

V. TRANSPORTATION



TRANSPORTATION

CURRENT CONDITIONS

Frederick County has grown significantly in the past two decades in both population and economic development, placing a significant demand upon the transportation system. Current County policy follows State Code guidance to ensure that new development offsets its impacts to the transportation system. A significant portion of congested roadways in the County can be linked to by-right development that does not offset its transportation impacts since it is not required by the Code of Virginia. This has had the greatest impact upon Interstate 81 and the primary highways in the County. Primary Highways include Routes 37, 522, 50, 7, 277 and 11.

Based upon the most recent Virginia Department of Transportation (VDOT) data available (2016) Frederick County has 1,853 lane miles of roadway that are part of the state system. As of 2014, VDOT estimates that vehicles traveled 3,040,103 miles per day on Frederick County roadways. This is *an over 200%* increase since 1990. The vast majority of this travel is focused upon the Interstate and Primary systems.

Planning Activities

Transportation planning for Frederick County takes place in many ways. In addition to local comprehensive planning, Frederick County is a member of the WinFred Metropolitan Planning Organization. As part that organization the County participates in regional long range planning and has access to resources for numerous other planning studies. In addition, the County annually updates the Frederick County Interstate, Primary, and Secondary Road Plans which highlight key priorities. Finally, the County also regularly conducts small area plans such as the Northeast Land Use Plan and the 277 Triangle Land Use Plan which focus on smaller portions of the County. With the exception of a situation where the small area plan is more detailed, any discrepancy between the two plans will be resolved by the Eastern Road Plan.

Urban Areas

It is the County's policy to focus future growth in the Urban Areas, within the boundaries of the Urban Development Area (UDA) and Sewer and Water Service Area (SWSA). In addition, the County has recently taken additional steps for growth within the UDA by adopting a Transfer of Development Rights (TDR) ordinance which allows by-right residential development rights to be sold by landowners in the Rural Areas to landowners inside the UDA. Ultimately, while this results in increased traffic in the UDA, this is still a net financial benefit to the County. This allows the County and State to focus roadway improvements within the UDA as opposed to having to expand roadways throughout the entire County. The Eastern Road Plan is the guide to roadway development/improvements in and around the Urban Areas.

As of the year 2000 census, the urbanized portions of Frederick County, Winchester, and

TRANSPORTATION

Stephens City area reached the population threshold (50,000) that led to the federally required creation of a Metropolitan Planning Organization (MPO). In Frederick County the MPO boundary is concentrated around the development in the eastern section, and along Route 11 to West Virginia in the north, and to Stephens City in the South. Staffed by the Northern Shenandoah Valley Regional Commission, the MPO is responsible for creating a long range transportation plan that meets air quality standards. The MPO is currently operating under the 2035 Long Range Transportation Plan (LRTP); a planned update will be undertaken in 2016.

Rural Areas

Improvements to secondary roads in the more rural western portion of the County are focused on safety and maintenance as opposed to creating additional capacity. The possible exception to this would be areas where the Comprehensive Plan proposes the development of Rural Community Centers. Capacity and safety improvements to primary roadways in the rural areas will be addressed on an as needed basis.

Transportation funding for improvements in Frederick County has largely been accomplished through development proffers and the VDOT Revenue Sharing Program. Whenever possible, the County uses public-private partnerships to make improvements. The County is also active in the areas of rail access funding and economic development road access funding. The Commonwealth's role in transportation funding has been declining over the years and has now reached the point where some federal funds are being used for maintenance with very little new construction taking place. The State has been actively encouraging localities to take on maintenance of their road systems. However, roadway construction and maintenance in Frederick County primarily remains the responsibility of the State and Federal Government. How the County, State, and Federal governments work together to create a long term funding policy for transportation will have far reaching impacts on transportation systems in Frederick County.

Recent Transportation Legislation, the Smart Scale Program (formerly HB2) and HB1887, has significantly changed the process by which transportation projects will be funded within the Commonwealth. The stated purpose of the new system is to score transportation projects and remove politics from the decision making process. Based on Commonwealth Transportation Board (CTB) adopted criteria, economic development is the most influential factor in scoring criteria for Frederick County. The County will continue to coordinate with the Economic Development Authority (EDA) to highlight the economic development importance of key roadways and improvements. During the first round of the Smart Scale Program the County was successful on a number of applications, the most significant of which was Route 277 from I-81 Exit 307 to Double Church Road which includes widening, access management for safety and a realignment of the Aylor Road intersection away from the interchange.

FOCUS FOR THE FUTURE

In the next twenty to thirty years it is expected that a number of key transportation milestones will be reached. The issue of long-term road construction funding must be resolved, which will allow significant transportation system improvements to move forward. Most crucial is the completion of the Route 37 East bypass, which is critical for both residential and economic development traffic. Completion of this roadway has been a top priority for Frederick County for many years. The Eastern Road Plan will continue to guide road projects and will evolve to address the long range transportation needs of the County.

The County will work to insure that development and transportation agencies routinely design and operate the entire right-of-way to enable safe access for drivers, transit users and vehicles, pedestrians, and bicyclists, as well as for older people, children, and people with disabilities. This goal aims to balance the diverse needs of all users of the public right-of-way and promote an integrated, multi-modal (or multiple modes of transportation) transportation system. Simply put, this means that the County will consider all potential users of the transportation system when making improvements, working with development, or constructing new facilities. This goal will benefit Frederick County as it addresses important safety, health, and environmental considerations, and promotes growth and revitalization within the Community.

Over time, it is expected that private transit options will begin to play a larger role in Frederick County's transportation network. This would likely begin with demand type services for the special needs populations, elderly, and disabled.

As densities increase in the UDA and citizen preferences continue to shift, it is expected that bicycle and pedestrian accommodations will continue to increase in importance. The Frederick County School System has opened its first elementary school (Greenwood Mill Elementary) with a walk zone, and they plan to continue promotion of this type of school.

Finally, with the growth potential of the Virginia Inland Port in Warren County, Frederick County can expect a continuing increase in freight movement via rail and roadways. The development of the County's transportation infrastructure should continue to address transportation improvements that will further the economic growth of the Community. This would also include future growth of the Winchester Regional Airport.

COMMUNITY BENEFITS

The benefits to the Community of a healthy transportation system are immeasurable. An efficient transportation system leads to communities that are less stressed, healthier, less polluted, safer, and more attractive to economic development opportunities and new residents.

TRANSPORTATION

A policy that creates an interconnected system of bicycle and pedestrian facilities will lead to a healthier and fitter community as well as increased home values. Removal of cars from the roadway would reduce congestion and air pollution. The mixed use land use pattern promoted by New Urbanism and the Urban Center concept of this Plan further promotes these policies.

The transportation system is also a key consideration for business locations. An efficient transportation system will make the County more attractive to new businesses and will also keep existing businesses from looking to locate elsewhere. In addition, continued focus in intermodal opportunities (the transfer of goods between different transportation modes such as truck to rail or air) in the area will make the County more attractive to businesses looking to take advantage of rail sidings or locations near the airport. The County's willingness to support both road and rail access funding has already led to increased economic development interest. The result is more jobs for County citizens as well as a more valuable and diverse tax base.

As residential and commercial development continues, increasing demands will be placed upon the County's transportation infrastructure. Challenges will continue to be placed on the County by users of Interstate 81 and commuters through the area.

The role of Frederick County is to first plan the transportation system and then work with new and existing development to preserve corridor right-of- ways and implement construction needs. It is the role of the State and Federal government along with development to fund transportation improvements necessary to ensure the future health of the County's transportation network.

GOALS/STRATEGIES

GOAL: TO PROMOTE THE DEVELOPMENT OF NEW ROADWAYS AND THE REDEVELOPMENT OF EXISTING ROADWAYS IN A MANNER THAT MAKES THEM OPEN, AVAILABLE, AND SAFE TO ALL MODES OF TRANSPORTATION.

STRATEGIES:

- Match desired form of development to roadway classification to simplify the determination of which roadways receive which treatment. That is, different types of streets for different land uses. For example, while some roadways would require a separate bicycle and pedestrian trail in order to be more accessible to bicyclists and pedestrians. In rural areas a wider shoulder section may be more appropriate.
- Work with new development and redevelopment to implement this policy and the overall transportation plan. This may require analysis and modification of the existing subdivision ordinance.

TRANSPORTATION

- Work cooperatively with the School Board to identify school locations that meet both school and County goals of public access and safe walkability.
- Seek outside funding sources to fill in gaps in order to attach separate segments and create a fully interconnected system.

GOAL: IMPLEMENT THE ROADWAY PRIORITIES OF THE COUNTY AS OUTLINED ANNUALLY IN THE CAPITAL IMPROVEMENT PLAN, THE INTERSTATE, PRIMARY AND SECONDARY ROAD PLANS, AND THE EASTERN ROAD PLAN, AND PARTICULARLY ROUTE 37 EAST.

STRATEGIES:

- Work with new development and redevelopment to implement the Eastern Road Plan through construction and preservation of right-of- ways.
- Continue to work closely with VDOT, State and Federal representatives, and any other available revenue sources to increase transportation.
- In the absence of outside funding, continue to protect rights-of-way and move forward on planning transportation priorities.
- Coordinate with VDOT to make sure the required percentage of maintenance funds to be spent on other accommodations is used on County priorities.
- Maintain the character of the rural roadways in the County while addressing safety issues as they may arise.

GOAL: IMPROVE UPON EXISTING TRANSPORTATION SAFETY AND SERVICE LEVELS IN THE COUNTY.

STRATEGIES:

- Coordinate with VDOT in the scoping and review of Traffic Impact Analyses (TIA).
- Analyze VDOT Access Management standards and, when needed, adopt County standards that are stronger.
- Work with new development and redevelopment to ensure that trip generation and new movements do not degrade the transportation system, increase delays, or reduce service levels.

TRANSPORTATION

- Create an informal working group with Staff, VDOT, and law enforcement to identify and address safety concerns with coordination to be handled by Planning and Development and the Board's Transportation Committee (TC).

GOAL: FIND WAYS TO IMPLEMENT TRANSPORTATION NEEDS WHILE KEEPING THE COST OF INDUSTRIAL PROPERTY COMPETITIVE. WORK TO ENHANCE USE OF INTERMODAL FREIGHT MOVEMENT WHEREVER POSSIBLE.

STRATEGIES:

- Coordinate with local business to maximize the use of Economic Development Road Access funding, as well as Rail Access funding.
- Actively work with rail carriers through the Economic Development Authority to maximize the amount of material that is shipped into and out of Frederick County via rail.
- Perform a study to discern where opportunities to bring air freight into the regional airport may be available.
- Work to encourage and maximize opportunities presented by expansion of the Virginia Inland Port and the new multimodal facility coming to Martinsburg, WV.
- Make use of revenue sharing funds for development of industrial property when the Board of Supervisors determines that it is in the best interest of Frederick County.
- Incorporate the Airport Master Plan into the County planning efforts.

GOAL: IMPROVE THE BEAUTY OF TRANSPORTATION CORRIDORS AT THE COUNTY GATEWAYS AND ALONG COMMERCIAL ROADWAYS.

STRATEGIES:

- Work with VDOT to create roadway design plans that meet standards while beautifying local gateways and commercial corridors.
- Through the Transportation Committee, develop a plan and actively promote corridor beautification. This should include working with local institutions to create more attractive County entrances into their facilities.

TRANSPORTATION

GOAL: ENSURE SAFE OPERATION OF FIRE AND RESCUE VEHICLES AND SCHOOL BUSES.

STRATEGIES:

- Investigate the existence and potential removal of barriers between neighborhoods that lead to delays in response, particularly for the Greenwood and Millwood Companies.
- Promote the adoption of a uniform locking technology acceptable to the Fire and Rescue Department for use on gated and locked emergency access points.
- Analyze driving, road, and parking standards and actively seek the Fire and Rescue Department input for driveways and roads to ensure that all approved developments are accessible by fire equipment.

GOAL: PROVIDE COST-EFFECTIVE ALTERNATIVES TO AUTOMOBILE TRAVEL AS NEEDED, FOR THE ELDERLY, DISABLED, STUDENTS, AND WORKFORCE.

STRATEGIES:

- Coordinate with existing agencies such as the Shenandoah Area Agency on Aging (SAAA) and Access Independence to secure outside funding to enhance service to the elderly and disabled in the community.
- Make use of the Winchester-Frederick Metropolitan Planning Organization (MPO) resources to identify areas of most critical need.
- Monitor existing data source updates to determine areas of growing need.

STATE CODE COMPLIANCE

The Code of Virginia, Section 15.2-2222.1, states specific requirements for the development of a transportation plan as it relates to comprehensive plans:

- B.1. As part of the comprehensive plan, each locality shall develop a transportation plan that designates a system of transportation infrastructure needs and recommendations that include the designation of new and expanded transportation facilities and that support the planned development of the territory covered by the plan and shall include, as appropriate, but not be limited to, roadways, bicycle accommodations, pedestrian accommodations, railways, bridges, waterways, airports, ports, and public transportation facilities. The plan shall recognize and differentiate among a hierarchy of roads such as expressways, arterials, and collectors. In developing the plan, the locality shall take into consideration how to align transportation infrastructure and facilities with affordable, accessible housing and community services that are located within the territory in order to facilitate community integration of the elderly and persons with disabilities. The Virginia Department of Transportation shall, upon request, provide localities with technical assistance in preparing such transportation plan.

- B.2. The transportation plan shall include a map that shall show road and transportation improvements, including the cost estimates of such road and transportation improvements from the Virginia Department of Transportation, taking into account the current and future needs of residents in the locality while considering the current and future needs of the planning district within which the locality is situated.

This chapter has been reviewed by VDOT officials and has been determined to meet the requirements outlined in state code.

PLANNING ASSUMPTIONS

While many factors impact changes in transportation needs and patterns, the most significant factors impacting the transportation system in Frederick County are population and employment growth. Desired patterns for that growth and policies and strategies to support those patterns are outline earlier in this chapter of the Comprehensive Plan. As noted in the WinFred MPO 2035 Long Range Transportation Plan, population in Frederick County which was 78,305 in 2010 is expected to reach 153,945 by 2035. Employment which was 23,499 in 2010 is expected to reach 26,960 by 2035. This growth, particularly the population is expected to add significant stress to the Frederick County transportation system.

NEEDS ASSESSMENT

A number of factors aid in determining near and long term needs in the County. While the most key input in determining needs and impacts is the modeling processes undertaken through the WinFred Metropolitan Planning Organization, many factors help in determining needs such as coordination with the Virginia Department of Transportation, safety concerns, maintenance needs, citizen concerns, and economic development. Shown below are the 2035 Projected Volumes and Volume/Capacity Ratio maps from the modeling work done with the WinFred Metropolitan Planning Organization. These modeling outputs are a significant tool in determining and vetting near term as well as long range transportation needs.

Some of the County's most immediate near term needs are as follows:

Route 37

Route 37 has long been the County's top priority and this continues to be true. The completion of the Route 37 loop around the eastern portion of the County will not only relieve congestion on numerous local routes that have become congested as the County has grown, but also offers relief on I-81 by helping to remove local trips from the interstate as well as offering an additional relief valve when there are incidents that lead to I-81 delays or closures. The segment of Route 37 that is of top priority is from I-81 exit 310 to Route 522. This segment offers important additional connectivity between I-81 and Route 522, which, in addition to significantly aiding local travel, will offer improved access to the Virginia Inland Port. This roadway is also expected to ease congestion on Route 277 and at Exit 313.

I-81 Exit 313 Bridge

The I-81 Exit 313 Bridge has been identified as in need of replacement by VDOT due to it reaching the end of the time where routine maintenance can adequately address bridge issues.

I-81 Exit 317 and Redbud Road

This project would realign the northbound exit ramp of I-81 onto Route 11 to the location where Redbud Road currently intersects Route 11. This would align the interstate ramps which are currently offset and allow the removal of a signal on Route 11 north. In addition this project would realign Redbud Road to a new intersection with Snowden Bridge Boulevard. This project is expected to aid congestion and improve safety at this area of Route 11 North as well as reduce stacking of traffic at the exit ramps.

Route 11 North Corridor Widening

Modeling of the expected development along the Route 11 North corridor indicates a need for widening and access management to the entire corridor with the corridor to become 6 lanes to Cedar Hill Road and 4 lanes to the West Virginia State line. The most immediate need is to widen from Route 37 to Old Charlestown Road.

TRANSPORTATION

Route 11 South

Route 11 South, particularly in the vicinity of Apple Valley Road, Commonwealth Court, and the interchange with Route 37 is becoming increasingly congested as surrounding area economic development has taken place.

Additional near term needs:

Renaissance Drive from Prosperity Drive to Shady Elm

Valley Mill Road Realignment

Russell 150 Bridge over I-81

Airport Road Extension

Tevis Street Extension

Route 277 from Double Church Road to Warrior Drive

Jubal Early Drive Extension and Interchange with Route 37

Intersection of Crestleigh and Senseny Roads

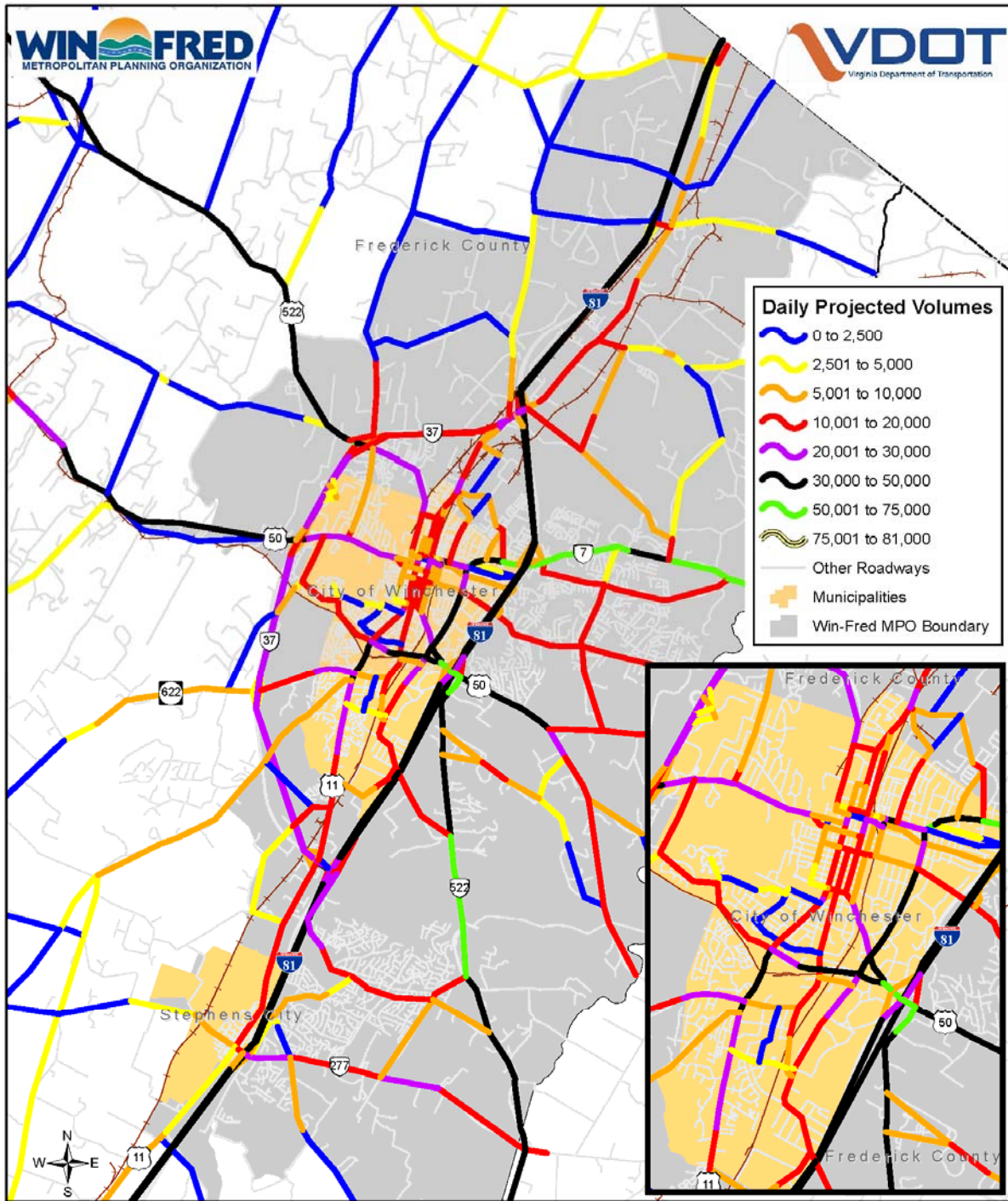
Fox Drive/Route 522 Intersection Improvements

Papermill Road/Route 522 Intersection Improvements

Apple Valley Road/Route 11 Intersection Improvements

Sulphur Springs Road Improvements

TRANSPORTATION

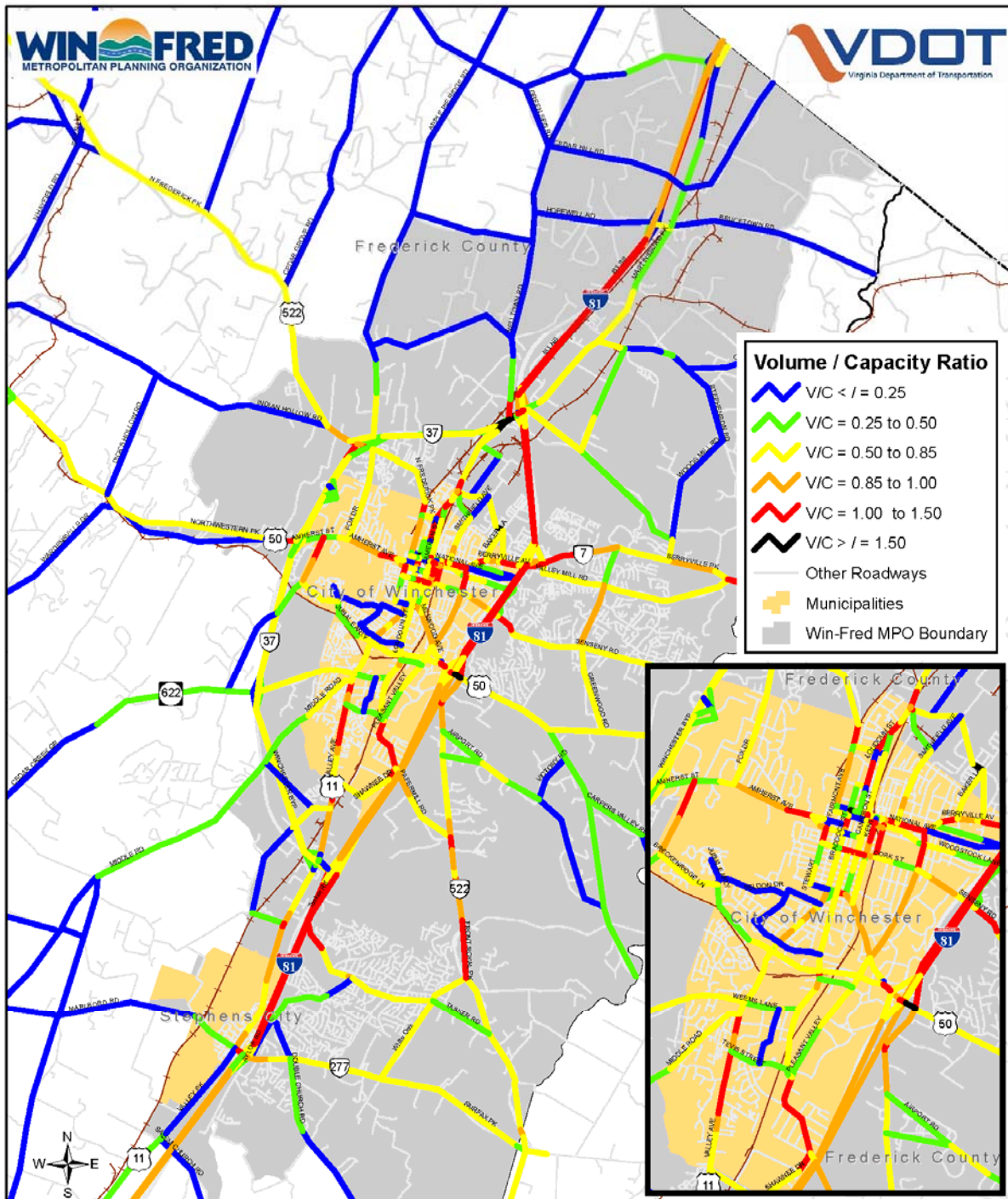


2035 No-Build - Modeled 24 Hour Volumes

WIN-FRED MPO 2035 Long Range Transportation Plan Update

Prepared by:
Win-Fred MPO & VDOT
February 11, 2012

TRANSPORTATION



2035 No-Build - Modeled Volume / Capacity Ratios

WIN-FRED MPO 2035 Long Range Transportation Plan Update

Prepared by:
Win-Fred MPO & VDOT
January, 2012

TRANSPORTATION

RECOMENDATIONS

Project recommendations are included in the Current Needs Projects maps as well as the Eastern Road Plan which shows near and long range transportation needs. Please note that while the map of existing inventory and functional classifications shows the entire County, the maps depicting the planned transportation improvements are zoomed in to the areas where improvements are called for to improve readability of the maps. Below please find a table of projects which are currently in the VDOT Six Year Improvement Program and that have been recently applied for through the VDOT SmartScale process.

VDOT UPC	Description	Route	Estimate	Notes
			(Values in Thousands of Dollars)	
T17535	I-81 EXIT 323 NB ACCEL AND SB DECEL LANE EXTENSION	81	\$3,451	Approved SmartScale Project FY17
75881	RTE 81 - INTERCHANGE MODIFICATION, EXIT 310	81	\$41,558	
94847	ADD THRU LANE FROM I81 TO RT37& LT TURN LANES.	11	\$2,501	Approved SmartScale Project FY17
109325	ROUTE 11 S. APPLE VALLEY RD. RIGHT TURN LANE	11	\$515	Approved SmartScale Project FY17
18003	RTE 277 - WIDEN TO 5 LANES FROM EXIT 310 TO DOUBLE CHURCH ROAD AND REALIGN AYLOR ROAD	277	\$35,935	Approved SmartScale Project FY17
104262	AIRPORT ROAD AND WARRIOR DRIVE EXTENSION	645	\$5,600	REVENUE SHARING

TRANSPORTATION

108672	JUBAL EARLY DRIVE EXTENSION - FREDERICK COUNTY	0	\$18,660	REVENUE SHARING
101204	IMPROVE ALIGNMENT VALLEY MILL RD AT RT. 7	659	\$7,200	REVENUE SHARING
109326	FOX DRIVE TURN LANES	767	\$651	Approved SmartScale Project FY17
105633	SNOWDEN BRIDGE BLVD PHASE I	875	\$8,137	REVENUE SHARING
107227	COVERSTONE DRIVE EXTENSION - FREDERICK COUNTY	1538	\$4,000	REVENUE SHARING
	ROUTE 37 EXTENSION FROM TASKER ROAD TO ROUTE 522	37	\$102,187	Applied SmartScale Project FY18
	ROUTE 37 EXTENSION FROM TASKER ROAD TO WARRIOR DRIVE. WARRIOR DRIVE FROM EXISTING TERMINUS OF WARRIOR DRIVE TO ROUTE 37	37/1141	\$49,510	Applied SmartScale Project FY18
	EXIT 317 NB EXIT RAMP RELOCATION TO LOCATION WHERE REDBUD ROAD CURRENTLY TIES INTO ROUTE 11 NORTH AND REALIGNMENT OF REDBUD ROAD TO SNOWDEN BRIDGE BLV	81/661	\$11,239	Applied SmartScale Project FY18

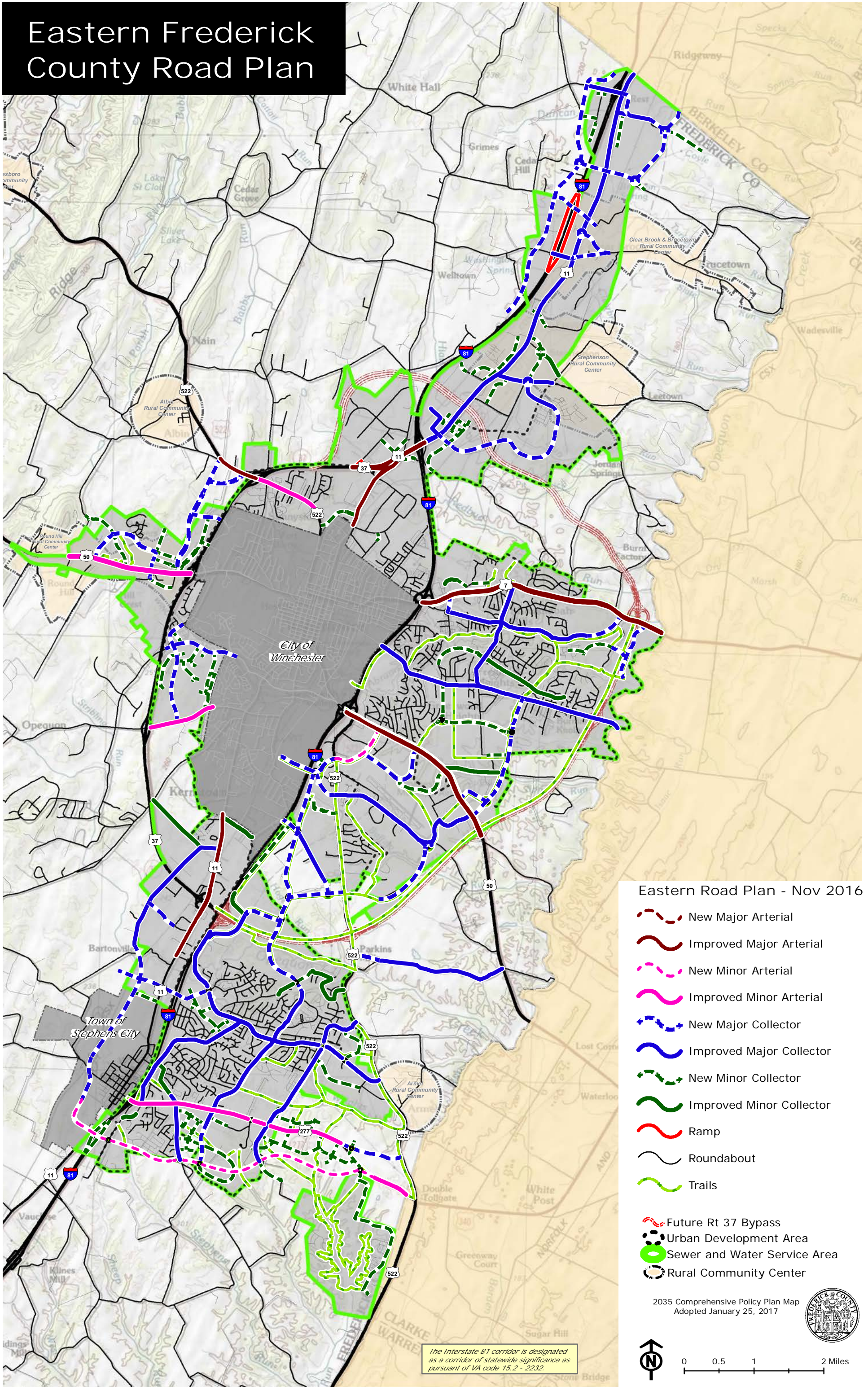
TRANSPORTATION

	ROUTE 277 WIDENING FROM DOUBLE CHURCH ROAD TO WARRIOR DRIVE	277	\$25,428	Applied SmartScale Project FY18
	ROUTE 11 NORTH WIDENING FROM SNOWDEN BRIDGE BLVD TO OLD CHARLESTOWN ROAD	11	\$28,346	Applied SmartScale Project FY18
	SULPHUR SPRINGS ROAD RECONSTRUCTION AND WIDENING FROM ROUTE 50 TO THE LANDFILL	655	\$2,704	Applied SmartScale Project FY18
	INTERSECTION OF SENSENY ROAD AND CRESTLEIGH DRIVE- ADD TURN LANES ON SENSENY	657	\$2,548	Applied SmartScale Project FY18
	INTERSECTION OF 277 AND WARRIOR DRIVE, EXTEND EB RIGHT TURN LANE ON ROUTE 277 AND PEDESTRIAN SAFETY IMPROVEMENTS ALONG THE SOUTHERN PART OF WARRIOR DRIVE	277/1141	\$477	Applied SmartScale Project FY18
	INTERSECTION OF PAPERMILL ROAD AND ROUTE 522, EXTEND RIGHT TURN LANE ON EB PAPERMILL ROAD	644	\$507	Applied SmartScale Project FY18
	EXIT 313 BRIDGE REDECKING AND INTERCHANGE IMPROVEMENTS	81		MPO Applied SmartScale Project FY18

TRANSPORTATION

	ROUTE 11 SOUTH AT THE CITY/COUNTY LINE CORRIDOR AND INTERSECTION IMPROVEMENTS IN THE VICINITY OF SHAWNEE DRIVE AND OPEQUON CHURCH LANE	11		MPO Applied SmartScale Project FY18
--	----------------------------------------------------------------------------------------------------------------------------------------	----	--	-------------------------------------

Eastern Frederick County Road Plan



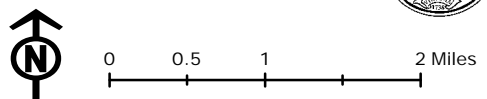
Eastern Road Plan - Nov 2016

- New Major Arterial
- Improved Major Arterial
- New Minor Arterial
- Improved Minor Arterial
- New Major Collector
- Improved Major Collector
- New Minor Collector
- Improved Minor Collector
- Ramp
- Roundabout
- Trails
- Future Rt 37 Bypass
- Urban Development Area
- Sewer and Water Service Area
- Rural Community Center

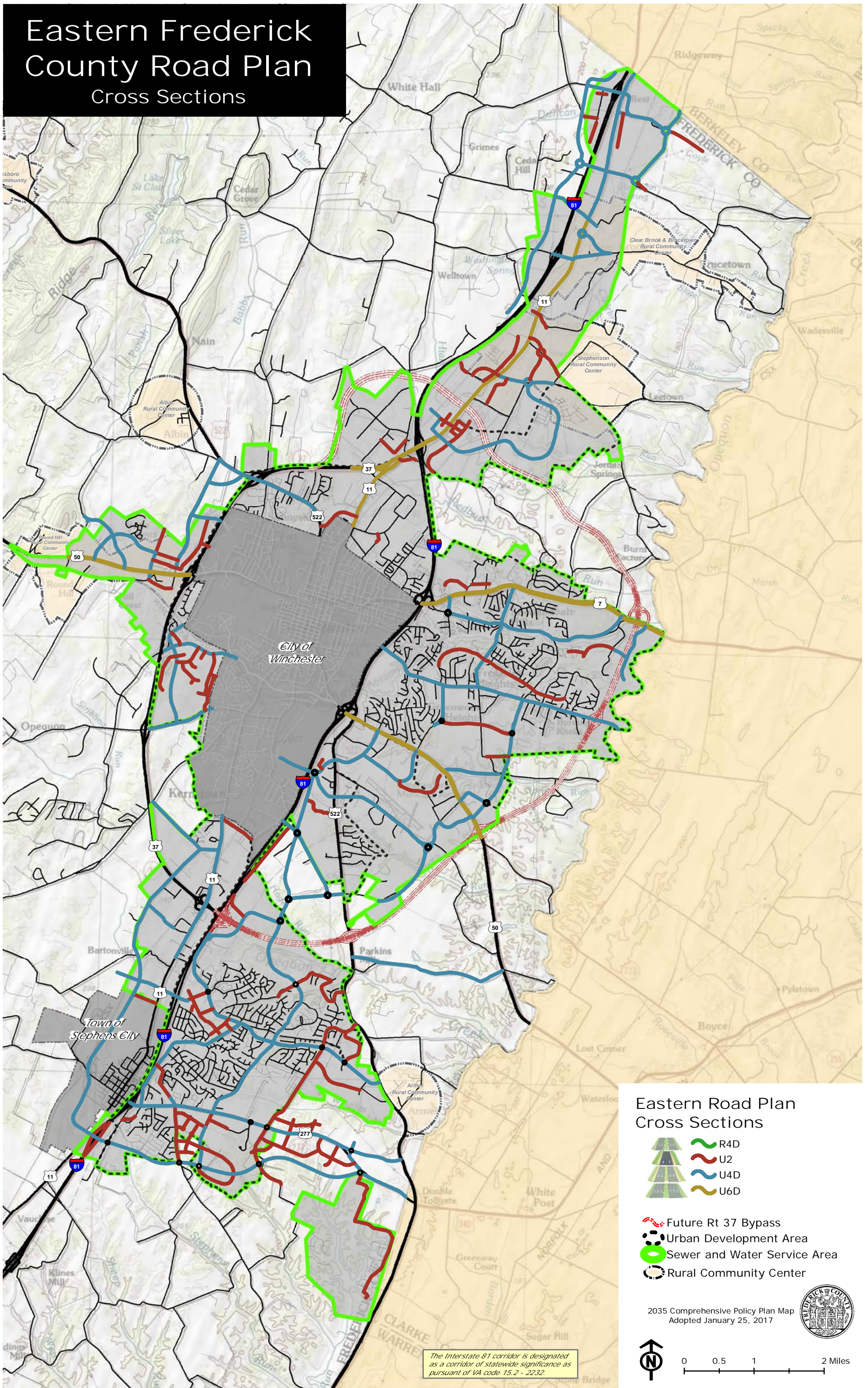
2035 Comprehensive Policy Plan Map
Adopted January 25, 2017







The Interstate 81 corridor is designated as a corridor of statewide significance as pursuant of VA code 15.2 - 2232.


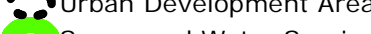
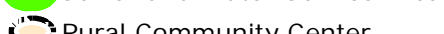



Eastern Frederick County Road Plan Cross Sections



Eastern Road Plan
Cross Sections

-  R4D
-  U2
-  U4D
-  U6D

-  Future Rt 37 Bypass
-  Urban Development Area
-  Sewer and Water Service Area
-  Rural Community Center

2035 Comprehensive Policy Plan Map
Adopted January 25, 2017

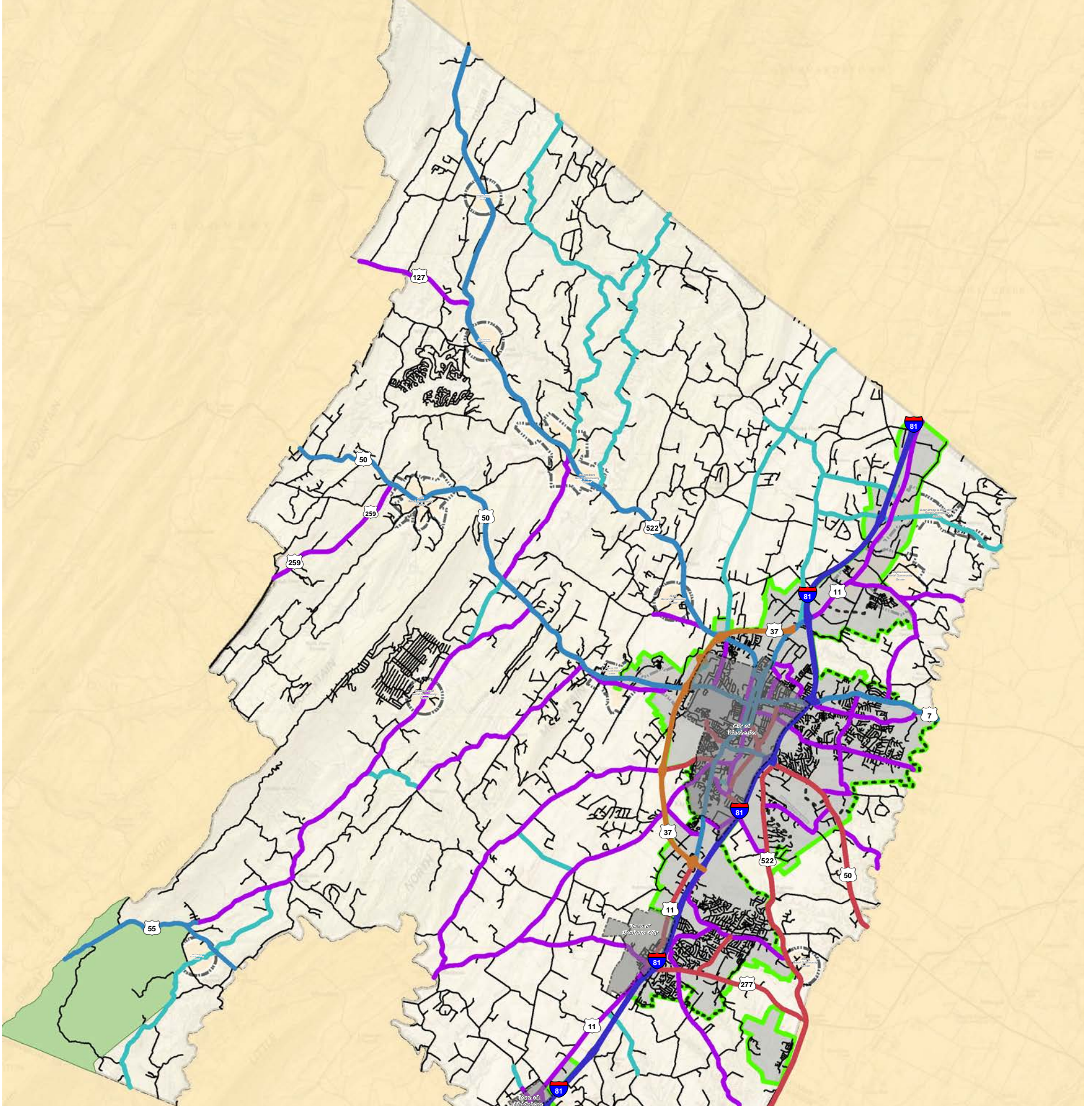


0 0.5 1 2 Miles

The Interstate 81 corridor is designated as a corridor of statewide significance as pursuant of VA code 15.2 - 2232.

Frederick County Road Plan

Existing Conditions/Inventory and Functional Classifications



Existing Conditions/ Inventory and Functional Classifications

-  Expressway
-  Interstate
-  Major Arterial
-  Minor Arterial
-  Major Collector
-  Minor Collector
-  Local Rd
-  Urban Development Area
-  Sewer and Water Service Area
-  Rural Community Center
-  George Washington National Forest

2035 Comprehensive Policy Plan Map
Adopted January 25, 2017

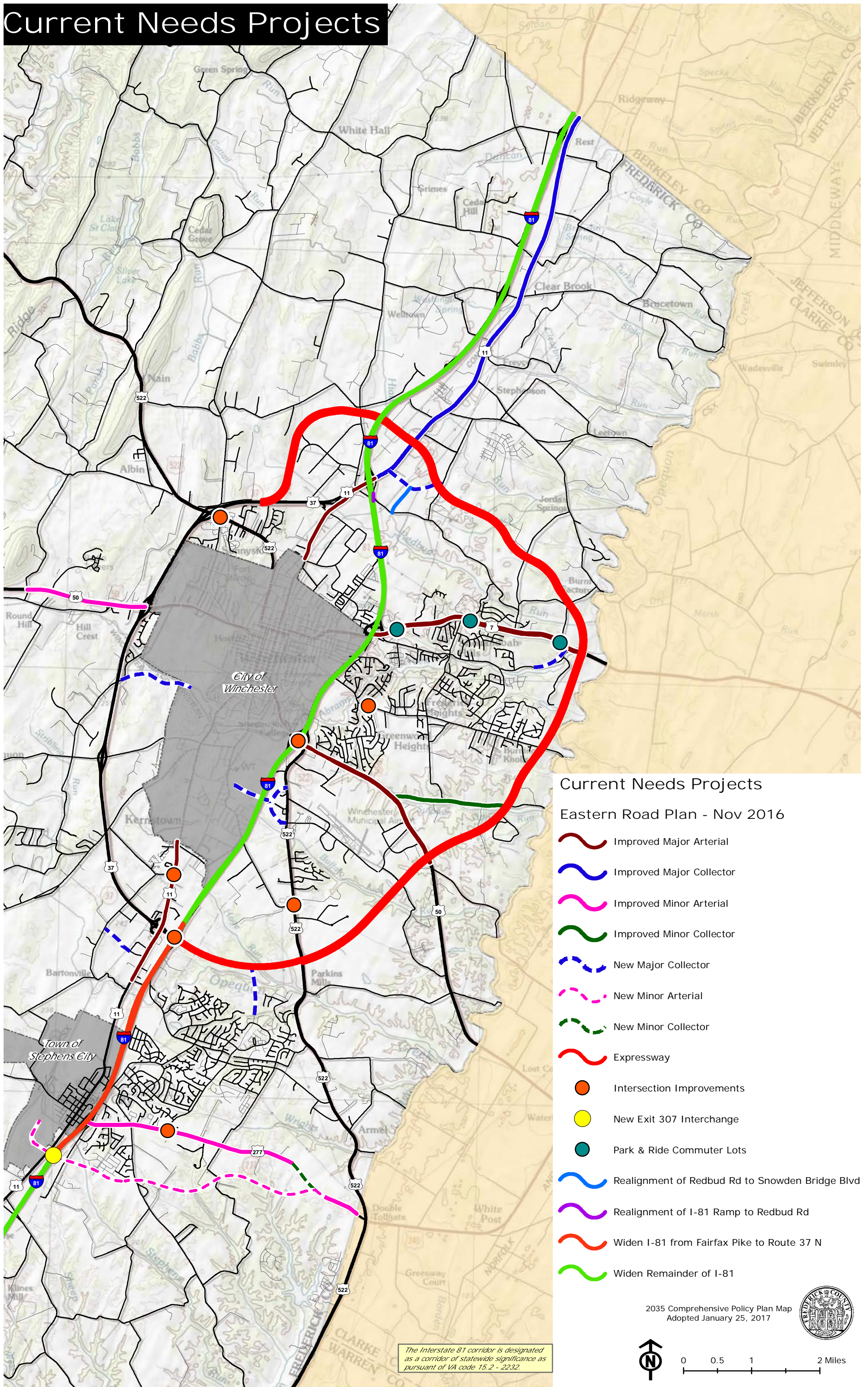


The Interstate 81 corridor is designated as a corridor of statewide significance as pursuant of VA code 15.2 - 2232.



0 1.25 2.5 5 Miles

Current Needs Projects



The Interstate 81 corridor is designated as a corridor of statewide significance as pursuant of VA code 15.2 - 2232.

2035 Comprehensive Policy Plan Map
Adopted January 25, 2017



0 0.5 1 2 Miles