



PRINCE WILLIAM COUNTY

Mobility



Mobility Chapter Policies and Action Strategies

Mobility Chapter Sections

The proposed Mobility Chapter will focus on the following areas:

1. Thoroughfare (TH)
2. Transit (TR)
3. Active Mobility/Transportation (AT)
4. Recreational Trails (RT)
5. Alternatives/Future Transportation (FT)
6. General Transportation/Mobility (G)

APPENDECIES:

- Appendix A – Level of Service for Roadways and Intersections
- Appendix B – Overview of Travel Demand Modeling
- Appendix C – Overview of Congestion Management
- Appendix D – Proposed Interchange and Innovative Intersection Locations
- Appendix E – Proposed Interchange Cost

Intent:

The intent of this Mobility Plan is to provide an accessible, safe, comprehensive, multimodal transportation network that allows for the safe and efficient movement of goods and people throughout the County and into surrounding jurisdictions. The system includes networks of facilities and infrastructure, including roadways, transit stops and stations, elements supporting active transportation within the roadway right-of-way like sidewalks and paths and bike facilities, and trails separate from the roadway network. It also includes services, including transit operations, taxi, and other ride-hailing models, and potentially bikeshare and other emerging modes including rentable e-scooters.

An integrated transportation system that provides mobility for all underpins the County's vision as "a diverse community striving to be healthy, safe, and caring with a thriving economy and a protected natural environment." It strives to ensure the efficient movement of people and goods, enhance quality of life, and provide for economic growth. As population and commercial growth continue to increase in the County and the region, the existing mobility network will have to change and adapt to accommodate the travel demands and preferences placed upon it. As such, it becomes essential for the County to diversify the way residential, recreational, commercial, and work-related trips move throughout the County. Specific objectives include adapting to changing mobility trends, improving multi-modal options, increasing the use of public transit, increasing travel time reliability while concurrently striving to decrease the use of vehicle fuels that contribute to climate change. All elements are proposed to be built and maintained in a safe and sustainable manner.

To manage congestion and provide equitable transportation solutions, Prince William must invest in all elements of the multimodal system described above. By developing transit-oriented communities (“TOD”) which integrate transportation planning with land use planning and utilizing the ten principles of Smart Growth, as stated in the Land Use chapter, the County can reduce the future demand for transportation roadway infrastructure. Concentrating population, jobs, and infrastructure within vibrant, walkable communities throughout Prince William County will help to ease existing road congestion and manage future demand by providing options for multimodal travel and reduce dependency on automobiles. Ensuring that the mobility network includes connections to, and expansion of, the County’s recreational trail network also promotes healthier communities, cross-county connectivity, and the potential for economic growth through tourism.

The Mobility Chapter provides a framework for meeting the existing and future needs of Prince William County, through goals and action strategies directed at a safe, equitable, and connected mobility network. Additionally, it serves as a guide to the County’s Departments of Transportation (DOT) and Parks, Recreation and Tourism (DPRT), the Virginia Department of Transportation (VDOT), the Potomac and Rappahannock Transportation Commission (PRTC) also known as OmniRide, the Virginia Railway Express (VRE), residential/commercial developers, and other transportation-oriented entities in the region in their efforts to provide transportation improvements in accordance with the needs of the County. The specific road, transit and trail projects proposed in this plan are high priorities for improving safety, equity, and connectivity across the County’s mobility network and are therefore expected to be a key focus of capital improvement budgets for the duration of this plan.

To better support the County’s intent to provide residents and visitors a truly multimodal transportation network, the recreational trail component of the Comprehensive Plan has been incorporated into this Mobility Chapter.

Mobility Policies – As part of the Mobility Chapter update, all policies will be titled “Mobility Policies” and the various Mobility action strategies related to the above areas will fall under one or more of the Mobility Policies.

MOBILITY-POLICY 1: Ensure that the County’s transportation network prioritizes safety for all mode users, including motorists, transit riders, pedestrians, and bicyclists.

Action Strategies

- G1.1 Utilize improved infrastructure design, enhanced enforcement, and public education to provide increased safety for all transportation modes.
- G1.2 Require safety to be a top priority in the planning, design, and construction of all mobility projects to improve safety for all transportation users.

- G1.3 Ensure that motorists are informed of all construction projects, utilizing various communication channels including the County's website, social media, and changeable message signs, and ensure that safe access and mobility is maintained throughout the construction of projects.
- G1.4 To ensure safe routes to schools, staff from Transportation and other agencies will meet on a regular basis with the Schools' Safe Routes to Schools coordinator or other representatives from Prince William Public Schools to document needs, identify priorities, develop project proposals and pursue potential funding sources.
- G1.5 Require new residential development within 1 mile of existing or proposed school sites to consider safe routes to school connectivity or walkshed studies in development applications.
- G1.6 Prioritize in capital improvement project decisions, sidewalk gaps in existing neighborhoods that are within 1 mile of existing or proposed school sites.
- G1.7 Identify programs or initiatives to reduce roadway and pedestrian related fatalities and injuries in the County.
- G1.8 Review vehicular accident data in response to requests from County police, citizens and elected officials to determine the most effective solution to the issue, whether it be intersection improvements, signing, striping and/or roadway improvements.
- G1.9 Utilize technology, such as solar powered Speed Monitoring Signs and High-Intensity Activated Crosswalk beacon (HAWK) devices, to improve safety.
- G1.10 Implement Crime Prevention Through Environmental Design (CPTED) strategies in new and redeveloped transportation projects to improve safety, such as enhanced lighting and unobstructed sidewalks.
- AT1.1 Consider alternative bike facility improvements (such as a paved shoulders) in areas where roadways are not planned to have shared use paths as part of roadway repaving.
- AT1.2 Update and enhance the bicycle and pedestrian standards within Section 600 of the County's Design and Construction Standards Manual (DCSM).
- AT1.3 Improve connectivity of sidewalks and trails for pedestrians and bicyclists to ensure continuous, safe access.
- AT1.5 Consider reducing the width of roadway travel lanes in Small Area Plans/Town Centers/Activity Centers to provide separated bike lanes/transit lanes and/or parallel parking to reduce speeds and incentivize safe multimodal options.

- AT1.6 Identify roadways and create criteria for establishing safe on-road bicycle routes throughout the County, ensuring that these routes provide access within and between Activity Centers and transit nodes.
- AT1.7 All proposed activities which impact public and private roadway areas should be reviewed for bicycle accommodations.
- TH1.1 Develop a program with County Police to implement red light cameras to reduce/enforce speeding and implement cameras on school buses to reduce illegal passing of stopped buses.
- TH1.2 Develop an annual operating budget in the Capital Improvement Program for the improvement of County-maintained roads to meet Secondary Street Acceptance Regulations (SSAR) for adoption of roadways in VDOT's Secondary Street System for maintenance (https://www.virginiadot.org/info/secondary_street_acceptance_requirements.asp).
- TH1.3 Ensure that the County's roadway network and roadway standards adequately address the needs of emergency responders – including fire, police, and EMS.
- TH1.4 Identify neighborhoods where high traffic volumes create safety concerns due to excessive speeds. In such situations, identify appropriate traffic calming measures outlined in the *PWC Residential Traffic Management Guide*. In situations where vehicle volume and speed are a result of cut-through traffic, identify methods for potentially shifting vehicles to roads more suited to handle the traffic.
- TH1.5 Work with VDOT to implement safety strategies identified in the State Strategic Highway Safety Plan to reduce crashes resulting in severe injuries or deaths, consistent with the national highway strategy Towards Zero Deaths (<https://www.virginiadot.org/info/hwysafetyplan.asp>).
- TR1.1 Coordinate with transit agencies to ensure safe access to transit facilities in the County through improved infrastructure design, transit stop locations, public education and enhanced enforcement.
- RT1.1 Improve safety and visitor experience along recreational trails through appropriate and consistent trail route and distance markings and use of technology, including Quick Response (QR) codes, to provide trail maps, contact information and user guides.

MOBILITY-POLICY 2: Prioritize equity and access when planning for mobility projects

Action Strategies

- G2.1 Ensure the quality and function of the transportation system contributes to equitable outcomes for all people by increasing mobility options and access for Equity Emphasis Areas as defined by the Metropolitan Washington Council of Governments (COG) (<https://www.mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas/>), increasing accessibility for senior citizens and persons with disabilities, and including equity as a key planning principle in all mobility projects.
- G2.2 Use equity as a planning tool to identify social and racial disparities to mitigate adverse impacts consistent with Board adopted Resolution 20-494 (<https://eservice.pwcgov.org/documents/bocs/briefs/2020/0616/res20-494.pdf>).
- G2.3 Consider the connection between neighborhoods and retail and institutional services, transit nodes and trails when designing roadways and consider width of road, speed limit, medians for protection, pedestrian signals, and facilities in the design of the roadway to allow disadvantaged populations to safely access services.
- G2.4 Remove physical barriers that restrict mobility access by discouraging dead end streets and cul-de-sacs and encourage designs that improve walkability, including inter-and intra-residential development pedestrian paths, on-street parking and locating parking lots behind buildings.
- G2.5 Identify neighborhoods in need of new or repaired sidewalks, curbs, gutters, ADA ramps and street pavement or other infrastructure and supporting facilities and services and initiate and maintain a repair and replacement program for these areas through appropriate private or public means.
- G2.6 Develop a plan to improve communications accessibility by identifying alternative messaging and platforms for non-English speaking, digital illiterate, deaf and blind persons.
- G2.7 Provide information codes, such as Uniform Resource Locator (URL) codes, at bus stops, wayfinding signs, recreational and active mobility trails that can be translated into any language with a smart phone.
- G2.8 Incorporate universal signage design guidelines consistent with federal and state signage standards.
- G2.9 Minimize displacement and environmental impacts to communities when planning for mobility projects.
- G2.10 Reduce commuting costs for residents in Equity Emphasis Areas (“EEA”) as measured by the U.S. Census American Housing Survey commuting model by improving access to affordable public transit (<https://www.census.gov/topics/employment/commuting/guidance/commuting.html>)

- AT2.1 Maintain a County online interface for gathering resident input on the location of active mobility gaps and improvements needed to formally connect residents to the retail/commercial/activity/recreational areas that they bike and/or walk to.
- AT2.2 During residential rezoning and special use permit applications, encourage developers to provide private and/or public trails, as appropriate, for inter-parcel connectivity and/or the recreational and wellness benefits of the development's residents/patrons as is consistent with applicable law.
- TR2.1 Accommodate transit users with special needs, including the elderly, riders with young children and the physically disabled, to ensure the mobility needs of all are met, including ADA requirements.
- TR2.2 Coordinate with the County Agency on Aging and Social Services to determine where transit services are needed and partner with these agencies and transit service providers to disseminate information and outreach to the elderly and those with limited access to such resources
- TR2.3 Consider the location of mobility impaired populations and their travel needs (i.e., doctor, hospital, shopping, social activities, etc.) when determining the location of bus routes.
- TR2.4 Examine ways to provide transportation alternatives to those populations that don't have access to PRTC or VRE services. Such alternatives may be taxicabs or paratransit for the elderly, and/or the physically limited or disabled.
- RT2.1 Establish a County Maintenance Fund for recreational trails as part of the Capital Improvement Program.
- RT2.2 During residential rezoning and special use permit applications, seek public trail easements and/or land dedications/donations, where needed to expand the County's greenway, blueway, and heritage corridors as is consistent with applicable law.
- RT2.3 Seek opportunities to create a variety of accessible recreational trail experiences (bicycle, equestrian, nature trails, etc.) for a diverse mix of populations (i.e., various age groups, level of mobility, etc.).

MOBILITY-POLICY 3: Promote sustainability and resiliency when proposing new infrastructure or upgrading existing facilities that impact environmental and cultural resources.

Action Strategies

- G3.1 Coordinate with Public Works to encourage increased landscaping and plantings of native plants where applicable along road rights of way and in medians, as allowed by VDOT to enhance the streetscape and environmental impacts of roadway improvements.
- G3.2 When planning and implementing transportation infrastructure, identify and protect the existing environmental resources through approaches that avoid, minimize, and mitigate impacts.
- G3.3 Use EPA's Environmental Justice Screening and Mapping Tool (EJScreen) to identify potential environmental justice impacts of projects (<https://www.epa.gov/ejscreen>).
- G3.4 Evaluate identified regional strategies for meeting regional greenhouse gas reduction goals for incorporation into local mobility projects (link to MWCOG plan when published).
- G3.5 Prioritize improvements to vulnerable infrastructure, as identified by VTrans Vulnerability Assessment (<https://www.vtrans.org/long-term-planning/megatrend-climate>).
- G3.6 Develop policies to identify, mitigate, and/or interpret cultural resources that are within right of way and/or impacted by road development/redevelopment projects.
- G3.7 Coordinate with a County Archeologist and the County Office of Historic Preservation on locally funded mobility projects to identify cultural impact mitigation measures and opportunities to enhance cultural resources.
- FT3.1 Promote the utilization of vehicles that use alternative fuels and other solutions including electricity to reduce air quality and noise impacts.
- TH3.1 Evaluate functional plans and designs for proposed roadway construction projects to identify cultural or environmental issues. Where there are conflicts, identify alternatives to construction of the roadway and alternative alignments.
- TH3.2 Support the *Journey Through Hallowed Ground* National Heritage Area initiative to designate specified sections of Route 29 and Route 15 within Prince William County as a National Scenic Byway and/or an All American Road. Employ context sensitive solutions for highway projects within these sections.
- TH3.3 Support VDOT's Rural Rustic Road program to identify roads that qualify for this designation (link to VDOT's webpage - https://www.virginiadot.org/business/resources/local_assistance/Rural_Rustic_Road_Program_Manual_2014_Update_-_Recodification.pdf.)

- TH3.4 Support VDOT's Scenic Byways program to identify roads having relatively high aesthetic or cultural value, leading to or within areas of historical, natural or recreational significance (<https://www.virginiadot.org/programs/programs/byways.asp>).
- TH3.5 Consider the impact of traffic noise on neighborhoods and implement appropriate noise mitigation measures in accordance with FHWA's noise abatement regulations (23 CFR 772) (<https://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0772.htm>).
- TH3.6 Consider alternative roadway designs that provide environmental benefits through improved operations, such as roundabouts, in project planning stage.
- RT3.1 DPRT shall coordinate with the County's Environmental Services/Watershed Division to establish guidelines and policies for the development of recreational trails within environmentally sensitive habitats and incorporate any design strategies, as appropriate, into related DPRT planning and design documents, such as the DPRT Trail Standards Manual.

MOBILITY-POLICY 4. Maximize cost effectiveness of all multimodal projects through strategic project planning, programming, procurement, and delivery.

Action Strategies:

- G4.1 Work with federal, state, regional and local public agencies, and private sector sources to identify, plan, fund, and implement County mobility improvements utilizing outside sources of funding.
- G4.2 Collaborate with other agencies and jurisdictions to implement innovative and cost-effective projects.
- G4.3 Annually update the Six-Year Highway Primary and Interstate Road Improvement Plan and biannually update the Six-Year Secondary Road Improvement Plan for road construction and seek state and regional funding to implement these plans.
- G4.4 Research the use of alternative financing methods, including mobility bonds, using the County's Capital Improvement Program ("CIP") as a foundation for the timing, location, and construction of roadway and recreational trails/activity mobility facilities.
- G4.5 Pursue methods for obtaining private sector resources to assist in the costs of design and/or construction of projects in the CIP, including identifying mitigation measures for offsetting impacts of land development.

- G4.6 Monitor and inform regional and state long range plans, policies and projects through staff participation in committees and working groups to ensure alignment and collaboration with County plans and projects.
- G4.7 Identify and apply to grant programs to maximize external funding of County mobility projects.
- G4.8 Strategically program funds based on funding source requirements and project scope, cost and schedule to maximize project cost efficiencies and delivery timeline.

MOBILITY-POLICY 5. Enhance and expand the transit network and supporting infrastructure.

Action Strategies:

- FT5.1 Identify and develop alternative transit concepts, such as bus rapid transit (BRT), light rail transit (LRT), Potomac ferry service, Metro rail extensions and VRE expansion.
- FT5.2 Initiate feasibility studies of alternative transit concepts that would identify conceptual alignment and engineering; proposed station locations; transit vehicle technology and suitability; initial scan of environmental issues; fatal flaw analysis; and possible funding sources.
- FT5.3 Aggressively seek funding through grants to develop alternative transit concepts.
- FT5.4 Coordinate with regional, state, and federal agencies to facilitate the design and construction of alternative transit concepts.
- TH5.1 Prioritize and implement roadway projects that improve access to transit.
- TH5.2 Develop a parking district policy for Activity Centers near existing or planned transit facilities that recognizes and balances the need for short-term and long-term parking supply.
- TR5.1 Improve intra-county bus network connecting Activity Centers.
- TR5.2 Support public information campaigns to increase awareness of all available transportation options.
- TR5.3 Integrate multiple modes of transit in centralized locations to create multimodal hubs that will improve mode choice and connectivity of modal systems.
- TR5.4 Coordinate with adjacent jurisdictions, federal, state, transit and regional agencies such as but not limited to OmniRide, Virginia Railway Express, and

Virginia Department of Rail and Public Transportation, to ensure that the county's transit system is compatible and connected to existing transit infrastructure in the surrounding metropolitan region.

- TR5.5 Development or redevelopment along transit corridors, and within a ½-mile of existing or proposed transit facilities (i.e., bus stops, bus shelters, train stations, park-and-ride lots), should make efforts to expand such transit infrastructure, through projects such as station and parking capacity expansions and additional or improved passenger facilities.
- TR5.6 Analyze feasibility of dedicated transit lanes and transit priority treatments to improve transit travel times and reliability.
- TR5.7 Support local and regional commuter programs, including vanpooling, ride hailing, ridesharing and "Slugging", through funding, coordination and promotion.
- TR5.8 Encourage the utilization of public/private partnership bus shuttle programs to connect development projects to mobility hubs.

MOBILITY POLICY 6: Adapt to changing and emerging mobility trends.

Action Strategies:

- G6.1 Monitor and plan for emerging mobility trends, including changes in travel behaviors (i.e. decreased vehicle ownership, shift in peak demand, greater demand for walking and biking) and changes in mobility modes and technology (i.e. autonomous vehicles, electric vehicles, ridesharing, shared mobility devices, automated traffic enforcement) through development of policies and strategies that will address changing mobility needs and support the shared use mobility network.
- G6.2 Monitor changes in travel behaviors to anticipate changes to Levels of Service and future demand and inform long range planning for capital projects.
- G6.3 Support local and regional telework policies to reduce trip demand.
- FT6.1 Identify opportunities for implementation of electric vehicle charging stations and determine appropriate infrastructure needs based on current and future technology.
- FT6.2 During the rezoning process ensure that the development/project considers alternative modes for internal circulation and connectivity to existing transportation networks, such as shared mobility devices, such as electric scooters and bikes, and micro transit, which provides flexible, demand responsive transit services within a defined geographical area.

- FT6.3 Encourage incorporation of technology in mobility projects, including solar power and intelligent transportation systems.
- FT6.4 Consider regional principles for Connected and Autonomous Vehicles (CAV) in roadway projects (<https://visualize2045.org/future-factor/emerging-technologies/>).

MOBILITY-POLICY 7. Align mobility priorities with land use to increase mobility options, minimize projected trip demand, and improve quality of life for residents.

Action Strategies:

- G7.1 Improve capacity, options and use of the active mobility and non-motorized network and supporting facilities and enhance intermodal connectivity consistent with land use to minimize trip demand.
- G7.2 Shift focus from planning around vehicle accessibility to supporting more options for public transportation, ride sharing, biking and walkable streets.
- G7.3 Include all modes of transportation for review and consideration as part of the rezoning and special use permit development review process to ensure a multimodal transportation assessment of land use.
- G7.4 Develop guidelines for multimodal transportation assessment of projects, to include mode split assumptions between vehicle, transit, and active transportation of trip generation estimates, to provide consistent review of proposed projects.
- G7.5 Coordinate with VDOT to develop values-aligned goals including safety, multimodal access, sustainability, and resiliency in order to assess the impacts of proposed development
- G7.6 Develop/redevelop guidelines for landscaping, signage, and architectural standards for County gateways and roadway corridors. Continue to create and update Highway Corridor Overlay Districts (**HCODs**) or similar regulations for major roadways identified in the Thoroughfare Plan, in conjunction with the Community Design Plan. Provide well-landscaped and well-maintained County gateways and corridors.
- G7.7 Prioritize transportation infrastructure in areas identified by the Long-Range Land Use Plan Map as Activity Centers or areas identified for targeted industries.
- G7.8 Support and identify funding for mobility improvements identified in approved Small Area Plans

- AT7.1 Expand the DCSM bicycle parking rate requirements for a wider variety of commercial, office and industrial uses based on the number of employees.
- AT7.2 Encourage bike parking facilities for 5% of the student and/or employee population at County owned facilities, including schools, libraries, and government buildings.
- AT7.3 Apply bike lane designs from the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide to the County's Small Area Plan areas and urban areas.
- AT7.4 Proposals for new mixed-use commercial, office, or residential development shall incorporate sidewalks, shared use paths, recreational trails, or similar, to connect to existing and adjacent facilities of a similar design, particularly where needed to provide connectivity between land uses and improve mobility in the immediate vicinity of the development.
- TH7.1 Evaluate the level of service (LOS) of existing and proposed roadway corridors and intersections to achieve a minimum LOS appropriate for the roadway classification and surrounding land use.
- TH7.2 Reduce expected traffic demand through use of Transportation Demand Management (TDM) strategies and use of Transit-Oriented Development (TOD) to create compact, mixed-use Activity Centers that encourage greater micro transit, transit and active mobility trips and reduce vehicle trips. This includes continued coordination with transit partners (OmniRide, Virginia Railway Express, and Virginia Department of Rail and Public Transportation).
- TR7.1 Provide transit connections, such as circulator transit systems, within and to Activity Centers.

MOBILITY-POLICY 8. Meet demand through capacity enhancements and innovative operational improvements

Action Strategies:

- AT8.1 Encourage public and private employers to create programs for employees that reduce trip demand by encouraging use of transit services and active mobility/recreational trail routes to and from the workplace.
- TH8.1 Improve roadway capacity by providing new roadway segments and widening existing segments (as detailed in the Thoroughfare Plan and presented in Table 2); and providing grade separated interchanges or innovative interchange/intersections (as detailed in Table 2).

- TH8.2 Manage growth in Total Daily Vehicle Hours of Delay through continuing investments in the multi-modal transportation system.
- TH8.3 Participate in performance-based planning studies, including VDOT's STARS and Pipeline Programs, to identify innovative operational alternatives.
- RT8.1 Utilize trail counters, user surveys, and/or new technologies to garner demographic data and use patterns of visitors to the County's recreational trails and identify trail enhancements/programs that increase resident and visitor satisfaction.

MOBILITY-POLICY 9: Continue to enhance and expand recreational trail opportunities throughout the County by providing a diverse mix of trail types and experiences to and within the County's parks, and greenway and blueway corridors.

Action Strategies:

- RT9.1 Actively seek to acquire fee simple interest in property or public recreational trail easements through land dedications, purchases, grants, or donations that are suitable for expanding or creating new recreational trails/trail networks that support the local and regional recreational trail planning initiatives of DPRT, PWC Transportation, VDOT, Virginia Outdoors Plan, etc.
- RT9.2 Develop a County-wide Trails Master Plan that identifies trail and active mobility gaps and includes priorities for inclusion into capital improvement and capital maintenance budgets. In support of action strategy REC 1.6 (Parks, Recreation and Tourism Chapter) include an evaluation of blueway opportunities, as well as an analysis of bicycle routes and equestrian trails. This plan should be updated every 10 years following the updates to the Parks, Recreation and Open Space Master Plan.
- RT9.3 In support of PK 1.6 and REC 1.3 (Parks, Recreation & Tourism Chapter), continue to develop and maintain a database of all County-maintained recreational trails and trail easements, to include primary trail use/type, surface, and other pertinent qualifying details.
- RT9.4 During the park master planning process, consider providing/expanding/improving recreational trail/active mobility opportunities to and within the County's parks, including expansion of the greenway and blueway trail networks. This should include identifying means to create appropriate bike/ped access to all park entrances and/or trails from adjacent neighborhoods and establishing/completing accessible routes to and between park facilities.

- RT9.5 To address the fitness and health objectives identified in action strategy REC 1.8 (Parks, Recreation & Tourism Chapter), seek opportunities to establish accessible walking/fitness trails around the perimeter of the County's neighborhood and community parks.
- RT9.6 Seek opportunities to expand/create recreational trails that connect County parks to one another.
- RT9.7 In support of Rec 1.4 (Parks, Recreation & Tourism Chapter), inventory all County parks lacking appropriate bicycle and pedestrian access at the park entrance and coordinate with Transportation/VDOT to formalize such improvements as adjacent roadways are developed/redeveloped, particularly at the neighborhood park level.
- RT9.8 Seek opportunities to expand equestrian and blueway trail opportunities, including the creation/development of trailhead parking areas as necessary to improve trail use/access.
- RT9.9 Provide recreational trail opportunities that serve the specialized needs of residents, with a focus on inclusion and accessibility for all types of recreational trails (i.e., nature, interpretive, equestrian, mountain biking, kayaking, etc.)

MOBILITY-POLICY 10: Encourage resident, stakeholder, and inter-jurisdictional participation in the planning and design of the County's recreational trails, and greenway and blueway corridors, to promote a greater sense of community and to enhance regional connectivity.

Action Strategies:

- RT10.1 Continue to work with the Prince William County Trails & Blueways Council to garner input on recreational trail opportunities and priorities within each of the County's magisterial districts, and the County-wide trail network.
- RT10.2 Continue to seek input/assistance from the Prince William County Trails & Blueways Council, Greater Prince William Trails Coalition, Prince William Trails and Streams Coalition, residents, and other stakeholders, to identify recreational trail gaps and prospective routes for implementing the recreational trails, as well as the greenway and blueway components of this Chapter.
- RT10.3 Provide an interactive online map to collect resident/stakeholder input on trail gaps (recreational trails, shared use paths, sidewalks, etc.) and establish a database of project priorities.

- RT10.4 In support of PK 4.1 (Parks, Recreation & Tourism Chapter) seek opportunities to connect the County's recreational trails to similar trails provided by adjacent jurisdictions, and other local, regional, state, and federal park and trail providers.

MOBILITY-POLICY 11: Balance recreational trail development and maintenance projects to ensure system-wide quality.

Action Strategies:

- RT11.1 Develop a database of recreational trail capital improvement and capital maintenance priorities for inclusion into department budgets. Create a recreational trail maintenance plan that identifies funding staffing levels necessary to maintain the County's recreational trails at a high quality.
- RT11.2 Actively pursue recreational trail grant funding that supports the County's recreational trail construction and maintenance efforts.
- RT11.3 Develop/formalize "Adopt A Trail", "Adopt A Stream", or similar program(s) to promote resident, stakeholder, businesses and neighborhood investment in the maintenance and improvement of the County's recreational trails, and greenway and blueway corridors. Seek assistance from the Prince William County Trails & Blueways Council, or similar groups/organizations to lead these initiatives.

APPENDIX A

LEVEL OF SERVICE STANDARDS FOR ROADWAYS AND INTERSECTIONS

New development creates demands on County roadways and intersections that affect the ability of those facilities to meet established level of service (LOS) standards. Therefore, it is important that new roadways, innovative intersections and widened facilities be provided in order to address this demand. As such, proposed developments must be evaluated in order to quantify impacts to roadways and intersections caused by that development and the needed improvements to maintain or achieve the acceptable County standard for LOS. Additionally, the demand for future roadway improvements based on development growth should be monitored, and methods for maintaining an acceptable roadway LOS must be evaluated.

Any application for a rezoning or special use permit shall contain the following information:

- Number and type of dwelling units
- Square footage of mixed use and nonresidential uses
- Name(s) and location(s) of roadways and intersections serving the project area
- Existing and proposed daily volume on all roadways serving the project area
- Traffic Impact Analysis (TIA), if required by the County or VDOT

Rezonings or special use permits for all uses shall propose mitigation measures in order to meet the established LOS standards for roadways and intersections. Applications that fail to meet the LOS standards shall be generally considered inconsistent with the mobility component of the Comprehensive Plan.

The standard measurement for level of service is based on the following criteria as established by the most recent edition of the Transportation Research Board's "Highway Capacity Manual":¹

- LOS "A" through LOS "F" for roadways based on volume to capacity ratios of the roadway link in question.
- LOS "A" through LOS "F" for intersections based on average intersection delay of the intersections in question

¹*LOS A* describes primarily free-flow operations at average travel speeds, usually about 90 percent of free-flow speed for the arterial classification. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Average delay at signalized and unsignalized intersections is minimal.

LOS B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification. The ability to maneuver within the traffic stream is only slightly restricted and on average, intersection related delays are not bothersome. Drivers are not generally subjected to appreciable tension.

LOS C represents stable operations; however, ability to maneuver and change lanes in mid-block locations may be more restricted than at LOS B.—Longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the roadway's average free-flow speed. Intersection related delays may begin to become problematic for some movements. Motorists will experience appreciable tension while driving.

LOS D borders on a range in which small increases in flow may cause substantial increases in delay and hence, decreases in arterial speed. *LOS D* may be due to adverse signal progressions, inappropriate signal timing, high volumes, or some combination of these factors. Average travel speeds are about 40 percent of free-flow speed. Intersection delays are problematic for many of the critical movements (i.e. side streets or turning movements) although the intersection as a whole may still be functional.

LOS E is characterized by significant delays and low average travel speeds of one-third the free-flow speed or less. Such operations are caused by some combination of: adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing. At intersection LOS E, critical movements have high average delays and the intersection as a whole reaches the point of near gridlock.

LOS F characterizes arterial flow at extremely low speeds below one-third to one-fourth of the free-flow speed. Congestion is likely at signalized intersections, as well as high delays and extensive queuing. Adverse progression is frequently a contributor to this condition.

Generally, the minimum acceptable LOS for roadways and intersections in Prince William County is LOS "D". All developments are expected to maintain LOS "D" or better for roadways and intersections currently operating at or above LOS "D", and not deteriorate roadways and intersections currently operating below LOS D. Meeting the LOS standards can be achieved through proffers or conditions providing additional roadway capacity, signalization, turn lanes, traffic reducing transportation demand management strategies, or other improvements that either increase the capacity of the transportation network or reduce the traffic demand on the network.

The Level of Service (LOS) rating system to measure traffic congestion on roadway segments, intersections and entire urban areas was initially presented in the 1965 *Highway Capacity Manual*. VDOT, FHWA and the County use LOS as a benchmark for the success of regional and local transportation roadway networks. The fundamental reason that state and local governments plan new or widen roads is to improve LOS during the peak hours, which creates roads that may be underutilized during the rest of the day.

While congestion is a considerable problem, it is not the County's only problem. The County has recognized the need for multimodal levels of service through the Strategic Plan's Mobility Goal to "have an accessible, comprehensive, multimodal network of transportation infrastructure that supports local and regional mobility." One of the objectives to achieve this goal recognizes the need to build a robust economy and to provide more job opportunities within the County to help reduce commute times and congestion issues. In order to implement the goals of the Town Centers/Activity Centers /Small Area Plans, the County needs new performance measures to measure accessibility, economic development, sustainability and livability. This requires less reliance on achieving a specific LOS, and more reliance on creating a sense of place with measures related to economic, social and environmental outcomes, where people live, work and play in the same geographic area and accept that congestion is expected in its Activity Centers.

The current LOS standards ignore impacts of people walking, biking, rolling and/or riding transit. A related measure posts vehicle hours of delay (VHD), which is related to the vehicle miles traveled (VMT) in the Strategic Plan. However, a sole focus on impacts to drivers undermines consideration of more value-aligned goals including safety, access, sustainability and resilience.

In the future, the County will explore evaluating transportation performance by metrics beyond conventional LOS and VHD. The Virginia Department of Transportation (VDOT) and the Department of Rail and Public Transportation (DRPT) recognize that Multimodal System Plans for Activity Centers/Small Area Plans can be developed so that the future roadway network and street sections for the entire area could be established with this plan. DRPT updated the Multimodal System Plan Guidelines in 2020 to bring them in line with the state practice and new national guidance. They provide a process for jurisdictions to designate connected networks for all travel modes and design and retrofit corridors that fit within the surrounding context within centers of activity, Prince William County followed the principals of the Multimodal System Plan in the development of its Small Area Plans/Activity Centers but has not applied to DRPT for approval of these plans. This is due to the complexity of the original Guidelines published in 2013. At the time that the Small Area Plans were being developed, there had not been a jurisdiction that had received approval for a Multimodal System Plan, even though one County had been trying for 5 years to gain this approval. The County

will continue to follow these guidelines though may not determine to apply for DRPT/VDOT approval for the Plan. Note that TIAs for individual rezonings would inform turn lanes and signalization, but not road sections.

OmniRide

DRPT has established guidelines that measure performance and determines improvements to systemwide and each service type – local vs commuter service. Metrics such as ridership, cost efficiency, safety, service quality and system coverage/availability are measured. In general, ridership on the local routes matches with the level of service provided. OmniRide planners review the performance data to determine whether routes need to be adjusted to increase or decrease route coverage/schedule. OmniRide also reviews large rezoning cases to determine the need for proffered bus shelters and/or shuttle runs within the development or to VRE/Commuter Parking Lots. OmniRide is currently developing on-time and performance methodology and standards and will be included in updates to the FY2020-2029 Transit Strategic Plan.

Virginia Rail Express (VRE)

VRE has established a load factor rather than level of service (LOS). For rolling stock, VRE's goal is to provide a seat for each passenger on a train. If the load factor is exceeded, VRE will add additional cars to a train or another train to service to alleviate passenger crowding. Per the VRE Transit Development Plan (TDP), VRE maximum load factor is 1.11 (ratio of total passengers to seated passengers) during peak periods, based on the seating capacity of VRE equipment + standing capacity (per manufacturer). In practice, however, the ability to add seats to a train or additional trains into service can be constrained by the available VRE coach fleet size and agreements with host railroads that limit the number and times VRE trains can be operated.

For station planning and design, there are industry accepted guidelines that can be used by an agency for planning purposes for station facilities. For example, VRE has used the TCRP Transit Capacity and Quality of Service Manual, 3rd Edition, Exhibit 10-32 (<https://www.trb.org/Main/Blurbs/169437.aspx>), LOS C as the guideline to determine the platform area to accommodate future passenger loads when designing new platform facilities such as the current L'Enfant Station improvement project. That guideline can also be applied to existing facilities to justify the need for platform expansion, although VRE platforms most subject to crowding are at the destination stations where the two lines merge (e.g., Alexandria inward) and there is the potential for passengers to be waiting for trains from both lines at the same time. Because passenger loads are typically less at origin stations and because platforms have been designed to accommodate a full train length, LOS at those stations tends to stay low.

The Transit Cooperative Research Program (TCRP) Manual addresses all aspects of physical station design (e.g., stair width, sidewalks, etc.) and include LOS guidelines for some of those station elements too. Most VRE stations are fairly simple, and those other guidelines may not apply, but some may be used in station planning and design to confirm other features (e.g., stairway width) will accommodate expected passenger loads.

APPENDIX B

OVERVIEW OF TRAVEL DEMAND MODELING

Travel demand modeling in all metropolitan regions is based upon the model developed by the federally mandated Metropolitan Planning Organization (MPO). For the Washington, DC region, the MPO is the Transportation Planning Board (TPB) of the Metropolitan Washington Council of Governments (MWCOG). VDOT derives its Northern Virginia District model from the MWCOG model which is the basis for the model used in Prince William County. These models all forecast average 24-hour weekday traffic (AWDT) volumes.

The essential difference between the County model and the regional model is the level of detail included within each, both in terms of the roadway network and the demographic data used to generate the number of trips being simulated. The MWCOG model is a multi-jurisdictional model which forecasts future travel demand across the entire Washington, DC region. The VDOT model simulates traffic across northern Virginia and demographic data are more detailed than used in the MWCOG model. The County's model, developed to support the County's Comprehensive Plan, is even more detailed. In addition to Interstate and Primary roadways generally found in the MWCOG and VDOT models, the County model also includes a number of Secondary roadways as well. For the purposes of the County model, all roads in the Thoroughfare Plane of the Comprehensive Plan are included, as well as a number of other significant roadway connections within the model as determined by County staff.

The County travel demand model is primarily used to simulate the effect of loading future traffic (as generated by land uses identified in the Land Use Chapter of the Comprehensive Plan) on a future roadway network. The primary goal is to identify what improvements may be required for specific roadway segments in order for them to operate at acceptable levels of service (see Appendix A) with the inclusion of e proposed land use related traffic. There are four main steps in the travel demand modeling process: trip generation, trip distribution, mode choice and traffic assignment. A brief discussion of each of these steps follows.

Trip Generation

The first step in the modeling process is to determine how many trips will take place in the future. To do this, future land uses, as determined by the Prince William County Planning Office and submitted to MWCOG, are converted into average daily person-trips. The PWC Planning Office submits its forecasts for the next 25 years and MWCOG reviews the data from all of its members and determines control totals for each demographic for each jurisdiction. These totals must be maintained for all travel demand model runs. This is accomplished by applying standard trip-making rates to the variables which make up future land use. These variables include the number of households, jobs, and population. Dwelling units represent the location where trips begin, or are produced, and jobs represent the locations where trips end, or are attracted. To facilitate this conversion, the area being modeled is divided into small geographic areas called traffic analysis zones (TAZs). The result of this first step in the modeling process is a table of person-trip ends produced and attracted for each of the TAZs by trip purpose (i.e., work, shop, other).

Trip Distribution

The second step in the modeling process takes the table of person-trip ends produced and attracted by each TAZ and allocates those trips between the TAZs. This is accomplished by matching each trip produced in each TAZ to a trip attracted in each TAZ with MWCOG's Origin Destination information. The result of this step is a table which shows how many person-trips will take place between each of the TAZs. This table is referred to as a zone-to-zone person-trip table.

Mode Choice

The third step in the modeling process predicts how each trip in the zone-to-zone person-trip table will take place. A trip can take place by car, by bus, or by some other means or mode of travel. As noted earlier, the model used in Prince William County uses primarily two modes - automobile and transit/HOV. The MWCOG model uses a very detailed process to calculate this split based on the relative time and cost of using each mode for each trip and the vehicle ownership of the trip maker. The County model transfers this information to the County's TAZ geography. The results of this step in the modeling process are a series of tables which identify zone-to-zone person-trips by mode of travel. Following the convention of an earlier version of the MWCOG model, the County model performs this split only for work trips. For travel completely within PWC, trip tables that are sensitive to trip purpose, traveler household income and proximity of bus route/ VRE line to traveler's origin and destination are used. These tables are based on MWCOG's home interview survey (most recent 2007-08) and adjusted to reflect the actual number of transit trips within PWC. For trips outside of PWC, the model uses the outputs of the MWCOG model which incorporate all of its assumptions about transit. Pedestrian/Bicycle trips are removed from the trip generation step based on trip purpose and Area Type (based on population and employment density as calculated by TAZ). The model uses a 20-40% ped share for CBD areas and significantly less for other areas such as Urban or Suburban Heavy. The County Planning Office and Department of Transportation have identified percentage of pedestrian/bicycling trips internal to each identified Activity Centers.

Traffic Assignment

The traffic assignment step in the modeling process places the zone-to-zone person-trips by automobile mode onto the roadway network which has been assumed to be constructed in the same goal year as the demographic data used in the Trip Generation step. Trips made by transit are not assigned to this network. The roadway network is developed in three phases: the network that currently exists is identified, then expanded to include any improvements which have been committed to or funded, and finally expanded again to include any additional improvements desired and/or required to satisfactorily handle projected traffic. Typically, this step in the process involves assigning the trips identified in the previous three steps to the roadway network which will exist once all identified improvements have been made. The entire network is then evaluated and roadway segments not operating adequately are identified and improvements are envisioned to improve performance. This can be a very time-consuming step because several model runs are required to achieve desired levels of service. In the final analysis, it is possible that not all segments of the roadway system will be operating at the desired level of service. In many cases, roadway improvements which would be helpful in mitigating congestion are clearly infeasible due to cost, right-of-way requirements, environmental concerns, or other considerations.

The final results of the four-step modeling process include a map which shows how each of the roadway segments included in the network will operate in the future. From this map, a list of required improvements to the existing roadway network is derived in order for the transportation system to operate as shown on the map. As noted at the beginning of this section, the travel demand model evaluates the average number of automobile trips which will likely occur on a theoretical roadway network on an average weekday in the future. The level of congestion for each segment of the network is expressed in terms of "Level of Service" (as discussed in Appendix A). The travel demand model is a planning tool intended for generalized, county-wide application. It does not evaluate how well individual intersections will operate during periods of peak volume. That type of analysis is conducted using more detailed micro-simulation software and an examination of trip-making at a much finer level of detail than an area-wide travel demand simulation model. This type of analysis typically takes place during the review of development applications and site/subdivision plans.

APPENDIX C

OVERVIEW OF CONGESTION MANAGEMENT

Managing congestion is a complex process of balancing the traffic demand of a roadway network with the capacity of that network. This process can be addressed from the demand perspective (demand management), the supply perspective (operational management), or from a combination of the two methods (control measures). What follows is an overview of the available tools currently in use throughout the metropolitan Washington, D.C. region.

Transportation Demand Management

Transportation Demand Management (TDM) are strategies that redistribute or reduce travel demand by influencing traveler's behavior. TDM is defined in Title 23 of the United States Code and in the Washington D.C. region, TDM strategies are established by the federally designated Metropolitan Planning Organization (MPO), the Metropolitan Washington Council of Governments (MWCOG). Managing demand on the County roadway network is consistent with the MWCOG's regional strategies, as detailed in the Transportation Planning Board (TPB) Visualize 2045 Appendix E. TDM strategies include commuter programs, public transportation improvements (including the provision of bicycle and pedestrian facilities), and growth management through transportation and land use activities.

TDM strategies are most often provided in the form of employer-based incentives such as ridesharing and telecommuting (which reduce demand), and/or flexible work schedules (which shift demand to non-peak times of the day). TDM strategies can also be provided in the form of neighborhood-based incentives such as shuttle bus and neighborhood day-care/pre-school childcare services. These work and homebased improvements help to reduce the demand on the highway system. By assembling TDM plans from across the County, trends can be identified and methods developed to further reduce demand at the public level. This can include strategies such as providing public shuttle buses or regular bus service from major employer/neighborhood collection points to transit centers. When these TDM strategies are organized into a plan, they can be quantified and value established. Therefore, when developers of major traffic generating projects submit a TDM plan which includes provisions for ensuring implementation, incentives in the form of trip generation credits are provided in accordance with the County DCSM (DCSM). The amount of credit that can be taken varies based on the extent of the improvements provided and their level of success in similar situations. The TDM strategies must always be given a quantifiable measure of effectiveness, as well as alternative solutions in the event their strategies are not successful.

Operational Management

Managing the capacity and maximizing the system effectiveness of the roadway network is a key element of TDM established by Title 23 and MPOs, as a part of the scope of their planning process, are encouraged to provide strategies and projects that will promote operational management. Operational management strategies are cost effective operational improvements and can include (but are not limited to): restriping of intersections, coordination and synchronization of traffic signals, closure of median breaks, incident management programs, transit management programs,

priority transit/emergency vehicle routing and Intelligent Transportation System (ITS) technologies, such as electronic toll collection, automated traffic enforcement and real-time parking management.

Although the preceding Operational Management strategies largely fall within the purview of the MPO and VDOT, there is also a role for the County in managing roadway capacity. As a part of the development application process, the County is responsible for identifying measures to mitigate the impacts of projects on the roadway network. These mitigation measures include operational improvements such as providing or upgrading traffic signals, installing left and right turn lanes, restriping existing intersections, and consolidating access points through interparcel connectivity. Through this process, the County is afforded the opportunity to assist in improving the region's ability to manage transportation network capacity and improve the flow of traffic on the County's roadways.

Transportation Control Measures

Strategies and programs which address management of both the demand and the capacity of the roadway network fall into the category of transportation control measures (TCM). US Title 23 requires metropolitan planning areas to provide a congestion management system during their transportation planning process, which provide measures for identifying and mitigating congestion, as well as monitoring the effectiveness of the various management strategies. The congestion management system for the Washington D.C. region is the TPB's Congestion Management Process. The purpose of these strategies is to reduce transportation-related emissions by reducing vehicle use or improving traffic flow as defined in Section 108 of the Clean Air Act (CAA). TCMs are an important part of meeting the standards of the CAA and helping the region to attain the National Ambient Air Quality Standards (NAAQS). In areas of non-attainment of the NAAQS for ozone or carbon monoxide pursuant to the Clean Air Act, Federal funds may not be programmed for any highway project result in a significant increase in carrying capacity for single-occupant vehicles unless the project is part of an approved congestion management system.

While the MPO is responsible for developing the TCMs for the region, the County is a crucial participant. By establishing County-wide TCM strategies, the Board of County Supervisors is able to better guide and support regional efforts.

APPENDIX D

PROPOSED INTERCHANGE AND INNOVATIVE INTERSECTION LOCATIONS

Interchanges utilize grade separation to allow for the movement of traffic between two or more roadways utilizing a system of bridges and overpasses to allow for the free-flow movement of at least one of the routes that pass through the interchange.

Innovative intersection and interchange designs modify vehicle, pedestrian and bicycle movements at conventional intersections to provide new cost-effective solutions and options to reduce delay, increase efficiency and provide safer travel for all users. Additional info can be found on VDOT's webpage: <https://www.virginia-dot.org/innovativeintersections/>

The following section highlights corridors and locations of proposed interchanges or proposed upgrades to intersections throughout the County. These improvements and upgrades also include innovative intersection designs.

- **Route 1 (Richmond Highway) / Route 123 (Gordon Boulevard)**
- **Route 1 (Richmond Highway) / Dale Boulevard**
- **Route 1 (Richmond Highway) / Route 234 (Dumfries Road)/Potomac Shores Parkway**
- **Route 1 (Richmond Highway) / Joplin Road/Fuller Road**
- **Route 1 (Richmond Highway) / Neabsco Road / Cardinal Drive**
- **Route 1 (Richmond Highway) / Russell Road**
- **Route 15 (James Madison Highway) / Route 29**
- **Route 123 (Gordon Boulevard) / Old Bridge Road**
- **Route 28 Bypass (Godwin Drive Extended) / Route 234 Business (Sudley Road)**
- **Route 28 Bypass (Godwin Drive Extended) / Lomond Drive**
- **Route 234 Bypass (Prince William Parkway) / Sudley Manor Drive/Wellington Road**
- **Route 234 Bypass (Prince William Parkway) / University Boulevard**
- **Route 234 Bypass (Prince William Parkway) / Clover Hill Road**
- **Route 234 Bypass (Prince William Parkway) / Brentsville Road / Dumfries Road**
- **Route 294 (Prince William Parkway) / Old Bridge Road**
- **Route 294 (Prince William Parkway) / Minnieville Road**
- **Route 294 (Prince William Parkway) / Smoketown Road**
- **Route 294 (Prince William Parkway) / Liberia Avenue / Wellington Road**
- **Minnieville Road / Dale Boulevard**
- **Minnieville Road / Old Bridge Road**

In addition to specific locations, general or innovative intersection improvements are also proposed at intersections within the segments below:

- **Route 1 Corridor:** Between Fairfax County Line and Stafford County Line
- **Route 29 (Lee Highway) Corridor:** Between Route 15 and Linton Hall Road
- **Route 28 (Centreville Road) Corridor:** Between Liberia Avenue and Fairfax County Line
- **Route 234 Business (Sudley Road) Corridor:** Between Bullock Drive/Battleview Parkway and Godwin Drive

Route 234 (Dumfries Road) Corridor: Between Prince William Parkway and Route 1
Route 294 (Prince William Parkway) Corridor: Between Hoadly Road and Route 1

APPENDIX E

PROPOSED INTERCHANGE COST

Project Type	Project Name	Project Description	Projected Need	Project Cost (2020)
Interchange	Route 1/Route 234/Harbor Station Parkway	Proposed interchange location.	2020	N/A
Interchange	Balls Ford Road Interchange	This project includes the construction of a new diverging diamond interchange at Route 234 Bypass (Prince William Parkway) and relocated Route 621 (Balls Ford Road). The project includes a grade-separated overpass crossing of relocated Balls Ford Road over Line B of the Norfolk Southern Railroad. In addition, the project will relocate Balls Ford Road as a new four-lane facility with a raised median between Devlin Road and Doane Drive. The project will also provide a 10-ft shared use path along relocated Balls Ford Road.	2020	\$142,900,000
Interchange	Prince William Parkway/Old Bridge Road	Proposed interchange location. Project will be phased with improvement at grade in near term and interchange long term.	2020	\$140,000,000
Interchange	Route 1/Dale Boulevard	Proposed interchange location	2020	\$140,000,000
Interchange	Route 1/Joplin Road/Fuller Road	Proposed interchange location	2020	\$140,000,000
Interchange	Route 234 Bypass/Clover Hill Road	Proposed interchange location	2020	\$140,000,000
Interchange	Route 234/University Boulevard	Proposed interchange location	2020	\$140,000,000
Interchange	Tri-County Parkway/Route 28/Lomond Drive	Proposed interchange location	2020	\$140,000,000
Interchange	Route 1/Route 123	Proposed interchange location. Alternative intersection may be preferred.	2020	\$117,600,000
Interchange	Route 234/Sudley Manor Drive	Proposed interchange at Route 234 and Sudley Manor Drive to grade separate traffic and innovative intersection at 234 and Wellington to further reduce congestion and improve throughput on Route 234.	2020	\$91,200,000
Interchange	Prince William Parkway/Minnieville Road	Proposed interchange location	2020	\$80,000,000
Interchange	Route 15 and Route 29 Interchange	Proposed grade-separated interchange at the intersection of Route 15 and Route 29.	2030	\$140,000,000
Road Project	Route 1 (Mary's Way to Annapolis Way)	This active project is widening Route 1 from four lanes to a six lane divided highway and constructing a 5' sidewalk and 10' shared use path. The project includes undergrounding utilities and improvements to intersections.	2020	N/A

Project Type	Project Name	Project Description	Projected Need	Project Cost (2020)
Road Project	Wayside Drive (Route 1 to Congressional Way)	Part of internal road network for Harbor Station (now Potomac Shores).	2020	N/A
Road Project	I-95 (Fairfax County to Route 234)	Proposed road improvement. Widening from 6 SOV / 3 HOT lanes to 8 SOV / 3 Hot lanes.	2020	\$500,000,000
Road Project	I-95 (Route 234 to Stafford County)	Proposed road improvement. Widening from 6 SOV / 3 HOT lanes to 8 SOV / 3 Hot lanes.	2020	\$300,000,000
Road Project	Tri-County Parkway/Route 28 Bypass/Route 234 Business	Proposed interchange location (Route 28 Bypass) - Extension of Godwin Drive	2020	\$300,000,000
Road Project	Wellington Road (Linton Hall Rd. to Godwin Drive)	Proposed road improvement to widen the roadway. The 4.8 mile segment from Linton Hall to Route 234 Wellington will be widened from two to four lanes. The 1.9 mile segment from Route 234 to Godwin the roadway will be widened from four to six lanes. The total project length is 6.7 miles and will include a 10' shared-use path.	2020	\$154,800,000
Road Project	Route 1 (Brady's Hill to Dale Boulevard)	Proposed road improvement to widen Route 1 from four to six lanes with a 10' shared use path along the west side of the roadway and a 5' sidewalk along the east side of the roadway. Project includes improvements to intersections along the entire 2 mile segment.	2020	\$150,000,000
Road Project	Route 234 (Route 28 to I-66)	Proposed road improvement to widen from four to six lanes. Project length is 4.4 miles and includes a 10' shared-use path and intersection improvements.	2020	\$150,000,000
Road Project	Gideon Drive (Dale Boulevard to Smoketown)	Proposed road improvement to widen 0.8 miles of roadway from 4 lanes to 6 lanes. Project includes a 10' shared-use path on the East side of the roadway.	2020	\$144,000,000
Road Project	Route 1 (Featherstone to Mary's Way)	The widening of Route 1 from Featherstone Road to Mary's Way, spanning 1.3 miles, improves this section of roadway from a four-lane undivided highway to a six-lane divided highway. The project includes improvements at all intersections within the project limits including modification to signals, access management improvements, pedestrian improvements at signalized intersections, and a 10' multi-use trail and 5' sidewalk.	2020	\$110,000,000
Road Project	Van Buren Road (Cardinal Drive to Route 234)	Proposed road improvement to construct an extension of Van Buren Road to connect Cardinal Drive to 234. Roadway will be designed as a four-lane divided major collector and includes a bridge over Powells Creek, a 10' shared-use path and 5' sidewalk.	2020	\$100,000,000
Road Project	Prince William Parkway (Hoadly Road to Liberia Ave)	Proposed road widening from four lanes to six lanes	2020	\$81,000,000

Project Type	Project Name	Project Description	Projected Need	Project Cost (2020)
Road Project	Route 29 (Heathcote Drive to Route 234 Bypass)	Proposed road improvement to widen to four lanes.	2020	\$68,400,000
Road Project	Balls Ford Road Widening	This project involves widening Balls Ford Road from two to four lanes, from Groveton Road to Route 234 Business for a distance of 1.95 miles. This section of Balls Ford is parallel to I-66 and is located 0.2 miles south of I-66. The project includes a 10-ft. shared use trail and a 5-ft. sidewalk on the entire length of the facility. This road provides access to the proposed Balls Ford Road/Century Park Drive Park and Ride Lot and new Express Lane ramps to/from Eastbound I-66. The improvement extends to the proposed interchange project at Route 234 (Prince William Parkway) and Balls Ford Road to enhance accessibility to I-66 at the western end of Balls Ford Road.	2020	\$66,300,000
Road Project	Dale Boulevard (Benita Fitzgerald Blvd to Route I)	Proposed road improvement to widen from 4 lanes to 6 lanes. Total length of project is approximately 3.6 miles.	2020	\$64,800,000
Road Project	Route 15 (Route 29 to I-66)	Proposed road improvement. Widening from 2 lanes to 4 lanes. With a class I trail. Project length is approximately 3.6 miles.	2020	\$64,800,000
Road Project	Devlin Road (Linton Hall Road to Wellington Road)	Proposed road improvement to widen 1.9 miles of Devlin Road from two to four lanes. Project will include pedestrian and bicycle facilities consistent with DSCM standards for a minor arterial.	2020	\$50,000,000
Road Project	Route 29 (Fauquier County to Virginia Oaks Drive)	Proposed road improvement to widen 2.6 miles of roadway from four to six lanes from Route 15 to Virginia Oaks Drive.	2020	\$46,800,000
Road Project	Old Carolina Road (Heathcote Boulevard to Route 29)	Proposed road improvement to widen Old Carolina from two to four lanes along entire 2.46 mile segment from Heathcote Blvd to Route 29. Project includes a 10' shared-use path along eastern side of roadway.	2020	\$44,280,000
Road Project	Route 28 Phase 3 (Pennsylvania Ave to Linton Hall)	The project widens Route 28 from Pennsylvania Avenue to Linton Hall Road. The project spans approximately 1.5 miles, which will widen this section of Route 28 from a four-lane undivided highway to a six-lane divided highway to include a multi-use trail and sidewalk. The funding will cover all phases of the project, which includes the study phase, preliminary engineering, final design, right-of-way, and construction.	2020	\$40,000,000
Road Project	Neabsco Mills Road (Route 1 to Dale Boulevard)	The project will design and construct roadway improvements to widen Neabsco Mills Road from two-lanes to four-lanes on a 0.8 mile segment from Route 1 to Dale Boulevard. The design of the project will include intersection improvements, a 5' sidewalk, 10' shared-use path, curb and gutter, and a raised median.	2020	\$35,000,000
Road Project	Telegraph Road (Caton Hill Road to Prince William County Parkway)	Proposed road improvement to widen Telegraph Road from two to four lanes.	2020	\$35,000,000

Project Type	Project Name	Project Description	Projected Need	Project Cost (2020)
Road Project	Summit School Road (Minnieville Road to Telegraph Road)	Extension of Summit School Road from Minnieville Road to Telegraph Road as a four lane roadway.	2020	\$35,000,000
Road Project	Old Centerville Road (Fairfax County to Route 28)	Proposed road improvement to widen from two to four lanes. Total project length is 1.8 miles.	2020	\$32,400,000
Road Project	Opitz Boulevard (Gideon Drive to Route 1)	Proposed road improvement to widen from four to six lanes. Total project length is 1.5 miles and includes a 10' shared-use path on the southern side of Opitz Blvd.	2020	\$27,000,000
Road Project	Pageland Lane (Route 234 to Groveton Road)	Proposed road improvement to upgrade existing two lane roadway to RM-2 standard.	2020	\$26,500,000
Road Project	Horner Road (Prince William Parkway to Route 123)	Proposed road improvement to widen from 2 lanes to 4 lanes along a 1.3 mile segment. Improvements include a 10' shared-use path along the south travel lane.	2020	\$23,400,000
Road Project	Van Buren Road (Route 234 to Mine Road)	Proposed road improvement to widen 1.1 mile segment from two to four lanes.	2020	\$19,800,000
Road Project	Route 234 (Route 28 to Route 234)	Proposed road improvement to widen from two to four lanes and construct a 10' shared use path.	2020	\$18,000,000
Road Project	Powells Creek Boulevard (Route 1 to River Ridge Boulevard)	Proposed road improvement to widen 0.8 mile segment from two to four lanes.	2020	\$14,400,000
Road Project	Hornbaker Road (Wellington Road to Shallow Creek)	Proposed road improvement.	2020	\$10,000,000
Road Project	Coverstone Drive (Ashton Avenue to Route 234 Business)	Proposed road improvement to widen from two to four lanes along this 0.5 mile roadway segment. The existing pedestrian and bicycle facilities will be reconstructed as part of the widening.	2020	\$9,000,000
Road Project	Telegraph Road (Minnieville Road to Summit School Road)	Proposed road improvement to widen Telegraph Road from two to four lanes on a 0.5 mile segment from Minnieville to the proposed connection with Summit School Road.	2020	\$9,000,000
Road Project	Williamson Boulevard (Route 234 Business to Portsmouth Road)	Proposed road improvement consistent with Williamson Blvd Functional Plan. Improvements will be within existing Right of Way already acquired.	2020	\$8,000,000
Road Project	Rollins Ford Road (Route 215 to University Boulevard)	Proposed road improvement to extend Rollins Ford to the proposed University Blvd Extension as a four-lane roadway with a 10' shared-use path.	2020	\$6,480,000
Road Project	Gum Springs Road (Loudoun County to Route 234)	Proposed road improvement to widen from two to four lanes. Project length is approximately 0.3 miles. A 10' shared use path will be constructed parallel to the eastern travel lane.	2020	\$5,400,000

Project Type	Project Name	Project Description	Projected Need	Project Cost (2020)
Road Project	Fuller/Fuller Heights Road Improvements	This project will widen Fuller Road which is the entrance road to serving the Quantico Marine Corps. Base, the Town of Quantico, and communities adjacent to the base. The improvements will involve the widening of the existing four-lane undivided section of a four-lane divided section of roadway and the relocation of Fuller Heights Road east to provide for the maximum spacing between the intersections of Route 1 and Fuller Heights Road.	2020	\$5,000,000
Road Project	Fitzwater Drive (Route 28 to Aden Road)	Proposed road improvement to widen existing two lane roadway to RM-2 typical standard with a Class III trail.	2020	\$4,500,000
Road Project	Signal Hill Road (Liberia Avenue to Signal View Drive)	Proposed road improvement to widen to four lanes with a Class III trail. Total project length is a quarter of a mile.	2020	\$4,500,000
Road Project	Route 28 (Fitzwater Drive to Fauquier County)	Proposed road improvement to widen roadway from two to four lanes and construct a 10' shared-use path along south side.	2025	\$37,800,000
Road Project	Annapolis Way Extension	Extension of Annapolis Way	2025	\$8,000,000
Road Project	Route 215 (Fauquier County to Route 28)	Proposed road improvement to widen roadway from two to four lanes and construct a 10' shared use path on the north. Total project length is approximately 6.8 miles.	2030	\$122,400,000
Road Project	Route 15 (Loudon County to Route 234)	Proposed road improvement. Widening from 2 lanes to 4 lanes. With a class I trail on eastside. Project length is approximately 4.2 miles.	2030	\$75,600,000
Road Project	Omisol Road Connection	Connect Omisol Road from Minnieville Road to Horner Road Commuter Lots	2030	\$74,700,000
Road Project	Haymarket Bypass and Route 15 Intersection Relocation	Proposed shift of the intersection at Haymarket Bypass and Route 15 to the northwest to avoid ER areas and to align with other roadways proposed on the west of Route 15.	2030	\$70,000,000
Road Project	Catharpin Road Extension	Proposed extension of Catharpin Road from Route 55 to connect with Somerset Crossing Drive with grade-separated crossing at the railroad tracks.	2030	\$63,000,000
Road Project	Lucasville Road (Manassas to Bristow Road)	Proposed road improvement to widen from two to four lanes along this 3.2 mile segment. Project includes a 5' dedicated bike lane.	2030	\$57,600,000
Road Project	Route 15 Alternative and Overpass	Proposed alternative to Route 15 to provide access to I-66 further to the west presumably in Fauquier County, and a overpass at the Norfolk Southern Railroad crossing at Route 15, that will accommodate vehicles, pedestrians, bikers and walkers.	2030	\$55,000,000
Road Project	Horner Road Extension	Extension of Horner Road across Route 123 to connect with Marina Way.	2030	\$54,400,000
Road Project	Neabsco Road (Route 1 to end)	Proposed road improvement to widen roadway from two to four lanes the approximately 2 mile length of Neabco Rd. Project includes a 10' shared-use path along the southern travel lane.	2030	\$36,000,000

Project Type	Project Name	Project Description	Projected Need	Project Cost (2020)
Road Project	Rippon Boulevard (Route 1 to Rarm Creek Road)	Proposed road improvement to widen from two to four lanes on this 2 mile segment. Project includes a 10' shared-use path on southern side of roadway.	2030	\$36,000,000
Road Project	Landing at Prince William Town Center Road Network	Construct roadway network with the Town Center in partnership with private sector.	2030	\$35,000,000
Road Project	McGraws Corner Drive (Somerset Crossing Drive to Route 55)	Proposed road improvement to extend McGraws Corner Drive as a four lane roadway the entire 0.7 miles from Route 55 to Sommerset Crossing. Project includes a 10' shared-use path along the south/west portion of the roadway.	2030	\$25,200,000
Road Project	Fleetwood Drive (Fauquier County to Aden Road)	Proposed road improvement to widen approximately 5 miles of existing lanes to Right of Way Standards for a two lane minor arterial roadway.	2030	\$25,000,000
Road Project	Farm Creek Drive (Featherstone Road to Rippon Boulevard)	Proposed road improvement to widen from two to four lanes. Project length is approximately 1 mile and will include pedestrian and bicycle facilities. This project will improve access to the Rippon VRE Station and industrial businesses on Farm Creek Drive.	2030	\$18,000,000
Road Project	Bristow Road (Route 28 to Route 234)	Proposed road improvement to widen 0.8 miles of Bristow Road between Nokesville Road (Route 28) and the railroad tracks from two to four lanes. The project includes design and construction of an additional segment to transition back to a two lane roadway from the railroad tracks to Route 234.	2030	\$14,400,000
Road Project	Catharpin Road (Heathcote Drive to Route 55)	Proposed road improvement to widen roadway from 2 to 4 lanes. Total length of proposed widening is 0.7 miles. Project will include a 10' shared-use path on the eastern side of the roadway.	2030	\$12,600,000
Road Project	Aden Road Upgrades	Proposed shoulder upgrades along Aden Road from the historic Nokesville Truss Bridge to Fitzwater Drive and along Marstellar Drive from Aden Road to Fitzwater Drive.	2030	\$10,000,000
Road Project	Groveton Road (Pageland La to Balls Ford Rd)	Proposed road improvement to widen roadway from two to four lanes along a 0.5 mile segment. This road provides access to Manassas National Battlefield Park and industrial areas south of I-66.	2030	\$9,000,000
Road Project	Belmont Bay Widening	Extend the Avenue/Street designation along Belmont Bay Drive to the Belmont Bay activity center.	2030	\$2,880,000