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NEW RIVER VALLEY PLANNING DISTRICT COMMISSION
2035 RURAL LONG RANGE TRANSPORTATION PLAN


## NEW RIVER VALLEY PLANNING DISTRICT COMMISSION



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## TRANSPORTATION SYSTEM

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## INTRODUCTION \& PURPOSE

The Transportation and Mobility Planning Division (TMPD) of the Virginia Department of Transportation (VDOT) has worked with other modal agencies to develop VTrans 2035, the Commonwealth's multi-modal long range plan and a more detailed subset report known as the 2035 Surface Transportation Plan. The highway element of the 2035 Surface Transportation Plan includes proposed improvements on Virginia's federal functionally classified roadways. This Rural Long Range Transportation Plan is one piece of the Surface Transportation Plan. VDOT, Virginia's Planning District Commissions (PDCs), and the local governments they represent are partners in the development of this new initiative to create regional transportation plans in rural and small urban areas that complement those in Virginia's metropolitan areas.

The transportation system within the rural areas for each region was evaluated, and a range of transportation improvements for each mode, including roadway, rail, transit, air, bicycle, and pedestrian, are recommended to satisfy existing and future needs. Some of the PDCs contain urbanized areas whose transportation needs are coordinated by a metropolitan planning organization (MPO). In the New River Valley, the Blacksburg-Christiansburg-Montgomery Area Metropolitan Planning Organization (BCM-MPO) conducts the transportation planning for the Towns of Blacksburg and Christiansburg, and the urbanized areas of Montgomery County. The transportation needs of this area are analyzed in its 2035 Long Range Transportation Plan, which is a separate component of the 2035 Surface Transportation Plan. For the purposes of this Plan, only the transportation network outside of the MPO is analyzed and addressed.


Each rural regional plan has twenty-five year planning horizon to address the anticipated impacts of population and employment growth upon the transportation system. This plan is intended for the forecast year 2035 and will be reviewed and updated as needed. Each rural plan was developed as a vision plan, addressing all needs of the transportation system studied without funding constraints. It is envisioned that each regional plan will be used as a basis to identify transportation funding priorities. Additional details on topics discussed in this plan can be found in the Technical Report.

## STUDY APPROACH

- Development of regional transportation goals and objectives,
- Public involvement,
- Data compilation and collection,
- Data analysis,
- Identification of transportation deficiencies and recommendations, and
- Environmental and cost reviews.


## OVERVIEW OF THE REGION

## Description and Function of the New River Valley Planning District Commission

The New River Valley region, located in southwest Virginia, straddles the New River as it flows north to West Virginia. The New River Valley Planning District Commission (NRVPDC) serves the Counties of Floyd, Giles, Montgomery, and Pulaski, the City of Radford, and the Towns of Blacksburg, Christiansburg, Dublin, Floyd, Glen Lyn, Narrows, Pearisburg, Pembroke, Pulaski, and Rich Creek. The region's estimated population was just over 172,000 in 2008 (Weldon, 2009). The New River Valley is a predominantly rural area with more intense urban and suburban development occurring around the Towns of Blacksburg and Christiansburg. The geography of the region varies from the ridge and valley system of the Appalachians in the western part of the region to the Blue Ridge Mountains in the east.

## Summary of Transportation Network

I-81, which serves as the region's primary transportation corridor, passes through the center of the region running from southwest to northeast. Access to and from this key corridor is an ongoing concern within the region. Other primary corridors include US 11 , US 460, US 221, and VA 8, VA 61, and VA 100. Ridesharing and commuting, particularly between the New River Valley and the Roanoke Valley, has also been a concern in the region. Public transportation services are provided by Blacksburg Transit, Community Transit, Pulaski Area Transit, Radford Transit, and the Smart Way. Numerous existing bicycle and pedestrian facilities traverse the NRV. There are two general aviation airports in the region. Norfolk Southern owns the Class 1 freight rail lines throughout the region. A range of travel demand management services is currently provided through RIDE Solutions, and there are fourteen park and ride lots within the region.


## Goals and Objectives

Needs for each plan were developed based on regional and statewide goals. Similar concepts within the goals of the PDCs were found and used to shape common rural long range plan goals (at right) to address rural transportation planning across the Commonwealth. A basic goal for all transportation programs in Virginia is the provision for the effective, safe, and efficient movement of people and goods. The plan for the New River Valley was developed with this primary goal in mind, along with other goals including consideration for environmental issues and local travel desires. Each PDC developed transportation goals and objectives that were used to guide the development of the Rural Long Range Transportation Plan for their area. Rural transportation planning in the NRVPDC is guided by the Transportation Technical Advisory Committee (TTAC). This committee reviewed the needs of the region and formulated the following goals.

GOAL 1 Support and improve the economic vitality of the region.
GOAL 2 Provide a safe and secure transportation system.

GOAL 3 Preserve the existing transportation network and promote efficient system management to increase accesibility and mobility of the transportation system.

GOAL 4 Enhance the links and connectivity of the transportation system throughout the region across and between modes for people and freight.

GOAL 5 Develop regional land use and transportation coordination measures.

A basic goal for all transportation programs in
Virginia is the provision for the effective, safe,
and efficient movement of people and goods.


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## DEMOGRAPHIC AND LAND USE TRENDS

## Relationship of Land Use and Development to Transportation

Rural counties throughout the Commonwealth are working either to seek new economic growth and diversification or to balance growth, while striving to preserve the rural character of the landscape. Most of the land in the NRV counties is agricultural or forested use, with more diverse land uses in the towns and village centers. There is a broad spectrum in the amount of growth and land use changes occurring throughout the Commonwealth and in the NRVPDC, based particularly on proximity to urban areas. Many of the rural counties are seeking to direct any new growth towards existing towns or village centers, or service districts. As the population fluctuates, the needs of the communities (including education, health care, social services, employment, and transportation) fluctuate as well. Land use and development changes that particularly affect transportation in rural areas include, but are not limited to: school consolidation, loss or gain of a major employer, movement of younger sectors of the population to more urban areas, retirement community development, and growth of bedroom-community type developments for nearby urban areas.

Several factors have affected land use in the NRVPDC: population growth within and outside the region; the location of two statewide roadway corridors of significance which traverse the region (I-81 and US 460); and

> Agriculture and forestry, particularly the Jefferson
> National Forest, compromise a considerable portion of
> the current land use and this is not expected to change.

existing agricultural and forested lands. The population has increased the most in Floyd and Montgomery Counties, which has influenced land use changes in both jurisdictions. Population growth throughout the region is also forecasted to occur. Agriculture and forestry, particularly the Jefferson National Forest, comprise a considerable portion of the current land use and this is not expected to change. In addition, the topography in parts of the region limits land use and development to some extent. Therefore, it is foreseeable that land use could intensify where it already exists, putting pressure on the transportation network.
Both the I-81 and US 460 corridors feature rolling topography as the pass through the New River Valley. This creates numerous challenges (congestion and safety) for both freight and passenger traffic. Improvements are needed at substandard interchanges and intersections of other primary roadways. The rolling topography creates somewhat unpredictable driving behavior such as inconsistently fluctuating speeds. Land development along these corridors has also intensified and this affects the accessibility and capacity of local transportation networks. Current VDOT Dashboard v3.0 data shows that the total number of crash incidents have decreased but the severity of crashes continues to increase along these corridors.


Total Population Over Time






## Population Trends

The region has experienced moderate growth in population, by 8.2 percent between 1990 and 2000, and by 4.2 percent between 2000 and 2008. Most jurisdictions' populations are expected to continue to increase, particularly Montgomery County with the largest growth. By the year 2030, over 192,000 people are estimated to reside in the region, an increase of 12 percent from 2008.

Population trends have implications for the transportation network of any geographic area. Improvements to the network are needed because mobility and safety are affected by increases in population. In the case of the NRVPDC, increasing pressure on the network has already resulted in changes such as: additional capacity demands on the roadways and additional demands for public transportation, and traveldemand management services. The region has experienced growth in through-traffic, particularly along l-81. Development pressures from urban growth have also contributed to reductions in mobility. Finally, access from more rural areas of the region into population and employment centers has been affected by increased population and development.

## Disadvantaged groups

 studied includelow-income, minority, elderly, and people with disabilities,
 as defined by the US Census.

## Transportation Implications

US Census data from 2000 were reviewed at the block group level in order to provide enough detail to assess possible areas of service expansion for fixed-route and demand-responsive transit. Any segment of the population without a vehicle available, which can include the elderly, people with disabilities, and low-income groups, is more dependent on demand-responsive transit in a rural area than in an urban area. This is due to the availability of fixed transit routes in urban areas when compared to rural areas. The NRVPDC, in conjunction with the Virginia Department of Rail and Public Transportation's (DRPT) statewide effort, recently completed a Coordinated Human Service Mobility Plan (CHSM Plan) that assessed the mobility needs of these target populations. Certain needs are being identified throughout the state, such as limited demand-responsive transit service, limited fixed-route service, and the determination of a single point of contact for providers. These needs were also identified in the NRVPDC, along with funding constraints. In addition, the NRVPDC recently completed a regional Employment Mobility Study that identified local commuting patterns. The study proposed a series of improvements targeted towards providing transportation choices for existing commuters to major employment centers throughout the region.

## Demographic Trends

Disadvantaged population groups were studied in order to determine if there are any gaps or deficiencies in the transportation network that could affect these groups. The disadvantaged groups studied include low-income, minority, elderly, and people with disabilities, as defined by the US Census. In the 2000 US Census, none of the jurisdictions had a minority population percentage higher than that of the state (29.9 percent). The portion of the population with disabilities in Floyd, Giles, and Pulaski Counties is also above the state percentage of 18.1 percent. These counties also have elderly portions of the population in a higher proportion than the state in 2000 (11.2 percent). In 2000, all jurisdictions had low-income populations at or above the state percentage of 9.6 percent, particularly in the City of Radford and Montgomery County. The presence of college students at both Virginia Tech and Radford University in these jurisdictions clearly affects the low-income and elderly portions of the populations in these jurisdictions.

The portion of the population with disabilities
in Floyd, Giles and Pulaski Counties is above
the state percentage of 18.1 percent.

Source: US Census, 2000. Note: People with disabilities is based on the population over 5 years of age. Lowincome is a percentage of the population for whom poverty is determined.

Elderly, Disability, Low-Income, and Minority Populations in the New River Valley Planning District Commission



Both I-81 and US 460 are criitical corridors for truck freight movement within the region and throughout the Commonwealith.

## Goods Movement

Both I-81 and US 460 are critical corridors for truck freight movement within the region and throughout the Commonwealth. Norfolk Southern owns several rail lines which are part of the company's Crescent and Heartland Corridors. A recent study of freight generators by the NRVPDC for the Blacksburg-ChristiansburgMontgomery Area Metropolitan Planning Organization (BCM-MPO) addressed freight generators within the NRVPDC as well as the MPO. The study included a survey which gathered comments from seventeen freight generators. All of the generators used trucks to move freight, while 30 percent of those also use rail and/or air service. There is an intermodal transfer facility currently planned in eastern Montgomery County in Elliston as a part of the Heartland Corridor improvement plan. The completion of the facility would have effects on both the rail and roadway network within the NRVPDC and surrounding regions.

Truck freight primarily utilizes I-81, US 460, US 11 , US 221, VA 100, VA 8, VA 42 and VA 61. I-81 is one of the primary truck freight corridors on the eastern seaboard. A tiered Environmental Impact Statement (EIS) process has been used to address the needs and deficiencies of the l-81 corridor.


Bike Route 76, which runs from Astoria, Oregon to
Yorkłown, Virginia, passes through the New River Valley in the Town of Christiansburg, the City of Radford and rural areas of Montgomery and Pulaski Counfies.

## Bicycle and Pedestrian Facilities

Bicycle routes and pedestrian trails are currently located in Montgomery, Giles, and Pulaski Counties, the City of Radford, and the Towns of Blacksburg, Christiansburg, Pearisburg, Glen Lyn, Rich Creek, Dublin, and Pulaski. In 1976, Bike Route 76 was created, running from Astoria, Oregon to Yorktown, Virginia. It passes through the New River Valley in the Town of Christiansburg, the City of Radford and rural areas of Montgomery and Pulaski Counties. Giles County is home to fifty miles of the Appalachian Trail (AT), which stretches from Maine to Georgia and is a national scenic trail.

Nearly fourteen miles of the fifty-seven mile stretch of the New River Trail is located in Pulaski County, including four rehabilitated rail trestles and the Hiwassee River Bridge that spans the New River. The trail continues southwest into the Mount Rogers PDC. The Huckleberry Trail currently connects the Christiansburg Mall to the Down town Blacksburg area. The Radford Riverway is a trail that interconnects Bisset and Wildwood Parks to Radford University. Montgomery County offers a wide range of mountain biking trails for users with varying abilities. Pandapas Pond and Radford Mountain Biking trail system provide an interconnected system of multi-use trails for hikers and equestrians as well. The New River is also designated as a blueway that offers a variety of access points and facilities for users along the alignment. A relatively new trend, blueways (also known as water trails), are


## Travel Demand Management

Travel Demand Management (TDM) holds the potential for enhancing many elements of the transportation network, and along with other improvements, has been shown to greatly aid in reducing single-occupant vehicle trips. TDM measures include carpooling and vanpooling programs, expanded peak hour public transit, commuter buses, park and ride lots, as well as better coordination between modes to facilitate intermodal transfers. While low population densties in rural areas are not always conducive to major shifts to mass transit, some gains in mass transit ridership in the NRVPDC could be realized. Because of the concentration of work destinations in Blacksburg, Christiansburg, Radford, Salem, and Roanoke, enhanced public transportation can increase usage through expanded peak period service and commuter routes.

TDM measures in the region are coordinated by RIDE Solutions, which offers alternative transportadion information and assistance in the New River Valley and Roanoke Valley-Alleghany regions. It is a joint effort between the NRVPDC and the Roanoke Valley-Alleghany Regional Commission (RVARC), which match funding received from DRPT. RIDE Solutions provides commuter matching, a

guaranteed ride home program, vanpool assistance, and bicycle information and resources. The commuter matching includes an online interactive map with posts of potential carpools. There are two main clusters of commuters, in Roanoke and in Blacksburg/ Christiansburg, and there are riders from the surrounding regions as well. The Smart Way bus is another example of cooperation between the Roanoke and New River valleys to improve mobility. The service is operated by Valley Metro and operates between Roanoke and the Towns of Blacksburg and Christiansburg, with stops within the jurisdictions and at park and ride lots on I-81. There are five official and thirteen unofficial park and ride lots in the region. RIDE Solutions has recently completed a study of the park and ride lots in both the New River Valley and the Roanoke Valley.

There is currently no intercity rail or commuter rail service within the region. The nearest Amtrak services are provided in Danville or Lynchburg on the Crescent service and at Clifton Forge on the Cardinal/Hoosier State line (New York to Chicago). The TransDominion Express is a proposed rail service that would connect Bristol to Lynchburg and then divide with a line to Washington, DC and a line to Richmond. Stops in the region are proposed at Pulaski, Radford, and Christiansburg, on the mainline. The new regional service from Lynchburg north to Washington, DC and beyond implements part of the full service planned by TDX.

A new long-distance/commuter transit service began in late 2010. Megabus, a long-haul, fixed-route, private transit operator in the US and Canada began offering service three times daily from Christiansburg to Washington, DC or Knoxville. The stop is at the New River Valley Falling Branch Park and Ride Lot, at I-81 Exit 118.

## Land Use

The land use/land cover in the region varies widely from agricultural and rural residential in most of the region to urban residential, commercial, and industrial uses in the larger communities such as Blacksburg, Christiansburg, Pulaski, and Radford. The location of I-81 in the region has affected land uses along its corridor, particularly at access points (interchanges). Large parcels of the Jefferson National Forest account for a large portion of the land use throughout the region.

There is currently no intercity rail or commuter rail service within the region.

## Public Transportation

Public transportation services are provided by five service operators: Blacksburg Transit (BT), Pulaski Area Transit (PAT), Community Transit, Radford Transit, and Smart Way. Specific operational characteristics for the transit systems in the NRVPDC are located in the Technical Report. BT, PAT, Smart Way, and Radford Transit all offer fixed route service. BT, PAT, and Community Transit offer demand-responsive service.

# TRANSPORTATION SYSTEM PERFORMANCE \& RECOMMENDATIONS 



## Roadways

Roadway analysis focused on safety, geometry and structure, and congestion. Through the review of available data, input at public meetings, and information provided by local and regional officials, the NRVPDC, in conjunction with the local jurisdictions, prepared a list of priority locations. The priority study location list is based on roadway performance measures, safety considerations, or a combination of the two. Some priority locations had current improvement recommendations from recent studies and required no further analysis. Other priority locations
required a new or updated analysis. Within the NRVPDC, 50 priority locations were analyzed. Twenty-three of these locations were identified for assessment of congestion and safety concerns, while the remaining 27 were analyzed only for safety. The safety assessment locations were identified using safety and crash database information, and input from local officials and the public. A more detailed discussion of all deficiencies and recommendations with planninglevel cost estimates is located in the Technical Report.

Higher priorities were given to those roadways with potential geometric concerns that
also carried higher levels of trafific.

## Bridge Deficiency Summary

|  | Functionally Obsolete |  | Structural Deficiency |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | REPLACE | UPGRADE/REPAIR |  | REPLACE | UPGRADE/REPAIR |  |
| Bridge <br> Sufficiency Rating | $\mathbf{0 - 5 0}$ | $\mathbf{5 1 - 8 0}$ | $\mathbf{8 0 +}$ | $\mathbf{0 - 5 0}$ | $\mathbf{5 1 - 8 0}$ | $\mathbf{8 0 +}$ |
| Floyd | 0 | 18 | 12 | 8 | 6 | 0 |
| Giles | 5 | 17 | 13 | 17 | 7 | 0 |
| Montgomery* | 4 | 24 | 14 | 18 | 8 | 0 |
| Pulaski | 2 | 21 | 5 | 11 | 4 | 0 |
| City of Radford | 0 | 0 | 0 | 0 | 0 | 0 |
| NRVPDC Total | 11 | 80 | 44 | 54 | 25 | 0 |

*Outside of BCM-MPO


## 1. Safety

The roadway safety assessments identified deficiencies such as sight distance and visibility, access management, and inadequate signage. Recommendations were developed for both intersections and segments throughout the region. The recommendations are identified by jurisdiction. More detailed deficiency data appear in the Technical Report.
2. Operations and Maintenance
a. Geometric Weaknesses

Roadways and intersections with geometric deficiencies such as substandard lane width, shoulder width, or horizontal and vertical curvature, were identified from the VDOT Statewide Planning System (SPS) database. Higher priorities were given to those roadways with potential geometric concerns that also carried higher levels of traffic. Recommendations to address these needs are identified by jurisdiction. More detailed deficiency data appear in the Technical Report.

## b. Bridge Condition

Current bridge sufficiency ratings were reviewed and those structures with a rating of less than 50 were considered deficient and in need of structural upgrade or replacement. These appear in a separate table by jurisdiction.

## 3. Capacity

Level of service analyses were performed on all functionally classified roadways in the NRVPDC to assess current and projected year 2035 operations. In addition, analyses were conducted for intersections identified by NRVPDC and local governments as priority study locations. The recommendations to address the deficient locations are identified as operational or safety, by jurisdiction. Short-term, mid-term, and long-term recommendations were combined in the tables and maps.

Deficiencies in the forecast year were noted for the functionally classified roadway network. Forecasted deficiencies are applicable only to anticipated mobility performance measures, since it is not possible to forecast safety issues or geometric and structural deficiencies.


ROADWAY SYSTEM DEFICIENCIES
Intersection Deficiency
Operation DeficiencySafety DeficiencyBoth DeficienciesOther Deficiencies
Segment Deficiency

- Operation Deficiency Safety Deficiency
Geometric Deficiency
Both Operation and Safety Deficiency


## FLOYD COUNTY RECOMMENDATIONS

1) VA 681/US 221

Short-term maintenance; Mid-term add/improve turn lanes.
(2) VA 8/VA 750

Short term maintenance and add "Intersection Ahead" signage along VA 8; Mid-term add westbound left turn lane.

Short-term maintenance; Mid-term add turn lanes; Longterm reconstruct intersection to improve sight distance and address safety issues.
4) VA 8/VA 730 Short-term maintenance; add "Intersection Ahead" signage along VA 8.
5 VA 663 (Sowers Mill Rd.) from 0.1 Mi. E. of VA 617 (White Oak Grove Rd.) to 1.0 Mi. E. of VA 617 (White Oak Grove Rd.) Long-term reconstruct to rural roadway design standards.

6US 221 (Floyd Hwy. S.) from VA 787 to T-1004 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). VA 8 (Locust St.) from Floyd Northern Town Limit to VA 748 Long-term widen to urban four-lane roadway.US 221 (Floyd Hwy. North) from VA 615 N. to Roanoke Co. Line Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
9 VA 8 (Locust St./Webbs Mill Rd.) from VA 748 to Montgomery Co. Line Mid-term improve shoulders and add turn lanes at major intersections along corridor; Long-term widen to rural four-lane roadway with median.

10 VA 612 (Stonewall Rd.) from VA 660 to Montgomery Co. Line Long-term reconstruct road to address geometric deficiencies (10-foot lanes). VA 660 (Daniel's Run) from VA 612 to VA 610 Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
12 VA 610 (Daniel's Run) from VA 660 N. to VA 669 Long-term reconstruct road to address
geometric deficiencies
 ( 10 -foot lanes).

13 VA 610 (Daniel's Run) from VA 653 to VA 649
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

14 VA 653 (Shawsville Pike) from VA 610 to VA 808 S. Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
VA 654 (Kings Store Rd.) from VA 665 S. to VA 654
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
VA 661 (King Store Rd.) from US 221 to Route 665 E. Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

17VA 639 (River Ridge Rd.) from VA 640 E. to VA 664 Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
18 VA 664 (River Ridge Rd.) from VA 639 to US 221 Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
19 VA 681 (Franklin Pike) from Blue Ridge Pkwy. to Franklin Co. Line/VA 666 Short-term study potential safety improvements; Long-term reconstruct road to address geometric deficiencies ( 10 -foot lanes).

VA 681 (Franklin Pike) from VA 679 to Blue Ridge Pkwy. Short-term study potential safety improvements; Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
21 VA 679 (Poor Farm Rd.) from VA 681 to US 221 S. Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
22 VA 681 (Franklin Pike) from US 221 to VA 860 Short-term study potential safety improvements; Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
VA 615 (Christiansburg Pike) from US 221 E. to VA 693 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
24 VA 615 (Barberry Rd.) from VA 637 to T-798 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

AA 679 (Bethlehem Church Rd.) from VA 608 to VA 689 Long-term reconstruct road to address geometric deficiencies (10-foot lanes). Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
VA 719 (Laurel Branch Rd.) from 1.83 Mi. E. of VA 729 to US 221 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
VA 719 (Laurel Branch Rd.) from 0.89 Mi. E. of VA 729 to 1.59 Mi . E. of VA 729
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).VA 719 (Laurel Branch Rd.) from VA 729 to 0.89 Mi. E. of VA 729 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
VA 727 (Union School Rd.) from VA 799 to VA 772 Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
VA 787 (Indian Valley Rd.) from VA 740 to Montgomery Co. Line Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).VA 787 (Indian Valley Rd.) from VA 622 to VA 655 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
VA 622 (Indian Valley Post Office Rd.) from Carroll Co. Line to VA 787 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

A 740 (White Rock Rd.) from VA 750 to VA 814 Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

37 VA 8 (Parkway Ln.) from VA 709 (Morning Dew Ln.) to End of S-Curve Short-term straighten roadway.
VA 681 (Franklin Pike) from VA 860 to VA 679
Short-term study potential safety improvements; Long-term reconstruct road to address geometric deficiencies (including fullwidth lanes and shoulders).
39 US 221 (Floyd Hwy.) Bridge over Mira Fork Short-term replace bridge.

## FLOYD COUNTY RECOMMENDATIONS (continued)

40 US 221 (Floyd Hwy.) Bridge over Pine Creek Short-term replace bridge.
41 Roger Rd. from US 221 (Floyd Hwy.) to End of Rd. Mid-term pave roadway.
42 VA 221 (Main St.)/VA 8 (Locust St.) Short-term maintenance; Mid-term apply access management, improve pedestrian accommodations, remove diagonal parking on US 221, and perform study to identify a truck bypass route; Long-term add left-turn bays if warranted and construct truck bypass route. (Town of Floyd)

43 VA 8 (Locust St.) from US 221 to Northern City Limit - Town of Floyd Long-term widen to urban four-lane roadway. (Town of Floyd)

44 US 221 (Main St.) from VA T-1004 to VA 615 N. Long-term upgrade to three-lane roadway with median two way left-turn lane. (Town of Floyd)

5 VA T-615 (Barberry Rd.) from VA T-798 to US 221 W Long-term upgrade to rural three-lane roadway. (Town of Floyd)

## GILES COUNTY RECOMMENDATIONS

1 US 460 (Virginia Ave.)/VA 42 (Blue Grass Trail)/VA 605 (Spruce Run Rd.) Long-term add regional parking lot.VA 100 (Wysor Hwy.) from Pulaski Co. Line to VA 692 Mid-term improve roadway to address safety issues; Long-term widen to four-lane roadway with median.

3 US 219 (Federal St.) from Eastern Town Limit - Rich Creek to West Virginia State Line
Long-term widen to four-lane roadway with median.
4 US 61 (Wolf Creek Hwy.) from Bland Co. Line to 1.09 Mi . E. of VA 760 Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
5 US 100 (Wysor Hwy.) from Western City Limits - Pearisburg to Eastern City Limits - Narrows
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
VA 622 from 0.14 Mi . E. of US 100 to VA 708
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

VA 601 from US 42 to VA 685
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
18 VA 604 from VA 700 to VA 601
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

## VA 700 from VA 604 to VA 613

Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

A 623 from Northern City Limit - Pembroke to VA 624 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
VA 623 (Rye Hollow Rd.) from VA 622 E. to Southern City Limits Pembroke
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
23 VA 670 Bridge 1.0 Mi . S. VA 669 Short-term replace bridge.
(24) VA 673 Bridge over Wolf Creek Short-term replace bridge.
25 VA 100 from 8.2 Mi . S. of US 460 to Pulaski Co. Line Mid-term improve roadway to address safety issues.
26 US 460 (Virginia Ave.)/US 219 (Island St.)
Long-term prohibit left turns from Island St. and provide a median break north of the intersection to accommodate turning traffic. (Town of Rich Creek)

27 US 219 (Federal St.) from VA T-1021 (Old Virginia Ave.) to Eastern Town Limit - Rich Creek
Long-term widen to rural four-lane roadway with median. (Town of Rich Creek)
US 219 (Virginia Ave.) from US 219 (Federal St.) to VA T-1021 (Old Virginia Ave.)/US 219 (Federal St.)
Long-term widen to rural four-lane roadway with median. (Town of Rich Creek)

VA 622 (Broad Hollow Rd.) from 2.25 Mi. E. VA 708 to VA 623 W. Long-term reconstruct road to address geometric deficiencies ( 10 -foot lanes).
8 VA 622 from VA 699 to VA 730 E. Long-term reconstruct road to address geometric deficiencies ( 10 -foot lanes).VA 622 (Eggleston River Rd.) from VA 730 W. to VA 730 S. Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
VA 660 (Staffordsville Rd.) from VA 734 to US 100 Long-term reconstruct road to address geometric deficiencies ( 10 -foot lanes).

VA 653 (Sugar Run Rd.) from VA 653 to US 100 N. Long-term reconstruct road to address geometric deficiencies ( 10 -foot lanes).
VA 730 from VA 622 E. to US 460 Long-term reconstruct road to address geometric deficiencies (including fullwidth lanes and shoulders).
VA 682 from VA 625 to VA 730 Long-term reconstruct road to address geometric deficiencies ( 10 -foot lanes).
VA 625 from VA 605 to VA 682 Long-term reconstruct road address geometric deficiencies (10-foot lanes).
VA 605 from VA 625 to VA 693 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

A 605 from VA 693 to VA 802 Long-term reconstruct road to address geometric
deficiencies (11-foot lanes).US 219 (Federal St.) from US 460 to US 219 (Virginia Ave.) Long-term widen to rural four-lane roadway with median. (Town of Rich Creek)
30 US 460 (Virginia Ave.)/Thomas Rd.
Short-term add signage to alert drivers of pedestrians in intersection; Mid-term conduct intersection study to check traffic signal warrants based on pedestrian volume; Long-term widen median to allow two-stage left turns from Thomas Rd. (Town of Pearisburg)
(31) Oak Ln./Curve Rd.

Short-term conduct speed study; Mid-term conduct traffic calming study. (Town of Pearisburg)


## GILES COUNTY RECOMMENDATIONS (continued)

32
US 100 /flat curve near entrance of Town of Pearisburg Short-term consider reducing speed limit; Long-term improve drainage systems along roadway. (Town of Pearisburg)
Curve Rd. from Harvey St. to Pearl St.
Long-term upgrade roadway to urban two-lane roadway design standards. (Town of Pearisburg)
34 Fort Branch Rd. from Henson Ave. to US 460 (Wenonah Ave.) Short-term install stop bar on Henson Ave. and northbound Fort Branch Rd. at US 460 and install center line and edge of pavement markings; Longterm upgrade roadway to urban design standards. (Town of Pearisburg)
35 US 460 (Wenonah Ave.)/VA 674 (Woodland Dr. near Wal-Mart) Mid-term improve northeast corner of intersection to at least 60 foot radius to accommodate truck traffic. (Town of Pearisburg)
36 US 100 from VA 640 E. to Western City Limits - Pearisburg Long-term reconstruct road to address geometric deficiencies (11-foot lanes). (Town of Pearisburg)
Henson Ave. from South Main St. to Fort Branch Rd. Mid-term widen to four-lane roadway. (Town of Pearisburg)
Curve Rd. from US 460 BUS (Wenonah Ave.) to Harvey St. Long-term reconstruct to urban two-lane standards. (Town of Pearisburg) Curve Rd. from Pearl St. to VA 1235 Long-term reconstruct to urban two-lane standards. (Town of Pearisburg) Horsley Dr. from Current terminus to Curve Rd. Long-term extend Horsley Dr. (Town of Pearisburg)
41 Hale St. from US 460 Business (Wenonah Ave.) to Valley View Dr. Mid-term reconstruct roadway to eliminate blind spots. (Town of Pearisburg)
42 Gale Rd. from US 460 Business (Wenonah Ave.) to Existing Terminus Near Mason Court Dr.
Long-term reconstruct roadway to eliminate blind spots. (Town of Pearisburg)
43 Gale Rd. from existing terminus near Mason Court Dr. to Woodland Dr. Long-term extend roadway. (Town of Pearisburg)
44 VA 100 (Main St.)/US 460 Business (Wenonah Ave.) Long-term remove island and add raised medians. (Town of Pearisburg)

## MONTGOMERY COUNTY RECOMMENDATIONS

I-81/Exit 109, US 177 (Tyler Rd.)Long-term expand interchange to address capacity deficiencies and construct a park-and-ride facility in the vicinity.
US 177/VA 600 (Tyler Rd.)/VA 658 (Meadow Creek Rd.)
Mid-term construct roundabout and incorporate improvements at adjacent l-81 interchange intersection.

VA 787 (Indian Valley Rd.)/VA 693 (Childress Rd.) Short-term maintenance and install "Intersection Ahead" warning signs along VA 787; Mid-term add turns lanes.

460 (Pandapas Pond Rd.)/VA 621 (Craig Creek Rd.) Short-term maintenance; Mid-term add turn lanes; Long-term restrict left turns from Craig Creek Rd. and reroute turn movements to medians
US 11/US 460 (Roanoke Rd.)/VA 637 (Alleghany Spring Rd.) Short-term maintenance and lengthen southbound left turn lane: Mid-term add and lengthen turn lanes.
(6) VA 8/VA 658

Short-term conduct warrant study for signalization and apply access management; Mid-term reconfigure and realign VA 670, VA 658 and VA 8 to address safety issues.

Long-term upgrade to provide two lanes of traffic through railroad overpass.

8 Webb's Mill/bridge over Little River
Short-term add warning signage to watch for turning vehicles, install chevrons, and reduce speed limit in both directions.

9 VA 603 from US 11 to I-81 Short-term reconstruct to two-lane standards including full shoulders.
10 VA 615 (Pilot Rd.)/VA 617 (Brush Creek Rd.) Long-term continue to monitor for potential improvements.
11 VA 8 (Webbs Mill Rd.) from Floyd Co. Line to VA 616 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

VA 100 (Main St.)/Mountain Lake Ave.
Long-term restripe center turn lane and add signage. (Town of Pearisburg)
Curve Rd. from VA 1235 to Northern City Limit Pearisburg
Long-term reconstruct to urban two-lane standards. (Town of Pearisburg)
US 460 (Wenonah Ave.) from Old Eastern City Limit Pearisburg to Eastern City Limit - Pearisburg (Woodland Dr.)
Mid-term reconstruct to urban four-lane standards including curb and gutter and sidewalk. (Town of Pearisburg)

US 460 (Virginia Ave.)/VA T-623 (Cascade Dr.) Short-term maintenance; Mid-term conduct intersection study to identify safety improvements; Long-term consider signalization following a complete warrant study. (Town of Pembroke)
T-623 from VA 1404 W. to Northern City Limit Pembroke Long-term upgrade to urban two-lane roadway. (Town of Pembroke)
-1404 from VA 623 W. to VA 623 E. Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Town of Pembroke)

51 T-1404 from Southern City Limit - Pembroke to VA 1040 E. ong-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Town of Pembroke)
T-626 from US 460 W. to VA 623 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Town of Pembroke)
53 VA 61 from Bridge St. to Bridge St. Mid-term reconstruct roadway and replace bridge over Wolf Creek. (Town of Narrows)
54 VA 61 from Southeast End of New River Bridge to US 460 Short-term replace bridge and upgrade tie-in from new bridge to US 460. (Town of Narrows)


## MONTGOMERY COUNTY RECOMMENDATIONS (continued)

SMART Hwy. Ext. (PROPOSED) from Terminus of existing SMART Hwy., E. of VA 723 to l-81
Long-term widen to rural four-lane roadway with median.
13 US 11 (Roanoke St.) from Eastern City Limit - Christiansburg to 0.51 Mi. E. of VA 641
Long-term widen to rural four-lane roadway with median.
14 SMART Hwy. from 1.15 Mi . southeast of Blacksburg City Limit to 1.7 Mi . southeast of Blacksburg City Limit (Dead End) Long-term widen to rural four-lane roadway with median.

15 VA 723 (Ellett Rd.) from VA 644 to VA 603 N.
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
16 VA 785 from VA 726 to Roanoke Co. Line Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
17 VA 622 from VA 629 to Roanoke Co. Line Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
18 VA 629 from VA 603 to VA 622
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
19 VA 603 from VA 723 N. to I-81 North Ramp Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

20 VA 652 from VA 625 E. to VA 655
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
21 VA 600 (Tyler Rd.) from New River Valley Medical Center Entrance to US 177 S./I-81/Southern Limit of MPO

Mid-term widen to rural four-lane divided roadway with bike lanes and turn lanes at VA 627 and NRV Medical Center
22 VA 600 (Tyler Rd.) from VA 693 N. to New River Valley Medical Center Entrance
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

23 VA 658 (Meadow Creek) from VA 600 to VA 8 ong-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

24 VA 693 (Graysontown Rd.) from VA 613 E (Blue Spring Rd.) to VA 658 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
25 VA 613 (Graysontown Rd.) from VA 693 to VA 613 E Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
26 VA 787 (Indian Valley Rd.) from Floyd Co. Line/VA 600 to VA 693 Long-term reconstruct road to address geometric deficiencies (11-foot lanes)
27 VA 669 (Indian Valley Rd.) from VA 679 to VA 615 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
28 VA 615 (Pilot Rd.) from VA 612 to VA 675 N Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

29 VA 615 (Old Pike) from Floyd Co. Line to VA 612 Long-term reconstruct road to address geometric deficiencies including full-width lanes and shoulders).
30 VA 610 (High Rock Hill Rd.) from VA 615 to VA 729 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
31 VA 612 (High Rock Hill Rd.) from VA 729 to Floyd Co. Line Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
32 VA 637 (Alleghany Springs Rd.) from VA 771 N. to VA 609 S. Long-term reconstruct road to address geometric deficiencies 11-foot lanes).

Pulaski Co. Line to VA 177 ong-term reconstruct to rural six-lane roadway with median (project in environmental stage). 1 from Eastern City Limit - Christiansburg to 0.68 Mi . N. of Christiansburg ong-term reconstruct shoulders to standards, add truck climbing lanes in southbound direction, and widen to rural eight-lane roadway with median (project in environmental stage).
-81 from 0.68 Mi. N. of Christiansburg to VA 603 ong-term reconstruct to rural eight-lane roadway with median project in environmental stage).

I-81 from VA 603 to Roanoke Co. Line Long-term reconstruct to rural six-lane roadway with median (project in environmental stage).I-81/Exit 128
Long-term reconstruct interchange (project in environmental stage).I-81/exit 105 Long-term reconstruct interchange (project in environmental stage).
39 VA 603 Bridge over Craig Creek Short-term replace bridge.
40 VA 613 Bridge over Little Rive Short-term replace bridge.

41 Big Vein Rd. from VA 652 to End of Rd. Short-term upgrade roadway to design standards for inclusion in VDOT road system.

42 Cornbread Rd. from VA 665 to End of Rd. Short-term upgrade roadway to design standards for inclusion in VDOT road system. Regency Rd. from VA 753 to End of Rd. Short-term upgrade roadway to design standards for inclusion in VDOT road system.
44 Sunflower Rd. from VA 729 to End of Rd. Short-term upgrade roadway to design standards for inclusion in VDOT road system.Brake Rd. from VA 831 to End of Rd.
Short-term upgrade roadway to design standards for inclusion in VDOT road system.

46 Walthall St. from VA 740 to End of Rd.
Short-term upgrade roadway to design standards for inclusion in VDOT road system.

47 Cornstalk Rd. from VA 616 to End of Rd. Short-term upgrade roadway to design standards for inclusion in VDOT road system.

48 Flick Dr., Extension of VA 816 from VA 637 to End State Maintenance of VA 816
Short-term upgrade roadway to design standards for inclusion in VDOT road system.
VA 639 (Mount Pleasant Rd.) from 0.05 Mi. W. of VA 722 to 1.24 Mi. E. of VA 722
Short-term upgrade roadway to design standards for inclusion in VDOT road system.
50 VA 606 (Sidney Church Rd.) from VA 669 to VA 673 Short-term upgrade roadway to design standards for inclusion in VDOT road system.
51 VA 600 (Piney Woods Rd.) from VA 787 to VA 672
Short-term upgrade roadway to design standards for inclusion in VDOT road system.
52 VA 639 (Mount Pleasant Rd.) Bridge over Elliot Creek Short-term upgrade bridge to design standards.

53 VA 621 (Craig Creek Rd.) from 7.5 Mi . E. of US 460 to Craig Co. Line Short-term upgrade roadway to design standards for inclusion in VDOT road system

54 VA 639 (Mount Pleasant Rd.) from 0.05 Mi. W. of VA 722 to 0.07 Mi. E. of VA 742
Short-term upgrade roadway to design standards for inclusion in VDOT road system.

## PULASKI COUNTY RECOMMENDATIONS

US 11 (Lee Hwy.)/VA 747, near Old Route 11 Speedway Short-term conduct traffic study to identify intersection constraints; Mid-term reconfigure intersection; Long-term consolidate/reconstruct intersection.
(2) I-81/Exit 98, VA 100 (Cleburne Blvd.)

Short-term maintenance; Mid-term add separate right-turn lane on northbound I-81 exit ramp; Long-term reconstruct interchange (project in environmental stage)
3 VA 611 (Newbern Rd.)/VA 643 (Cougar Trail Rd.)
Short-term conduct detailed traffic study; Mid-term provide sufficient capacity to accommodate vehicular activity.
4) I-81/Exit 94, Count Pulaski Rd.

Long-term reconstruct interchange (project in environmental stage).
5 US 11 (Lee Hwy.)/VA 617 (Ruebush Rd.)
Short-term maintenance; Long-term conduct traffic study to identify intersection constraints and potential for signalization
(6) I-81/Exit 101, VA 660 (State Park Rd.)

Long-term reconstruct interchange (project in environmental stage).
7 Julia Simpkins Rd. (bridge) over Max Creek Short-term maintenance; Long-term reconstruct approaches and widen bridge.
8 US 11 (Lee Hwy.)/VA 624 (Hickman Cemetery Rd./New River Rd.) Short-term install stop bars on both side street approaches; Mid-term lengthen left turn lanes on both eastbound and westbound approaches.
(9) I-81/Exit 92, VA 658 (Greenbrier Rd.) Long-term improve interchange (project in environmental stage).
(10) I-81/Exit 89, US 11 (Lee Hwy.)/VA 100 (Wysor Rd.) Long-term improve interchange (project in environmental stage).
(11) VA 600 (Belspring Rd.)/VA 627 (Highland Rd.) Short-term maintenance; Mid-term add turn lanes and "Intersection Ahead" signage on VA 600; Long-term reconstruct intersection to address geometric and safety issues.
12 US 11 (Lee Hwy.)/VA 643 (Thomspring Rd.)
Short-term install stop bar on VA 643; Long-term reconstruct southbound US 11 to match northbound approach grade and alignment.

VA 600 (Belspring Rd.) from VA 114 to VA 779
Long-term reconstruct road to address geometric deficiencies (including bike lanes and full-width shoulders). (Fairlawn Area)
VA 600 (Belspring Rd.) from VA 779 to VA 623
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).F-047 (Possum Hollow Rd.) from VA 99/I-81 to VA 611 Long-term widen to rural four-lane roadway with median. VA 99 (Main St./Count Pulaski Dr.) from Eastern Limit - Town of Pulaski to I-81 Long-term widen to urban four-lane roadway with median.

Long-term widen to rural four-lane roadway with median
VA 643 (Cougar Trail Rd.) from VA 683 to US 11 E. Long-term widen to rural four-lane roadway with median

VA 623 (Ammunition Plant) from VA 600 (Belspring Rd.) to 1.39 Mi. E. of VA 600 Deficiency with low priority; Continue to monitor for potential improvements.
I-81 from Wythe Co. Line to Montgomery Co. Line Long-term reconstruc t to rural six-lane roadway with median (project in environmental stage).
VA 693 (Julia Simpkins) from VA 761 to VA 777
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
VA 654 (Old Baltimore Rd.) from VA 100 to VA 658
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

658 (Delton Rd.) from VA 651 to VA 651
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
VA 693 (Lead Mine Rd.) from VA 672 S. to VA 669 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

A 627 (Highland Rd.)/VA 625 (Morgan Farm Rd.) Short-term install stop bar on VA 625; Long-term reconstruct intersection to improve horizontal alignment of VA 627 and improve approach grade of VA 625.
US 11 (Broad St./Lee Hwy.) from Dublin Eastern Town Limit to VA 747
Long-term widen to rural four-lane roadway with median.
VA 658 (Delton Rd.) from VA 654 (Old Baltimore Rd.) to river
Short-term add warning signage and conduct maintenance; Long-term reconstruct to rural roadway design standards

A 693 (Julia Simpkins Rd.) Horizontal Curvature from VA 777 (Clark Rd.) to VA 675 (Little Irish Rd.)
Mid-term add pavement markings, channelization, and edge of pavement treatments; Long-term reconstruct to rural roadway design standards.
17 US 11 (Lee Hwy.)/OId Route 11 Speedway Entrance Mid-term study extension of turn lanes or change in traffic control; Long-term consolidate intersections and conduct study for potential signalization or

VA 611 (Newbern Rd.)/VA F-047 (Old VA 100)
Short-term move stop bar on southbound Old VA 100 back to increase turn radius for trucks; Mid-term add eastbound left turn lane.

VA 100 (Cleburne Blva.)/VA 683 (Alexander Rd.) Deficiency with low priority; Continue to monitor for potential improvements
VA 100 (Cleburne Blvd.)/VA 682 (Newburn Rd.)/VA 1097 (Town Center Dr.)
Deficiency with low priority; Continue to monitor for potential improvements.

VA 114 (Peppers Ferry Rd.)/VA 600 (Belspring Rd.)
Long-term upgrade intersection, including signalization,

VA 114 (Peppers Ferry Rd.)/VA 679 (Viscoe Rd.)
Deficiency with low priority; Continue to monitor for 3

US 11 (Lee Hwy.) from VA 747 to 0.19 Mi. E. of VA 747 Long-term widen to rural four-lane roadway with median.


## PULASKI COUNTY RECOMMENDATIONS (continued)

VA 693 (Lead Mine Rd.) from VA 619 to VA 665
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
37 VA 605 (Little River Dam Rd.) from VA 693 to VA 619 E. Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
VA 605 (Little River Dam Rd.) from VA 619 E. to VA 690 N.
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
39 VA 664 ( Graysontown Rd.) from VA 613 to VA 605 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
40 VA 663 (Owens Rd.) from VA 605 to VA 757 Long-term reconstruct road to address geometric deficiencies (11-foot lanes).
41 VA 710 (Mount Olivet Rd.) from VA 745 to West City Limit - Pulaski Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
42 VA 636 from North City Limit - Pulaski to VA 639 S. Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
43 VA 626 (Hazel Hollow Rd.) from VA 611 to VA 798 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
44 VA 624 from 0.84 Mi . N. of US 11 to VA 600 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
45 VA 627 (Highland Rd.) from VA 617 E. to VA 600 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
46 VA 606 (Parrott Mountain Rd.) from VA 830 to VA 600 Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
47 VA 617 from VA 747 to US 11 (Lee Hwy.) Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

48 VA 747 (Old Route 11) from VA 633 to US 11 (Lee Hwy.) Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
49 VA 658 (Delton Rd.) from VA 609 to VA 654 Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
VA 674 (Pond Lick Hollow road) Bridge at intersection of VA 640 Short-term replace bridge.
51 VA 693 (Julia Simpkins Rd.) Bridge over Big Reed Island Creek Short-term replace bridge.
52 VA 100 Bridge Over Clebourne Blva. Short-term replace bridge.
53 VA 100 Bridge Over Clebourne Blva. Short-term replace bridge.
(54) I-81 Bridges over New River Short-term replace bridges.
55 VA 643 (Cougar Trail Rd.)/VA 683 (Alexander Rd.)
Short-term perform study to identify improvements; Mid to Long-term construct identified improvements.
56 VA 747 (Old Route 11)/VA 1030 (Bagging Plant Rd.)
Short-term perform study to identify improvements; Mid to Long-term construct identified improvements.
57 VA 114 (Peppers Ferry Blvd.)/VA 695 (Old Peppers Ferry Rd.) Short-term maintenance; Mid-term apply access management and add eastbound right-turn lane; Long-term close access to VA 114 from both ends of loop and consolidate traffic to new signalized intersection of extended Oxford Ave. with VA 114. (Fairlawn Area)
58 US 11 (Lee Hwy.)/VA 630 (Round House St.)
Mid-term convert VA 630 to right-in/right-out operation; Long-term realign VA 630 to tie in perpendicular to US 11 and eliminate crossover at location of old intersection. (Fairlawn Area)
59 US 11 (Lee Hwy.)/VA 114 (Peppers Ferry Blva.)
Short-term repaint puppy tracks and provide left-turn channelization on southbound approach; Mid-term allow all turns to be controlled by signal and add double lefts on southbound US 11; Long-term incorporate additional improvements from long range plan for Peppers Ferry. (Fairlawn Area)
60 VA 114 (Peppers Ferry Blvd.)/VA 630 (Round House St.)
Mid-term conduct signal warrant study; Long-term upgrade intersection to design standards as part of long range plan for Peppers Ferry.
(Fairlawn Area)

VA 114 (Peppers Ferry Blvd.) from US 11 (Lee Hwy.) to 0.32 Mi . E. of VA 600 (Belspring Rd.)
Mid-term provide right-turn bays and widen to rural six-lane divided with sidewalks/bike lanes; Long-term continue to monitor and incorporate roadway into long range plan for Peppers Ferry. (Fairlawn Area)
US 11 (Lee Hwy.) from VA 114 (Peppers Ferry Blvd.) to Radford City Limit/New Memorial Bridge
Mid-term widen to rural six-lane divided roadway with sidewalk and bike lanes; Long-term upgrade to urban six-lane roadway with median. (Fairlawn Area)
VA 626 (Hazel Hollow Rd.) from VA 798 (Falling Branch Rd.) to US 11 (Lee Hwy.)
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Fairlawn Area) (Hazel Hollow Rd.)
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Fairlawn Area)
VA 624 (New River Rd.) from VA 798 (Falling Branch Rd.) to US 11 (Lee Hwy.)
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Fairlawn Area)
VA 624 (Hickman Cemetery Rd.) from US 11 (Lee Hwy.) to 0.40 Mi . N. of US 11 (Lee Hwy.)
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders), including realignment with New River Rd. (Fairlawn Area)
US 11 (Lee Hwy.)/VA 600 (Belspring Rd.)
Short-term prohibit VA 600 southbound traffic from turning onto US 11; Mid-term relocate intersection to allow for perpendicular alignment with US 11 and reconstruct to design standards as part of long range plan for Peppers Ferry. (Fairlawn Area)
68 VA 100 (Cleburne Blvd.) from Southern City Limit - Dublin to Northern City Limit - Dublin
Long-term upgrade VA 11 to urban design standards and conduct access management study. (Town of Dublin)

US 11 (Broad St.)/VA 746 (Giles Ave.)
Deficiency with low priority; Continue to monitor for potential improvements. (Town of Dublin)
US 11 (Broad St.) from T-746 to Eastern Town Limit - Dublin Long-term widen to urban four-lane roadway with median. (Town of Dublin)
VA 747 (Old Route 11) from VA 746 to VA 633
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Town of Dublin)
US 11 (Washington Ave.)/US 11 (5th St.)
Short-term maintenance and conduct warrant study for signalization or a roundabout; Mid-term construct roundabout or add signal. (Town of Pulaski)
Route 611 (Bob White Blvd.) from VA 99 to Warden Spring Rd. Short-term widen to urban four-lane divided roadway standards including bike lanes. (Town of Pulaski)
Route 611 (Bob White Blvd.) from Warden Spring Rd. to Northern City Limit - Town of Pulaski
Mid-term widen to urban four-lane divided roadway standards including bike lanes. (Town of Pulaski)
VA 710 (Mount Olivet Rd.) from Western City Limit - Pulaski to Magazine Rd.
Long-term reconstruct to urban two-lane standards including shared bike lanes. (Town of Pulaski)
Dora Hwy. from US 11 (Washington Ave.) to Eastern VA 99 (East Main St.)/Dora Hwy. Connector
Long-term reconstruct to urban two-lane standards including shared bike lanes. (Town of Pulaski)
77 Peppers Ferry Rd. from Memorial Dr. to US 11 (Lee Hwy.)
Long-term reconstruct to urban two-lane. (Town of Pulaski)
Alum Spring Rd. from US 11 (Lee Hwy.) to Northern City Limit Pulaski
Long-term reconstruct to urban two-lane standards including bike lanes. (Town of Pulaski)
West Main St. from Altoona Rd. to Mount Olivet Rd.
Long-term reconstruct to urban two-lane standards including shared bike lanes. (Town of Pulaski)
Commerce St. from Howard Rd. to US 11 (Washington Ave) Long-term reconstruct to urban two-lane standards including shared bike lanes. (Town of Pulaski)
Edge Hill Dr. from VA 99 (East Main St.) to US 11 (Lee Hwy.)
Long-term reconstruct to urban two-lane standards and add to thoroughfare system. (Town of Pulaski)

PULASKI COUNTY RECOMMENDATIONS (continued)Peppers Ferry Rd. from US 11 (Lee Hwy.) to Memorial Dr. Long-term reconstruct to urban two-lane roadway. (Town of Pulaski)
83 Western Connector from VA 99 (East Main St.) to Dora Hwy.
Long-term construct new two-lane connector including bike lanes and bridge over Peak Creek and railway. (Town of Pulaski)
84 Eastern Connector from VA 99 (East Main St.) to Dora Hwy Long-term construct new two-lane connector including bike lanes and bridge over Peak Creek. (Town of Pulaski)
85 Pulaski Industrial Park access road from Wurno Rd. to S. of Wurno Rd. Long-term construct new roadway. (Town of Pulaski)

86 New connector road from New Pulaski Industrial Park to VA 99 (East Main St.) Long-term construct new roadway including bridge over Thorn Spring Branch. (Town of Pulaski)
87 US 11 (Lee Hwy.)/1st St.
Short-term signalize intersection. (Town of Pulaski)Mid-term signalize intersection. (Town of Pulaski)US 11 (Washington Ave.)/Pierce Ave.
Mid-term improve intersection. (Town of Pulaski)

90 Memorial Dr./Peppers Ferry Rd.
Short-term signalize intersection. (Town of Pulaski)US 11 (Lee Hwy.)/Hospital Entrance
Short-term channelize intersection to permit right turn egress only. (Town of Pulaski)
92) VA 611 (Bob White Blvd.)/Wurno Rd. Short-term signalize intersection. (Town of Pulaski)US 11 (Washington Ave.) from Southern City Limit - Pulaski to 6th St. Mid-term reconstruct to urban two-lane roadway including bike lanes. (Town of Pulaski)
94 US 11 (Lee Hwy.) from Northern City Limit - Pulaski to Memorial Dr Long-term reconstruct to urban four-lane divided roadway including sidewalks and bike lanes. (Town of Pulaski)

95 VA 99 (East Main St.) from Old Eastern Corporate Limits to New Eastern Corporate Limits ( 1.300 Mi .) Mid-term widen to four-lane standards. (Town of Pulaski)

96 Valley Rd. from Southern City Limit - Pulaski to Commerce Rd. Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Town of Pulaski)

## CITY OF RADFORD RECOMMENDATIONS

1) VA 177 (Tyler Road) at Rock Road

Short-term repaint faded pavement markings; Mid-term upgrade signal; Long-term continue to monitor for potential improvements.
2 US 11 (Main Street) from Memorial Bridge to VA 177 (Tyler Avenue) Long-term continue to monitor for potential improvements.
3 Park Road from Rock Road to 2nd Avenue Long-term reconstruct to urban one-lane and two-lane roadways including sidewalk and bike lanes and straighten horizontal alignment.
4 Rock Road from Wadsworth Street to Park Road
Long-term widen to urban four-lane roadway including sidewalk and bike lanes.

5 Auburn Avenue from VA 177 (Tyler Ave) to Eastern City Limit - Radford Short-term reconstruct to urban two-lane roadway including sidewalk, and bike lanes.
6 US 11 (East Main Street) from Tyler Avenue to East City Limit - Radford Mid-term reconstruct to urban two-lane roadway including sidewalk and bike lanes.
7 Rock Road from Park Road to VA 177 (Tyler Avenue)
Long-term widen to urban four-lane roadway including sidewalk and bike lanes.
8 Eighth Street from Pendleton Street to Wadsworth Street
Long-term reconstruct roadway to include parking, sidewalks and bicycle lanes.
9 Seventh Street from Forest Avenue to Pendleton Street
Long-term reconstruct roadway to include parking, sidewalks and bicycle lanes.
10 Forest Avenue from VA 232 (West Main Street) to Rock Road
Long-term reconstruct to urban two-lane roadway including sidewalk and bike lanes.

VA 232 (West Main Street) from Rock Road West to Highland Avenue Long-term reconstruct to add sidewalk on east side.
12 Wadsworth Street from Rock Road West to Sundell Drive Short-term reconstruct to urban two-lane roadway including sidewalk and bike lanes.
13 2nd Avenue - Park Road Improvement from Walker Street to George Street
Reconstruct to two-lane roadway with bike/pedestrian walkways, improved drainage, lighting, traffic Control (Roundabout)
14 Tyler-East Main Street Connector from VA 177 (Tyler Avenue) to US 11 (East Main Street)
Short-term construct new two-lane facility with bike lanes and sidewalks. (Alignment Study Completed)
15 Park-Tyler Connector from Park Road to VA 177 (Tyler Avenue) Long-term construct new urban two-lane roadway including sidewalks and bike lanes.
16 Eighth Street from Wadsworth Street to Walker Street
Long-term reconstruct to urban two-lane roadway including accommodation for on-street parking.
17 Berkley Williams Drive extension from terminus of Berkley Williams Drive to Staples Street extension
Long-term extend Berkley Williams Drive, including new tunnel under NS Railroad bridge to connect with East Main St. at Staples St.


RADFORD CITY DEFICIENCIES
Intersection Deficiency
Operation Deficiency
Safety Deficiency
Segment Deficiency
Safety Deficiency $\square$ Safety Deficiency
Both Deficiencies $\quad$ Geometric Deficiency
Other Deficiency
Other Deficiency $\square$ Both Operation \& Safety Deficiency

## Public Transportation

Individual public transit providers in the region all have plans for expansion that were identified during interviews with the NRVPDC in 2008. In general, the planning horizon is of shorter duration than the forecast year used for roadway analysis. Blacksburg Transit recently expanded additional services into Christiansburg. The future plans for Pulaski Area Transit are to extend the on-demand service beyond the Town of Pulaski and into other areas of Pulaski County, particularly eastward into the Town of Dublin and the community of Fairlawn. Radford University and the Cityof Radford recently entered into a Memorandum of Understanding for provision of transit service. New fixed route service in Radford started on August 8, 2011. Radford Transit offers a new fixed-route service within the city and also provides a new route via Peppers Ferry Road (VA 114). The Peppers Ferry Route provides a link between the Radford, Christiansburg, and Blacksburg Areas. In addition, mini-hubs that provide transit connections and amenities are being considered in the region.

The review of disadvantaged population groups determined that the three transit systems are providing access to low-income, elderly, and disabled populations within their respective jurisdictions and expansion of services would further increase access. This does not apply to either Floyd County or Giles County which currently have no public transit service. However, both Floyd and Giles County have been identified in the 2035 Surface Transportation Plan as communities that have the characteristics to sustain transit services. A regional mobility manager that could assign trips throughout the region to available providers could greatly improve mobility and access to the transportation disadvantaged groups in the region.

> Individual public transit providers in the region all have plans for expansion that were identified during interviews with the NRVPDC in 2008.


## Goods Movement

The transfer of goods shipments from roadway to rail has the potential to strengthen rail freight services offered. The implementation of multiple transfer centers may also reduce the number of long-haul tractor -trailers trips, and preserve or possibly enhance roadway levels of service. This transfer is possible when rail sidings are available both at the origin and destination of the goods. Even though several highly-traveled freight rail lines traverse the region, truck freight movements are expected to remain important. The key corridors will continue to include the major arterials and collectors in the region: $1-81$, US 460, US 221, US 11 , and VA 8. There are currently improvements proposed for Norfolk Southern's Heartland and Crescent rail corridors, that intersect in the region. The Heartland Corridor improvements are expected to double the freight capacity on the line that parallels US 460 by making improvements to accommodate doublestacked containers. Similar improvements are also expected on the Crescent Corridor, which parallels I-81 through the region, and is expected to shift a portion of truck shipments from l-81 to this rail corridor.

## Airports

The two general aviation airports in the NRVPDC will continue to be important to the transportation network in the future. The Virginia Air Transportation System Plan Update forecasts future operations (2020) and aircraft based at the airports. These forecasts project a growth of 0.5 percent of based aircraft at the Virginia Tech-Montgomery Executive Airport and no growth at the New River Valley Airport (VADOA, 2003). The Master Plan update for the Virginia Tech-Montgomery Executive Airport forecasts annual growth rates of 2.5 percent (Virginia Tech, 2008).

Regional Public Transportation Deficiencies and Recommendations

| Jurisdiction | Identified Need | Recommendation |
| :--- | :--- | :--- |
| Blacksburg, Christiansburg, <br> Pulaski County | Regional transit connections | Expand connections between MPO and |
| Pulaski County |  |  |



## Land Use and Future Growth

Potential future growth areas were identified by the TTAC in conjunction with the individual jurisdictions (see adjacent map). These areas were then used in the analysis of individual roadways to produce new traffic forecasts. The roadway analyses were then used to prepare recommendations. The land uses in the region were assumed to not change dramatically. All of the jurisdictions have goals and strategies within their respective comprehensive plans to focus growth where there are existing residential, commercial, or industrial uses. Directed growth is a strategy being used in order to provide needed services to residents and to preserve rural settings and existing green space within the jurisdictions.

## Bicycle and Pedestrian Facilities

A wide range of facilities already exist in the region and additional planning for new facilities has been ongoing for the last 20 years. The Bikeway-Walkway-Blueway Plan (BWBP) for the New River Valley serves as the foundation for local community planning. The BWBP is a compilation of local plans and provides recommendations for connectivity between different localities. The BWBP also encourages alternative transportation development in jurisdictions that do not presently have formal plans. The Towns of Blacksburg and Christiansburg, Counties of Montgomery and Pulaski and the City of Radford have current plans for bikeway and walkway development. Other towns and counties within the region that have not articulated alternative transportation in their comprehensive plans share the aspirations of those jurisdictions with existing facilities.

Specific improvements already identified in the region include: a portion of the Appalachian Trail in Giles County that is anticipated to be used for the proposed Great Eastern Trail and provide a spur into Bluestone State Park, WV; extension of the New River Trail to connect with the Radford Riverway and the Huckleberry Trail; extensions of the Huckleberry Trail to the Pandapas Pond Trail network in Jefferson National Forest and to downtown Christiansburg. Virginia Tech is also planning Hokie Trails to interconnect the university bicycle and pedestrian system to the Huckleberry Trail. Long term goals for the Huckleberry Trail include connections to the Radford Riverway and New River Trail to the west and the Roanoke Greenway to the east. Future plans for the Riverway include connections to the New River Trail to the west and the Huckleberry Trail to the northeast.

## Travel Demand Management

In rural areas, low residential densities and dispersed work destinations are typically not conducive to public transportation use. Gains in usage of transit and commuter services are possible around small communities by providing public transportation service that connects residential areas with employment centers. A decrease in single-occupant vehicle trips is possible in and around the towns and on heavily traveled commuter routes, such as I-81, US 460, US 221, and VA 8, through the continued use of the RIDE Solutions services. The potential positive impacts for the capacity of the existing transportation network, as well as cost savings for the weekday commuter, are of considerable value.

The services of Blacksburg Transit, Tartan Transit, Pulaski Area Transit, Community Transit, and RIDE Solutions will continue to be important resources for decreasing single-occupant vehicle trips, particularly during the peak hour The NRVPDC recently conducted an employee transportation study and

## NRVPDC Travel Demand Management Recommendations

| Jurisdiction | Recommendation |
| :---: | :---: |
| All Jurisdictions | Establish vanpools on semi-fixed routes from transit stops to employment centers |
| All Jurisdictions | Refine routes as needed to provide connections between service providers |
| All Jurisdictions | Initially serve commuters during standard hours, expand as necessary |
| Montgomery County | Formalize the I-81 Exit 114 park and ride lot |
| All Jurisdictions | Utilize existing providers to implement commuter service to: Glen Lyn to Blacksburg; Pearisburg to Dublin Draper to Fairlawn; Radford to Christiansburg Blacksburg, Radford, Christiansburg Christiansburg to Shawsville |
| All Jurisdictions | Consideration of other modes in the design of future facilities |
| Floyd, Giles, Montgomery, Pulaski Counties | Evaluation of the need to formalize some park and ride lots or create VDOT-owned facilities in close proximity to highly used informal lots |
| Floyd, Giles, Montgomery, Pulaski Counties | Addition/improvement to signs for lots along corridors and at key intersections |
| Floyd, Giles, Montgomery, Pulaski Counties | Continued maintenance of sites e.g. trash pick-up, lighting |
| Pulaski, Giles, Montgomery Counties | Addition of bicycle racks in park and ride lots with connections to surface streets |
| Pulaski, Giles, Montgomery Counties | Bus shelters at park and ride lots with future transit connections (existing Smart Way stops at park and ride lots are within the MPO) |
| All Jurisdictions | Coordinate between PDC and MPO to establish agency roles, identify funding partners, maintain program vision |

survey as a part of the regional Employment Mobility Project. The purpose of the study was to develop a vision for rural commuter transportation within the New River Valley. The project analyzed commuter patterns, barriers to transportation, and explored transportation solutions. A final report is not yet completed but preliminary results were combined with reviews of local comprehensive plans and other existing studies in order to have an inclusive set of recommendations.

Park and ride lots in the region are expected to continue to be of importance to the commuting population. RIDE Solutions recently conducted a study of park and ride lots in both the New River Valley and the Roanoke Valley-Alleghany region in 2009 (see adjacent table).

## PLAN ADOPTION

The 2035 Rural Long Range Transportation Plan for the NRVPDC was adopted by the Commission on September 22, 2011. This Plan will serve as a long term strategy for the transportation network of the region and as a component of the Surface Transportation Plan. Projects can be prioritized for funding based on the recommendations that have been identified. Further information on this Plan and the 2035 Surface Transportation Plan and VTrans 2035 can be found at www.vdot.virginia.gov.

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[^0]:    NEW RIVER VALLEY PLANNING DISTRICT COMMISSION

