to 1,556 ADT, with Willis Proffitt Road carrying 1,549 ADT. In Goochland County, the traffic counts reach 1,700 ADT at the Interstate 64 interchange, with counts decreasing further towards the south.

VDOT forecasts suggest that traffic will continue to increase over the next twenty years. By 2035, the existing counts on Shannon Hill and Willis Proffitt Road may rise by 1,000 ADT. With this added traffic, counts could reach 2,200 to 2,600 ADT.

Truck Traffic

» *4 Percent*

On VA 604, traffic from heavy vehicles is a major contributing factor to diminishing the bike compatibility score.

Travel Speeds

» *45 to 50 MPH*

The speed limit is 45 MPH near the intersection with Tab-scott Road, but soon increases to 50 MPH as motorists approach Louisa County. In these areas, the speed limit for trucks remains at 45 MPH. At VA 644, the posted speed drops again to 45 MPH for the northern segments of this corridor.

Level of Service

» *A – Free Flow &*

» *B - Reasonably Free Flow*

Currently, on the VA 605 corridor, motorists are able to travel at or above the posted speed limit. VDOT forecasts show that VA 605 will continue at a LOS B for the next twenty years, despite increases in traffic counts.

Traffic Accidents

» *82 Crashes, 0 Fatal*

Between 2005 and 2011, there were 82 crashes in the Louisa County portion of this corridor. The intersection with US 33 had the highest concentration of crashes, with at least 20 recorded accidents. Overall, the most common crash type in this corridor was off-road collisions. *Note: There were no recorded crashes between motorists and cyclists.*

Recreational

Historic Resources

» *No Identified Resources*

Scenic Resources

» *No Designations*

Other Destinations

» *Agri-Tourism*

There is a winery near the US 33 intersection, which provides a destination opportunity for cyclists.

Cycling Services & Resources

» *Water & Restrooms*

At the winery, there are restrooms for patrons, but there are no additional services or resources for cyclists in this corridor.

Access Points

» *No Access*

Topography

» *Flat and Rolling*

The terrain on VA 605 is relatively flat, though there are subtle climbs in multiple areas. The largest hills are at the South Anna River, with topography sloping towards the river.

Route Assessment

Bike Compatibility: BLOS D

Most road sections on VA 605 scored a BLOS D, indicating that the road is incompatible for cycling. The combination of a narrow road surface, traffic counts and higher speeds contribute to this score. The deciding factor is the presence of truck traffic, causing wind blast on the narrow travel lanes. Despite these hazards, there are also conditions that foster cycling safety. Generally, road surfaces are in excellent condition and sight distances are adequate.

Recreational: Low Value

The recreational aspects of VA 605 are limited. There is no access to scenic or historic resources. Also, there are limited cycling resources in the area. The only destination is the winery near US 33. The relatively easy terrain could be another benefit.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Louisa County to

install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Alternate Route

The TJPDC should work with AASHTO to explore an alternate route that would follow the historic ride of Jack Jouett, who rode from Louisa County to Monticello to warn Thomas Jefferson of advancing British soldiers, in the Revolutionary War.

Road Widening

The TJPDC should work with VDOT and Louisa County to provide further study on the road widening recommendations listed on the RLRP and Local Comprehensive Plan.

Study of Intersections

The TJPDC should work with VDOT and Louisa County to provide further study on the intersection recommendations listed in the RLRP.

Partner with Richmond Regional

The TJPDC should coordinate with Richmond Regional Planning District Commission to explore any potential road improvements on the Goochland County section of BR 76.



Segment L2: Mineral Corridor

Town of Mineral and Louisa County

Segment L2 evaluates the existing cycling conditions on Pendleton Road and sections of BR 76 that pass through the Town of Mineral. This corridor includes the only incorporated town in this study area, helping to make this area a destination for cyclists. While there are several benefits to cycling in this corridor, there are also several challenges to cycling safety and comfort.

Segment Characteristics

Rural Environment

- Minor Arterial
- Primary Route

Road Segments

- » **Total Road Mileage: 2.27 Miles**
- US 522 (Pendleton Road) – 1.54 Miles
- US 522 (Mineral Avenue) - .66 Mile
- US 522 (East 1st Street) - .07 Mile

Land Uses

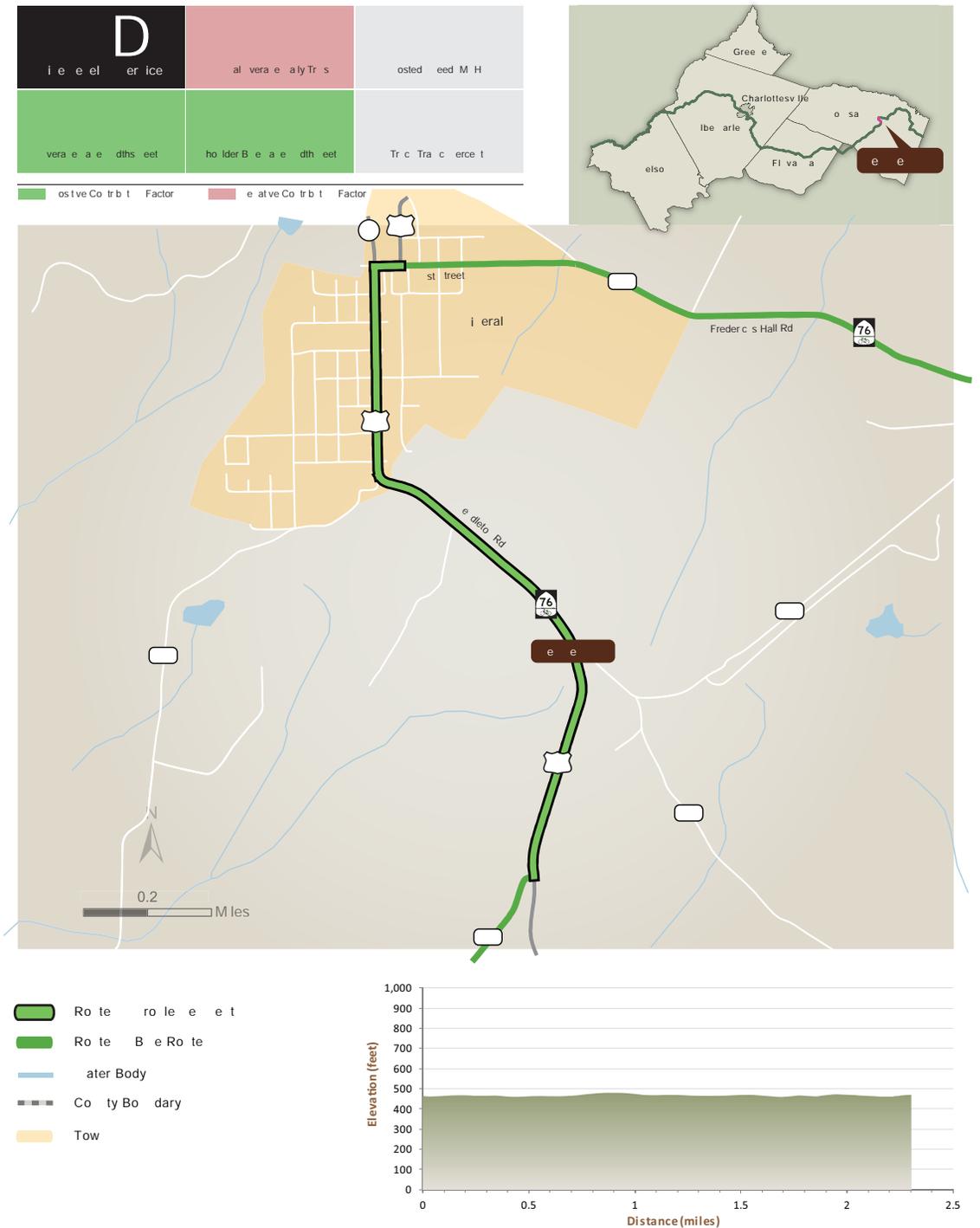
» *Small Town and Rural*

The character of land uses varies throughout the Mineral corridor. Along Pendleton Road, the surrounding area consists mostly of farms, wooded lots and large residential properties. At the Mica Road intersection, the adjacent land is dedicated to industrial and storage uses.

In the Town of Mineral, US 522 serves as the town’s main street. This street includes a mix of uses, including restaurants, a grocery store and service station.

Public Comment

» *No Comments*



Road Features

Road Sections

» Rural Two-Lane

The road dimensions vary greatly in this corridor. On Pendleton Road, there are two (2) travel lanes, 12 feet wide. (Figure 22-1)

On Mineral Avenue, the street section expands to three lanes, from West 6th Street north. The middle lane serves as a turn lane for a local grocery store and 5th Street. North of this intersection, the road becomes two lanes and the road surface consists of 56 feet of pavement. (Figure 22-2)

On East 1st Street, the roadway becomes narrower. With 40 feet of pavement. There are portions that allow for on-street parking, but the only markings for parallel parking are on the westbound lane, west of the railroad crossing. There is curb and gutter on the road edge. (Figure 22-3)

» Wide Outside Lane

Throughout this corridor, there are paved shoulders and wide outside lanes that allow cyclists to move away from travel lanes. On Pendleton Road, there are paved shoulders that range from 1 to 3 feet, with grass shoulders and shallow ditches adjacent to the pavement. On Mineral Avenue, there is 10 feet of on-street parking for both north- and southbound lanes. The remaining pavement consists of two 23-foot travel lanes.

Bike Signage

» Adequate Signage

There are four (4) BR 76 signs. While these signs are effective at guiding cyclists, there are no other bike-related signs.

Featured Intersections

» Typical, Town Intersection

There are seven (7) intersections along Mineral Avenue that are similar in design. The side streets at these intersections

include: West 6th Street, 5th Street, West 4th Street, West 3rd Street and 2nd Street. Many of these intersections have minor issues with sight distance, as on-street parking or vegetation can obscure sight-lines. (Figure 22-4)

» VA 522 (Mineral Avenue)/ VA 522 (East 1st Street)

This T-intersection is a major bottleneck in the community, with relatively high traffic counts. With the railroad crossing on 1st Street, a passing train can essentially close the intersection. In those instances, long traffic queues form behind turning vehicles. With limited turning radii, there are also issues with trucks turning at this intersection, creating potential dangerous situations for cyclists. Tractor trailers and other large vehicles sometimes collide with utility poles and other roadside features, as the drivers attempt this turning movement. In addition to these deficiencies, there are obstructions to sight-lines and multiple conflict points between vehicles and cyclists. (Figure 22-5)

» VA 208 (Louisa Avenue)

This T-intersection appears to have several deficiencies related to sight-distance and access management. From Louisa Avenue, vegetation blocks view to the east and west. Consequently, motorists pull into the intersection in order to view oncoming traffic. With access management, there are multiple intersections and entrances within the same general area. Within 200 feet of this intersection, there are two (2) additional intersections, four (4) business/service entrances, and ingress/egress at the firehouse. (Figure 22-6)

» Other intersections in this corridor include:

- VA 700 (Mica Road)
- VA 605 (Willis Proffitt Road)
- VA 665 (West 9th Street)

Sight Distance

» Clear Sight-Lines

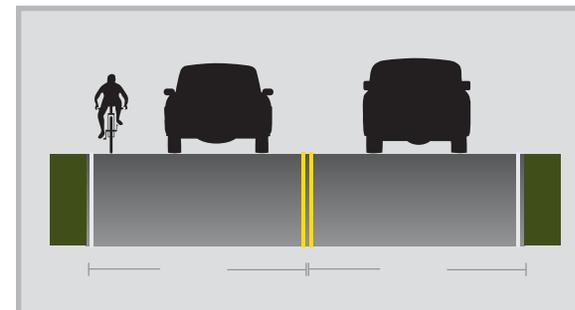


Figure 22-1: Typical Road Section for Pendleton Road



Figure 22-2: Typical Road Section for Mineral Avenue



Figure 22-3: Typical Road Section for East 1st Street

Additional Road Hazards

» On Street Parking

Another feature that generally concerns cyclists is parallel parking. On Mineral Avenue and 1st Street, on-street parking restricts road widths and present hazards, as open car doors can serve as an abrupt obstacle to riders. Since a low percentage of on-street parking is occupied on Mineral



Figure 22-4: Typical Intersection



Figure 22-5: East 1st Street Intersection



Figure 22-6: Sight-Lines from Louisa Avenue

Avenue, these dangers are minimized.

» **Railroad Crossing**

There is a railroad cross on this segment, though East 1st Street crosses the railroad at a right-angle. This minimizes dangers of a bike tires getting caught in the railroad's flangeway.

Planned Road Improvements

» *Monitoring of Intersection*

The Louisa County Comprehensive Plan and RLRP identify the East 1st Street intersection as a bottleneck. The RLRP recommends that this intersection be monitored for potential improvements.

» *New Road*

The Louisa County Comprehensive Plan recommends the construct of a new bypass, from Route 656 to the Town of Mineral, to relieve the East 1st Street intersection. The RLRP also references this recommendation. There are no timelines or funds dedicated to this project.

» *Mixed-Use Path*

Louisa County has preliminary plans for a mixed-use trail that would connect the Town of Mineral with the Lake Anna area. If the County were to build this trail, then there may be an alternate route for cyclists, away from traffic. Currently, there are no timelines or funds assigned to this trail project.

Traffic Conditions

Traffic Counts

» *3,700 to 5,370 ADT*

US 522 plays an important role in intra-county travel and carries significant traffic through the Mineral area. South of town, the traffic counts on Pendleton Road reach 5,368 ADT. Those same volumes flow through Mineral Avenue. On East 1st Street, the counts decrease to 3,723 ADT.

According to VDOT's 2035 forecasts, traffic volumes in this corridor may increase significantly. In the next twenty years, counts could rise to 8,750/8,900 ADT on Mineral Avenue and Pendleton Road. Traffic on East 1st Street could increase to 4,400 ADT. These increases in traffic could significantly influence bike compatibility in the future.

Truck Traffic

» *2 to 5 Percent*

There is a significant amount truck traffic on US 522, where heavy vehicles account for 5 percent of total ADT. These percentages influence the BLOS score for this corridor. On East 1st Street, this figure drops to a moderate 2 percent.

Travel Speeds

» *25 to 55 MPH*

There are different speed limits set for the various sections of this corridor. On the southern end, between Willis Proffitt and Mica Roads, the posted speed is set at 55 MPH. Between Mica Road and the town limits, the speed limit drops to 45 MPH. Within the Town, speed limits reduce once again to 35 MPH. On East 1st Street, the limit is 25 MPH. Actual travel speeds are typically 10 MPH over the posted speed. In the case of East 1st Street, speeds remain low, because of the railroad crossing and multiple intersections.

Level of Service

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

When trains pass through town, long traffic queues can build behind the East 1st Street intersection. During normal conditions, the corridor experiences a LOS C, where roads remain safely below capacity, and motorists can travel at or above the speed limit. With the forecast of higher traffic counts in the future, the LOS would subsequently diminish as the road approaches capacity.

Traffic Accidents

» *47 Crashes, 1 Fatal*

Between 2005 and 2011, there were 47 crashes in this corridor. This includes 23 traffic accidents on Pendleton Road, where off-road collisions were the most common crash type. One of those off-road collisions resulted in a fatality in 2010, just south of the Mica Road intersection. There were 10 crashes along Mineral Avenue and 5 accidents at the intersection with East 1st Street. Between Mineral and Louisa Avenue, there were 14 crashes, which was the second highest occurrence of accidents per mile

in the study area. *Note: There are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Historic*

This corridor includes the Town of Mineral Historic District, which is on the Virginia and National Historic Registries. This portion of BR 76 provides views of structures that have historic significance, such as the Mineral Train Depot and several private homes.

Scenic Resources

» *No Designations*

Other Destinations

» *Town of Mineral*

The Town of Mineral offers cyclists with several service opportunities. As the only incorporated town in the study area, this corridor is a destination for cyclists.

Cycling Services & Resources

» *All Services*

There are several businesses that sell food and water, and provide access to restrooms. There are also two (2) service stations, which have air pumps. On the northern edge of the corridor, the Mineral Fire Station is a major hospitality feature, well regarded by cyclists worldwide, by allowing cyclists to stay overnight. Several miles to the west (on Yanceyville Road), Sophia House offers lodging and meals. There are other Bed and Breakfast opportunities in this area. In terms of parkland, Mineral is home to Walton Park, which has the potential to serve as a camp site.

Access Points

» *On-Street Parking*

There are several parking areas in the Town of Mineral, where cyclists could access the Bike Route.

Topography

» *Flat*

Route Assessment

Bike Compatibility: BLOS B – D

The BLOS varies greatly in this corridor. On Pendleton Road, the roadway is uncomfortable for cycling, due to high traffic counts and speeds, along with the high volume of truck traffic. On Mineral Avenue, the travel lanes are unusually wide and the speeds are relatively low. Consequently, the street is highly compatible for cycling, with a BLOS B. Along this section, even novice cyclists would feel comfortable riding in the street. On East 1st Street, the narrower travel lanes and on-street parking result in a BLOS C score, meaning the street is moderately compatible for cycling.

Recreational: High Value

In terms of recreation and amenities, there are several benefits to this corridor. The Town offers opportunities for several valuable services, such as lodging at the firehouse and air pumps. The Town has historic resources and a small town feel that would be interesting to cyclists. There are no scenic vistas in the area, but the Town creates an interesting environment for travelers.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Louisa County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Maintenance of Vegetation

The TJPDC should work with VDOT to examine the need to address vegetation at intersections, which may obstruct sight-lines.

Installation of Bike Lanes

The TJPDC should work with the Town of Mineral and VDOT on coordinating the installation of bike lanes on Mineral Avenue.

Additional Study of Intersection

Pursuant to the Louisa County Comprehensive Plan and RLRP, the TJPDC should work with VDOT, the County and Town on further study of the Mineral Avenue/East 1st Street Intersection.

Information Center

The TJPDC should work with the Town of Mineral to consider a BR 76 information center at Town Hall or the Firehouse. The center could include cycling information and access to cycling repair kits.

Segment L3: Fredericks Hall Road

Town of Mineral and Louisa County

Segment L3 evaluates the existing cycling conditions on Fredericks Hall Road, between the Town of Mineral, to the west, and VA 700 (Johnson Road), to the east. The Fredericks Hall Road corridor serves as a connector for BR 76, linking the Town of Mineral to eastern segments. While there are several benefits to cycling along VA 618, there are also hazards to riders.

Segment Characteristics:

Rural Environment

- Major Collectors
- Secondary Routes

Road Segments

- » *Total Road Mileage: 2.18 Miles*
- VA 618 (East 1st Street) - .54 Mile
- VA 618 (Fredericks Hall Road) – 1.64 Miles

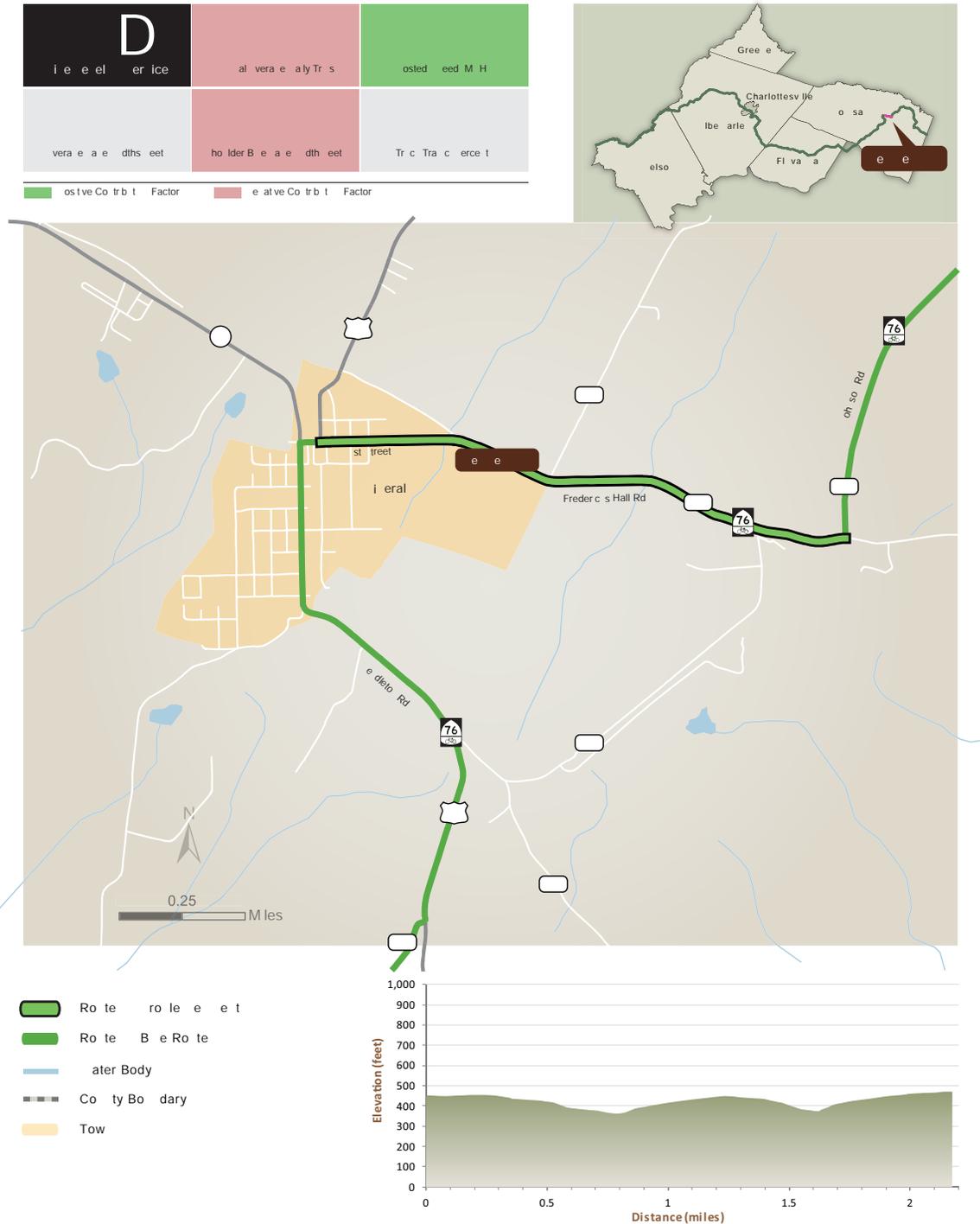
Land Uses

» Small Town and Rural

The western end of this corridor is within the Town of Mineral. While most of the properties in this section of VA 618 are undeveloped, the land uses have the scale of a small town, with small residential lots and services. East of the Mineral, Fredericks Hall Road passes by wooded, undeveloped properties, along with several small residential properties.

Public Comment

» *No Comments*



Road Features

Road Sections

» Rural Two-Lane

Along VA 618, the roadway consists of two 10-foot travel lanes, resulting in a total pavement width of 20 feet. (Figure 23-1)

» Shared Lane Bike Facility

There are no paved shoulders. Instead, the outside edge of the roadway is framed by narrow, grass shoulders and shallow ditches. Consequently, cyclists must share travel lanes with motorists.

» Bike Lanes

At the intersection with VA 703 (Spring Road) there are 4-foot bike lanes on the east- and westbound lanes. The bike lanes span approximately 720 feet, but then reduce back to a shared lane bike facility. (Figure 23-2)

Bike Signage

» Adequate Signage

There are two (2) BR 76 signs. There are also seven (7) signs that inform motorists of the bikes lanes near Spring Road.

Featured Intersections

» Typical, Town Intersection

There are four (4) intersections in the town portion of this corridor, all involve local streets. Those streets include Louisa Avenue South, Saint Cecilia Avenue, Richmond Avenue and Albemarle Avenue. All of these intersections are similar in scale, as the cross streets are narrow roadways that carry low volumes of traffic. In some areas, sight lines may be limited by vegetation, but overall, there are no apparent deficiencies at these intersections.

» VA 703 (Spring Road)

This T-intersection includes a unique feature for a rural road section, bike lanes. On VA 618, there are over 700 feet

of bike lanes in this vicinity. On the westbound lane of VA 618, there is a short right turn lane that merges onto Spring Road. The road markings allow for a break in the bike lane, to accommodate turning vehicles. Overall, the markings and sight distances are sufficient for cycling safety.

» VA 700 (Johnson Road)

This T-intersection marks the eastern end of the Fredericks Hall Road Profile. While there are no immediate concerns with this intersection, there were several reported crashes. Between 2005 and 2011, there were 8 traffic accidents within the intersection, including a pedestrian collision. There may be obstructed sight-lines from Johnson Road that could have contributed to these accidents.

» Other intersections in this corridor include:

- VA 208 (Louisa Avenue)
- VA 667 (Old Tolersville Road)
- VA 700 (Mica Road)

Sight Distance

» Clear Sight-Lines

Additional Road Hazards

» Lack of Shoulders

While travel speeds are relatively low, the higher traffic counts create a need for additional shoulders along VA 618. Without paved shoulders, cyclists are exposed to this vehicular traffic.

Planned Road Improvements

» No Planned Improvements

Traffic Conditions

Traffic Counts

» 3,000 to 3,200 ADT

East 1st Street carries relatively high traffic counts for the roadway dimension, with 3,202 ADT. The counts are due to

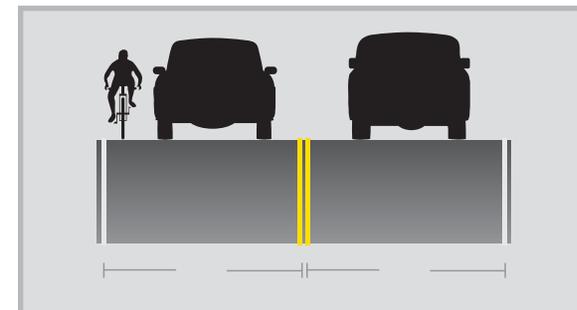


Figure 23-1: Typical Road Section



Figure 23-2: Bike Lanes

the intra-county importance of this corridor. To the east of Mineral, volumes drop slightly to 3,078 ADT.

VDOT anticipates that ADT will rise for this corridor, over the next twenty years. Traffic counts on East 1st Street could increase by 1,200 in that time, to 4,400 ADT. To the east, counts on Fredericks Hall Road could rise by 1,000, resulting in 4,000 ADT. These increases could significantly diminish bike compatibility.

Truck Traffic

» 2 Percent

Heavy vehicles account for a moderate percent of total ADT (2 percent), which does not significantly influence bike compatibility.

Travel Speeds

» 25 to 45 MPH



Figure 22-3: Mineral Train Depot



Figure 23-4: Mineral Firehouse

The posted speed varies as VA 618 transitions from the Town of Mineral. In Mineral, the speed limit is set at 25 MPH, until the town limits, where the speed increases to 35 MPH. The speed limit increases to 45 MPH, just east of the VA 703 (Spring Road) intersection. Generally, actual travel speed is approximately 10 MPH over the posted speed.

Level of Service

» *B - Reasonably Free Flow*

There is no traffic congestion identified in the corridor. Motorists are able to travel at or above the posted speed limit, with a high level of comfort. VDOT forecasts show that the LOS will degrade slightly by 2035 (to LOS C), where the roadway will still remain under capacity.

Traffic Accidents

» *30 Crashes, 1 Fatal*

There were 30 crashes along this corridor, between 2005

and 2011. This includes 6 crashes on East 1st Street and 24 crashes on Fredericks Hall Road. In the Town, most crashes were rear-end collisions, whereas off-road collisions were more common in the rural areas, to the east. There was 1 fatal crash, an off-road collision near the intersection with Mica Road. *Note: There are no records of crashes between motorists and cyclists.*

Recreational

Historic Resources

» *Historic District*

VA 618 passes through the Town of Mineral Historic District, which is on the Virginia and National Historic Registers. This portion of BR 76 also provides views of structures with historic significance, such as the Mineral Train Depot. (Figure 23-3)

Scenic Resources

» *No Designations*

Other Destinations

» *Town of Mineral*

Cycling Services & Resources

» *Restrooms, Food/Beverages, Supplies, Lodging and Medical Services*

The Mineral Firehouse provides lodging for cyclists and serves as a destination for cyclists. The fire department also trains their crews in first aid, which could be important for cyclists who sustain injuries. There are several businesses in the town that offer services that are useful to cyclists. (Figure 23-4)

Access Points

» *On-Street Parking*

There are several parking areas in the Town of Mineral, where cyclists could access the Bike Route.

Topography

» *Flat*

While there are topography changes, VA 618 is relatively flat. The biggest grade change occurs in the Town of Mineral, where the road slopes down at a 3 percent grade, towards Old Tolersville Road.

Route Assessment

Bike Compatibility: BLOS C & D

The BLOS in this corridor varies, based on road and traffic conditions. In the Town of Mineral, VA 618 scored a 'C', where the environment is moderately compatible for cycling. While the traffic counts are relatively high, the speeds are low, at 25 MPH. Once the speed limit increases to 35 MPH, the BLOS score drops to a 'D', which is incompatible for cycling. In combination with the higher speeds, there are no shoulders and relatively narrow travel lanes. The only other location with a BLOS C is at the bike lanes near Spring Road.

There are several features that are positive to cycling safety and comfort. The road surface is in excellent condition. The existing bike lanes are a great start for further road improvements. The truck traffic is low. The sight-distances are unobstructed, except in a few instances. Finally, the low to moderate number of entrances onto VA 618 results in fewer conflict points between vehicles and cyclists.

Recreational: High Value

In terms of recreation and amenities, there are several positives for cycling in this area. The terrain is flat, lacking difficult climbs. The scenic and historic resources are limited, but cyclists can still experience a rural setting. The Town of Mineral offers multiple opportunities for cyclists to replenish supplies, rest and explore. Finally, the Mineral Firehouse is a well-known destination for cyclists, providing lodging and access to first aid.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Louisa County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Maintenance of Vegetation

The TJPDC should work with VDOT to examine the need to address vegetation at intersections, which may obstruct sight-lines.

Shoulder Improvements

The TJPDC should work with VDOT to draft estimates and plans for additional bike lanes, which would expand on those already in place. The TJPDC can also add this project to the RLRP, for the 2015 update of that plan.

Segment L4: Lake Anna Area

Louisa County

Segment L4 evaluates the existing cycling conditions on Johnson and Kentucky Springs Roads, in the Lake Anna area. These roads are on the eastern end of the BR 76 study area. While there is a large recreational asset, a 13,000 acre lake, there are no few accessible destinations for cyclists. Consequently, this corridor serves more as a connector to other destinations along the Bike Route. While the roadways in this segment are relatively wider than in other rural roadways, there are several challenges to cycling safety and comfort.

Segment Characteristics

Rural Environment

- Major Collectors
- Secondary Routes

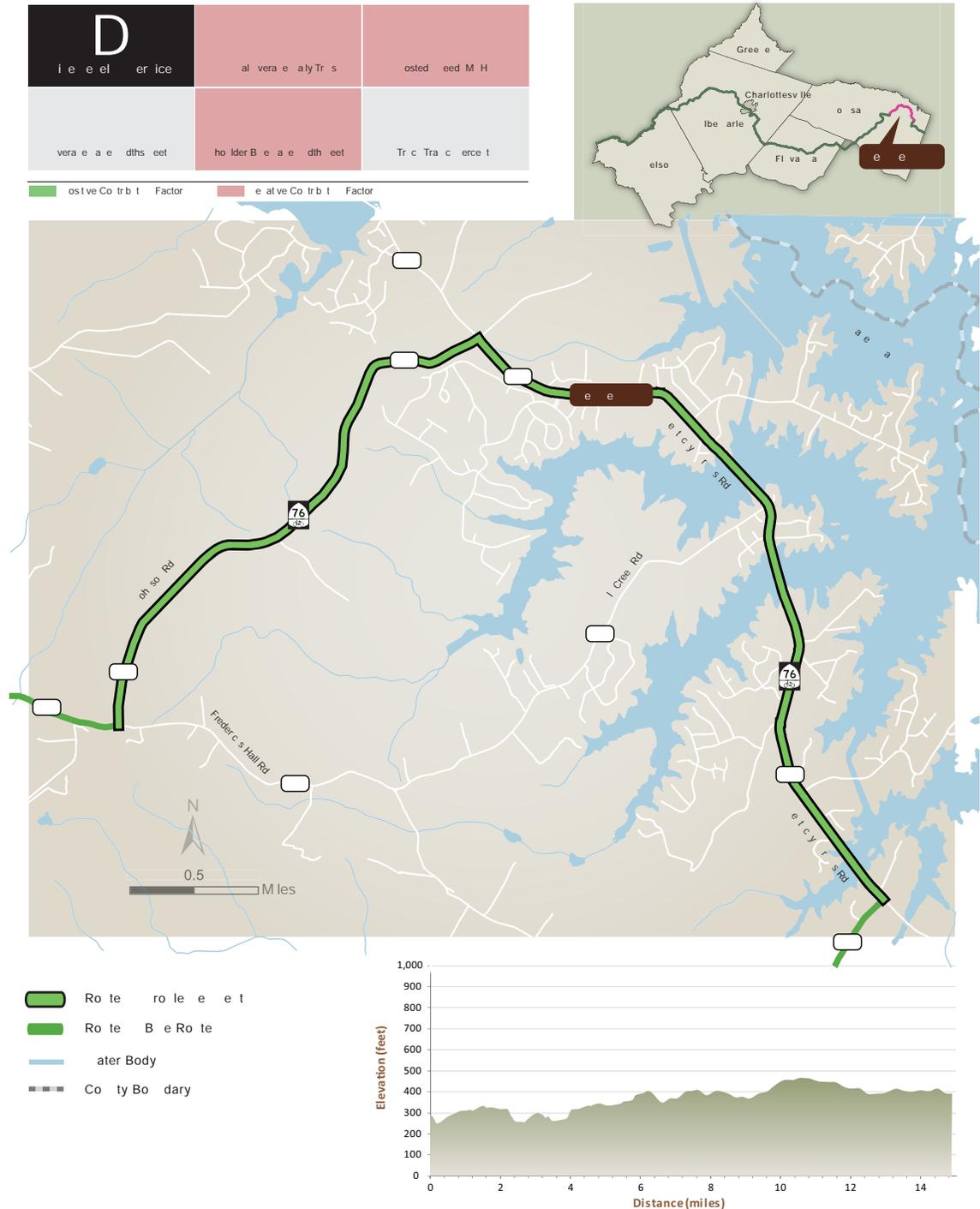
Road Segments

- » **Total Road Mileage: 10.79 Miles**
- VA 700 (Johnson Road) – 4.6 Miles
- VA 652 (Kentucky Springs Road) – 6.19 Miles

Land Uses

» Rural and Suburban

In the Lake Anna segment, the adjacent land uses are rural and suburban in nature. Along VA 700, the surrounding area consists mostly of undeveloped, wooded lots and a handful of homes. VA 652 has a more suburban character, with several large, residential subdivisions that take advantage of the waterfront along Lake Anna. Other than a few miscellaneous uses, this entire area consists of forests, residential lots and a few small farms. Occasionally, BR 76 passes over dikes and small bridges, which cut across the many coves of Lake Anna. (These coves are actually cooling ponds for the North Anna Power Station).



Road Features

Road Sections

» Rural Two-Lane

Johnson and Kentucky Springs Road are both rural, two-lane roadways with the same general dimensions. These roads consist of 22 feet of pavement, which includes two (2) travel lanes of approximately 10 feet. (Figure 24-1)

» Shared Lane Bike Facility

The shoulders in this corridor are minimal, with less than a foot of pavement on the outside edge. Beyond the pavement, there are shallow ditches, except for a few instances where there are guardrails.

Bike Signage

» Additional Signage Needed

There are five (5) BR 76 signs. There should be an additional sign at Pottiesville Road, to direct cyclists onto Kentucky Springs Road. Also, there are no other bike-related signs in the corridor.

Featured Intersections

» VA 700 (Johnson Road)/VA 652 (Kentucky Springs Road)

This intersection experiences additional traffic because of its location and function. The northern leg is the only access point for the North Anna Power Station. The southern leg takes travelers towards the Town of Mineral, whereas the east and west legs provide access to residential subdivisions and destinations along Lake Anna. Because of the additional traffic, this is one of the only signalized intersections in the rural portions of the study area. (Figure 24-2)

There do not appear to be any immediate deficiencies in this intersection. Sight-distances appear to be sufficient. Between 2005 and 2011, there were only five (5) reported accidents within this intersection.

» Other intersections in this corridor include:

- VA 618 (Fredericks Hall Road)
- VA 614 (Elk Creek Road)
- VA 650 (Pottiesville Road)

Access Management

» Low Number of Conflict Points

There are relatively few conflict points along VA 700 and VA 652. Johnson Road has more occurrences of ingress/egress from individual residential lots, with 43 driveways in 4.6 miles. Most of these entrances are clustered together in specific areas. While there is more residential property along Kentucky Springs Road, there are only 31 residential driveways and over a longer distance, over six (6) miles. Most of those homes are within residential subdivisions, resulting in 17 entrances onto the roadway. These consolidated entrances minimize the number of conflict points along the corridor.

Sight Distance

» Clear Sight-Lines

Additional Road Hazards

» Railroad Crossing

On VA 700, the railroad crossing occurs at an angle, which increases the chances that a bike tire could slip into the railroad's flangeway.

» Guardrails

On VA 652, there are guardrails directly adjacent to the roadside, which limits the ability of cyclists to maneuver away from traffic. (Figure 24-7)

Planned Road Improvements

» Road Widening

The RLRP identifies geometric deficiencies on VA 652. The plan recommends road reconstruction that includes full-width lanes and shoulders. These improvements are listed as long-term solutions, though there are no specific funds or timelines assigned to this recommendation.

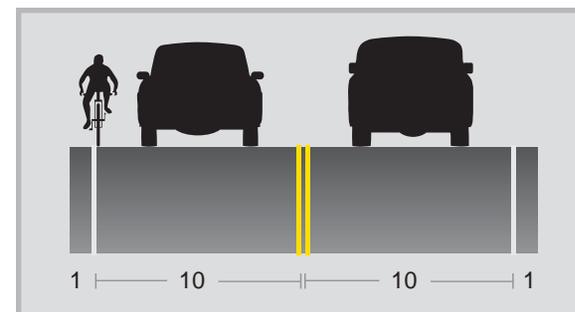


Figure 24-1: Typical Road Section



Figure 24-2: Johnson/Kentucky Springs Road



Figure 24-3: Guardrails on Kentucky Springs Road

Traffic Conditions

Traffic Counts

» 1,430 to 2,890 ADT

Traffic counts vary across this corridor. Johnson Road carries 1,911 ADT, which is relatively high for the roadway

geometries. Kentucky Springs Road also carries relatively high traffic counts due to travel associated with the lake community and the Lake Anna Power Station. The western segment of VA 652 has the highest counts, with 2,885 ADT. The counts gradually decrease to the east, reaching 1,427 ADT. Overall, the counts in this corridor are a primary contributor to the poor bike compatibility score.

(Note: VDOT typically collects traffic counts during the fall months. As a seasonal destination, Lake Anna attracts more people and traffic during the summer, meaning that these ADT figures may not be representative of peak season.)

VDOT forecasts indicate that overall traffic counts may increase over the next twenty years. Near the intersection with VA 700, traffic volumes may raise by approximately 1,000 ADT. To the east (closer to the Bypass area) counts would rise to a lesser extent, from 1,427 to 1,900 ADT by 2035. With these increases in traffic, bike compatibility will continue to diminish.

Truck Traffic

» *3-4 Percent*

On VA 700, truck traffic accounts for approximately 3 percent of total ADT and does not greatly influence cycling conditions. On Kentucky Springs Road, heavy vehicles are a larger share of the overall traffic, with 4 percent, which begins to diminish the cycling score.

Travel Speeds

» *55 MPH*

The posted speed limit is 55 MPH throughout the Lake Anna corridor, but the actual travel speeds are assumed to be closer to 65 MPH. These speeds are high, considering the roadway dimensions and the effects on cycling safety. Consequently, speed is a contributing factor to the poor bike compatibility score.

Level of Service

» *B - Reasonably Free Flow &*

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

In the Lake Anna area, the level of traffic congestion varies, but all road sections are safely below capacity. With the lack of congestion, motorists are able to travel at or above the posted speed.

VDOT forecasts show little change in LOS over the next twenty years. The only section anticipated to degrade in LOS would be the roadway between Carr's Bridge and Bohannon Roads, where LOS could marginally drop from 'B' to 'C'.

Traffic Accidents

» *63 Crashes, 0 Fatal*

There were 26 crashes on Johnson Road, between 2005 and 2011. Over half were off-road collisions, suggesting geometric deficiencies. One-third of the total accidents on Johnson Road occurred at the T-intersection with Fredericks Hall Road, including an incident with a pedestrian.

There were 40 crashes on Kentucky Springs Road, where almost half were off-road collisions. The remaining crashes were mainly angled collisions between vehicles or deer-related accidents. Throughout the corridor, there were no apparent areas with an unusually high occurrence of crashes. *Note: There are no records of crashes between motorists and cyclists on this roadway either.*

Recreational

Historic Resources

» *No Identified Resources*

Scenic Resources

» *No Designations*

Other Destinations

» *Lake Anna State Park*

Except for southwest Virginia, Lake Anna State Park is the

only Virginia State Park in relative proximity to BR 76. The main challenge for cyclists is access. This park is on the northern shores of Lake Anna and cyclists must travel several miles, on incompatible roadway conditions, to access it.

» *North Anna Information Center*

The North Anna Nuclear Information Center, 1022 Haley Drive, Mineral, VA 23117, is unique to BR 76 in Virginia and possibly nationwide. At the information center, visitors can learn more about the area, the Power Station and Nuclear Power. The center also has restrooms and picnic tables.

Cycling Services & Resources

» *Air Pumps, Restrooms & Food/Water*

At the Elk Creek Road intersection, there is a service station that has an air pump and restrooms for patrons, along with food and water.

Access Points

» *No Access*

There are no public parking areas in this corridor that allow cyclists to access BR 76.

Topography

» *Flat*

The roadways in the Bypass area are relatively flat, with no significant hills or climbs.

Difficulty Level

» *Low Difficulty*

With a flat terrain and limited curves, this corridor provides a relatively easy ride for cyclists. Despite the terrain, the road and traffic conditions can cause moderate discomfort for even experienced riders.

Route Assessment

Bike Compatibility: BLOS D

With a BLOS D, the roads in this corridor are relatively

incompatible for cycling. There were several contributing factors to this score. The traffic counts and speeds are relatively high, given the road dimensions. Without adequate shoulders, cyclists are exposed to these high traffic volumes and speeds. (AASHTO standards indicate that the shoulders would ideally be 6 feet). Without shoulders, cyclists are also subject to truck blast, from heavy vehicles. The guardrails and railroad crossing also contribute to the relatively poor cycling environment.

Despite these dangers, there are benefits to cycling in this area. The road surfaces are in excellent condition. The travel lanes are wider than other rural roads in the study area. Access management is sufficient, limiting the number of conflict points. Also, there are minimal deficiencies at the intersections in this corridor.

Recreational: Low Value

While there are critical amenities, the recreational value in this area is relatively low. There are no historic resources. Any scenic vistas are in areas where cyclists cannot appreciate the views. There are no other tourist destinations that would interest cyclists. There is no access to Lake Anna. Also, there is no identifiable access to the Bike Route by car.

There are recreational benefits to this corridor. The terrain is flat, providing an easy ride. There are also important services and resources, such as air pumps and restrooms for patrons of the service station.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Louisa County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Road Widening

The TJPDC should work with VDOT and Louisa County to

develop greater detail on the recommendation in the RLRP, to widen the roadway.

Additional Study on Traffic Counts

The TJPDC should work with VDOT to collect seasonal traffic counts for the Lake Anna area, to determine the increase of ADT over summer months.

Study Alternate Route

The TJPDC should work with AASHTO to evaluate an alternate route that bypasses the cycling hazards in the Lake Anna area. Fredericks Hall Road is a frequent shortcut from Mineral to Bypass and should be evaluated as an official alternate for cyclists.

Information Center

The TJPDC should work with Dominion Power to explore the possibility of providing additional resources at the North Anna Information Center that would cater to cyclists.

Segment L5: Bumpass Area

Louisa County

Segment L5 evaluates the cycling conditions in the Bumpass portion of the study area, located in the northeast corner of Louisa County, near Lake Anna. While there are benefits to cycling in this corridor, there are few recreational amenities or destinations, making this a connector route. In terms of safety, there are also several challenges to cycling safety and comfort.

Segment Characteristics

Rural Environment

» Major Collectors

- Rural Local (VA 650)
- Secondary Routes

Road Segments

- » Total Road Mileage: 5.89 Miles
- VA 650 (Pottiesville Road) – 1.9 Miles
- VA 618 (Fredericks Hall Road) – 1.11 Miles
- VA 618 (Belsches Road) – 2.88 Miles

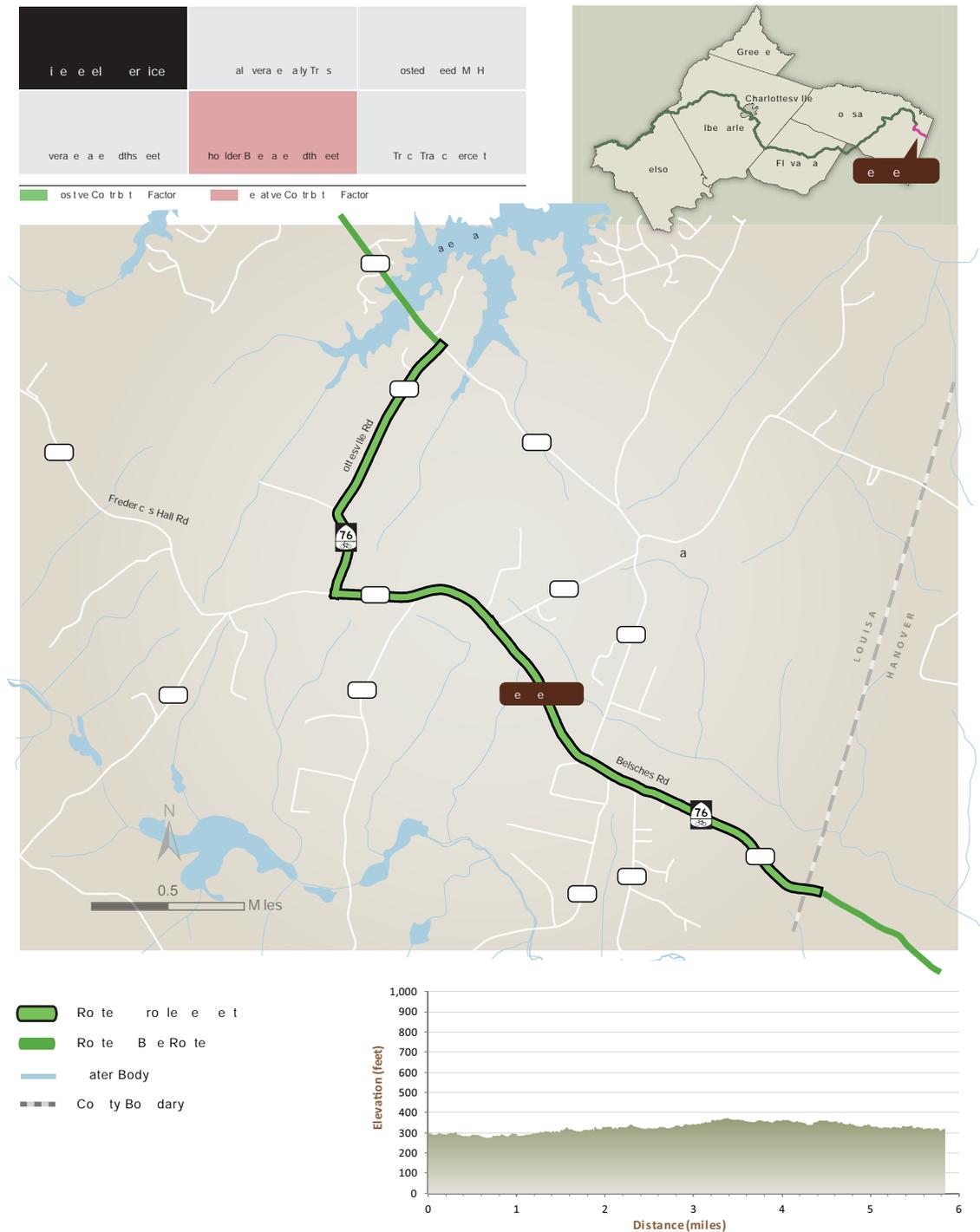
Land Uses

» Rural

The Bumpass area is a rural setting, consisting mostly of wooded properties, pastures, farms and large residential lots. There are a couple of residential subdivisions in this corridor, along with an industrial property at the corner of Pottiesville and Fredericks Hall Roads. The industrial property is a notable land use that generates truck traffic.

Public Comment

» No Comments



Road Features

Road Sections

» Rural Two-Lane

The Road section varies slightly in this corridor. Pottiesville Road consists of an 18-foot paved surface, which includes 9-foot travel lanes. (Figure 25-1). On Fredericks Hall Road, the pavement widens to 20 feet (10-foot travel lanes). To the east, Belsches Road narrows again to 18 feet of asphalt. (Figure 25-2)

» Shared Lane Bike Facility

There are no paved shoulders in this corridor, forcing cyclists to share the same travel lanes as general traffic. At the road edge, there are shallow ditches or lawns.

Bike Signage

» Additional Signage Needed

There are five (5) signs that identify BR 76. There is one (1) Bike Route sign that is missing, on Pottiesville Road. Additionally, there is no other bike-related signage in this segment.

Featured Intersections

» VA 650 (Pottiesville Road)/ VA 618 (Fredericks Hall Road)

The main issue at this T-intersection is access management. There are several entrances within 300 feet of the intersection. This includes entrances to a small mobile home park, single-family home, church, service station and industrial operation. This additional access creates potential conflict points between vehicles and cyclists.

» VA 601 (Bumpass Road)

There are potential roadway deficiencies at this Y-intersection. A gravel road segment cuts across the Y of the intersection, which could cause confusion with turning movements. Those access points include entrances to 3 residential properties, a private business, the post office and a fire station.

» Other intersections in this corridor include:

- VA 652 (Kentucky Springs Road)
- VA 601 (Diggstown Road)
- VA 701 (Borden Road)

Sight Distance

» Clear Sight-Lines

Additional Road Hazards

» Lack of Shoulders

With the existing traffic volumes and speeds, the lack of shoulders creates safety concerns for cyclists. These issues are somewhat diminished by the roadside features, which consists of lawns and shallow ditches, which allows cyclists to bail from the roadway, if needed.

Railroad Crossing

There is a railroad crossing on Pottiesville Road, near the intersection with VA 618. While railroad crossings can be a hazard to cyclists, this crossing appears to be relatively safe, since the road approaches the railroad at a 90 degree angle.

Planned Road Improvements

» Road Widening

The RLRP identifies geometric deficiencies along VA 618. The plan recommends roadway reconstruction that includes full-width lanes and shoulders. These improvements are listed as long-term solutions.

The Louisa County Comprehensive Plan states that there are major needs for VA 618, due to truck traffic from the industrial property at the intersection of Pottiesville and Fredericks Hall Roads. The plan also states that these needs may be mitigated if the operation made use of rail service in the future.

Traffic Conditions

Traffic Counts

» 590 ADT to 1,920 ADT

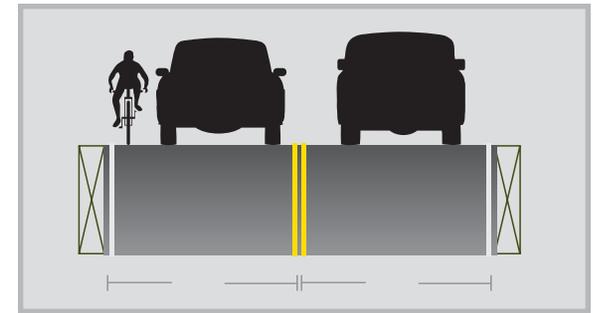


Figure 25-1: Typical Road Section on Pottiesville Road

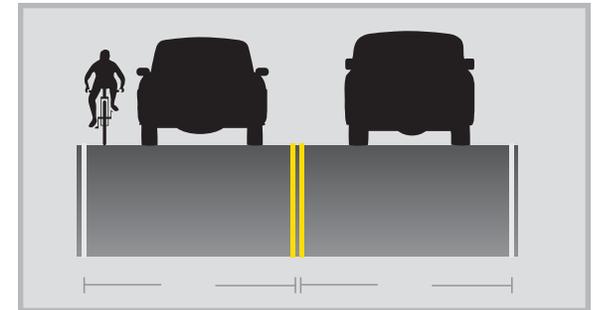


Figure 25-2: Typical Road Section on Fredericks Hall Road



Figure 25-3: Hanover County Line

Traffic counts vary in the Bumpass area. Pottiesville Road carries the lowest traffic counts, as would be expected for a local road, with 588 ADT. The highest volumes are on the Fredericks Hall Road segment, with 1,563 ADT. Near the Hanover County line, there are 1,919 ADT on Belsches Road.

Note: VDOT typically collects these counts during the fall months. With Lake Anna, the peak season for traffic is during the summer months, meaning that the ADT figures may not be representative of peak season.

Over the next twenty years, VDOT anticipates a rise in traffic volumes. Pottiesville Road may increase to 1,200 ADT, while future counts on VA 618 may reach 2,300 ADT. With an increase in traffic, bike compatibility would diminish.

Truck Traffic

» *0-2 Percent*

Travel Speeds

» *35 to 55 MPH*

The speed limit in this segment varies. While the speed is not posted on Pottiesville Road, the default limit is 55 MPH. Near the intersection of VA 650 and VA 618, the speed drops to 35 MPH. On the eastern segment of VA 618, the speed limit is set at 45 MPH. On average, motorists tend to travel close to 10 MPH faster than the posted speed. These higher speeds may be more common with the straight, flats roadways in this segment.

Level of Service

» *A – Free Flow*

» *B – Reasonably Free Flow*

In the Bumpass area, traffic flows freely and vehicles are able to travel at or above the posted speed limit. VDOT forecasts show that there could be minor increases in traffic congestion by 2035. Areas with LOS A may decrease marginally: to LOS B. Conditions on Belsches road will likely remain unchanged.

Traffic Accidents

» *34 Crashes, 1 Fatal*

Between 2005 and 2011, there were 34 recorded crashes in this corridor. Belsches Road had the highest occurrence of crashes, with 18. This includes a fatal accident that occurred in 2011, with an off-road collision near the Hanover

County line. Most of the crashes in this area involved off-road crashes, with roadside features such as trees or road signs. *Note: There are no recorded crashes between motorists and cyclists, between 2005 and 2011. (Figure 25-3)*

Recreational

Historic Resources

» *No Identified Resources*

Scenic Resources

» *No Designations*

Other Destinations

» *Bumpass Park*

Louisa County maintains a park just outside of this corridor. Bumpass Park includes playing fields and open space for visitors.

Cycling Services & Resources

» *Air Pumps, Restrooms, Food/Beverage & Medical Services, Post Office*

While there are few destinations in this segment, there are several services that can be of great benefit to cyclists. Just west of the intersection of VA 650 and VA 618, there is a service station with air pumps, restrooms and other supplies. Farther east, there is a fire station near the intersection with Bumpass Road. These stations typically have personnel with training in first-aid. A post office in this area may be useful to cyclists, who need to send/receive equipment, emergency repair parts and other supplies.

Access Points

» *Post Office & Bumpass Park*

There is parking at the Post Office and Bumpass Park that could allow access to BR 76.

Topography

» *Flat*

Difficulty Level

» *Low Difficulty*

Route Assessment

Bike Compatibility: BLOS C

With a BLOS C, this corridor is moderately compatible for cycling. The roadway is relatively narrow, with no paved shoulders. Given the traffic conditions, roadways would ideally have 4-foot shoulders, according to AASHTO standards. There is also a relatively high number of turning movements in the segment, introducing greater possibility of conflict points between cyclists and motorists.

While there are cycling dangers on these roads, there are also several benefits to cycling. The surface conditions are excellent. There are clear sight-lines, so that motorists can easily spot and avoid cyclists. There are no other identified hazards to cycling safety.

Recreational: Low Value

While there are critical amenities in this corridor, the recreational value of this area is relatively low. There are no historic or scenic resources; and, there are no other tourist destinations that would interest cyclists.

Given these deficiencies, there are recreational benefits to this corridor. The terrain is flat, providing an easy ride. There are important services and resources, such as air pumps and medical services. Also, there is public parking, allowing access to the Bike Route.

Recommendations

Additional Signage

The TJPDC should work with VDOT and Louisa County to install additional bike signage that informs cyclists and warns motorists of frequent bike traffic.

Road Widening

The TJPDC should work with VDOT and Louisa County to develop greater detail on the RLRP recommendation, to widen the roadway.

Additional Study on Traffic Counts

The TJPDC should work with VDOT to collect traffic counts for the Lake Anna area that capture peak season counts, to determine the increase of ADT over summer months.

Camping at Bumpass Park

The TJPDC should work with Louisa County to consider camping opportunities for cyclists at Bumpass Park. There may be opportunities to limit camping to cyclists.

