

Chapter 3

TRANSPORTATION & THOROUGHFARE PLAN

INTRODUCTION

The Transportation Plan

The purposes of this Transportation Plan are to identify Spotsylvania County's future transportation needs, serve as a resource for the County's citizens and the development community, and provide a base for ~~developing~~ the development and implementation of local, regional and statewide transportation plans. It is the intent of this plan to provide a comprehensive examination of the existing transportation network and appurtenant facilities. This plan seeks to maintain an efficient transportation system utilizing available and expected resources. The overarching goal of this plan is to maintain functional and effective transportation systems that keep pace with growth in the future. This plan provides guidance for shaping the future of transportation in Spotsylvania County.

The Thoroughfare Plan

The recommendations for improvements to the road network in Spotsylvania County as set forth in this plan consist of several new facilities and the need for improvements to existing facilities. The plan has a horizon year of ~~2030~~2040. With traffic volumes consistently on the increase, the improvement and maintenance of the existing network is of utmost importance, while new facilities will be needed in order to provide capacity for future traffic volumes and increase connectivity. New roads can have a positive impact on existing roads stressed by traffic volumes without adequate capacity by providing a "pressure relief" to better distribute traffic and provide alternative routes for traffic movement. For identified new "concept roads" it is important to note that ~~the new road depicted~~ alignments are conceptual in nature and that no engineering to determine the optimal location has taken place. ~~When examining the roads, it is imperative to focus on the origin and termination points of the roads. These roads are: a connection between Lake Anna Parkway at Robert E. Lee Drive and Courthouse Road at Massaponax Church Road; a connection between Route 1 at Guinea Station Road and Massaponax Church Road at Smith Station Road; a connection between Harrison Road and Courthouse Road in relatively close proximity to Interstate 95; a connection of Spotsylvania Avenue with Germanna Point Drive; a realigned Route 17 tying into the proposed new interchange on Interstate 95 and then extending to intersect with Route 1; an extension of Hospital Drive to intersect with the realigned Route 17 and Massaponax Church Road; and extensions of Northeast and Cosner Drives to intersect with the extended Hospital Drive.~~

Improvements to existing roads are meant to address level of service deficiencies resulting from increasing traffic volumes conflicting with existing road capacity. These tend to result in necessity for addition of new lanes through road widening and intersection improvement projects. Additionally, where capacity isn't being addressed in the form of road widenings, safety improvements have been targeted along a number of roads, especially outside of the Primary Development Boundary in instances where roads would benefit from realignment, more generous travel lane widths and shoulder improvements. As populations grow county-wide it is important to recognize the importance of improved roadways even if capacity isn't necessarily being expanded.

Many of these rural roads are also traversed with truck traffic from local timbering operations, agricultural machinery, and towed boat traffic in the area of Lake Anna.

Transportation alternatives are also addressed as part of the Transportation plan as a means to reduce road based demands by employing alternative transportation methods such as provision of bicycle and pedestrian friendly transportation routes. The Trailways Master plan located in Chapter 3A serves as a master plan for bicycle and pedestrian based transportation alternatives. that also directly corresponds to provision of recreational trails considering parks and recreation level of service standards as established in Chapter 4.

The recommended improvements including new concept roads, roadway, interchange and intersection improvements are shown on The Thoroughfare Plan Map with a description of each improvement listed in The Thoroughfare Plan - Project List.

CODE OF VIRGINIA REQUIREMENTS

The Code of Virginia requires the study of transportation needs and their incorporation in comprehensive plans. Section 15.2-222.1 requires coordination of plan amendments that will substantially affect transportation on state controlled highways with the Virginia Department of Transportation. **This update was reviewed by the Fredericksburg District Office in July and August of 2013.** Section 15.2-2223 stipulates that the plan shall designate the “general or approximate location, character, and extent of each feature, including any road improvement and any transportation improvement”. It requires that each locality develop a transportation plan that “designates a system of transportation infrastructure needs and recommendations that include the destination of new and expanded transportation facilities and that support the planned development of the territory covered by the plan.” The transportation resources may include roadways, pedestrian and bicycle facilities, railways, bridges, waterways, airports, and public transportation. The code requires that maps of improvements and costs accompany the plan, and that the plan be consistent with the Commonwealth’s Statewide Transportation Plan and the Six-Year Improvement Program. Section 15.2-2224 requires the study and documentation of road and other transportation improvements and their cost. Section 15.2-2232 requires that corridors of statewide significance are shown in the plan. The section also states that the plan shall control the general or approximate location of transportation facilities and that no street or connection to an existing street shall be constructed, established, or authorized unless it is shown on the plan or has been approved by the Planning Commission as being substantially in accord with the adopted Comprehensive Plan.

RELATIONSHIP TO STATE AND REGIONAL PLANS

The results of the 1990 Census of Population led to the designation of the greater Fredericksburg area as an Urbanized Area by the Census Bureau. With this status came the federal requirements for a 3-C (continuing, comprehensive, and cooperative) transportation planning process and the

establishment of the Fredericksburg Area Metropolitan Planning Organization (FAMPO). In order to receive federal funding for eligible projects the local governments of Spotsylvania, Stafford and the City of Fredericksburg must work together as the MPO to carry out transportation planning activities. The MPO is part of the George Washington Region (GW Region), which includes Spotsylvania, Stafford, King George, and Caroline counties and the City of Fredericksburg. The Commonwealth of Virginia and the Federal Government play significant roles in determining whether or not the region's transportation network is adequate to meet current or future conditions and funding of identified needs based on those conditions.

There are a number of transportation plans for Spotsylvania County, the FAMPO region, and the State. The various plans are: ~~VTrans2035-VTrans2040 Update~~: An Update to Virginia's Multimodal Long-Range Transportation Policy Plan, 2035 Virginia Surface Transportation Plan, [Virginia Statewide Rail Plan](#), the FAMPO ~~2040-2045~~ Long Range Transportation Plan (LRTP), FAMPO Transportation Improvement Program (TIP), the Six-Year Improvement Program (SYIP) for Interstates and Primaries (SYIP), and the Secondary Six-Year Plan. Each of these plans is a subset of this transportation element. As each of these plans are revised, ~~this-the Spotsylvania County Thoroughfare Plan (located within the Transportation Element of the Comprehensive Plan) of the Spotsylvania County Comprehensive Plan~~ will serve as the master plan from which projects are prioritized, selected and moved to the funding stage of development.

The ~~VTrans2035-VTrans2040~~ plan and Six-Year plans are available for review—at <http://www.virginiadot.org/projects/default.asp> **HERE**. While ~~the-not all of the transportation projects identified within intersection improvement, bridge replacement, and study projects in the~~ Six-Year Improvement Program are ~~not~~ individually noted in this Comprehensive Plan, the Plan is consistent with those projects on the ~~FY2014~~-SYIP, available **HERE**. The FAMPO plans referenced above are available for review at <http://www.fampo.gwregion.org/#> **HERE**.

Specific ~~corridor roadway transportation~~ improvement plans and studies are identified below. These plans have been incorporated by reference as an integral part of the Transportation Plan.

Corridor Studies

Lafayette Boulevard Corridor Study

Completed in October, 2009 by FAMPO, the corridor study ~~provides a background of~~ focuses on the Lafayette Boulevard (U.S. Route 1 Business) corridor between U.S. Route 1 in Spotsylvania and Sophia Street in Fredericksburg. It documents existing conditions, provides recommendations, and identifies a plan for implementing corridor improvements consistent with the Thoroughfare Plan.

I-95 Jackson Gateway Access Study

~~In December, 2008, FAMPO began the process of studying I-95 access in the Jackson Gateway area with the goal of developing an Interchange Justification Report supporting a new interchange of I-95. The focus of the study shifted in 2012 to development of an Interchange Modification Report (IMR). A preferred improvement scenario has been identified and endorsed by the FAMPO Policy Committee. The IMR will show phased projects of independent utility that improve I-95 exit 126. The improvements shown in the Thoroughfare Plan are based on the preferred scenario. In December, 2008 the Fredericksburg Area Metropolitan Planning Organization (FAMPO) established a technical study work group composed of representatives from FHWA, VDOT, Spotsylvania County, FAMPO, and Kimley-Horn with the goal to improve traffic safety and operations on the interstate mainline, interstate ramps, and intersecting arterial roadways such as US 1 and US 17. The group evaluated fourteen possible alternatives which were separated into three categories: a single interchange, a new interchange, and a split interchange. From these, a preferred alternative was selected and an Interchange Modification Report (IMR) was developed in 2012. The preferred alternative was selected because it was compatible with the Spotsylvania County Comprehensive Plan, demonstrated the highest capacity and lowest amount of congestion, had less impact on existing and future businesses, and was estimated at the lowest construction cost.~~

I-95 Exit 126 Interchange Modification Report (IMR) and Planning Study

~~The I-95 Exit 126 IMR and Planning Study include southbound I-95, northbound I-95, US 1, US 17, Route 208, and Southpoint Parkway. The study includes four new large developments: Southpoint Landing, Heritage Woods, Jackson Village, and Alexander's Crossing. The study focuses on 2020 conditions and identifies 2040 improvements and screened alternatives for existing ramp upgrades, J-Ramp option and ramp upgrades, and US 1 left and right turn upgrades. In 2014, Kimley-Horn prepared an Interchange Modification Report (IMR) for the I-95 Exit 126 interchange in partnership with FAMPO, Spotsylvania County, VDOT, and the Federal Highway Administration (FHWA). The study included key information concerning traffic growth assumptions and future trip generation from four new large developments; Southpoint Landing, Heritage Woods, Jackson Village, and Alexander's Crossing. Three alternatives were developed. These included; alternative 1 (deceleration lanes and new off-ramp lanes on I-95 and dual left-turn lanes at the off-ramp and US 1), alternative 2 (a new one-lane I-95 southbound off ramp referred to as the J-Ramp) and alternative 3 (which include all of alternative 1 and dual free-flow right turn lanes at the off-ramp and US 1, and an additional southbound through lane on US 1).~~

Route 3 Arterial Management Plan

The Route 3 Arterial Management Plan consists of an approximate 9.6 mile corridor section of Route 3 from Gordon Road (626) to Route 20. The study details access management standards for development along Route 3, signalization, cross-over closings, and cross-over improvements to enhance safety and traffic flow. The improvements would be triggered by development along the corridor. This Plan is used as a reference document when reviewing applications for development along the corridor.

Route 606 Corridor Study

The Route 606 Corridor Study consists of an approximate 0.75 mile corridor section of Route 606 from the I-95 interchange to approximately 800' west of Route 1. Key areas of concern include the southbound I-95 ramp, intersections with Route 1 and Dan Bell Lane, and commercial entrances. The study includes access management standards to ensure traffic flows safely and efficiently between I-95 and Route 1 and includes a round-a-bout and divided roadway plan.

Massaponax Corridor Study

In August, 2006 the Board of Supervisors authorized the hiring of the firm of Michael Baker, Inc. to perform a Corridor Study which included the area of Jefferson Davis Highway (Route 1) and Interstate 95 with the Harrison Road intersection as the northern limit of the study and the Morris/Mudd Tavern Road intersection as the southern limit. The study area also included Mills Drive (Route 17).

The study evaluated existing and future conditions at intersections within the study area and developed alternatives to address needed improvements within the corridor. These included details on traffic signal spacing, locations of limited access routes, limits, and typical road sections for four, six, and eight lane sections of Route 1 to accommodate build out of the proposed Land Use plan. The study also addressed the potential for land use changes and looked at the effect of the proposed collector-distributor lanes from the HOT lane project.

In addition to these tasks, the study also evaluated improvements to both the 126 Interchange in Massaponax and the 118 interchange in Thornburg. The study investigated the feasibility of a new interchange (Jackson Gateway Interchange) between the two existing interchanges taking into consideration the planned hospital (at the time) and at the same time minimizing impacts to wetlands and existing development. Many of the recommendations resulting from the Massaponax Corridor Study have progressed over time to result in substantive projects pursued for implementation. The Study envisioned:

- Spotsylvania Exit 126 Interchange reconstruction concept design
- New Interchange between US Route 17 and Thornburg (Jackson Gateway Interchange) and new connector road linking Route 1 to Route 17.
- Thornburg Exit 118 Interchange replacement
- New connector road linking Spotsylvania Avenue to Germanna Point Drive

- Access Management Detail Diagrams for commercial development, and development along major transportation routes.
- Transportation corridor details: Traffic signal spacing, locations of limited access routes, limits and typical road sections for the 4-lane, 6-lane and 8-lane sections of Route 1 to accommodate build out of the proposed 2008 Land Use plan.
- Existing conditions (2007) and Levels of Service (LOS), and proposed improvements with their predicted LOS, for each intersection.

It is good to acknowledge that some of the design and alignment details have changed over time as land use and development changes have occurred since the Study's release. Factors such as engineering, cost, land use and development change, design alternatives, project support all impact the ultimate "real world" project that results. The Study still merits mention as a fundamental guiding source of recommended transportation improvements for the Interstate 95 and Route 1 corridor from which planned, implemented, and for future implementation projects have their roots.

Route 1 & 208 Corridor Study

The corridor study was a comprehensive evaluation of Route 1 & 208 to account for the growth in the area and improve the mobility and safety of all road users. The study focused on Routes 1 and 208 within the context of the broader land corridor bounded by two limited access roadways, I-95 (to the east), and Route 17 (to the south). A total of nine (9) intersections were evaluated: Route 17 and Germanna Point Drive; Spotsylvania Avenue and Market Street; Route 1 and Market Street; Spotsylvania Avenue and Mine Road; Route 1 and Mine Rd/Hood Drive; Route 208 and Hood Drive; Route 208 and Southpoint Parkway/Rollingwood Drive; Route 1 and Courthouse Road/Lafayette Boulevard; and Lafayette Boulevard and Falcon Drive/Mall Drive. The study included the evaluation of a possible roadway connection between Germanna Point Drive and Spotsylvania Avenue. It assessed the potential for reducing congestion on Route 1, and provided conceptual plans, cost estimates, and environmental assessments. The study was funded in part through the Virginia Department of Transportation (VDOT) Revenue Sharing Program.

Route 2 & 17 Corridor Study

The corridor study was a comprehensive evaluation of Business Route 2 & 17 from the Caroline County Line to the City of Fredericksburg. It examined opportunities for accommodating future growth, addressing current traffic congestion and mobility, and potential opportunities to improve safety. It provided opportunities to maximize alternate modes of transportation and provide more efficient routes for local circulation. The study also addressed the feasibility of connecting two Industrial Parks within the City of Fredericksburg and the County. The focus of the study was on the Route 2 & 17 roadway within the context of the broader land corridor bounded by the Rappahannock River (to the east) and the CSX railroad (to the west). The study included an evaluation of the six (6) signalized intersection on Route 2/17, Benchmark Road and the intersection of Lansdowne Road and Shannon Park. The study was funded in part through the Virginia Department of Transportation (VDOT) Revenue Sharing Program.

TRANSPORTATION ALTERNATIVES

The principal modes of transportation within Spotsylvania County include vehicular, rail, transit, bicycle, and pedestrian. The vehicle-oriented roadway system is the most extensive transportation facility in the County by a wide margin and ~~it~~ is directly affected by local land use decisions. The Thoroughfare Plan lists roadway improvements needed to maintain the system at acceptable levels of service. The focus of this section is on multi-modal transportation options alternatives and concepts that lessen demand or increase capacity/safety of the roadway system at a relatively low cost.

In addition to addressing capacity improvements and transportation alternatives to achieve improved levels of service on County roads, AM and PM Peak hour traffic impacts are amplified locally due to significant out-commuting in the AM of County residents to employment located outside of the County, and return trips home during the PM. The US Census Bureau, 2016 American Community Survey found that nearly 62% (61.9%) of Spotsylvania County residents have employment outside their County of residence. Reduction in the prevalence of out-commuting in the County with increased employment availability within the County across a number of industries is beneficial. Reduced commute times and road miles travelled during AM and PM Peak hours would be beneficial to County residents, promote spending within the community as opposed to out of County during working hours (gasoline sales, lunches, etc.) and result in reduced burdens on local transportation infrastructure.

Transportation Demand Management

Transportation Demand Management (TDM) is a congestion relief strategy. The idea of TDM is to move as many people as possible through the use of techniques that minimize peak demands on the transportation system. These include different alternative modes of transportation, flexible work schedules, and mixed-used development where proximity to live, work, play opportunities reduce necessity for lengthy on road travel. Those modes consist of high-occupancy-vehicle (HOV) lanes on the interstate system, ridesharing, van pools, public and private transit, telecommuting, and provisions for walking and bicycling.

Transportation System Management

Transportation System Management (TSM) is the terminology given to represent minor improvements to the transportation system that enhance performance. TSM improvements typically consist of minor intersection and road improvements that afford a safer and more efficient road network. TSM improvements include, but are not limited to, implementation of turn lanes, acceleration/deceleration lanes, traffic signals, signal timing, intersection lighting, pavement marking, signage, horizontal/vertical grade improvements, drainage improvements, median installations, intersection realignments, round-a-bouts, and access management.

As the County continues to grow and develop, emphasis needs to be placed on identifying and implementing TSM projects that can be addressed through federal, state, and local funding. As

developments occur within the County they too should address not only major transportation improvements necessary to mitigate their impact, but also address any TSM improvements that will enhance the safety and operation of the road network directly impacted by the development.

Rail

Virginia's rail network is a valuable asset for the Commonwealth of Virginia. It provides an efficient means of moving freight and passengers both within and through the Commonwealth. By diverting freight and passenger traffic from road to rail, Virginia's rail network relieves congestion, saves lives, improves air quality, helps grow the economy, and complements the Virginia highway network while reducing capital and maintenance expenditures.

The Virginia Department of Rail and Public Transit (DRPT) compiles rail inventory, capacity, economic impacts data, and statewide rail planning as part of the Virginia Statewide Rail Plan. The Plan was last updated in 2017 and provides many additional resources considering the state of rail and rail planning in Virginia **HERE**.

Information concerning passenger and freight rail services in Spotsylvania County has been presented below. Additionally, the Spotsylvania County based Rappahannock Rail Museum has been included in this local rail profile in the interest of tourism, historic resource interpretation, and education.

Rail: Passenger Service

Commuter rail service to Northern Virginia and Washington, D.C. is provided by Virginia Rail Express (VRE), a semi-public agency. VRE is the tenth largest commuter rail agency in the U.S. and is a transportation partnership of Northern Virginia and Potomac & Rappahannock Transportation Commissions. Off Crossroads Parkway, south of U.S. Route 17 the VRE began passenger service to a new passenger rail station opened on November 16, 2015. Prior to the 2015 station opening in Spotsylvania County, the City of Fredericksburg downtown passenger rail station was the chief means of access to VRE service locally for Spotsylvania residents. Rail service is provided to the City of Fredericksburg, but VRE will open a Spotsylvania County station in late 2013 off of Crossroads Parkway, south of U.S. Route 17. The Spotsylvania station will have has 1,500 parking spaces for rail and commuter use, a small restroom, and a 700-foot platform with canopy. Presently the station serves VRE ridership exclusively. for rail and commuter use. Since 2015, VRE boardings at the Spotsylvania Station have increased based on boarding survey data collected since station inception. Ridership has increased 17% since the Spotsylvania station opening in 2015. An October 3, 2018 survey of passenger boardings found a total of 789 passengers riding the rail from the Spotsylvania station generally between the hours of 5am and 7:30am distributed amongst eight VRE train arrivals at the station platform.

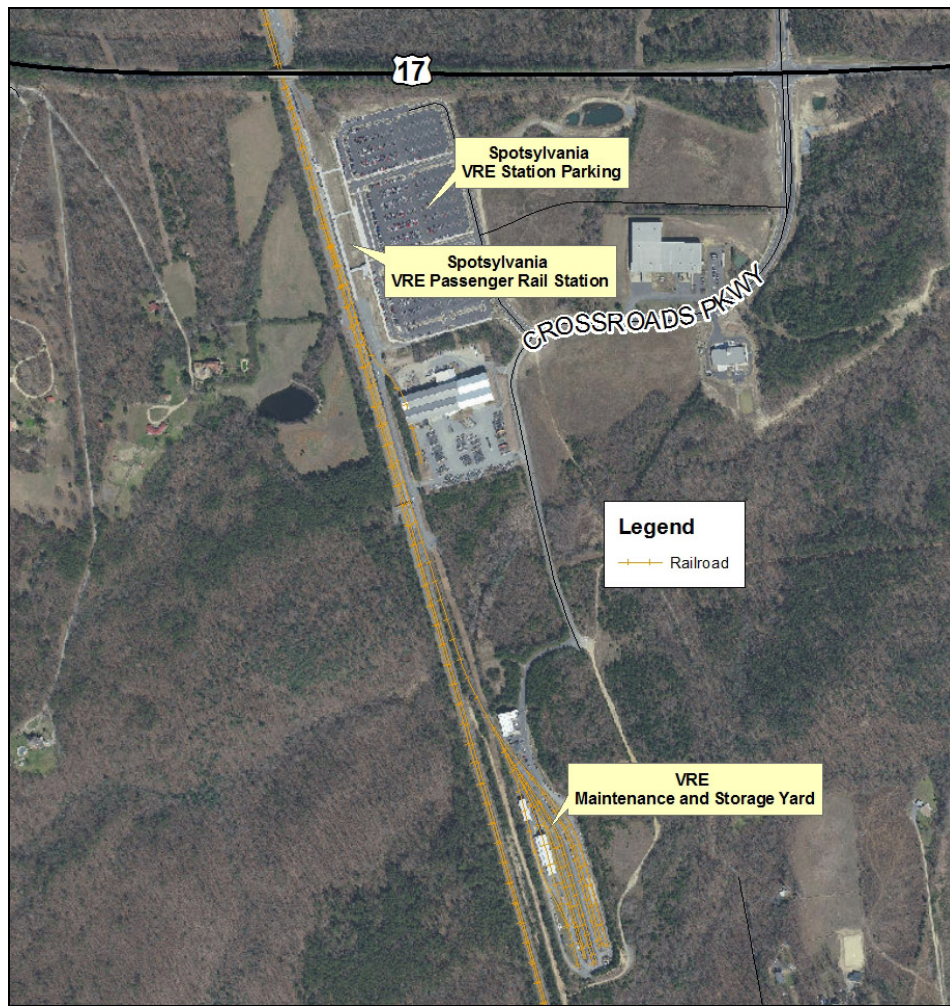
Recognizing the potential draw of a new passenger rail station in Spotsylvania County along with historic trends of a large resident population commuting north for employment opportunities in northern Virginia and Washington, DC, the County identified the rail station area as well suited for higher density, higher intensity development with a mixed land use designation. This land use

designation in the Crossroads area first appeared in the 2008 Comprehensive Plan and has been maintained in the spirit of creating a transit oriented development for easy access for VRE commuter trains. Eventually, as the area grows and accessibility from the station is enhanced, the County may well benefit from a more two-way service that would bring travelers to the County for work opportunities and travel/ tourism opportunities.



VRE Passenger Service Train at Spotsylvania County Station Platform

VRE also operates a maintenance and storage yard within Spotsylvania County off Crossroads Parkway just south of the VRE Station. The Spotsylvania maintenance yard for the VRE line is located just south of the Commuter rail station. The facility was recently expanded to include a new storage track and a 33,000 square foot addition to the Service and Inspection building.



AMTRAK ~~rail~~ service traverses the County and provides additional rail passenger transportation options for passengers within the region with access up and down the east coast and through the entire national AMTRAK system, including the movement of freight. Within the region, AMTRAK service is available exclusively through Fredericksburg's downtown passenger rail station. VRE and AMTRAK ~~operate on~~ share tracks owned and operated by freight rail carrier CSX Transportation, one of two Class I freight railroads in Virginia.

To address corridor congestion resulting from shared freight and passenger rail services, VRE, CSX and the Virginia Department of Rail and Public Transportation (DRPT) constructed a third track between Crossroads Parkway and Mine Road in Spotsylvania County to more efficiently accommodate passenger and freight rail traffic in the rail corridor, known as the Richmond, Fredericksburg and Potomac Rail (RF&P) Corridor within the region. VRE's long range plan includes completing triple tracking of the CSX main line between Spotsylvania and Alexandria and expanding service with additional peak and mid-day service.

RF&P Rail Corridor enhancements including addition of additional capacity via construction of a third track through the County complements efforts to further enhance passenger rail services along the east coast by adding High Speed Rail as part of the Washington, DC to Richmond Southeast High Speed Rail project (known as DC2RVA) whose project partners include the Virginia Department of Rail and Public Transit, U.S. Department of Transportation, Federal Railroad Administration. According to the DC2RVA team, increased congestion and demands on the rail corridor are linked to population growth, freight growth, Interstate 95 congestion driving additional rail demand, air travel congestion, limited existing capacity in the corridor infrastructure, opportunity to expand and enhance TDM alternatives, and air quality benefits.

According to the project partners leading the high speed rail initiatives, Aacross the country, the U.S. Department of Transportation has designated 10 high speed rail corridors in addition to the Northeast Corridor. The Washington, D.C. to Richmond project is the critical link connecting two high speed rail corridors on the East Coast, which are:

- **Washington, D.C. – Richmond, VA – Charlotte, NC:** In 1992 the U.S. Department of Transportation designated the Southeast High Speed Rail Corridor connecting Charlotte, NC, Richmond, VA, and Washington, D.C. This corridor designation has been extended south to Northern FL through subsequent actions of the Department.
- **Boston – New York – Washington, DC:** The Northeast Corridor is the only high speed rail service at present in the U.S. It is also the busiest passenger rail line in the U.S. by ridership and service frequency. Amtrak operates a 150 mph train service known as “Acela” in this corridor.

The Purpose of the DC2RVA project is to increase the capacity between Washington, D.C. and Richmond to deliver higher speed passenger rail, improve conventional speed passenger rail, expand commuter rail, and accommodate growth of freight rail service in an efficient and reliable multimodal rail corridor. This Project will enable passenger rail to be a competitive transportation choice for intercity travelers between Washington, D.C. and Richmond and beyond. The Project extends 123 miles along an existing rail corridor owned by CSX Transportation from the Long Bridge in Arlington, VA, to Centralia, VA in Chesterfield County, south of Richmond. DRPT has recommended specific rail infrastructure improvements and service upgrades to deliver higher speed passenger rail, improve conventional speed passenger service, expand commuter rail, and accommodate growth of freight rail service in the corridor. These recommendations are subject to review and approval by the Federal Railroad Administration (FRA) and the Commonwealth Transportation Board (CTB).

In May, 2019, the US Department of Transportation, Federal Railroad Administration and the Virginia Department of Rail and Public Transportation issued the Tier II Final Environmental Impact Statement and Final Section 4(f) Evaluation concerning the DC2RVA project. For Spotsylvania County, recommendations result in expanded capacity along the existing RF&P Corridor. Third track rail capacity expansion improvements are already in place in Spotsylvania County between the County line with the City of Fredericksburg to the Crossroads VRE station in Spotsylvania County. Plans would extend the third rail south beyond the Spotsylvania Crossroads VRE station. Capacity improvements would result in no changes to the Spotsylvania Crossroads VRE station.

The Washington to Richmond segment will provide the critical link between the Northeast Corridor and the rest of the Southeast High Speed Rail Corridor. Spotsylvania County and its citizens have been involved in review and comment concerning service and alternatives throughout the Environmental Impact Statement process. For more information regarding the DC to Richmond Southeast High Speed Rail project, visit the project website [HERE](#).

Rail: Freight Service

Freight rail offers a number of benefits to the transportation system including but not limited to: fuel efficiency and emissions versus truck traffic; ability to move large quantities of goods from ports and distribution hubs to market; avoided truck trips along road corridors resulting in reduced traffic volumes and wear and tear upon roadways.

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Spotsylvania County's RF&P Rail Corridor is part of a significant freight and passenger rail route along the east coast of the United States. The corridor has been experiencing increasing demands and rail traffic volumes. As noted prior, the rail corridor serves a dual use for passenger train and freight rail transportation. According to the Virginia DRPT, demand for freight movement through and within the corridor is growing as economic activity and population increase. Ongoing expansion of Virginia's deep water ports, rail-dependent industries, and intermodal facilities further increases the need for efficient shipment of freight. According to the Virginia DRPT's 2017 Virginia Statewide Rail Plan, the mining and extraction industry sector has been the leading source of freight tonnage in the Virginia freight rail system however the sector is not projected to grow through 2040. Agriculture and manufactured goods however are expected to nearly double their tonnage in all freight movements through 2040.

| Subdivision: | RF&P Subdivision |
|---|--|
| Owner | CSX |
| Operator | CSX |
| Line Heritage | Richmond, Fredericksburg & Potomac Railroad (RF&P) |
| Subdivision Route / Mileage | Washington, District of Columbia-Greendale (Richmond), Virginia; 109 miles |
| FRA Track Class | Class 4 |
| Track Configuration | 2-4 main tracks |
| Maximum Authorized Speed Freight | 40-60 mph freight |
| Maximum Authorized Speed Passenger | 70 mph passenger |
| Wayside Signals | Centralized Traffic Control (CTC) and Automatic Train Control (ATC) |
| Method of Operation | Centralized Traffic Control (CTC) and Automatic Train Control (ATC) |
| Maximum Allowable Gross Weight | 286,000 lbs. |
| Clearances | Cleared for trailers (TOFC), double-stacks (COFC), and autorack railcars (20' 2" Above Top of Rail) |
| Current Traffic Density (2015) in Million Gross Tons | 116 MGT |
| Average Number of Trains per Day | 47.1 |
| Train Types | <ul style="list-style-type: none"> • Intermodal, general manifest, and bulk freight trains • Amtrak long-distance and intercity passenger trains • Virginia Railway Express commuter trains |
| Industrial Leads | Dahlgren Branch: Dahlgren Junction-Sealston, Virginia; approximately 10 miles; 286,000 lbs. maximum allowable gross weight |
| FRA Excepted Track | N/A |

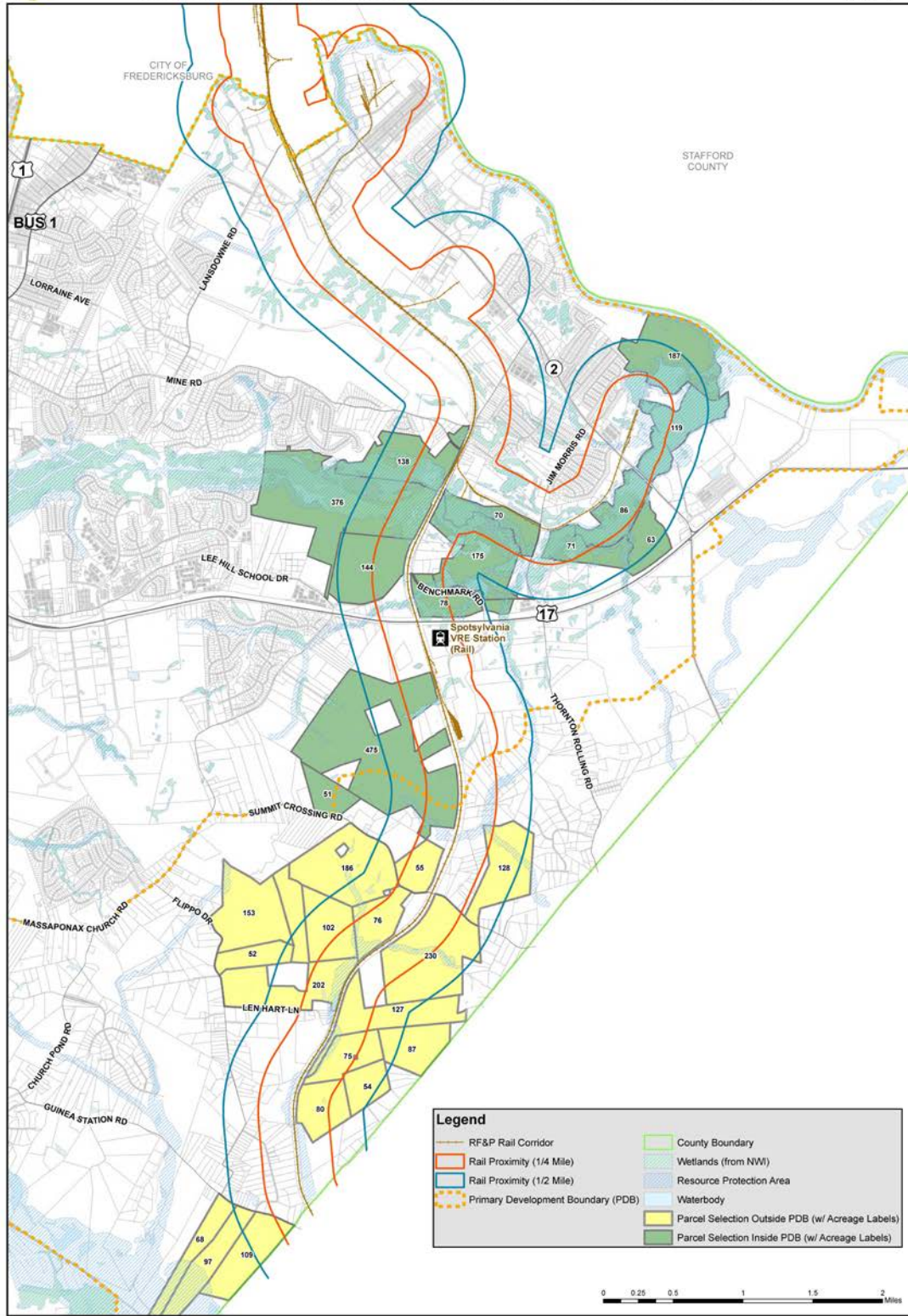
2017 DRPT Virginia Railway Plan RF&P Corridor Summary

The extent of freight rail service and raiiside accessibility within Spotsylvania County is limited as Spotsylvania County does not have an extensive network of rail traversing the County. CSX is the only freight rail operator in the County operating along a single rail corridor in the northeastern corner of the County. The rail corridor within the County extending from the City of Fredericksburg line to the Caroline County line is approximately 9 miles in length of which approximately 5.7 miles are located within the County's designated Primary Development Boundary (based on 2013 Comprehensive Plan). Within the Primary Development Boundary staff notes large stretches of the rail corridor have already been developed, are bordered by protected Civil War Battlefield lands by the National Park Service (Fredericksburg Battlefield) and Civil War Preservation Trust (Slaughter Pen Farm), or limited by significant natural resources including wetlands, steep slopes, resource protection areas. From a land use perspective, the areas within the Primary Development Boundary are where higher intensity uses including industry and distribution centers are envisioned. Some of these industrial and distribution prospects may require or benefit from rail service as part of their site selection process as a necessary element of their manufacturing and

distribution chain. The Spotsylvania Economic Development Department has confirmed that rail served sites are not often sought locally by economic development prospects but they do occur on occasion and represent very real opportunities for economic development and local employment benefits as well as tax revenue generation and positive spin off economic activity within the community. Considering the prospect of freight rail and economic development prospects, the map below was created to identify all parcels of 50 or more acres located within 1/4th and 1/2 mile of the rail corridor or rail spurs not already built out or protected via conservation easement or preservation ownership. The analysis shows the land inventory in relation to the 2013 adopted Primary Development Boundary, in effect unless altered as part of a newly adopted Comprehensive Plan.



**Spotsylvania County Undeveloped Parcels of 50 Acres or Greater
along the Richmond, Fredericksburg and Potomac (RF&P) Rail Corridor**



Presently four rail spurs provide feeder rail into the mainline rail corridor within the County, including: (1) Bowman Center Spur serving industrial center users and the Rappahannock Railroad Museum; (2) Shannon Drive, serving industrial property; (3) Urban Systems Development Property (former General Motors Plant), including idX Virginia plant; (4) Ruffins Pond spur serving Culpeper Wood Preservers. Within the planning period, two of the four rail spurs may to scale back in usage or cease to exist as viable rail spurs due to development impacts or land use trend changes in immediate proximity to the spurs. Tentative plans for development of the “back 40 acres” behind the idX Virginia plant would shorten the rail spur and shifts in land use around the Bowman Center appear to be reducing rail viability there. Such reductions further limit the inventory of sites available for rail ready service.

Rail: History, Education and Interpretation

The Rappahannock Rail Museum (RRM) is located at 11700 Main Street in the Bowman Center off Routes 2/17. The RRM provides railroad-related education to the public, including information about railroad lines and related events in the region, as well as the preservation of historical railroad equipment in the greater Spotsylvania and Fredericksburg areas. The Spotsylvania County Department of Economic Development and Tourism confirms this is a popular tourism destination for the County. Visitors are welcome to tour the museum Saturdays from 9 a.m. to noon. From Mid-March through October (and other Saturdays weather permitting), visitors are welcomed aboard the maintenance of way train (“little yellow train”) for short rail excursions to not only learn, but experience how rail workers in the mid 1900’s commuter to work sites. All train rides are subject to crew availability, weather, commercial rail activity and other factors beyond RRM’s control. The RRM is supported solely through donations and volunteers.

Following a two-year effort, in September, 2018 the museum celebrated an expansion that includes model train exhibits in the HO, O. and N scale layouts as well as exhibit of additional memorabilia from local collections.

Additional information about the RRM can be found **HERE**, or contact the Spotsylvania County Economic Development & Tourism office at (540) 507-7205.

Aviation

There are two airports in the GW Region that provide general aviation service. First, Shannon Airport is significant to the local transportation system as it serves as a gateway for VIPs and business men and women working in the region. Shannon Airport is located in Spotsylvania County, on Tidewater Trail (Route 2). Shannon Airport is classified as a Non-Reliever General Aviation- Community airport as per the Virginia Department of Aviation. The classification is described as serving the needs of businesses and recreational users but often serve a more limited market area than the regional airports. They provide services such as aircraft rentals, flight instruction and AvGas fuel. In 2016, there were 93 aircraft based at the Shannon Airport.

Statewide of the 49 non-reliever general aviation airports, the Shannon Airport had the third highest number of based aircraft (93), behind only Culpeper Regional (127) and Winchester Regional (105).

Based on the Virginia Department of Aviation's 2018 report entitled "Virginia Airport System Economic Impact Study" Spotsylvania County based Shannon Airport is responsible for the creation of approximately 69 jobs which represent approximately 2.5 Million dollars in wages and approximately \$6.8 million in total economic activity. The Shannon Airport has not been identified by the Federal Aviation Administration (FAA) as a National Plan of Integrated Airport Systems (NPIAS) airport as of their 2016 designations. As a result the airport has not been forecasted by the FAA for future activity (total volume of operations). NPIAS designation provides eligibility for airports to receive federal funding for airport infrastructure development and improvements. More information regarding the FAA NPIAS can be found [HERE](#).

Secondly, ~~and~~ the Stafford Regional Airport is located in Stafford County off of exit 136 and Centreport Parkway. The Stafford Regional Airport is classified as a General Aviation- Reliever airport. Such airports are described as general aviation airports located in metropolitan areas that serve to reduce congestion at nearby commercial service airports by providing comparable landside and airside facilities to general aviation operators. As of 2016, there were 68 aircraft based at Stafford Regional Airport.

~~Based on the 2011 report entitled "Virginia Air Transportation System 2011 Statewide Economic Impact" Shannon Airport is responsible for the creation of approximately 80 jobs which represent more than three million dollars annually in payroll taxes and approximately \$18 million in total economic activity. Finally, Shannon Airport is significant to the local transportation system as it serves as a gateway for VIPs and business men and women working in the region. Shannon Airport is forecasted to have a constant level of aircraft activity with approximately 30,000 annual operations per year through 2030. Statewide the 2018 study notes an overall decrease in the number of certificated active airmen; down 43,000 (-7%), and aircraft; down approximately 13,000 (-6%) from 2010 to 2015 utilizing general aviation airports. However, during the same period increases have been noted for active wing turboprop (350 or 4%), active wing turbojet (1,950 or 17%) and active rotorcraft (700 or 11%).~~

The complete Virginia Department of Aviation's 2018 Virginia Airport System Economic Impact Study can be located online [HERE](#).

There are ~~No~~ commercial service classified airports ~~airline service is provided~~ within the GW Region.

Outside of the GW Region, there are three major commercial airports that provide both air freight and passenger services to the larger area for both domestic and international passengers. Two are located in the Washington, D.C. area (Washington Reagan National Airport- approximately 64 miles to the northeast, and Washington Dulles International Airport- approximately 80 miles to the northwest), and the other is in Richmond (Richmond International Airport- approximately 60 miles to the southeast).

To the southwest, the Charlottesville Albemarle Commercial Service Airport- approximately 60 miles, has seen growth in popularity, with a 51% increase in passenger enplanements between 2010 and 2016 as per the Virginia Department of Aviation's 2018 study. An increase in larger aircraft landings is a contributing factor.

More distant, the Baltimore-Washington International (BWI) Airport- approximately 100 miles to the northeast, is also accessible within the greater region via Interstate 95 or Route 301 as primary routes as well as Amtrak passenger rail service from the Fredericksburg passenger rail station to the BWI station with shuttle service to the terminal.

Airport Protection Overlay District

Consistent with requirements of the Code of Virginia Sect. 15.2-2294, the Spotsylvania County Zoning ordinance has an established Airport Protection Overlay District considerate of its one County based airport, the Shannon Airport. As per County Zoning Code Sect. 23-7.7.1, the Airport Protection Overlay District is established to provide for the safe use of Shannon Airport by creating additional regulation of the use of land surrounding the airport, in addition to existing zoning districts, which will protect over flying aircraft from conflicts with land uses, objects, and natural foliage on the ground; and, to protect the safety of air navigation around the airport by limiting the height of structures and foliage under the four (4) approach paths to the airport and generally within nine thousand (9,000) feet of the runway surfaces. Anything above the established height limitations could obstruct aircraft using the airport, create a safety hazard to airport operations, and unnecessarily endanger people, property and land use activities in the vicinity of the airport. Standard zoning height limitations and land use regulations alone are insufficient to provide the required protection for air navigation, according to Federal specifications.

Aviation: History, Education and Interpretation

Like Rail discussed in the previous section, Aviation is highlighted local attraction with focus on aviation history, education and interpretation for residents and tourists at the Shannon Air Museum. The museum is located on the grounds of the Shannon Airport and was founded in the 1970s. Throughout the year the museum displays their rare collection of vintage aircraft, numerous aviation related exhibits and hosts a variety of aviation related events and festivals.

Additional information about the Shannon Air Museum can be found at their website [HERE](#).

Commuter Bus Services

Three private bus operators provide commuter bus service in Spotsylvania County. ~~LW Transportation, The~~ Martz Group Virginia, and ~~Warrior Transit~~ provides service from the various park and ride lots in Spotsylvania County to destinations in the greater Washington, D.C. Metro area, as well as Richmond.

Additionally, the regional FRED system provides local linkages to area commuter lots and VRE passenger rail services.

Park and Ride Lots

There are ~~three (3)~~ four (4) Virginia Department of Transportation (VDOT) operated park and ride lots in Spotsylvania County and one (1) additional ~~planned~~ expected within the planning period. One is located on the south side of Route 3 at Salem Church Road (Route 639), which has approximately ~~672-670~~ parking spaces. This is a lighted park and ride lot that includes transit service, and bicycle racks. A second lot is located at the corner of Route 3 and Gordon Road (Route 627). The lot was expanded from 600 spaces to 1,061 spaces in 2015. In addition to the additional parking spaces, the \$7.2 million improvement project added: A dedicated High Occupancy Vehicle (slugging) pickup and dropoff area; bus lane and bus parking bay; second entrance to the lot accessible from Harrison Road; pedestrian sidewalk connecting the lot with surrounding commercial development. ~~which has about 600 parking spaces is planned for an expansion that will nearly double its size.~~ The third park and ride lot in Spotsylvania County is located on Houser Drive off Route 208, which has ~~805-823~~ spaces. This is a lighted park and ride lot that includes transit service access. Fourth, a new 1,500 space lot was opened in 2015 with the opening of the new Spotsylvania VRE Passenger Rail station just south of Route 17 off Crossroads Parkway. This is a lighted park and ride lot that includes passenger rail station access, bathroom facility, transit service, and bicycle racks. ~~Approximately 500 parking spaces at the Spotsylvania VRE station will be available for park and ride use.~~

Following the results of a 2005 Commuter Lot study combined with County growth and demands upon the existing park and ride lots, the County set a transportation objective in the 2008 Comprehensive Plan seeking the development of a new lot in the Massaponax area. A 2010 screening of potential locations resulted in a favorable recommendation of a location that had been identified as a viable alternative site in the 2005 study at Route 1 and Commonwealth Drive. The project has progressed since that time to site evaluation, engineering, design, and the project has been fully funded via VDOT Smart Scale with a projected opening in 2021. The lot will have approximately 700 parking spaces. Amenities will include parking lot lighting, bus and ridesharing loading areas, bicycle racks, and Route 1 frontage shared use path for future connectivity to adjoining developments and the Spotsylvania Parkway Trail system. This site is located in the midst of residential, commercial, industrial uses, and large mixed use areas with approved projects including Jackson Village, Heritage Woods, Alexanders Crossing.

On October 3, 2018 a commuter lot utilization survey was conducted for all four of the existing commuter lots within the County. Results of that survey are below:

| <u>Commuter Lot</u> | <u># Spaces</u> | <u># Used</u> | <u>Utilization</u> |
|-----------------------------------|-----------------|---------------|--------------------|
| <u>Route 3 - Old Salem Church</u> | <u>672</u> | <u>371</u> | <u>55%</u> |
| <u>Route 3 - Gordon</u> | <u>1052</u> | <u>388</u> | <u>37%</u> |
| <u>Courthouse/Houser</u> | <u>805</u> | <u>406</u> | <u>50%</u> |
| <u>VRE Spotsylvania Station</u> | <u>1486</u> | <u>711</u> | <u>48%</u> |

Though lot utilization varies from day to day it appears there is not presently a warrant in the foreseeable future for additional capacity beyond what's expected within the next couple years with a new Commonwealth Drive lot at Route 1. There are a variety of factors that could change commuter lot utilization over time. One influencing factor is geographical convenience and shifts in commuter behavior. The opening of the Spotsylvania VRE station and commuter lot expanded ease of access for VRE ridership within the County and added commuter parking capacity to an area of the County that had not had a nearby commuter lot previously. With expected population growth forecasted to continue there is value in continued monitoring of commuter lot usage trends to assure adequate capacity based on demand is provided.

Vanpooling

A vanpool is a group of commuters who have joined together to ride to and from work. The Potomac and Rappahannock Transportation Committee established the "Vanpool Alliance" in October of 2013 organizing 207 vans. Currently there are now 665 vans and 56 vendors operating in the region, of these vans, 49% originate from Spotsylvania County. The region receives 5307 federal funds based on transit vehicle-miles, passenger miles and other factors. Multiple agencies have established ridesharing services in the region including Department of Rail & Public Transportation (DRPT) and GWRideConnect which assists commuters who are seeking vanpools. The regions vanpool program is one of the most successful of its type in the United States. More information regarding GWRideConnect can be found **HERE**.

~~A vanpool is a group of commuters who have joined together to ride to and from work. Vanpools include owner operated vans, third party vans leased from a vendor for a monthly fee, and employer provided vans. The Virginia VanStart Program provides financial support for new vanpools and assistance in starting a new vanpool (www.vamegaprojects.com/commuter-solutions). GWRideConnect is a free ridesharing service that assists commuters who are seeking daily transportation, including vanpools (www.gwriderconnect.org).~~

Ridesharing

~~GWRideConnect, the Transportation Demand Management Agency of the George Washington Regional Commission, promotes ridesharing and transportation demand management techniques to assist persons seeking transportation their workplaces and other destinations. It is the mission of the program to promote, plan, and establish transportation alternatives to the use of the single occupant vehicle, improving air quality, reducing congestion and improving the overall quality of~~

life for the citizens of the region. GWRideConnect coordinates carpooling, vanpooling and bus pooling and provides a free ride matching program for persons seeking rides to their work destinations. GWRideConnect is the Transportation Demand Management (TDM) Agency operated by the George Washington Regional Commission (GWRC) that serves the residents of the region. GWRideConnect promotes ridesharing and TDM techniques to assist citizens seeking transportation options to their workplaces and other destinations. It is the goal of the program to promote, plan and establish transportation alternatives to the single occupant vehicle, improving air quality, reducing congestion and improving the quality of life for the citizens.

GWRideConnect is the recognized source for TDM and transportation information and assistance in the George Washington Region. The program offers a free ride matching program in addition to a wide variety of transportation options and solutions connecting citizens to available carpools, vanpools, commuter buses, slug lines, Fredericksburg Regional Transit and the Virginia Railway Express.

GWRideConnect Program Services Includes 11 Work components:

- Ridematching
- GWRideConnect Website
- Follow Up and Database surveys
- Vanpool Formation
- Advantage
- Carpool Formation
- Transit Options Promotion and Support
- Advertising and Promotion
- Commuter Lots
- Employer/Realtor/New Resident Outreach
- TDM, Bike and Pedestrian Promotion

GWRideConnect supports the largest vanpool fleet in the State and offers a comprehensive suite of vanpool services such as: Van Start, Advantage Self-Insurance Pool, Vanpool Express Match, Vanpool Alliance and Vanpool Connections Webpage. A large number of those vanpools, 107 originate from Spotsylvania County. Regionally, GWRideConnect supports 350 Vanpools transporting an average of 4,200 persons daily.

High Occupancy Toll (HOT) Lanes

High Occupancy Toll (HOT) lanes are proposed for I-95 between Spotsylvania County and Washington, D.C. These lanes would be available to high occupancy vehicles, such as carpools, vanpools, buses, motorcycles, and emergency vehicles. Vehicles not meeting the occupancy requirement can choose to pay to access these lanes, with the prices changing based upon demand and traffic congestion, with the goal to keep the HOT lanes congestion free. The current two-lane reversible High Occupancy Vehicle (HOV) lanes between Route 234 in Prince William County and Washington D.C. would be expanded to three lanes, and the three-lane section would be extended to Route 610 in Stafford County. South of Route 610, a two-lane reversible section would be constructed to Massaponax in Spotsylvania County, south of an interchange with U.S. 1. High occupancy toll roads were built between exit 152 in Prince William County and exit 143 in

Stafford County in 2014, with a revised and extended merge area just south of the Garrisonville Road exit opening in 2018. New toll roads are in the process of being built along the Interstate 95 corridor from the exit 143 area of north Stafford County down to Route 17 in south Stafford County to increase capacity to I-95. A new I-95 Interchange just north of the Welcome Center in Fredericksburg is in the planning stage as well. This will result in additional capacity being added to the Rappahannock River Crossing. These improvements are regionally significant and expected to benefit commuter populations within the larger area including Spotsylvania County.

In 2009, the George Washington Toll Road Authority was established which encompasses the City of Fredericksburg and the counties of Spotsylvania and Stafford for the purposes of alleviating highway congestion, promoting highway safety, expanding highway construction, increasing the utility and benefits and extending the services of public highways, including bridges, tunnels and other highway facilities, both free and toll, and otherwise contributing to the welfare of the Commonwealth and the George Washington Region. The Authority is governed by a ten-member board of directors. Three members are appointed from each of the original participating localities from among their elected officials, and one member is a designee of the Commissioner of the Virginia Department of Transportation.

Local Bus Service

Local transit services are provided by Fredericksburg Regional Transportation (FRED) through a purchase of service arrangement with the County. FREDericksburg Regional Transit (FRED) operates ~~four (4)~~ bus routes in Spotsylvania County providing ~~daily-weekday~~ services, ~~except holidays~~. Routing and scheduling is coordinated by FRED and subject to change potentially as demand warrants or as new stop locations are identified. The FRED system includes a stop at the Spotsylvania VRE Passenger Rail Station. As of adoption of this plan, the routes are: For more information regarding FRED local bus service including routes, fares, schedules, and other related news within FRED's Spotsylvania County and the Fredericksburg regional network can be found at the FRED website [**HERE**](#).

Route S1 from Lee's Hill Center to Spotsylvania Towne Centre

Route S4 from Lee's Hill Center to Spotsylvania Court House

Route S5 from Lee's Hill Center to Cosner's Corner, Lee's Hill and Germanna Community College

Route VS1 feeding the Fredericksburg VRE station from VDOT commuter lots at Gordon Road and Salem Church Road.

Teleworking/Telecommuting Centers

Teleworking, also known as telecommuting, means using information technology and telecommunications to replace work-related travel and therefore reduce peak hour commute time traffic volumes that ultimately impact transportation levels of service. With teleworking, employees work at home or at a local telework center one or more days per week. Communication to office staff or clients is accomplished by phone, fax, e-mail, internet, teleconferencing, and/or videoconferencing. Telework is usually implemented by business and

government agencies to improve services, reduce costs, reduce vehicle travel, or to help achieve other objectives.

Telework!VA (www.teleworkva.org) is an organization that provides information on establishing and expanding telework programs for Virginia businesses. The program goal is to provide more opportunity for participation in teleworking. This program is administered by the Commonwealth of Virginia Department of Rail and Public Transportation (DPRT). [More information about Telework!VA can be found on their website HERE.](#)

~~There is one telework center operated in Spotsylvania County. The Mason Enterprise Center's Flex-Office and Telework Center operated at 4712 Southpoint Parkway, Fredericksburg, VA 22407 (<http://www.mec-flex-office.org/>)~~

Bicycle and Pedestrian Trailways Master Plan

The Spotsylvania County Trailways Master Plan ~~was initially adopted by the Spotsylvania County Board of Supervisors on , adopted February 22, 2011 as a standalone transportation alternatives and parks and recreation amenities plan, is incorporated by reference in the Comprehensive Plan.~~ The Trailways Plan was developed with careful attention paid to community input and existing trailways plans at the national, state, regional, and local levels. The plan proposes an integrated system of off road greenway trails as well as roadway based improvements to serve multiple non-motorized transportation users including bicycle, pedestrian, equestrian, and others with a focus on creating safer transportation conditions while expanding recreational opportunities for citizens and tourists to enjoy Spotsylvania County's numerous historic, cultural, scenic, recreational, and commercial/ service attractions located throughout the County.

The plan was developed acknowledging that full build-out of the trailways system with all amenities will not take place immediately. This is a flexible, living plan and will be subject to future developments and economic conditions, as the community evolves. Levels of interest, available funding, and community support factors may fluctuate over time; so may the rate at which implementation of the plan is feasible.

~~In the interest of assuring the Trailways Master plan does not become outdated or inconsiderate of opportunities that may arise from changes elsewhere within other elements of the Comprehensive Plan, in 2019, the critical elements of the plan were reviewed, updated, and incorporated into the Comprehensive Plan in Chapter 3A. Abandonment of the standalone plan in favor of inclusion as a Comprehensive Plan element better positions it for continued monitor, pursuit, and review and update consistent with the 5 year review and update cycle. Otherwise staff has found there tends to be little impetus to update standalone plans that may become outdated or proactively amended to reflect new opportunities or routing alternatives. The revised and updated Plan addresses sidewalks, and recreational/ commuter trails plan intended to create an interconnected network of trails cognizant of provision for transportation alternatives as well as established Parks and Recreation Level of Service Standards and trail deficits expected to grow to 159 miles by the year 2040 based on projected population growth.~~

The Six Year Improvement Program (SYIP) identifies two projects in Spotsylvania County: Virginia Central Rail (VCR) Trail (VDOT UPC #97554) and Pedestrian Facilities at Courthouse Road and Brock Road (VDOT UPC #56436).

TRANSPORTATION ANALYSIS TOOLS

Transportation Impact Analysis

A Transportation Impact Analysis is required for all rezoning or special use proposals that meet the criteria established by the Virginia Department of Transportation or when a proposed development will generate 100 peak hour trips or 750 daily trips.

The Transportation Impact Analysis should address or include, at a minimum, the following:

- Definition of the study area (include map);
- Type of development proposed to include specific land uses;
- Size of proposed development with a breakdown of each specific land use;
- List of all approved but un-built developments to include approved subdivisions, site plans and zoned property (to be used for future background traffic);
- List of assumptions and rationale (include distribution of traffic);
- Modeling program used;
- Trip generation rates used for each land use proposed;
- Description of those roads directly and indirectly affected by the proposed development;
- Average daily traffic (ADT), peak hour traffic volumes, Level of Service (LOS) and volume/capacity ratios for all intersections and road segments under the following scenarios;
- Existing conditions;
- Phased and build-out condition within study area on existing road network;
- Build-out conditions within study area on existing road network with transportation improvements needed due to proposed development;
- Build-out conditions within study area on planned road network;
- Description of impacts to the existing and planned road networks; and
- List of recommended improvements based on impacts to the existing and planned networks.

Using Transportation Impact Analyses, staff can better determine what conditions, if any, are appropriate to mitigate the impact of development. Understanding traffic demands and impacts at the project level can greatly assist the County in building and maintaining a road network that addresses the needs of its users and provides for safe, effective, and efficient travel for those living in or traveling through Spotsylvania County.

Traffic Impact Analysis is a study used to estimate impacts of growth and how the transportation network would function once a proposed land use change or development takes place. Depending upon the impacts the analysis can involve VDOT, Spotsylvania County or other government agencies. If the impact is substantial and generates 5,000 new trips per day, equals the existing traffic on a residential road or is within 3,000 feet of connection to a major VDOT highway then VDOT requires a 527 TIA and takes the lead role in scoping the parameters of the study. Spotsylvania County has established additional requirements which are as follows;

- a trip generation threshold is crossed,
- a development is proposed within a critical corridor,
- a rezoning or land use request is inconsistent with the comprehensive plan,
- a development has regional significance,
- or the County Traffic Engineer determines that the development warrants a study.

The Table below includes Land Use Size Thresholds for Spotsylvania County and the impact analysis, site issues, or other analysis that is required or appropriate for a TIA.

Requirements for Various Types of Traffic Impact Studies

| TASK | TRIP THRESHOLD | |
|--|------------------------------|--------------------------------|
| | County Traffic Impact Study | 527 Impact Traffic Study |
| Trip Generation | 100 Peak Hour or 750 + Daily | 400 Peak Hour or 5,000 + Daily |
| Pre-application or scoping meeting | ✓ | ✓ |
| Impact Analysis Requirement | | |
| Existing conditions analysis LOS at site | ✓ | ✓ |
| Sight distance evaluation | ✓ | ✓ |
| Opposing driveway locations | ✓ | ✓ |
| Existing conditions at nearby intersections | ✓ | ✓ |
| Study area & future road summary | ✓ | ✓ |
| Comparison of trip generation uses | * | |
| Trip generation for specific uses. | ✓ | ✓ |
| Trip distribution analysis. | ✓ | ✓ |
| Background traffic growth. | ✓ | ✓ |
| Future conditions analysis (LOS) at nearby intersections | ✓ | ✓ |
| Design Year Analysis (6 years beyond Build) | | ✓ |
| Mitigation identification. | ✓ | ✓ |
| Site Issues | | |
| Evaluate number, location, and spacing of access points | ✓ | ✓ |
| Evaluate access design, queuing, etc... | ✓ | ✓ |
| Evaluate site circulation | * | ✓ |
| Other Analysis | | |
| Accident history. | * | * |
| Gap analysis at unsignalized intersections | * | * |
| TDM/TSM mitigation measures. | * | ✓ |
| Evaluate impacts on travel model | * | |
| Key ✓ = required * = may be appropriate on a case by case basis | | |

Travel Demand Forecast Model

Travel demand forecasting models are the major means for the development of a long-range transportation plan. The model is designed to calculate the number of trips, connect their origins and destinations, and identify the roadways or transit routes most likely to be used in completing a trip. Models are used to determine where future transportation problems are likely to occur by identifying congested roads. Once identified the model can test the ability of the highway network or transit system to address those problems.

In 2006, Spotsylvania County developed its first travel demand forecasting model in order to update the County's Thoroughfare Plan and quantitatively evaluate Future Land Use projections. The Spotsylvania Travel Demand Forecasting Model covers the entire Fredericksburg Area Metropolitan Planning Organization (FAMPO) region: the Counties of Caroline, King George, Spotsylvania, and Stafford, and the City of Fredericksburg. The Spotsylvania model was developed based on the FAMPO Travel Demand Forecasting Model.

In ~~2013~~ 2018, the model was updated with a base year of ~~2010-2015~~ to take advantage of the ~~2010 U.S. Census data~~, new travel surveys, and other information. The update included changes to the road network, population, dwelling units, employment, and household data. The travel demand forecasting model contains a set of mathematical relationships that estimate the total number of trips made by residents and employees in the County on a typical weekday. The model estimates the patterns of origins and destinations between and within all parts of the County and the Fredericksburg metropolitan area. It estimates the proportion of trips that travel by auto and applies auto occupancy factors. The final step is to determine the roads used by each trip on its way from its origin to its destination. This is calculated assuming that each driver attempts to find the quickest path, taking into account expected congestion. The summation of those trips over all the roadway segments produces the total daily traffic volume.

The Spotsylvania County Travel Demand Forecasting Model consists of ~~1,616~~ 1,659 Traffic Analysis Zones (TAZ's). The zone boundaries are based on Census geography, property lines, natural topography, roads, and other features. The TAZ's are points where traffic enters and exits the real roadway system. The number and size of these zones are extremely important in determining the model's accuracy and what roads can be modeled. The County desired a high level of accuracy and wanted the model to represent roads down to the Collector Road level, including many of the Local roads. This allows the County to also use the model to evaluate large mixed use developments as well as long range transportation plans.

The model also estimates ~~2030-2040~~ land use at the TAZ level and the ~~2030-2040~~ highway network reflects the current Comprehensive Plan. The model is used to evaluate land use changes proposed through the Comprehensive Plan process as well as through rezoning and special use applications. The model can also be used to evaluate future road improvement scenarios.

FUNCTIONAL CLASSIFICATIONS

The roadway functional classification system is a network of roadways grouped into classes each defined according to its purpose with respect to transportation. The system is based on guidelines by the Federal Highway Administration (FHWA). The basic purpose of a given road can be defined as a function of mobility and access. For ~~instance~~instance, a high level facility such as an interstate or major arterial are typically characterized as having greater travel speeds as well as greater traffic volumes. On these roadways, the main travel purpose is mobility. Low level facilities such as collector or local roads on the other hand, generally tend to carry fewer vehicles traveling at lower speeds. The main function of these roadways is more related to access. The classification for roads

in the county is important because in order to be eligible for Federal funding a roadway must be classified as a collector road or higher.

There are six (6) functional classifications for roads: Freeways/Interstates, Principal Arterials, Minor Arterials, Major Collectors, Minor Collectors and Local Roads. The transportation network in Spotsylvania County is organized by these classifications and matches those used by the Travel Demand Forecast Model. Spotsylvania County follows the latest adopted VDOT ~~adopted Roadway Functional~~ Classifications. —(<http://www.virginiadot.org/projects/fxn-class/home.asp>). A map depicting VDOT's 2014 Functional Classifications can be found within this Chapter. VDOT is the official source for such classifications and any future amendments to them that may occur within the Planning Period. The latest VDOT Functional Classifications apply and can be found online HERE.

The definition, in part, of each roadway classification is as follows:

Freeways/Interstates are multi-lane highways with limited access at grade-separated interchanges. They are designed to carry high traffic volumes at high speeds linking one state to another for interstate travel and commerce. Typical right of way widths range from 250 feet to 400 feet.

Principal Arterials are highways designed to carry high speed/high volume traffic. Access is generally controlled through at-grade signalized crossings and grade-separated crossings at major intersections. These facilities are most often limited-access roadways intended to carry inter-county traffic and typically link cities and towns. Typical right of way widths range from 110 feet to 200 feet.

Minor Arterials are highways designed to carry high volume traffic at moderate speeds with general access through at-grade crossings and grade-separations at major/high volume intersections. These facilities are controlled-access roadways intended to carry mostly intra-county traffic while still linking cities and towns. Typical right-of-way widths range from 90 feet to 200 feet.

Major Collectors are highways designed to carry moderate speed/moderate volume traffic. These roads serve as major links between arterial roads and tend to serve more local traffic. The typical right-of-way width range is from 90 feet to 120 feet on major collectors.

Minor Collectors are highways designed to carry moderate speed, relatively low volume traffic. Minor collectors are more local serving and connect local streets with other collectors, as well as arterials. Typical right-of-way widths range from 60 feet to 90 feet.

Local Roads include those roads that provide access within residential and commercial areas. These roads are local serving in nature and connect residential and commercial areas with

collector roads. In rural areas local roads convey traffic to the collector roads and are in many cases farm-to-market roads that do not meet modern design standards. Typical right-of-way widths for local roads range from 50 feet to 100 feet.

In each of the classifications described above the right-of-way widths will tend to vary to make allowances for bikeways, pedestrian facilities, bus stops, etc. as well as actual design speed.

CORRIDORS OF STATEWIDE SIGNIFICANCE

Corridors of Statewide Significance (CoSS) are multimodal connections to the Commonwealth's major activity centers. They are critical to the movement of people and goods between regions of Virginia and through the state. The CoSS were originally developed under VTrans2025 and validated during the VTrans2035 Update process. The Commonwealth Transportation Board (CTB) is charged with developing criteria for prioritizing the CoSS and conducting studies of the corridors. Corridors identified as CoSS demonstrate all of the following characteristics:

- Multiple modes and/or an extended freight corridor,
- Connection among regions, states and/or major activity centers,
- High volume of travel, and
- Unique statewide function and/or fulfillment of statewide goal

The purpose of identifying and designation CoSS is "to provide a multimodal vision for the corridors to guide localities in their land use and transportation plans. Without guidance, local decisions could degrade a corridor's ability to move people and goods, causing bottlenecks and problems that are costly to fix, and undermine economic and quality of life goals. As Virginia continues to grow, it must take steps now to ensure the right balance of development, transportation capacity, and natural resources. The real value of the CoSS is the identification of strategies within each corridor as the first step in ensuring these corridors are invested in and protected for the future benefit of the entire Commonwealth". The VTrans2035 Update establishes three tiers of CoSS: National Corridors, Commerce and Mobility Corridors, and Statewide Corridors. These systems are defined by the dynamics of total population, travel patterns, and intermodal and economic potential of the corridor within and outside of Virginia.

Two CoSS traverse Spotsylvania County:

1. *Coastal Corridor (Route 17)*, ~~which locally~~ includes U. S. Route 17 as it passes through the County, is designated as a Commerce and Mobility Corridor. In whole includes Route 17, Local Transit Services, Port of Virginia, Port of Richmond, Rappahannock River, Norfolk Southern Heartland Corridor, Norfolk Southern Coal Corridor, CSX National Gateway Corridor, CSX Coal Corridor, Amtrak, Norfolk International Airport, Newport News/Williamsburg International Airport.

Key Functions:

- Major I-95 alternative to shore destinations and through traffic
- Freight corridor
- Tourism access to Northern Neck and Middle Peninsula

Strategies Identified in VTrans2035 Update for Route 17:

1. Improve capacity by widening, intersection improvements, and/or construction of interchanges at strategic locations
2. Improve capacity through high-density areas through traffic management, access management, development of parallel routes and grid streets to separate local and through traffic, and possible use of Intelligent Transportation Systems (ITS) technologies

2. Washington to North Carolina Corridor (I-95), which includes I-95, Route 1 Local Transit Services, Virginia Railway Express, CSX National Gateway Corridor, and Amtrak as these facilities pass through the County, is designated as a National Corridor. Major corridor components include I-95, I-395, I-495, I-85, I-195, I-295, Routes 1 and 301, WMATA Blue and Yellow Lines, Local Transit Services, Virginia Railway Express, Ports of Alexandria and Richmond, James River, CSX National Gateway Corridor, Amtrak, Ronald Reagan Washington National Airport, Richmond International Airport.

Key Functions:

- Commuter Corridor in Northern Virginia and Richmond Areas.
- Through Traffic ("Main Street" of East Coast).
- Freight Corridor (trucks, CSX Rail Lines).
- Military Access (Pentagon, Quantico, Ft. Belvoir, Ft. AP Hill, Ft. Lee, etc.).
- Multimodal Corridor (VRE, Amtrak, Express Bus, HOV/HOT Lanes).
- Link to Maryland, Washington, D.C., and Capital Beltway from Points South.

Strategies Identified in VTrans2035 for the Washington to North Carolina Corridor (I-95):

1. Encourage increased Travel Demand Management (TDM).
2. Increase highway capacity through interchange improvements and modifications, interchange construction, and widening in strategic locations.
3. Improve Intelligent Transportation Systems (ITS), including along parallel roadways. ITS improvements are planned on I-95 at exit 126 and on U.S. Route 17 in the area of Crossroads Parkway.

A summary of Six Year Improvement Program projects within CoSS in Spotsylvania County are summarized in the table below. The projects are also included in the Spotsylvania County Thoroughfare Plan.

| Corridors of Statewide Significance (CoSS) Projects in the Six Year Improvement Program | | | |
|--|---|---------------------|-------------------|
| State Project # | Description | Route | VDOT UPC |
| 0000-088-593 | VRE Commuter Rail Station | 17 | 93066 |
| 0001-088-133 | Widening Improvements | 1 | 74002 |
| 0001-088-595 | Routes 1 & 606 intersection improvements | 1/606 | 93136 |
| 0095-088-584 | Spotsylvania Interchange Justification Report | I-95 | 90830 |
| 0620-088-182 | Harrison Road East (Rte 620 & Rte 1 Intersection Improvements) | 1/620 | 51845 |
| 0606-088-622 | Route 606 bridge replacement over I-95 and roadway improvements | I-95/606 | 100829 |
| 0606-088-653 | Reconstruction of Mudd Tavern Road (complements Route 606 I-95 Bridge replacement) | I-95/606 | 105463 |
| 0606-088-654 | Reconstruction of Mudd Tavern Road (complements Route 606 I-95 Bridge replacement) | I-95/606 | 105464 |

TRANSPORTATION ~~POLICIES~~-GOALS AND STRATEGIES

An overarching goal with specific ~~policies-goals~~ and strategies has been developed to provide direction and rationale for decision making related to transportation in Spotsylvania County. *The overarching goal is to develop a sustainable transportation network that supports the County's Comprehensive Plan and achieves a level of service that promotes safe and efficient operation and movement of people and goods.* The goals, ~~policies~~, and strategies form the foundation for the planning and development of Spotsylvania County's transportation system.

Policy-Goal 1: Maintain acceptable Levels of Service on public roads.

Strategies:

1. Achieve no less than a "D" Peak Hour Level of Service on 90% of County secondary roads within the Primary Development Boundary as shown in the Thoroughfare Plan. In the Primary Settlement District, levels of service are lower to encourage development and redevelopment to densities and intensities that maximize use of the existing infrastructure.
2. Achieve no less than a "D" Peak Hour Level of Service on the VDOT Primary Street System.
3. Achieve no less than a "C" Peak Hour Level of Service on 90% of County secondary roads outside of the Primary Development Boundary as shown on the Thoroughfare Plan. Levels of Service standards have been set higher in the rural area to ensure the rural character of the area is not degraded by development.
4. Continue efforts to pave those unpaved roads in the VDOT Secondary System.
5. The County should monitor secondary road links and intersection Levels of Service through a Traffic Count Program to supplement VDOT's existing Traffic Count Program.
6. Utilize the Travel Demand Forecast Model to project future Thoroughfare Plan needs.

Policy-Goal 2: Ensure that new development does not degrade Levels of Service and mitigates its impact on the transportation network.

Strategies:

1. Protect the transportation network from future congestion by:
 - a) encouraging joint-use access points for multiple developments,
 - b) ensuring connections within and between developments that offer alternative routing for traffic, but does not encourage cut-through traffic, and
 - c) encouraging alternative land development and site design techniques such as mixed use and planned unit developments that provide residential, employment, and recreational opportunities connected by a network of internal streets.
2. Require the submission of Traffic Impact Analysis (TIA) in compliance with VDOT's 527 Process or for projects that meet the County TIA threshold.
3. Only roadway facilities that are fully funded and programmed for implementation within the first 3 years of VDOT's Six Year Program or the County's CIP should be considered built and eligible for inclusion in a traffic analysis.

4. Large scale and mixed use developments should consider incorporating Transportation Demand Management (TDM) measures that reduce single occupancy vehicle trips.
5. The County should support alternative onsite transportation alternatives and recreational options such as transit, pedestrian and bicycle facilities that are able to, or will, connect to neighboring properties.
- 5.6. Discourage road sections allowing only single lane access in any direction without adequate travelway or shoulder width to allow other vehicles to pass in case of disabled vehicle, crash, stopped or pulled over vehicle. A single lane access constrained by a divided median is one example.

Policy Goal 3: Promote alternative modes of transportation and multi-modal facilities to more effectively address demands on the transportation network.

Strategies:

1. Promote Transportation Demand Management measures, such as the rideshare program, which relieve congestion on major transportation routes and promote more efficient use of alternative transportation systems.
2. Promote design and construction of appropriate bicycle and pedestrian facilities meant to enhance safety and avoid conflicts with motorized vehicles.
3. Promote the design and construction of transportation facilities that consider the needs of persons with disabilities as well as the needs of an aging population.
4. Coordinate with a regional transit service to provide timely and efficient bus routes that meet the needs of local transit users.
5. Support capacity enhancements and efficiency improvements along the RF&P Rail corridor for freight and passenger transport.
6. Support protection, enhancement, expansion of rail spurs and sidings within the County along the RF&P corridor for the potential growth of freight service and rail reliant industries and their associated employment and economic activity benefits.
- 4.7. Support protection, enhancement, expansion of rail spurs and sidings within the County along the RF&P corridor for development complementary to passenger rail service such as transit oriented developments.

Policy Goal 4: Plan transportation facilities that are environmentally and aesthetically compatible with the character of the County and minimize adverse effects upon historic and environmental resources.

Strategies

1. Minimize negative physical impacts to existing residents and businesses in the planning and design of new transportation facilities.
2. Promote Context Sensitive Design (CSD) in the development of new and expanded roadway improvements. CSD involves developing a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility.

~~Policy~~ Goal 5: Plan future transportation facilities that are cost-effective and can be implemented in a timely fashion.

Strategy:

1. Develop and implement a financial plan to achieve the County's transportation system objectives. The Plan should identify all new and existing funding mechanisms, such as Revenue Sharing, to include private funding initiatives and public/private partnerships.

Goal 6: Prioritize transportation projects for consistent implementation and clear direction for development patterns.

Strategies:

1. Develop and implement a working prioritized list of future road projects to achieve the County's transportation system priorities and objectives.
2. The list should identify all proposed improvement projects, new connection points, lane improvement, turn lane/intersection improvements, traffic circles, interchange alternatives, etc. to be coordinated through the regional transportation network including FRED, FAMPO, VRE and surrounding localities for consistent development.
3. The list shall be a working document reviewed and approved by the Transportation Committee and the Spotsylvania County Board of Supervisors.
4. Any inclusions, exclusions and alterations in the priorities approved on the list will require Spotsylvania County Board of Supervisors approval.