FINANCIALLY CONSTRAINED LONG-RANGE TRANSPORTATION PLAN (CLRP) FOR THE NATIONAL CAPITAL REGION

2016 CLRP Amendment

November 2016

DRAFT 12/2/16

National Capital Region
Transportation Planning Board

FINANCIALLY CONSTRAINED LONG-RANGE TRANSPORTATION PLAN FOR THE NATIONAL CAPITAL REGION
2016 CLRP AMENDMENT
Adopted by the TPB on November 16, 2016

ABOUT THE TPB
The National Capital Region Transportation Planning Board (TPB) is the federally designated metropolitan planning organization (MPO) for metropolitan Washington. It is responsible for developing and carrying out a continuing, cooperative, and comprehensive transportation planning process in the metropolitan area. Members of the TPB include representatives of the transportation agencies of the states of Maryland and Virginia and the District of Columbia, 22 local governments, the Washington Metropolitan Area Transit Authority, the Maryland and Virginia General Assemblies, and nonvoting members from the Metropolitan Washington Airports Authority and federal agencies. The TPB is staffed by the Department of Transportation Planning at the Metropolitan Washington Council of Governments (COG).

CREDITS
Editor:
Contributing Editors:

ACCOMMODATIONS
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What is the TPB?

The National Capital Region Transportation Planning Board (TPB) is the federally designated Metropolitan Planning Organization (MPO) for the region, and plays an important role as the regional forum for transportation planning. The TPB is responsible for carrying out a continuing, cooperative, and comprehensive planning process for regional transportation planning in the District of Columbia, Northern Virginia, and Suburban Maryland. The TPB prepares plans and programs that must receive federal approval in order for federal-aid transportation funds to flow to the Washington region. Members of the TPB include representatives of the transportation agencies of the states of Maryland and Virginia, the District of Columbia, local governments, the Washington Metropolitan Area Transit Authority, the Maryland and Virginia General Assemblies, and non-voting members from the Metropolitan Washington Airports Authority and federal agencies

The National Capital Region

The CLRP includes projects and programs in jurisdictions that make up the TPB's federally designated planning area (Figure 1) . This area, known as the National Capital Region, includes the District of Columbia and 21 surrounding counties and cities in Suburban Maryland and Northern Virginia.

Overview of the CLRP

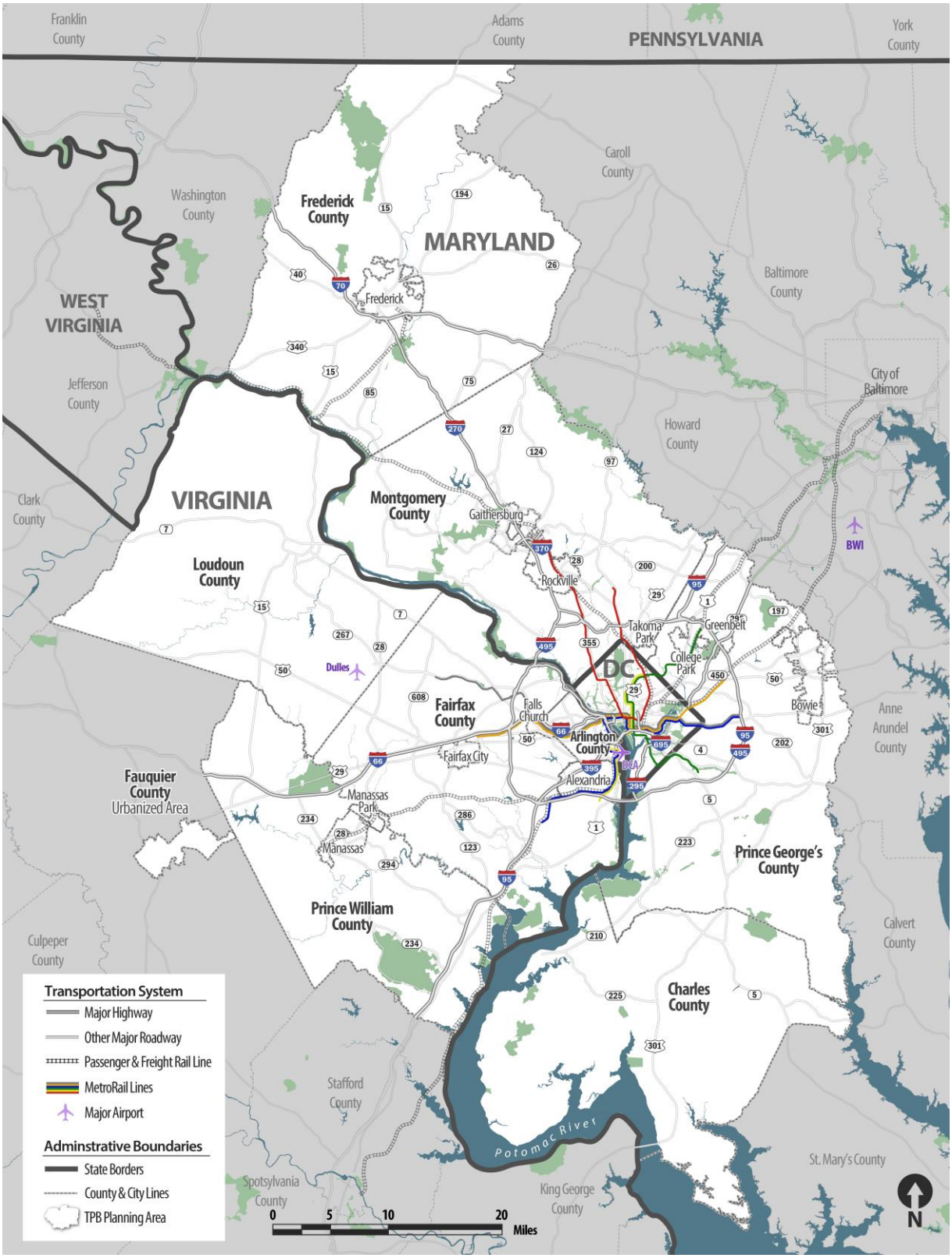
The CLRP is a statement of the ways the region plans to invest in its transportation system over the next 20 to 30 years. The plan includes regionally significant projects and programs that seek to facilitate the efficient movement of people and goods using a variety of transportation modes. It also outlines all anticipated spending on operations and maintenance of the current and future transportation system over the same timeframe.

The TPB adopts a major update to the CLRP once every four years which includes the completion of a comprehensive financial analysis indicating how the region expects to invest in the transportation system. In addition, the TPB typically amends the CLRP every year to include new projects and programs and to make changes to projects already in the plan as priorities at the local, state, and regional levels change and as funding for new initiatives is identified. Any project that might affect future air quality by adding or removing highway or transit capacity is considered to be "regionally significant" and must be included in the plan, as must any project that will require federal funding or federal approval during the timespan that the CLRP covers.

REGIONAL POLICY FRAMEWORK

A regional policy framework, described in detail in the next chapter, is meant to guide the development of projects to be included in the CLRP. The framework spells out regional goals, priorities, and needs that the TPB asks agencies to consider when developing and submitting projects for inclusion in the plan. The TPB Vision, adopted in 1998, serves at the policy element of the CLRP and provides a comprehensive set of policy goals, objectives, and strategies to guide

Figure 1: TPB Planning Area



decision making. The Regional Transportation Priorities Plan, adopted in 2014, focuses attention on a handful of strategies with the greatest potential to advance regional goals rooted in the Vision.

FEDERAL REQUIREMENTS

A host of federal planning regulations guide the development of the CLRP. These requirements are described in detail in the next chapter, but two requirements are particularly important – financial constraint and air quality conformity.

According to federal law and regulation, the TPB must develop a long-range transportation plan that is financially constrained. This means that the plan must demonstrate that projects can be implemented using revenue sources that are already committed, available, or reasonably expected to be available in the future. As such, the CLRP is not a comprehensive list of all improvements that localities in the region desire to make between now and 2040. It does not include any planned project for which funding has yet to be identified, nor does it include smaller-scale capital improvements that are not considered regionally significant or that will not require federal funding.

The other key characteristic of the CLRP is that it must ensure that emissions resulting from transportation investments are consistent, or "in conformity" with, emissions levels set forth in air quality plans adopted by the states. Federal law requires such "conformity findings" in all metropolitan regions that are currently not in attainment of certain federal air quality standards.

HOW IS THE CLRP USED?

The CLRP pulls together in one place all of the regionally significant transportation investments that are reasonably expected to be made in coming decades to accommodate anticipated changes in demand for travel based upon anticipated growth in the region. The plan can be analyzed to see how the region's transportation future looks under existing planning and funding trajectories, helping decision makers and the public better understand what changes to current plans and funding might be needed in order to achieve different future outcomes.

THE CLRP PROCESS

Every four years the TPB completes a major update of the CLRP which includes a comprehensive record of 4 years of planning the region and a financial analysis which serves as a statement of the ways the region expects to invest in the transportation system over the next 20-30 years. The last major update was approved in 2014, and the next one will be complete in 2018.

In addition to the 4-year major updates, the TPB typically completes an annual amendment to the CLRP to include new projects and programs and make changes to those already in the plan. From November 2015 – November 2016, the TPB oversaw a CLRP amendment process which was guided by four key elements:

Regional Policy Framework

The TPB Vision and the Regional Transportation Priorities Plan make up the regional policy framework meant to help guide transportation planning and decision-making in the Washington region. A small number of other TPB and COG policy documents and studies provide additional policy context. The TPB strongly encourages agencies to consider this regional policy framework as they develop and select projects to submit for inclusion in the CLRP and TIP.

THE TPB VISION

To guide the planning and implementation of transportation strategies, actions, and projects for the National Capital Region the TPB adopted the Vision in October 1998 that includes a comprehensive set of policy goals, objectives, and strategies. The TPB Vision incorporates the eight planning factors specified in current federal regulations; security is addressed implicitly. The full Vision document is available on the TPB website.

Vision Statement

In the 21st Century, the Washington metropolitan region remains a vibrant world capital, with a transportation system that provides efficient movement of people and goods. This system promotes the region's economy and environmental quality, and operates in an attractive and safe setting--it is a system that serves everyone. The system is fiscally sustainable, promotes areas of concentrated growth, manages both demand and capacity, employs the best technology, and joins rail, roadway, bus, air, water, pedestrian, and bicycle facilities into a fully interconnected network.

The Vision Goals

1. The Washington metropolitan region's transportation system will provide reasonable access at reasonable cost to everyone in the region.
2. The Washington metropolitan region will develop, implement, and maintain an interconnected transportation system that enhances quality of life and promotes a strong and growing economy throughout the entire region, including a healthy regional core and dynamic regional activity centers with a mix of jobs, housing and services in a walkable environment.

3. The Washington metropolitan region's transportation system will give priority to management, performance, maintenance, and safety of all modes and facilities.
4. The Washington metropolitan region will use the best available technology to maximize system effectiveness.
5. The Washington metropolitan region will plan and develop a transportation system that enhances and protects the region's natural environmental quality, cultural and historic resources, and communities.
6. The Washington metropolitan region will achieve better inter-jurisdictional coordination of transportation and land use planning.
7. The Washington metropolitan region will achieve an enhanced funding mechanism(s) for regional and local transportation system priorities that cannot be implemented with current and forecasted federal, state, and local funding.
8. The Washington metropolitan region will support options for international and interregional travel and commerce.

THE REGIONAL TRANSPORTATION PRIORITIES PLAN

Adopted by the TPB in January 2014, the Regional Transportation Priorities Plan, focuses attention on a handful of transportation strategies with the greatest potential to advance regional goals rooted in the TPB Vision. The Priorities Plan aims to identify those strategies that are "within reach" both financially and politically. The Plan calls for maintaining the region's existing system of roadways and transit first, strengthening public confidence and ensuring fairness, and finding better, more efficient ways to move people and goods.

The Priorities Plan serves as a policy guide to assist local, state, and regional leaders in "thinking regionally and acting locally" - that is, in considering regional needs when identifying transportation improvements to advance to implementation. Pursuing the priorities and strategies outlined in this Plan will lead to greater economic vitality and a higher quality of life in the Washington region.

Priorities Plan Goals

1. Provide a Comprehensive Range of Transportation Options
2. Promote a Strong Regional Economy, Including a Healthy Regional Core and Dynamic Activity Centers
3. Ensure Adequate System Maintenance, Preservation, and Safety
4. Maximize Operational Effectiveness and Safety of the Transportation System
5. Enhance Environmental Quality, and Protect Natural and Cultural Resources
6. Support Inter-Regional and International Travel and Commerce

Priorities and Strategies Identified in the RTPP

1. Meet Our Existing Obligations: Funding for maintenance and state-of-good-repair needs should continue to be prioritized over system expansion.

   Strategies:
   - Ensure Maintenance of the Transit System
   - Ensure Maintenance of Roads and Bridges

2. Strengthen Public Confidence and Ensure Fairness: Efforts to increase accountability and address the needs of historically transportation-disadvantaged populations should be considered in all stages of project planning, design, and implementation.

   Strategies:
   - Ensure Accessibility for Persons with Disabilities,Low Incomes, and Limited English Proficiency
   - Engage and Communicate with the Public
   - Promote System Efficiency Through Management and Operations, and the Appropriate Use of Technology

3. Move More People and Goods More Efficiently: Improvements to the transportation system should seek to do more with less—to make more efficient use of existing infrastructure and promote greater use of more efficient travel modes for both people and goods.

   Strategies:
   - Improve Access to Transit Stops and Stations
   - Alleviate Roadway Bottlenecks
   - Support and Promote Electric Vehicles
   - Promote Commute Alternatives
   - Expand Pedestrian Infrastructure
   - Expand Bicycle Infrastructure
   - Apply Bus Priority Treatments
   - Increase Roadway Efficiency
   - Update and Enforce Traffic Laws
   - Provide Additional Capacity on the Existing Transit System
   - Concentrate Growth in Activity Centers
   - Enhance Circulation within Activity Centers
   - Implement Bus Rapid Transit & Other Cost-Effective Transit Alternatives
   - Construct/implement Express Toll Lanes

Read more about the regional policy framework at mwcog.org/CLRP.

Federal Requirements

The Financially Constrained Long-Range Transportation Plan (CLRP) must meet federal requirements as established in the U.S. Department of Transportation (USDOT) transportation planning regulations. These federal requirements are described below.

AIR QUALITY CONFORMITY

The TPB must make sure that the projects in the CLRP and TIP, taken collectively, support the attainment of the federal health standards. This is a requirement of the federal Clean Air Act. The plan's air quality conformity assessment included (1) comparing forecasted mobile source emissions to emissions ceilings (called “mobile emissions budgets”) for volatile organic compounds (VOC) and nitrogen oxides (NOx) established in the air quality plans for the region; and (2) comparing forecasted mobile source emissions of fine particulate matter (PM2.5) and precursor NOx (vehicle

emissions which lead to additional PM2.5 formulation) with base year 2002 levels to ensure such emissions do not increase through time . The conformity analysis found that forecasts of mobile emissions for VOC and NOx are within required budgets for the forecast years of 2016, 2017, 2025, 2030, and 2040. The analysis also found that forecasts of PM2.5 emissions are significantly lower than base year 2002 levels.

CONGESTION MANAGEMENT PROCESS

In 2007, the TPB established a Congestion Management Process (CMP) which provides information on transportation system performance, and to consider alternative strategies to alleviate congestion and enhance the mobility of persons and goods. The CMP has four main components: 1) Congestion monitoring of major highways; 2) Identification and analysis of strategies to alleviate congestion; 3) Implementation of reasonable strategies and an assessment of their effectiveness and 4) Integration of strategies into major roadway construction projects. With the CMP, the TPB aims to use existing and future transportation facilities efficiently and effectively, reducing the need for highway capacity increases for single-occupant vehicles (SOVs).

CONSULTATION AND MITIGATION DISCUSSION

The TPB consulted with natural resource, conservation, environmental protection and historic preservation agencies regarding the development of the CLRP. These agencies provided comments on the plan, contacts for future engagement and environmental GIS data. This regional data was used to create maps of environmentally and/or culturally sensitive areas for comparison with the CLRP. The CLRP also includes an environmental mitigation discussion which identifies potential activities to moderate the environmental impacts of the long-range transportation plan.

TRANSPORTATION FOR PERSONS WITH DISABILITIES, LOW-INCOME INDIVIDUALS, AND OLDER ADULTS

To ensure on-going participation from low-income and minority communities, persons with disabilities and those with limited English skills, the TPB created the Access for All (AFA) Advisory Committee in 2001 to advise the Board on transportation issues, programs, policies, and services that are important to these communities and individuals. Each year, the AFA comments on the Draft CLRP. In addition, The Coordinated Human Service Transportation Plan for the National Capital Region, updated in November 2014, identifies unmet transportation needs for people with disabilities, low-income individuals and older adults. The Coordinated Plan guides the selection of projects to be funded by the TPB's Enhanced Mobility of Seniors and Individuals with Disabilities Program. The TPB also has a Language Assistance Plan and follows the COG accommodations policy to provide access to documents, meetings or any other planning activities to limited English proficiency populations and those with disabilities.

TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

The Metropolitan Washington Council of Governments (COG), as the administrative agent for the TPB, adopted the "Title VI Plan To Ensure Nondiscrimination in all Programs and Activities" which includes a policy statement, Title VI assurances and nondiscrimination complaint procedures. The Title VI Plan describes how COG and the TPB meet a number of Title VI requirements. As part of the TPB's activities to ensure nondiscrimination, the CLRP is analyzed to ensure that people with low-income, minorities, persons with disabilities and older adults are not disproportionately and adversely affected.

HUMAN SERVICE TRANSPORTATION COORDINATION

The TPB approved an Update to the Coordinated Human Service Transportation Plan for the National Capital Region in November 2014. The preparation of the Coordinated Human Services Transportation Plan was a coordinated process and is consistent with the CLRP. The Coordinated Plan guides the implementation of the Federal Transit Administration's (FTA's) Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program. COG is the designated recipient for this program for the Washington DC-VA-MD Urbanized Area. The previous Coordinated Plan was used to guide funding for FTA's Job Access and Reverse Commute and New Freedom Programs.

FINANCIAL CONSTRAINT

The financial plan for the CLRP demonstrates that the forecast revenues reasonably expected to be available are equal to the estimated costs of expanding and adequately maintaining and operating the highway and transit system in the region through 2040. The forecasts were prepared by the transportation implementing agencies and jurisdictions, with technical integration and documentation provided by consultants.

FREIGHT PLANNING

On July 20, 2016, the TPB approved the National Capital Region Freight Plan. It defines the role of freight in the region, provides information on current and forecasted conditions, identifies regional freight concerns such as safety and security, and includes a National Capital Region Freight Project Database.

The TPB's Freight Subcommittee has been active since 2008. The Subcommittee meets regularly to exchange information among stakeholders and provide advice to the TPB on regional freight issues. The Subcommittee also conducts occasional site visits such as to the CSX Transportation rail facilities in Washington. TPB staff maintains contact with the freight community via a monthly e-newsletter, *Focus on Freight.* Additional outreach efforts include attending nearby MPO meetings, freight-related association meetings, and maintaining a TPB Freight Program Web Site. TPB staff also expanded the content of the freight planning portion of the CLRP web site.

SYSTEMS PERFORMANCE, OPERATIONS, AND TECHNOLOGY

Intelligent Transportation Systems (ITS) are the application of current and evolving computer and communications technology to transportation systems. The benefits seen from ITS have uncovered another key aspect of transportation systems—management and operations (M&O) – maximizing the efficiency and effectiveness of the transportation system. To address these issues, the TPB has a Systems Performance, Operations, and Technology subcommittee and MOITS Technical Subcommittee. Related programs include the Metropolitan Area Transportation Operations Coordination (MATOC) Program, the Regional Intelligent Transportation Systems (ITS) Architecture and the Traffic Signals Subcommittee.

PUBLIC PARTICIPATION

A Participation Plan has been developed that articulates the TPB's commitment to a transparent interface with the public and with relevant public agencies to support the regional transportation planning process, including the development of the CLRP. The long-range plan had two public

comment periods during its development; the first was held from February 10 to March 12, 2011 on the projects to be included in the air quality conformity analysis, and the second was held from October 13 to November 12, 2011 on the draft 2011 CLRP and the draft air quality conformity determination.

The TPB has two standing citizen committees: The Citizens Advisory Committee (CAC), the main standing body for providing citizen input into the deliberations of the TPB; and the Access for All (AFA) Advisory Committee which provides input to the TPB on concerns of low-income individuals, minority individuals and persons with disabilities.

SECURITY AND EMERGENCY PREPAREDNESS PLANNING

Transportation plays multifaceted roles in incidents and emergencies. The need for coordination among transportation agencies during incidents having multi-jurisdictional or regional impacts fostered creation of the Metropolitan Area Transportation Operations Coordination (MATOC) Program. The MATOC Program aims to advise agencies as they respond to major incidents, through improved technological data sharing systems, coordinated operating and notification procedures, and better availability of transportation information for the public.

In declared emergencies and major disasters, transportation becomes one of a number of support functions to a public safety agency-led response. Regionally, public safety and emergency management planning are addressed under the auspices of the Metropolitan Washington Council of Governments (COG) Board of Directors and its group of public safety programs and committees. The COG Board is advised by the National Capital Region Emergency Preparedness Council on regional preparedness planning matters, as well as by a number of specialized public safety committees in the Homeland Security Program. The TPB and its programs maintain liaison with the COG programs, and provide technical transportation expertise as necessary.

TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

The Transportation Improvement Program (TIP) is a 6-year financial program that describes the schedule for obligating federal funds to state and local projects. The TIP contains funding information for all modes of transportation including highways and high occupancy vehicle (HOV) facilities as well as transit capital and operating costs. The TIP represents an agency's intent to construct or implement a specific project and the anticipated flow of federal funds and matching state or local contributions. State, regional and local transportation agencies update the TIP each year to reflect priority projects in the CLRP. A public forum was held during the course of the development of the TIP on July 14, 2016. The FY 2017-2022 TIP is available online and in a searchable database.

TRANSPORTATION SAFETY PLANNING

The Transportation Safety Element of the CLRP integrates the important topic of safety in the planning process, including tracking safety funding in the TIP, sharing best practices, regional traffic safety data compilation and sharing, participation in the State Highway Safety planning process, and coordination of the metropolitan planning aspects of state, regional, and local safety efforts, especially education and enforcement. A Transportation Safety Subcommittee of the TPB advises staff on the Safety Element and Safety programs. The TPB conducts a yearly "Street Smart" campaign to raise awareness and promote safer behavior among drivers, pedestrians and bicyclists.

OTHER REQUIREMENTS

Annual Listing of Projects

With the assistance of and in cooperation with the transportation implementing agencies in the region, the TPB has prepared an annual listing of projects for which federal funds have been obligated each year since 2001.

Metropolitan Planning Agreement

In the Washington Metropolitan region, the roles and responsibilities involving the TPB, the three state DOTs, the local government transportation agencies, WMATA and the state and local government public transportation operators for cooperatively carrying out transportation planning and programming have been established over several years. As required under the final planning regulations, the TPB, the state DOTs and the public transportation operators have documented their transportation planning roles and responsibilities in the Washington Metropolitan Region in a Memorandum of Understanding (MOU) that was executed by all parties on January 16, 2008.

Certification Review

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) conducted a joint review of the TPB's planning process during an on-site visit in October of 2014. The Federal team also met with the Citizens Advisory Committee and the Access for All Advisory Committee to discuss public involvement. Under Federal Planning regulations FHWA and FTA must review and certify that the TPB's planning process meets the requirements of the Metropolitan Transportation Rule at 23 CFR Part 450 Subpart C and 49 CFR part 613 every four years. In a report released on May 14, 2015, FHWA and FTA determined that the TPB met the planning requirements.

Cycle and Updates

The TPB updates both the CLRP nearly every year and the Transportation Improvement Program (TIP) every two years. Typically, projects are submitted for inclusion in the air quality conformity analysis of the CLRP in the winter or spring, are released for public comment, and then are approved by the TPB for air quality conformity testing. A travel demand and emissions analysis is conducted, and then the Draft CLRP, TIP and air quality conformity analysis are released for another public comment period in late summer or fall, after which time the TPB is asked to approve the three documents.

Unified Planning Work Program (UPWP)

Each year, the TPB adopts a Unified Planning Work Program that incorporates all federally-assisted state, regional and local transportation planning activities proposed to be undertaken in one document. The UPWP describes all work activities utilizing federal funding and details the tasks and budgets that will be accomplished each year to meet the federal planning requirements, such as preparing the TIP and updating the CLRP.

CONSIDERATION OF THE FEDERAL PLANNING FACTORS

The eight federal planning factors are encompassed by the TPB Vision's policy goals and are considered when developing the CLRP. Each planning factor is included in one or more of the TPB Vision goals, objectives and strategies, except for security, which is implicitly addressed in the TPB Vision. The new planning regulations added safety and security as two separate planning factors, which are addressed by the TPB in on-going planning activities.

A mapping of the eight Federal planning factors to the eight TPB Vision policy goals is provided below.

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency

TPB policy goal #2 addresses this factor. Policy goal #8 also addresses this factor by discussing options for promoting international and interregional travel and commerce. Global competitiveness is encouraged through the Ground Access Element of the Regional Airport System and the planned Metrorail to Dulles project.

2. Increase the safety of the transportation system for all motorized and non-motorized users

TPB policy goal #3 addresses this factor and the CLRP includes a Transportation Safety Element. Planning activities have resulted in many programs to promote safety including: Street Smart campaign, operations and maintenance funds to keep existing network safe to use, effective enforcement of all traffic laws and motor carrier safety regulations, achievement of national targets for seatbelt use, appropriate safety features in facility design.

3. Increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and non-motorized users

TPB Policy goal #3 addresses safety and policy goal #4 speaks to technology that enhances safety and security measures. Security has been a major focus since the 9/11 attacks. With TPB member participation, regional transportation security activities are undertaken through the homeland security committee structure of the Metropolitan Washington Council of Governments (COG), involving federal, state and local public safety and homeland security stakeholders.
On October 19, 2005, the TPB added an initial multi-year Regional Transportation Coordination Program to the CLRP and Transportation Improvement Program. The program, a partnership of the region's major transportation agencies, is to coordinate and support regional sharing of transportation systems condition and management information during incidents.

4. Increase accessibility and mobility of people and freight

TPB policy goal #1 addresses this factor as well as the TPB scenario study, called the Regional Mobility and Accessibility Study. The study is examining alternative land use and transportation scenarios for 2030. The TPB is currently expanding its freight planning efforts.

5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns

TPB policy goal #5 addresses this factor. The TPB's environmental consultation and mapping relates to this planning factor, as does the air quality conformity analysis. TPB policy goal #6 addresses this factor as well, and many of the TPB's planning activities work towards this goal, including the TPB's Transportation / Land-Use Connections program, the development of the Regional Activity Centers and Clusters, the Regional Mobility and Accessibility Study, and the Cooperative Forecasting program.

6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

TPB policy goal #2 addresses this factor, calling for an interconnected transportation system, multi-modal connections in the regional core and activity centers, ground access to airports. Numerous improvements in the plan contribute to a web of multi-modal connections between the core and activity centers, including transit and HOV (Dulles Rail, HOV/HOT, Bi-County Transitway), highways (circumferential corridor improvements, US-301, Tri-County Parkway) and goods movement.

7. Promote efficient system management and operation;

TPB policy goal #3 addresses this factor, specifying priority to management and maintenance of existing facilities. TPB policy goal #4 addresses this factor, by stating the region will use "the best available technology to maximize system effectiveness".

8. Emphasize the preservation of the existing transportation system.

TPB policy goal #3 addresses this factor. This is evidenced by the financial analysis of the CLRP, where over 75% of allocated funding is for operating and maintaining transit and highways.

Regional Planning Activities

Development of the CLRP was also influenced by numerous regional planning activities carried out by the TPB, mainly through more than a dozen committees and subcommittees. These planning activities have led to the inclusion of specific new programs and projects in the plan, and indirectly inform the plan development process by identifying critical transportation issues or needs facing the region.

- Airport Access
- Air Quality Planning
- Bicycle & Pedestrian Planning
- Bus Planning
- Climate Change
- Congestion Management and Operations
- Environmental Consultation
- Freight Planning
- Human Services Transportation Coordination

- Transportation & Land-Use Coordination
- Transportation Safety
- Emergency Preparedness & Transportation Security
- Transportation Demand Management
- Scenario Planning

Get more detailed information on the Regional Planning Activities that influence the development of the CLRP at www.mwcog.org/clrp/elements.

Public Involvement

Several public involvement avenues provided opportunities for the public to influence the development of the CLRP. These included two formal comment periods during the annual amendment process and feedback from two citizen-led advisory committees.

COMMENT PERIODS

During the 2016 CLRP amendment process, the TPB held two 30-day comment periods during which the public and any TPB member or stakeholder could submit comments on the amendment process via online submission form, email, phone, mail, or in-person at the beginning of the monthly TPB meeting.

- *Comment Period on Proposed Additions and Changes (February 11 – March 12, 2016)* During the first comment period, the TPB invited comment on the new projects and changes to existing projects that agencies had submitted for inclusion in the CLRP. The comment period took place before the projects were included in the federally required Air Quality Conformity Analysis.
- *Comment Period on Draft CLRP and Results of Analysis (October 13 – November 12, 2016)* During the second comment period, the TPB invited comment on the draft CLRP, the results of the federally required Air Quality Conformity Analysis, and any of the other analyses of the plan, including the Performance Analysis.

CITIZEN-LED ADVISORY COMMITTEES

During the amendment process, the TPB was advised by two citizen-led advisory committees: the Citizens Advisory Committee (CAC) and the Access for All Advisory Committee (AFA). Both reviewed project submissions, made recommendations for ways that new projects and programs submitted for inclusion in the CLRP could better address the needs of the region's residents, and submitted comments on other issues and needs that might affect decisions regarding the CLRP update.

LOCAL PROJECT DEVELOPMENT PROCESS

Effective public input also occurs during the local project development process, when ideas for future improvements that might one day be included in the CLRP are first being conceived and refined. Local public meetings, hearings, and comment periods are all opportunities to help shape regionally significant projects that might eventually be included in the plan.

The TPB's online Transportation Planning Information Hub (www.transportationplanninghub.org) provides more information about local and state decision-making processes that feed the annual CLRP update process, including opportunities to get involved at the local and state levels.

POPULATION AND JOB GROWTH FORECASTS

The 2016 CLRP Amendment includes forecasts of how many people and jobs are expected in the region in coming decades and where those people and jobs are expected to locate. These forecasts allow regional planners to analyze future travel patterns and air quality impacts under the CLRP.

Cooperative Land-Use Forecasting Process

The Cooperative Forecasting Program, established in 1975 and administered by the Council of Governments, enables local, regional, and federal agencies to coordinate planning decisions using common assumptions about future growth and development in the region.

The Cooperative Forecast is a multi-stage, "top-down/bottom-up" process undertaken by COG's Planning Directors Technical Advisory Committee and the Cooperative Forecasting and Data Subcommittee. It employs a regional econometric model and local jurisdictional forecasts. The model projects employment, population, and households for the metropolitan Washington region based on national economic trends and local demographic factors. Concurrently, local jurisdictions develop independent projections of population, households, and employment based on pipeline development, market conditions, planned transportation improvements, and adopted land use plans and zoning, taking into account the preliminary regional projections. The forecasts are presented and approved by the Planning Directors Technical Advisory Committee (PDTAC) and the COG Board of Directors.

Latest Regional Growth Forecasts

Analysis conducted as part of the 2016 CLRP Amendment used Round 9.0 of the Cooperative Forecasts, as adopted by the COG Board in November 2016. These forecasts are updated on a regular basis through the Cooperative Land-Use Forecasting Program at COG which combines regional data (based upon national economic trends and regional demographics) with local projections of population, households and employment.

According to the forecasts, the region is expected to add 1.24 million people and 940,000 jobs between now and 2040. The region's outer suburban jurisdictions are expected to see the highest rates of growth, while the inner suburban jurisdictions and regional core will continue to be home to the greater number of jobs and the most population.

FIGURE 2: Regional Population and Job Growth

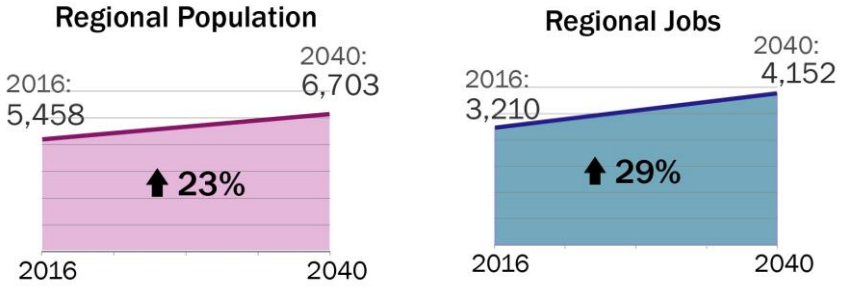


Figure 3: Population Growth, 2016-2040

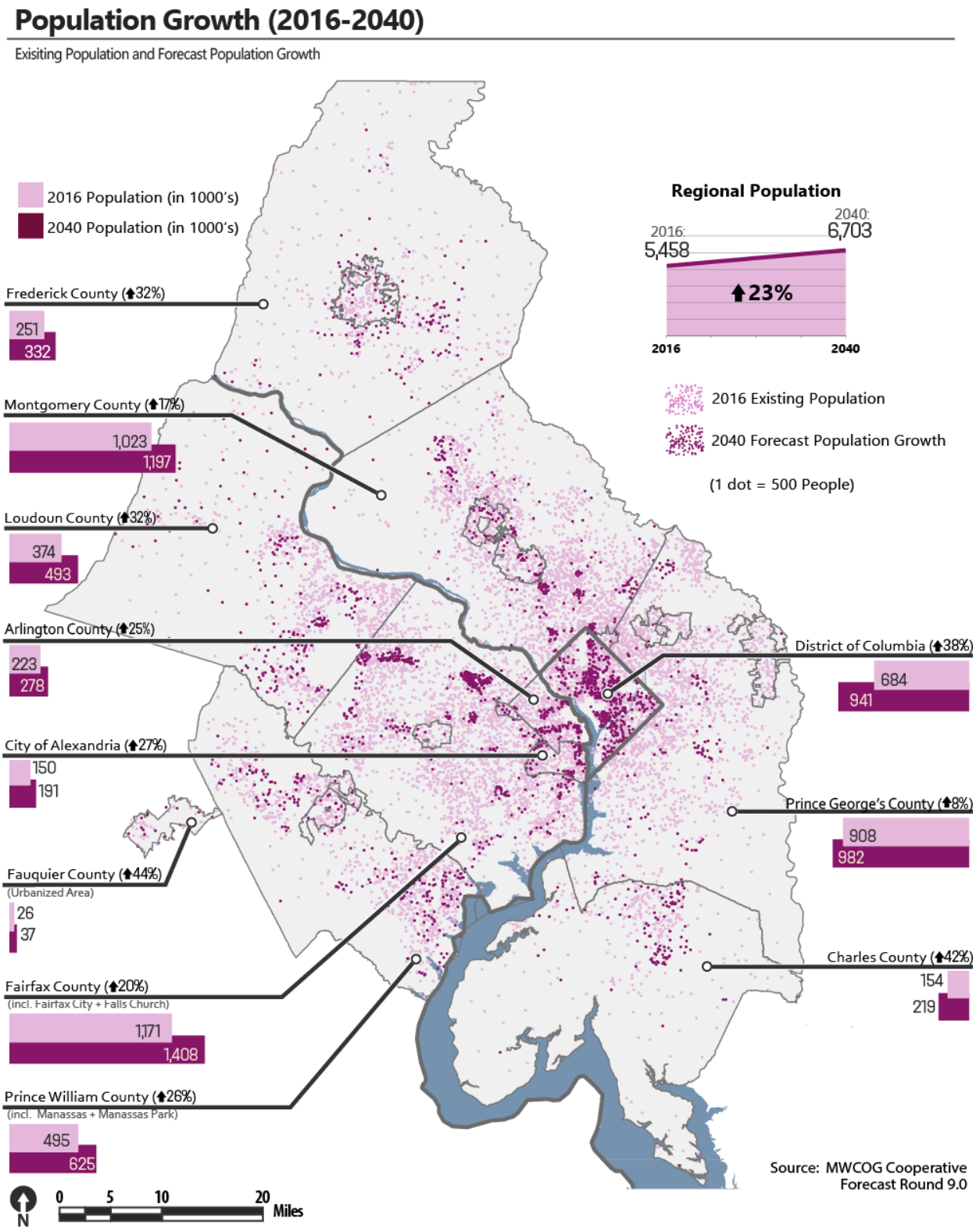
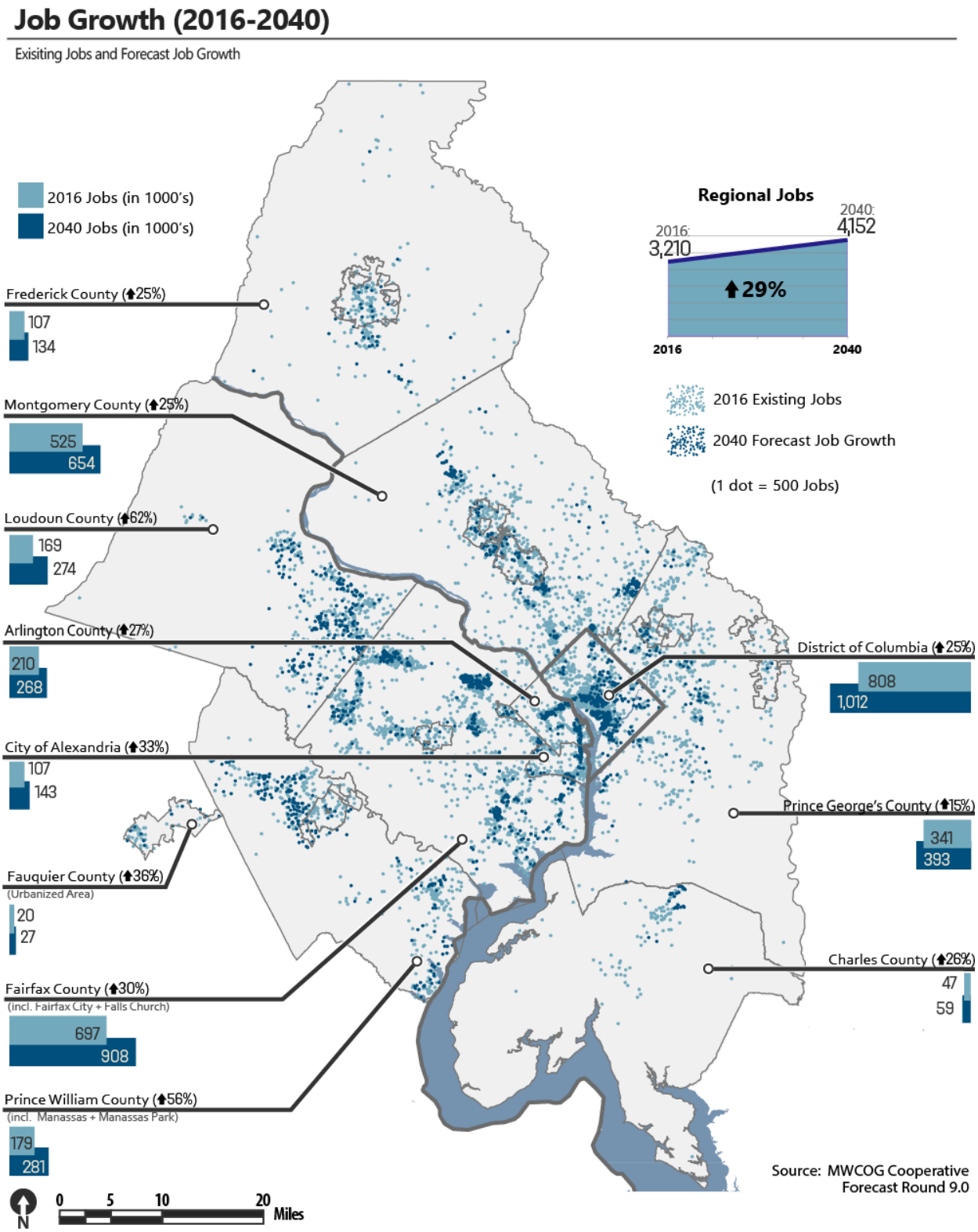


Figure 4: Employment Growth, 2016-2040



PROJECTS, PROGRAMS, & FUNDING

The CLRP identifies all of the regionally significant capital improvements to the region's highway and transit systems that area transportation agencies expect to make and to be able to afford through 2040. It also outlines all anticipated spending on operations and maintenance of the current and future transportation system over the same timeframe. Any project that might affect future air quality by adding or removing highway or transit capacity must be included in the plan.

The CLRP, as amended in 2016, identifies more than 350 "regionally significant" capital improvements that add or remove highway or transit capacity and therefore might affect future air quality. In all, the plan includes 1,182 new lane-miles of roadway and 76 new miles of high-capacity transit.

Major Highway Projects

The CLRP, as amended in 2016, includes xx major highway improvement projects. Most involve widening or upgrading existing roadways rather than building new facilities.

Table 1: Roadway Lane Miles in the CLRP

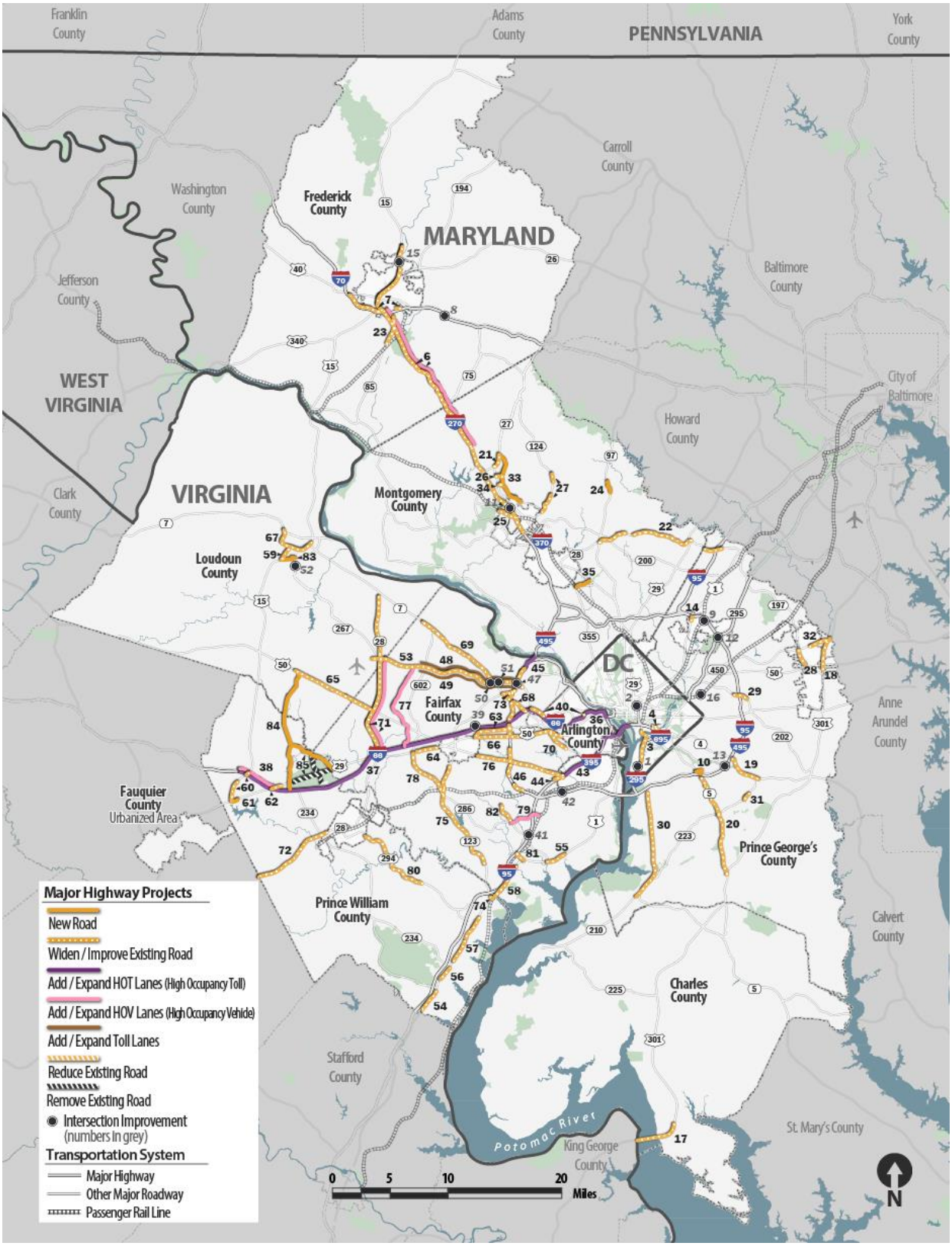
System	Existing System (lane miles)	CLRP (additional lane miles)
Freeways/Expressways	3,572 mi	+467 mi
Arterials	13,362mi	+715 mi
TOTAL	16,934 mi	+1,182 mi

MAJOR HIGHWAY PROJECTS LIST

1. I-295 - reconstruct interchange at Malcolm X Blvd, 2014
2. I-395 - remove 3rd St SB exit ramp, reconfigure 3rd St SB entrance and 2nd St NB exit ramps, reconnect F St between 2nd and 3rd St, 2016
3. South Capitol St - convert to 6 lane urban blvd, incl. Franklin Douglas Bridge Reconstruction, 2015, 2016
4. Southeast Blvd - downgrade and construct urban blvd, 2015
5. Lane Reductions/Reconfigurations for Bicycle Lanes, 2015, 2016, 2017, 2021, 2022 (not mapped)
6. I-270/US-15 widen including HOV, 2030
7. I-70 - widen to 6 lanes, 2020
8. I-70 - interchange at Meadow Rd, 2020
9. I-95/I-495 - interchange at Greenbelt Metro Sta, 2020
10. I-95/I-495 - Branch Avenue Metro access improvements, construct 8 lanes, 2017
11. I-270 - interchange at Watkins Mill Rd Ext, 2018
12. Baltimore Washington Parkway (MD-295) at MD-193 (Greenbelt Rd) - intersection improvement, 2020, 2025
13. Suitland Pkwy - interchange at Rena/Forestville Rd, 2025
14. US-1 (Baltimore Ave) - reconstruct 4 lanes, 2030
15. US-15 (Catoctin Mtn Hwy) - reconstruct intersection at Monocacy Blvd, 2017
16. US-50 (John Hanson Hwy) - westbound ramp to Columbia Park Rd, 2025
17. US-301 - widen Governor Harry Nice Memorial Bridge, 2030
18. MD-3 (Robert Crain Hwy) - widen to 6 lanes, 2030
19. MD-4 (Pennsylvania Ave) - widen to 6 lanes with interchanges at Westphalia Rd and Suitland Pkwy, 2022, 2035
20. MD-5 (Branch Ave) - upgrade, widen to 6 lanes including interchanges, 2017, 2030
21. MD-27 (Ridge Rd) - widen to 6 lanes, 2020
22. MD-28 (Norbeck Rd) / MD-198 (Spencerville Rd) - widen to 4, 6 lanes, 2025
23. MD-85 (Buckeystown Pke) - widen to 4, 6 lanes, 2020, 2025
24. MD-97 (Brookeville Bypass) - construct 2 lane bypass, 2018
25. MD-117 (Clopper Rd) - widen to 4 lanes, 2025
26. MD-118 (Germantown Rd) - widen to 4 lanes, 2020
27. MD-124 (Woodfield Rd) - widen to 6 lanes, 2020
28. MD-197 (Collington Rd) - widen to 4/5 lanes, 2025
29. MD-202 (Landover Rd) - Largo Town Center Metro Access Improvement, reconstruct 6 lanes, 2025
30. MD-210 (Indian Head Hwy) - upgrade to 6 lanes and interchange improvement, 2019, 2030
31. MD-223 (Woodyard Rd) - widen to 4 lanes, 2017, 2020
32. MD-450 (Annapolis Rd) - widen to 4 lanes, 2020
33. Mid County Hwy Extension (M-83) - construct 4, 6 lanes, 2025
34. Middlebrook Rd Extended - construct 4 lanes, 2025
35. Montrose Pkwy East - construct 4 lanes, 2022
36. I-66 HOT (Inside Beltway), revise operations from HOV 2+ to HOT during peak hours and bus service, 2017, 2021, 2040
37. I-66 HOT (Outside Beltway) - widen to 6 lanes (3 general purpose, 2 HOT, and 1 auxiliary) and bus service, 2021, 2040
38. I-66 HOV, widen to 8 lanes, HOV in additional lanes during peak, includes interchange reconstruction at US-15, 2016
39. I-66 - construct HOV ramps to access Vienna Metro Sta, 2021
40. I-66 - construct 1 lane in each direction, 2020, 2040
41. I-95/Fairfax County Parkway - enhanced interchanges for BRAC, 2025
42. I-95/I-495 - reconstruct interchange at Van Dorn St, 2015

43. I-395 HOT - additional lane and revise operation from HOV 3+ during peak to HOT 3+, 2019
44. I-395 - construct new south bound lane, 2018
45. I-495 - construct 4 HOT lanes, 2025, 2030
46. I-495 Auxiliary Lanes - construct 2 auxiliary lanes in both directions, 2030
47. I-495 - interchange at VA 267, 2030
48. Dulles Toll Rd (VA-267) - Collector-Distributor Road west-bound, 2037
49. Dulles Toll Rd (VA-267) - Collector-Distributor Road east-bound, 2036
50. Dulles Toll Rd (VA-267) - interchange at New Boone Blvd Extension, 2037
51. Dulles Toll Rd (VA-267) - interchange at Greensboro Drive/Tyco Rd, 2036
52. Dulles Greenway (VA 267) - interchange at Hawling Farm Blvd, 2016
53. Dulles Access Rd (VA 267) - widen to 6 lanes including interchange reconstruct at I-495, 2017
54. US-1 (Jefferson Davis Hwy) - widen to 6 lanes, 2030
55. US-1 (Richmond Hwy) - widen to 6 lanes, 2016, 2025
56. US-1 (Richmond Hwy) - widen to 6 lanes, 2024, 2030
57. US-1 (Richmond Hwy) - widen to 6 lanes, 2016, 2021
58. US-1 (Richmond Hwy) - widen to 6 lanes, 2019, 2021, 2035
59. US-15 (South King St) - widen to 4 lanes, 2017
60. US-15 (James Madison Hwy) - widen to 4 lanes, 2017, 2024, 2040
61. US-29 (Lee Hwy Parallel) McGraws Corner Dr - construct 4 lanes, 2020
62. US-29 (Lee Hwy) - widen to 5 lanes, 2030
63. US-29 (Lee Hwy) - widen to 6 lanes, 2025
64. US-29 (Lee Hwy) - widen to 3 lanes, 2017
65. US-50 (Lee Jackson Memorial Hwy) - widen to 6 lanes, 2025
66. US-50 (Arlington Blvd) - widen/reconstruct 6 lanes including interchanges, 2025
67. VA-7/US-15 Bypass (Harry Byrd Hwy) - widen to 6 lanes, 2040
68. VA-7 (Leesburg Pke) - widen to 6 lanes, 2021
69. VA-7 (Leesburg Pke) - widen to 6, 8 lanes, 2021, 2025, 2030
70. VA-7 (Leesburg Pke) - widen to 6 lanes, 2025
71. VA 28 (Sully Rd) HOV, widen to 8-10 lanes, HOV in additional lanes during peak, 2016, 2021, 2025, 2040
72. VA-28 (Nokesville Rd) - widen to 4 or 6 lanes, 2016, 2018, 2020, 2040
73. VA-123 (Chain Bridge Rd) - widen to 8 lanes, 2021
74. VA-123 (Gordon Blvd) - widen to 6 lanes, 2022
75. VA-123 (Ox Road) - widen to 6 lanes, 2025
76. VA-236 (Little River Tpke) - widen to 6 lanes, 2025
77. VA-286 (Fairfax County Pkwy) HOV - widen to 6 lanes, HOV in additional lanes during Peak, 2035
78. VA-286 (Fairfax County Pkwy / Jack Herrity Pkwy) - widen to 6 lanes, 2025
79. VA 289 (Franconia/Springfield Parkway), HOV lanes with interchange at Neuman St, 2025
80. VA-294 (Prince William Pkwy) - widen to 6 lanes, 2040
81. VA-638 (Pohick Rd) - widen to 4 lanes, 2025
82. VA-638 (Rolling Rd) - widen to 4 Lanes, 2020
83. Battlefield Pkwy - construct 4 lanes, 2020
84. Manassas Bypass (VA-234 Bypass) - construct 4 lanes, 2030
85. Manassas Battlefield Bypass - construct 4 lanes and close portions of US-29 (Lee Hwy) and VA-234 (Sudley Rd), 2030, 2035

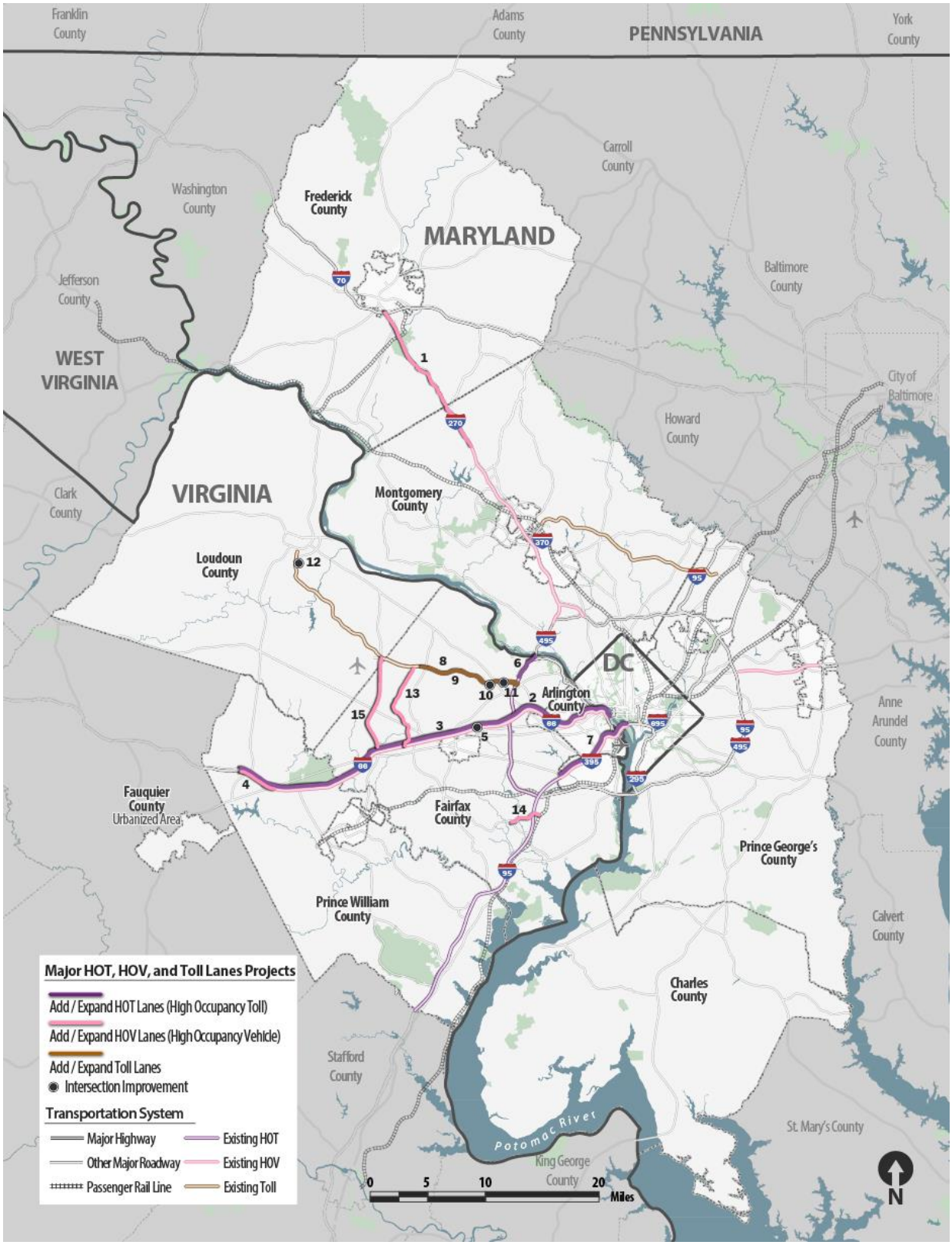
FIGURE 5: Major Highway Projects



MAJOR HOT, HOV, AND TOLL LANE PROJECTS LIST

1. I-270/US-15 widen including HOV, 2030
2. I-66 HOT (Inside Beltway), revise operations from HOV 2+ to HOT during peak hours and bus service, 2017, 2021, 2040
3. I-66 HOT (Outside Beltway) - widen to 6 lanes (3 general purpose, 2 HOT, and 1 auxiliary) and bus service, 2021, 2040
4. I-66 HOV, widen to 8 lanes, HOV in additional lanes during peak, includes interchange reconstruction at US-15, 2016
5. I-66 - construct HOV ramps to access Vienna Metro Station, 2021
6. I-495 - construct 4 HOT lanes, 2025, 2030
7. I-395 HOT - additional lane and revise operation from HOV 3+ during peak to HOT 3+, 2019
8. Dulles Toll Rd (VA-267) - Collector-Distributor Road west-bound, 2037
9. Dulles Toll Rd (VA-267) - Collector-Distributor Road east-bound, 2036
10. Dulles Toll Rd (VA-267) - interchange at New Boone Blvd Extension, 2037
11. Dulles Toll Rd (VA-267) - interchange at Greensboro Drive/Tyco Rd, 2036
12. Dulles Greenway (VA 267) - interchange at Hawling Farm Blvd, 2016
13. VA-286 (Fairfax County Pkwy) HOV - widen to 6 lanes, HOV in additional lanes during Peak, 2035
14. VA 289 (Franconia/Springfield Parkway), HOV lanes with interchange at Neuman St, 2025
15. VA 28 (Sully Rd) HOV, widen to 8-10 lanes, HOV in additional lanes during peak, 2016, 2021, 2025, 2040

Figure 6: Major HOT, HOV, and Toll Lane Projects



Major Transit Projects

The CLRP, as amended in 2016, includes xx major transit improvement projects, including new or upgraded heavy rail, light rail, commuter rail, and bus rapid transit facilities, as well as major new transit stations and transit centers. Four major high-occupancy vehicle (HOV) or high-occupancy/toll (HOT) lane facilities that are planned will provide infrastructure for increased express bus transit service.

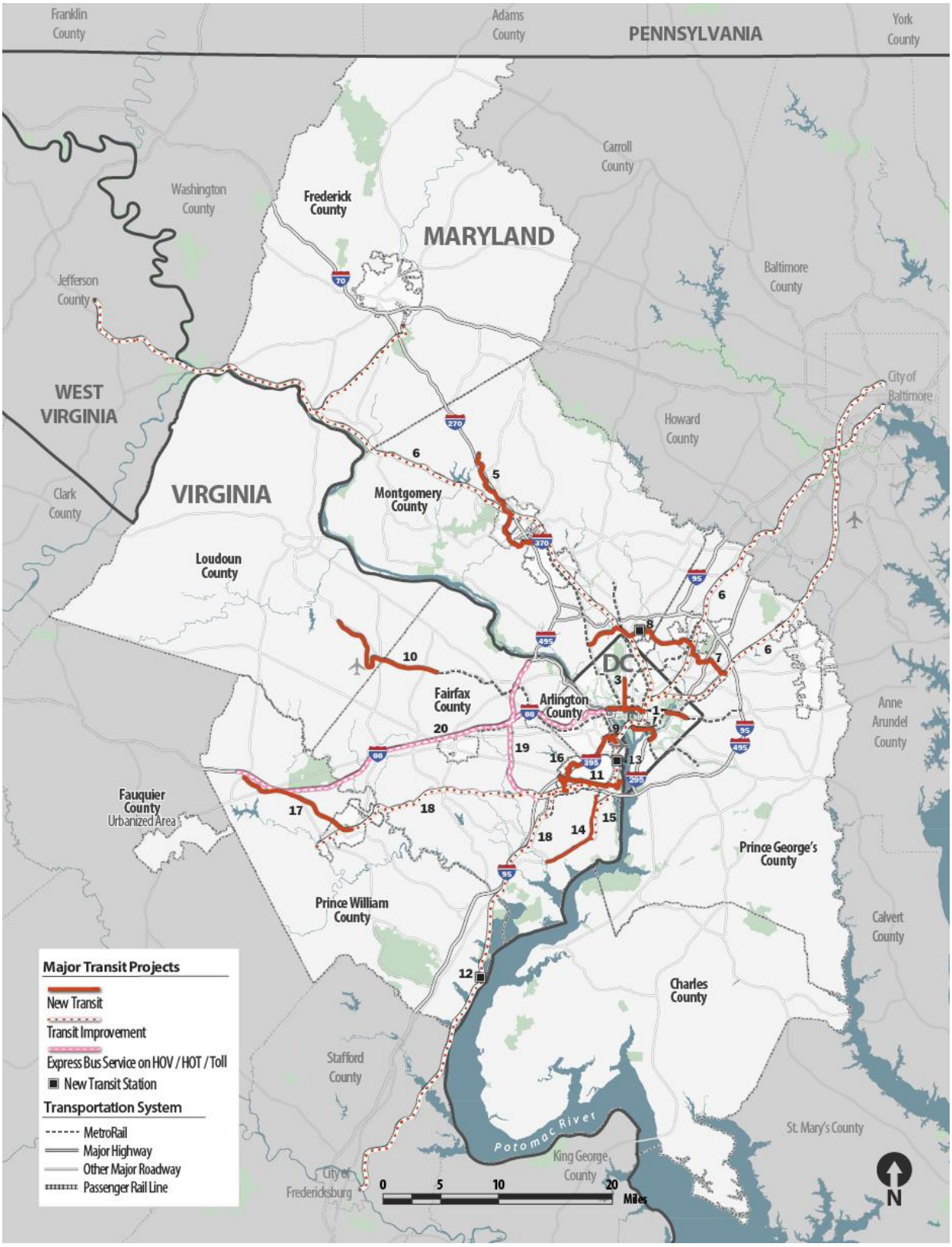
Table 2: High-Capacity Transit Miles in the CLRP

System	Existing System (lane miles)	CLRP (additional lane miles)
Metro Rail	119 miles	+12 miles
Light Rail/ Streetcars	2 miles	+28 miles
BRT	4 miles	+25 miles
Commuter Rail	167 miles	+11 miles
TOTAL	**292** miles	**+76** miles

MAJOR TRANSIT PROJECTS LIST

1. DC Streetcar, 2016, 2017, 2020, 2022
2. DC Dedicated Bicycle Lane Network, 2016, 2017 (not mapped)
3. 16th Street Bus Priority Improvements, 2021
4. Tiger Grant Bus Priority Improvements (not mapped: DC, MD, and VA)
5. Corridor Cities Transitway BRT - from Shady Grove to COMSAT, 2020
6. MARC - Increase trip capacity and frequency along all commuter rail lines, 2029
7. Purple Line - Bethesda to New Carrollton, 2020
8. Silver Spring Transit Center, 2017
9. Crystal City Transitway: Northern Extension BRT, 2016, 2023
10. Metro Silver Line (Dulles Corridor Metrorail Project) - Phase 2, 2020
11. Duke St Transitway - King St Metro to Fairfax County line, 2024
12. Potomac Shores VRE Station, 2017
13. Potomac Yard Metro Station, 2021
14. US-1 BRT from Huntington Metro Station to Woodbridge, 2030
15. US-1 bus right turn lanes, 2035
16. West End Transitway - Van Dorn St Metro to Pentagon Metro, 2019
17. VRE - Gainseville-Haymarket Extension, 2022
18. VRE - Reduce headways along the Manassas and Fredericksburg Lines, 2020
19. I-495 HOT Lane Express Bus Service
20. I-66 HOT Lane Enhanced Bus Service

Figure 7: Major Transit Projects



New Projects and Significant Changes

In all, there were nine new and changed "major" projects in the 2016 CLRP Amendment. For the purposes of this documentation, "major" projects are defined as those which directly affect interstates, major arterials, and expressways or freeways with at-grade intersections, as well as dedicated transit facilities.

REGIONAL POLICY FRAMEWORK FOR DEVELOPMENT OF THE 2016 CLRP AMENDMENT

In December 2015, the TPB released the Call for Projects for the 2016 Amendment to the CLRP and the FY 2017-2022 TIP. After a 30-day public comment period, the project submissions from each agency were approved by the TPB for inclusion in the Air Quality Conformity Analysis on March 16, 2016.

The Call for Projects document listed the region's "greatest needs" for transportation reflecting the TPB's policy framework as defined in the Vision and the Regional Transportation Priorities Plan. The Call for Projects encouraged agencies to consider regional goals, priorities and needs as they developed and selected projects to submit for inclusion in the 2016 Amendment.

The CLRP project description form asked agencies to answer a series of questions on how new projects support the goals laid out in the Regional Transportation Priorities Plan. The six RTPP goals are described in Figure 8. The responses provided by the submitting agencies for all new projects submitted for this year's CLRP amendment have been summarized in Table 3.

In addition, submitting agencies were asked to identify how new projects support the federal planning factors prescribed under MAP-21. The responses to those questions are summarized in Table 4.

Figure 8: RTPP Goals and Corresponding Questions in the CLRP Call for Projects

Goal 1

Provide a Comprehensive Range of Transportation Options

- Please identify all travel mode options that this project provides, enhances, supports, or promotes.
- Does this project improve accessibility for historically transportation-disadvantaged individuals (i.e., persons with disabilities, low-incomes, and/or limited English proficiency?)

Goal 2

Promote a Strong Regional Economy, Including a Healthy Regional Core and Dynamic Activity Centers

- Does this project begin or end in an Activity Center?
- Does this project connect two or more Activity Centers?
- Does this project promote non-auto travel within one or more Activity Centers?

Goal 3

Ensure Adequate System Maintenance, Preservation, and Safety

- Does this project contribute to enhanced system maintenance, preservation, or safety?

Goal 4

Maximize Operational Effectiveness and Safety of the Transportation System

- Does this project reduce travel time on highways and/or transit without building new capacity (e.g., ITS, bus priority treatments, etc.)?
- Does this project enhance safety for motorists, transit users, pedestrians, and/or bicyclists?

Goal 5

Enhance Environmental Quality, and Protect Natural and Cultural Resources

- Is this project expected to contribute to reductions in emissions of criteria pollutants?
- Is this project expected to contribute to reductions in emissions of greenhouse gases?

Goal 6

Support Inter-Regional and International Travel and Commerce

- Please identify all freight carrier modes that this project enhances, supports, or promotes.
- Please identify all passenger carrier modes that this project enhances, supports, or promotes.

Table 3: 2016 CLRP Project Submissions and RTPP Goals

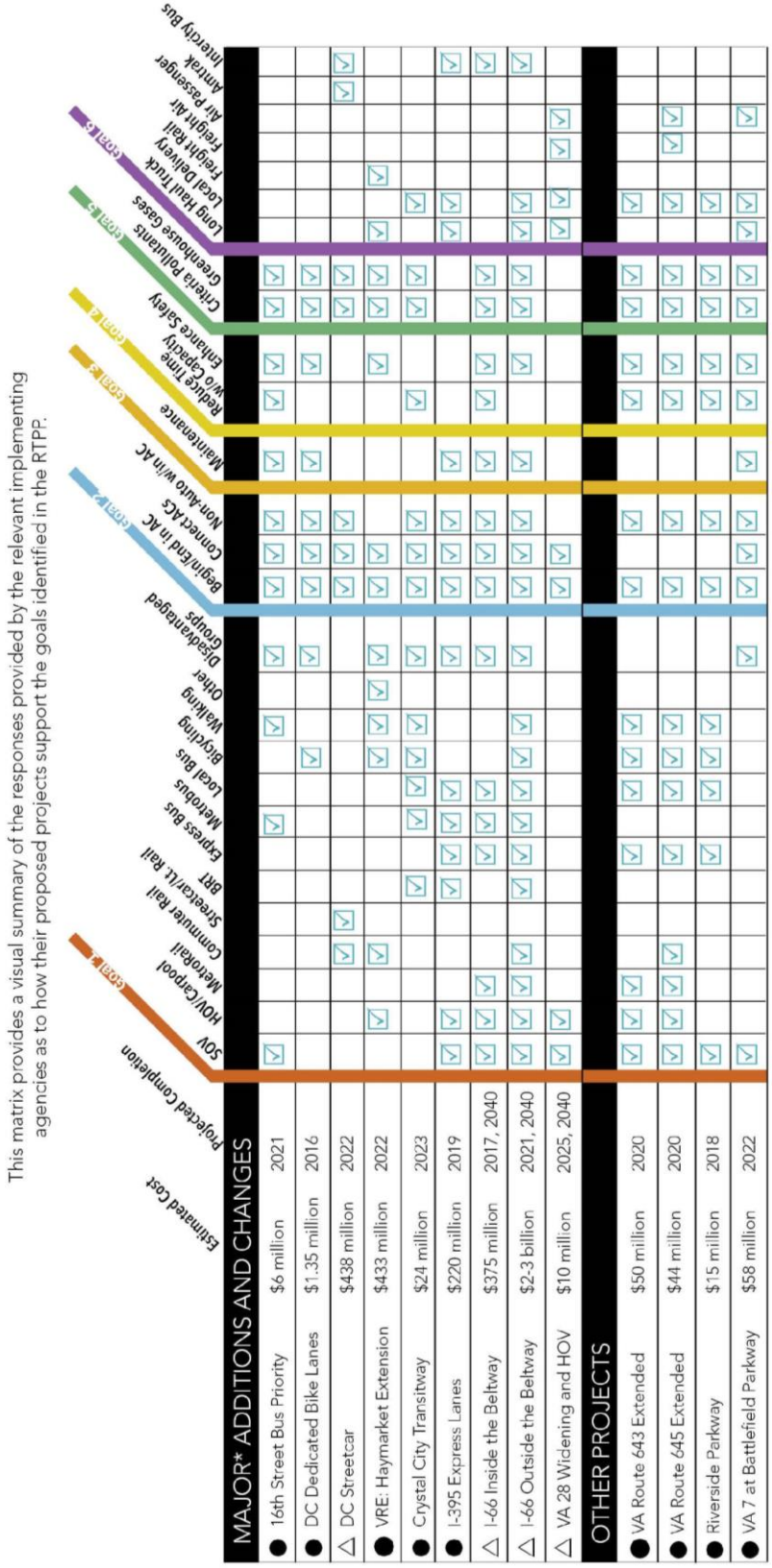


Table 4: 2016 CLRP Project Submissions and Federal Planning Factors

This matrix provides a visual summary of the responses provided by the relevant implementing agencies as to how their proposed projects support the federal planning factors.

	Estimated Cost	Projected Completion	Economic Vitality	Safety	Homeland Security	Accessibility/Mobility People	Accessibility/Mobility Freight	Environment	Integration/Connectivity	Management & Operation	Preservation
MAJOR PROJECTS*											
● 16th Street Bus Priority	$6 million	2021	☑	☑		☑		☑	☑	☑	
● DC Dedicated Bike Lanes	$1.35 million	2016	☑	☑			☑		☑	☑	
△ DC Streetcar	$438 million	2022	☑		☑		☑		☑	☑	
● VRE: Haymarket Extension	$433 million	2022	☑	☑	☑	☑	☑	☑	☑	☑	
● Crystal City Transitway	$24 million	2023	☑	☑		☑	☑	☑	☑	☑	
● I-395 Express Lanes	$220 million	2019	☑	☑	☑	☑			☑	☑	
△ I-66 Inside the Beltway	$375 million	2017, 2040	☑	☑	☑	☑		☑	☑	☑	☑
△ I-66 Outside the Beltway	$2-3 billion	2021, 2040	☑	☑	☑	☑	☑	☑	☑	☑	☑
△ VA 28 Widening and HOV	$100 million	2025, 2040				☑	☑		☑	☑	
OTHER PROJECTS											
● VA Route 643 Extended	$50 million	2020	☑	☑	☑	☑	☑	☑	☑	☑	☑
● VA Route 645 Extended	$44 million	2020	☑		☑	☑	☑	☑	☑	☑	☑
● Riverside Parkway	$15 million	2018	☑	☑	☑	☑	☑	☑	☑	☑	☑
● VA 7 at Battlefield Parkway	$58 million	2022	☑	☑	☑	☑	☑	☑	☑	☑	☑

Federal Planning Factors

- Support the **economic vitality** of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- Increase the **safety** of the transportation system for all motorized and non-motorized users.
- Increase the ability of the transportation system to support **homeland security** and to safeguard the personal security of all motorized and non-motorized users.
- Increase accessibility and mobility of **people**.
- Increase accessibility and mobility of **freight**.
- Protect and enhance the **environment**, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
- Enhance the **integration and connectivity** of the transportation system, across and between modes, for people and freight.
- Promote efficient system **management and operation**.
- Emphasize the **preservation** of the existing transportation system.

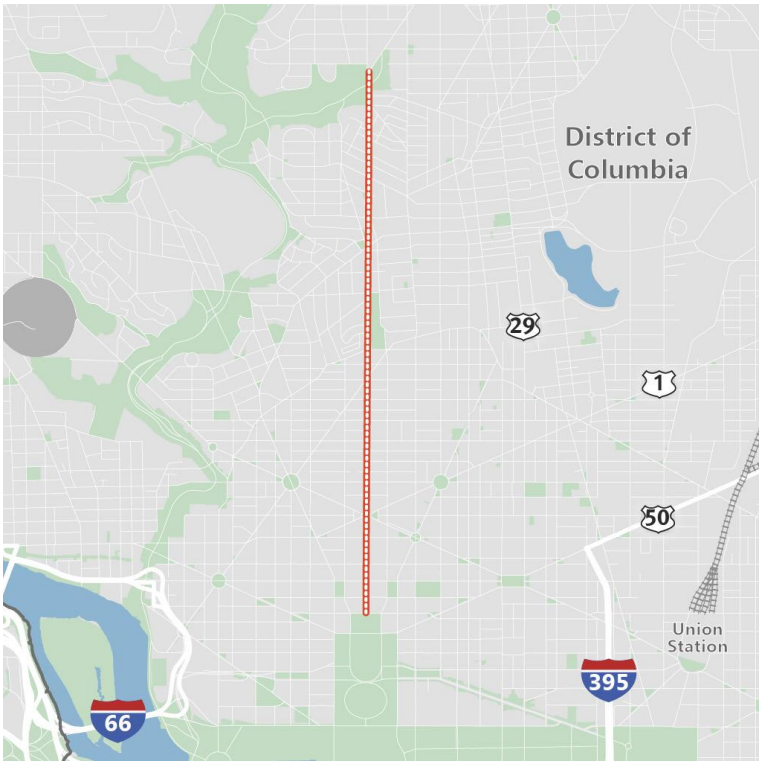
* Major projects are defined as changes to interstates, major arterials, and expressways or freeways with at-grade intersections, as well as dedicated transit facilities.

● New project △ Change to project already in the CLRP

Descriptions of New Projects and Major Project Changes

16TH STREET BUS PRIORITY
From H Street NW to Arkansas Avenue NW

Project Type.....Transit – Proposed Major Addition
Project Length..... 2.7 miles
Anticipated Completion..... 2021
Estimated Cost of Construction.....$6 million
Submitting Agency.....District of Columbia DOT
Anticipated Funding Sources.....Federal



Project Description
This project will convert general purpose lanes on 16th Street NW into peak-period, peak-direction bus-only lanes from Arkansas Avenue to H Street, and implement a new reversible center lane from W Street to O Street and K Street to H Street. The project will also improve bus stops in the corridor, including installation of additional shelters, creation of additional waiting areas, and installation of off-board fare payment kiosks, as well as pedestrian improvements, including crosswalks and ADA ramps.

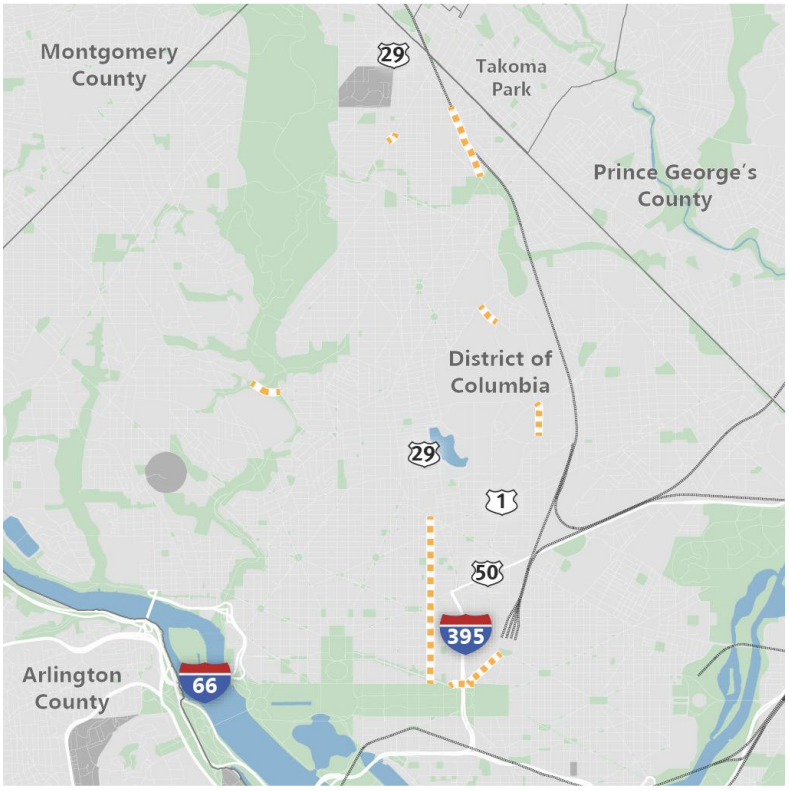
Existing Support for this Project
This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: Move DC and the 16th Street Transit Priority Study.

See official CLRP Project Description Form for more information about this project, or visit the project website at: http://ddot.dc.gov/page/16th-street-nw-transit-priority-planning-study

Advancing Goals in the Regional Transportation Priorities Plan
By providing reliable express bus service for nearly three miles in the congested 16th Street Corridor, this project will expand travel options (Goal 1) and improve connections between Activity Centers and circulation within them (Goal 2). The project also enhances system efficiencies (Goal 4) by reducing transit travel times without expanding capacity, supports emissions reductions by reducing congestion (Goal 5), and improves safety (Goal 4).

DC DEDICATED BICYCLE LANE NETWORK
Multiple Street Segments Throughout City

Project Type.....Bicycle/Pedestrian – Proposed Major Addition
Project Length..... 3.9 miles
Anticipated Completion..... 2016, 2017
Estimated Cost of Construction.....$1.35 million
Submitting Agency.....District of Columbia DOT
Anticipated Funding Sources.....Local



Project Description
This project will expand the District of Columbia's dedicated bicycle lane network by removing one or more travel lanes for motor vehicles on the following road segments:

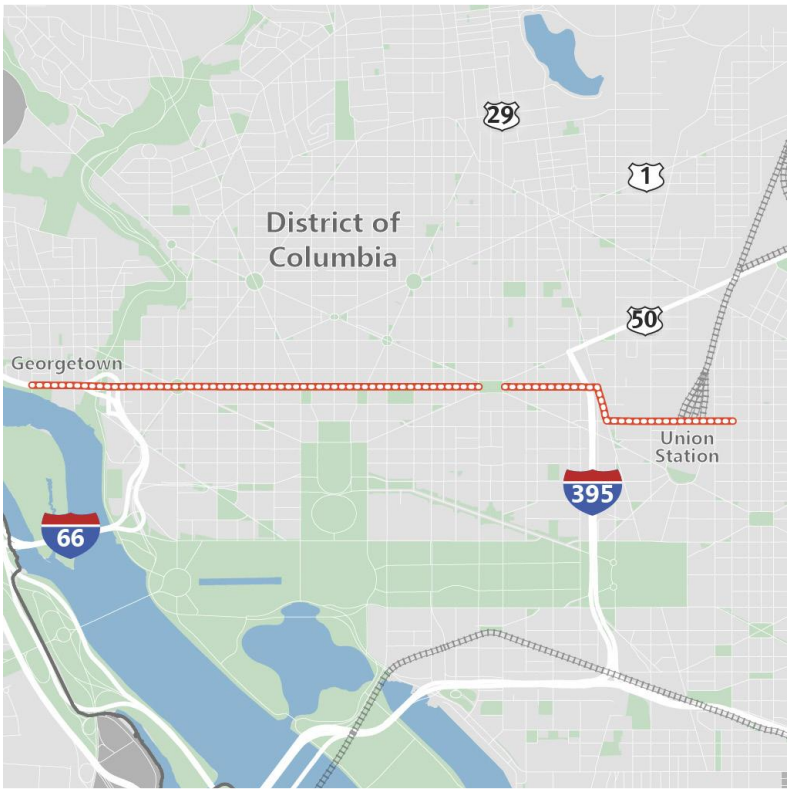
- 4th St NE, from Lincoln Rd to Harewood Rd
- Blair Rd NW, from Peabody St to Aspen St
- Constitution Ave NW, from 1st St to Pennsylvania Ave
- Eastern Downtown Study, alternatives on 5th, 6th or 9th St. NW
- Harewood Rd NW, from Rock Creek Church Rd to North Capitol St
- Klingle Rd NW, from Adams Mill Rd to Porter St
- Louisiana Ave NW, from Columbus Circle to Constitution Ave NW
- Piney Branch Rd NW, from Georgia Ave to Underwood St

Existing Support for this Project
This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: MoveDC and the Eastern Downtown Protected Bike Lane Study. See official CLRP Project Description Form for more information about this project.

Advancing Goals in the Regional Transportation Priorities Plan
The viability of bicycling as a travel mode—representing an expansion of transportation options (Goal 1)— will be advanced with the implementation of nearly four miles of new bike lanes in the District. The project is particularly supportive of the Priorities Plan's call for improved non-motorized circulation within Activity Centers (Goal 2) to make bicycle travel more efficient and safer (Goals 3 and 4). The project further supports emissions reductions (Goal 5).

DC STREETCAR: UNION STATION TO GEORGETOWN
Primarily Along the K Street NW Corridor

Project Type.....Transit – Proposed Major Change
Project Length..... 3.5 miles
Anticipated Completion..... 2022
Estimated Cost of Construction.....$348 million
Submitting Agency.....District of Columbia DOT
Anticipated Funding Sources.....Federal, Local



Project Description
This project will extend the H Street NE streetcar line from Union Station to Georgetown, mainly along the K Street NW corridor. The project was added to the CLRP in 2014. In this proposed major change, the District Department of Transportation (DDOT) has indicated that travel lanes in each direction on H Street and segments of K Street would be removed and new lanes on New Jersey Avenue and other segments of K Street would be added in order to allow the streetcar to run on an exclusive transitway.

Existing Support for this Project
This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: 2014 Constrained Long-Range Transportation Plan (CLRP), MoveDC and the Final Alternative Analysis Study Report

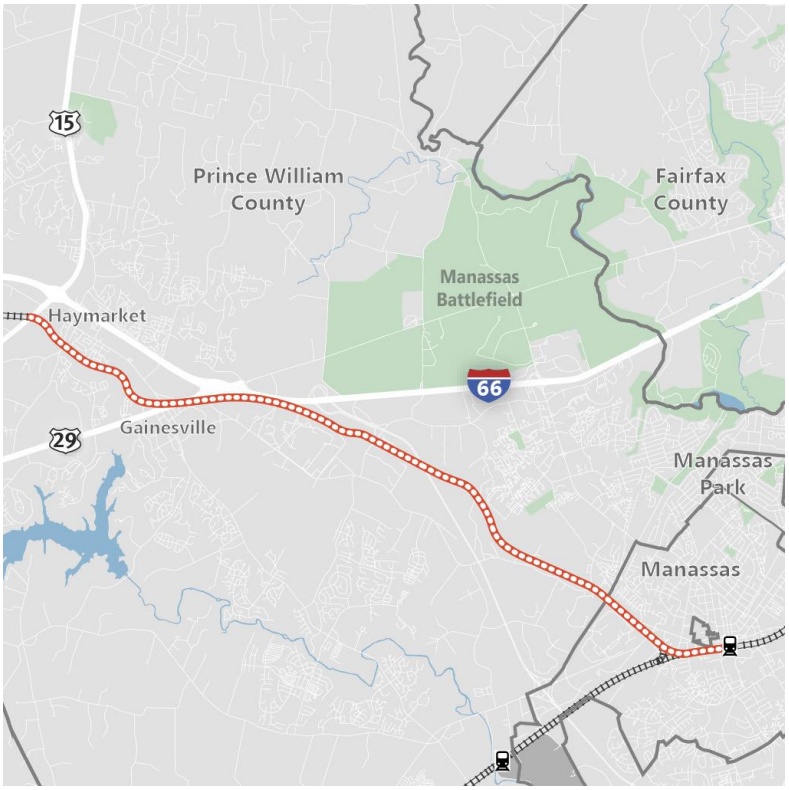
See official CLRP Project Description Form for more information about this project, or visit the project website at: www.unionstationtogeorgetown.com

Advancing Goals in the Regional Transportation Priorities Plan
This 3.5-mile streetcar line will provide a new express travel option (Goal 1) and support connections between key Activity Centers (Goal 2), including NoMa, Downtown DC, and Georgetown. The project will increase access to Union Station, supporting commuter rail and intercity rail and bus (Goal 6). And by reducing driving and congestion, the project aims to supports emissions reductions (Goal 5). The Priorities Plan supported street-level transit systems, like streetcars, in jurisdictions that have determined them to be cost-effective and important for mobility, accessibility, and community development.

VRE HAYMARKET EXTENSION

From Manassas VRE Station to Gainesville/Haymarket

Project Type.....Transit – Proposed Major Addition
Project Length..... 11 miles
Anticipated Completion..... 2022
Estimated Cost of Construction.....$433 million
Submitting Agency.....Virginia DOT
Anticipated Funding Sources.....Federal, State, Local, ...Private, Other



See official CLRP Project Description Form for more information about this project, or visit the project website at: www.vre.org/ghx

Project Description

This project will extend the Virginia Railway Express (VRE) Manassas Line by approximately 11 miles to Gainesville and Haymarket. The project includes up to three new stations with platforms, bicycle and pedestrian access, and park-and-ride lots. The project also includes the purchase of additional railcars, expansion of equipment storage and yard facilities, widening of existing right-of-way, and real-time information on parking availability and train arrival. An alternatives analysis and environmental impact study are currently underway.

Existing Support for this Project

This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: Prince William County Comprehensive Plan Transportation Element, Town of Haymarket Comprehensive Plan, City of Manassas Comprehensive Plan, and NVTA TransAction 2040 Project List.

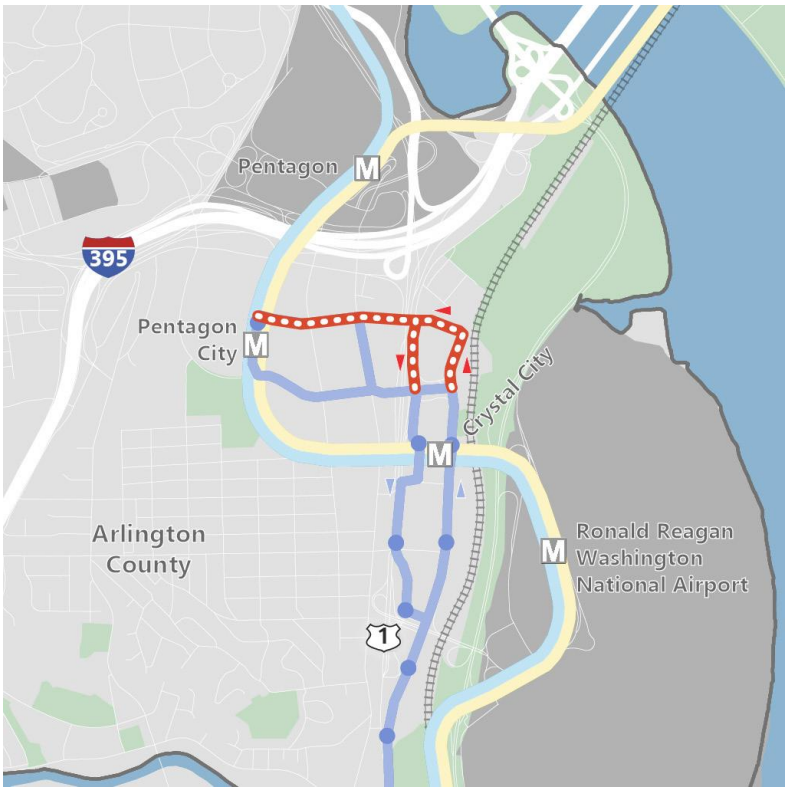
Advancing Goals in the Regional Transportation Priorities Plan

The 11-mile Manassas Line extension will offer VRE services to more residents, eliminate crowding and serve future markets – key components that will expand transportation options (Goal 1). The project will also connect Activity Centers (Goal 2), which are focal points for economic opportunity and growth. And by reducing congestion and driving, the extension will support emissions reductions (Goal 5) and boost efficient freight movement on both roads and rail (Goal 6).

CRYSTAL CITY TRANSITWAY: NORTHERN EXTENSION

From Crystal City Metro Station to Pentagon City Metro Station

Project Type.....Transit – Proposed Major Addition
Project Length..... 1 mile
Anticipated Completion..... 2023
Estimated Cost of Construction..... $24 million
Submitting Agency.....Virginia DOT
Anticipated Funding Sources.....Federal, State, Local,
.....Private, Other



Project Description

This project will extend the existing Metroway bus rapid transit (BRT) line from the Crystal City Metro Station north to the Pentagon City Metro Station. The extension will follow Clark Street and Crystal Drive as far as 12th Street South, at which point it will turn left and continue to South Hayes Street. The project includes construction of three new BRT stations along the route, as well as construction of a new one-block segment of 12th Street South.

Existing Support for this Project

This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: (Pending).

See official CLRP Project Description Form for more information about this project, or visit the project website at: www.metrowayva.com

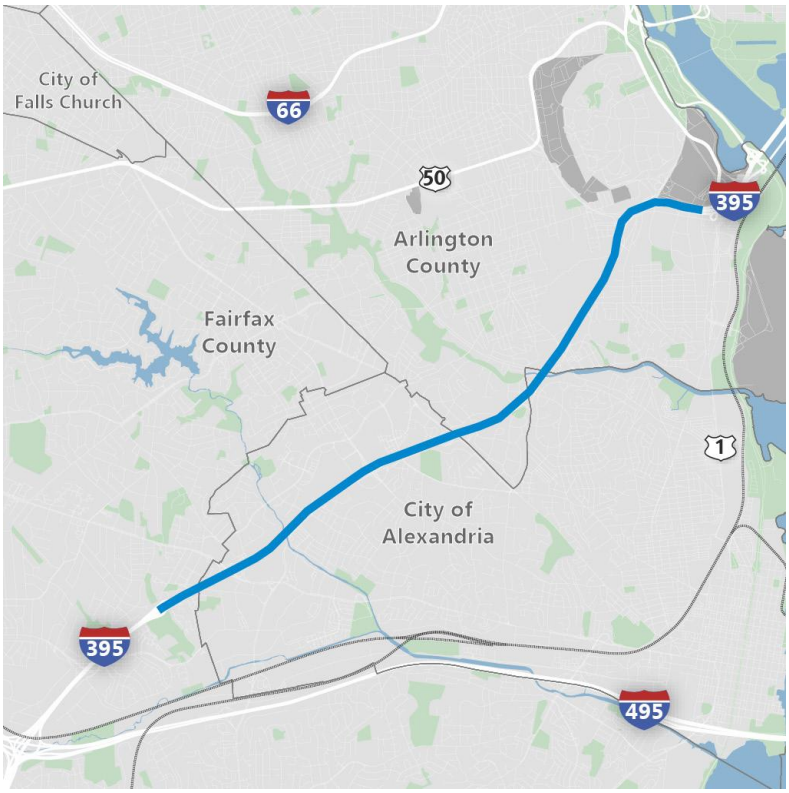
Advancing Goals in the Regional Transportation Priorities Plan

The Priorities Plan specifically called for cost-effective transit alternatives like bus rapid transit (BRT) that approach the speed, frequency, and reliability of heavy rail, but at a fraction of the cost. This BRT extension will expand transportation choice (Goal 1) by providing a new express transit option and improving the accessibility of non-motorized modes and other transit. By adding dedicated transit lanes and a new street segment, the project will connect Activity Centers and promote circulation within them (Goal 2). It will also maximize use of existing infrastructure without adding new capacity (Goal 4), while reducing emissions (Goal 5) and supporting local delivery freight (Goal 6).

I-395 EXPRESS LANES

Inside the Capital Beltway (Turkeycock Run to vicinity of Eads Street)

Project Type.....Highway – Proposed Major Addition
Project Length.....8 miles
Anticipated Completion..... 2019
Estimated Cost of Construction.....$220 million
Submitting Agency.....Virginia DOT
Anticipated Funding Sources.....Private



Project Description

This project will convert and reconfigure the two existing reversible high-occupancy vehicle (HOV) lanes on I-395 inside the Capital Beltway to a three-lane, reversible high-occupancy/toll (HOT) facility ("Express Lanes"). The project will provide a seamless connection from the I-95 Express Lanes to the vicinity of Eads Street in Arlington. This conversion was originally added to the CLRP in 2007 but was removed in 2011. The 2014 opening of the I-95 Express Lanes has led to renewed interest in this project. Travel demand management and enhanced transit services are currently being developed and are expected in the next update of the CLRP. Toll revenue will be used in part to fund transit services.

Existing Support for this Project

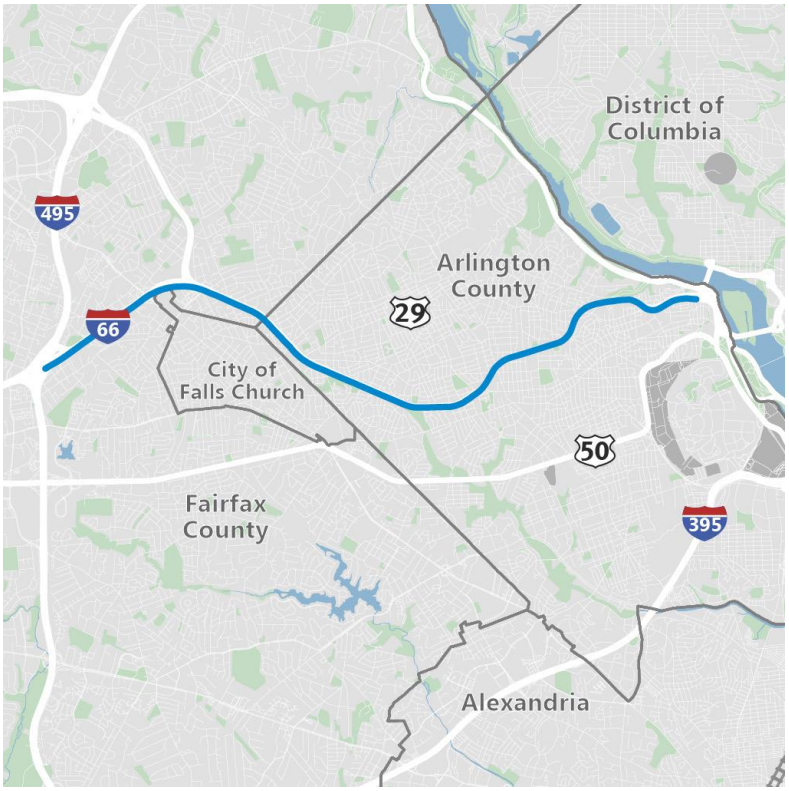
This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: (Pending). See official CLRP Project Description Form for more information about this project.

Advancing Goals in the Regional Transportation Priorities Plan

The Priorities Plan called upon the region to use tolling and pricing mechanisms to manage road congestion and raise revenue, and this project adds another key component to the region's express lane network. The I-395 Express Lanes will expand transportation choices (Goal 1) by providing free-flowing travel lanes to solo drivers who pay tolls, carpools, and express bus services. The 8-mile project connects several Activity Centers, which are the region's primary engines for economic growth and opportunity (Goal 2).

I-66 MULTIMODAL IMPROVEMENTS
Inside the Capital Beltway Basic Project Information

Project Type.....Highway, Transit, Bicycle/Pedestrian
.....Proposed Major Change
Project Length..... 10 miles
Anticipated Completion.....2017, 2020, 2040
Estimated Cost of Construction.....$375 million
Submitting Agency.....Virginia DOT
Anticipated Funding Sources.....Federal, State, Local,
..... Private, Other



See official CLRP Project Description Form for more information about this project, or visit the project website at: www.Transform66.org.

Project Description

This project will convert I-66 inside the Capital Beltway to high-occupancy/toll (HOT) lanes ("Express Lanes") and widen certain segments (see schedule below). The project also includes enhanced bus service and numerous bicycle, pedestrian, and other multimodal improvements in the corridor.

- In 2017: Begin HOT-2+ during peak periods in peak direction
- By 2020: Widen EB I-66 from Dulles Toll Rd to Fairfax Dr (near Ballston)
- In 2021: Begin HOT-3+ during peak periods in peak direction
- In 2040: Expand HOT-3+ during peak periods to both directions
- By 2040: Widen WB I-66 from Sycamore St to Washington Blvd

This project was added to the CLRP in 2015. This proposed change alters the scope and timing of the tolling and lane widenings through 2040.

Existing Support for this Project

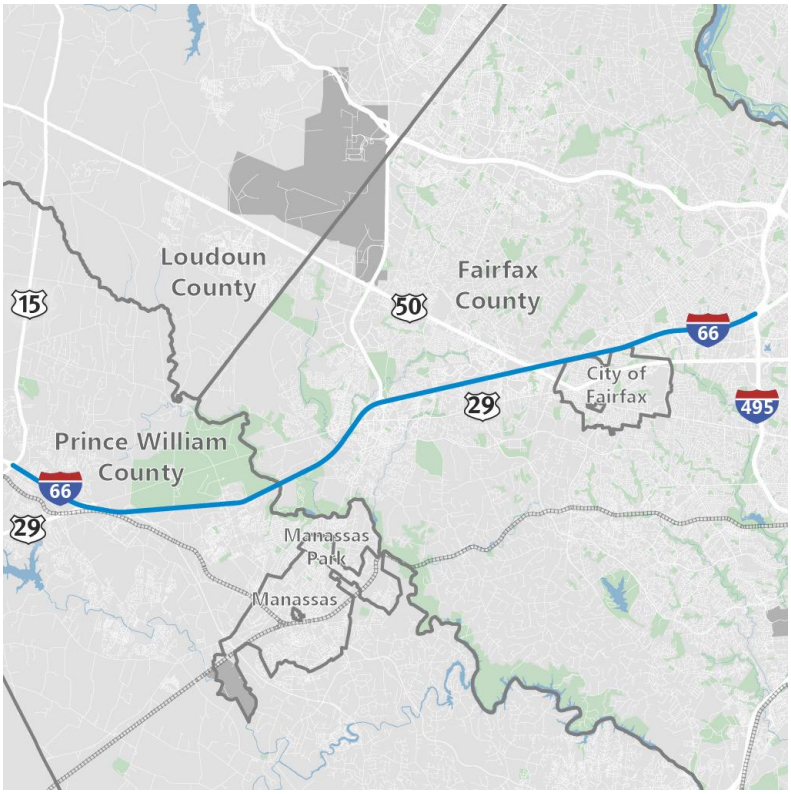
This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: I-66 Multimodal Study Inside the Beltway and 2015 Constrained Long-Range Transportation Plan (CLRP) Amendment.

Advancing Goals in the Regional Transportation Priorities Plan

This project is designed to expand transportation choices by introducing a new travel option–Express Lanes–to the I-66 corridor while supporting other transportation modes (Goal 1), including carpooling, express buses, bicycling, and walking. The 10-mile project forms a key link in a network of recent and forthcoming priced-lane projects in the region, which is consistent with the Priorities Plan's call for the consideration of express toll facilities. It also supports the Priorities Plan strategy of making targeted roadway improvements that provide congestion relief for drivers in key locations. In addition to the first goal, the project supports aspects of all the other goals in the Priorities Plan.

I-66 CORRIDOR IMPROVEMENTS
Outside the Capital Beltway Basic Project Information

Project Type.....Highway, Transit – Proposed Major Change
Project Length..... 26 miles
Anticipated Completion..... 2021, 2040
Estimated Cost of Construction.....$2-3 billion
Submitting Agency.....Virginia DOT
Anticipated Funding Sources.....Federal, State, Local, ... Private, Bonds, Other



See official CLRP Project Description Form for more information about this project, or visit the project website at: www.Transform66.org

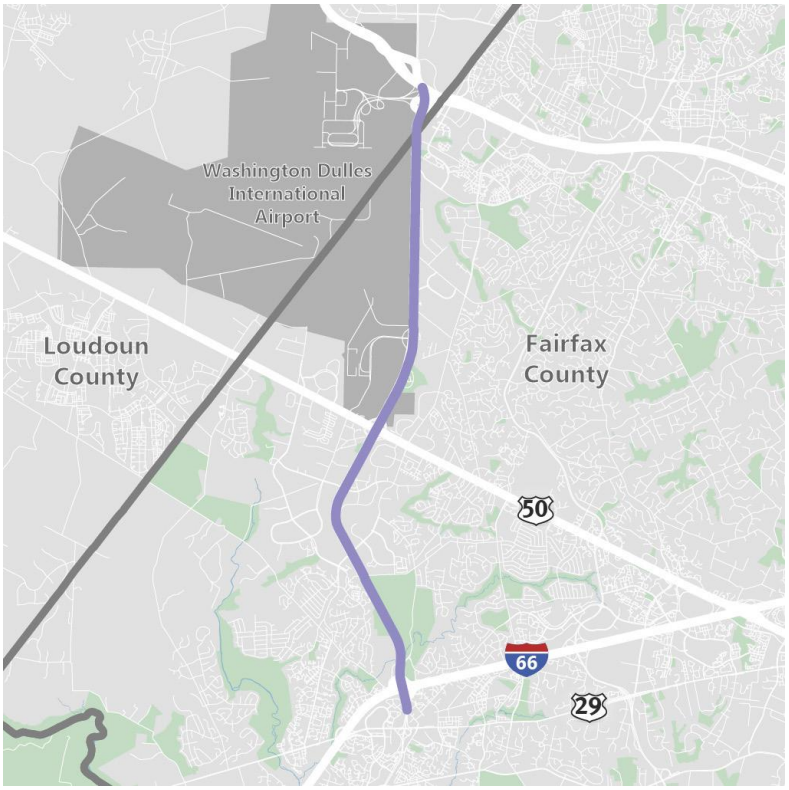
Project Description
This project will add two new high-occupancy/toll (HOT) lanes ("Express Lanes") in either direction to I-66 outside the Capital Beltway. One lane will be added new while the other will come from converting the existing high-occupancy vehicle (HOV) lane. Vehicles with three or more occupants (HOV-3+) will get to use the lanes for free while those not meeting the occupancy requirement will pay a toll. The project also includes new park-and-ride lots and enhanced express bus service in the corridor. The project was added to the CLRP in 2015. This proposed major change includes various ramp movement modifications, but no major policy or facility changes.

Existing Support for this Project
This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: 2015 Constrained Long-Range Transportation Plan (CLRP) Amendment.

Advancing Goals in the Regional Transportation Priorities Plan
The extension of Express Lanes on I-66 outside the Capital Beltway supports a variety of transportation options by providing congestion-free travel for solo drivers who pay tolls, as well as for carpoolers and express bus services (Goal 1). The 26-mile project is consistent with the Priorities Plan's call for the use of pricing mechanisms to manage road congestion and raise revenue, especially when building new lanes or roads—that is, when expanding capacity. The project forms a key link in an emerging network of recent and forthcoming priced-lane projects. It supports aspects of all the Priorities Plan goals, ranging from connecting Activity Centers to enhancing safety to reducing emissions.

VA 28 HOV AND WIDENING
From I-66 to the Dulles Toll Road

Project Type.....Highway – Proposed Major Change
Project Length.....8 miles
Anticipated Completion.....2021, 2025, 2040
Estimated Cost of Construction.....$100 million
Submitting Agencies.....Fairfax County, Virginia DOT
Anticipated Funding Sources.....Federal, State, Local, ... Private, Bonds, Other



Project Description
This project will create high-occupancy vehicle (HOV) lanes on VA Route 28 (Sully Rd) between I-66 and the Dulles Toll Road by 2040 by converting one general purpose lane in either direction to HOV. The project will also add a new auxiliary lane in either direction on a 2-mile stretch between I-66 and Westfields Blvd by 2021. This project is part of a larger project to widen VA 28 from 6 to 8 lanes between I-66 and VA Route 7 which has been in the CLRP since 2004. The addition of auxiliary lanes between I-66 and Westfields Blvd will bring the total number of lanes on that segment to 10.

Existing Support for this Project
This project has undergone review at the local, state, and/or subregional levels and is included in the following approved plans: Fairfax County Transportation Plan.

See official CLRP Project Description Form for more information about this project, or visit the project website at: www.28freeway.com.

Advancing Goals in the Regional Transportation Priorities Plan
This 8-mile road widening will connect four Activity Centers (Goal 2) along a heavily congested circumferential corridor. TPB and COG policies have long emphasized the importance of improving transportation connections between Activity Centers, which are anticipated to attract 75 percent of the region's new jobs over the next 25 years. The VA 28 project will also expand transportation options in the corridor (Goal 1) by providing carpool lanes in each direction by 2040. In addition, the project will improve access to Dulles Airport, supporting interregional and international travel and commerce (Goal 6).

FINANCIAL ANALYSIS

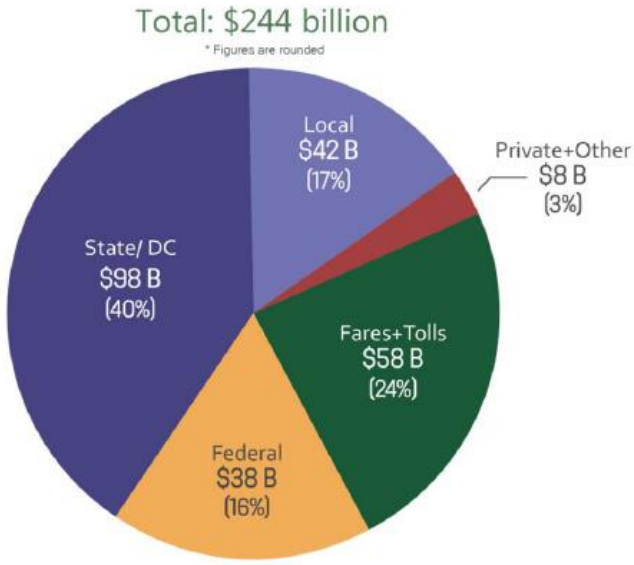
Every four years, the TPB undertakes a major update of the CLRP which includes a comprehensive update of a financial plan demonstrating that sufficient revenues are "reasonably expected to be available" to build, operate, and maintain the transportation system spelled out in the CLRP. The financial plan, summarized below, was approved as part of the 2014 CLRP major update and will remain the official financial plan until the next major update in 2018.

Get more detailed information on the Financial Analysis of the 2014 CLRP at www.mwcog.org/clrp/financial/.

CLRP Revenues

The 2014 CLRP Financial Analysis identified $244 billion in revenue that is "reasonably expected to be available" for transportation in the Washington region through 2040. Most of the revenue—$98 billion in all, or about 40 percent—will come from the region's three state-level jurisdictions, Maryland, Virginia, and the District of Columbia.

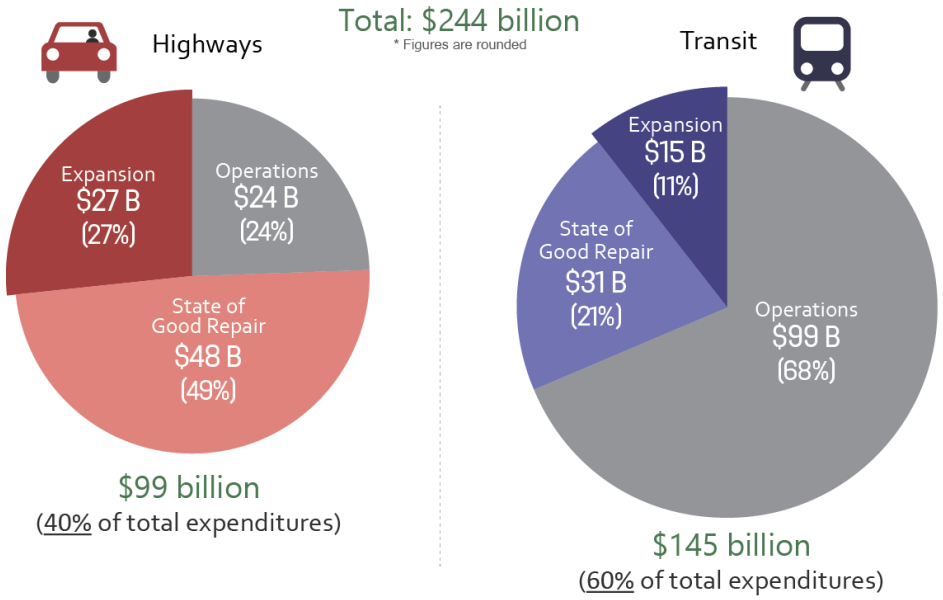
Figure 9: CLRP Revenues, 2015-2040



CLRP Expenditures

The largest share of expenditures—about $123 billion, or 51 percent—will go toward operations and routine maintenance of the region's transportation system. More than half of the region's anticipated transportation spending through 2040 will go toward investments in transit. The largest share of that spending, about 70 percent, will go toward operations and routine maintenance, including paying train and bus operators and servicing railcars and buses.

Figure 10: CLRP Expenditures, 2015-2040



PERFORMANCE ANALYSIS OF THE 2016 CLRP

The Performance Analysis of the 2016 CLRP uses output from the TPB's travel demand model, which forecasts where, when, and how people will travel around the region in coming decades. To make its predictions, the model relies on the latest regional population and job growth forecasts from the Metropolitan Washington Council of Governments, information on existing travel patterns from the TPB's Household Travel Survey, and the future transportation system laid out in the CLRP. The CLRP can be analyzed to see how well it accommodates rising travel demand resulting from population and job growth and how it supports or advances key strategies in the Regional Transportation Priorities Plan. The results of this analysis can help decision-makers and the public better understand what changes to current plans and funding might be needed to achieve different future outcomes.

Performance Analysis Summary

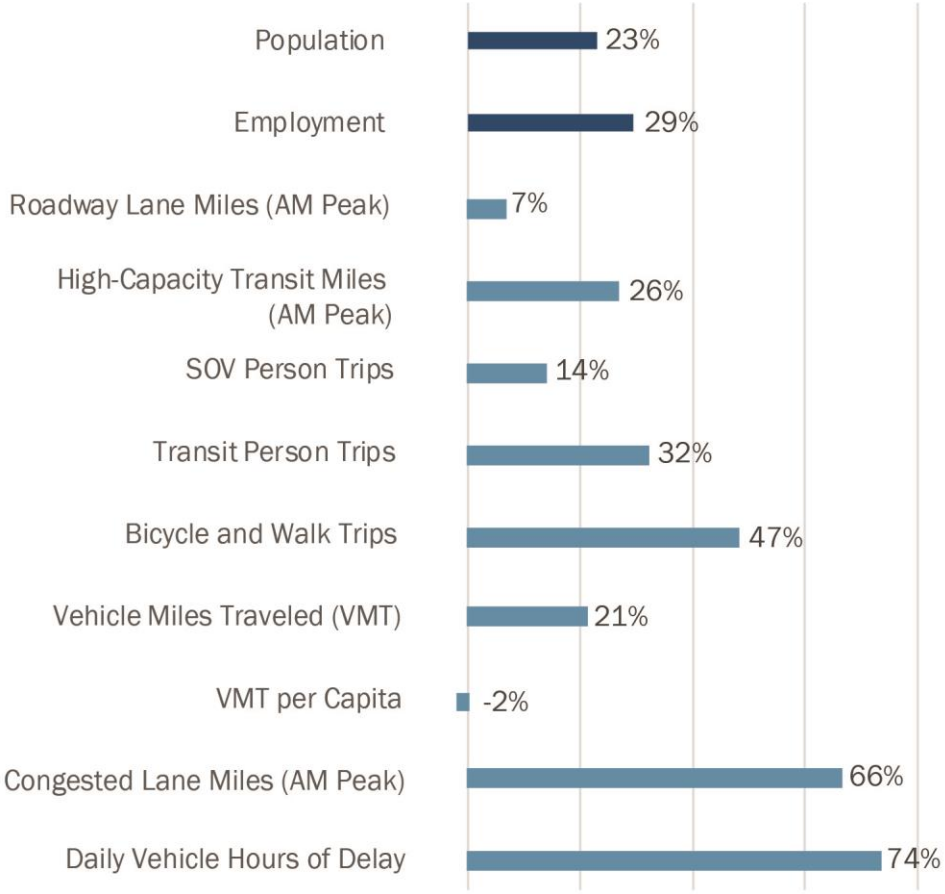
The results of the performance analysis of the 2016 CLRP are dependent upon the following inputs: Round 9.0 Cooperative Land Use Forecasts for population and jobs, the full set of transportation projects programmed for the region in the 2016 CLRP, TPB's Version 2.3.66 Travel Demand Model, and other modeling assumptions.[1]

Based on the over 500 projects in the 2016 CLRP, by 2040 there will be approximately 1,200 new lane miles of roadways, around 200 of which will be tolled. There will be expansions of Metrorail, commuter rail, and the BRT and light rail systems throughout the region. Further details about the projects can be found in the "Projects, Programs, & Funding" chapter.

Figure 11 displays a summary of the key performance analysis indicators for the 2016 CLRP. By 2040, the region's transportation system is expected to handle 4 million more trips than it does today, an increase of 23%. The rate of growth in pedestrian and bicycle trips is expected to outpace growth in single-occupancy vehicle trips and transit trips. The total amount of driving, measured in vehicle miles travel (VMT), is expected to grow, but at a slightly lower rate than population growth, meaning that the average amount of driving per person will be less in 2040 than it is today. Growth in travel demand will, under the forecasts, outpace the addition of new highway and transit capacity, resulting in significant increases in congestion and crowding.

[1] Other modeling assumptions include: modeling done for the TPB Planning Area (not the TPB Modelled Area), 2014 Vehicle Registration Data (VIN), HOV Policy assumption, and EPA's MOVES2014a Mobile Emissions Model

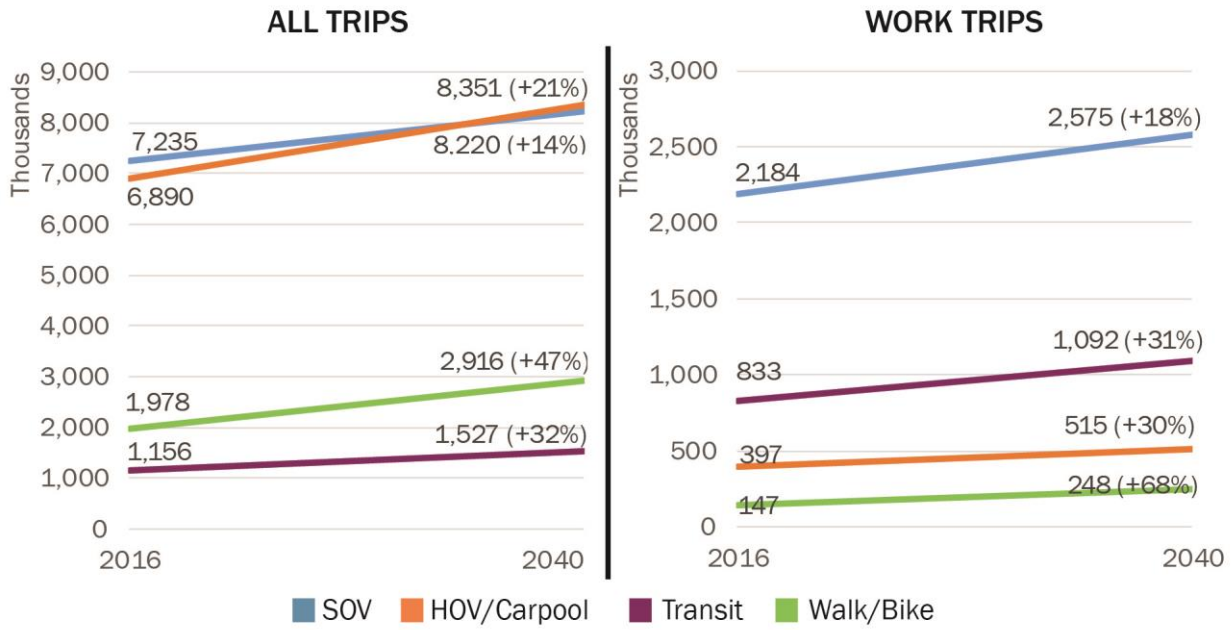
Figure 11: 2016 CLRP Performance Analysis Summary



TRAVEL DEMAND AND MODE CHOICE

Figure 12 shows the growth in all trips and work trips by mode. Overall, in 2040 automobiles will continue to be the predominant way people travel in the region, although the usage of other modes will grow at faster rates between 2016 and 2040. Growth in carpooling, transit, walking, and bicycling is expected to out-pace growth in single occupancy driver trips, for all trips and work trips alike. For all trip purposes in 2040 carpooling trips will surpass single-occupancy vehicle trips. For work trips, driving alone is currently and will remain the most common mode. The work trip mode expected to grow at the fastest rate between now and 2040 is walking and biking, at a rate of 68%. This is followed by carpooling (growth of 31%) and transit (growth of 30%).

Figure 12: Growth in All Trips and Work Trips by Mode



Despite faster growth in carpooling, transit, walking, and bicycling, mode shares will not see drastic changes by 2040 (Figure 13). The most notable changes include a decline in the share of both work and non-work trips by single-drivers, and small increases in the share of work trips by carpooling, transit, walking, and bicycling. Even though the percentage increases are small, the actual number of trips gained in these growing modes, as shown in Figure 12, are worth noting.

Figures 14 and 15 show the geographic differences in mode share for all trips and work trips, respectively. The sub-areas of the region are defined as Regional Core (District of Columbia, Arlington County, Alexandria), Inner Suburbs (Montgomery County, Prince George's County, Fairfax County, Fairfax City, Falls Church), and Outer Suburbs (Frederick County, Charles County, Prince William County, Loudon County, Manassas, Manassas Park, Urbanized Area of Fauquier County).

Changes in travel patterns are expected to vary by geography, both in terms of the number of trips taken and how trips are made. Most trips will, under the forecasts, occur in the region's populous Inner Suburbs, while the fastest growth in trips will occur in the Outer Suburbs, mirroring the Outer Suburbs' fast rate of population and employment growth. Transit is expected to continue to be the dominant mode choice for commuters living in the Regional Core, though walking and biking are forecast to become more popular. Driving will, under the forecasts, continue to dominate in the Outer Suburbs, though carpool and transit trips are expected to increase, both for all trips and work trips.

Figure 13: Growth in All Trips and Work Trips by Mode

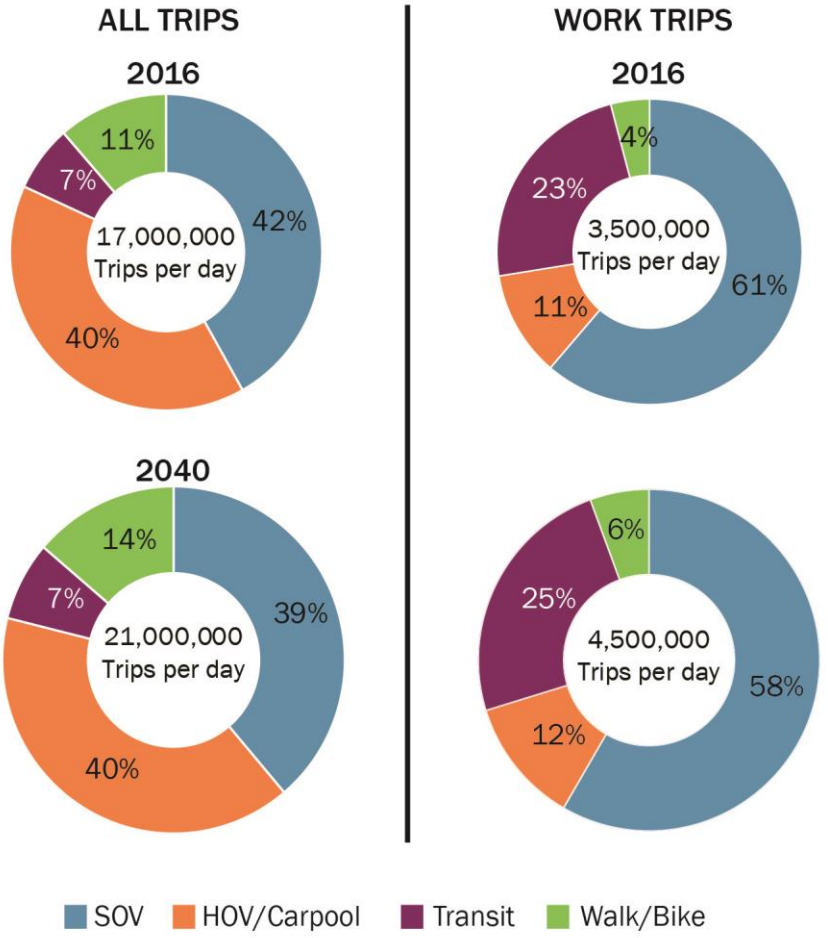


Figure 14: Geographic Differences in Mode Share for All Trips

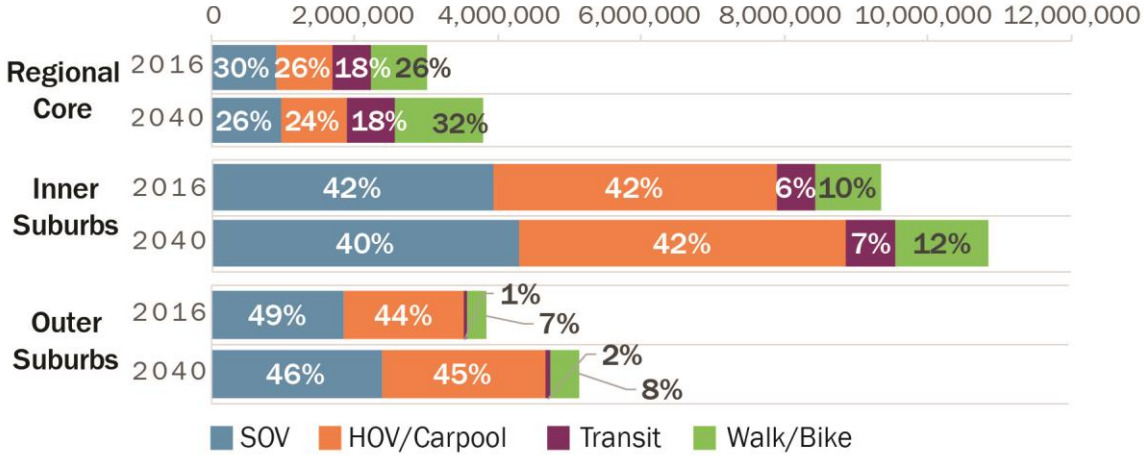
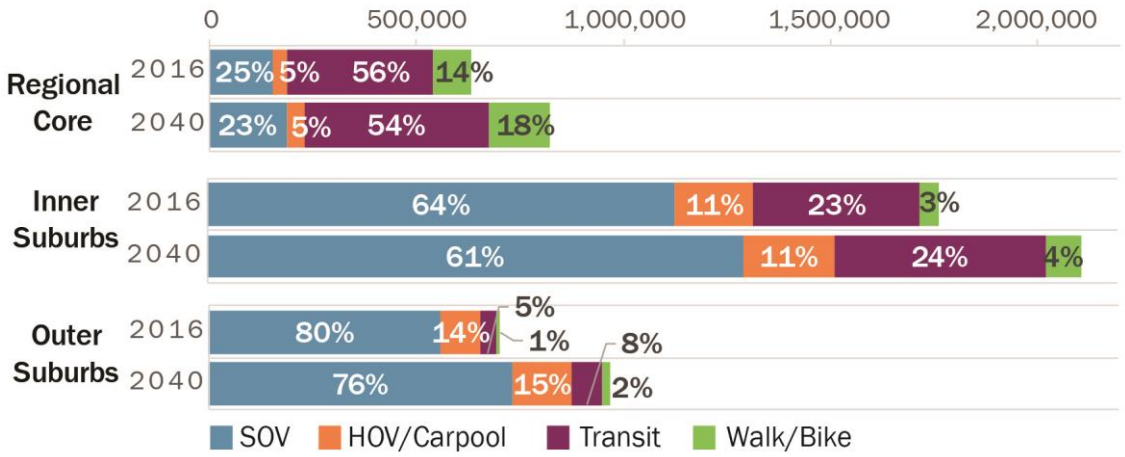


Figure 15: Geographic Differences in Mode Share for Work Trips



Performance Analysis and the TPB's Regional Transportation Priorities

New to this year's CLRP project submissions process, the CLRP project description form asked agencies to answer a series of questions on how new projects support the goals laid out in the Regional Transportation Priorities Plan (RTPP). The Priorities Plan, approved in January 2014, is also used as the policy framework to guide the performance analysis section of this report. The Priorities Plan was designed to assist local, state and regional leaders in "thinking regionally and acting locally" – that is, in considering regional needs when identifying transportation improvements to advance to implementation. The RTPP lists the multi-modal goals that were derived from the TPB Vision, which serves as the policy document for the TPB's transportation plans.

Recognizing that the region's economy and quality of life depend on our transportation system, the Priorities Plan identified a host of practical strategies to alleviate congestion and crowding and accommodate future growth. The analysis in this study utilizes those strategies as a way to examine different packages of potential transportation improvements.

The Priorities Plan identified 19 specific strategies with the greatest potential to advance our regional transportation goals. Some of these strategies call for transportation capacity expansion projects, some strategies call for maintenance of the existing transportation system, and other strategies are oriented toward policy or program changes (e.g., support and promote electric vehicles), which are not typically addressed by the CLRP.

To better understand the impacts of the transportation investments in the 2016 Amendment to the CLRP, TPB staff developed a framework for analysis using the RTPP strategies. The development of this framework included two preliminary tasks to streamline the categories for analysis: 1) those strategies that would be addressed through transportation capacity increases were culled from the full list of 19 strategies, and 2) similar strategies were grouped into categories that could be analyzed in a unified manner.

Five packages of RTPP strategies, listed below, have been given succinct titles (in italics below) that reflect thematic objectives. They form the basis for the analysis in this report.

Maintenance (see call-out box on this page)
- Ensure maintenance of the transit system
- Ensure maintenance of roads and bridges

Transit Improvements
- Provide additional capacity on the existing transit system
- Implement bus rapid transit (BRT) and other cost-effective transit alternatives
- Apply priority bus treatments

Targeted Congestion Relief
- Build/Implement Express Toll Lanes
- Alleviate roadway bottlenecks

Circulation in Activity Centers & Access to Transit
- Improve access to transit stops and stations
- Enhance circulation within Activity Centers

Environmental Justice Communities
- Ensure accessibility for persons with disabilities, low incomes, and limited English proficiency

MAINTENANCE

Maintenance of our transportation system is vital. The Priorities Plan identified maintenance of our roadways and transit systems as the region's top transportation priority. That means taking care of day-to-day maintenance and repair activities as well as rehabilitating or completely replacing aging infrastructure.

The last CLRP Financial Analysis (conducted in 2014) included a full funding commitment for operations and state of good repair for roads and transit.

WHAT'S IN THE PLAN:
1) $79 billion for major rehabilitation or complete replacement of aging road and transit infrastructure
2) Another $123 billion for operating and maintaining the system, including repaving roads and servicing transit vehicles

See the previous chapter on "Projects, Programs & Funding" for more details on funding for maintenance.

Transit Improvements

The Priorities Plan called for the development of a wide variety of public transit options— diverse systems that will serve diverse needs throughout our region. The transit strategies in the plan included implementing cost effective transit expansions such as bus rapid transit, providing additional capacity on the existing system, and applying priority bus treatments.

WHAT'S IN THE PLAN?

RTPP STRATEGIES:

- Implement bus rapid transit and other cost-effective transit alternatives.
- Provide additional capacity on the existing transit system.
- Apply priority bus treatments.

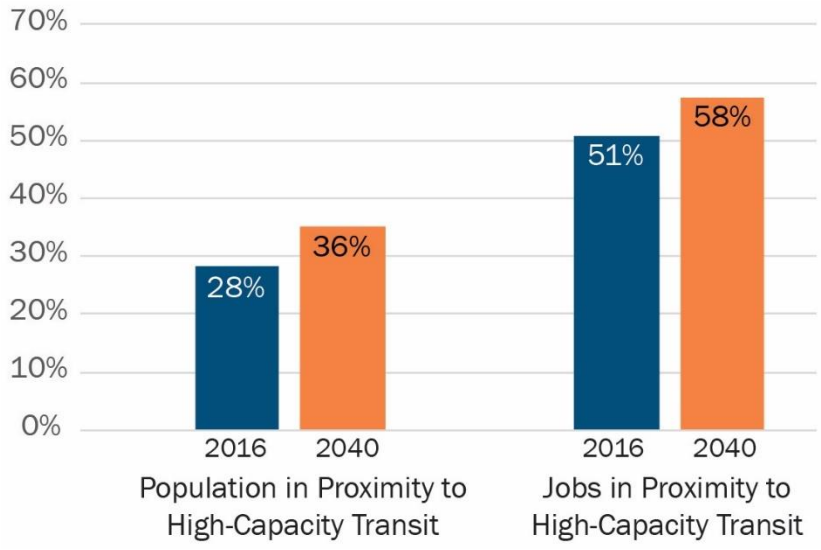
The 2016 CLRP is expected to expand the region's high-capacity transit[2] miles by 26% between 2016 and 2040. Projects in the CLRP, totaling 76 new transit miles, include Phase II of the Silver Line, the Purple Line between Bethesda and New Carrollton, the VRE extension to Gainesville/Haymarket, the Corridor Cities Transitway, BRT on Route 1 in Virginia, and the extension of the DC Streetcar to Georgetown. The CLRP includes projects to improve and expand capacity on the existing VRE and MARC commuter rail services, but does not include full funding for Metro 2025 projects, including all 8-car trains during rush hour and core station improvements.

HOW WOULD THE PLAN AFFECT TRANSIT?

Proximity to transit

In 2040 many more people will live close to high-capacity transit: 36% of the region's population in 2040 would live within walking distance of high capacity transit, compared to 28% today (Figure 16).[3]

Figure 16: Population and Jobs in Proximity to High-Capacity Transit



[2] "High-capacity transit" was defined to include Metrorail, commuter rail, light rail, streetcar and bus rapid transit.

[3] For this analysis, reasonable proximity was defined as within a mile of rail or within a ½ mile of BRT. This is considered a reasonable walking distance.

Already today over half of the region's jobs (51%) are located close to high-capacity transit, and by 2040 that percentage will grow to 58%.

By 2040 there would also be significant increases in high-capacity transit connections to Regional Activity Centers, the region's economic growth centers, under the 2016 CLRP (Figure 17). Currently, 59% of Activity Centers are connected to high-capacity transit, and by 2040 that will increase to 69% of Activity Centers.

Transit ridership

In 2040 the number of transit trips taken in the region is forecast to be 32% higher than in 2016. This increase in transit use noticeably exceeds the growth in population, which is forecast to increase by 23% over the same period. For work trips, transit trips will increase by 31%, as the second fastest growing work mode. Even more transit trips could occur in 2040 if the Metrorail constraint were removed from the travel demand model, which is demonstrated in Figure 18. The Metrorail constraint is an important element of the modeling process because it places a limit on the number of passengers who can pass through the core stations due to physical capacity constraints of the system. The Metrorail constraint caps the number of Metro commuters traveling through core stations at projected 2020 levels, whereas if the constraint were removed, by 2040 over 51,000 additional work transit trips could be taken every day, resulting in a 1.2% increase in transit mode share.

Figure 17: Activity Centers with High-Capacity Transit

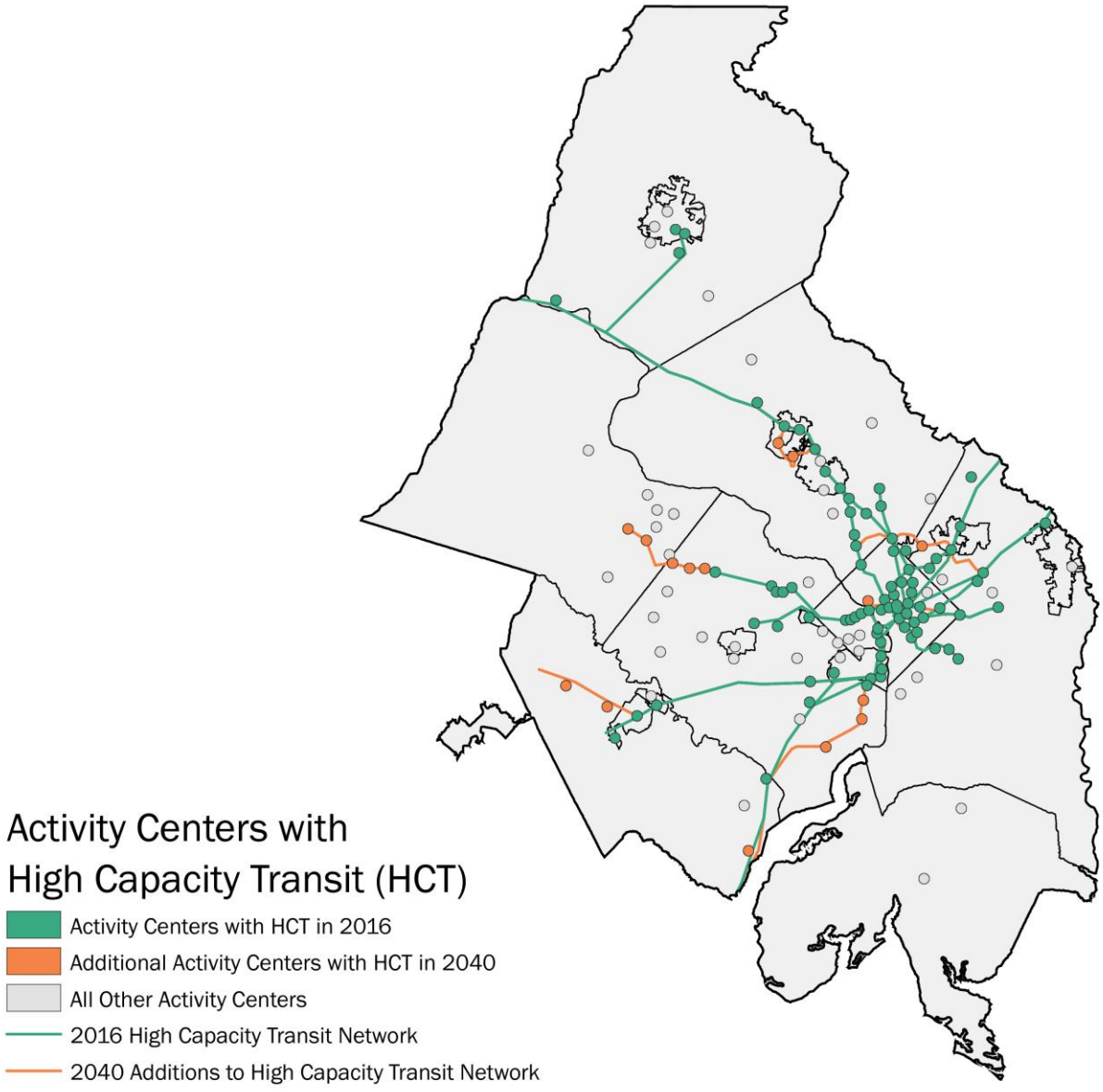
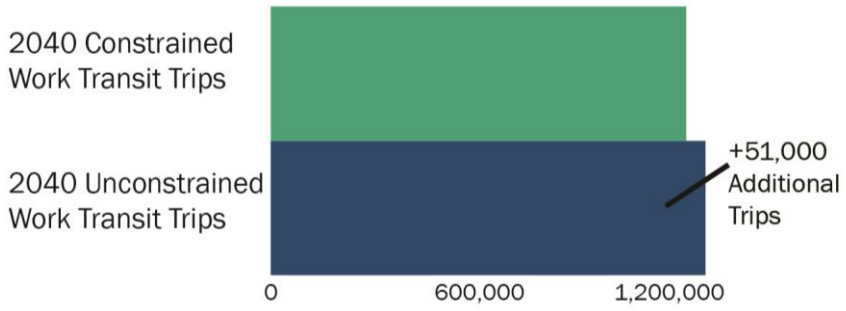


Figure 18: Metrorail Constraint



Access to jobs by transit

In 2040 there will be more jobs located near existing transit stations and stops, and expansions of the transit system across the region will also bring higher quality service to more areas. These factors combine to increase the average number of jobs accessible within a 45 minute transit commute by 31% (Figure 19). When looking at the geographic distribution of the change in access to jobs from 2016 to 2040 (Figure 20), most places that currently have access to transit will experience increases in the number of jobs that are accessible within a 45 minute commute. However, in 2040 transit may still not be a viable commute option for many people in the region due to lack of access to transit facilities and potentially long travel times.

Figure 19: Average Number of Jobs Accessible by Transit within 45-Minute Commute (in 1000s)

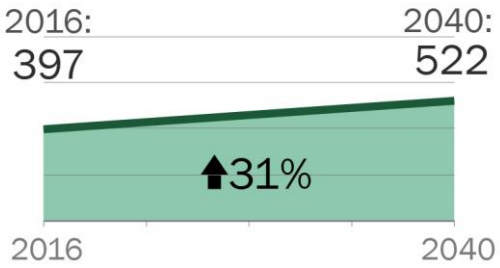
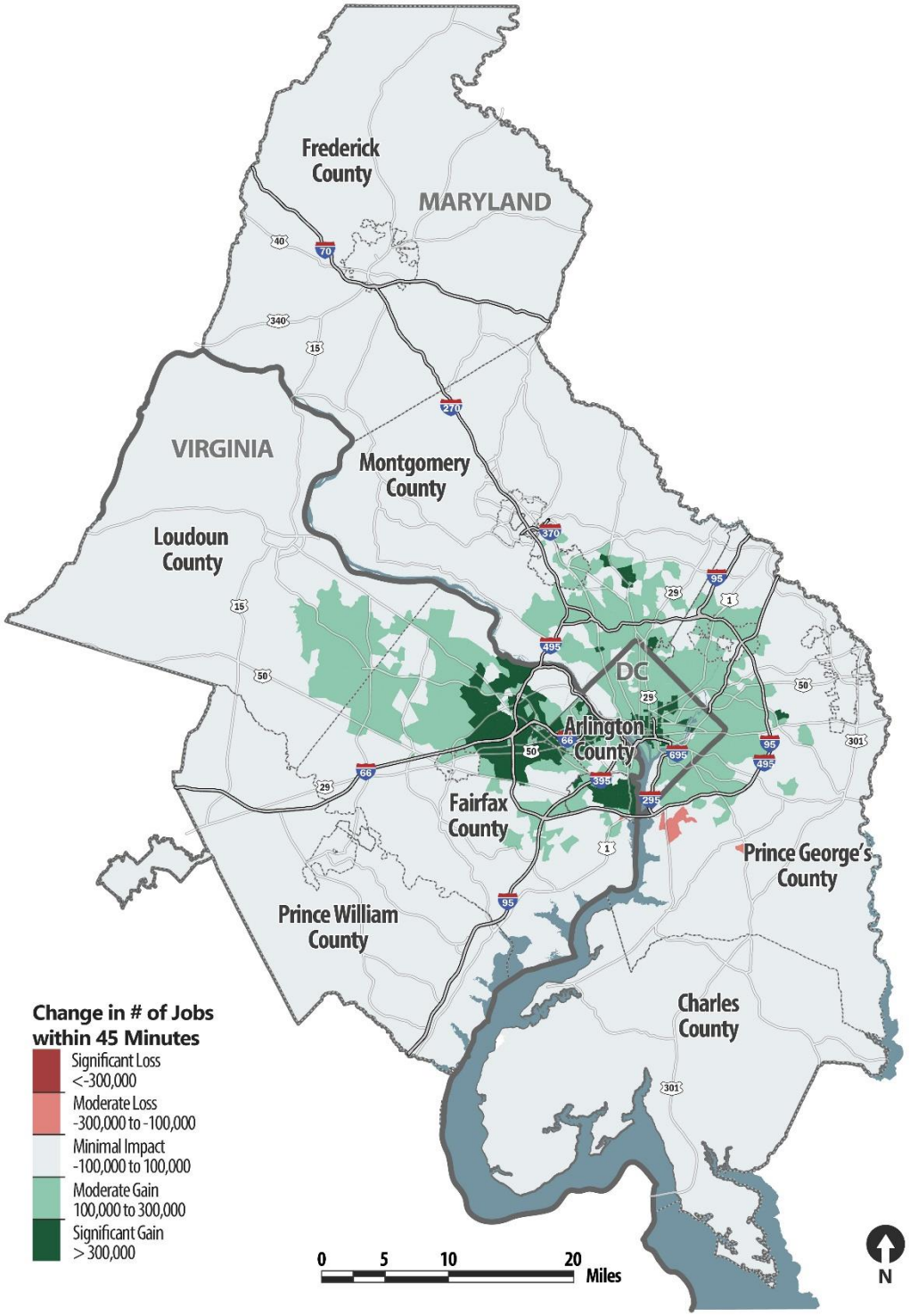


Figure 20: Change in Access to Jobs by Transit (2016 – 2040)



Targeted Congestion Relief

The RTPP focused attention on targeted roadway improvements that provide congestion relief for drivers and support economic productivity. The plan called for expanded use of toll lanes to manage congestion and raise much-needed revenue. It also said the region should strategically target bottlenecks in determining whether to build new road capacity.

WHAT'S IN THE PLAN?

RTPP STRATEGIES:
- **Build/implement express toll lanes**
- **Alleviate roadway bottlenecks**

The 2016 CLRP is expected to expand the region's road network by 1,182 lane miles – a 7% increase between 2016 and 2040. Road projects include express lanes on I-395 and I-66 (inside and outside the Beltway), and widening/HOV construction on I-270. Currently there are 394 tolled lane miles in the region, and by 2040 there are expected to be 213 additional tolled lane miles – an increase of 54%.

HOW WOULD THE PLAN AFFECT CONGESTION AND DRIVING?

Congested roadways

Congested lane miles in the AM peak hour are projected to increase by 66% in 2040 compared to today (Figure 21), meaning that 1,111 lane miles of roadway which today are not congested will be congested in 2040 (in the AM peak hour). In Figure 22, looking at the share of lane miles congested in comparison to all the lane miles of roadway in our region helps tell another part of the story: in 2016 during the AM peak hour 10% of lane miles in the region were congested and in 2040 during the AM peak hour 15% of lane miles are projected to be congested. This demonstrates that while roadway capacity is expanding, the region's travel demand due to growth in population and employment will further congest a small set of the most popular roadways.

Figure 23 shows congested roadways in 2016, while Figure 24 shows the change in congested roadways between 2016 and 2040.[4] Though congestion on many segments of the region's major highway system is expected to increase over this period of time, some segments of highway will see slight relief in congestion as a result of capacity expansions or changes in travel behavior. Major highways seeing improvements in congestion include portions of I-66 East, I-70 East, and VA-267 East.

[4] Analysis of non-HOT facilities only.

Figure 21: Congested Lane Miles

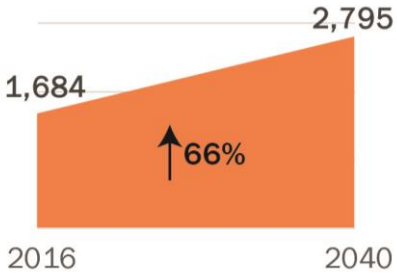


Figure 22: Share of Lane Miles Congested

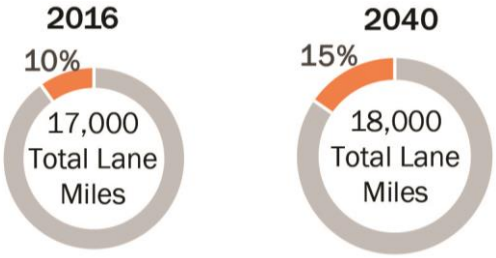


Figure 23: 2016 Major Highway Congestion Map (AM Peak)

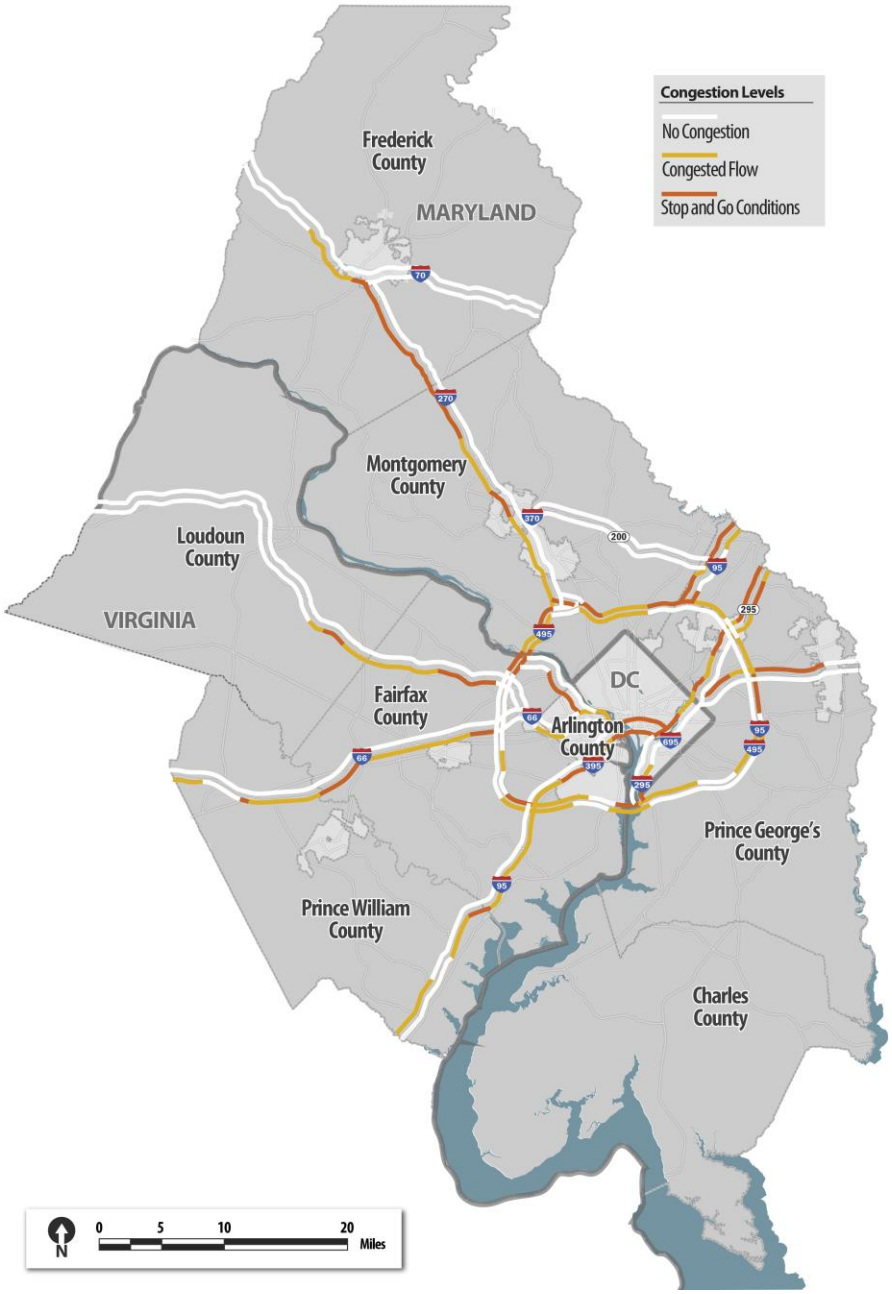
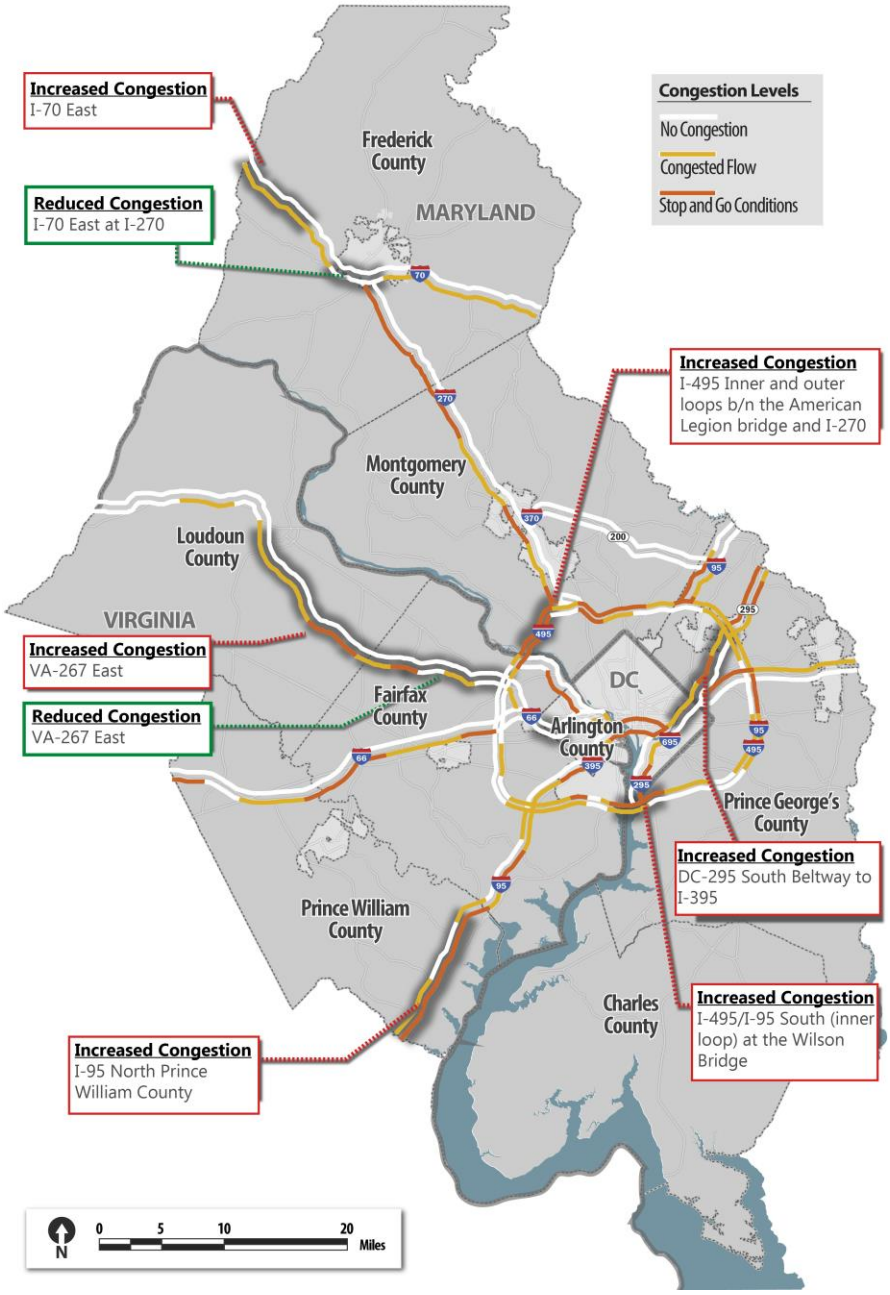


Figure 24: 2040 Major Highway Congestion Map (AM Peak)



Vehicle hours of delay

Total daily vehicle hours of delay, which is the total daily amount of time that all vehicles spend on congested roadways, will increase by 74% between 2016 and 2040 (Figure 25). Another way to look at that same data is by looking at the delay that individual vehicle trips experience: in 2016 the average vehicle delay per trip was 4.9 minutes and in 2040 its estimate that will grow to 7.3 minutes (Figure 26). Keeping in mind that this is modeled data, not observed data (meaning that the actual

quantity of minutes and hours may not accurately reflect current or future conditions) there will likely be a significant growth in the delay that vehicles traveling during peak times will experience while traveling in our region.

Figure 25: Change in Vehicle Hours of Delay*

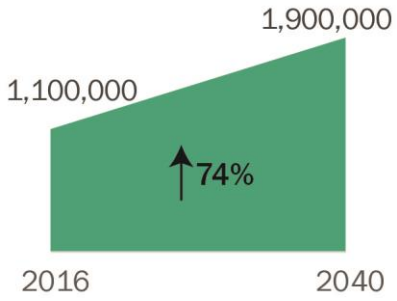
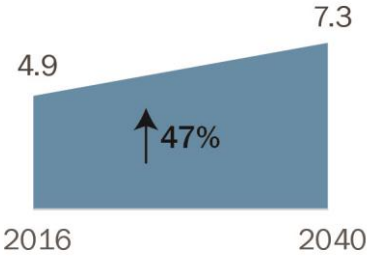


Figure 26: Change in Average Minutes of Delay per Vehicle Trip*



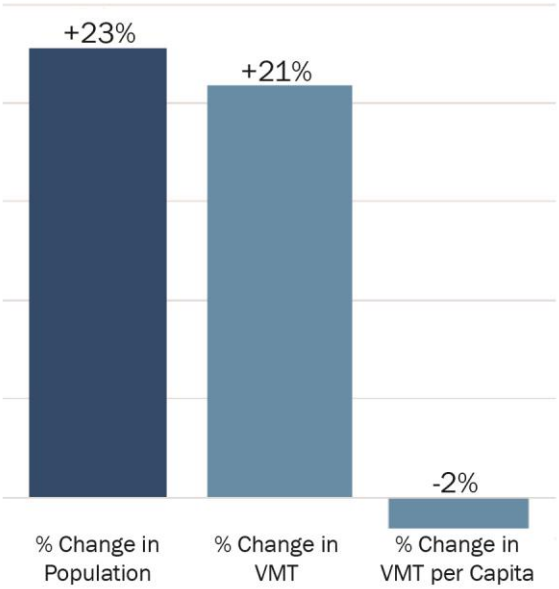
*** All delay statistics are based on modeled, not observed data.**

Vehicle miles traveled

The amount of driving in the region, measured as vehicle miles traveled or VMT, is expected to grow over the next 25 years, but at a slightly lower rate than population growth (Figure 27). This means that the average amount of driving per person will be less in 2040 than it is today.

Though the drop in VMT per capita is slight, it is noteworthy because it signals the reversal of a decades-long trend of ever-increasing driving in the region. As recently as the mid-2000s, the region's travel demand model was forecasting significant increases in VMT per capita well into the future. Changes in projected land-use and travel patterns are the primary drivers of the reversal of this trend.

Figure 27: Vehicle Miles of Travel: Total and Per Capita



Access to jobs by automobile

The average number of jobs that are accessible within a 45-minute commute by automobile is expected to decrease slightly between now and 2040. Figure 28 shows the slight decrease in average number of jobs accessible, from 881,000 to 876,000. While more jobs will be in the region in 2040 compared to today, the increased congestion on roadways and location of jobs and housing throughout the region would lead to a decrease in how many jobs on average can be reached within a 45-minute automobile commute.

Figure 29 shows the geographic distribution of the change in number of jobs accessible from 2016 to 2040. Significant declines in job accessibility by automobile are expected on the eastern side of the region and in the inner suburbs. These declines are the result of two important factors: one, anticipated increases in roadway congestion, which make it more difficult to reach other parts of the region by car within 45 minutes, and, two, the fact that more of the new jobs anticipated between now and 2040 are forecast to be located on the western side of the region, out of reach of those living in the east.

Figure 28: Average Number of Jobs Accessible by Automobile Within 45-Minute Commute (in 1000s)

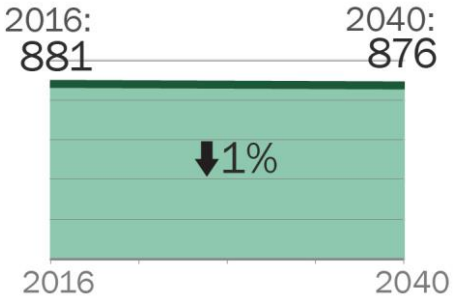
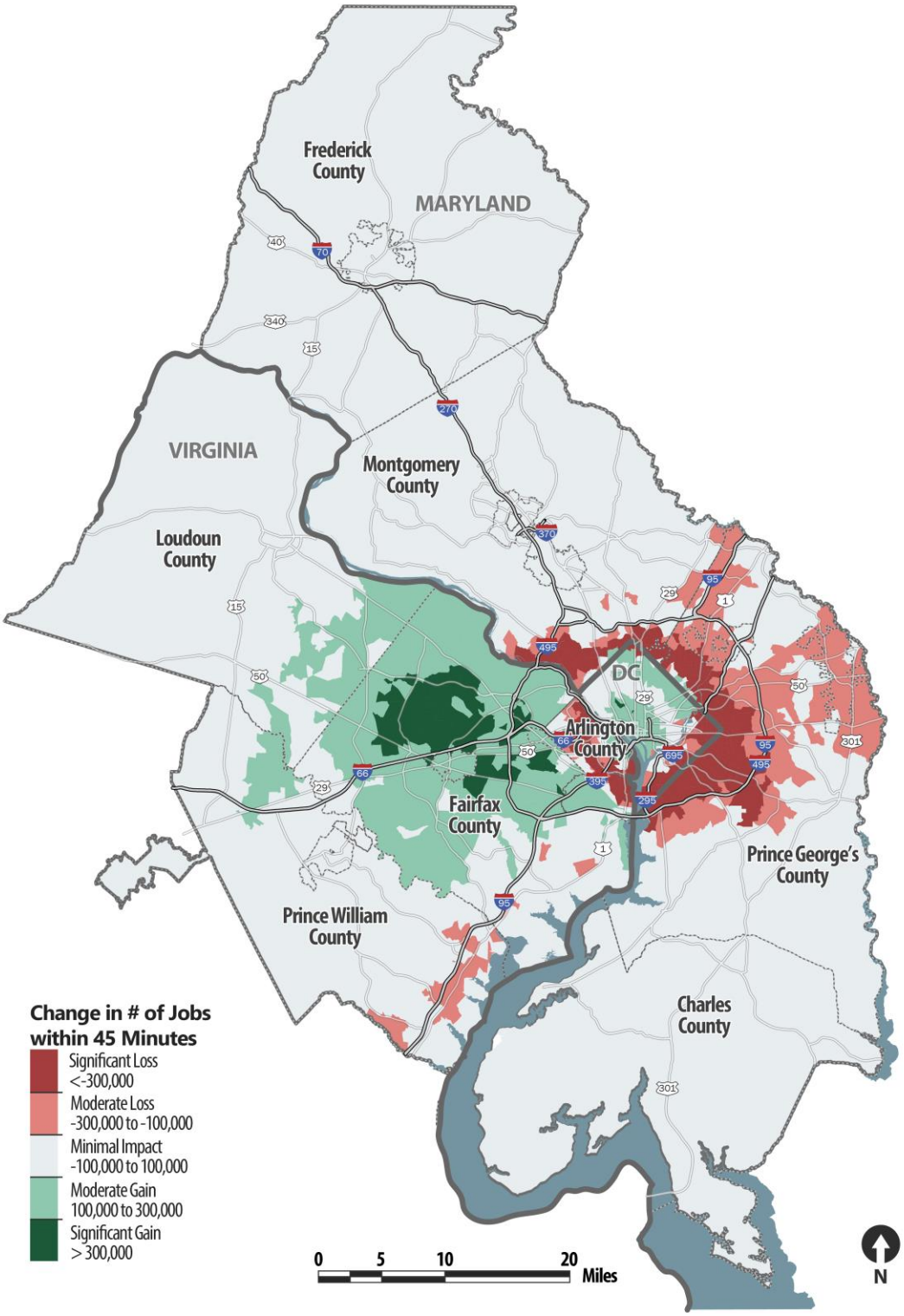


Figure 29: Change in Access to Jobs by Auto (2016 – 2040)



Access to Transit & Circulation in Activity Centers

The Priorities Plan called for small capital improvements to promote circulation within Activity Centers and to provide first-mile and last-mile connections to transit. Such improvements typically emphasize walking and bicycling.

WHAT'S IN THE PLAN?

The CLRP does not include most bicycle and pedestrian improvements that are in local plans because most of them do not involve federal funding. However, those types of projects have great potential to increase local access to transit stations as well as to improve circulation within Activity Centers.

RTPP STRATEGIES:
- Improve access to transit stops and stations
- Enhance circulation within Activity Centers

Projects in the plan which connect Activity Centers with high-capacity transit, as well as growth in population and jobs within Activity Centers, can be analyzed for their relevance to this subject area called for in the Priorities Plan.

HOW WOULD THE PLAN AFFECT ACCESS TO TRANSIT?

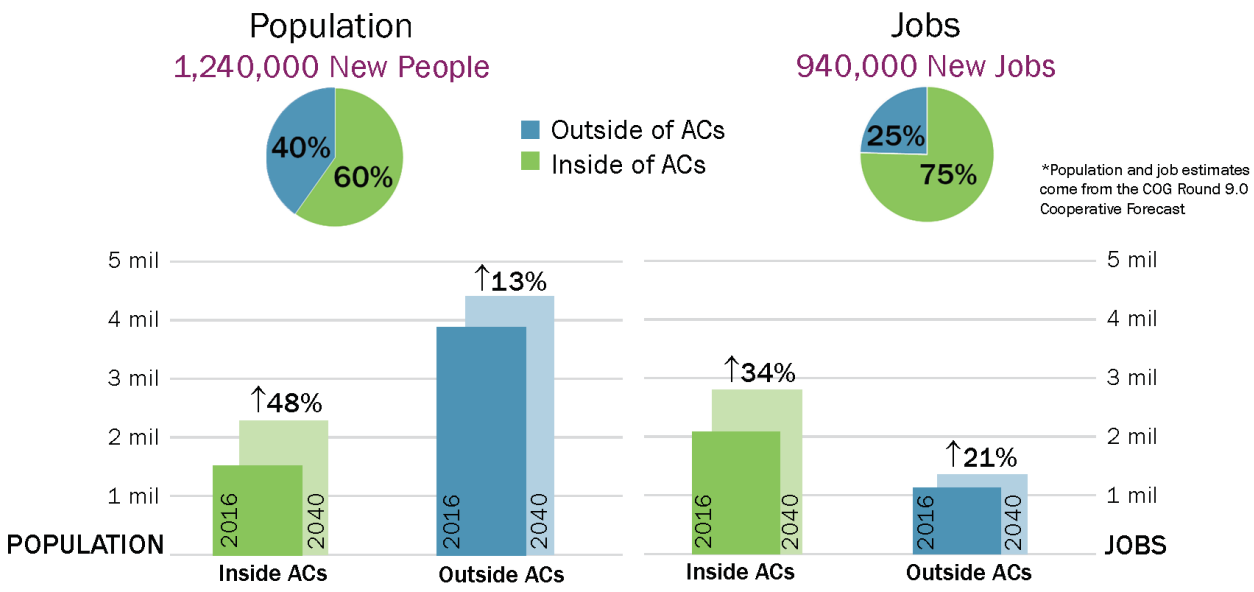
The land use forecasts used for the performance analysis shed light on the continuing trend throughout the region of locating new population and jobs within Regional Activity Centers. Figure 30 shows that three out of five new residents in the region between 2016 and 2040 will move into Activity Centers, and three out of four new jobs will be located in Activity Centers. Currently there is a strong base of jobs in Activity Centers, and the continued growth will build on that base. Today more people live outside of Activity Centers than live inside them, which will continue to be the case in 2040, however the growth rate of population moving to Activity Centers (48%) will outpace growth outside of them (13%). While this is not a direct reflection of the projects in the CLRP, throughout the region there is a desire to plan for connections between growth and transportation investments.

Due to the continued growth in Activity Centers, where transit is readily available, the transit projects in the CLRP which connect Activity Centers will help improve region-wide access to transit. By 2040 there would be significant increases in high-capacity transit connections to Activity Centers (Figure 17). Currently, 59% of Activity Centers are connected to high-capacity transit, and by 2040 that will increase to 69% of Activity Centers.

HOW WOULD THE PLAN AFFECT CIRCULATION WITHIN ACTIVITY CENTERS?

Some Activity Centers will have connections to high-capacity transit for the first time as a result of projects in the CLRP. Most these projects do not directly address circulation within those Activity Centers because they typically will add one or two major transit stations or stops as opposed providing local bus or bicycle and pedestrian enhancements. However, these projects can still contribute to the improved circulation within Activity Centers by making transfers between transit lines easier, creating public spaces, and drawing commercial or recreational attractions to busy areas.

Figure 30: Population and Job Growth Inside and Outside of Regional Activity Centers (ACs)



Environmental Justice Considerations

The Priorities Plan called upon the region to enhance transportation options for traditionally disadvantaged populations. Such communities are found throughout Metropolitan Washington, although these populations are located in higher concentrations on the eastern side of the region.

FORTHCOMING ANALYSIS

RTPP STRATEGY:
• Ensure accessibility for persons with disabilities, low incomes, and limited English proficiency.

Environmental justice is a theme of the Priorities Plan and will be featured in future scenario analysis. TPB staff is currently developing a revised methodology to conduct an environmental justice analysis of the CLRP, which will be released in early 2017. This analysis will identify the impacts of the CLRP on low-income and minority populations. The new methodology will identify "Communities of Concern" throughout the region. These are locations with high concentrations of low-income and minority populations relative to regional averages. After the "Communities of Concern" map has been approved, staff will analyze the impacts of CLRP transportation investments on these communities compared to the rest of the region.

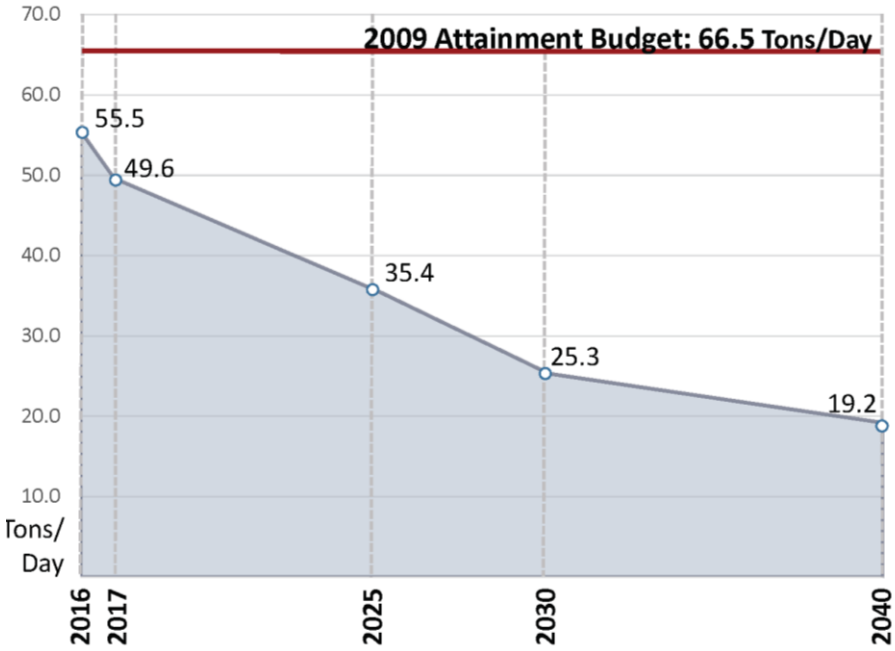
Air Quality and Climate

Many of the strategies in the Priorities Plan are geared toward helping the region improve environmental outcomes, in line with Goal 5 of the Priorities Plan, which is to "enhance environmental quality and protect natural and cultural resources." The air quality analysis of the CLRP demonstrates how the region is working towards its environmental goals.

The Washington metropolitan area currently does not meet federal air quality standards for groundlevel ozone. Therefore, it must show through a detailed technical analysis that future vehicle-related emissions of the two key ingredients in the formation of ozone—nitrogen oxides (NOx) and volatile organic compounds (VOCs)—are expected to remain below approved regional limits.[5] Emissions are expected to drop steadily (Figures 31 and 32) due to tougher fuel and vehicle efficiency standards and projected changes in land use and the transportation network. Emissions are expected to drop significantly through 2020 and steadily through 2030, mainly as cars and trucks meeting tougher new federal fuel and vehicle efficiency and other emissions standards enter the region's vehicle fleet and as changes are made to the formulation of vehicle fuel. Changes in development patterns, investments in transit and other travel options, and improved operational efficiency of area roadways will also contribute to reductions in vehicle-related emissions.

More and more attention is being paid to the contribution of greenhouse gases like carbon dioxide (CO_2) to global climate change. Unlike the two specific pollutants regulated by federal law in this region, CO_2 is not regulated by the federal government and it is not included in the Air Quality Conformity Analysis. In 2010, the TPB proactively started estimating future CO_2 emissions under the CLRP. The latest estimates show the absolute amount of CO_2e (carbon dioxide equivalent) emissions will decrease by 22% between now and 2040, along with CO_2e emissions per-capita which will decrease by 44% (Figure 33).

Figure 31: Volatile Organic Compound (VOC) Emissions



[5] In the past the region has included graphs showing emissions associated with fine particles (PM2.5) pollutants and Winter Carbon Monoxide (CO). However, the EPA recently published a rule[1] revoking the 1997 standard for fine particles pollutants. The revocation, combined with the decreasing levels of fine particles in our region, resulted in our region no longer being required to analyze fine particles pollutants in the air quality conformity analyses of our transportation plans and TIPs. Also, in March 2016, the region reached the end of the required 20-year maintenance period for Winter CO, and no longer has to include that pollutant in any conformity analysis. Since the region is no longer required to demonstrate transportation conformity for the fine particles pollutants or Winter CO, there will no longer be any charts or graphs associated with these pollutants included in any CLRP or conformity reports.

Figure 32: Precursor Nitrogen Oxide (NOx) Emissions

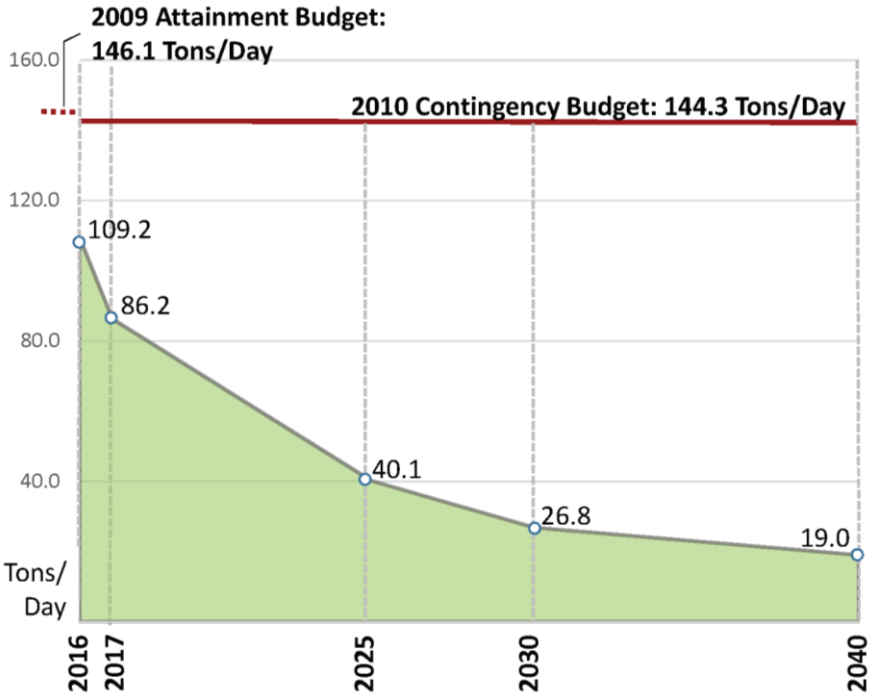
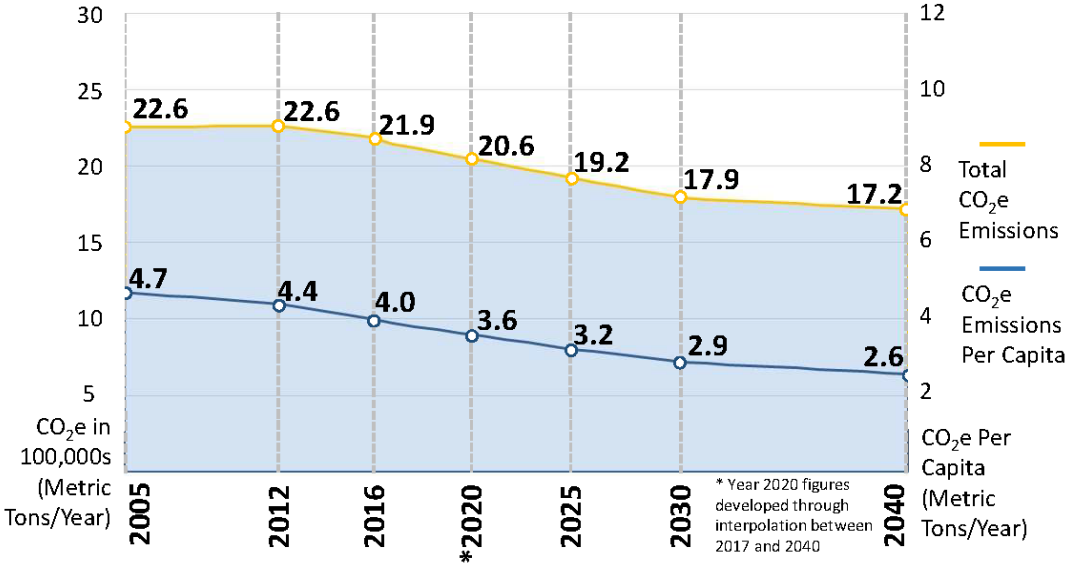


Figure 33: Carbon Dioxide Equivalent (CO_2e) Emissions



Findings

In summary, the 2016 Amendment to the CLRP supports the priorities laid out in the Regional Transportation Priorities Plan for maintenance, transit improvements, targeted congestion relief and Activity Centers. A fundamental element of the CLRP is the region's solid commitment to maintenance, which is accounted for in the financial analysis.

Under the CLRP, by 2040 transit would be more widely available and more widely used. By 2040 there will be a 26% increase in new miles of high-capacity transit and overall transit ridership will increase by 32%. Simultaneously, single-occupancy vehicle trips will decrease from 42% to 39%. Due to the expanded transit network as well as new jobs coming to the region, job accessibility by transit will increase by 31%. New transit capacity will parallel efforts to expand capacity on the existing commuter rail network, but the region has not committed the necessary funds to expand existing capacity on Metrorail for its Metro 2025 projects.

Congestion and delay will increase as a result of the increased demand on the roadway network from new population and jobs located in the region. Congested lane miles in the AM peak hour are expected to increase by 66% between 2016 and 2040 and total daily vehicle hours of delay are expected to increase by 74%. Tolled lanes will provide alternatives to congested roads, as 213 of the lane miles in the region will be tolled (18% of all new lane miles).

Most new growth will be in Activity Centers, which will allow for more transit and walking and biking trips to be possible by 2040. Three out of four new people will live in Activity Centers, and three out of five new jobs will be located in Activity Centers. Additionally, 69% of Activity Centers will have high-capacity transit connections by 2040, compared to 59% in 2016.

LOOKING AHEAD: THE 2018 CLRP UPDATE

The TPB will soon begin its next major four-year update of the CLRP as required by federal law. The update will include revised estimates of available revenue through the horizon year of the plan. It will also include a new "unconstrained" element that identifies projects for which funding has not yet been identified.

The purpose of the new "unconstrained" plan element is two-fold. First, it will help quantify and highlight the region's unmet transportation funding needs. The element will spell out hundreds of projects that local jurisdictions have identified as priorities in their local plans but that remain unfunded.

Second, the element will provide a foundation from which the region can identify a limited number of key priority projects to rally regional leaders and the public behind in order to secure funding for the investments. The 2018 CLRP Update must be adopted by the TPB by the end of 2018. The TPB is currently developing a plan for involving the public in the update process.