National Capital Region
Transportation Planning Board

2016 AMENDMENT | CLRP

Financially Constrained Long Range Transportation Plan for the National Capital Region

AIR QUALITY CONFORMITY ANALYSIS

of the 2016 CLRP Amendment and FY2017-2022 TIP

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ABSTRACT

TITLE: AIR QUALITY CONFORMITY ANALYSIS of the 2016 Constrained Long Range Plan Amendment and the FY2017-2022 Transportation Improvement Program for the Washington Metropolitan Region

DATE: November 16, 2016

AGENCY: The Metropolitan Washington Council of Governments is the regional planning organization of the Washington area's major local governments. COG works on finding solutions to regional problems, especially those related to regional growth, transportation, housing, human services, and the environment.

ABSTRACT: This report documents an updated analysis of the 2016 Constrained Long Range Plan Amendment (CLRP) with respect to air quality conformity requirements under the 1990 Clean Air Act Amendments. The analysis used criteria and procedures contained in the Environmental Protection Agency (EPA)'s final conformity rule, published in the November 24, 1993 Federal Register, with subsequent amendments and additional federal guidance published by the Environmental Protection Agency (EPA) and by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The analysis is a responsibility of the National Capital Region Transportation Planning Board (TPB).

The report presents an overview of the conformity requirements contained in the legislation and subsequent guidance, and documents the technical procedures used in the analysis including travel demand forecasting, emissions calculation procedures and impacts of transportation emissions reduction measures. The analysis demonstrates that mobile source emissions for each analysis year of the long range plan adhere to ozone season volatile organic compound and nitrogen oxide emissions budgets established by the Metropolitan Washington Air Quality Committee (MWAQC), and approved by the EPA. These results provide a basis for a determination of conformity of the 2016 CLRP Amendment and FY2017-2022 TIP.

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EXECUTIVE SUMMARY

This report documents the air quality conformity analysis of the 2016 Constrained Long Range Plan Amendment (CLRP) and FY2017-2022 Transportation Improvement Program (TIP) as carried out under the regulations contained in the Environmental Protection Agency's final rule, published in the November 24, 1993 *Federal Register,* with subsequent amendments and additional federal guidance published by the Environmental Protection Agency (EPA), the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA). The process involved consultation with affected agencies such as the EPA, the FHWA, the FTA, and the Metropolitan Washington Air Quality Committee (MWAQC), as well as with the public. The analysis is a responsibility of the National Capital Region Transportation Planning Board.

"Conformity" is a requirement of the Federal Clean Air Act to ensure that transportation plans and transportation improvement programs are consistent with air quality goals, and progress towards achieving and maintaining Federal air quality standards is being made. A conformity determination is undertaken to forecast emissions that will result from an area's transportation system. The analysis must demonstrate that those emissions are within limits outlined in state air quality implementation plans.

For the 2016 CLRP Amendment, emissions estimates for ozone season Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) were developed for 2016, 2017, 2025, 2030, and 2040 forecast years. The currently approved budgets for VOC and NOx were submitted to the EPA by the Metropolitan Washington Air Quality Committee (MWAQC) in 2007, as part of an 8-hour ozone SIP, responding to the 1997 Ozone Standard. On February 7, 2013 EPA found adequate the 2009 Attainment and 2010 Contingency budgets included in this SIP. The budgets are 66.5 tons/day of VOC and 146.1 tons/day of NOx for the 2009 Attainment Plan and 144.3 tons/day of NOx for the 2010 Contingency Plan.

The results of this analysis show that the 2016 CLRP Amendment and FY2017-2022 TIP mobile emissions are within the mobile budgets for ozone season VOC and NOx for all forecast years. This analysis provides a basis for a determination of conformity for the 2016 CLRP and FY2017-2022 TIP.

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1. Transportation Conformity Regulations as of April 2012 EPA–420-B-12-013, EPA April 2012. http://www.epa.gov/otaq/stateresources/transconf/regs/420b12013.pdf

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LIST OF ACRONYMS

AWDT	Average Weekday Traffic
BMC	Baltimore Metropolitan Council
CAAA	Clean Air Act Amendments of 1990
CAC	Citizens Advisory Committee
CLRP	Constrained Long Range Plan
CMAQ	Congestion Mitigation & Air Quality
CO	Carbon Monoxide
C-SMMPO	Calvert-St. Mary's Metropolitan Planning Organization
DDOT	District of Columbia Department of Transportation
DTP	(COG's) Department of Transportation Planning
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HOT	High Occupancy Toll
HOV	High Occupancy Vehicle
I/M	Inspection and Maintenance
LOV	Low Occupancy Vehicle
MDOT	Maryland Department of Transportation
MPO	Metropolitan Planning Organization
MOVES	MOtor Vehicle Emissions Simulator
MVEB	Motor Vehicle Emissions Budget
MWAQC	Metropolitan Washington Air Quality Committee
MWCOG	Metropolitan Washington Council of Governments
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
$PM_{2.5}$	Fine Particles
PNR	Park and Ride Lot
SIP	State Implementation Plan
TAZ	Transportation Analysis Zone
TCM	Transportation Control Measure
TERM	Transportation Emission Reduction Measure
TIP	Transportation Improvement Program
TPB	Transportation Planning Board
US DOT	United States Department of Transportation
US EPA	United States Environmental Protection Agency
VDOT	Virginia Department of Transportation
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WMATA	Washington Metropolitan Area Transit Authority

TPB R3 -2017
November 16, 2016

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

RESOLUTION FINDING THAT THE 2016 CONSTRAINED LONG RANGE PLAN AMENDMENT AND THE FY2017-2022 TRANSPORTATION IMPROVEMENT PROGRAM CONFORM WITH THE REQUIREMENTS OF
THE CLEAN AIR ACT AMENDMENTS OF 1990

WHEREAS, the National Capital Region Transportation Planning Board (TPB) has been designated by the Governors of Maryland and Virginia and the Mayor of the District of Columbia as the Metropolitan Planning Organization (MPO) for the Washington Metropolitan Area; and

WHEREAS, the U.S. Environmental Protection Agency (EPA), in conjunction with the U.S. Department of Transportation (DOT), under the Clean Air Act Amendments of 1990 (CAAA), issued on November 24, 1993 "Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," and, over the years, subsequently amended these regulations and provided additional guidance, which taken together provide the specific criteria for the TPB to make a determination of conformity of its financially Constrained Long Range Transportation Plan (CLRP) and Transportation Improvement Program (TIP) with the State Implementation Plans (SIPs) for air quality attainment within the Metropolitan Washington non-attainment area; and

WHEREAS, a scope of work was developed to address all procedures and requirements, including public and interagency consultation, and the scope was released for public comment on February 11, 2016, and approved by the TPB at its March 16, 2016 meeting; and

WHEREAS, highway and transit project inputs submitted for inclusion in the air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP were released for public comment on February 11, 2016, and approved by the TPB at its March 16, 2016 meeting; and

WHEREAS, on October 13, 2016, the draft results of the air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP were released for a 30-day public comment period with inter-agency consultation; and

WHEREAS, the analysis reported in *AIR QUALITY CONFORMITY ANALYSIS of the 2016 Constrained Long Range Plan Amendment and FY2017-2022 Transportation Improvement Program,* dated November 16, 2016, demonstrates adherence to all mobile source

emissions budgets for ground level ozone precursors Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx), and meets all regulatory, planning and interagency consultation requirements, and therefore provides the basis for a finding of conformity of the CLRP and the TIP with the requirements of the CAAA; and

WHEREAS, in the attached letter, the Metropolitan Washington Air Quality Committee (MWAQC) has provided favorable comments, and other comments relating to the region's air quality, on the *AIR QUALITY CONFORMITY ANALYSIS of the 2016 Constrained Long Range Plan Amendment and FY2017-2022 Transportation Improvement Program* for the National Capital Region;

NOW, THEREFORE, BE IT RESOLVED THAT THE NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD determines that the 2016 Constrained Long Range Plan Amendment and the FY2017-2022 Transportation Improvement Program conform to all requirements of the Clean Air Act Amendments of 1990.

Adopted by the Transportation Planning Board at its regular meeting on November 16, 2016.

Metropolitan Washington Council of Governments

November 9, 2016

Honorable Timothy Lovain, Chair
National Capital Region Transportation Planning Board
777 North Capitol Street, NE, Suite 300
Washington, D.C. 20002

Dear Chair Lovain:

Thank you for providing an opportunity to the Metropolitan Washington Air Quality Committee (MWAQC) to comment on the draft 2016 Constrained Long Range Plan (CLRP) and the FY2017-2022 Transportation Improvement Program (TIP). MWAQC has reviewed the draft Air Quality Conformity assessment and concurs that the transportation sector emissions associated with the proposed transportation plans meet the motor vehicle emissions budgets (MVEBs) approved for the 1997 8-hour ozone national ambient air quality standard (NAAQS).

The Washington region has made significant progress in reducing emissions of ozone precursors such as, volatile organic compounds (VOC) and nitrogen oxides (NOx) from both transportation and non-transportation sectors over the years. As a result, the region met the 2008 ozone standard of 75 parts per billion (ppb) based on the data for the period 2012 through 2014. The region is currently working on developing a request for EPA to redesignate the area to attainment for the 2008 ozone standard along with a required demonstration to maintain compliance in the future (maintenance plan).

The Washington region is developing MVEBs for VOC and NO_x as part of the maintenance plan for the 2008 ozone standard using EPA's latest MOVES2014a model. These MVEBs will replace the currently used MVEBs, which were developed earlier using Mobile6.2 model. The MOVES2014a model includes the recently published Tier 3 vehicle emission and fuel standards rule as well as two greenhouse gas rules for motor vehicles. MWAQC appreciates that TPB is using MOVES2014a, the 2014 motor vehicle registration data, and the most current version of TPB's Travel Demand Model to update the VOC and NO_x MVEBs.

However, MWAQC also notes that EPA published a revised and tougher health based ozone standard of 70 ppb in October 2015. The draft data for the period 2014 through 2016 shows the region's design value for ozone at 72 ppb. This indicates that even though the region has made significant progress in reducing emissions, it needs to continue its efforts in order to meet the 2015 ozone standard. While the recently adopted Tier 3 program will provide significant emissions reduction benefits from the transportation sector, MWAQC will need the support and cooperation of TPB to examine emissions and to identify new cost-effective strategies and opportunities to reduce on-road mobile emissions further in order to continue progress towards meeting the ozone standard.

MWAQC is encouraged to learn that the region is actually achieving reductions in per capita vehicle miles travelled (VMT), even with an increase in employment. However, the region is experiencing an increase in total VMT as the population grows. Therefore, we urge TPB's continued investment in VMT and emission reduction strategies such as public transit, including all needed investments in Metro, ride-sharing, pedestrian and bike infrastructure, and other travel demand management strategies to continue to mitigate future growth in vehicle emissions. MWAQC strongly urges TPB to maintain its commitments to Transportation Emission Reduction Measures and other emission reduction measures. All of these efforts are essential to meet the 2015 ozone standard.

Thank you again for the opportunity to comment on the draft conformity analysis.

Sincerely,

Brianne K. Nadeau

Hon. Brianne K. Nadeau
Chair, Metropolitan Washington Air Quality Committee

I. INTRODUCTION

The Washington region is currently designated as non-attainment for the federal health standards for ozone. Clean air legislation in 1977 mandated that a Metropolitan Planning Organization (MPO) may not approve any transportation project that did not conform to the approved state implementation plan (SIP) for the attainment of clean air standards. This established the responsibility on the part of COG/TPB to review transportation plans and programs and affirm that they conform to air quality state implementation plans for the region.

This requirement means that TPB plans, programs, and projects must be consistent with clean air objectives. In the 1990 Clean Air Act Amendments, conformity to an implementation plan is defined as conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards. In addition, Federal activities may not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment.

This report documents the air quality conformity analysis of the 2016 Constrained Long Range Plan (CLRP) Amendment and FY2017-2022 Transportation Improvement Program (TIP) with respect to ozone season pollutants, specifically, Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). The results of the analysis provide a basis for a determination of conformity of the 2016 CLRP and FY 2017-2022 TIP.

II. BACKGROUND

Conformity Regulations

On November 15, 1990 President Bush signed into law the Clean Air Act Amendments (CAAA) of 1990. The CAAA establishes standards and procedures for reducing human and environmental exposure to a range of pollutants generated by industry and transportation. The law allows the EPA to define the boundaries of "non-attainment" areas for various common pollutants known as "criteria pollutants". These boundaries outline geographic areas where air quality does not meet Federal air quality standards. The law also established non-attainment area classifications ranked according to the severity of the area's air pollution problem. These classifications are marginal, moderate, serious, severe, and extreme. EPA assigns each non-attainment area one of these categories, thus triggering various requirements the area must comply with in order to meet a particular standard. The Washington region is currently designated "marginal" non-attainment for the federal health standards for ozone. Once a non-attainment area attains a standard for a pollutant, the area must go through a series of steps in order to be reclassified from "non-attainment" to "maintenance". The "maintenance" designation includes its own set of requirements that assure that the standard for that pollutant is maintained.

The concept of transportation conformity was introduced in the Clean Air Act (CAA) of 1977, which included a provision to ensure that Federal funding and approval go to those transportation activities that are consistent with air quality goals. These goals are set in each state's air quality implementation plan (SIP). Conformity requirements were made substantially more rigorous in the CAA Amendments of 1990. The transportation conformity regulations (Reference 1) that detail implementation of the CAA requirements were first issued in the November 24, 1993 *Federal Register*, and have been amended several times, most recently in April 2012 (federal register notice: March 14, 2012). The regulations establish the criteria and procedures for transportation agencies to demonstrate that air pollutant emissions from metropolitan Transportation Plans, Transportation Improvement Programs (TIPs), and projects funded or approved by the Federal Highway

Administration (FHWA) or the Federal Transit Administration (FTA) are consistent with ("conform to") the State's air quality goals in the SIP.

Pollutants

The Clean Air Act requires EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants, also known as "criteria pollutants", are found all over the United States. The six pollutants are: particle pollution, ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. EPA calls these pollutants "criteria" air pollutants because it sets standards for them based on the human health-based and/or environmentally-based criteria. The Clean Air Act identifies two types of national ambient air quality standards. ***Primary standards*** provide public health protection, including protecting the health of "sensitive" populations such as asthma patients, children, and the elderly. ***Secondary standards*** provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Ozone Season Pollutants

1979 Standard

The Washington, DC-MD-VA region was originally classified in 1990 as “serious” non-attainment for the 1979 (124 parts per billion – ppb) 1-hour ozone standard, with an attainment date of 1999. The region did not attain the standard by 1999, and was subsequently reclassified as “severe” non-attainment, with a new attainment date of 2005.

1997 Standard

In 2004 the Washington, DC-MD-VA region was designated as “moderate” non-attainment for the 1997 (84 ppb) 8-hour ozone standard, with an attainment date of 2010. In 2007, in response to the 1997 standard, MWAQC developed an 8-hour ozone SIP (Reference 2) to reduce ozone-causing emissions of VOCs and NOx. As part of this SIP, MWAQC developed mobile budgets for VOC and NOx. As required by federal guidance, MWAQC established 2008 budgets to show “reasonable further progress” in addition to the 2009 and 2010 attainment year budgets. The 8-hour ozone SIP set the following mobile budgets: 2008 VOC = 70.8 tons/day, 2008 NOX = 159.8 tons/day, 2009 VOC = 66.5 tons/day, 2009 NOX = 146.1 tons/day, 2010 VOC = 66.5 tons/day, and 2010 NOX 144.3 tons/day. On February 7, 2013 EPA found adequate the 2009 Attainment and 2010 Contingency budgets included in the 2007 SIP, and the TPB was then required to use those budgets to meet conformity requirements. These budgets are applicable to the 2016 CLRP air quality conformity analysis documented in this report.

2008 Standard

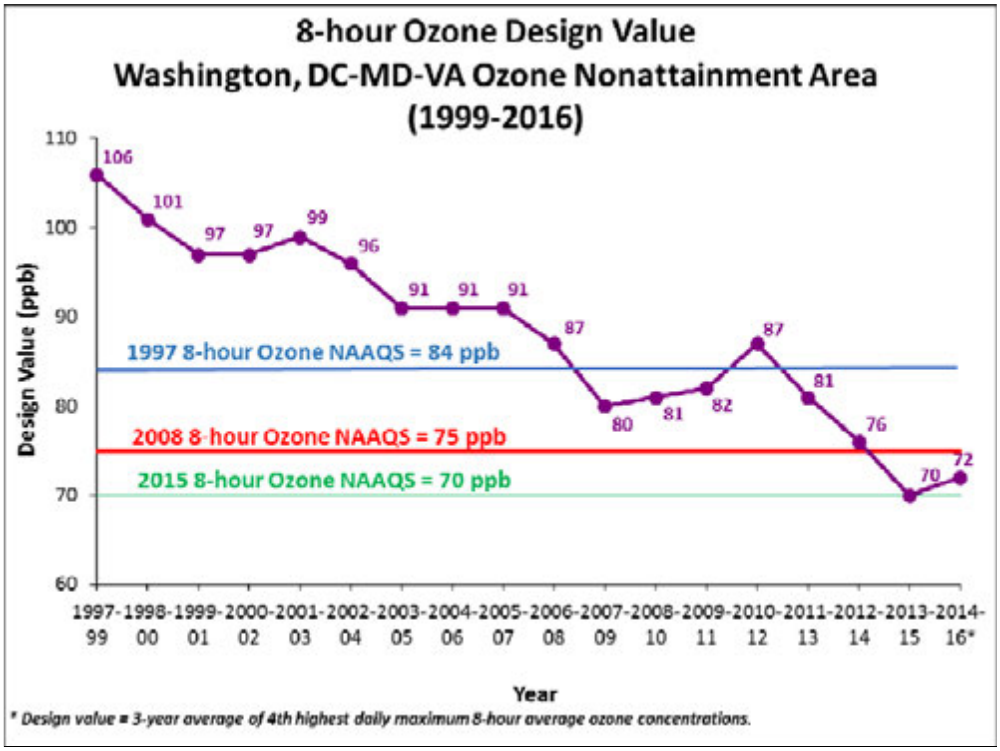
In 2012 EPA designated the Washington, DC-MD-VA region as “marginal” non-attainment for the 2008 (75 ppb) 8-hour ozone standard. Under a “marginal” designation, it is not necessary to develop updated mobile budgets; however, the region must still adhere to those approved by EPA under the old 1997 standard.

Once a non-attainment area has met a standard, it may request redesignation to attainment. For the area to be redesignated, it must develop a maintenance State Implementation Plan (SIP) for EPA’s approval. The plan ensures the area will continue to meet the NAAQS for a 20-year period. In 2015 the region attained the 2008 standard, and began development of a redesignation request and maintenance plan. The maintenance plan, which is scheduled to be completed by MWAQC in 2017, will include new mobile budgets applicable to future conformity analyses.

2015 Standard

In 2015 EPA updated the 8-hour ozone standard to 70 ppb. Based on monitor readings, the Washington, DC-MD-VA region is not in attainment of that standard. EPA is scheduled to develop the geographic boundaries and non-attainment designations for the 2015 standard at the end of 2017. Exhibit 1 shows the three 8-hour ozone standards (1997, 2008, and 2015) compared to the actual monitored ozone levels through time from 1997 to 2016.

EXHIBIT 1



Fine Particles ($PM_{2.5}$) Pollutants

1997 Standard

In 2004 the EPA designated the Washington, DC-MD-VA region as non-attainment for the 1997 (15µg/m^3) fine particles ($PM_{2.5}$) standard. $PM_{2.5}$ standards refer to particulate matter less than or equal to 2.5 micrometers in diameter. In 2009 the EPA, using local monitored data, determined that the region had attained the 1997 $PM_{2.5}$ standard and issued a clean data determination for the area. The region subsequently withdrew the $PM_{2.5}$ Attainment SIP and decided to seek redesignation as a maintenance area for the 1997 $PM_{2.5}$ NAAQS.

In 2013 MWAQC approved a $PM_{2.5}$ redesignation request and a maintenance plan (Reference 3) for the Washington region. This maintenance plan includes forecast year mobile budgets for $PM_{2.5}$ direct and $PM_{2.5}$ Precursor NOx for 2017 and 2025. On April 28, 2014, EPA found these mobile budgets adequate for use in conformity analyses, with an effective date of May 13, 2014, so these budgets were used for the first time officially in the conformity analysis of the 2014 CLRP. On October 6, 2014 EPA approved the requests from the District of Columbia, Maryland, and Virginia to redesignate to attainment the Washington DC-MD-VA area for the 1997 NAAQS with an effective

date of November 5, 2014.

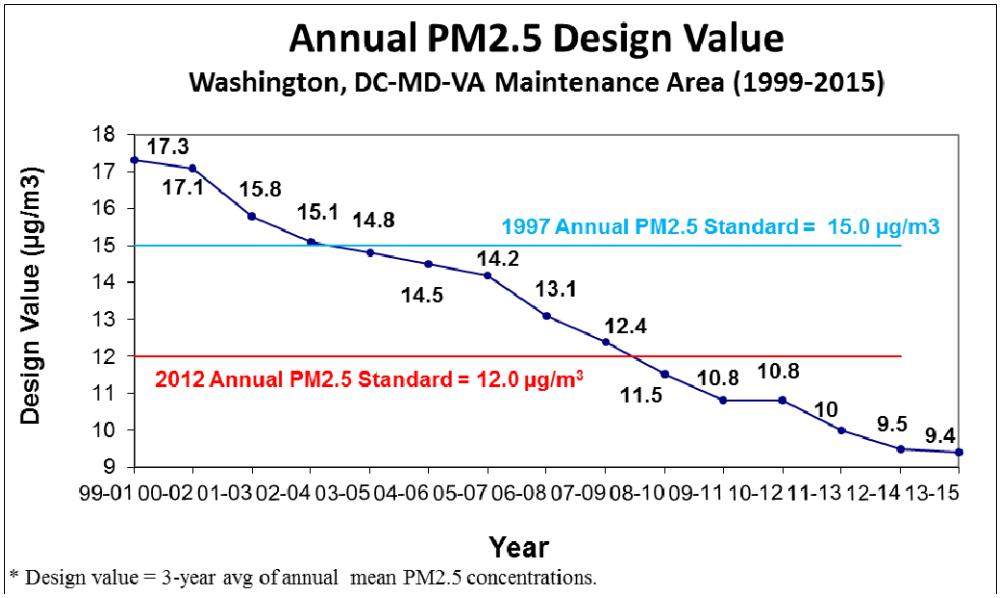
The maintenance plan included two tiers of mobile budgets. Tier 1 budgets were based on mobile emission inventory projections for 2017 and 2025, and were applicable with EPA's adequacy finding. Tier 2 budgets were developed by adding a 20% buffer to the mobile emission inventory projections for 2017 and 2025. The Tier 2 mobile budgets would become effective if it was determined that technical uncertainties primarily due to model changes and to vehicle fleet turnover, which may affect future motor vehicle emissions inventories, lead to motor vehicle emissions estimates above the Tier 1 budgets. The determination to use the Tier 2 budgets would be made through the interagency consultation process. Tier 1 mobile budgets were 1,787 tons/year for 2017 $PM_{2.5}$ direct, 1,350 tons/year for 2025 $PM_{2.5}$ direct, 41,709 tons/year for 2017 $PM_{2.5}$ Precursor NOx, and 27,400 tons/year for 2025 $PM_{2.5}$ Precursor NOx. Tier 2 mobile budgets were 2,144 tons/year for 2017 $PM_{2.5}$ direct, 1,586 tons/year for 2025 $PM_{2.5}$ direct, 50,051 tons/year for 2017 $PM_{2.5}$ Precursor NOx, and 32,880 tons/year for 2025 $PM_{2.5}$ Precursor NOx.

2012 Standard

In 2012 the EPA set a new, tougher, annual $PM_{2.5}$ Standard of 12 µg/m³. The Washington region, with its steadily downward trend (see Exhibit 2) in the level of fine particles pollutants, was already in attainment of that standard at the time it was set. Therefore, there were no new requirements for the Washington region related to the 2012 Standard.

Exhibit 2 shows the two fine particles standards (1997 and 2012) compared to the actual monitored $PM_{2.5}$ levels through time from 1999 to 2015.

EXHIBIT 2



Revocation of 1997 Standard

At the beginning of the conformity cycle for the 2016 CLRP, it was expected that fine particles pollutants would be included in the analysis. However, on August 24, 2016, EPA published a final rule (Reference 4) that resulted in the region no longer being required to demonstrate transportation

conformity for any fine particles standard. As part of the rule, EPA revoked the 1997 fine particles standard since more stringent 2012 standard had been put in place. The revocation, combined with the decreasing levels of fine particles in our region always remaining below the 2012 standard, resulted in our region no longer being required to analyze fine particles in the air quality conformity determinations of our transportation plans and TIPs. Since the region is no longer required to demonstrate transportation conformity for the $PM_{2.5}$ standard, there will no longer be any charts or graphs associated with $PM_{2.5}$–related pollutants in this, or any future, air quality conformity reports, as long as the region remains in attainment of EPA's standard.

Wintertime CO

The Metropolitan Washington DC-MD-VA region attained the federal carbon monoxide standard in the 1990s and submitted a CO maintenance plan covering the 1996-2007 period. The maintenance plan included a mobile budget of 1671.5 tons/day. EPA approved this maintenance plan effective March 16, 1996. The region was required to submit a second maintenance plan within eight years of its redesignation as an attainment area. This revised plan (Reference 4) was completed on February 19, 2004, and provided for attainment of the CO standard in the Washington DC-MD-VA attainment area through March 16, 2016. After March, 2016 the region no longer has to include Wintertime CO in any conformity analysis as long as it remains in attainment of EPA's standard.

III. TECHNICAL APPROACH

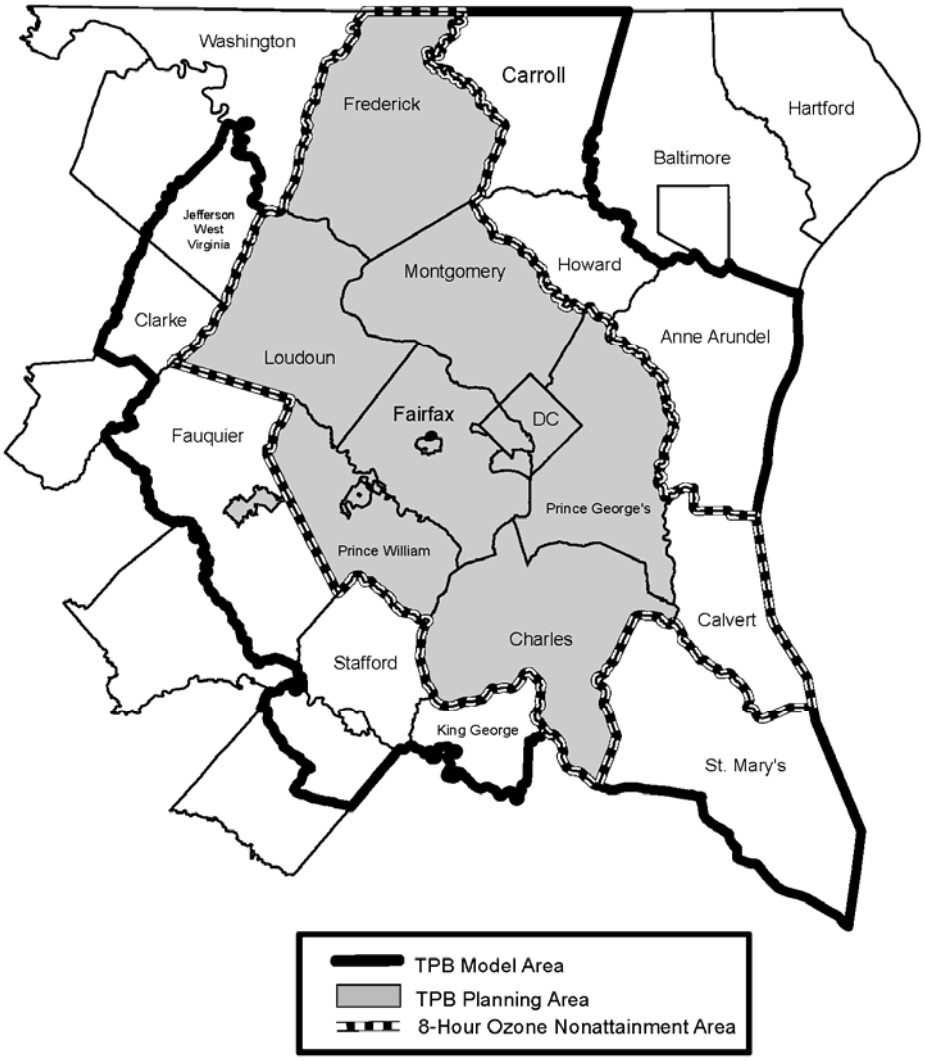
In developing the work program for this year's conformity analysis, contained as Appendix A of this report, staff identified latest planning assumptions and modeling techniques, and considered requirements of the conformity regulations, as well as requirements associated with, and comments received upon, past conformity analyses. Staff presented the work program to regional technical and policy committees starting in February 2016. Staff also coordinated the draft work program with EPA, FHWA, FTA and the state and local air management agencies through the TPB consultation procedures. This scope was adopted by the TPB on March 16, 2016.

Key technical planning assumptions and methods include:

- New Cooperative Land Activity Forecasts- Round 9.0
- New Project and Updates to Existing Project Submissions corresponding to the CLRP and TIP
- Updated HOV policy assumptions related to occupancy requirements
- EPA's MOVES 2014a Mobile Emissions Model
- 2014 Vehicle Registration Data
- Version 2.3.66 Travel Demand Model including a 3,722 Transportation Analysis Zones (TAZ) area system

Technical work activities for the 2016 CLRP Amendment and FY2017-2022 TIP included the preparation of travel demand forecasts (Vehicle Miles Traveled and trip data) and emissions inventories (daily ozone season VOC and NOx emissions) for each of the specified analysis years (2016, 2017, 2025, 2030, and 2040). The emissions inventories address a primary conformity assessment criterion to demonstrate that the plan adheres to established mobile source emissions budgets for all analyzed pollutants. Exhibit 3 depicts the geographic areas for travel modeling and for emissions reporting.

EXHIBIT 3
TPB Transportation Planning Areas



Coordination with Calvert-St. Mary's Metropolitan Planning Organization (C-SMMPO)

Calvert County, Maryland is in the Washington D.C. region's ozone non-attainment area, and is also a member of the new southern Maryland MPO, C-SMMPO. Projects in Calvert County have always been included in the TPB's conformity analysis, but with the recent establishment of the new MPO, it was necessary to formalize coordination between the TPB and the C-SMMPO. On January 20, 2016 the TPB approved a resolution with the C-SMMPO and Calvert County where all parties agreed upon procedures for ensuring that transportation plans, programs, and projects in Calvert County are assessed for regional air quality conformity. The TPB/C-SMMPO agreement, and documentation about how each task in the agreement was completed, is included in Appendix D.

IV. TRAVEL FORECASTS

Travel Model

The preparation of travel forecasts for each of the conformity alternatives was carried out using the Version 2.3.66 travel modeling process. The 2.3 travel model operates on a 3722-zone area system. It was initially calibrated using the 2007/08 Household Travel Survey (Reference 7). It was subsequently validated using 2010 data including traffic counts, Metrorail electronic counts, the American Community Survey, and the Geographically Focused Household Travel Survey (Reference 8).

As part of the technical methods originally employed in 2000, transit capacity constraint procedures, constraining peak Metrorail trips to and through the regional core at 2020 levels, were applied to better relate transit forecast levels with transit carrying ability in the future. These procedures are documented in the Version 2.3 travel model Calibration Report (Reference 7) and User's Guide (Reference 9).

As in recent years' analyses, in addition to existing toll facilities, the 2016 CLRP Amendment and FY2017-2022 TIP includes portions of I-95 and I-395 in Virginia and I-66 inside and outside of the Capital Beltway as managed facilities, with time-of-day tolls used to ensure that an acceptable level of service is maintained throughout the day. The Version 2.3 travel model Calibration Report and a HOT Lanes Modeling memo (Reference 10) document these procedures.

Network Development

Work on this task began last winter with the request for project inputs to the 2016 CLRP Amendment and FY2017-2022 TIP. All project submissions were reviewed and organized by DTP staff into transportation networks for appropriate forecast years, according to the project's completion date as estimated by the programming agency. The TPB approved the final project inputs at its March meeting.

These projects, summarized by state, agency, project characteristics and completion date are contained as Appendix B to this report. The list contains transit, highway, and HOV/HOT projects. Each project submission was reviewed and, where appropriate, coded in highway and transit networks. In many cases, the project inputs could not be coded into a regional network since such projects did not involve changes in capacity (e.g., transit operating assistance, highway rehabilitation, bridge reconstruction) or were too small to influence the modeling results at the regional level (e.g., intersection improvements, improvements to a facility which is not contained in the regional networks). Exhibit 4 presents mileage summaries for the highway system, separated into LOV and HOV/HOT lane miles, and for the rail transit system.

The COG modeled area includes counties outside the non-attainment area to enable better simulation results within the non-attainment area. Project inputs from these outer counties are provided by their respective MPOs, state DOTs, or county DOTs, and are coded, when appropriate, into the highway and transit networks. While travel demand estimates include all counties in the modeled area, emissions estimates are only tabulated for the defined non-attainment area for Ozone season pollutants.

HOV Policy Assumptions

The Maryland Department of Transportation (MDOT) requested an update to the policy assumption in the CLRP regarding high occupancy vehicle (HOV) facilities in Maryland. The previous policy indicated that all HOV/HOT facilities in the region will operate as HOV/HOT-3 in the year 2020 and beyond. MDOT recommended that I-270 and US 50, which currently operate as HOV-2 facilities,

continue to operate as HOV-2 facilities in the CLRP for all analysis years. The Virginia Department of Transportation (VDOT) did not recommend any change to the policy for HOV/HOT facilities in the CLRP. Therefore, all HOV/HOT facilities in Virginia are assumed to operate as HOV/HOT-3 in the year 2020 and beyond, except I-66 inside the Beltway, which converts to HOT-3 when the I-66 outside the Beltway HOT lanes open to traffic. There currently are no HOV/HOT facilities in the District in the CLRP. The MDOT letter is included in Appendix B of this document.

EXHIBIT 4

RAIL AND ROAD MILES

(modeled area)

	LOV LANE MILES TOTAL	HOV/HOT LANE MILES TOTAL	METRORAIL MILES TOTAL	COMMUTER RAIL * MILES TOTAL	STREETCAR, LIGHT RAIL ** MILES TOTAL
2016	22,852	300	119	220	2
2017	22,946	300	119	220	6
2025	23,848	404	131	231	30
2030	24,004	441	131	231	30
2040	24,202	465	131	231	30

* Includes MARC and VRE
** Includes Purple Line & DC Streetcar
(Anacostia, M St. SE/SW, Union Station/Georgetown,
H St./Benning Rd., Benning Rd. extension)

NOTE: If a lane operates as HOV/HOT during any part of the day, it is counted in the HOV/HOT column.

Land Activity

The COG Board approved the draft Round 9.0 Cooperative Forecasts for use in the air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP in March, 2016. This update includes a slight decrease in forecasted employment levels compared to the previous Round 8.4. Round 9.0 also includes the latest land activity forecasts for areas outside the TPB planning area but inside the modeled area, such as from the Baltimore and Fredericksburg regions. Exhibit 5 presents Round 9.0 household data for each of the years in the conformity analysis. Exhibit 6

presents similar data for the employment assumptions, and Exhibit 7 presents population assumptions. The employment data reflect census adjustments (References 11 & 12).

EXHIBIT 5
HOUSEHOLD DATA

MODELED AREA	2016	2017	2020	2025	2030	2040
D.C.	301,551	305,963	319,290	341,019	362,524	396,233
MONTGOMERY	378,101	381,348	391,100	405,562	422,342	450,922
PR.GEORGE'S	323,767	326,394	334,268	343,865	355,494	370,023
ARLINGTON	104,776	105,912	109,318	115,238	120,666	131,149
ALEXANDRIA	72,087	72,980	75,665	80,779	84,118	92,898
FAIRFAX	422,327	426,021	437,097	461,293	485,201	530,118
LOUDOUN	124,438	127,807	137,906	150,760	158,568	167,588
PR. WILLIAM	161,059	163,561	171,128	184,406	194,239	209,020
FAUQUIER	25,659	25,981	26,954	28,616	30,272	33,801
FREDERICK	91,373	93,284	99,010	107,934	115,066	126,539
CHARLES	54,976	56,331	60,302	65,529	72,911	83,426
HOWARD	114,518	116,866	123,899	130,948	135,517	139,497
ANNE ARUNDEL	207,858	209,268	213,504	220,565	227,626	241,542
CALVERT	32,645	33,064	34,325	36,125	37,350	38,125
CARROLL	64,556	64,972	66,219	68,025	69,692	72,853
FREDERICKSBURG (VA) & N. SPOTSYLVANIA	48,813	49,894	53,122	57,878	62,604	69,306
CLARKE&JEFFERSON	27,805	28,212	29,438	31,289	33,048	36,373
K. GEORGE	10,094	10,379	11,237	12,808	14,366	17,142
ST. MARY'S	42,037	43,060	46,050	51,075	55,875	62,425
STAFFORD	51,245	52,815	57,533	65,473	73,367	87,670
TOTAL	2,659,685	2,694,112	2,797,365	2,959,187	3,110,846	3,356,650

SOURCE:

MWCOG Round 9.0 Cooperative Forecasts
BMC Round 8A for Anne Arundel, Carroll and Howard Counties
George Washington Regional Commission / Federicksburg Area MPO February 2013 TAZ Refinements of the January 2012 GWRC/FAMPO Long-Range Transportation Plan Update Control Estimates and Forecasts for City of Fredericksburg, King George, Spotsylvania and Stafford Counties
Maryland Department of Planning, July 2014 for Calvert and St. Mary's Counties
Charles County Department of Planning and Growth Management, Updated Round 9.0 for Charles County
COG/TPB Staff used Updated COG Round 8.2 for Clark and Fauquier Counties
COG/TPB Staff used West Virginia University Population Projections, Updated COG Round 8.2 and Round 9.0 for Jefferson County

EXHIBIT 6
EMPLOYMENT DATA

MODELED AREA	2016	2017	2020	2025	2030	2040
D.C.	807,858	817,462	846,280	895,120	937,854	1,011,806
MONTGOMERY	524,825	529,509	543,542	572,521	604,491	653,917
PR.GEORGE'S	340,659	342,744	349,048	366,326	375,741	393,336
ARLINGTON	210,319	211,037	213,202	225,194	242,136	267,641
ALEXANDRIA	107,009	107,792	110,119	121,772	127,266	142,735
FAIRFAX	697,325	707,620	738,777	788,281	831,913	908,430
LOUDOUN	168,957	173,706	187,959	211,000	235,476	273,910
PR. WILLIAM	179,270	183,593	196,555	217,510	238,297	280,546
FAUQUIER	29,529	29,901	31,017	32,950	34,865	38,938
FREDERICK	107,075	107,948	110,572	115,618	121,283	133,934
CHARLES	46,682	46,759	46,988	49,227	52,196	58,762
HOWARD	175,451	178,092	186,016	199,220	212,423	229,077
ANNE ARUNDEL	325,204	328,898	339,999	353,540	367,849	398,624
CALVERT	34,564	35,120	36,800	39,500	40,900	43,100
CARROLL	68,520	69,087	70,782	72,937	75,227	79,379
FREDERICKSBURG (VA) & N. SPOTSYLVANIA	80,185	81,609	85,881	92,897	99,865	116,175
CLARKE & JEFFERSON	27,846	28,244	29,432	31,249	32,948	36,182
K. GEORGE	18,119	18,433	19,377	20,947	22,490	25,747
ST. MARY'S	62,878	63,703	66,180	69,844	71,917	76,907
STAFFORD	53,824	54,970	58,399	64,304	70,170	84,159
TOTAL	4,066,099	4,116,227	4,266,925	4,539,957	4,795,307	5,253,305

SOURCE:

MWCOG Round 9.0 Cooperative Forecasts
BMC Round 8A for Anne Arundel, Carroll and Howard Counties
George Washington Regional Commission / Federicksburg Area MPO February 2013 TAZ Refinements of the January 2012 GWRC/FAMPO Long-Range Transportation Plan Update Control Estimates and Forecasts for City of Fredericksburg, King George, Spotsylvania and Stafford Counties
Maryland Department of Planning, July 2014 for Calvert and St. Mary's Counties
Charles County Department of Planning and Growth Management, Updated Round 9.0 for Charles County
COG/TPB Staff used Updated COG Round 8.2 for Clark and Fauquier Counties
COG/TPB Staff used West Virginia University Population Projections, Updated COG Round 8.2 and Round 9.0 for Jefferson County

NOTE: Includes Census Adjustment
Includes Household and Group Quarfteres Population

EXHIBIT 7
POPULATION DATA

MODELED AREA:	2016	2017	2020	2025	2030	2040
D.C.	683,684	695,135	729,501	787,116	842,154	940,687
MONTGOMERY	1,022,625	1,029,975	1,052,023	1,087,259	1,128,823	1,197,131
PR.GEORGE'S	908,176	911,915	923,144	938,023	952,955	982,385
ARLINGTON	222,962	225,392	232,702	244,782	256,013	278,055
ALEXANDRIA	149,947	152,260	159,169	167,515	172,781	190,824
FAIRFAX	1,171,070	1,178,955	1,202,687	1,255,119	1,308,017	1,407,629
LOUDOUN	373,757	383,985	414,699	451,119	470,695	492,517
PR. WILLIAM	495,273	502,509	524,367	558,090	584,602	625,376
FAUQUIER	70,550	71,440	74,114	78,710	83,306	93,022
FREDERICK	250,754	255,011	267,782	288,690	303,583	332,151
CHARLES	154,030	157,290	167,036	178,238	194,671	218,575
HOWARD	313,690	318,338	332,273	346,517	357,094	366,352
ANNE ARUNDEL	563,691	567,770	580,006	593,594	606,688	628,047
CALVERT	92,439	93,228	95,600	98,350	100,200	101,450
CARROLL	171,615	172,687	175,900	179,437	183,258	189,574
FREDERICKSBURG (VA) & N. SPOTSYLVANIA	136,026	138,651	146,515	158,276	169,994	189,052
CLARKE&JEFFERSON	73,480	74,540	77,714	82,518	87,075	95,697
K. GEORGE	27,571	28,237	30,226	34,029	37,819	44,707
ST. MARY'S	116,146	118,396	125,149	137,199	148,749	163,349
STAFFORD	153,462	157,536	169,774	191,249	212,671	251,851
TOTAL	7,150,948	7,233,250	7,480,381	7,855,830	8,201,148	8,788,431

SOURCE:

MWCOG Round 9.0 Cooperative Forecasts

BMC Round 8A for Anne Arundel, Carroll and Howard Counties

George Washington Regional Commission / Federicksburg Area MPO February 2013 TAZ Refinements of the January 2012 GWRC/FAMPO Long-Range Transportation Plan Update Control Estimates and Forecasts for City of Fredericksburg, King George, Spotsylvania and Stafford Counties

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Charles County Department of Planning and Growth Management, Updated Round 9.0 for Charles County

COG/TPB Staff used Updated COG Round 8.2 for Clark and Fauquier Counties

COG/TPB Staff used West Virginia University Population Projections, Updated COG Round 8.2 and Round 9.0 for Jefferson County

Travel Summaries

After coding the networks, staff executed the travel forecasting process using the Version 2.3.66 model. Transit fares include the latest assumptions for all coded transit service and reflect policies such as price differentials for those who use SmarTrip versus those who use cash. Transit capacity constraint procedures, in which Metrorail transit trips to and through the core of the region are constrained at 2020 levels, are in place for 2025, 2030, and 2040 forecast years. Summary mode choice results are shown in Exhibits 8A and 8B. VMT summaries are shown in Exhibit 9.

EXHIBIT 8A

2016 CLRP AND FY2017-2022 TIP AIR QUALITY CONFORMITY
DAILY REGIONAL HOME BASED WORK PURPOSE MODE ANALYSIS BY YEAR
(Based on Mode Choice Output - 4th Iteration)

YEAR	HBW MOTORIZED PERSON	TOTAL HBW AUTO PSN	HBW SINGLE OCCUPANT AUTO PSN	HBW MULTIPLE OCCUPANT AUTO PSN	TOTAL HBW AUTO DRV	HBW CAR OCC.	HBW TRANSIT	HBW TRANSIT (%)
2016	4,019,276	3,184,474	2,717,949	466,526	2,927,339	1.09	834,801	20.77%
2017	4,067,185	3,219,304	2,755,159	464,146	2,962,183	1.09	847,881	20.85%
2025	4,426,072	3,464,178	2,948,037	516,141	3,174,134	1.09	961,894	21.73%
2030	4,622,632	3,611,068	3,060,871	550,196	3,300,007	1.09	1,011,564	21.88%
2040	4,958,932	3,863,885	3,259,431	604,454	3,519,348	1.10	1,095,046	22.08%

EXHIBIT 8B

2016 CLRP AND FY2017-2022 TIP AIR QUALITY CONFORMITY
DAILY REGIONAL ANALYSIS BY YEAR FOR ALL TRIP PURPOSES
(Based on Mode Choice Output - 4th Iteration)

YEAR	TOTAL MOTORIZED PERSON	TOTAL AUTO PSN	SINGLE OCCUPANT AUTO PSN	MULTIPLE OCCUPANT AUTO PSN	TOTAL AUTO DRV	TOTAL CAR OCC.	TOTAL TRANSIT	TRANSIT (%)
2016	19,525,961	18,366,723	9,532,632	8,834,090	13,093,033	1.40	1,159,238	5.94%
2017	19,732,887	18,555,970	9,636,519	8,919,450	13,228,983	1.40	1,176,917	5.96%
2025	21,216,854	19,864,771	10,200,971	9,663,800	14,078,922	1.41	1,352,083	6.37%
2030	21,974,717	20,556,673	10,498,965	10,057,708	14,527,758	1.41	1,418,044	6.45%
2040	23,293,146	21,761,180	11,012,737	10,748,443	15,306,052	1.42	1,531,966	6.58%

EXHIBIT 9

2016 CLRP/FY2017-2022 TIP AIR QUALITY CONFORMITY
MODELED AREA TRIPS AND VEHICLE MILES TRAVELED
AVERAGE WEEKDAY TRAFFIC (AAWDT)
(Based on Final Iteration)

YEAR	WORK AND NON-WORK AUTO DRV	TRUCKS (Med + Hvy)	MISC + THRU TRIPS	COMMERCIAL VEHICLES	TOTAL VEH. TRIPS	TOTAL VMT
2016	14,102,861	682,882	862,829	1,384,482	17,033,054	167,131,322
2017	14,254,247	689,840	874,492	1,398,313	17,216,892	169,105,830
2025	15,232,488	742,385	969,681	1,517,170	18,461,724	183,903,579
2030	15,770,516	771,944	1,028,592	1,584,908	19,155,960	192,993,850
2040	16,654,523	824,096	1,130,414	1,707,352	20,316,385	205,201,570

V. EMISSIONS

MOVES

In November 2015, EPA released MOVES2014a, which was an update to the MOVES2014 model. The MOVES2014a model includes minor updates to the default fuel tables and corrects an error in estimation of brake wear emissions. MOVES2014a does not significantly change the criteria pollutant emissions results of MOVES2014, and therefore, EPA does not consider it a new model for State Implementation Plan (SIP) and transportation conformity purposes.

MOVES Inputs

Input data from ten broad categories were used in the MOVES County Manager in order to generate the mobile emissions inventories for each analysis year. Five of these categories are travel-related (i.e., derived from the regional travel demand model), and five of these are obtained either directly from state agencies (i.e., air agencies and Department of Motor Vehicles), or developed based on actual meteorological data. Exhibit 10 summarizes these categories, and indicates the methodology used to develop these data.

EXHIBIT 10
Local Input Data Categories

No	Data Category	Data Table Name	Locality	Methodology
1	Age Distribution	**sourceTypeAgeDistribution**	County	based on VIN
2	Average Speed Distribution	**avgSpeedDistribution**	County	based on travel demand model's post-processor outputs + school bus/refuse truck data from Fairfax Co. + transit bus from WMATA
3	Road Type Distribution	**roadTypeDistribution**	County	based on travel demand model's post-processor outputs
4	Source Type Population	**sourceTypeYear**	County	based on CLRP Vehicle Projection & VIN
5	Vehicle Type VMT	**HPMSVTypeYear**	County	based on TDM's post-processor outputs
		monthVMTFraction	Region	based on Regional Data
		dayVMTFraction	Region	based on Regional Data
		hourVMTFraction	Region	based on Regional Data
6	Ramp Fraction	**roadType**	Region	8% of the urban/rural restricted access roads
7	Fuel	**FuelSupply**	State	from state air agency (state-wide data)
8		**FuelFormulation**	State	from state air agency (state-wide data)
9	I/M Programs	**IMCoverage**	State	from state air agency (state-wide data)
10	Meteorology Data	**zoneMonthHour**	State	from DEP (region-wide data)

Age Distribution and Source Type Population refer to vehicle fleet characteristics, and are developed using regional vehicle registration (VIN) data. Age Distribution refers to the age of the vehicle fleet by vehicle type. For Age Distribution, registered vehicles are divided into 13 vehicle classes and 31 age categories in a series of steps, using a commercial decoding software program and an EPA-developed converter. Source Type Population refers to the specific types of vehicles in the fleet. Trendlines (Reference 13) derived from actual vehicle population data from the 1975-2014 analysis timeframe serve as the basis for developing total vehicle population projections by jurisdiction for each analysis year. For each forecast year, the population is then converted into 13 vehicle types using a population mapping table included in EPA's technical guidance.

Average Speed Distribution refers to average vehicle speeds stratified by vehicle type, road type, time of day, and type of day (i.e., weekday vs. weekend). Average vehicle speed data are used to derive Vehicle Hours of Travel (VHT). Speed data from the travel demand model are stratified, using a post processor, into hourly VHT for each jurisdiction by 3 vehicle types, 4 road types, and 16 speed

bins. VHT distribution for trash trucks, school buses, and transit buses is derived using locally observed data.

Road Type Distribution is the percentage of VMT allocated to each road type by vehicle type. The VMT by road type is stratified into 13 vehicle types and 4 road types.

The average annual weekday VMT by five HPMS vehicle types from the travel demand model is input into the EPA-provided annual VMT converter with local monthly adjustment factors and weekend-day adjustment factors. The converter develops annual VMT for five HPMS vehicle types as required for MOVES and provides two additional outputs, "monthVMTfraction" and "dayVMTfraction". The local "hourlyVMTfraction" is also provided as part of the annual VMT input.

With the MOVES model, local data is used to provide bus VMT estimates. Local bus VMT is substituted for heavy duty vehicle VMT from the travel model. With the MOVES model, auto access to transit VMT is added to the travel model VMT. In order to develop auto access VMT, TPB staff gathered capacity information for current and future parking lots. Parking lot capacities were kept constant through all forecast years because quality historic data is not currently available to develop future growth trends. However, in subsequent conformity analyses this assumption may change if reliable data become available. A regional average home-to-transit travel distance of 4.5 miles was assumed for most parking lots. This assumption was based on findings from Commuter Connections surveys and a 2012 Geographically Focused Travel Survey. An average home-to-transit travel distance of 7.5 miles was used for certain parking lots where longer commuting distances apply. The parking capacity was multiplied by twice the average travel distance to provide auto access to transit VMT.

Ramp Fraction is the percentage of driving time on ramps by road type. Local data indicate that ramp time represents 8 percent of VHT. This, coincidentally, is the same as the national default value.

Appendix E includes a detailed description of how the MOVES inputs were developed. TPB staff developed the travel-related MOVES inputs based on the regional travel demand model (Version 2.3.66). COG's Department of Environmental Programs (DEP) staff provided inputs related to Fuel Supply and Formulation and Inspection and Maintenance (I/M) programs, as well as Meteorology Data. Fuel and I/M program data were supplied directly from DC, Maryland, and Virginia air agencies in MOVES ready formats. Meteorology data were developed by DEP staff and supplied as hourly records of temperature and relative humidity in MOVES format.

Mobile Emissions Inventories

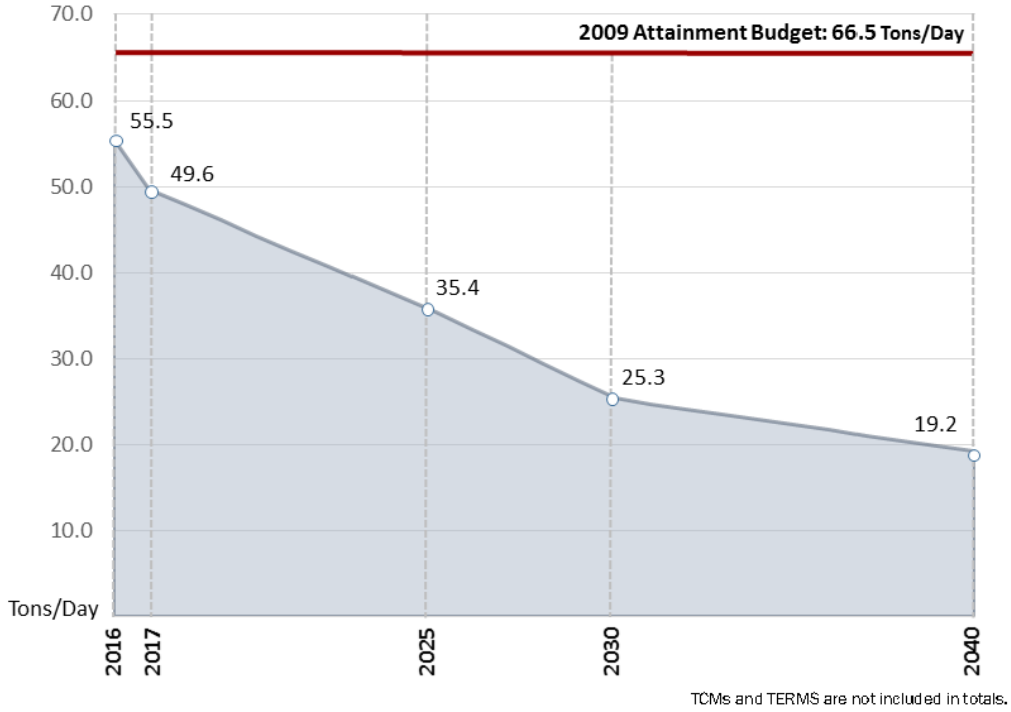
The emissions estimates for ozone season pollutants are summarized in Exhibit 11, and indicate total VOC and NOx emissions for each analysis year. The emissions are shown in relation to the approved mobile budget for each pollutant. Ozone season emissions show reductions through time despite steady increases in vehicle trips and VMT in the forecast years. The emissions reductions are attributed to cleaner vehicles and fuel standards, including Tier 2 and Tier 3 federal standards, and related emissions reductions/control programs. As programs are put into place, emissions reductions are realized, and decreases continue through time as fleet turnover replaces older vehicles.

2016 CLRP Amendment and FY2017-2022 TIP Emissions Inventories vs. Budgets

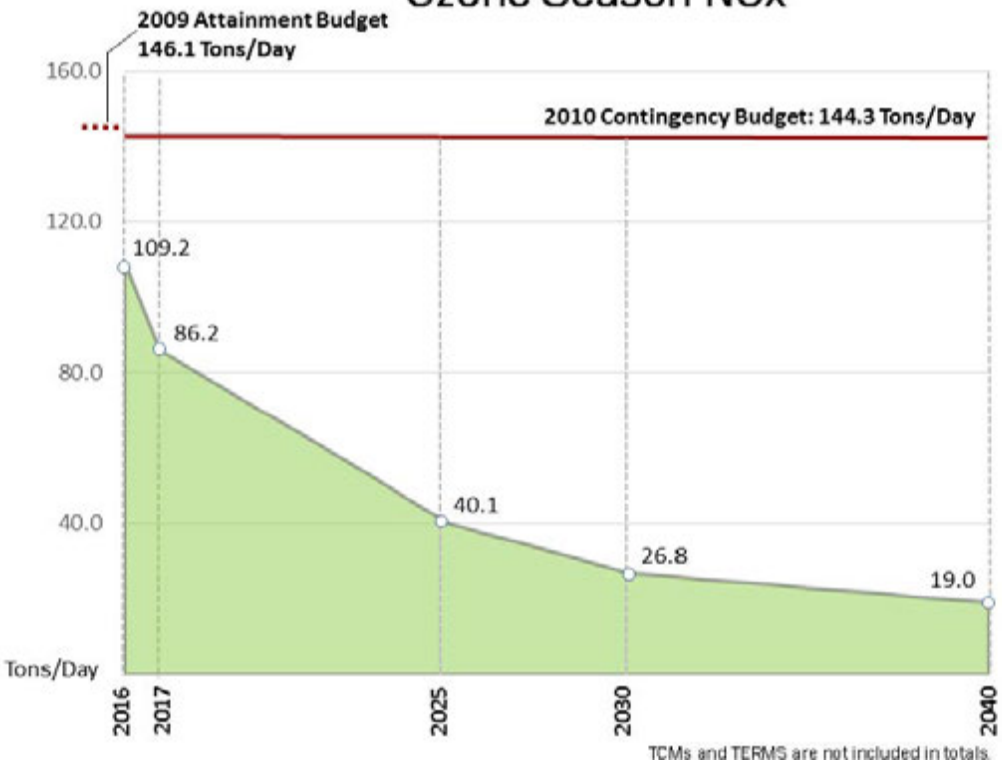
Exhibit 11 displays net emissions for each forecast year. The charts show that emissions are within the mobile budgets for ozone season VOC and NOx for all forecast years.

EXHIBIT 11
2016 CLRP & FY2017-2022 TIP
Mobile Source Emissions

Ozone Season VOC



Ozone Season NOx



TERMs

Transportation Emission Reduction Measures (TERMs) are strategies or actions that the TPB can employ to further reduce emissions from mobile sources. TERMs are generally intended to reduce either the number of vehicle trips (VT), vehicle miles traveled (VMT), or both. These strategies may include ridesharing and telecommuting programs, improved transit and bicycling facilities, clean fuel vehicle programs or other possible actions. These types of considerations, while not explicitly accounted for in the travel demand model, will continue to reduce the emissions levels in the region.

TERMs were analyzed using emissions rates generated in a post-processing environment using MOVES outputs from the conformity analysis. This approach ensured consistency of assumptions, inputs, and methodologies with conformity. Only projects put into place after 2010, or projects with improvements since 2010, were included in this analysis.

TERMs analyzed for the 2016 CLRP Amendment and FY2017-2022 TIP conformity analysis were grouped into four broad categories. Each category consisted of a grouping of several similar and related activities:

- TPB Commuter Connections Program
- Regional Incident Management Program
- Pedestrian Facilities Expansions & Enhancements
- Freeform Carpooling (Slug Lots)

Exhibit 12 lists the emission reduction potential of these TERMs, by pollutant, for each analysis year. The benefits of these projects are not included in the emissions totals in this report, but are available, if necessary, to offset future growth in mobile emissions. Appendix F contains detailed information about the updated TERMs analysis.

EXHIBIT 12
2016 CLRP Amendment and FY2017-2022 TIP
TRANSPORTATION EMISSIONS REDUCTION MEASURES

ADDITIONAL EMISSIONS REDUCTIONS-ALL TERMS COMBINED				
Years/Pollutants	Ozone - VOC	Ozone - NOx	PM2.5 Direct	Precursor NOx
	(tons/day)	(tons/day)	(tons/year)	(tons/year)
2016	0.066	0.090	0.95	25.77
2017	0.074	0.083	1.04	23.91
2025	0.097	0.071	1.43	20.84
2030	0.087	0.054	1.63	16.60
2040	0.093	0.043	2.06	15.09

NOTE: Benefits from these TERMs are not included in the emissions totals in this conformity analysis.

Transportation Control Measures (TCMs)

A Transportation Control Measure, or TCM, is any measure that is specifically identified in a SIP for the purpose of reducing emissions or concentrations of air pollutants from transportation sources. These on-road mobile source measures typically reduce vehicle use or change traffic flow or congestion conditions. A few examples of TCMs are: programs for improved public transit, employer-based transportation management plans, trip-reduction ordinances, programs to control extended idling of vehicles, reducing emissions from extreme cold-start conditions, employer-sponsored programs to permit flexible work schedules, programs to encourage removal of pre-1980 vehicles.

Section 93.113 of the conformity regulations requires the timely implementation of TCMs. All adopted TCMs for this region were included in the 1-Hour Ozone SIP and the 8-Hour Ozone SIP. The 1-Hour Ozone SIP was adopted by MWAQC on February 19, 2004. The 8-Hour Ozone SIP was adopted by MWAQC on May 23, 2007, and replaced the 1-Hour Ozone SIP when EPA found the Reasonable Further Progress (RFP) mobile budgets adequate for use in conformity in September, 2009. All TCMs included in these SIPs were implemented in a timely manner, as documented in Appendix G of this report.

VI. CONSULTATION & PUBLIC PARTICIPATION

Consultation

The conformity regulations require that Metropolitan Planning Organizations (MPOs) make Transportation Plans, TIPs, and conformity determinations available to the public, and accept and respond to public comment. The Transportation Planning Board (TPB) staff went through a lengthy process involving EPA and state and local air quality agencies to develop the region's transportation and air quality conformity consultation procedures. These procedures have been organized into a report, Transportation Planning Board Consultation Procedures with Respect to Transportation Conformity Regulations Governing TPB Plans and Programs (Reference 6). They were adopted by the Board initially on September 21, 1994 and subsequently updated in response to EPA's August 15, 1997 amendments, and formally adopted by the TPB on May 20, 1998. The procedures seek early involvement of the air agencies in the transportation planning process through concurrent mailings to the TPB and consultation agencies of all material relevant to transportation conformity, including announcements of work sessions and public forums in which the materials will be discussed.

Public Participation

Public participation is a federal requirement initially outlined in the Intermodal Surface Transportation Efficiency Act of 1991, included in subsequent legislation, and most recently reaffirmed in the federal transportation reauthorization bill, Fixing America's Surface Transportation (FAST) Act, signed into law in 2015. Public participation is recognized as an integral part of the planning process.

The Region's fourth *Participation Plan* (Reference 14), adopted by the TPB on September 17, 2014, provides an overall framework for participation in the TPB process. The *Participation Plan* describes the policies of the TPB regarding public involvement activities relating to the development of TPB Plans and Programs, including the air quality conformity analysis. The *Participation Plan* ensures that the TPB follows federal requirements for public involvement, by including the following procedures:

- A public comment period of at least 30 days precedes the approval of documents
- Consideration is given and written responses are prepared to comments received
- TPB provides an additional opportunity for public comment, if the final CLRP or TIP differs significantly from the version that was made available for public comment by the TPB

and raises new material issues, which interested parties could not reasonably have foreseen from the public involvement efforts

- When significant written and oral comments are received on the draft CLRP and TIP (including financial plans) as a result of the participation process in the interagency consultation process required under the transportation conformity regulations (40 CFR part 93), a summary, analysis, and report on the disposition of comments shall be made as part of the final CLRP and TIP
- A period of time at the beginning of each TPB meeting is provided for public comment by interested citizens and groups on transportation issues under consideration by the TPB, and provide follow-up acknowledgement and response (as appropriate)
- Opportunities for public comment are offered on the TPB website
- Access to the technical and policy activities of the TPB is offered through open attendance at meetings of the TPB, and its Technical Committee and Subcommittees
- All publicly available TPB documents are posted on the TPB website, and otherwise opportunities are sought to make reports and technical information widely available through the website
- Reports and technical information material are distributed at TPB, technical committees' and subcommittees' meetings free of charge
- At least one formal public meeting is provided during the TIP development process.

The TPB maintains and supports two public advisory committees, The Citizens Advisory Committee (CAC) and the Access for All Advisory Committee (AFA). These committees are intended to promote public involvement and represent the opinions of a variety of communities and interests. The CAC includes individual citizens and representatives of environmental, business, and civic interests concerned with regional transportation matters. The AFA advises the TPB on transportation issues, programs, policies, and services that are important to low-income communities, minority communities, and people with disabilities. Participants in the AFA include individuals and organizations that represent traditionally unrepresented populations.

The TPB also maintains a portfolio of websites as well as Facebook and Twitter accounts. The websites include a Transportation Homepage ("What's Happening in Transportation") http://www.mwcog.org/transportation, a Transportation Planning Information Hub http://www.transportationplanninghub.org, and pages specific to the CLRP http://www.mwcog.org/clrp. These websites cover planning activities, including online meeting calendars of the TPB, technical committees and subcommittees with links to the corresponding meeting agendas and support materials. Staff uses Facebook and Twitter to announce meetings, events, public comment periods, and release of key publications and reports.

In October, 2015 TPB started live-streaming audio of each TPB meeting, and providing audio recordings at www.mwcog.org/TPBmtgLIVE. Earlier that year, the TPB Technical Committee meetings started being broadcast live via the web.

In April, 2016 the TPB updated the method used to deliver important TPB news and information to the public. Staff relaunched the *TPB News* as an e-newsletter and digital news site (http://www.tpbne.ws/). The *TPB News* is delivered directly to recipients via email twice a month. The e-newsletter contains key upcoming board actions and recaps the previous month's board meeting. It announces important events, funding opportunities, and public comment periods. It also contains articles that highlight and summarize recent TPB research, analysis, outreach, and planning.

The TPB provided two 30-day comment periods associated with this conformity analysis. The first was for a review of inputs and the conformity scope of work, and the second was for a review of the conformity analysis results and the CLRP and TIP documents. Each comment period began at a CAC meeting, where staff distributed materials and discussed the documents being released for

comment. The TPB websites announced the comment opportunities. The *Washington Post*, the *Afro-American*, and the *Washington Hispanic* posted ads publicizing the comment period information. The TPB provides a comment opportunity at the beginning of each monthly meeting. The CLRP schedule in Exhibit 13 lists these opportunities.

The TPB held a TIP Forum on September 15, 2016. At the TIP Forum planners presented highlights from the FY2017-2022 TIP, and representatives from the state-level Departments of Transportation were available to answer questions. Prior to the Forum, the TPB reached out to the public by using the new *TPB News* website and social media channels to share information. The TPB also provided the public with a live streaming option for the forum. The TPB collected statistics related to public outreach for the TIP forum. These statistics, and additional details about public outreach, are included in a memo in Appendix C.

Additional materials including a sample consultation letter, website announcements, Twitter and Facebook postings, and copies of the newspaper notifications are contained in Appendix C. Additional information about public comment procedures as well as a detailed listing of all TPB consultation and public comment opportunities associated with the conformity assessment of the 2016 CLRP Amendment and FY2017-2022 TIP are also included in Appendix C.

EXHIBIT 13
CONFORMITY SCHEDULE

SCHEDULE FOR DEVELOPMENT & ADOPTION

of the 2016 Amendment to the Financially Constrained Long-Range Transportation Plan (CLRP) & FY 2017-2022 Transportation Improvement Program (TIP)

2015	November	TPB is briefed on the draft Call for Projects document and summary
	December	TPB releases final Call for Projects. Transportation agencies begin
2016	January 22	**DEADLINE:** Transportation agencies complete online submission of draft project inputs.
	February 5	Technical Committee reviews draft CLRP & TIP project submissions and draft Scope of Work for the Air Quality Conformity Analysis.
	February 11	CLRP & TIP project submissions and draft Scope of Work released for **30-day comment period**.
	February 9	TPB staff briefs Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) on submissions and Scope of Work.
	February 17*	TPB is briefed on project submissions and draft Scope of Work.
	March 12	Comment period ends.
	March 16*	TPB reviews comments and is asked to approve project submissions and draft Scope of Work.
	May 6	**DEADLINE:** Transportation agencies finalize CLRP forms (including Congestion Management Documentation forms where needed) and inputs to the FY 2017-2022 TIP. Submissions must not impact conformity inputs. Note that the deadline for changes affecting conformity inputs was January 22, 2016.
	July 14	Public Forum on the development of the FY 2017-2022 TIP.
	October 7	Technical Committee reviews draft CLRP & TIP and Conformity Analysis.
	October 13	Draft CLRP, TIP and Conformity Analysis are released for **30-day comment period** at Citizens Advisory Committee (CAC) meeting. CLRP Performance Analysis also published.
	October 19*	TPB is briefed on the draft CLRP & TIP and Conformity Analysis.
	October (TBD)	TPB staff briefs MWAQC TAC on the draft CLRP & TIP and Conformity Analysis.
	November 12	Comment period ends.
	November 16*	TPB reviews comments and responses to comments, and is presented with the draft CLRP & TIP and Conformity Analysis for adoption.

*Regular monthly TPB meeting

VII. FISCAL CONSTRAINT

EPA's conformity regulations require that transportation plans and TIPs must be fiscally constrained in order to be found in conformity. Consistent with federal planning requirements the TPB conducts a "major" update of the CLRP every four years. This major update occurred in 2014 and included a financial analysis of the regional transportation plan and program. A report (Reference 15) documenting this financial plan for the 2014 CLRP is available on the COG website. The financial plan demonstrates that the regional CLRP, covering the period from 2015 through 2040, is financially constrained. The plan is fiscally realistic, balancing all proposed new project investments and system maintenance and operating costs with reasonable revenue expectations. The plan demonstrates that the forecast revenues reasonably expected to be available cover the estimated costs of expanding and adequately maintaining and operating the highway and transit system in the region.

A total of $243 billion in transportation expenditures is projected for the Washington Metropolitan Region for the 26-year period from 2015 to 2040. WMATA expenditures constitute 41 percent and local transit 18 percent of the total for the CLRP, and highways constitute 41 percent. The majority of future transportation revenues will be devoted to the operations and maintenance of the current transit and highway systems. However, funding is identified for significant capital projects, including the Streetcar Projects and the South Capitol Street Corridor project in the District of Columbia; I-270 widening, reconstruction of the Nice Bridge, the Purple Line, the Corridor Cities Transitway, and the MARC Growth and Investment Plan for commuter rail in Maryland; Phase two of the Silver Line, and the VRE System Expansion Plan in Virginia. The plan also demonstrates full funding for WMATA's forecast needs for both Operations and State of Good Repair through 2040. Exhibit 14 shows the balanced revenue and expenditures tables for the CLRP.

EXHIBIT 14
REVENUES & EXPENDITURES
(in millions of year-of-expenditure dollars)

REVENUES:	Federal	State	Local	Private / Other	Fares / Tolls	TOTAL
District of Columbia						
Highway	$5,624	$2,128		$1,956		$9,708
Local Transit	$282	$5,210			$879	$6,371
Commuter Rail						$0
WMATA Support		$17,042				$17,042
Sub-Total	***$5,906***	***$24,380***	***$0***	***$1,956***	***$879***	***$33,121***
	17.8%	*73.6%*	*0.0%*	*5.9%*	*2.7%*	
Maryland						
Highway	$11,494	$26,622	$10,023	$824		$48,964
Local Transit	$1,791	$5,125	$6,380		$2,422	$15,718
Commuter Rail		$4,951			$791	$5,742
WMATA Support		$16,902				$16,902
Sub-Total	***$13,285***	***$53,600***	***$16,403***	***$824***	***$3,213***	***$87,325***
	15.2%	*61.4%*	*18.8%*	*0.9%*	*3.7%*	
Virginia						
Highway	$3,767	$12,036	$13,880	$2,745	$8,080	$40,509
Local Transit	$294	$1,794	$4,909	$1,573	$3,268	$11,838
Commuter Rail	$1,125	$602	$583	$8	$1,430	$3,749
WMATA Support		$5,860	$6,525			$12,385
Sub-Total	***$5,186***	***$20,292***	***$25,897***	***$4,327***	***$12,779***	***$68,480***
	7.6%	*29.6%*	*37.8%*	*6.3%*	*18.7%*	
WMATA Fares, Grants and Other Nonjurisdictional (Regional) Funds						
Sub-Total	$13,382			$647	$41,132	$55,160
GRAND TOTAL	**$37,759**	**$98,272**	**$42,300**	**$7,754**	**$58,002**	**$244,086**

EXPENDITURES:	Operations	State of Good Repair	Expansion	TOTAL
District of Columbia				
Highway	$1,297	$6,332	$2,079	$9,708
Local Transit	$3,710	$159	$2,502	$6,371
Commuter Rail				$0
WMATA Support	$12,768	$4,073	$201	$17,042
Sub-Total	***$17,775***	***$10,564***	***$4,782***	***$33,121***
Maryland				
Highway	$10,582	$21,437	$16,945	$48,964
Local Transit	$7,788	$2,136	$5,795	$15,718
Commuter Rail	$2,882	$565	$2,295	$5,742
WMATA Support	$12,764	$3,946	$192	$16,902
Sub-Total	***$34,016***	***$28,083***	***$25,227***	***$87,325***
Virginia				
Highway	$12,050	$20,434	$8,024	$40,508
Local Transit	$6,482	$1,839	$3,517	$11,837
Commuter Rail	$2,723	$216	$810	$3,749
WMATA Support	$8,508	$3,704	$174	$12,386
Sub-Total	***$29,763***	***$26,192***	***$12,525***	***$68,480***
WMATA Fares, Grants and Other Nonjurisdictional (Regional) Funds				
Sub-Total	$41,132	$14,028		***$55,160***
GRAND TOTAL	***$122,685***	***$78,867***	***$42,534***	***$244,086***

Most new or updated projects do not impact the financial analysis that was done in 2014. However, there are a couple of new or updated projects with significant costs. These are the I-66 inside and outside the Capital Beltway HOT lanes, the I-395 HOT lanes, the US 28 widening and construction of HOV lanes, the US 1

BRT, and the VRE extension to Gainesville/Haymarket. Upon finalization of the design and cost for each project, a detailed financial plan will be included in the next major update of the CLRP.

VIII. CONFORMITY ANALYSIS - CRITERIA AND PROCEDURES

EPA's conformity regulations identify criteria and procedures for the determination of conformity. The April 2012 amendments to EPA's regulations represent the current transportation conformity requirements. The following sections indicate: (1) the appropriate sections of the regulations which must be adhered to in this conformity analysis, and (2) the manner in which the regulations have been met.

Conformity Criteria

This section identifies the criteria (sections of the regulations) which the CLRP must meet in order to conform to current implementation plans in the District of Columbia, Maryland and Virginia. Exhibit 15 lists the sections of the regulations relevant for the analysis of the 2016 CLRP Amendment and FY2017-2022 TIP. The following discussion indicates the manner in which each criterion was met.

EXHIBIT 15

Conformity Criteria

All Actions at all times:	
Sec. 93.110	Latest planning assumptions.
Sec. 93.111	Latest emissions model.
Sec. 93.112	Consultation.
Transportation Plan:	
Sec. 93.113(b)	TCMs.
Sec. 93.118 and/or Sec. 93.119	Emissions budget and /or Interim emissions.
TIP:	
Sec. 93.113(c)	TCMs.
Sec. 93.118 and/or Sec. 93.119	Emissions budget and /or Interim emissions.
Project (From a Conforming Plan and TIP):	
Sec. 93.114	Currently conforming plan and TIP.
Sec. 93.115	Project from a conforming plan and TIP.
Sec. 93.116	CO, PM_{10}, and $PM_{2.5}$ hot spots.
Sec. 93.117	PM_{10} and $PM_{2.5}$ control measures.
Project (Not From a Conforming Plan and TIP):	
Sec. 93.113(d)	TCMs.
Sec. 93.114	Currently conforming plan and TIP.
Sec. 93.116	CO, PM_{10}, and $PM_{2.5}$ hot spots.
Sec. 93.117	PM_{10} and $PM_{2.5}$ control measures.
Sec. 93.118 and/or Sec. 93.119	Emissions budget and/or Interim emissions

Sec. 93.110 Criteria and procedures: Latest planning assumptions.

The conformity analysis is based upon the most current planning assumptions available for the Washington region. Round 9.0 Cooperative Forecasts were approved for use in the conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP. These forecasts were developed and reviewed taking into consideration transportation and land use interaction.

Travel demand modeling methods incorporating the latest available data were used in this study. The refinements include development and use of a comprehensive set of transit and HOV networks. As with previous conformity analyses, transit fares are modeled explicitly in the modal choice process. The analysis includes actual fares for the base year simulation, with forecast year fares based on current (January 2016) fares with increases through time as a function of increases in the consumer price index. Base year fares are modeled to reflect the WMATA tariff and other actual charges levied by each transit provider; the updated fare tariffs provided the basis for future analysis years. Transit operating policies, such as hours and frequency of service, are updated annually and modeled explicitly to reflect actual conditions in the peak and off-peak hours. The overall travel demand modeling process is continually monitored and refined as new data become available.

Sec. 93.111 Criteria and procedures: Latest emissions model.

The current analysis used MOVES2014a, the latest emission factor model specified by EPA for use in preparation of state implementation plans and conformity assessments.

Sec. 93.112 Criteria and procedures: Consultation.

The TPB offers many opportunities for public comment. Since the initial consultation procedures were developed, TPB has expanded the opportunities for public involvement through a series of initiatives. Examples include: the public comment period at the start of each TPB meeting; regular public forums and workshops on major topics; and the institution of the Citizens Advisory Committee and the Access For All Committee, website posts, and Twitter and Facebook postings. Details relating to public involvement for this conformity analysis are included above, and in Appendix C of this document. General information is summarized in a report called the TPB Participation Plan (Reference 14).

Sec. 93.113 Criteria and procedures: Timely implementation of TCMs.

Transportation Control Measures were included in both the 1-Hour Ozone SIP, the 8-Hour Ozone SIP, and the $PM_{2.5}$ SIP. Documentation regarding the timely implementation of each project is included as Appendix G of this document.

Sec. 93.114 Criteria and procedures: Currently conforming transportation plan and TIP.

There is a currently conforming plan and program in the Washington region. This current conformity analysis is designed to update and supersede the (conforming) 2015 CLRP, adopted by the TPB in October, 2015 and approved by the FHWA on February 4, 2016.

Sec. 93.115 Criteria and procedures: Projects from a plan and TIP.

All projects advanced for implementation come from a conforming plan and program.

Sec. 93.116 Criteria and procedures: Localized CO and PM_{10} violations (hot spots).

Projects advancing to the current TIP have met this criterion as an element of their environmental study prior to being included in the TIP. (The Washington area is now in attainment for both carbon monoxide and PM_{10}.)

Sec. 93.117 Criteria and procedures: Compliance with PM_{10} and $PM_{2.5}$ control measures.

The Washington area is in attainment for PM_{10}. Prior to the region attaining the 1997 $PM_{2.5}$ NAAQS, a SIP for the Washington non-attainment area was developed and submitted to EPA in April, 2008. That SIP was never approved. After attaining the 1997 $PM_{2.5}$ NAAQS, MWAQC submitted, and EPA approved, a $PM_{2.5}$ Redesignation Request and Maintenance Plan for the Washington region. The On-Road control measures in that Maintenance Plan include only measures directly impacting vehicles and fuels which would not be pertinent for project level conformity determinations. These are: the 2007 heavy duty engine rule, Tier 1 federal motor vehicle emissions standards, Tier 2 vehicle and gasoline sulfur program, and enhanced motor vehicle emissions and maintenance programs.

93.118 Motor vehicle emissions budget

As discussed earlier in this report, this analysis includes use of the existing budgets developed as part of the 8-hour ozone SIP. Approved budgets exist for ozone season VOC and NOx. The mobile emissions inventories for all analysis years were compared to these budgets. Total VOC and NOx emissions for all plan milestone analysis years are within their respective emissions budgets.

Sec. 93.119 Criteria and procedures: Interim emissions in areas without motor vehicle budgets

All assessed pollutants have motor vehicle budgets.

NOTE: See EPA's conformity regulations for the full text associated with each section's requirements.

IX. FINDINGS

The analytical results described above provide a basis, in relation to US EPA conformity regulations, for a determination of conformity of the year 2016 Constrained Long Range Plan Amendment and FY2017-2022 Transportation Improvement Program for The Washington Metropolitan Region, with requirements of the Clean Air Act Amendments of 1990.

APPENDIX A

Scope of Work

AIR QUALITY CONFORMITY ANALYSIS: 2016 CONSTRAINED LONG RANGE PLAN AND FY2017-2022 TRANSPORTATION IMPROVEMENT PROGRAM

SCOPE OF WORK

I. INTRODUCTION

This scope of work provides a context in which to perform the conformity analysis and presents an outline of the work tasks required to address all regulations currently applicable.

Projects solicited for the 2016 Constrained Long Range Plan (CLRP) and FY2017-2022 Transportation Improvement Program (TIP) are scheduled to be finalized at the March 16, 2016 TPB meeting. This scope of work reflects the tasks and schedule designed for the air quality conformity analysis leading to adoption of the plan on November 16, 2016. This work effort addresses requirements associated with attainment of the ozone standards (volatile organic compounds (VOC) and nitrogen oxides (NOx) as ozone precursor pollutants), and fine particles (PM2.5) standards (direct particles and precursor NOx). The region has reached the end of the maintenance period for wintertime carbon monoxide (CO), and is no longer required to include the pollutant in conformity analyses.

The plan must meet air quality conformity regulations: (1) as originally published by the Environmental Protection Agency (EPA) in the November 24, 1993 Federal Register, and (2) as subsequently amended, most recently on March 14, 2012, and (3) as detailed in periodic FHWA/FTA and EPA guidance. These regulations specify both technical criteria and consultation procedures to follow in performing the analysis.

II. FEDERAL REQUIREMENTS

As described in the 1990 Clean Air Act Amendments, conformity is demonstrated if transportation plans and programs:

1. Are consistent with most recent estimates of mobile source emissions
2. Provide expeditious implementation of TCMs
3. Contribute to annual emissions reductions.

The federal requirements governing air quality conformity compliance are contained in §93.110 through §93.119 of the Transportation Conformity Regulations (printed April 2012), as follows:

CONFORMITY CRITERIA & PROCEDURES	
All Actions at all times	
§93.110	Latest Planning Assumptions
§93.111	Latest Emissions Model
§93.112	Consultation
§93.113	TCMs
§93.114	Currently conforming Plan and TIP
§93.115	Project from a conforming Plan and TIP
§93.116	CO, PM10 and PM2.5 hot spots
§93.117	PM10 and PM2.5 Control Measures
§93.118 and/or §93.119	Emissions Budget and/or Interim Emissions

§ 93.110 Criteria and procedures: Latest planning assumptions - The conformity determination must be based upon the most recent planning assumptions in force at the time of the conformity determination.

§ 93.111 Criteria and procedures: Latest emissions model - The conformity determination must be based on the latest emission estimation model available.

§ 93.112 Criteria and procedures: Consultation – The Conformity must be determined according to the consultation procedures in this subpart and in the applicable implementation plan, and according to the public involvement procedures established in compliance with 23 CFR part 450.

§ 93.113 Criteria and procedures: Timely implementation of TCMs - The transportation plan, TIP, or any FHWA/FTA project which is not from a conforming plan and TIP must provide for the timely implementation of TCMs from the applicable implementation plan.

§93.114 Criteria and procedures: Currently conforming transportation plan and TIP - There must be a currently conforming transportation plan and currently conforming TIP at the time of project approval.

§93.115 Criteria and procedures: Projects from a plan and TIP - The project must come from a conforming plan and program.

§93.116 Criteria and procedures: Localized CO, PM10, and PM2.5 violations (hot spots) -The FHWA/FTA project must not cause or contribute to any new localized CO, PM10, and/or PM2.5 violations or increase the frequency or severity of any existing CO, PM10, and /or PM2.5 violations in CO, PM10, and PM2.5 nonattainment and maintenance areas.

§93.117 Criteria and procedures: Compliance with PM10 and PM2.5 control measures -The FHWA/FTA project must comply with PM10 and PM2.5 control measures in the applicable Implementation Plan.

§93.118 Criteria and procedures: Motor vehicle emissions budget - The transportation plan, TIP, and projects must be consistent with the motor vehicle emissions budget(s).

§93.119 Criteria and procedures: Interim emissions in areas without motor vehicle budgets - The FHWA/FTA project must satisfy the interim emissions test(s).

Assessment Criteria:

- Ozone season pollutants will be assessed by comparing the forecast year pollutant levels to the most recently approved 8-hour ozone area VOC and NOx mobile emissions budgets. The 2009 Attainment and 2010 Contingency budgets were deemed adequate for use in conformity by EPA in February 2013. These budgets were submitted to EPA by the Metropolitan Washington Air Quality Committee (MWAQC) in 2007 as part of the 8-hour ozone State Implementation Plan (SIP).

- PM2.5 pollutants will be assessed by comparing the forecast year pollutant levels to the mobile budgets in the PM2.5 Maintenance Plan. A PM2.5 Maintenance Plan was approved by EPA effective November 5, 2014. The region is currently preparing new mobile budgets for an updated PM2.5 Maintenance Plan. If those mobile budgets are submitted to EPA, and found adequate or are approved prior to the completion of this analysis, those budgets will be used to assess conformity of the PM2.5 pollutants.

III. POLICY AND TECHNICAL APPROACH

The table below summarizes the key elements of the Policy & Technical Approach:

	Ozone	Fine Particles
Pollutant	VOC, NOx	Direct PM2.5, Precursor NOx
Emissions Model	MOVES2014a	
Conformity Test	Budget Test: Using mobile budgets most recently approved by EPA. 2009 attainment and 2010 contingency budgets found adequate for use in conformity by EPA in Feb. 2013. All budgets were set using Mobile6 emissions model and submitted to EPA in 2007.	Budget Test: Using mobile budgets established in the $PM_{2.5}$ Maintenance Plan approved by EPA in 2014. All budgets set using MOVES 2010a emissions model. Updated budgets are currently being developed using MOVES2014. If those are approved or found adequate by EPA prior to the completion of the analysis, the updated budgets will be used.
Emissions Analysis Timeframe	Daily	Annual
Vehicle Fleet Data	2014 vehicle registration data for all jurisdictions	
Geography	8-hour ozone non-attainment area	8-hour ozone non-attainment area less Calvert County
Network Inputs	Regionally significant projects	
Land Activity	Cooperative Forecasts Round 9.0	
HOV/HOT	VA: All HOV 2+/HOT 2+ facilities become HOV 3+/HOT 3+ in 2020 and beyond MD: All HOV facilities remain HOV2+ through 2040	
Transit Constraint	Transit "capacity constraint" procedures- 2020 constrains later years	
Analysis Years	2016, 2017, 2020, 2025, 2030, 2040	
Modeled Area	3,722 TAZ System	
Travel Demand Model	Version 2.3.57a or latest	

NOTE: Highlights reflect changes since the 2015 CLRP conformity analysis

IV. CONSULTATION

The TPB adheres to the specifications of the consultation procedures (as outlined in the consultation procedures report adopted by the TPB on May 20, 1998). The TPB will participate in meetings of MWAQC, its Technical Advisory Committee, and its Conformity Subcommittee to discuss the Scope of Work, TERMs development process, and other elements as needed. The TPB will discuss at meetings or forums, as needed, the following milestones:

- CLRP & TIP Call for Projects
- Scope of work
- TERM proposals
- Project submissions: documentation and comments
- Analysis of TERMs, list of mitigation measures
- Conformity analysis: documentation and comments
- CLRP Performance
- Process: comments and responses

V. WORK TASKS

The work tasks associated with the 2016 CLRP air quality conformity analysis are as follows:

1. Receive project inputs from programming agencies and organize into conformity documentation listings by:
   - Project type, limits, etc.
   - Phasing with respect to forecast years
   - Transit operating parameters, e.g., schedules, service

2. Update Travel Model Base Transit Service to reflect:
   - Service current to December 2015
   - Fares current to January 2016

3. Review and Update Land Activity files to reflect Round 9.0 Cooperative Forecasts with respect to:
   - Zonal data files
   - Employment Data Census Adjustment
   - Households by auto ownership, size and income
   - Coordination with agencies outside the MWCOG Cooperative Forecast area (BMC, FAMPO, C-SMMPO etc.)
   - Exogenous Travel (external, through trips etc.)

4. Prepare forecast year highway, HOV, and transit networks including regionally significant projects, as follows:
   - 2016, 2017, 2020, 2025, 2030, and 2040 highway networks
   - 2016, 2017, 2020, 2025, 2030, and 2040 transit network input files
   - Update highway tolls, as necessary

5. Execute travel demand modeling for years 2016, 2017, 2020, 2025, 2030, and 2040

6. Derive Mobile Emissions Estimates for years 2016, 2017, 2025, 2030, and 2040

7. Provide emissions reductions estimates for TERMs

8. Summarize key inputs and outputs (VMT, mode share, emissions, etc.) of the conformity determination for use in the CLRP Performance Analysis

9. Assess conformity and document results in a report

    - Document methods
    - Draft conformity report
    - Forward to technical committees, policy committees
    - Make available for public and interagency consultation
    - Receive comments
    - Respond to comments and present to TPB for action
    - Finalize report and forward to FHWA, FTA, and EPA

SCHEDULE FOR DEVELOPMENT & ADOPTION

of the 2016 Amendment to the Financially Constrained Long-Range Transportation Plan (CLRP) & FY 2017-2022 Transportation Improvement Program (TIP)

2015	November 18*	TPB is briefed on the draft Call for Projects document and summary brochure.
	December 16*	TPB releases final Call for Projects. Transportation agencies begin submitting project information through online database.
2016	January 22	**DEADLINE:** Transportation agencies complete online submission of draft project inputs.
	February 5	Technical Committee reviews draft CLRP & TIP project submissions and draft Scope of Work for the Air Quality Conformity Analysis.
	February 11	CLRP & TIP project submissions and draft Scope of Work released for **30-day comment period**.
	February 17*	TPB is briefed on project submissions and draft Scope of Work.
	March (TBD)	TPB staff briefs Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) on submissions and Scope of Work.
	March 12	Comment period ends.
	March 16*	TPB reviews comments and is asked to approve project submissions and draft Scope of Work.
	May 6	**DEADLINE:** Transportation agencies finalize CLRP forms (including Congestion Management Documentation forms where needed) and inputs to the FY 2017-2022 TIP**.** Submissions must not impact conformity inputs. Note that the deadline for changes affecting conformity inputs was January 22, 2016.
	July 14	Public Forum on the development of the FY 2017-2022 TIP.
	October 7	Technical Committee reviews draft CLRP & TIP and Conformity Analysis.
	October 13	Draft CLRP, TIP and Conformity Analysis are released for **30-day comment period** at Citizens Advisory Committee (CAC) meeting. CLRP Performance Analysis also published.
	October 19*	TPB is briefed on the draft CLRP & TIP and Conformity Analysis.
	October (TBD)	TPB staff briefs MWAQC TAC on the draft CLRP & TIP and Conformity Analysis.
	November 12	Comment period ends.
	November 16*	TPB reviews comments and responses to comments, and is presented with the draft CLRP & TIP and Conformity Analysis for adoption.

*Regular monthly TPB meeting

APPENDIX B

Project Inputs
(significant changes & input table)

Key to the Air Quality Conformity Table:

COLUMN 1:

Con ID – conformity identification number

COLUMN 2:

Project ID - project identification number (for reference purposes)

COLUMN 3:

Agency ID – agency project identification number (for reference purposes)

COLUMN 4:

Type of improvement - defined as follows:

Construct	=	build a new facility
Close	=	facility cease operation
Widen	=	increase the number of lanes on an existing facility
Upgrade	=	improve the facility type of a roadway
Reduce Capacity	=	reduce the number of lanes on an existing facility
Relocate	=	construct an existing facility on a new right-of-way
Reconstruct	=	modify an existing facility with no capacity increase i.e., shoulder paving, geometric improvements
Rehabilitate	=	repair existing structures - no capacity increase
Study	=	to review alternative transportation improvements- project planning or preliminary engineering only

COLUMN 5:

Facility - name of facility to be studied or improved

COLUMNS 6 and 7:

From and To - limits of the project

COLUMN 8:

Facility Type - defined as follows:

1 = Interstate
2 = Major Arterial
3 = Minor Arterial
4 = Collector
5 = Expressway or Freeway with at-grade intersections

If a facility is being upgraded, the old facility type is in the "from" column, and the new facility type is in the "to" column. If the facility is not being upgraded, the "from" and "to" columns are the same.

COLUMN 9:

Number of Lanes - same explanation of "from" and "to " columns as above

COLUMN 10:

Project Completion Date or Status - date project will be open for use.
"not coded" indicates that project is not included in the conformity analysis

National Capital Region
Transportation Planning Board

EXCERPT

MEMORANDUM

TO: Transportation Planning Board

FROM: Andrew Austin, TPB Transportation Planner

SUBJECT: Briefing on the Draft 2016 Amendment to the Financially Constrained Long-Range Transportation Plan (CLRP)

DATE: October 13, 2016

On Thursday, October 13, 2016 the TPB released the draft 2016 Constrained Long-Range Plan (CLRP) Amendment, the draft FY 2017-2022 Transportation Improvement Program (TIP) and the draft Air Quality Conformity Analysis results for a 30-day public comment period. This memo provides information on the project inputs and actions that have taken place to date regarding the CLRP. 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 attached materials present the same summary of the major new projects and changes to existing major projects that was included in this year's submissions. The projects described here are unchanged from those that were approved by the TPB on March 16, 2016.

REGIONAL POLICY FRAMEWORK FOR DEVELOPMENT OF THE 2016 CLRP AMENDMENT

The Call for Projects document specifically listed the region's "greatest needs" reflecting the TPB's Vision and regional transportation priorities. 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 explain how their new projects support the goals laid out in the Regional Transportation Priorities Plan (RTPP).

The agencies' responses to those questions were compiled in Table 1 on page 15 of the attachment, along with the agencies' responses to how projects support the federal Planning Factors on Table 2. Additionally, based on feedback from TPB members and representatives on the Technical Committee, staff developed individual project profile sheets that provide readers with "at a glance" information, as well as a narrative describing how the proposed major project supports the RTPP and other regional goals. A Project Profile has been created for each of the nine major projects proposed in this year's CLRP amendment.

SUMMARY OF PROJECT SUBMISSIONS

In all, there were nine new and changed "major" projects in the 2016 submissions. 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. The submissions also include many changes to existing CLRP projects. These nine projects are listed in the attached Table 1 and they are also the subject of two-page project profiles, which are attached. Further details about these projects are contained in the CLRP Project Description Forms which are also attached to this memo. Four other new projects, which are not considered

major, are included in Table 1, but they are not highlighted with individual project profiles. The remaining project changes proposed for the 2016 CLRP Amendment are detailed in the Air Quality Conformity Inputs table, distributed separately from this memo.

In the **District of Columbia**, DDOT is proposing to implement bus priority lanes on 16th Street NW between H Street and Arkansas Avenue, and to expand its bicycle lane network with eight additional segments. DDOT has also submitted new information about lane configurations and removals for the DC Streetcar: Union Station to Georgetown project which has been in the CLRP since 2014.

No new major projects are proposed this year in **Maryland**. MDOT has responded to the call for projects by providing minor project updates. MDOT typically submits projects for inclusion in the CLRP once project-level NEPA analysis is substantially complete. No MDOT projects met that criteria this year.

In **Virginia**, VDOT and the Virginia Department of Rail and Public Transportation are proposing to extend VRE commuter rail from the City of Manassas to the Gainesville/Haymarket area. VDOT is also proposing to extend the Crystal City Transitway north to the Pentagon City Metro Station, and to extend Express Lanes on I-395 from Turkeycock Run to the vicinity of Eads Street in Arlington County.

Additionally, changes have been submitted by VDOT for two major projects on I-66 that were amended into the CLRP in 2015, and for one project on VA Route 28 that has been in the CLRP since 2004. The I-66 Multimodal Improvements *Inside* the Capital Beltway project is being revised to alter the vehicle-occupancy requirements and hours of operation for the proposed HOT lanes, as well as the scope of future widening. The I-66 Corridor Improvements *Outside* the Capital Beltway project is also being revised to reflect the preferred alternative that was selected in 2015, after the approval of the 2015 CLRP amendment, specifying the locations of access points between the general purpose and high occupancy lanes. The CLRP includes a project to widen VA Route 28 between I-66 and VA Route 7 from 6 to 8 lanes. For this amendment, the project is being revised to convert one general purpose lane in each direction into HOV lanes between I-66 and the Dulles Toll Road. Additionally, one auxiliary lane will be added in each direction between I-66 and Westfields Blvd.

No new major additional capacity projects are proposed by the **Washington Metropolitan Area Transit Authority** at this time.

NEXT STEPS

The draft 2016 CLRP Amendment was released for a 30-day public comment period on Thursday, October 13, 2016, along with the draft Air Quality Conformity Analysis results, and the draft FY 2017-2022 TIP. Comments may be submitted:

- Online at www.mwcog.org/TPBcomment
- Via email at TPBcomment@mwcog.org
- By calling (202) 962-3262, TDD: (202) 962-3213
- Or in writing to The Transportation Planning Board
  777 North Capitol Street, NE, Suite 300
  Washington, DC 20002-4239

The public comment period ends on Saturday, November 12, 2016. The TPB will be briefed on the comments received and the responses from implementing agencies and then asked to approve the Air Quality Conformity Analysis, the 2016 CLRP Amendment, and the FY 2017-2022 TIP at the

meeting on November 16, 2016. All comments submitted will be made available for review online at www.mwcog.org/TPBcomment.

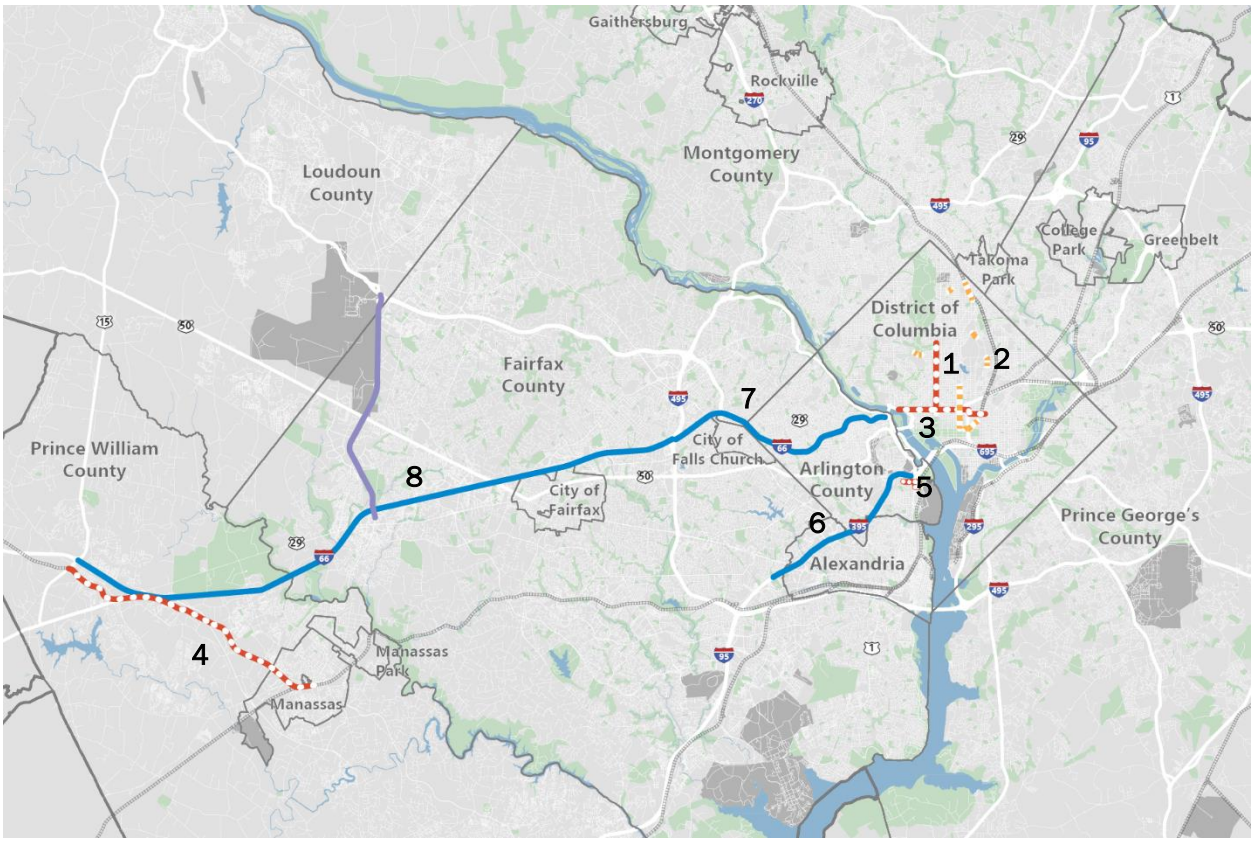
MATERIALS FOR PUBLIC COMMENT

Attached to this memo are the following materials that were released for public comment on October 13:

- CLRP Maps
  - New Major Projects and Significant Changes for the 2016 Amendment (page 5)
  - All Major Highway Projects (page 7)
  - All Major Transit Projects (page 9)
  - All Major HOT, HOV, and Toll Projects (page 11)
- Summary of RTPP Goals and CLRP project description form questions (page 13)
- Table 1: 2016 CLRP Amendment Project Submissions and the RTPP Goals (page 15)
- Table 2: 2016 CLRP Amendment Project Submissions and federal Planning Factors (page 16)
- Project Profiles for the following projects:
  - 16th Street Bus Priority from H Street NW to Arkansas Avenue NW (page 17)
  - DC Dedicated Bicycle Lane Network on Multiple Street Segments Throughout City (page 19)
  - DC Streetcar: Union Station to Georgetown, Primarily Along the K Street NW Corridor (page 21)
  - VRE Haymarket Extension from Manassas VRE Station to Gainesville/Haymarket (page 23)
  - Crystal City Transitway: Northern Extension from Crystal City Metro Station to Pentagon City Metro Station (page 25)
  - I-395 Express Lanes Inside the Capital Beltway (Turkeycock Run to the Vicinity of Eads Street) (page 27)
  - I-66 Multimodal Improvements Inside the Capital Beltway (page 29)
  - I-66 Corridor Improvements Outside the Capital Beltway (page 31)
  - VA Route 28 HOV and Widening (page 33)
- Complete CLRP Project Description Forms for each project listed above (page 35)

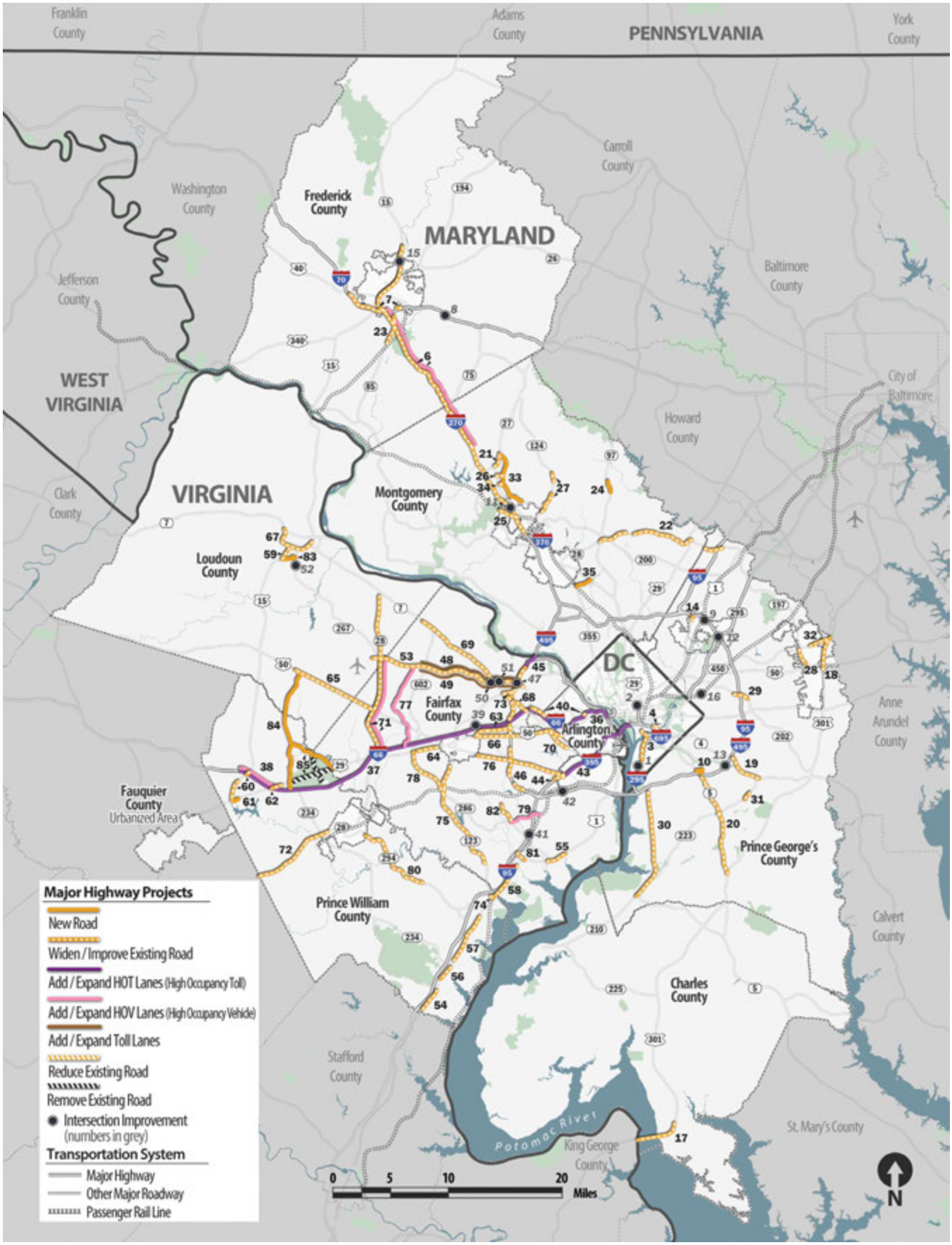
An interactive map of the proposed major new and changed projects can be found online at www.mwcog.org/clrp2016.

New Major Projects and Significant Changes for the 2016 CLRP Amendment



1. 16th Street Bus Priority from H Street NW to Arkansas Avenue NW
2. DC Dedicated Bicycle Lane Network on Multiple Street Segments Throughout City
3. DC Streetcar: Union Station to Georgetown, Primarily Along the K Street NW Corridor
4. VRE Haymarket Extension from Manassas VRE Station to Gainesville/Haymarket
5. Crystal City Transitway: Northern Extension from Crystal City Metro Station to Pentagon City Metro Station
6. I-395 Express Lanes Inside the Capital Beltway (Turkeycock Run to the Vicinity of Eads Street)
7. I-66 Multimodal Improvements Inside the Capital Beltway
8. I-66 Corridor Improvements Outside the Capital Beltway
9. VA Route 28 HOV and Widening

Major Highway Projects



MAJOR HIGHWAY PROJECTS

DISTRICT OF COLUMBIA

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)

MARYLAND

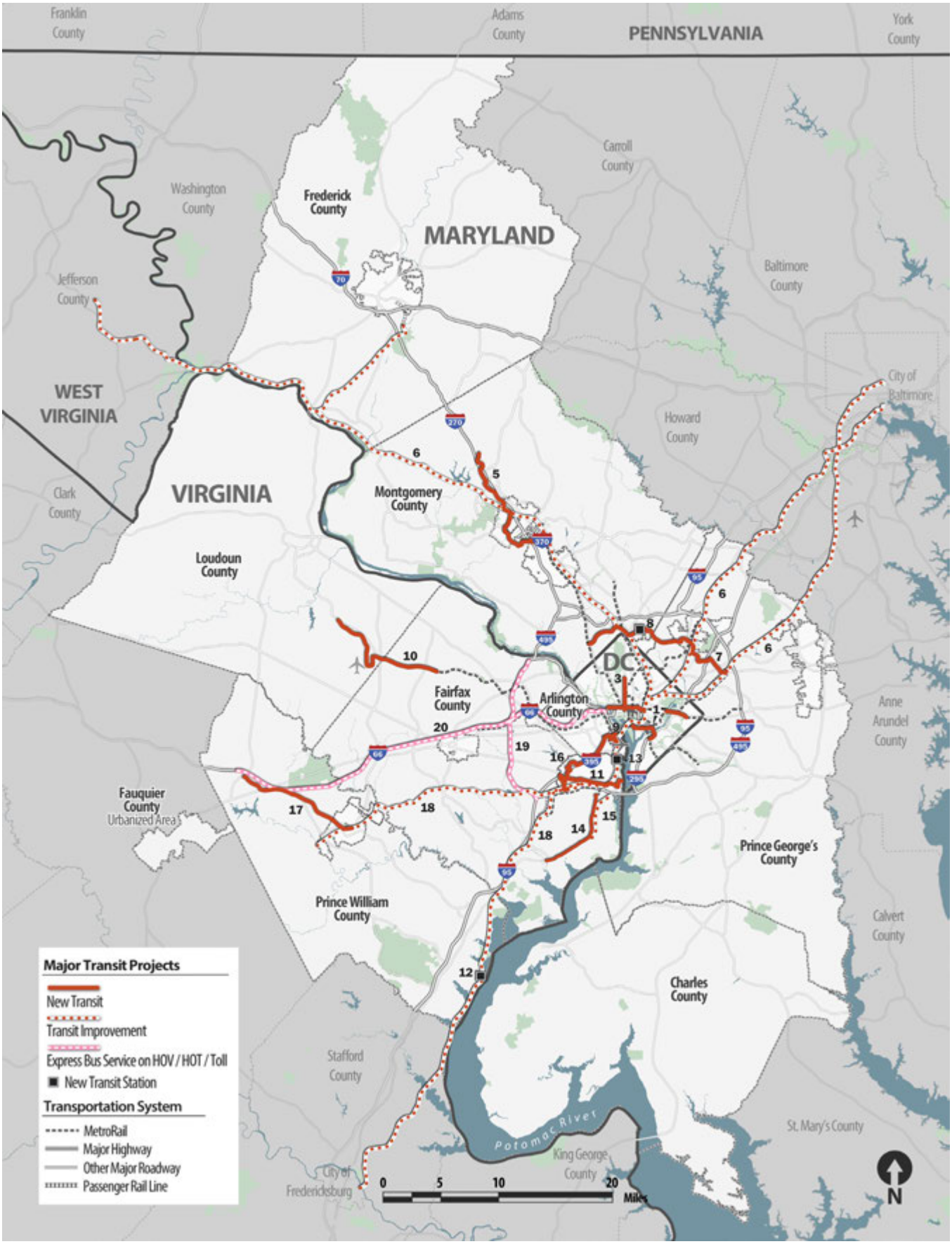
6. I-270/US-15 widen including HOV, 2030
7. I-70 - widen to 6 lanes, 2020
8. I-70 - interchange at Meadow Rd, 2020
9. I-95/I-495 - interchange at Greenbelt Metro Sta, 2020
10. I-95/I-495 - Branch Avenue Metro access improvements, construct 8 lanes, 2017
11. I-270 - interchange at Watkins Mill Rd Ext, 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

VIRGINIA

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

Projects listed in bold are new to the CLRP in the 2016 Amendment.

Major Transit Projects



MAJOR TRANSIT PROJECTS

DISTRICT OF COLUMBIA

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)

MARYLAND

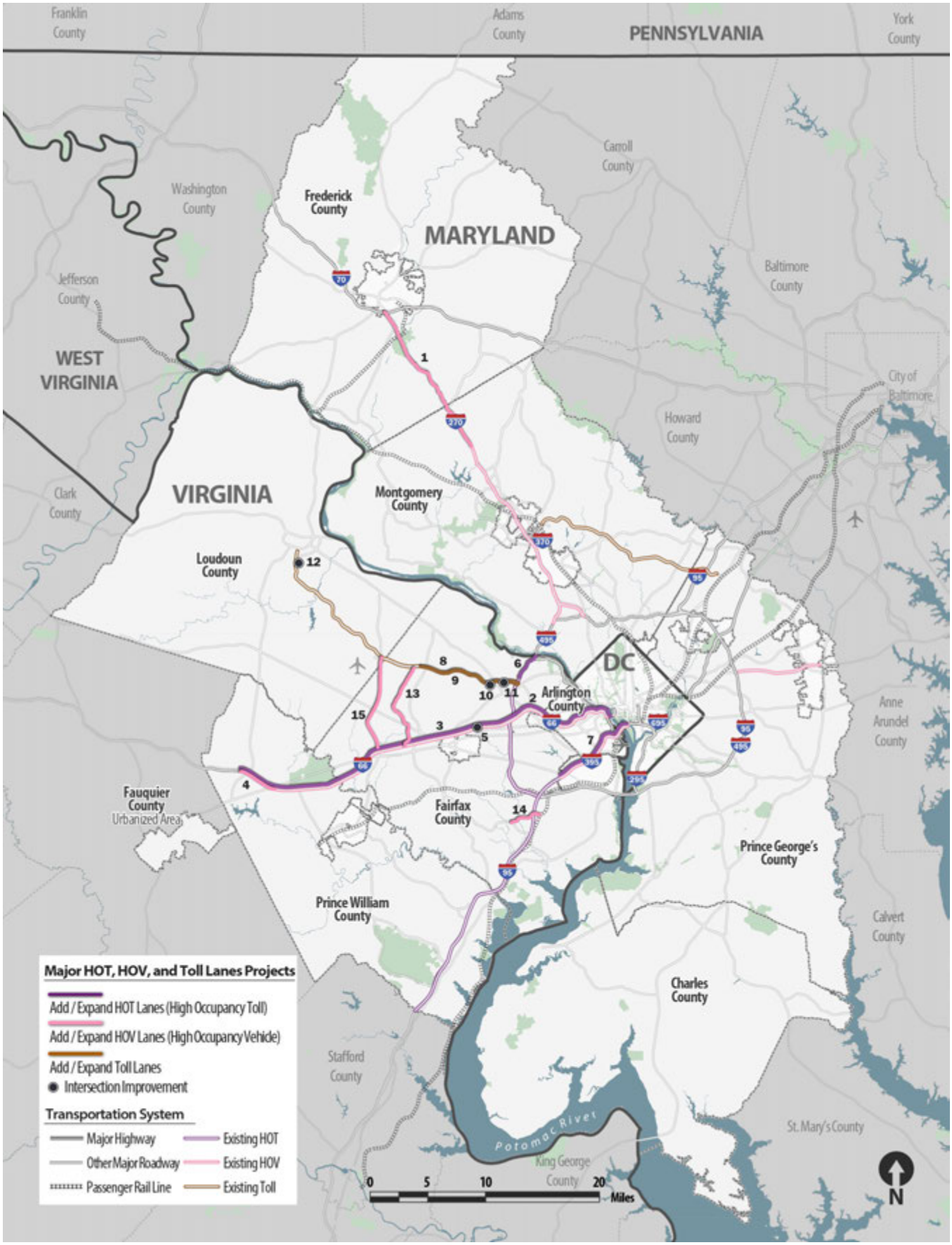
5. Corridor Cities Transitway BRT - from Shady Grove to COMSAT, 2020
6. MARC - Increase trip capacity and frequency along all commuter rail lines, 2029
7. Purple Line - Bethesda to New Carrollton, 2020
8. Silver Spring Transit Center, 2017

VIRGINIA

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

Projects listed in bold are new to the CLRP in the 2016 Amendment

Major HOT, HOV, and Toll Projects



MAJOR HOT, HOV, AND TOLL LANE PROJECTS

MARYLAND

1. I-270/US-15 widen including HOV, 2030

VIRGINIA

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 Sta, 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

Projects listed in bold are new to the CLRP in the 2016 Amendment

2016 CLRP AMENDMENT AND FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (transit)

9/14/2016

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
DDOT						
614	DCSTCARA	Construct	Anacostia Streetcar Extension	Howard Road Firth Sterling	Good Hope Road SE	2017
613	DCSTHST2	Construct	Benning Road Streetcar Extension	Oklahoma Avenue NE	45th Street/Benning Road Metro	2020
668	DCMALL	Implement	DC Circulator	National Mall Area Route		Complete
664	CATHEXT	Implement	DC Circulator Expansion	Union Station to Georgetown Route	Extension to National Cathedral	2017
793	WATEREXT	Implement	DC Circulator Expansion	Union Station to Navy Yard Route	Extension to Waterfront	2017
794	UHOWEXT	Implement	DC Circulator Expansion	Rosslyn to Dupont Circle Route	Extension to U St./Howard University	2017
616	DCSTCARA	Construct	DC Streetcar - Anacostia Initial Line (AIL)	Defense Blvd. and S. Capitol St. SE	Howard Rd. and Firth Sterling	2017
822		Study	H St. NW Peak Period Bus-Only Lanes	17th St. NW	New York Ave. NW	Not Coded
544	DCSTHST1	Construct	H Street/Benning Road Streetcar	3rd Street NE (near Union Station)	Oklahoma Avenue, NE	2016 ~~2015~~
823		Study	I St. NW Peak Period Bus Only Lanes	13th St. NW	Pennsylvania Ave. NW	Not Coded
~~811~~	~~KSTBUS~~	~~Reconstruct~~	~~K St. Transitway~~	~~Mt. Vernon Square/9th S. NW~~	~~Washington Circle/23rd St. NW~~	~~2020~~
612	DCSTMST	Construct	M Street SE/SW Streetcar	Good Hope Road SE	Maine Avenue SW	2020
610	DCSTGTWN	Construct	Union Station/Georgetown Streetcar	K Street/34th Street NW	3rd Street/H Street NE	~~2020~~ 2022
		Implement	16th St. Bus Priority Improvements	H St. NW	Arkansas Ave NW	2021
812	TIGER16TH	Implement	16th St. Bus Priority Improvements (TIGER GRANT)			2016
813	TIGERGA	Implement	Georgia Ave. Bus Priority Improvements (TIGER GRANT)			2016
814	TIGERWI	Implement	Wisconsin Ave. Bus Priority Improvements (TIGER GRANT)	Friendship Heights Metro Station	Naylor Road Metro Station	2016
815	TIGERTRK	Implement	Roosevelt Bridge to K St. Bus Priority Improvements (TIGER GRANT)			2016
816	TIGER14TH	Implement	14th St. Bus Priority Improvements (TIGER GRANT)			2016
550		Study	Long Bridge	Alexandria	L'Enfant	Not Coded
MDOT/MTA						
588		Implement	Brunswick - New Station			not coded

NOTE: Shaded areas represent changes from the 2015 CLRP.

2016 CLRP AMENDMENT AND FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (transit)

9/14/2016

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
617	MARCFRQ	Implement	Brunswick Line Service Improvements			2029
618	MARCFRQ	Implement	Camden Line Service Improvements			2029
481	CCTBRT	Construct	Corridor Cities BRT	Shady Grove	Comsat	2020
619	MARCFRQ	Implement	Penn Line Service Improvements			2029
479	PURPLE	Construct	Purple Line Transitway	Bethesda	New Carrollton	2020
480	SSTCTR	Construct	Silver Spring Transit Center	Phase II		2017
	TIGERADD	Implement	Addison Rd. Bus Improvements (TIGER GRANT)			2016
~~818~~	~~TIGERUS1~~	~~Implement~~	~~US 1 (MD) Bus Priority Improvements (TIGER GRANT)~~			~~2016~~
MDOT/SHA						
692		Study	MD 355 Bus Rapid Transit	MD 410	Redgrave Place	Not Coded
693		Study	MD 586 Bus Rapid Transit	MD 97	MD 355	Not Coded
~~741~~		~~Study~~	~~MD 97 Georgia Ave. Busway~~	~~MD 586~~	~~MD 108~~	~~Not Coded~~
~~486~~		~~Study~~	~~MD 97 Georgia Avenue Bus Rapid Transit~~	~~MD 586~~	~~MD 108~~	~~Not Coded~~
694		Study	US 29 /MD 384 Bus Rapid Transit	MD 410	MD 198	Not Coded
Montgomery County						
669		Study	Countywide BRT	various corrirors		Not Coded
483	MCT7	Construct	Olney Transit Center	adjacent to or north of MD 108		2015
485		Study	Veirs Mill Bus Rapid Transit	Rockville Metrorail Station	Wheaton Metrorail Station	Not Coded
487	TIGERVIER	Construct	Veirs Mill Road Bus Enhancement	Rockville	Wheaton	2020
WMATA						
514		Modify	Revised Metrorail Operating Plan			
VDOT						

NOTE: Shaded areas represent changes from the 2015 CLRP.

2016 CLRP AMENDMENT AND FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (transit)

9/14/2016

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
795	US1VABUS	Widen	US 1 (bus/right-turn lanes)	VA 235 North	SCL Alexandria (I-95 Capital Beltway)	2035
511	MWAYBRT	Construct	Crystal City/Potomac Yard Busway (2 lane- dedicated)	Vicinity of Glebe Road Extended (City/County Line)	Pentagon City Metro Station ~~Crystal City Metro Station~~	2016 ~~2015~~
861		Construct	Crystal City Transitway: Northern Extension - complete dedicated lanes	Crystal City Metro Station	Pentagon City Metro Station	2023
488	MWAYBRT	Construct	Potomac Yard Transit Bus Lanes (2 lanes)	Four Mile Run	Braddock Road	Complete
677		Study	US 1 Corridor Streetcar Conversion	Four Mile Run	Braddock Road	Not Coded
489	POTYDS	Construct	Metro Station (Proposed)	Potomac Yard		2021
493		Construct	Park-and-Ride Lot	Springfield CBD	vic. I-95 & Old Keene Mill Road	2015
670		Construct	Park-and-Ride Lot	Dulles Town Center	300 Spaces	2014
495		Construct	Park-and-Ride Lot	US 50 at Stone Ridge 150 spaces		2015
671		Construct	Park-and-Ride Lot	US 50 Dulles at East Gate	200 Spaces	2015
498		Construct	Park and Ride Lot	Brambleton 100 space expansion		2015
499		Construct	Park and Ride Lot	Arcola Center 300 spaces		2015
500		Construct	Park and Ride Lot	at EPG		2015
503	SILVER 2	Construct	Dulles Corridor Metrorail	Wiehle-Reston East Station	VA 772	~~2016~~ 2020
	VREGHX	Construct	VRE Gainesville-Haymarket Extension	Manassas VRE Station	Haymarket	2022
629	POTSHRS	Construct	VRE - Potomac Shores Commuter Rail Station	Potomac Shores	Prince William County	2017
817	VRESPOTS	Construct	VRE - Spotsylvania Station	extend VRE to Spotsylvania		Complete
504	VREFREQ	Implement	VRE Service Improvements (Reduce Headways)	Fredericksburg and Manassas lines		2020
506	TIGERVAN	Implement	West End Transitway (TIGER Grant)	Van Dorn Street Metro	Pentagon	2016 ~~2015~~
505	VANDBRT	Construct	West End Transitway (City Funded)	Van Dorn Street Metro	Pentagon	2019
508	ALEXBUS	Implement	DASH Service Expansion	citywide		2019
820	BELTHOT	Implement	Beltway HOT lanes transit service			2020
821	BELTHOT	Implement	Beltway HOT lanes transit service			2030
819	TIGERVA7	Implement	VA 7 Bus Priority Improvements (TIGER GRANT)	Alexandria	Tyson's Corner	2016

2016 CLRP AMENDMENT AND FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (transit)

9/14/2016

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
509	DUKEBUS	Construct	Duke Street Transitway	King Street Metro	Fairfax County Line	2024
672		Construct	Leesburg Park and Ride Lot (new location)	Crosstrails Blvd (approx)	300 Spaces	2018
673		Construct	Sterling Park and Ride Lot		200 Spaces	2014
674		Construct	One Loudoun Park and Ride Lot	VA 7 & Loudoun County Parkway	200 Spaces	2019
675		Study	Western Loudoun Park and Ride Lot		250 Spaces	Not Coded
797	I66HOTI	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Inside the beltway		2025
798	I66HOTI	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Inside the beltway		2040
799	I66HOTO	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Outside the beltway		~~2022~~ 2021
800	I66HOTO	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Outside the beltway		2040
801		Construct	I-66 Corridor Park and Ride lot	~~US 15 in~~ Haymarket		~~2022~~ 2021
802		Construct	I-66 Corridor Park and Ride lot	University Blvd. in Gainesville		~~2022~~ 2021
803		Construct	I-66 Corridor Park and Ride lot	Balls Ford Road in Manassas		~~2022~~ 2021
804		Expand	I-66 Corridor Park and Ride lot	Prince William Pkwy (Cushing Rd)		~~2022~~ 2040
~~805~~		~~Expand~~	~~I-66 Corridor Park and Ride lot~~	~~Stringfellow Road~~		~~2021~~
806		Expand	I-66 Corridor Park and Ride lot	Fairfax County Government Center/Monument Drive		~~2022~~ 2021
807	FFXBUS	Expand	Fairfax Connector Bus Service Expansion	Countywide		2021
	LOUDBUS	Update	Loudoun County Local Bus Service			2016
808	US1BRT	Construct	Bus Rapid Transit (BRT)	US 1 Richmond Highway	Huntington Metro to Hybla Valley to Ft. Belvoir to Woodbridge VRE	2030

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
DDOT											
539	DI10		Downgrade	Southeast Boulevard	11th Street SE	Pennsylvania Ave. SE Barney Circle	1	3	5	4	2015
600			Study	I 395 14th Street/Rochambeau Bridge	conversion to HOV/HOT						Not Coded
601			Study	I 395 Southeast/Southwest Freeway managed lanes (convert or construct HOV/HOT lanes)	Case Bridge	11th Street Bridge					Not Coded
602			Study	I 295 managed lanes (convert or construct HOV/HOT lanes)	11th Street Bridge	Maryland state line					Not Coded
605	DI9		Reconstruct	I 295 Interchange at Malcolm X Blvd.	Add above grade ramp connection from NB I-295 off ramp to new St. Elizabeth's Access Road						2014
603			Remove/Close	I 395 SB Exit Ramp	SB to the 400 block of 3rd St. NW				1	0	2014
604			Construct	F Street NW	2nd Street NW	3rd Street NW			0	2	2016 ~~2014~~
541	DP9A	AW011, AW024	Widen	South Capitol Street Corridor: Frederick Douglas Bridge	Independence Avenue (East)	Martin Luther King, Jr. Blvd.	2	2	5	6	2015
542	DP9C		Construct	South Capitol Street Intersection	at Potomac Avenue						2015
543	DP9D		Construct	Suitland Parkway interchange	at Martin Luther King, Jr. Boulevard to complete movements						2016
606	DP10		Construct	St. Elizabeth's Access Road (along West Campus Boundary)	Firth Sterling	Malcolm X			0	3	2014
584	DS3		Construct	Southern Ave. SE	Branch Ave. SE	Naylor Rd. SE			0	2	2018
639	DS5		Reduce Capacity	M Street NW - add bike lane	Connecticut Avenue NW	14th Street NW			4	3	2014
638	DS5A		Reduce Capacity	M Street NW - add bike lane	29th Street NW	Connecticut Avenue NW			5	4	2014
546	DP11		Widen	Wisconsin Ave. NW	Garfield Street NW	34th St. NW			4	4/6	2014
449	DP12	SR071A	Reduce Capacity	17th Street NE/SE	Benning Avenue NE	Potomac Avenue SE			2	1	2015
582			Study	H St. NW Peak Period Bus-Only Lanes	17th St. NW	New York Ave. NW			5	4	Not Coded
583			Study	I St. NW Peak Period Bus Only Lanes	13th St. NW	Pennsylvania Ave. NW					Not Coded
558		ED0C2A	Reduce Capacity	C Street/N. Carolina Avenue	Oklahoma Avenue	14th Street NE			5	3	2016
567	DP16		Reduce Capacity	East Capitol Street	40th Street	Southern Ave			6	4	2015
585	DS6		Reduce Capacity	Maryland Ave. NE	6th St. NE	15 St. NE			4	2	2015
608			Reconstruct	New Jersey Avenue NW 1-way to 2-way	H Street NW	N Street NW					2015
609			Reduce Capacity	South Capitol Street	Firth Sterling Ave.	Southern Ave Maryland state line			5	4	2015
663			Reduce Capacity	Adams Mill Rd. NW	Kenyon	Klingle			3	2	~~2015~~ 2016
637	DP19		Reduce Capacity	4th Street SW	Pennsylvania Avenue SW	Virginia Avenue SW			4	2	2014
636	DP20		Reduce Capacity	Reno Road NW	36th Street NW	Tilden Street NW			4	2	2015

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
700	DS7		Reduce Capacity	4th Street SW	M Street	P Street			4	2	Complete
701	DS8		Reduce Capacity	6th Street NE	Florida Avenue	K Street			2	1	~~2015~~ 2016
702	DS9		Reduce Capacity	7th Street NW	New York Avenue	N Street			4	2	~~2015~~ 2016
703	DS10		Reduce Capacity	12th Street NW	Pennsylvania Avenue	Massachusetts Avenue			4	3	Complete
704	DS11		Reduce Capacity	14th Street NW	Florida Avenue	Columbia Road			4	2	~~2015~~ 2016
705	DS12		Reduce Capacity	Brentwood Parkway NE	6th Street/Penn Street	9th Street			2 ~~4~~	1 ~~2~~	~~2015~~ 2016
717	DS13		Reduce Capacity	Florida Avenue NE	3rd Street	West Virginia Avenue			6	4	2015
710			Reduce Capacity	Florida Avenue NE	2nd Street	3rd Street			6	5	~~2015~~ 2017
707	NRS		Reduce Capacity	New Jersey Avenue NW	H Street	Louisiana Ave			4	2	~~2015~~ 2016
713	DS14		Reduce Capacity	Pennsylvania Avenue NW	18th Street	20th Street			5	4	~~2015~~ 2017
712	DS15		Reduce Capacity	Pennsylvania Avenue NW	17th Street	18th Street			6	4	~~2015~~ 2017
715	DS16		Reduce Capacity	Pennsylvania Avenue NW	26th Street	28th Street			5	4	~~2015~~ 2017
716	DS17		Reduce Capacity	Pennsylvania Avenue NW	28th Street	29th Street			4	2	~~2015~~ 2017
714	DS18		Reduce Capacity	Pennsylvania Avenue NW	20th Street	26th Street			6	4	~~2015~~ 2017
709	DS19		Reduce Capacity	Wheeler Road SE	Alabama Avenue	Southern Avenue			4	2	~~2015~~ 2016
837	DS20		Reduce Capacity - bike lanes	4th Street NE	Lincoln Rd. NE	Harewood Rd. NE			4	2	2016
829	DS21		Reduce Capacity - bike lanes	6th Street NW	Constitution Avenue	Massachusetts Avenue			6 peak- 4 offpeak	4 peak - 2 offpeak	2016
830	DS22		Reduce Capacity - bike lanes	6th Street NW	Massachusettes Avenue	Florida Ave NW			4	2	2016
832	in base		Reduce Capacity - bike lanes	Blair Road NW	Peabody St. NW	Aspen St. NW			3	2	2016
833	DP21		Reduce Capacity - bike lanes	Constitution Avenue	1st Street NW	Pennsylvania Avenue NW			6	4	2016
	DS23		Reduce Capacity - bike lanes	Harewood Road NW	Rock Creek Church Road NW	North Capitol Street			2	1	2016
834	DS24		Reduce Capacity - bike lanes	Klingle Road NW	Adams Mill Road NW	Porter Street NW			4	2	2016
835	DP22		Reduce Capacity - bike lanes	Louisana Avenue NW	Columbus Circle NE/ Mass Ave NE	Constitution Avenue NW			4	3	2016
836	DS25		Reduce Capacity - bike lanes	Piney Branch Road NW	Georgia Avenue NW	Underwood Street NE			4	2	2016
839	DP23		Reduce Capacity - Bus Priority	16th Street NW	Arkansas Avenue NW	Columbia Road NW			6	4	2021
840	DP24		Reduce Capacity - Bus Priority	16th Street NW	Columbia Road NW	W Street NW			5	4	2021
841	DP25		Reduce Capacity - Streetcar	H Street NE/NW	3rd Street NE	New Jersey Ave NW			6	4	2022

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
842	DS26		Reduce Capacity - Streetcar	New Jersey Avenue NW	H St NW	K Street NW			3 lanes 1 way	1 lane each 2-way	2022
844	DP26		Reduce Capacity - Streetcar	K Street NW	New Jersey Avenue NW	7th Street NW			3	2	2022
845	DP27		Reduce Capacity - Streetcar	K Street NW	9th Street NW	12th St NW			4	2	2022
846	DP28		Reduce Capacity - Streetcar	K Street NW	12th St NW	21St St NW			6	4	2022
847	DP29		Reduce Capacity - Streetcar	K Street NW	21st Street NW	25th Street NW			4	2	2022
848	DP30		Reduce Capacity - Streetcar	K Street NW	25th Street NW	29th Street NW			6/4	4	2022
849	DP31		Reduce Capacity - Streetcar	K Street NW	29th Street NW	Wisconsin Avenue NW			4	2	2022
MDOT/State Highway Administration											
Interstate											
126	MI2Q	MO839	Construct	I 270 Interchange	at Watkins Mill Road		1	1	8	8+2	2018
125	MI2SHOV MI2S	FR1921	Construct	I 270 /US 15	Shady Grove Metro Station	North of Biggs Ford Road	1	1		Varies	2030
202	NRS		Reconstruct	I 270	at MD 121		1	1	1	2	2016
697			Study	I 270	at Gude Drive		1	1			Not Coded
210	MI4		Widen	I 70	Mt. Phillip Road	West of I 270	1	1	4	6	2020
151	MI4a	FR5801	Reconstruct	I 70	at Meadow Road		1	1			2020
108	MI1P	PG3331	Construct	I-95/I-495	at Greenbelt Metro Station		1	1	8	8+2	2020
856			Study	I270	I-495	I 70					Not Coded
696			Study	I 495 ~~/I 270Y / I270~~	Virginia HOT Lanes (northern terminus) ~~Potomac River (American Legion Bridge)~~	I 270 ~~I 370~~					Not Coded
Primary											
139	MP10A	PG2531	Reconstruct	US 1	College Avenue	I-95/I-495 ~~Sunnyside Avenue~~	2	2	4	4	2030 ~~2020~~
370	MP9	CA4131	Widen	MD 2/4 Solomons Island Road	South of MD 765A	North of Stoakley Road	2	2	4	6	2035
645	NRS		Reconstruct	MD 4	MD 2	MD 235	2	2	2	2	2040
644	MP9B		Widen	MD 4	Thomas Johnson Bridge at Patuxent River		2	2	2	4	~~2040~~ 2027
127	MP2C	AT1981	Widen	MD 3 Robert Crain Highway	I595/US 50/US 301	Anne Arundel County Line	2	2	4	6	2030

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
355	NRS	PG9171	Construct	MD 4	at Westphalia Road		2	5	4	6	~~2020~~ 2035
393	NRS	PG6181	Construct	MD 4 Pennsylvania Avenue	at Suitland Parkway		5 ~~2~~	5	4	6	~~2019~~ 2022
212	MP3A	PG9171	Widen~~/Upgrade~~	MD 4 Pennsylvania Avenue	I-95/I-495	MD 223	5 ~~2~~	~~1~~ 5	4	6	2035
394	MI1K	PG4941	Construct	MD 5	I-95/I-495	Branch Ave. Metro Station	1	1	8	8	2017
440	NRS		Construct	MD 5	at Earnshaw/Burch Hill Roads		2	5	4	6	~~2025~~ 2030
205	MP4F	PG3916	Widen/Upgrade	MD 5 Branch Avenue	US 301 at T.B.	North of I95 /I 495	2	5	4	6	~~2025~~ 2030
354	NRS	PG1751	Construct	MD 5	at MD 373 and Brandywine Road		2	5	4	6	2017
441	NRS		Construct	MD 5	at Surratts Road		2	5	4	6	~~2025~~ 2030
358	MP15	FR5711	Construct	US 15 Catoctin Mountain Highway	at Monocacy Blvd.		2	2	6	6	2017
357	MP16		Construct	US 15 / US 340	Jefferson Tech Park		1	1	4	4	Completed
211	NRS	MO8911	Construct	US 29 Columbia Pike	at Musgrove/Fairland Road				6	6	2025
551			Construct	US 29 Columbia Pike	at Tech Road / Industrial Road		5	5	6	6	2030
552			Study	US 29 Columbia Pike	at Stewart Lane, Greencastle Road, & Blackburn Road		5	5	6	6	Not Coded
647	MP5e		Study	US 29 Columbia Pike	North of MD 650 New Hampshire Avenue	Howard County Line	2	5	6	6	Not Coded
111			Construct	MD 75 Relocated	South of MD 80		0	4	0	4	2020
858	FP2B		Widen	MD 85	English Muffin Way	Crestwood Boulevard	2	2	2/4	4	2025
391	FP2A	FR3881	Widen	MD 85 Buckeystown Pike	~~English Muffin Way~~ Crestwood Drive	~~north of Grove Road~~ Spectrum Drive	2	2	~~2/4~~ 4	4/6	2020
857	FP3		Construct/Widen	MD 180	600 ft north of I-70	Structure 10140	4	4	2	4	2022
387	MP14	PG6191	Reconstruct	MD 202	at Brightseat Road		2	2	6	6	2025
353	NRS	PG7001	Upgrade	MD 210	at Kerby Hill Road/Livingston Road		2	5	6	6	2019
124	MP6D	PG2211	Upgrade	MD 210 Indian Head Highway	I-95/495	MD 228	2	5	6	6	2030
110	MP8E	PG2881	Study	US 301	North of Mount Oak Road	I-595 / US 50	2	5	4/6	6+2	Not Coded
Secondary											
209	MS33		Widen	MD 27	MD 355	Snowden Farm Parkway	2	2	4	6	2020
206	MS2F	MO8861	Widen	MD 28 Norbeck Road /MD 198 Spencerville Road	MD 97	I 95	2	2	2/4	4/6	2025
137	MP12C	MO7461	Construct	MD 97 Brookeville Bypass	Gold Mine Road	North of Brookville	0	2	0	2	2018
392	NRS	MO852	Upgrade	MD 97 Georgia Avenue	at MD 28 Norbeck Road		2	2	6	6	2030
135	NRS	MO854	Upgrade	MD 97 Georgia Avenue	at Randolph Road		2	2	6	6	~~2016~~ 2017
115	MS32		Widen	MD 117 Clopper Road	I270	West of Game Preserve Road	2	2	2	4	2025
698			Study	MD 119	at Sam Eig Highway						Not Coded

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
665	MS34		Study	MD 121	I 270	West Old Baltimore Road	3	3	4	6	Not Coded
118	MS6B	MO632	Widen	MD 124 Woodfield Road	Midcounty Highway	South of Airpark Drive	3	3	2	6	2020
1	MS6D	MO6323	Widen	MD 124 Woodfield Road	North of Fieldcrest Road	Warfield Road	3	3	2	6	2020
356	MS35	PG6911	Widen	MD 197 Collington Road	MD 450 ~~Relocated~~	Kenhill Drive	2	2	2	4/5	2025
648		FR5491	Study	MD 180 /MD 351	Greenfield Drive	Corporate Drive					Not Coded
359	MS10b		Study	US 1 / MD 201	I 95/495 Capital Beltway	North of Muirkirk	2	2	4	6	Not Coded
516	same as MC15B	MO3441	Construct	Montrose Parkway	Randolph Road	East of Parklawn Drive	0	2	0	4	2020
175	MS18D	PG6541	Widen	MD 450 Annapolis Road	Stonybrook Drive	west of MD 3	2	2	2	4	2020
152	BRAC nrs	MO5931	Reconstruct	BRAC Intersection Improvements near the National Naval Medical Center, Bethesda			2	2			2020
MDOT/Maryland Transportation Authority											
Primary											
384	MP18		Construct	US 301 Gov. Nice Bridge	Charles County, MD	King George County, VA	2	2	2	4	2030
Frederick County											
Secondary											
651	FS2a		Widen	Monocacy Boulevard	Schifferstadt Boulevard	Gas House Pike	3	3	2	4	2017
691		F3	Study	Spectrum Drive	Technology Way	MD 85 Buckeystown Pike	4	4	0	2	Not Coded
Montgomery County											
Secondary											
170	MC11C		Construct	A 305 Snowden Farm Parkway	MD 355	MD 27 Stringtown Road	0	3	0	4	2015
208	NRS		Construct	Burtonsville Access Road	MD 198 Spencerville Road	School Access Road in Burtonsville	0	4	0	2	2025
597	NRS		Construct	Century Boulevard	Current terminus south of Oxbridge Tract	Intersection with future Dorsey Mill Road	0	3	0	4	2020
198	NRS		Construct	Chapman Avenue	Randolph Road	Old Georgetown Road			0	2	2016
199	MC43		Construct	Dorsey Mill Road Bridge over I-270	Century Blvd.	Milestone Center Dr.	0	3	0	4	2020
112	MC7A		Widen	Goshen Road South	South of Girard Street	1000 feet north of Warfield Road	3	3	2	4	2025
172	MC11A		Construct	M 83 MidCounty Highway Extended	MD 27 Ridge Road	Middlebrook Road	0	2	0	4-6	2025
204	MC11D	509337-1	Construct	M 83 Midcounty Highway Extended	Middlebrook Road	Montgomery Village Avenue	0	2	0	4-6	2025
113	MC12F		Widen	MD 118 Germantown Road Extended	MD 355	M 83 at Watkins Mill Road	2	2	3	4	2020
161	MC14G		Widen	Middlebrook Road Ext.	MD 355	M 83	2	2	3	4	2025
214	MC15B		Construct	Montrose Parkway East	Eastern Limit of MD 355/Montrose Interchange	Veirs Mill Road/Parkland Road Intersection	0	2	0	4	2022

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
428			Construct	Platt Ridge Drive Extended	Its terminus at Jones Bridge Road	Montrose Driveway			0	2	2016
119	MC34		Widen	Snouffer School Road	MD 124 Woodfield Road	Centerway Road	3	3	2	4	2016
Urban											
421		501204-1	Construct	Executive Blvd Extended East	MD 355 Rockville Pike	New Nebel Street Extended			0	4	2020
422			Construct	Executive Blvd Extended West	MD 187 Old Georgetown Road	Marinelli Road			0	4	2020
424		501116-6	Construct	Hoya Street	Executive Blvd	Montrose Parkway			0	4	2020
425		501116-1	Construct	Main Street / Market Street	MD 187 Old Georgetown Road	MD 355 Rockville Pike			0	2	2020
423		501116-5	Construct	MD 187 Old Georgetown Road	MD 187 Old Georgetown Road	Nicholson Lane/Tilden Lane			0	6	2020
Prince George's County											
Secondary											
361	PGS3a		Widen	Addison Road	Walker Mill Road	MD 214 Central Avenue	3	3	2	4	~~2019~~ 2023
362	NRS		Reconstruct	Addison Road	Sherieff Road	MD 704	4	4	2	2	~~2014~~ 2025
386	PGS5		Construct	Allentown Road Relocated	MD 210 Indian Head Highway	Brinkley Road		3		4	2025
365	PGS73	PGS73	Widen	Ardwick-Ardmore Road	MD 704	91st Ave.	4	4	2	4	~~2015~~ 2025
388	PGS9a		Widen	Bowie Race Track Road	MD 450 Annapolis Road	Old Chapel Road	4	4	2	4	~~2015~~ 2025
389	PGS9b		Widen	Bowie Race Track Road	MD 197 Laurel-Bowie Road	Old Chapel Road	4	4	2	4	~~2015~~ 2025
390	PGS10		Widen	Brandywine Road	Piscataway Road (north of)	Thrift Road	4	4	2	4	2020
418	PGS12		Widen	Brinkley Road	MD 414 St. Barnabas Road	MD 337 Allentown Road	3	3	4	6	2020
134	PGS13		Construct	Brooks Drive Extended	Marlboro Pike	Rollins Avenue	0	3	0	4	2020
136	PGS14		Widen	Cabin Branch Drive	Columbia Park Road	Sheriff Road (north of)	4	4	2	4	Complete
140	PGS16a		Construct	Campus Way North	Lake Arbor Way	south of Lottsford Road	0	4	0	4	2023
138	PGS16b		Construct	Campus Way North Extended	south of Lottsford Road	Evarts Drive	0	4	0	4	2020
141	PGS17		Widen	Cherry Hill Road	Powder Mill Road	Selman Road	3	3	2	4	2019
142	PGS18		Widen	Church Road	Woodmore Road	Central Ave. (MD 214)	4	4	2	4	~~2011~~ 2021
144	PGS20b		Widen	Columbia Park Road	US 50	Cabin Branch Road	4	4	2	4	2020
143	PGS20a		Widen	Columbia Park Road	Cabin Branch Road	Columbia Terrace	4	4	2	4	2020
145	PGS21a		Widen	Contee Road	US 1	MD 201 Virginia Manor Road	4	4	2	4	~~2016~~ 2018
146	PGS22		Widen	Dangerfield Road	Cheltenham Avenue	MD 223 Woodyard Road	4	4	2	4	2020
147	PGS24b		Widen	Dower House Road	Foxley Road	MD 4 Pennsylvania Avenue	4	4	2	6	~~2015~~ 2025
155	PGS24a		Widen	Dower House Road	MD 223 Woodyard Road	Foxley Road	4	4	2	4	2025
156	PGS25		Widen	Fisher Road	Brinkley Road	Holton Lane	4	4	2	4	2025
157	PGS26		Construct	Forbes Boulevard Extended	south of Amtrak	MD 193 Greenbelt Road	0	4	0	4	2020
158	PGS27		Widen	Forestville Road	MD 337 Allentown Road	MD 4 Pennsylvania Avenue	4	4	2	2	~~2014~~ 2021
159	PGS29		Widen	Fort Washington Road	Riverview Road	MD 210 Indian Head Highway	4	4	2	4	2025
160	PGS30b		Widen	Good Luck Road	Cipriano Road	MD 193 Greenbelt Road	4	4	2	4	2025

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
162	PGS30a		Widen	Good Luck Road	MD 201 Kenliworth Avenue (east of)	Cipriano Road	4	4	2	4	2025
415	NRS4		Widen	Governor Bridge Road	US 301	Anne Arundel County	4	4	2	4	2020
164	PGS34a		Widen	Hill Road	MD 214 Central Avenue	MD 704 ML King Jr Highway	4	4	2	4	~~2016~~ 2018
163	PGS34b		Construct	Hill Road	MD 704 ML King Jr Highway	Sheriff Road	0	4	0	2	~~2015~~ 2025
416	PGS88		Construct	Iverson Street Extended	Wheeler Road	19th Avenue	0	4	0	4	2018
666	PGS35		Widen	Karen Boulevard	Walker Mill Road	MD 214 Central Avenue	4	4	2	4	2020
165	PGS38b		Widen	Livingston Road	Piscataway Creek	Farmington Road	4	4	2	4	2020
417	PGS38a		Widen	Livingston Road	MD 210 Indian Head Highway at Eastover	Kerby Hill Rd.	4	3	2	4	~~2015~~ 2025
213	PGS40a		Widen	Lottsford Road	Archer Lane	MD 193 Enterprise Road	3	3	2	4	~~2012~~ 2021
166	PGS39b		Widen	Lottsford Vista Road	MD 704 ML King Jr Highway	Ardwick-Ardmore Road/Relocated	4	4	2	4	2020
360	PGP4a		Construct	MD 193 Greenbelt Road	Baltimore-Washington Parkway (ramp to)		0	5	0	4	2025
167	PGS42		Widen	MD 223 Woodyard Road	Rosaryville Road	Dower House Road	2	2	2	4	2020
2	PGS42C		Widen	MD 223 Woodyard Road Relocated	Piscataway Creek/Floral Park Road	MD 4 /Livingston Road	3	3	2	4	2017
169	PGS44b		Widen	Metzerott Road	Adelphi Road	MD 193 University Boulevard	4	4	2	4	2020
168	PGS44a		Widen	Metzerott Road	MD 650 New Hampshire Avenue	Adelphi Road	4	4	2	4	2020
667	PGS45a		Widen	Mitchellville Road	Atlantis/Northview Drive	Mount Oak Road	4	4	4	6	Complete
171	PGS46		Widen	Murkirk Road	US 1 Baltimore Avenue (west of)	Odell Road	4	4	2	4	2020
173	PGS47		Widen	Oak Grove and Leeland Roads	MD 193 Watkins Park Road	US 301 Robert Crain Highway	4	4	2	4	2020
174	PGS48		Widen	Old Alexandria Ferry Road	MD 223 Woodyard Road	MD 5 Branch Avenue	4	4	2	4	~~2015~~ 2025
192	PGS80		Construct	Old Baltimore Pike Extended	Muirkirk Road	Contee Road	0	4	0	2	2020
649	PGS50		Widen	Old Branch Avenue	MD 223 Piscataway Road (north of)	MD 337 Allentown Road	4	4	2	4	2020
395	PGS90		Construct	Old Fort Road Extended	MD 223 Piscataway Road	Old Fort Road	4	4	0	4	2020
369	PGS51a		Widen	Old Gunpowder Road	Powder Mill Road	Greencastle Road	3	3	2	4	2018
363			Reconstruct	Oxon Hill Road	National Harbor Ent.	Fort Foote North	4	4	2	2	Complete
364	PGS52		Reconstruct	Oxon Hill Road	Fort Foote Road North	MD 210 @ Livingston Sq.Shopping Center	4	4	2	2	~~2015~~ 2025
193	PGS81		Construct	Presidential Parkway	Suitland Parkway	Melwood Road	0	3	0	6	2025
150	PGS54		Reconstruct	Rhode Island Avenue	MD 193	US Route 1	4	4	2	2	~~2016~~ 2025
176	PGS56a		Widen	Ritchie Road/Forestville Road	Alberta Drive	MD 4 Pennsylvania Avenue	3	3	2	4	2020
153	PGS55b		Widen	Ritchie-Marlboro Road	White House Road	Old Marlboro Pike	2	2	2	4	2020
177	PGS57		Widen	Rollins Avenue	MD 214 Central Avenue	Walker Mill Road	4	4	2	4	2020
178	PGS58		Widen	Rosaryville Road	US 301	MD 223 Woodyard Road	3	3	2	4	2020
179	PGS60B		Widen	Spine Road	MD 5 Branch Avenue / US 301	MD 381 Brandywine Road	3	3	2	4	~~2016~~ 2025
109	PGS61		Widen	Springfield Road	Lanham-Severn Road	Good Luck Road	4	4	2	4	2020
194	PGS82		Construct	St. Joseph's Drive	MD 202	Ardwick-Ardmore Road	0	4	0	4	Complete
122	PGP2		Construct	Suitland Parkway Interchange at	Rena/Forestville Roads		5	5			2025
180	PGS62a		Widen	Suitland Road	MD 337 Allentown Road	Suitland Parkway	3	3	2	4	2018
123	PGS62b		Widen	Suitland Road	Suitland Parkway	MD 458 Silver Hill Road	3	3	2	4	2018

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
181	PGS63		Widen	Sunnyside Avenue	US 1	MD 201 Kenilworth Avenue	4	4	2	4	2020
182	PGS64		Widen	Surratts Road	Beverly Ave.	Brandywine Road	4	4	2	4	~~2015~~ 2025
183	PGS65		Widen	Temple Hill Road	MD 223 Piscataway Road	MD 414 St. Barnabas Road	3	3	2	4	2020
185	PGP5a		Construct	US 50 Columbia Park Road Ramp	wb ramp to Columbia Park Rd						2025
187	PGS67a		Widen	Van Dusen Road	Contee Road	MD 198 Sandy Springs Road	3	3	2	4	2020
186	PGS67b		Construct	Van Dusen Road Interchange at	Contee Road						2025
188	PGS68		Widen	Virginia Manor Road	Muirkirk Road	Old Gunpowder Road	4	4	2	4	2014
429	PGS69a		Widen	Walker Mill Road	Silver Hill Road	I 95	3	3	2	4	2020
154	PGS91		Widen	Westphalia Road	MD 4 Pennsylvania Avenue	Ritchie-Marlboro Road	2	2	2	4	2020
189	PGS70		Widen	Wheeler Road	DC Limits	St. Barnabas Road	3	3	2	4	2018
437	PGS71		Widen	White House Road	Ritchie-Marlboro Road	MD 202 Largo-Landover Road	3	3	2	6	2020
190	PGS72		Widen	Whitfield Chapel Road	MD 450 Annapolis Road	Ardwick-Ardmore Road	4	4	2	4	2020
436	PGS40b		Construct	Woodmore Road	MD 193 Enterprise Road	Church Road	3	3	2	4	~~2015~~ 2025
					Anne Arundel County						
	AA1d		Widen	I-97	US 50/301	MD 32/3	1	1	4	6	2025
	AA15a		Widen	I-295	I-195	MD 100	1	1	4	6	~~2015~~ 2030
	AA15c		Widen	I-295	I-695	I-195	1	1	4	6	2015
	AA15b		Construct	I-295 (New Interchange)	Hanover Road						2015
	AA4e		Widen	MD 3	MD 32	St. Stephen's Church Rd.	2	2	4	6	2025
	AA6e		Widen	MD 100	Howard Co. Line	I-97		5/1	4	6	~~2025~~ 2035
	AA8b		Widen	MD 175	MD 170	BW Parkway		2	4	6	~~2015~~ 2025
	AA30		Widen	MD 198	MD 32	BW Parkway	2	2	2	4	~~2025~~ 2030
	AA34a		Widen	MD 713	MD 175	Arundel Mills Boulevard		2	2	4	~~2025~~ 2040
	AA34b		Widen	MD 713	Arundel Mills Boulevard	MD 176		2	4	6	~~2025~~ 2040
					Carroll County						
	CA1B		Widen	MD 140	Sullivan Road	Market St.		1	4/6	8	~~2025~~ 2035
	CA1C		reconstruct	MD 140 (w/ intchg @ MD ~~191~~)	Baltimore County Line	Kays Mill Rd.			4	4	~~2020~~ 2035
	CA2a		Widen	MD 26	MD 32	Reservoir			~~2~~ 4	~~4~~ 6	~~2015~~ 2025
	study		Widen	MD 32	MD 26	Howard County Line		2	2	4	not coded ~~2030~~
	CA5		Widen	MD 97	MD 140	~~Pleasant Valley Rd~~ Bachmans Valley Rd.		2	2	4	~~2020~~ 2035
					Howard County						
	HW1b		Widen	I-70	US 29	US 40	1	1	4	~~8~~ 6	2025
	HW20		Widen	US 1	MD 100	~~PG/ Howard Line~~ Montevido Rd.			4	6	~~2025~~ 2030
	HW10b		Widen	US 29 NB	Seneca Dr.	Middle Patuxent River		5	4	6	~~2015~~ 2035
	HW3c		Widen	MD 32	Cedar Lane	Anne Arundel County Line		1	4/6	8	2025
	HW3B		Widen	MD 32	~~MD 99~~ MD 108	~~Carroll County Line~~ I-70		2	2	4	~~2025~~ 2035

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
	HW3e		construct/ reconstruct	MD 32 (interchanges)	@ I-70/ @ MD 144 @ Linden Church Rd/Dayton Shop @Rosemary Lane						~~2014~~ 2030
	HW6c		Widen	MD 108	~~Woodland Rd.~~ Trotter Rd.	~~1200' w. of Centennial Ln.~~ Guilford Rd.	2	2	2	4	~~2014~~ 2030
	HW8b		Widen	MD 216	High School Access Rd.	Maple Lawn Blvd.		3	2	4	2015
	HW14c		Widen	Snowden River Parkway	~~MD 100~~ Oakland Mills Road	Broken Land Parkway		3	4	6	~~2020~~ 2022
	nrs		Widen	Guilford Rd.	US 1	Dorsey Run Road			2	4	2017
Calvert-St. Mary's MPO											
644	MP9B	C-SMMPO	Construct	Thomas Johnson Bridge replacement	over the Patuxent River		2	2	2	4	~~2040~~ 2027
	MP9C	C-SMMPO	Widen	MD 4 (in St. Mary's County)	Thomas Johnson Bridge	MD 235	2	2	2	4	2023
	nrs	C-SMMPO	Construct	MD 4/ MD 235 Interchange	in Lexington Park		2	2	--	--	2028
	MP9D	C-SMMPO	Widen	MD 4 (in Calvert County)	Thomas Johnson Bridge	Patuxent Point Parkway	2	2	2	4	2031
VDOT											
Federal Lands											
433	FED3a		Construct	Manassas Battlefield Bypass	US 29 West of Centreville	East of Gainesville, via 234		1		4	2035
243	VP1A	VP1A	Widen	US 1 Jefferson Davis Highway	Telegraph Road	VA 235 South	2	2	4	6	2016
434	FED3b		Remove/Close	US 29 Lee Highway	Pageland Lane	Bridge over Bull Run	2	2	2/4	0	2035
435	FED3c		Remove/Close	VA 234 Sudley Road	Southern Park Boundary	Sudley Springs (north of park) ~~Northern Park Boundary~~			2	0	2030
652	FED2	77404	Widen	Old Mill Rd. (future Mulligan Rd.)	US 1	VA 611 Telegraph Road	4	4		4	Complete
Interstate											
426 268	VI1w	93577 100566	Widen	I 66 HOV-2 and SOV	US 29 0.8 miles east of	US 15 (1.2 miles west of) (includes interchange reconstruction)	1	1	4	8	2016
399	VI1AJ	81009	Construct	I 66 Vienna Metro Station bus ramp (duplicate project with ConID 759, below)	Transit Ramps- from EB & to WB	Saintsbury Dr.	1	1	0	2	~~2014~~ 2021
47	VI1AH		Widen	I 66 EB Auxiliary Lanes	Cedar Lane	Gallows Road (west of)	1	1	3+1	3+1+1	2030
48	VI1AI		Widen	I 66 WB Auxiliary Lanes	Gallows Road (west of)	Cedar Lane	1	1	3+1	3+1+1	2030
271	VI1AF	78828	Reconstruct	I 66 WB Operational/Spot Improvements	Westmoreland Dr. / Washington Blvd Exit	Haycock Rd /Dulles Access Highway	1	1	3	4	~~2015~~ 2020
350	VI1AG	78827	Reconstruct	I 66 WB Operational/Spot Improvements	Lee Highway/Spout Run On-Ramp	Glebe Road Off-Ramp	1	1	2	3	2020

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
718	VI1Y	105500	Widen / Revise Operations	I-66	I-495	US 50	1	1	3 general purpose in each direction + 1 HOV in peak direction during peak period	3 general purpose + 1 Auxiliary + 2 HOT each direction	2021 ~~2022~~
851	VI1Z	105500	Widen / Revise Operations	I-66	US 50	US 29 Centreville ~~US 15~~	1	1	4 general purpose in each direction off-peak, 3 general purpose + 1 HOV in peak direction during peak period	3 general purpose + 1 Auxiliary + 2 HOT in each direction (2 Aux per direction btwn VA 286 & VA 28 only)	2021 ~~2022~~
852	VI1ZA	105500	Widen / Revise Operations	I-66	US 29 Centreville	University Boulevard Ramps (new interchange for HOT only)	1	1	4 general purpose in each direction off-peak, 3 general purpose + 1 HOV in peak direction during peak period	3 general purpose + 2 HOT in each direction	2021 ~~2022~~

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
853	VI1ZB	105500	Widen / Revise Operations	I-66	University Boulevard Ramps (new interchange for HOT only)	US 15 ***(1.2 miles west of)***	1	1	4 general purpose in each direction off-peak, 3 general purpose + 1 HOV in peak direction during peak period	3 general purpose+ 2 HOT in each direction (+1 Auxiliary each direction between US 29 and VA 234 Bypass only)	2040 ~~2022~~
740	VI1X	97586	Revise Operations	I-66	I-495	US 29 near Rosslyn	1	1	HOV 2 in peak direction during peak period	HOT 2 in *peak direction* during peak period	2017
862	VI1X1		Revise Operations	I-66	I-495	US 29 near Rosslyn	1	1	HOT 2 in peak direction during peak period	HOT 3 in *peak direction* during peak period	2021
863	VI1X2		Revise Operations	I-66	I-495	US 29 near Rosslyn	1	1	HOT 3 in peak direction during peak period	HOT 3 in *both directions* during peak period	2040
~~787~~	~~VI1X~~		~~Construct/Widen~~	~~I 66 Eastbound~~	~~Virginia Lane Overpass~~	~~VA 267 DTR~~	~~1~~	~~1~~	~~2~~	~~3~~	~~2040~~
788	VI1XB		Construct/Widen	I 66 Eastbound	VA 267 DTR	Washington Blvd. Off-Ramp	1	1	3	4	2020 ~~2040~~
789	VI1XC		Construct/Widen	I 66 Eastbound	Washington Blvd. Off-Ramp	North Fairfax Drive	1	1	2	3	2020 ~~2040~~
786	VI1XD		Construct/Widen	I 66 Westbound	Sycamore Street	Washington Blvd. On-Ramp	1	1	2	3	2040
~~747~~	~~VI1XE~~		~~Construct/Widen~~	~~I 66 Westbound~~	~~VA 267 DTR~~	~~I 495 Beltway~~	~~1~~	~~1~~	~~2~~	~~3~~	~~2040~~
752	I66R31 I66R32 I66R34	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Interchange Ramps	EB Expr to SB GP NB GP to WB Expr SB Expr to WB Expr	I-495 Interchange (Capital Beltway GP and Express Lanes)	0	1	0	1	2021 ~~2022~~

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
753	I66R37	Prfd Alt ~~B~~	Construct	I-66 General Purpose Lanes Interchange Ramp	NB Expr to WB GP (modification of existing loop ramp)	I-495 Interchange (Capital Beltway GP and Express Lanes)	0	1	0	1	2021 ~~2022~~
754		Prfd Alt ~~B~~	Relocate / Reconstruct	I-66 Interchange	Dual-lane loop ramp from NB I-495 GP to I-66 GP relocated to dual-lane flyover & existing ramp modified to NB I-495 GP to I-66 WB HOT	@ I-495	1	1	2	2	2021 ~~2022~~
755		Prfd Alt ~~B~~	Reconstruct	I-66 Interchange	EB GP to SB GP WB GP to SB GP WB GP to SB Expr NB GP to EB GP SB GP to WB GP	@ I-495	1	1	—	—	2021 ~~2022~~
756	I66R29	Prfd Alt ~~B~~	Construct	I-66 flyover ramp	EB general purpose to EB express lanes	.5 mile east of VA 243	0	1	0	1	2021 ~~2022~~
757	NRS	Prfd Alt ~~A~~	Reconstruct	I-66 Interchange	Cloverleaf interchange converted to diverging diamond interchange	@ Nutley Street (VA 243)	1	1	—	—	2021 ~~2022~~
~~758~~		~~Alt B~~	~~Reconstruct~~	~~I-66 Interchange~~	~~Reconfigured interchange to replace EB to NB, NB to WB, SB to EB loop ramps with flyovers / direct ramps~~	~~@ Nutley Street (VA 243)~~	~~1~~	~~1~~	~~—~~	~~—~~	~~2022~~
759	I66R27 I66R28	Prfd Alt ~~A~~	Construct	I-66 Express Lanes Interchange Ramps (duplicate project with ConID 399, above)	EB off-ramp, WB on-ramp to/from I-66 Express lanes BUS /HOV-3/HOT ONLY	@ Vaden Drive / Vienna Metro Station	1	1		Bus / HOV-3 / HOT from proposed Express Lanes	2021 ~~2022~~
	I66R43	Prfd Alt	Remove	I-66 ramp	remove existing EB on-ramp from Saintsbury Dr. at Vaden Dr.						2021
~~760~~	~~I66R27 I66R28~~	~~Alt B~~	~~Revise Operations~~	~~I-66 Express Lanes Interchange Ramps~~	~~EB off-ramp, WB on-ramp to/from I-66 Express lanes – BUS ONLY~~	~~@ Vaden Drive / Vienna Metro Station~~	~~1~~	~~1~~	~~Bus Only Operations from existing HOV Lanes~~	~~Bus Only Operations from proposed Express Lanes~~	~~2022~~
762	VI1YA	Prfd Alt ~~B~~	Reconstruct	I-66 Interchange	Reconfigured interchange to eliminate C-D roads & ~~replace~~modify EB to NB loop ramp ~~with flyover~~& WB to SB flyover	@ Chain Bridge Road (VA 123)	1	1	—	—	2021 ~~2022~~
763	I66R25 I66R26	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Interchange Ramps	EB on-ramp, WB off-ramp to/from I-66 Express lanes	@ Chain Bridge Road (VA 123)	0	1	0	1	2021 ~~2022~~

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
765	I66R23 I66R24	Prfd Alt ~~A~~	Construct	I-66 Express Lanes Interchange Ramps	EB on-ramp, WB off-ramp to/from I-66 Express lanes	@ Lee Jackson Mem Highway (US 50)	0	1	0	1	2021 ~~2022~~
766	NRS	Prfd Alt ~~B~~	Reconstruct	I-66 Interchange	Reconfigure interchange to replace NWB to WB loop ramp with flyover	@ Lee Jackson Mem Highway (US 50)	1	1	—	—	2021 ~~2022~~
767	I66R19A I66R20A I66R21A I66R22A	Prfd Alt for Ulitmate Project ~~Alt A~~	Relocate / Reconstruct ~~/ Revise Operations~~	I-66 Interchange	Reconfigure interchange with Express lanes ramps shifted to the north of I-66; ~~Conversion of existing HOV ramps to HOT~~; Construct new EB off-ramp, WB on-ramp to/from I-66 Express lanes	@ Monument Drive (US 50)	1	1	Bus / HOV 2 Reversible by time of day	Bus / HOV-3 / HOT Movements in both directions 24 hrs/day	2040 ~~2022~~
768	I66R19 I66R20 I66R21 I66R22	Prfd Alt - Phase 1 ~~Alt B~~	~~Relocate /~~ Reconstruct / Revise Operations / Construct	I-66 Interchange	Conversion of existing HOV ramps to HOT; Construct new EB off-ramp, WB on-ramp to/from I-66 Express lanes	@ Monument Drive (US 50)	1	1	Bus / HOV 2 Reversible by time of day	Bus / HOV-3 / HOT Movements in both directions 24 hrs/day	2021 ~~2022~~
769	I66R17 I66R18	Prfd Alt - Phase 1 ~~Alt A~~	Revise Operations / Construct new ramp	I-66 Express Lanes Interchange Ramps	Existing reversible HOV ramp converted to HOT EB on-ramp only, 24 hrs/day; Construct new flyover ramp for HOT WB off-ramp from I-66 Express Lanes, operating 24 hrs/day ~~EB on-ramp, WB off-ramp to/from I-66 Express lanes (reversible)~~	@ Stringfellow Road	1	1	Bus / HOV 2 Reversible by time of day	Bus / HOV-3 / HOT both directions 24 hrs / day ~~Reversible by time of day~~	2021 ~~2022~~
770	I66R17A	Prfd Alt for Ultimate Project ~~B~~	Relocate / Revise Operations	I-66 Express Lanes Interchange Ramps	Construct new flyover ramp for HOT EB on-ramp, ~~WB off-ramp~~ to~~/from~~ I-66 Express lanes, relocated north of I-66, operating 24 hrs/day	@ Stringfellow Road	1	1	Bus / HOV 2 Reversible by time of day	Bus / HOV-3 / HOT Movements in EB ~~both~~ directions~~s~~ 24 hrs/day	2040 ~~2022~~
771	I66R16	Prfd Alt ~~B~~	Construct	I-66 flyover ramp	EB express lanes to EB general purpose	1 mile west of VA 286	0	1	0	1	2021 ~~2022~~
772	I66R41	Prfd Alt ~~B~~	Construct	I-66 slip ramp	EB general purpose to EB express lanes	1 mile west of VA 286	0	1	0	1	2021 ~~2022~~

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
773	I66R15	Prfd Alt ~~B~~	Construct	I-66 flyover ramp	WB express lanes to WB general purpose	1 mile west of VA 286	0	1	0	1	2021 ~~2022~~
774	I66R42	Prfd Alt ~~B~~	Construct	I-66 slip ramp	WB general purpose to WB express lanes	1 mile west of VA 286	0	1	0	1	2021 ~~2022~~
776	I66R11 I66R12 I66R13 I66R14 I66R40	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Interchange Ramps	EB Expr to NB GP WB Expr to NB GP SB GP to EB Expr SB GP to WB Expr NB GP to EB Expr	Route 28 Interchange	0	1	0	*1*	2021 ~~2022~~
778	I66R9 I66R10	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Interchange Ramps	EB on-ramp, WB off-ramp to/from I-66 Express lanes	@ Balls Ford Road / Ashton Avenue Connector 1.25 ~~.5~~ mile west of VA Bus 234	0	1	0	*1*	2021 ~~2022~~
779	I66R7 I66R8	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Interchange Ramps	EB on-ramp, WB off-ramp to/from I-66 Express lanes	@ Cushing Road Park-Ride Lot .5 mile east of VA 234 Bypass	0	1	0	*1*	***2040*** ~~2022~~
855	I66R38 I66R39	Prfd Alt	Construct	I-66 Express Lanes Interchange Ramps	EB off-ramp, WB on-ramp to/from I-66 Express lanes	@ VA 234 Bypass to/from south of I-66	0	1	0	*1*	2040
781	I66R5 I66R6	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Interchange Ramps	EB on-ramp, WB off-ramp to/from I-66 Express lanes	@ University Bloulevard .75 mile east of US 29	0	1	0	*1*	2021 ~~2022~~
784	I66R1 I66R1A I66R2 I66R2A	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Interchange Ramps	EB on-ramp & off-ramp, WB on-ramp & off-ramp to/from I-66 Express lanes	@ New connector road between Heathcote Boulevard and VA 55 approx .5 mile west of US 15	0	1	0	*1*	2040 ~~2022~~
785	VSP49C	Prfd Alt ~~B~~	Construct	I-66 Express Lanes Access Connector Road	Heathcote Boulevard Extension	John Marshall Highway (VA 55)	0	1	0	*1*	2040 ~~2022~~
270	VI2AC		Reconstruct	I 95 Interchange	VA 613 Van Dorn Street		1	1			2015
3	VI2RB	77262	Widen	I 395 HOV Lanes ramp	Eads Street		1	1	1	2	Complete
438	VI2R6A	UPC# 96261	Construct	I 395 NB HOV to Seminary & Seminary to SB HOV Ramps	Seminary Road Interchange		0	1	0	1	Complete
430	VI2s	70849	Construct	I 395 northbound Auxiliary Lane	~~.28 mi. n. of~~ Duke street northbound on ramp	Seminary Road off ramp ~~Sanger Avenue~~	1	1	3	4	complete
444	VI2T		Widen	I 395 southbound	VA 236 Duke Street (north of)	VA 648 Edsall Road (south of)	1	1	3	4	2018
854			MODIFY	I-395 Express Lanes	Turkeycock Run near Duke Street	vicinity of Eads Street, Arlington	1	1	2	3	2019

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
	VI2V		Widen/Revise Operations	I-395 reversible HOV lanes	Turkeycock Run	vicinity of Eads Street	1	1	2 reversible HOV 3+ lanes during peak periods	3 reversible HOT-3+ lanes operating nb in am and sb in pm	2019
			Revise Operations	I-395 Flyover Ramp South of Duke Street (NB)	I-395 NB GP lanes	I-395 HOV lanes	1	1	HOV-3+ in am peak period	HOT-3+ in morning hours	2019
			Revise Operations	I-395 HOV nb on-ramp at Seminary	Seminary Road	I-395 HOV lanes	1	1	HOV-3+ in am peak period	HOT-3+ in morning hours	2019
			Revise Operations	I-395 HOV sb off-ramp at Seminary	I-395 HOV lanes	Seminary Road	1	1	HOV-3+ in pm peak period	HOT-3+ in evening hours	2019
			Revise Operations	I-395 HOV nb on-ramp at Shirlington Circle	Shirlington Circle	I-395 HOV lanes	1	1	HOV-3+ in am peak period	HOT-3+ in morning hours	2019
			Revise Operations	I-395 HOV sb off-ramp at Shirlington Circle	I-395 HOV lanes	Shirlington Circle	1	1	HOV-3+ in pm peak period	HOT-3+ in evening hours	2019
			Revise Operations	I-395 HOV sb off-ramp near Edsall Rd.	I-395 HOV lanes	I-395 SB GP lanes	1	1	HOV-3+ in pm peak period	HOT-3+ in evening hours	2019
			Revise Operations	I-395 NB HOV Ramp to Washington Blvd.	I-395 NB HOV lanes	Washington Blvd. NB	1	1	HOV-3+ in am peak period	HOT-3+ in morning hours	2019
			Revise Operations	I-395 SB HOV Ramp from Washington Blvd.	Washington Blvd. SB	I-395 SB HOV lanes	1	1	HOV-3+ in pm peak period	HOT-3+ in evening hours	2019

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
			Revise Operations	I-395 HOV nb off ramp at Eads Street			1	1	HOV-3+ in am peak period	HOT-3+ in morning hours	2019
			Revise Operations	I-395 sb HOV on-ramp at Eads Street			1	1	HOV-3+ in pm peak period	HOT3+ in evening hours	2019
4	VI2R	70849	Revise Operations	I 95 I-395 HOV/Bus/HOT	VA 294 Prince William Parkway	VA 234 Dumfries Road (south of)	1	1	2	2	Complete
149	VI2R	70849 VI3b	Widen/ Revise Operations	I 95 I-395 HOV/Bus/HOT	I 495 Approx. 2 miles north of	VA 294 Prince William Parkway	1	1	2	3	Complete
5	VI2RA		Construct	I 95 I-395 HOV/Bus/HOT	VA 234 Dumfries Road (south of)	VA 610 Garrisonville Road in Stafford County	1	1	0	2	Complete
6	NRS		Reconstruct	Boundary Chanel Drive	Old Jefferson Davis Highway (off of I-395 Boundary Chanel Interchange)						2020
378	BRAC	BRAC0005	Construct	I 95 NB Off Ramp at Newington	I-95 NB	Fairfax County Parkway NB	1	1	0	1	2020
9	VI2r11		Construct	I 95 HOV/Bus/HOT Ramp Between VA 648 (Edsall) and Turkeycock Run	I 395 NB HOV/HOT Lanes	I 395 NB GP Lanes	0	1	0	1	Complete
10	VI2r24		Construct	I 95 HOV/Bus/HOT Reversible Ramp	I 95 NB HOV/HOT Lanes	VA 7100 Fairfax County Parkway (Alban Road)	0	1	0	1	Complete
11	VI2r24		Construct	I 95 HOV/Bus/HOT Reversible Ramp	VA 7100 Fairfax County Parkway (Alban Road)	I 95 SB HOV/Bus/HOT Lanes	0	1	0	1	Complete
8	BRAC0004 / VI2ra		Construct	I 95 Reversible Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	I 95 ~~NB~~ HOV/BUS/HOT Lanes (Located N of Rte. 7100/I 95 I/C Phase II DAR)	EPG Southern Loop Road AM Only	0	1	0	1	2025
379	BRAC0004 / VI2rb	BRAC0004	Construct	I 95 Reversible Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	EPG Southern Loop Road PM Only Phase I DAR	I 95 SB HOV/BUS/HOT Lanes N of Rte. 7100/I-95 I/C	0	1	0	1	Complete
7	BRAC0004 / VI2rc		Construct	I 95 Reversible Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	EPG Southern Loop Road ~~PM Only Phase I DAR~~	I 95 NB GP Lanes	0	1	0	1	Complete
12	VI2r31		Construct	I 95 HOV/Bus/HOT Ramp SB Gen Purpose Lanes to SB HOV/Bus/HOT lanes	Between US 1 and VA 123		0	1	0	1	Complete
13	VI2r37		Construct	I 95 HOV/Bus/HOT Ramp SB Gen Purpose Lanes to SB HOV/Bus/HOT lanes	Between Opitz Blvd. and Dalve Blvd.		0	1	0	1	Complete
14	VI2r34		Construct	I 95 HOV/Bus/HOT Ramp NB HOV/Bus/HOT to Gen. use lanes	Between VA 123 (Gordon Rd.) & VA 294 (Prince William Pkwy.)		0	1	0	1	Complete

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
15	VI2r43		Construct	I 95 HOV/Bus/HOT Ramp SB HOV/Bus/HOT lanes to SB Gen Purpose Lanes	Between Dumfries Rd. and Joplin Rd.		0	1	0	1	Complete
16	VI2r43a		Construct	I 95 HOV/Bus/HOT Ramp SB Gen Purpose Lanes to SB HOV/Bus/HOT lanes	Between Dumfries Rd. and Joplin Rd.		0	1	0	1	2018
18	VI2r45a		Construct	I 95 HOV/Bus/HOT Ramp NB HOV/Bus/HOT lanes to NB Gen Purpose Lanes	Between Joplin Rd. and Russell Rd.		0	1	0	1	2018
19	VI2r44		Construct	I 95 HOV/Bus/HOT Ramp SB HOV/BUS/HOT lanes to SB GP lanes	Between VA 619 (Joplin Rd.) and VA 610 (Garrisonville Rd.)		0	1	0	1	Complete
17	VI2r45		Construct	I 95 HOV/Bus/HOT Ramp NB GP lanes to NB HOV/BUS/HOT Lanes	Between VA 619 (Joplin Rd.) and VA 610 (Garrisonville Rd.)		0	1	0	1	Complete
20	VI4laux1		Widen	I 495 Capital Beltway NB Auxiliary Lane	North of Hemming Ave. Underpass	Braddock Road Off Ramp	1	1	4+2	5+2	2030
21	VI4laux2		Widen	I 495 Capital Beltway SB Auxiliary Lane	Braddock Road On Ramp	North of Hemming Ave. Underpass	1	1	4+2	5+2	2030
22	VI4laux3		Widen	I 495 Capital Beltway NB Auxiliary Lane	Braddock Road On Ramp	VA 236 Off Ramp	1	1	4+2	5+2	2030
24	VI4laux5		Widen	I 495 Capital Beltway NB Auxiliary Lane	VA 236 On Ramp	Gallows Road Off Ramp	1	1	4+2	5+2	2030
25	VI4laux6		Widen	I 495 Capital Beltway SB Auxiliary Lane	Gallows Road On Ramp	VA 236 Off Ramp	1	1	4+2	5+2	2030
29	VI4laux10		Widen	I 495 Capital Beltway NB Auxiliary Lane	US 50 On Ramp	I 66 Off Ramp	1	1	5+2	6+2	2030
32	VI4laux13		Widen	I 495 Capital Beltway SB Auxiliary Lane	VA 7 On Ramp	I 66 Off Ramp to WB	1	1	4+2	5+2	2030
35	VI4laux16		Widen	I 495 Capital Beltway SB Auxiliary Lane	VA 123 On Ramp	VA 7 Off Ramp	1	1	5+2	6+2	2030
38	VI4laux19		Widen	I 495 Capital Beltway NB Auxiliary Lane	VA 267 On Ramp	VA 193 Off Ramp	1	1	4+2	5+2	2030
39	VI4laux20		Widen	I 495 Capital Beltway SB Auxiliary Lane	VA 193 On Ramp	VA 267 Off Ramp	1	1	4+2	5+2	2030
40	VI4K		Construct	I 495 Capital Beltway HOT Lanes	American Legion Bridge	George Washington Parkway (south of)	1	1	8	8+2	2030
41	VI4KA		Construct	I 495 Capital Beltway HOT Lanes	George Washington Parkway (south of)	Old Dominion Drive (south of)	1	1	8	8+4	2025
49	Part VI4IHOTa		Relocate	I 495 Capital Beltway Interchange Flyover Ramp (Phase 4)	EB Dulles Airport Access Highway to NB General Purpose	at VA 267 Dulles Toll Road	1	1	1	1	2030

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
519	Part VI4IHOTa		Construct	I 495 Capital Beltway Interchange (Phase IV)	Provide SB HOT to EB HOV & EB DTR to NB HOT movements	at VA 267 Dulles Toll Road	1	1			2030
517	Part VI4IHOTa		Widen	I 495 Capital Beltway Interchange Ramp (Phase III DTR)	Widen EB DTR ramp to 2 NB lanes	NB GP Lanes	1	1	1	2	2030
520	VI4Irmp1		Construct	I 495 Capital Beltway Interchange Flyover Ramp (Phase 4)	I 495 Capital Beltway NB GP lanes	Dulles Airport Access Highway (DAAH) WB	0	1	0	1	2030
50	VI4IHOTb		Construct	I 495 Capital Beltway Interchange Ramp (Phase II, Ramp 3 DAAH)	I 495 Capital Beltway SB	Dulles Airport Access Highway WB	0	1	0	1	2020
684	SHOULDER		Construct	I 495 HOT lanes shoulder NB peak period only (operating until HOT lanes extend northward)	Old Dominion Drive (south of)	George Washington Parkway					Complete
536	VP21F		Construct	VA 267 Dulles Greenway Egress Ramp	at Hawling Farm Boulevard (Future)		0	1	0	1	2016 ~~2015~~
534	VP15E		Construct	VA 267 Dulles Toll Road Ramp	New Boone Boulevard Extension at Ashgrove		0	1	0	2	2037
535	VP15B		Construct	VA 267 Dulles Toll Road Ramp	Greensboro Drive @ Tyco Road		0	1	0	2	2036
236	MW1	MW1	Widen	Dulles Airport Access Road	Dulles Airport	VA 123	1	1	4	6	2017
Primary											
549	VP1AH	90339	Widen	US 1 Jefferson Davis Highway	Fuller Road	Russell Road/Stafford County Line	2	2	4	6	~~2025~~ 2030
631	VP1AD	90339	Widen	US 1 Jefferson Davis Highway	Brady's Hill Road	VA 234 Dumfries Road	2	2	4	6	*2024* ~~*2025*~~
632	VP1ADA		Widen	US 1 Jefferson Davis Highway	VA 234 Dumfries Road	Cardinal Drive/Neabsco Road	2	2	4	6	2030
383	VP1AE	PWC0013/ UPC# 100426	Widen	US 1	VA 638 Blackburn Dr/Neabsco Mills Rd	VA 636 Featherstone Rd	2	2	4	6	2016
84	VP1AF	104303	Widen	US 1 Jefferson Davis Highway	Featherstone Road	Mary's Way	2	2	4	6	~~2020~~ 2021
239	VP1P	94102	Widen	US 1 Jefferson Davis Highway (part of 1/123 interchange)	Mary's Way	Annapolis Way	2	2	4	6	~~2018~~ 2019
633	NRS	100938	Reconstruct	US 1 Jefferson Davis Highway	at VA 123 Gordon Boulevard						~~2019~~ -2022
634	VSP63	100938	Construct	Belmont Bay Drive Extension	US 1 Jefferson Davis Highway	Heron's View Way			0	4	~~2019~~ -2022
85	VP1AG		Widen	US 1 Jefferson Davis Highway	Annapolis Way	Lorton Road	2	2	4	6	2035
322	VP1U		Widen	US 1 Jefferson Davis Highway	VA 235 North	VA 235 South	2	2	4	6	2025
653	NRS		Study	VA 7 Interchange	At VA 690		2	2	0	4	Not Coded
686	NRS	58599	Construct	VA 7 WB Truck Climbing Lane	VA 9	VA 7 Business West	5	5	4	5	Complete
86	VP2JA	16006	Widen	VA 7 Bypass	VA 7 West	US 15 South King Street South	5	1	4	6	2040
299	VP2J	16006	Widen	VA 7 Bypass	US 15 South King Street	VA7/US 15 East	5	1	4	6	2040
324	VP2MA			VA 7	Rolling Holly Drive	Reston Avenue	2	2	4	6	Complete
221	VP2M		Widen	VA 7	Reston Avenue	West Approach to Bridge over Dulles Toll Road	2	2	4	6	2025

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
626	NRS	82135	Construct	VA 7 Leesburg Pike	Bridge over Dulles Toll Road		2	2	4	6	2030
628	VP2Lb		Widen	VA 7 Leesburg Pike	VA 123 Chain Bridge Road	I 495 Capital Beltway	2	2	6	8	2021
87	VP2N		Widen	VA 7 Leesburg Pike	I 495	I 66	2	2	4	6	2021
347	VP2B	TBD	Widen	VA 7	Seven Corners	Bailey's Crossroads	2	2	4	6	2025
682	NRS	105584	Construct	VA 7 Overpass at	George Washington Boulevard		0	4	0	4	2022
621	nrs	99481	Construct	VA 7 Interchange	at VA 659 Belmont Ridge Road		2	2	6	6	2017
654	NRS		Reconstruct	VA 7 Interchange	@ Ashburn Village Boulevard		1	1	6	6	2017
253	VP4EA		Widen	US 15 James Madison Highway	US 29 Lee Highway	~~I-66~~ Thoroughfare Road	3	3	2	4	2040
655	VP4EB		Widen	US 15 James Madison Highway	~~Monroe Glen Drive~~ Thoroughfare Road	~~Thoroughfare Road~~ 1200' S. of RR tracks	3	3	2	4	Completed
	VP4EC		Widen	US 15 James Madison Highway Overpass	1200' S of RR tracks	1000' N. of RR tracks	3	3	2	4	2024
	VP4ED	100566	Widen	US 15 James Madison Highway	1000' N. of RR tracks	Heathcote Blvd.	3	3	2	4	2017
88	VP6H		Widen	VA 28	Fauquier County Line	VA 652 Fitzwater Drive	3	3	2	4	2040
309	VP6kA	105198	Widen	VA 28	VA 652 Fitzwater Drive	VA 215 Vint Hill Road	3	3	2	4	~~2016~~ 2018
90	VP6KB	92080	Widen	VA 28 Nokesville Road	VA 215 Vint Hill Road ~~Relocated~~	VA 619 Linton Hall Road	3	3	2	6	~~2015~~ 2016
326	VP6MA	96721	Widen	VA 28	Godwin Drive	Manassas City limits (west)	3	2	4	6	2018
89	VP6K	105428	Widen	VA 28 Nokesville Road	~~Prince William Parkway~~ Manassas City Limits	VA 619 Linton Hall Road	3	3	4	6	2020
	VP6EDD		Convert	VA 28 PPTA Phase II- HOV	I-66	Westfields Blvd	5	5	8+ 2 aux	6 + 2aux + 2 HOV	2040
	VP6EDE		Convert	VA 28 PPTA Phase II- HOV	Westfields Blvd	Dulles Toll Road	5	5	8	6 + 2 HOV	2040
310	VP6EAA		Widen	VA 28 PPTA Phase II	I 66	Westfields Blvd	5	5	6	8+ 2 aux	2021
	VP6EAB		Widen	VA 28 PPTA Phase II	Westfields	US 50	5	5	6	8	2025
	VP6EBB		Widen	VA 28 PPTA Phase II	US 50	Sterling Blvd.	5	5	6	8	2016 ~~2025~~
310	VP6ECC	106651	Widen	VA 28 PPTA Phase II	Sterling Blvd.	VA 7	5	5	6	8	2025
344	VP6EB	78906	Construct	VA 28 Interchange at	VA 209 Innovation Avenue		5	5	--	--	~~2015~~ 2016
656			Study	VA 28 Manassas Bypass /VA 411	VA 234 Sudley Road	I 66 Proposed Interchange					Not Coded
737	VP6N		Widen	VA 28 Centreville Road	VA 898 Old Cntreville Road	Prince William County Line	2	2	4	6	2025
730		105482	Study	VA 28	US 29	Liberia Avenue					Not Coded
620	VP7s		Widen	US 29 (add NB lane)	I 66	Entrance to Conway Robinson MSF	3	2	4	5	2030
622	VP7AG		Widen	US 29 (add NB lane)	Legato Road	Shirley Gate/Waples Mill Rd.	2	2	2	3	2017
623	VP7AF	59094	Reconstruct	US 29 Bridge Little Rocky Run	Pickwidk Road (0.2 miles east of)	VA 659 Union Mill Road	2	2	4	5	Completed
624	VP7AE	52326	Construct	US 29 Interchange	VA 55 Linton Hall VA 619						Completed
349	VP7AA		Widen	US 29	ECL City of Fairfax (vic. Nutley St.)	Espana Court	2	2	4	6	2025
625	VP7AB		Widen	US 29	Espana Court	I 495 Capital Beltway	2	2	4	6	2025
401	VSP57A		Construct	McGraws Corner Dr.	US 29 Lee Highway (near US 15)	Sommerset Crossing Drive	0	4	0	4	2020
731	VP7T		Widen	US 29 Lee Highway	VA 659 Union Mill Road	Buckleys Gate Drive	2	2	4	6	2024

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
305	VP8Q	LDN0015 VP8Q	Widen	US 50	VA 659 Relocated	VA 742 Poland Road	2	2	4/5	6	2025
316	VP8C	68757	Widen	US 50	VA 742 Poland Road	VA 609 Pleasant Valley	2	2	4/5	6	Complete
93	VP8R	68757	Widen	US 50	VA 609 Pleasant Valley	VA 28	2	2	4/5	6	Complete
319	VP8H			US 50	ECL City of Fairfax	Arlington County Line	2	2	4	6	2025
94	NRS		Construct	US 50 Interchange	VA 606 Loudoun County Parkway		2	2	6	6	2025
657	NRS		Construct	US 50 Interchange	West Spine/Gum Springs Road		2	2	6	6	2035
658	NRS		Construct	US 50 Interchange	South Riding Boulevard		2	2	6	6	2035
659	NRS		Construct	US 50 Interchange	Tall Cedars Parkway		2	2	6	6	2035
245	VP10G	100938	Widen	VA 123	US 1	Annapolis Way	2	2	4	6	~~2019~~ -2022
235	VP10H		Widen	VA 123 Ox Road	Hooes Rd.	Fairfax Co. Parkway	2	2	4	6	2025
337	VP10F	1784	Widen	VA 123 Ox Road	Fairfax Co. Parkway	Burke Center Parkway	2	2	4	6	2025
300	VP10R		Widen	VA 123	Burke Center Parkway	Braddock Road	2	2	4	6	2025
95	VP10S		Widen	VA 123	VA 677 Old Courthouse Road	VA 7 Leesburg Pike			4	6	2025
595	VP10T		Widen	VA 123 Chain Bridge Road	VA 7 Leesburg Pike	I 495 Capital Beltway	2	2	6	8	2021
92	VP24A	92080	Construct	VA 215 Vint Hill Road Relocated	VA 28 Nokesville Road	Schaefer Lane	0	3	0	4	~~2015~~ 2016
590	VP24B		Widen	VA 215 Vint Hill Road	VA 655 Schaeffer Lane	~~1566~~ VA 1566 Sudley Manor Drive	4	4	2	4	~~2016~~ 2018
678		105420 /T143	Construct	VA 234 Bypass Interchange	Balls Ford Road Relocated						~~2020~~ 2025
660		T5665	Construct	VA 234 Bypass Interchange	Dumfries Road/Brentsville Road						2025
727	NRS		Construct	VA 234 Prince William Parkway Interchange at	VA 1566 Sudley Manor Dr.						2030
311	VP13A		Widen	VA 236	Pickett Road	I 395	2	2	4	6	2025
679			Reconstruct	VA 244/VA 27 Interchange	I 395 (.03 MI North)	VA 244 (.29 MI North)					Completed
264	VSF25aa	57167	Convert	VA 286 Fairfax County Parkway HOV	VA 267 Dulles Toll Road	Sunrise Valley Drive	5	5	6	4+2	2035
96	VSF25ea	57167	Widen	VA 286 Fairfax County Parkway HOV	Sunrise Valley	West Ox Road	5	5	4	4+2	2035
97	VSF25e	57167	Convert	VA 286 Fairfax County Parkway HOV	West Ox Road	US 50	5	5	6	4+2	2035
98	VSF25y		Upgrade	VA 286 Fairfax County Parkway HOV	US 50	VA 7735 Fair Lakes Parkway	2	5	6	4+2	2035
101	VSF25z		Widen/Upgrade	VA 286 Fairfax County Parkway HOV	VA 7735 Fair Lakes Parkway	I 66	2	5	6	6+2	2035
320	VSF25g		Widen	VA 286 Fairfax County Parkway	US 29	VA 123 Ox Road	5	5	4	6	2025
728			Study	VA 286 Fairfax County Parkway	US 29 Lee Highway	Rolling Road					Not Coded
729			Study	VA 286 Fairfax County Parkway	VA 267 Dulles Toll Road	Rugby Road					Not Coded
304	VSF26		Construct	VA 289 Franconia-Springfield Parkway HOV	VA 286 Fairfax County Parkway	VA 2677 Frontier Drive	5	5		2	2025

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ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
104	VSF26a		Construct	VA 289 Franconia-Springfield Parkway HOV Interchange	Neuman Street		1	1			2025
105	VSF26b		Upgrade	VA 289 Franconia-Springfield Parkway HOV	VA 638 Rolling Road	VA 617 Backlick Road	5	1	6+2	6+2	2025
408	VSP23d		Widen	VA 294 Prince William County Parkway	VA 776 Liberia Avenue	VA 642 Hoadly Road	2	2	4	6	2040
375	VSP23f	PWC0008	Widen	VA 294 Prince William Parkway	VA 641 Old Bridge Road	VA 640 Minnieville Road	2	2	4	6	Completed
739			Construct	VA 234 Byp-Prince William Parkway Interchange at	VA 840 University Boulevard						2030
107	VP15CD		Construct	Collector-Distributor Rd Eastbound (parallels Dulles Toll Rd.)	VA 828 Wiehle Avenue	VA 684 Spring Hill Road	0		0	2	2036
106	VP15CD		Construct	Collector-Distributor Rd Westbound (parallels Dulles Toll Rd.)	VA 684 Spring Hill Road	VA 828 Wiehle Avenue	0		0	2	2037
286	VP12O	99482	Construct	VA 234 Manassas Bypass	VA 234 Bypass@I-66	US 50		5		4	2030
Urban											
313	VU28B	100518	Construct	Battlefield Parkway	US 15 south of Leesburg	Dulles Greenway	0	2	0	4	2020
52	VU30F	50100	Widen/Reconstruct	East Elden Street	Monroe Street	Fairfax County Parkway	3	2	4	6	2020 ~~2019~~
328	VU52	77378	Widen	Eisenhower Avenue	Mill Road	Holland Lane	3	3	4	6	2016
553	VU55	106976	Widen	Evergreen Mills Road	US 15 S. King Street	South City Limits of Leesburg	4	4	2	4	2022
681	VU56		Construct	Farrington Aveneue	Van Dorn Street at Eisenhower Avenue	Edsall Road	0	4	0	2	2035
267	VU10B	105521	Widen/Reconstruct	Spring Street	Herndon Parkway (East)/Spring Street	Fairfax County Parkway Interchange	3	2	4	6	2021
232	VU33	102895	Widen	Sycolin Road	VA7/US 15 Bypass	SCL of Leesburg	4	4	2	4	2020
398 554	VU32	17687 103999	Widen	US 15 South King Street	Evergreen Mills Road	SCL of Leesburg	3	2	2	4	2017 ~~2015~~
382	NRS	89890/ LEES0001	Construct	US 15 Bypass Interchange ~~VA 773 Edwards Ferry Road~~	~~.2 mi. s. of East Market St.~~ At Fort Evans Road and Edwards Ferry Road	~~0.3 Mi. N. of Edwards Ferry Road~~	5	2	4	4	2025 ~~2020~~
290	VU45	15960	Widen	VA 234 Dumfries Road Business	South Corporate Limits	Hastings Drive	3	3	2	4	2018
594	NRS		Reconstruct	VA 234 Grant Avenue	Lee Avenue	Wellington Road	3	3	4	4	2020
53	nrs	8645	Construct	Intersection Improvement	King Street	Beauregard Street					2016
54	nrs		Construct	Ellipse	Seminary Road	Beauregard Street					2020
55	nrs	70580	Construct	Intersection Improvement	King/Quaker Lane	Braddock Road					2017
56	NRS	104328 and 106986	Reconstruct	Herndon Parkway (East): Transit Drop-off/Pick-Up Access to Herndon Metrorail Station	East of Rte 666/Van Buren Street (at 593 Herndon Parkway)	West of Rte 675 / Spring Street (at 575 Herndon Parkway	2	2	4	4	2018 ~~2017~~

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ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
725	NRS	89889	Reconstruct	Herndon Parkway/Van Buren Street (south) intersection	Herndon Parkway/Van Buren Street (south)	Worldgate Drive/Van Buren Street (south)	2	2	4	4	2017
687	NRS	76408	Reconstruct	VA 17 Intersection Improvements in Warrenton	South of Frost Ave.	South of Winchester St.					2021
Secondary											
Arlington County											
411	AR17a		Widen	Washington Boulevard	Wilson	Kirkwood	3	3	3	4	~~2017~~ 2019
Fairfax County											
336	FFX2a	FFX2a	Construct	VA 602 Reston Pkwy.	VA 5320 Sunrise Valley Dr.	VA 606 Baron Cameron Avenue	2	2	4	6	2020
732	VSF44		Widen	VA 608 Frying Pan Road	VA 28 Sulley Road	VA 657 Centreville Road	3	3	2	4	2025
241	VSF4f	VSF4f	Widen	VA 611 Furnace Road	VA 123 Ox Road	VA 642 Lorton Road	3	3	2	4	2016
60	VSF4c		Widen	VA 611 Telegraph Road	VA 613 Beulah St.	Leaf Road North	3	3	2	4	Complete
218	VSF4ca		Widen	VA 611 Telegraph Road	Leaf Road North	VA 635 Hayfield Road	3	3	2	4	2025
298	VSF4i		Widen	VA 611 Telegraph Road	VA 635 Hayfield Road	VA 613 (Van Dorn St.)	3	3	2	4	2025
61		96509	Widen	VA 611 Telegraph Road	VA 613 S. Van Dorn	VA 633 S. Kings Highway	3	3	2	4	Complete
62	VSF4h	11012	Widen	VA 611 Telegraph Road	VA 613 S. Van Dorn	VA 644 Franconia Road	3	3	2	3	2025
63	VSF15b		Construct	VA 613 Van Dorn Interchange	VA 644 Franconia Road		0	0	0	0	2025
301	VSF8g	VSF8g	Widen	VA 620 Braddock Road	~~VA 7100~~ VA 286 Fairfax County Parkway	VA 123 Ox Road	3	3	4	6	2025
334	VSF8j		Construct/Widen	VA 620 New Braddock Rd.	VA 28	US 29 @ VA 662 (Stone Rd.)	0/4	3	0/2	4	2025
736	VSF45		Widen	VA 636 Hooes Road	VA 286 Fairfax County Parkway	VA 600 Silverbrook Road	3	3	2	4	2025
427	BRAC	10091	Widen	VA 638 Rolling Road NB off-ramp	NB Rolling Rd.	NB Fairfax Co. Pkway	3	3	2	4	2015
302	VSF10a		Widen	VA 638 Rolling Road	VA 286 Fairfax County Parkway	VA 644 Old Keene Mill Road	3	3	2	4	2020
586	VSF10E	102905	Widen	VA 638 Rolling Road	Rt 5297 DeLong Drive	Fullerton Drive	3	3	2	4	2022
377	VSF10c	16505	Widen	VA 638 Pohick Road	VA 1	I 95	3	3	2	4	2025
269	VSF13d	16505	Widen	VA 642 Lorton Road	VA 123 (Ox Road)	VA 600 Silverbrook Road	3	3	2	4	2016
217	FFX11a		Widen	VA 645 Stringfellow Road	US 50	VA 286 Fairfax County Parkway	3	3	2	4	2020
287	VSF16G	60864	Widen	VA 645 Stringfellow Road	VA 7735 Fair Lakes Blvd.	US 50	3	3	2	4	Complete
64	VSF37a		Widen	VA 650 Gallows Road	VA 7 Leesburg Pike	VA ~~299~~ 699 Prosperity Ave.	2	2	4	6	2038
65	VSF33a		Widen	VA 651 Guinea Road	VA 6197 Roberts Parkway	VA 4807 Pommeroy Drive	3	3	2	4	2025
255	FFX12a		Construct	VA 651 New Guinea Road	VA 123 Ox Road	Roberts Road	0	3	0	4	2025
688	VSF17b		Construct	VA 655 Shirley Gate Road	VA 286 Fairfax County Parkway	VA 620 Braddock Road	0	3	0	4	2025
346	VSF18C	74749	Widen	VA 657 Centreville Road	VA 8390 Metrotech Dr.	VA 668 McLearen Road	3	3	4	6	2040
66	VSF42		Construct	Boone Boulevard Extension	VA 123 Chain Bridge Road	Ashgrove Lane			0	4	2036
67			Construct	New Bridge/Road Crossing	Tysons Corner Center Ring Road	Old Meadow Road			0	4	2036
68	VSF43		Widen	Magarity Road	VA 7 Leesburg Pike	VA 694 Great Falls Street			2	4	2037
442	VSF41	103907	Construct/Widen	VA 8102 Scotts Crossing Rd	VA 123 Dolly Madison Blvd	Jones Branch Dr			0/2	4	2018
69	NRS		Construct	Greensboro Drive WB	Spring Hill Road	Tyco Road	0	4	0	2	2034

NOTE: Shaded areas represent changes from the 2015 CLRP.

2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
724	VSF46		Construct	VA 2677 Frontier Drive	Franconia-Springfield Transportation Center	VA 789 Loisdale Road	0	4	0	2	2024
Loudoun County											
661	NRS		Construct	VA 606 Ramp	VA 606 Eastbound	VA 789 Lockridge Road Northbound			0	2	2020
330	VSL1B	97529, 105064	Widen/Upgrade	VA 606/607 Old Ox Rd/Loudoun County Parkway	VA 634 Moran Rd	VA 621 Evergreen Mills Rd	4	3	2	4	2017
566	VSL10E		Widen	VA 607 Loudoun County Parkway	US 50	VA 606 at new Arcola Blvd.	3	3	4	6	2030
329	VSL10C		Construct	VA 607 Loudoun County Parkway	VA 606 Old Ox Rd / VA 842 Arcola Rd	VA 607 Ryan Rd / Loudoun County Parkway	0	3	0	4	~~2015~~ 2017
275	VSL10bb		Widen/Upgrade	VA 607 Loudoun County Parkway	W&OD Trail	Redskin Park Drive	4	3	4	6	2025
323	VSL10bf		Widen/Upgrade	VA 607 Loudoun County Parkway (dirt road)	Redskin Park Drive	VA 2150 Gloucester Parkway	4	3	2	4	Completed
689	VSL54	106996	Widen	VA 640 Farmwell Road	VA 1950 Smith Switch Road	VA 641 Ashburn Road	4	4	4	6	2020 ~~2017~~
683	NRS		Construct	VA 625 Waxpool Road/ VA 607 Loudoun County Parkway Interchange			3	3	0	4	2019
335	VSL45	VSL45	Widen~~/Upgrade~~	VA 643	Leesburg Town Limits	Crosstrails Boulevard	3	3	2	4	2035 ~~2018~~
827	VSL65		Construct	VA 643 Shellhorn Extended	VA 606 Loudoun County Parkway	Moran Road	0	4	0	4	2020
825	VSL64		Construct	VA 645 Westwind Blvd	VA 607 Loudoun County Parkway	VA 606 Old Ox Rd.	0	4	0	4	2020
72	VSL4ac	76244 & 99481	Widen	VA 659 Belmont Ridge Road	VA 7 Leesburg Pike	VA 267 Dulles Greenway ~~Croson Lane~~	4	3	2	4	2018
746	VSL4AD		Widen/Upgrade	VA 659 Belmont Ridge Road	VA 645 Croson Lane	VA 267 Dulles Greenway	4	3	2	4	2025
372	VSL4E	LDN0005	Widen/Upgrade	VA 659 Gum Springs Road	VA 620 Braddock Road	US 50 John Mosby Highway	4	4	2	4	Complete
297	VSL4f		Widen~~/Upgrade~~	VA 659 Gum Spring Rd.	Prince William County Line	VA 620 Braddock Road	4	4 ~~3~~	2	4	2035
641	VSL58		Construct	~~VA 772~~Ashburn Silver Line Station Connector Bridge	VA 267 Dulles Greenway	~~VA 772~~ Ashburn Silver Line Station	4	4	0	4	2019
662	NRS	69870	Construct	VA 868 Davis Drive	VA 606 Old Ox Road	VA 846 Sterling Boulevard	0	4	0	4	2025
333	VSL46	68767, 70760, 93144, 93899, 105331	Construct	VA 1036 Pacific Boulevard	VA 846 Sterling Boulevard	VA 1060 Richfield Way	0	4	0	4	2016
74	VSL52	104418	Construct	VA 2150 Gloucester Parkway	VA 607 Loudoun County Parkway	VA 1036 Pacific Boulevard	0	4 ~~3~~	0	4	2016
573 574 575	VSL61		Construct	VA 842 Arcola Boulevard (Southern Segment)	US 50	VA 607 Loudoun County Parkway	0	4	0	4	2022
76	VSL40F	102858	Construct	VA 901 Clairborne Parkway	VA 645 Croson Lane	VA 772 Ryan Road	0	4	0	4	2017

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
577	VSL56		Construct	Crosstrail Boulevard	VA 625 Sycolin Road	Kincaid Boulevard	0	4	0	4	2019
578 580	VSL62		Widen	VA 621 Evergreen Mills Road (Eastern Segment)	VA 607 Loudoun County Parkway	VA 659 Belmont Ridge Road	4	4	2	4	2025
564	NRS		Construct	Glascock Road (Eastern Segment)	VA 842 Arcola Boulevard	VA 607 Loudoun County Parkway	0	4	0	4	2023
565	NRS		Construct	Glascock Road (Western Segment)	VA 842 Arcola Boulevard	VA 3171 Northstar Boulevard	0	4	0	4	2023
568	VSL57		Construct	VA 2298 Mooreview Parkway (Missing Link)	VA 2773 Amberleigh Farm Drive	VA 772 Old Ryan Road	0	4	0	4	2019
570	VP12R	106994	Construct	VA 3171 Northstar Boulevard (Missing Link #79)	Shreveport Drive	US 50	0	3 ~~2~~	0	4	2022
572	VSL59		Construct	VA 1071 Prentice Drive (Western Segment)	VA 607 Loudoun County Parkway	Loudoun Station Drive	0	4	0	4	2019
556	VSL59		Construct	VA 1071 Prentice Drive Eastern Segment	VA 789 Lockridge Road	VA 607 Loudoun County Parkway	0	4	0	4	2019
75 557	VSL48A	91773	Construct	VA 2401 RIverside Parkway	VA 773 River Creek Parkway	Upper Meadow Drive/Kingsport Dr.	4	4	2	4	Complete
826	***VSL48B***		***Construct***	***VA 2401 RIverside Parkway***	***VA 607 Loudoun County Parkway***	***VA 2020 Ashburn Village Boulevard Extension***	***0***	***4***	***0***	***4***	***2018***
561	VSL49A		Construct	VA 1061 Russell Branch Parkway (Eastern Segment)	VA 2020 Ashburn Village Road	VA 641	0	4	0	4	2017
559	VSL49B		Construct	VA 1061 Russell Branch Parkway (Western Segment)	VA 659 Belmont Ridge Road	Tournament Parkway	0	4	0	4	2017
560	VSL55		Construct	Shreveport Drive (Eastern Segment)	VA 659 Belmont Ridge Road	VA 607 Loudoun County Parkway	0	4	0	4	2017
563	VSL55A		Construct	Shreveport Drive (Western Segment)	VA 621 Evergreen Mills Road	VA 659 Belmont Ridge Road	0	4	0	4	2017
562	VSL60	105783	Construct	VA 846 Sterling Boulevard Extension	VA 1036 Pacific Boulevard	VA 634 Moran Road	0	4	0	4	2019
77	VSL53		Construct	VA 2020 Tall Cedars Parkway	VA 827 Pinebrook Road	VA 659 Gum Springs Road`			0	4	~~2015~~ 2017
576	VSL63		Construct	VA 774 Creighton Road (completion of eastern end)	VA 659 Belmont Ridge Road	VA 621 Evergreen Mills Road	0	4	0	4	~~2013~~ 2016
555		87106	Widen	VA 2119 Waxpool Road	VA 2070 Demott Road	VA 2020 Ashburn Village Boulevard	4	4	2	4	~~2018~~ 2016
Prince William County											
643	VSP67	104802	Construct	VA 2190 Summit School Road Extension	Telegraph Road	VA 2190 Summit School Road (south end of existing)	4	4	2	4	~~2020~~ 2022
219	VSP25b	104802	Widen	VA 1781 New Telegraph Road/Summit School Road	Horner Road/Park'n'Ride Lot Access	VA 2190 Summit School Road Extension	4	4	2	4	~~2020~~ 2022
257	VSP25c		Widen	VA 1781 Telegraph Rd.	VA 294 (Prince William Pkwy)	VA 849 (Caton Hill Rd.)	4	4	2	4	2020
81	VSP2h		Widen	VA 619 Joplin Road eastbound	I 95 ramp	US 1			2	3	~~2015~~ 2017
367	VSP3a		Widen/Upgrade	VA 621 Balls Ford Road	Miramar Drive	Bethlehem Road	4	3	2	4	2030
79	VSP3b	80347	Widen/Upgrade	VA 621 Balls Ford Road	Bethlehem Road	Doane Drive	4	3	2	4	2030
690	VSP64		Construct	VA 621 Balls Ford Road Relocated	Doane Drive	Devlin Road	0	3	0	4	~~2020~~ 2025

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
596	VSP3C		Widen	VA 621 Balls Ford Road	VA 1600 Ashton Avenue	VA 622 Groveton Drive	3	3	2	4	2025
376	VSP5e	103484	Widen	VA 640 Minnieville Road	VA 643 Spriggs Road	VA 234 Dumfries Road	3	3	2	4	~~2017~~ 2018
244	NRS	90499	Reconstruct	VA 643 Purcell Road	VA 234 Dumfries Rd.	Vista Brook Dr.	4	4	2	2	2017
646 581	VSP17ba		Widen	VA 674 Wellington Road	VA 621 Devlin Road/Balls Ford Road	VA 234 Prince William Parkway Bypass	3	3	2	4	2025
338 589	VSP17b		Widen	VA 674 Wellington Road	VA 234 Bypass Prince William Parkway	VA 668 Rixlew Lane	3	3	2	4	2035
308	VSP18	VSP18	Widen	VA 676 Catharpin Rd.	VA 55 John Marshall Highway	Heathcote Blvd.	3	3	2	4	2040
325	VSP20C	VSP20c	Widen/Upgrade	VA 1392 Rippon Boulevard Extension	West of Wigeon Way	Rippon VRE Station	4	3	2	4	2040
83	VSP47e		Construct	University Boulevard/Devlin	Sudley Manor Drive	Wellington Rd/Progress Ct.	0	3	0	4	~~2020~~ 2025
82	VSP2i	92999	Widen	VA 619 Fuller Road	US 1	VA 619 Fuller Heights Road Relocated			2	4	~~2016~~ 2017
593	VSP65		Widen	VA 638 Neabsco Mills Road	US 1 Jefferson Davis Highway	VA 784 Dale Boulevard			2	4	~~2020~~ 2022
642	VSP62a		Construct	Rollins Ford Road	Wellington Road	Linton Hall Road	0	3	0	4	2020
591	VSP66		Construct	VA 627 Van Buren Road	VA 234 Dumfries Road	VA 610 Cardinal Drive	0	4	0	4	~~2035~~ 2022
745	NRS		Construct	VA 234 Potomac Shores Parkway	US 1 Jefferson Davis Highway	VA 4700 River Heritage Boulevard	0	4	0	4	2020
743	NRS		Widen	VA 4700 River Heritage Boulevard	VA 234 Potomac Shores Parkway	Dominica Drive	4	4	2	4	2020
744	NRS		Construct	VA 4700 River Heritage Boulevard	Dominica Drive	VA 234 Potomac Shores Parkway	0	4	0	2	2020
742	VSP68		Construct	VA 4700 River Heritage Boulevard	US 1 Jefferson Davis Highway	VA 234 Potomac Shores Parkway / Harbor Station	0	4	0	4	2020
FAMPO											
	VI2RFA		Construct/revise operations	I-95 :HOV/Bus/HOT Lanes- single reversible lane	north of Garrisonville Road (south of Aquia Creek) at flyover	south of Garrisonville Road	1	1	0	1	2018
	VI2RFB		Construct	I 95 : HOV / Bus / HOT Lanes: Southbound Ramp	South of Garrisonville Road	SB HOT Lanes to SB GP Lanes	1	1	0	1	2018
	VI2RFC		Construct	I 95 : HOV / Bus / HOT Lanes: Northbound Ramp	South of Garrisonville Road	NB GP Lanes to NB HOT Lanes	1	1	0	1	2018
	VI2rf		Construct	I 95 : HOV / Bus / HOT Lanes	Rte. 610 (Garrisonville Rd.) in Stafford County	VA 17 in Spotsylvania County (exit 126)	1	1	0	2	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	South of Telegraph Road (North of Aquia Creek)	SB GP Lanes to SB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	South of Telegraph Road (North of Aquia Creek)	NB HOT Lanes to NB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	North of Garrisonville Road (South of Aquia Creek)	NB GP Lanes to NB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Garrisonsville Road and Courthouse Road	SB GP Lanes to SB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Garrisonsville Road and Courthouse Road	NB HOT Lanes to NB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Garrisonsville Road and Courthouse Road	SB HOT Lanes to SB GP Lanes	1	1	0	1	2025

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Garrisonsville Road and Courthouse Road	NB GP Lanes to NB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	South of Rt 628 (North of Stafford Regional Airport)	SB HOT Lanes to SB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	South of Rt 628 (North of Stafford Regional Airport)	NB GP Lanes to NB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Centerpoint Road (St.Co.Airport Access Rd.) and Rt 652	SB GP Lanes to SB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Centerpoint Road (St.Co.Airport Access Rd.) and Rt 652	NB HOT Lanes to NB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Centerpoint Road (St.Co.Airport Access Rd.) and Rt 652	SB HOT Lanes to SB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Centerpoint Road (St.Co.Airport Access Rd.) and Rt 652	NB GP Lanes to NB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	South of Rt 17 (North of Rappahannock River)	NB HOT Lanes to NB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Just South of Rappahannock River	SB HOT Lanes to SB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Just north of Rt 3	NB GP Lanes to NB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Rt 620 and Rt 208	NB GP Lanes to NB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Rt 620 and Rt 208	SB HOT Lanes to SB GP Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Rt 1 and Rt 17	NB GP Lanes to NB HOT Lanes	1	1	0	1	2025
			Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Between Rt 1 and Rt 17	SB HOT Lanes to SB GP Lanes	1	1	0	1	2025
			Reconstruct	I-95 interchange	at Courthouse Rd. (exit #140)						2025
	FAI1E		Upgrade	Inside I-95 shoulders for use as travel lanes in peak periods	1.3 mi. n. of Garrisonville Rd.	.4 mi. n. of Amleg Rd.					2020
	FAP5F		Widen	US-1	Prince William County Line	VA-637, Telegraph Rd. (Northern Intersection)			4	6	2025
			Reconstruct	US-1/US-17/PR-218 Intersection							2020
	FAP5I		Widen	US 1(Bridge Replacement)	US 17 (Butler Rd.)	Princess Anne St.	2	2	4	6	2025
	FAS22A		Widen	VA-3 (William St)	Gateway Blvd.	William St./Blue Gray Parkway			4	6	2030
	FAS22		Widen	VA 3 (Spotsylvania)	Chewing Lane	VA 627 (Gordon Rd.)	2	2	4	6	2013
	FAP6A		Widen	US 17 Bypass (Mills Dr.)	I-95	Caroline County Line	2	2	2	4	2030
	FAP6E		Widen	Tidewater Trail US 17 Business/VA 2	SCL Fredericksburg	US 17 Bypass (Mills Dr.)	2	2	2	4	2040
	FAP6C		Widen	US 17 (Warrenton Rd.)	McLane Drive	Stafford Lakes Parkway	2	2	4	6	2020
	FAP6D		Widen	US 17 (Warrenton Rd.)	Stafford Lakes Parkway	VA 612 (Hartwood Road)	2	2	4	6	2040
	FAP7		Widen	VA 218 (Butler Rd)	US 1	VA 212 (Chatham Heights Rd)	4	4	2	4	2030
	FAS40		Widen	VA 208 (Courthouse Road)	US 1 (Jefferson Davis Hwy)	Smith Station Road	3	3	4	6	2040
Fredericksburg											

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2016 CLRP AMENDMENT and FY2017-2022 TIP AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							Fr	To	Fr	To	
	FAU1			Fall Hill Ave./ Mary Washington Blvd. Extension	Mary Wash. Blvd.	Gordon Shelton Blvd.			2	4	2020
				Lafayette Blvd. (Phase 1)	Sophia St	VA-3 (Blue & Gray Parkway)					2025
	FAU2			Gateway Blvd. Extended	William St. (PR-3)	Fall Hill Ave (UR-3965)			0	4	2030
Stafford County Secondary											
	FAS43			VA 606 (Ferry Rd)	VA 3 (Kings Highway)	VA 608 (Brook Rd)	4	3			2035
	FAS5b			VA 630 (Courthouse Rd)	Winding Creek Dr.	VA 648 (Shelton Shop Rd)	4	4	2	4	2030
	FAS13			VA 648 (Shelton Shop Rd.)	VA 610 (Garrisonville Rd)	VA 627 (Mountainview Rd)	4	4	2	4	2035
Spotsylvania County Secondary											
	FAS18c			VA 620 (Harrison Rd)	VA 610 (old Plank Rd.)	VA 627 (Gordon Rd.)	4	4	2	4	2025
	FAS18B			VA-620 (Harrison Rd.)	US-1 BUS (Lafayette Blvd.)	VA-639 (Salem Church Rd.)			2	4	2025
	FAS28			VA 628 (Smith Station Rd)	VA 608 (Massaponax Church Rd.)	VA 627 (Gordon Rd.)	4	4	2	4	2035
	FAS19			VA 636 (Mine Rd./ Hood Dr.)	VA 208 (Courthouse Rd.)	US 1	4	4	2	4	2025
	FAS20b			VA 639 (Leavells Rd.)	VA 208 (Courthouse Rd.)	VA 628 (Smith Station Rd.)	4	4	2	4	2035

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Maryland Department of Transportation
The Secretary's Office

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Pete K. Rahn
Secretary

February 1, 2016

Mr. Kanti Srikanth
Director
Department of Transportation Planning
Metropolitan Washington Council of Governments
777 North Capitol Street, N.E., Suite 300
Washington DC 20002

Dear Mr. Srikanth:

In response to your request for comments to inform the Air Quality Conformity Analysis Scope of Work for the 2016 Constrained Long Range Plan (CLRP) and FY 2017-2022 Transportation Improvement Program (TIP), I would like to address the current policy assumption which indicates all high-occupancy vehicle (HOV) facilities will operate as HOV-3 facilities in 2020. In 2009, the Maryland Department of Transportation (MDOT) recommended that the model should assume that the two MDOT HOV facilities, I-270 and US 50, which currently operate as HOV-2 facilities, would operate as HOV-3 facilities in 2020. MDOT does not plan to convert these facilities from HOV-2 operations to HOV-3 operations by 2020. We recommend that the HOV-3 assumption for Maryland facilities be changed to maintain these facilities as HOV-2 operations in the upcoming Air Quality Conformity Analysis.

We appreciate your cooperation in this matter. If you have any questions or concerns, please contact Ms. Lyn Erickson, Manager, Office of Planning and Capital Programming, MDOT, at 410-865-1279, toll free at 888-713-1414, or via email at lerickson@mdot.state.md.us. Of course, please feel free to contact me directly.

Sincerely,

Heather R. Murphy, Director
Office of Planning and Capital Programming

cc: Mr. Eric Beckett, Chief, Regional and Intermodal Planning Division, SHA
Ms. Lyn Erickson, Manager, Office of Planning and Capital Programming, Maryland Department of Transportation
Ms. Kari Snyder, Regional Planner, Office of Planning and Capital Programming, Maryland Department of Transportation

APPENDIX C

Interagency Consultation and Public Involvement Process

TPB Public Comment Procedures and Opportunities Related the Air Quality Conformity Planning Process

As described in the 2014 TPB *Participation Plan*, it is the policy of the TPB to carry out the following public involvement activities with respect to air quality conformity regulations governing TPB plans and programs.

- Ensure that the TPB follows federal requirements for public involvement, including a public comment period of at least 30 days prior to the approval of air quality conformity determinations that are part of the Financially Constrained Long-Range Transportation Plan (CLRP), Transportation Improvement Program (TIP) and other major documents, and the development and consideration of written responses to comments received.

    - Provide notification of the opportunity to comment during the public comment period through a variety of means, including:
        - Direct email notifications that the public comment period has begun;
        - Paid advertisements in local newspapers;
        - Notices in the TPB's e-newsletter the *TPB News;*
        - Announcements on TPB websites including the COG Transportation homepage http://www.mwcog.org/transportation, the TPB Transportation Planning Information Hub http://www.transportationplanninghub.org, and pages specific to the CLRP http://www.mwcog.org/clrp.
        - Agenda items on key TPB committee's including the Citizens Advisory Committee, Access for All Advisory Committee and Technical Committee;
        - At least one formal public meeting during the development process for the TIP.

    - Comments from the public can be submitted on the TPB's web site, by email, postal mail, or in person at the beginning of TPB meetings. All comments are posted on the web site and are grouped according to whether the comment was submitted by a private citizen, a business or non-profit organization, or a government official or representative body. Comments can also be sorted according to the nature of the comment.

    - The TPB shall provide an additional opportunity for public comment, if the final CLRP or TIP differs significantly from the version that was made available for public comment by the TPB and raises new material issues which interested parties could not reasonably have foreseen from the public involvement efforts.

    - When significant written and oral comments are received on the draft CLRP

and TIP (including the financial plans) as a result of the participation process in this section or the interagency consultation process required under the EPA transportation conformity regulations (40 CFR part 93), a summary, analysis, and report on the disposition of comments shall be made as part of the final metropolitan transportation plan and TIP.

- In addition to the formal public comment process described above, the following ongoing public involvement opportunities are in place and can be used to provide comment on air quality conformity determinations related to the TPB's plans and programs, and to learn about the conformity process:
    - A period of time for public comment is provided at the beginning of each TPB meeting.
    - The TPB website provides online opportunities for public comment.
    - The TPB provides live-stream audio of each TPB meeting, and provides audio recordings of past meetings at www.mwcog.org/TPBmtgLIVE.
    - All meetings of the TPB's committees are open to the public.
    - The TPB strives to provide reasonable public access to technical and policy information through its website, distribution of paper documents, and through telephone and email communications.
    - Information about the planning process, including air quality conformity issues, is provided through a variety of ad hoc meetings and presentations that regularly occur throughout the region.

TPB Consultation and Public Comment Opportunities for the Air Quality Conformity Analysis of the 2016 CLRP Amendment and FY2017-2025 TIP

The following lists TPB consultation and public comment opportunities during the air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP:

- November 6, 2015 – TPB Technical Committee presentation on the draft Call for Projects and schedule for the 2016 CLRP Amendment and the FY2017-2022 TIP and discussion of detailed transit assumptions
- November 13, 2015 – Monthly conformity consultation letter referenced the draft Call for Projects document and schedule for the air quality analysis of the 2016 CLRP Amendment and the FY2017-2022 TIP
- November 18, 2015 – Opportunity for public comment at the TPB meeting
- November 18, 2015 – TPB presentation on the draft Call for Projects document and schedule for the air quality analysis of the 2016 CLRP Amendment and the FY2017-2022 TIP
- December 4, 2015 – TPB Technical Committee presentation with an update proon the Call for Projects and schedule for the 2016 CLRP Amendment and the FY2017-2022 TIP
- December 11, 2015 – Monthly conformity consultation letter referenced the solicitation document for the 2016 CLRP Amendment, and the proposed schedule for the air quality conformity analysis of the 2016 CLRP Amendment and the FY2017-2022 TIP
- December 16, 2015 – Opportunity for the public comment at the TPB meeting
- December 16, 2015 – TPB presentation on the approval of the solicitation documents for the 2016 CLRP Amendment, and the proposed schedule for the air quality conformity analysis of the 2016 CLRP Amendment and the FY2017-2022 TIP
- January 8, 2016 – TPB Technical Committee presentation with an update on the Call for Projects for the 2016 CLRP Amendment and the FY2017-2022 TIP
- January 13, 2016 – Call for Projects and schedule for the air quality conformity analysis of the 2016 CLRP Amendment, both of which were TPB approved at its December 16 meeting, were included in the TPB's newsletter the ***TPB News***
- February 5, 2016 – TPB Technical Committee presentation on the briefing on project submissions for the 2016 CLRP Amendment and draft scope of work for the air quality conformity assessment for the 2016 CLRP Amendment and the FY2017-2022 TIP
- February 9, 2016 – MWAQC Technical Advisory Committee (TAC) presentation on the draft scope of work for the air quality conformity analysis of the 2016 CLRP Amendment and the FY2017-2022 TIP
- February 11, 2016 – TPB Citizens Advisory Committee (CAC) presentation on the project inputs for the 2016 CLRP Amendment and the FY2017-2022 TIP

- February 11, 2016 – Project inputs and draft scope of work released for 30-day public comment; documents posted on web
- February 11, 2016 – Paid advertisement posted in the ***Washington Post*** announcing a 30-day public comment period for project inputs and draft scope of work
- February 12, 2016 – Paid advertisement posted in the ***Washington Hispanic*** announcing a 30-day public comment period for project inputs and draft scope of work
- February 12, 2016 – Monthly conformity consultation letter referenced the project submissions by transportation agencies to date for the 2016 CLRP Amendment and the FY2017-2022 TIP and draft scope of work for the air quality conformity analysis for the 2016 CLRP Amendment and the FY2017-2022 TIP
- February 13, 2016 – Paid advertisement posted in the ***Afro-American*** announcing a 30-day public comment period for project inputs and draft scope of work
- February 17, 2016 – Opportunity for public comment at the TPB
- February 17, 2016 – TPB presentation on the major projects submitted by transportation agencies to date and the draft scope of work for the air quality conformity analysis for the 2016 CLRP Amendment and FY2017-2022 TIP
- March 4, 2016 – TPB Technical Committee presentation on the update on project submissions for the 2016 CLRP Amendment and briefing on draft scope of work for the air quality conformity analysis for the 2016 CLRP Amendment and the FY2017-2022 TIP
- March 4, 2016 – Projects submitted for 2016 CLRP Amendment for a 30-day public comment period that ends on March 12, 2016 were included in the TPB's newsletter the ***TPB News***
- March 10, 2016 – TPB CAC presentation on projects submitted for 2016 CLRP Amendment for a 30-day public comment period from February 11, 2016 to March 12, 2016
- March 11, 2016 – Monthly conformity consultation letter referenced the projects submitted for 2016 CLRP Amendment for a 30-day public comment period
- March 16, 2016 – Opportunity for public comment at the TPB meeting
- March 16, 2016 – TPB presentation on approval of the projects submitted for inclusion in the air quality conformity analysis for the 2016 CLRP Amendment and the FY2017-2022 TIP
- March 18, 2016 – TPB Travel Forecasting Subcommittee (TFS) presentation on the draft scope of work for the air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP
- April 16, 2016 – Review of comments received and approval of inputs announced for the TPB March 16, 2016 meeting item in the ***TPB News***
- April, 2016 – Relaunch of ***TPB News*** as e-newsletter and digital news site.
- August 23, 2016- Article on the TIP forum with links to sign up to attend the forum in the online ***TPB News*** site

- September 13, 2016 - Link to TIP forum information in the online ***TPB News*** site.
- September 15, 2016 - Public Forum on the FY2017-2022 TIP
- October, 2016 – Two articles about 2016 CLRP Amendment in the online ***TPB News*** site.
- October 7, 2016 – TPB Technical Committee presentation on the draft air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP, which were released for public comment on October 13, 2016
- October 7, 2016 – Paid advertisement posted in the ***Afro-American*** announcing a 30-day public comment period for the 2016 CLRP Amendment and 2017-2022 TIP and the accompanying air quality analysis
- October 7, 2016 – Paid advertisement posted in the ***Washington Hispanic*** announcing a 30-day public comment period for the 2016 CLRP Amendment and FY2017-2022 TIP and the accompanying air quality analysis
- October 11, 2016 – MWAC TAC presentation on the draft air quality conformity analysis of the 2016 CLRP Amendment
- October 13, 2016 – TPB CAC presentation on 2016 CLRP performance analysis and on the draft conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP, which was released for public comment on October 13, 2016
- October 13, 2016 – Paid advertisement posted in the ***Washington Post*** announcing a 30-day public comment period for the 2016 CLRP Amendment and FY2017-2022 TIP and the accompanying air quality analysis
- October 14, 2016 – Monthly conformity consultation letter referenced results and announced public comment period
- October 18, 2016 – The 30-day public comment period for the 2016 CLRP Amendment and FY2017-2022 TIP and the accompanying air quality analysis ***News***were announced in a special edition of the TPB News
- October 19, 2016 – Opportunity for public comment at the TPB meeting
- October 19, 2016 – TPB presentation on the draft conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP, whichwere released for public comment on October 13, 2016
- November 10, 2016 – Monthly conformity consultation letter referenced results for the air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP
- November 16, 2016 – Opportunity for public comment at the TPB meeting
- November 16, 2016 – TPB responded to comments received during public comment period and approved the air quality conformity analysis of the 2016 CLRP Amendment and FY2017-2022 TIP.

National Capital Region
Transportation Planning Board

March 11, 2016

TO: Transportation Planning Board
(United States Environmental Protection Agency, Federal Highway Administration, Federal Transit Administration, Metropolitan Washington Air Quality Committee, Air Quality Public Advisory Committee, and Transportation Planning Board Citizens Advisory Committee)

FROM: Kanti Srikanth, COG Transportation Planning Director

SUBJECT: Consultation with respect to TPB Plans and Programs

Enclosure:
1) Agenda for March 16, 2016 TPB meeting

This memo transmits the agenda for the March TPB meeting, which is relevant to TPB consultation with respect to air quality conformity. Materials associated with each agenda item are available on the TPB web site www.mwcog.org under *Dates and Events*. As always, you are welcome to attend the TPB meetings (and/or any meetings of the TPB committees and their subcommittee). A schedule of monthly meetings is listed in the Calendar of Events in *TPB NEWS*.

Please be aware that there will be a work session meeting on the Unfunded Capital Needs Working Group from 10:30 a.m. to 11:45 a.m. in the Ronald F. Kirby Training Center on the first floor.

The March TPB agenda items relevant for transportation conformity and consultation are identified below.

Item 7 is an action item in which the Board will be briefed on the comments received and recommended responses, and asked to approve the project submissions for inclusion in the air quality conformity analysis for the 2016 Constrained Long Range Plan (CLRP) Amendment and the FY2017-2022 Transportation Improvement Program (TIP). At the February 17 meeting, the Board was briefed on the major project changes submitted for inclusion in the air quality conformity analysis for the 2016 CLRP Amendment, which were released for a 30-day public comment period that ended March 12.

Item 8 is an action item in which the Board will be briefed on the comments received and recommended responses, and asked to approve the scope of work for the air quality conformity analysis for the 2016 CLRP Amendment and FY2017-2022 TIP. At the February 17 meeting, the Board was briefed on the draft scope of work, which was released for a 30-day public comment period that ended March 12.

Item 9 is an action item in which the Board will be briefed, and asked to approve, an amendment to the FY2016 Unified Planning Work Program (UPWP) and associated FY2016 carryover funding to FY2017.

Item 10 is an action item in which the Board will be briefed on, and asked to approve the Final draft of the FY2017 UPWP.

National Capital Region
Transportation Planning Board

TRANSPORTATION PLANNING BOARD

March 16, 2016
12:00 - 2:00 P.M.
Walter A. Scheiber Board Room

~~WORK SESSION~~

~~**10:30 - 11:45 A.M.** Meeting of the Unfunded Capital Needs Working Group *(Ronald F. Kirby Training Center)* More Info~~

AGENDA

12:00 P.M. **1. PUBLIC COMMENT ON TPB PROCEDURES AND ACTIVITIES**
Timothy Lovain, TPB Chairman

Interested members of the public will be given the opportunity to make brief comments on transportation issues under consideration by the TPB. Each speaker will be allowed up to three minutes to present his or her views. Board members will have an opportunity to ask questions of the speakers, and to engage in limited discussion. Speakers are encouraged to bring written copies of their remarks (65 copies) for distribution at the meeting.

12:20 P.M. **2. APPROVAL OF THE MINUTES OF THE FEBRUARY 17 MEETING**
Timothy Lovain, TPB Chairman

- Minutes from the February 17 2016 Meeting

12:25 P.M. **3. REPORT OF THE TECHNICAL COMMITTEE**
Tim Roseboom, TPB Technical Committee Chairman

- Technical Committee Highlights

12:30 P.M. **4. REPORT OF THE CITIZENS ADVISORY COMMITTEE**
Doug Stewart, TPB Citizens Advisory Committee Chairman

- Report of the Citizens Advisory Committee

12:40 P.M. **5. STEERING COMMITTEE ACTIONS AND REPORT OF THE DIRECTOR**
Kanti Srikanth, TPB Staff Director

This agenda item includes Steering Committee actions, letters sent/received, and announcements and updates.

- Steering Committee Actions and Report of the Director

12:45 P.M. **6. CHAIRMAN'S REMARKS**
Timothy Lovain, TPB Chairman

ACTION ITEMS

12:50 P.M. **7. REVIEW OF COMMENTS RECEIVED AND APPROVAL OF PROJECT SUBMISSIONS FOR THE AIR QUALITY CONFORMITY ANALYSIS FOR THE 2016 CLRP AMENDMENT AND THE FY 2017-2022 TIP**
Andrew Austin, TPB Transportation Planner

At the February 17 meeting, the board was briefed on the major project changes submitted for inclusion in the air quality conformity analysis for the 2016 Constrained Long-Range Plan (CLRP) Amendment, which were released for a 30-day public comment period that ended March 12. The board will be briefed on the comments received and recommended responses, and asked to approve the project submissions for inclusion in the air quality conformity analysis for the 2016 CLRP Amendment and the FY 2017-2022 Transportation Improvement Program (TIP).

Action: Adopt Resolution R8-2016 to approve the project submissions for inclusion in the air quality conformity analysis for the 2016 CLRP Amendment and the FY 2017-2022 TIP.

- Review of comments and approve project submissions for the Air Quality Conformity analysis for the 2016 CLRP Amendment and FY2017-2022 TIP
- Updated Air Quality Conformity Input Table
- Summary of Comments Received and Proposed Responses on the Project Submissions
- Compilation of Comments Received

1:10 P.M. **8. BRIEFING ON DRAFT SCOPE OF WORK FOR THE AIR QUALITY CONFORMITY ANALYSIS FOR THE 2016 CLRP AMENDMENT AND THE FY 2017-2022 TIP**
Jane Posey, TPB Transportation Engineer

At the February 17 meeting, the board was briefed on the draft scope of work for the air quality conformity analysis for the 2016 CLRP and FY 2017-2022 TIP which was released for a 30-day public comment period that ended March 12. The board will be briefed on the comments received and recommended responses, and asked to approve the scope of work for the air quality conformity analysis for the 2016 CLRP Amendment and FY 2017-2022 TIP.

Action: Approve the scope of work for the air quality conformity analysis for the 2016 CLRP and FY 2017-2022 TIP.

- Approve the scope of work for the air quality conformity analysis for the 2016 CLRP and FY 2017-2022 TIP

1:15 P.M. **9. APPROVAL OF AMENDMENT TO THE FY 2016 UNIFIED PLANNING WORK PROGRAM (UPWP), AND APPROVAL OF FY 2016 UPWP CARRYOVER FUNDING TO FY 2017**
Robert Griffiths, TPB Planning and Programming Director

Certain projects and budgets in the current FY 2016 UPWP have been identified to be carried over to FY 2017. The board will be briefed on the enclosed

amendment to the FY 2016 UPWP and associated FY 2016 carryover funding to FY 2017.

Action: Adopt Resolutions R9-2016 and R10-2016 to approve the amendment to the FY 2016 UPWP and the FY 2016 carryover funding to FY 2017.

- Approve the amendment to the FY 2016 UPWP and the FY 2016 carryover funding to FY 2017

1:20 P.M. **10. APPROVAL OF THE FY 2017 UPWP**

Robert Griffiths, TPB Planning and Programming Director

At the February 17 meeting, the board was briefed on the draft FY 2017 Unified Planning Work Program (UPWP). The board will be briefed on the final draft of the UPWP and will be asked to approve it.

Action: Adopt Resolution R11-2016 to approve the FY 2017 Unified Planning Work Program.

- Approve the FY 2017 Unified Planning Work Program

1:25 P.M. **11. APPROVAL OF THE FY 2017 CCWP**

Nicholas Ramfos, TPB Transportation Operations Programs Director

At the February 17 meeting, the board was briefed on the draft FY 2017 Commuter Connections Work Program (CCWP). The board will be briefed on the final draft of the CCWP and will be asked to approve it.

Action: Adopt Resolution R12-2016 to approve the FY 2017 Commuter Connections Work Program.

- Approve the FY 2017 Commuter Connections Work Program

INFORMATION ITEMS

1:30 P.M. **12. UPDATE ON THE DEVELOPMENT OF POLICY LANGUAGE FOR THE REGIONAL FREIGHT PLAN**

Jon Schermann, TPB Transportation Planner

The board will be updated on the development of draft policy language for inclusion in the National Capital Region Freight Plan. The draft language is based on input gathered from several sources including the October 2015 TPB Work Session, the Technical Committee, the TPB Freight Subcommittee, and regional stakeholders.

- Update on the Development of Policy Language for the Regional Freight Plan

1:40 P.M. **13. BRIEFING ON THE COG COOPERATIVE FORECASTING PROCESS**

Paul DesJardin, COG Department of Planning and Community Services Director

At its meeting on March 9, the COG Board approved the Draft Round 9.0 Cooperative Forecasts for use by the TPB in the air quality conformity analysis of the 2016 CLRP Amendment and FY 2017-2022 TIP. The board will be briefed on

the COG Cooperative Forecasting Process and the Round 9.0 Forecasts of future population, household and employment growth in the region.

- COG Cooperative Forecasting Process
- Presentation - COG Cooperative Forecasting Process

1:50 P.M. **14. BRIEFING ON CURRENT REGIONAL TRAVEL TRENDS**

Robert Griffiths, TPB Planning and Programming Director

The committee will be briefed on current trends in regional travel including changes in daily vehicle miles of travel (VMT), transit ridership, modal shares for single occupant vehicle (SOV), carpool, transit and biking commuting travel and peak period congestion levels.

- Current Regional Travel Trends

2:00 P.M. **15. ADJOURN**

The next meeting is scheduled for April 20, 2016.

MEETING AUDIO

Stream live audio of TPB meetings and
listen to recorded audio from past meetings at:
www.mwcog.org/TPBmtgLIVE

TPB News January 2016

TPBnews
A Publication of the National Capital Region Transportation Planning Board

Volume XXIII, Issue 6 *January 2016*

More Reliable Metro Funding Needed to Curb Crowding, Agency Rep Tells TPB

Crowding on the Metro system is set to worsen in coming years, Metro Board member Harriet Tregoning told the TPB at its meeting on December 16. And, she said, without a more reliable source of funding, the major capacity improvements that are necessary to alleviate that crowding are far less likely to be made.

Tregoning was at the December meeting to conclude a three-part series of Metro presentations meant to kick-start a TPB discussion about how best to help support the strained transit agency.

Dedicated funding was at the top of that list because, without it, Metro will only be able to focus on safety and maintaining a state of good repair—not alleviating key bottlenecks in the system to make sure that it can keep up with rising demands.

"Metro has shaped the growth of our region… But that is something that we can't do indefinitely without looking at addressing some of the choke points and the expansion needs that we have," Tregoning told the TPB.

Unlike most other U.S. transit systems, Metro lacks a dedicated source of funding, which means the

(Continued on page 3)

2016 CLRP Amendment Kicks Off

The next annual update of the region's Financially Constrained Long-Range Transportation Plan (CLRP) is now underway following recent TPB approval of the official Call for Projects and schedule for Air Quality Conformity Analysis of the 2016 CLRP Amendment.

The TPB approved the Call for Projects and analysis schedule at its December 16 meeting. The annual update provides an opportunity for area transportation agencies to submit any new regionally significant highway, transit, or bicycle and pedestrian projects they expect to build, operate, and maintain between now and 2040, for inclusion in the CLRP. It is also an opportunity to submit changes to projects that are already in the plan.

The Call for Projects includes a summary brochure that highlights the regional goals, priorities, and needs that the TPB is encouraging area transportation agencies to consider when developing and identifying projects to submit for inclusion.

(Continued on page 4)

Upcoming meetings and items of interest:

TPB Meeting: January 20, 2016

- Approval of funding recommendations for the 5310 Enhanced Mobility program
- Briefing on COG Multi-Sector Working Group consensus recommendations on greenhouse gas emissions strategies

Inside this issue of *TPBnews*:

More information may be found at: www.mwcog.org/transportation

http://www.mwcog.org/uploads/pub-documents/pl5aX1w20160113140048.pdf

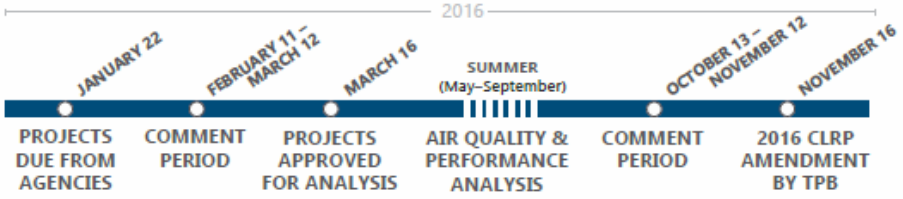
2016 CLRP AMENDMENT

(Continued from page 1)

In February, once agencies have submitted their projects, the TPB will invite comment from the public and any TPB member or stakeholder before advancing the projects into the federally required Air Quality Conformity Analysis to determine whether future vehicle-related emissions under the plan will remain below approved regional limits, known as "mobile emissions budgets."

In October 2016, the results of the Air Quality Conformity Analysis and the Performance Analysis will be presented for public comment. The draft 2016 CLRP amendment is expected to be finalized in November.◆

2016 CLRP Schedule



DEADLINES FOR AGENCIES

To submit new projects or changes to existing projects, designated agency representatives must complete project description forms and provide inputs for the Air Quality Conformity Analysis.

DEADLINE 1: JANUARY 22, 2016 Complete online project description forms and Air Quality Conformity Input information for projects deemed regionally significant for air quality purposes.

DEADLINE 2: MAY 6, 2016
Provide all other required project information, including Congestion Management Documentation, for regionally significant projects and funding for the FY 2017-2022 TIP.

COMMENT PERIODS

The 2016 CLRP amendment will include two 30-day comment periods during which the public and any TPB member or stakeholder can submit comments on the plan amendment.

FEBRUARY 11 – MARCH 12, 2016
Comment on the projects submitted for inclusion in the 2016 CLRP update. The comment period takes place before the projects are included in the federally required Air Quality Conformity Analysis.

OCTOBER 13 – NOVEMBER 12, 2016
Comment on the draft 2016 CLRP amendment, the results of the Air Quality Conformity Analysis, and any of the associated analyses of the 2016 CLRP amendment prior to adoption by the TPB.

TPB BRIEFED ON METRORAIL SAFETY OVERSIGHT

Reginald Bazile, DDOT Special Assistant for Policy and Planning, briefed the TPB at its December 16 meeting about the current operations of the Tri-State Oversight Committee (TOC) and changes planned for the agency in response to new federal requirements.

The TOC was created in 1997 in response to federal regulations that required states to develop and maintain a state safety oversight agency that oversees safety and security practices for rail transit systems that are not regulated by the Federal Railroad Administration. The TOC is a cooperative effort between the District of Columbia, the State of Maryland, and the Commonwealth of Virginia to oversee the safety of the Washington Metropolitan Area Transit Authority's (WMATA) Metrorail system.

The TOC's primary objective is to ensure that WMATA develops federally required safety plans. To do this, the agency is staffed

(Continued on page 5)

http://www.mwcog.org/uploads/pub-documents/pl5aX1w20160113140048.pdf

TPB Public Comment Period
February 11 – March 12, 2016

COMMENT PERIOD OPEN
FEBRUARY 11 - MARCH 12

Additions and Changes Proposed for Inclusion in the Air Quailty Conformity Analysis of the 2016 Amendment to the CLRP

The Transportation Planning Board has released for 30-day public comment and inter-agency review the project submissions to be included in the Air Quality Conformity Analysis for the 2016 Amendment of the region's Constrained Long-Range Transportation Plan (CLRP). The public and any TPB member or stakeholder may submit comments. The following materials are available for review and comment:

- Major Additions and Changes Proposed for Inclusion in the 2016 CLRP Amendment
- Project Inputs for the Air Quality Conformity Analysis
- Draft Scope of Work for the Air Quality Conformity Analysis

The CLRP shows the road, bridge, high-occupancy vehicle (HOV), transit, bicycle and pedestrian projects funded through the year 2040. The six-year TIP includes all projects, programs, and strategies that state and local transportation agencies plan to implement between 2015 and 2020. The air quality conformity analysis assesses the plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments. The comment process on the TIP is being used to obtain comments on the region's program of projects that are funded by the Federal Transit Administration (including projects funded by the Urbanized Area Formula Program) and the Federal Highway Administration. To learn more about the currently approved CLRP, please visit www.mwcog.org/CLRP.

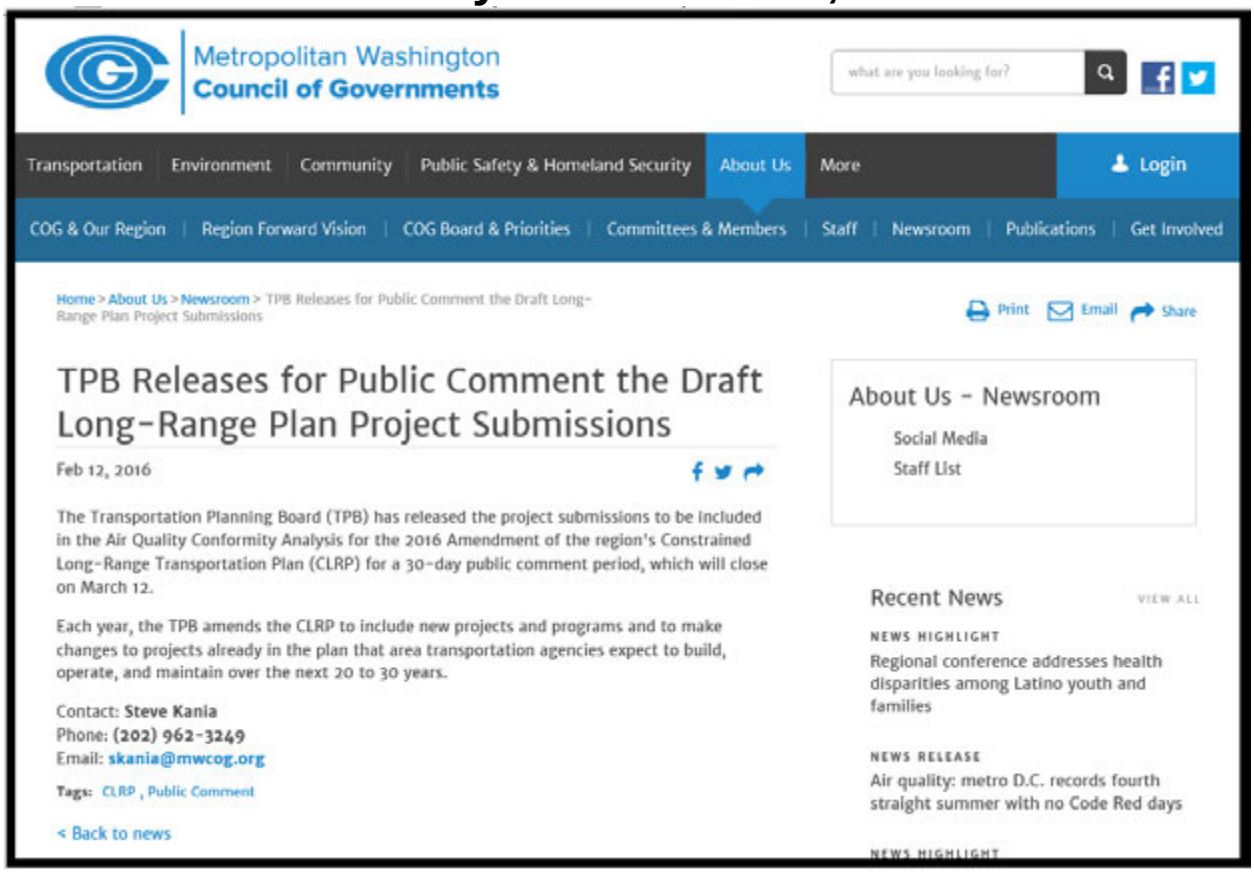
The Metropolitan Washington Council of Governments (COG) fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations prohibiting discrimination in all programs and activities. For more information, or to file a Title VI related complaint, see www.mwcog.org/publications/nondiscrimination.asp or call (202) 962-3200. If information is needed in another language, then contact (202) 962-3200.

El Consejo Metropolitano de Gobiernos de Washington (COG) cumple con el Titulo VI de la Ley sobre los Derechos Civiles de 1964 y otras leyes y reglamentos en todos sus programas y actividades. Para obtener informacion en espanol, o para someter una demanda relacionado al Titulo VI, visite nuestra pagina web www.mwcog.org/publications/nondiscrimination.asp o llame al (202) 962-3300. Para obtener informacion en otra idioma, llame al (202) 962-3200.

The 30-day comment period closes at 11:59 p.m. ET on Saturday, March 12. Please visit www.mwcog.org/CLRP2016 for more information about this year's CLRP update.

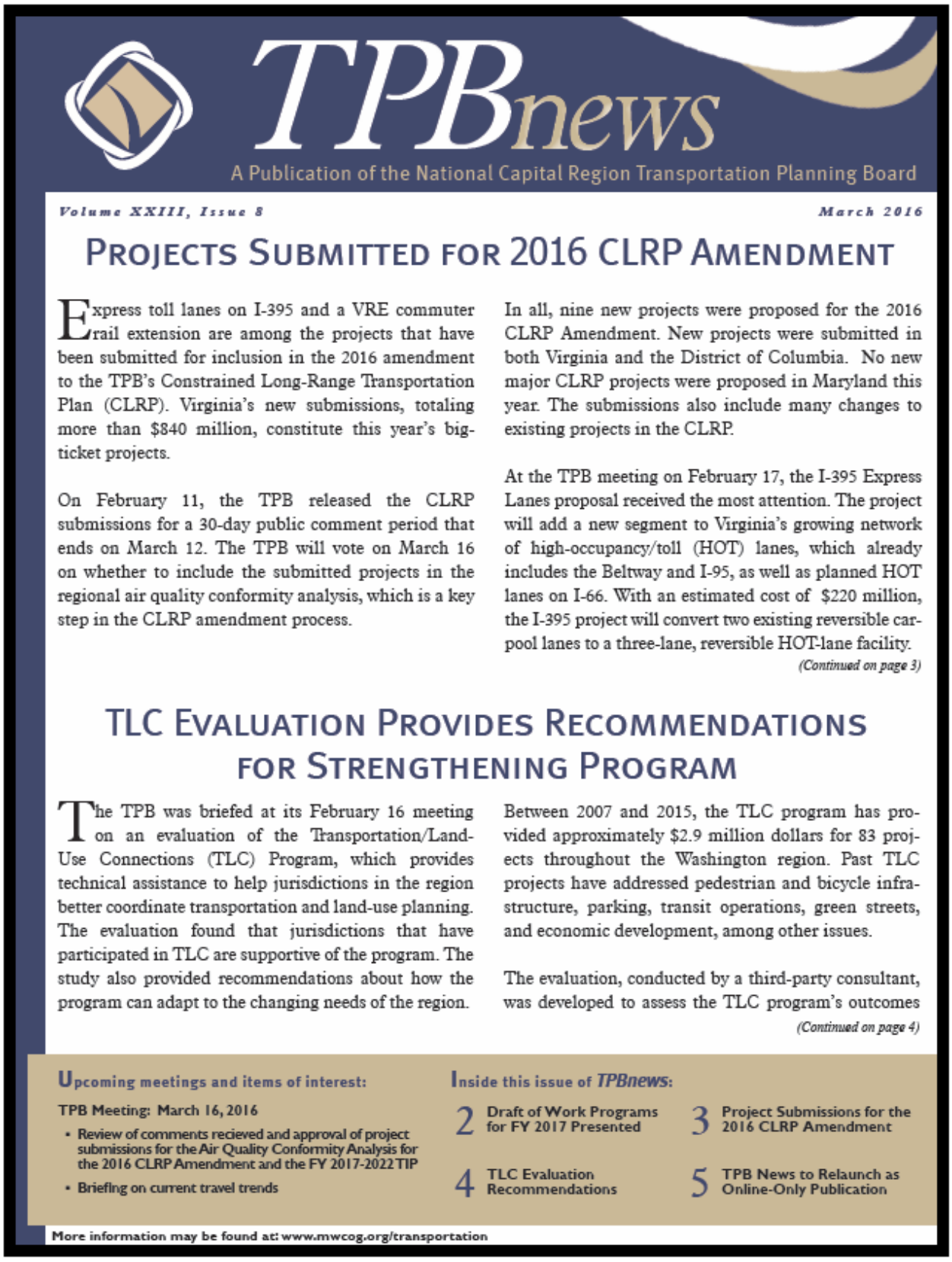
http://old.mwcog.org/clrp/update/comment.asp

TPB Public Comment Period
February 12 – March 12, 2016



https://www.mwcog.org/about-us/newsroom/2016/2/12/tpb-releases-for-public-comment-the-draft-long-range-plan-project-submissions-public-comment-clrp/

TPB News March 2016



TPBnews

A Publication of the National Capital Region Transportation Planning Board

Volume XXIII, Issue 8 *March 2016*

Projects Submitted for 2016 CLRP Amendment

Express toll lanes on I-395 and a VRE commuter rail extension are among the projects that have been submitted for inclusion in the 2016 amendment to the TPB's Constrained Long-Range Transportation Plan (CLRP). Virginia's new submissions, totaling more than $840 million, constitute this year's big-ticket projects.

On February 11, the TPB released the CLRP submissions for a 30-day public comment period that ends on March 12. The TPB will vote on March 16 on whether to include the submitted projects in the regional air quality conformity analysis, which is a key step in the CLRP amendment process.

In all, nine new projects were proposed for the 2016 CLRP Amendment. New projects were submitted in both Virginia and the District of Columbia. No new major CLRP projects were proposed in Maryland this year. The submissions also include many changes to existing projects in the CLRP.

At the TPB meeting on February 17, the I-395 Express Lanes proposal received the most attention. The project will add a new segment to Virginia's growing network of high-occupancy/toll (HOT) lanes, which already includes the Beltway and I-95, as well as planned HOT lanes on I-66. With an estimated cost of $220 million, the I-395 project will convert two existing reversible car-pool lanes to a three-lane, reversible HOT-lane facility.

(Continued on page 3)

TLC Evaluation Provides Recommendations for Strengthening Program

The TPB was briefed at its February 16 meeting on an evaluation of the Transportation/Land-Use Connections (TLC) Program, which provides technical assistance to help jurisdictions in the region better coordinate transportation and land-use planning. The evaluation found that jurisdictions that have participated in TLC are supportive of the program. The study also provided recommendations about how the program can adapt to the changing needs of the region.

Between 2007 and 2015, the TLC program has provided approximately $2.9 million dollars for 83 projects throughout the Washington region. Past TLC projects have addressed pedestrian and bicycle infrastructure, parking, transit operations, green streets, and economic development, among other issues.

The evaluation, conducted by a third-party consultant, was developed to assess the TLC program's outcomes

(Continued on page 4)

Upcoming meetings and items of interest:

TPB Meeting: March 16, 2016

- Review of comments recieved and approval of project submissions for the Air Quality Conformity Analysis for the 2016 CLRP Amendment and the FY 2017-2022 TIP
- Briefing on current travel trends

Inside this issue of *TPBnews*:

More information may be found at: www.mwcog.org/transportation

https://www.mwcog.org/documents/2016/04/13/tpb-news-2003-2016/

TPB News March 2016

Volume XXIII, Issue 8 *TPBnews*

2016 CLRP Project Submissions

(Continued from page 1)

Virginia originally planned to the build the I-395 HOT lanes as part of a larger express lanes project that included the I-95 HOT lanes south of the Beltway, which opened last December. As part of the larger HOT lanes plan, the I-395 project was included in the CLRP in 2007, but it was removed from the CLRP in 2011 due to local opposition. VDOT has been working with jurisdictions and stakeholders to build support for the updated project.

"This project will basically continue the Express Lanes network in the region," said VDOT's Rene'e Hamilton. The eight-mile project is expected to be complete by 2019.

The VRE commuter line extension in Prince William County is also on a short timeframe, with completion expected in 2022. The project, estimated at $433 million, will extend VRE's Manassas line by 11 miles to Gainesville and Haymarket. It includes construction of up to three new stations, purchase of railcars, and widening of existing right-of-way.

VDOT also submitted changes to two high-profile projects that were added to the CLRP last year. For the I-66 project inside the Beltway, the agency has proposed changing the scope and timing of the tolling and lane widenings through 2040. For the I-66 project outside the Beltway, VDOT has proposed ramp modifications, but no major policy or facility changes.

The District of Columbia submitted two new projects totaling less than $8 million. The 16th Street Bus Priority project will provide nearly three miles of peak-period bus-only lanes. The addition of nearly four miles of dedicated bicycle lanes will help expand the city's cycle network by converting auto travel lanes for this purpose.

In releasing the projects for public comment on February 12, the TPB provided a summary of how agencies have reported that their project submissions support the goals laid out in the Regional Transportation Priorities Plan. The TPB also released "project profiles" that provide at-a-

(Continued on page 5)

Project Submissions for the 2016 CLRP Amendment

DISTRICT OF COLUMBIA

16th Street Bus Priority

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.

Cost: $6 million **Anticipated Completion:** 2021

Dedicated Bicycle Lane Network

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

Cost: $1.35 million **Anticipated Completion:** 2017

Streetcar: Union Station to Georgetown

This project will extend the H Street NE streetcar line from Union Station to Georgetown, mainly along the K Street NW corridor.

Cost: $348 million **Anticipated Completion:** 2022

VIRGINIA

VRE Haymarket Extension

This proejct will extend the Virginia Railway Express (VRE) Manassas Line by approximately 11 mailes to Gainesville and Haymarket.

Cost: $433 million **Anticipated Completion:** 2022

Crystal City Transitway: Northern Extension

This project will extend the existing Metroway bus rapid transit (BRT) line from Crystal City Metro Station north to the Pentagon City Metro Station.

Cost: $24 million **Anticipated Completion:** 2023

I-395 Express Lanes

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) lanes ("Express Lanes") facility.

Cost: $220 million **Anticipated Completion:** 2019

I-66 Multimodal Improvements

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

Cost: $375 million **Anticipated Completion:** 2017, 2020, 2040

I-66 Corridor Improvements

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.

Cost: $2-3 billion **Anticipated Completion:** 2021, 2040

VA 28 HOV and Widening

This project will create high-occupancy vehicle (HOV) lanes on VA Route 28 (Sully Road) between I-66 and the Dulles Toll Road by 2040 by converting one general purpose lane in either direction to HOV.

Cost: $100 million **Anticipated Completion:** 2021, 2025, 2040

For an interactive map and more information about these projects visit:
www.mwcog.org/clrp/update/projects.asp

https://www.mwcog.org/documents/2016/04/13/tpb-news-2003-2016/

TPB News April 2016

TPBnews

A Publication of the National Capital Region Transportation Planning Board

Volume XXIII, Issue 9 April 2016

Board Hears, Reviews Public Comments on Projects Slated for 2016 CLRP Amendment

At the TPB's March 16 meeting several members of the public weighed in on the new projects under consideration for the 2016 amendment to the region's Constrained Long-Range Transportation Plan (CLRP). Board members also reviewed a number of written comments received during a 30-day public comment period that ended March 12.

Many of the comments the board heard focused on tolling proposals for I-66 and I-395 in Northern Virginia.

Bob Chase of the Northern Virginia Transportation Alliance, Michael Forehand of the Northern Virginia Chamber of Commerce, and Tom Calcangi of AAA Mid-Atlantic all spoke in favor of the major highway projects, citing their importance in supporting the region's economic health. The three also noted the importance of transit and other multimodal investments alongside the major road improvements.

The Northern Virginia Transportation Commission (NVTC) also weighed in on the tolling proposals. In a formal resolution, NVTC urged the TPB to seek a commitment from VDOT that a "reasonable, guaranteed" amount of annual revenue from the I-395 toll project be dedicated to transit and other multimodal improvements in the corridor. (See article on Page 2 for more information about VDOT's response to the NVTC request.)

The other main focus of the comments at the March 16 meeting focused on the District's proposal to expand

(Continued on page 4)

COG Releases New Population and Job Growth Forecasts

The region could see 1.5 million more people and 1.1 million more jobs by 2045, according to the latest regional growth forecasts from the Metropolitan Washington Council of Governments (COG). In the coming months, the TPB will use the forecasts to predict future travel patterns and air quality under recently proposed changes to the region's Constrained Long-Range Transportation Plan (CLRP).

COG's Paul DesJardin was on hand at the TPB's March 16 meeting to brief the board. He said that the forecasts amount to a 36-percent increase in employment, a 28-percent increase in population, and a 32-percent increase in the number of households in the region. He said that the employment prediction is lower than in previous forecasts, largely a reflection of broader national economic trends, but still ahead of the national average.

(Continued on page 3)

Upcoming meetings and items of interest:

TPB Meeting: April 20, 2016

- Approval of projects recommended for funding under the federal Surface Transportation Block Grant Set Aside Program (formerly known as the Transportation Alternatives Program) for FY 2017 in Virginia
- Briefing on current regional travel trends

Inside this issue of *TPBnews*:

More information may be found at: www.mwcog.org/transportation

https://www.mwcog.org/documents/2016/04/13/tpb-news-2003-2016/

Public Comments on 2016 CLRP Projects

(Continued from page 1)

its network of dedicated bicycle lanes by removing travel lanes for automobiles.

Greg Billing, executive director of the Washington Area Bicyclist Association (WABA), expressed his organization's enthusiastic support for the proposal, noting especially that the District's ongoing public engagement process has led to alternatives that provide dedicated bike lanes with a negligible impact to traffic and parking.

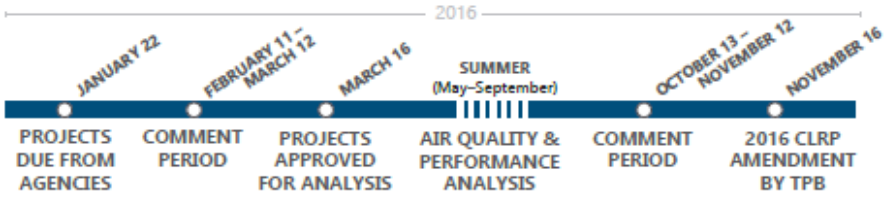
Two other commenters expressed deep concerns about the projects, though, and asked the TPB not to approve them. Apostle Green from the United House of Prayer said that one of the proposed lanes, in the 1200 block of 6th Street NW, would take away much-needed parking for attendees of his church. He reminded the TPB of its obligation to consider the needs of low-income and minority communities when approving changes to the CLRP.

Green's comments were echoed at the meeting by Advisory Neighborhood Commissioner Frank Wiggins and by several written comments the board received during the comment period.

After hearing and reviewing the public comments the TPB approved including the projects in the federally required Air Quality Conformity Analysis. Under federal law, the analysis must demonstrate that future vehicle-related emissions under the CLRP will remain below approved regional limits. The TPB will receive the results of the air quality analysis in the fall when it considers the projects for final approval and inclusion in the plan. Another 30-day public comment period is currently scheduled to take place October 13-November 12, just ahead of the board's final vote.

Learn more about the 2016 CLRP Amendment at www.mwcog.org/CLRP2016. ◆

2016 CLRP Schedule



DEADLINES FOR AGENCIES

To submit new projects or changes to existing projects, designated agency representatives must complete project description forms and provide inputs for the Air Quality Conformity Analysis.

DEADLINE 1: JANUARY 22, 2016 Complete online project description forms and Air Quality Conformity Input information for projects deemed regionally significant for air quality purposes.

DEADLINE 2: MAY 6, 2016
Provide all other required project information, including Congestion Management Documentation, for regionally significant projects and funding for the FY 2017-2022 TIP.

COMMENT PERIODS

The 2016 CLRP amendment will include two 30-day comment periods during which the public and any TPB member or stakeholder can submit comments on the plan amendment.

FEBRUARY 11 – MARCH 12, 2016
Comment on the projects submitted for inclusion in the 2016 CLRP update. The comment period takes place before the projects are included in the federally required Air Quality Conformity Analysis.

OCTOBER 13 – NOVEMBER 12, 2016
Comment on the draft 2016 CLRP amendment, the results of the Air Quality Conformity Analysis, and any of the associated analyses of the 2016 CLRP amendment prior to adoption by the TPB.

https://www.mwcog.org/documents/2016/04/13/tpb-news-2003-2016/

National Capital Region
Transportation Planning Board

HOME ABOUT CONTACT

MORE NEWS

Learn about transportation project prioritization at the Sept. 15 TIP Forum

Posted by TPB NEWS *on* AUGUST 23, 2016

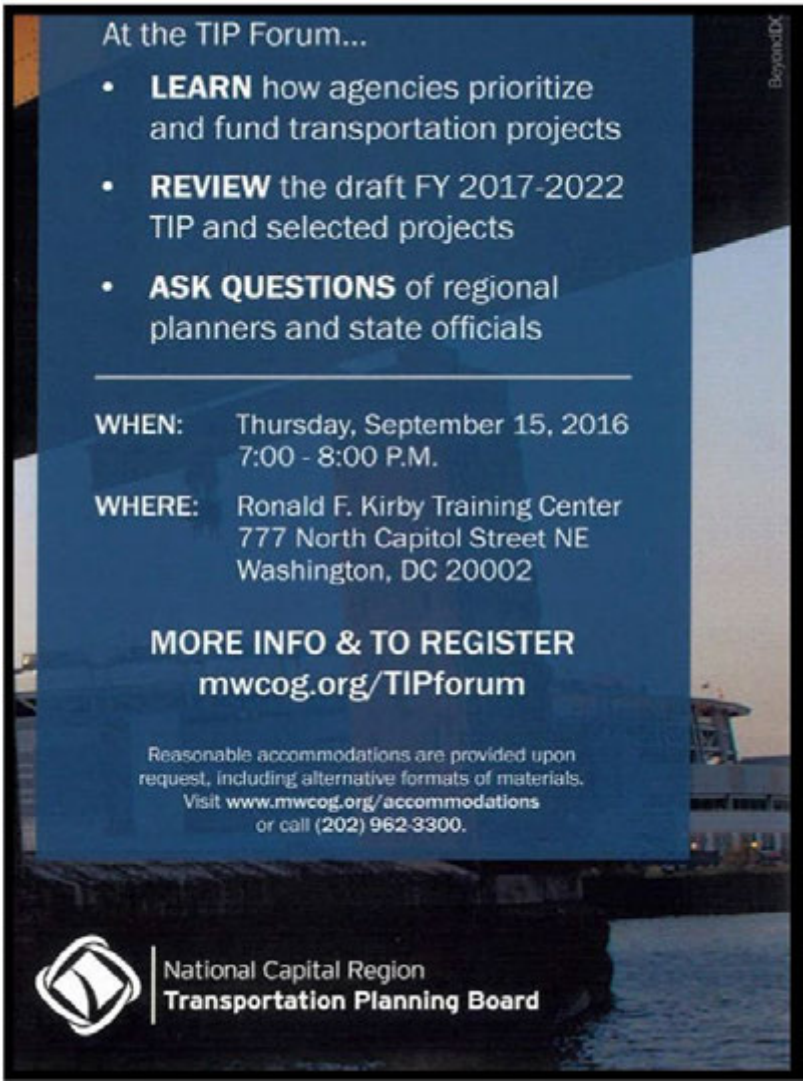
Share

(Photo by BeyondDC on Flickr)

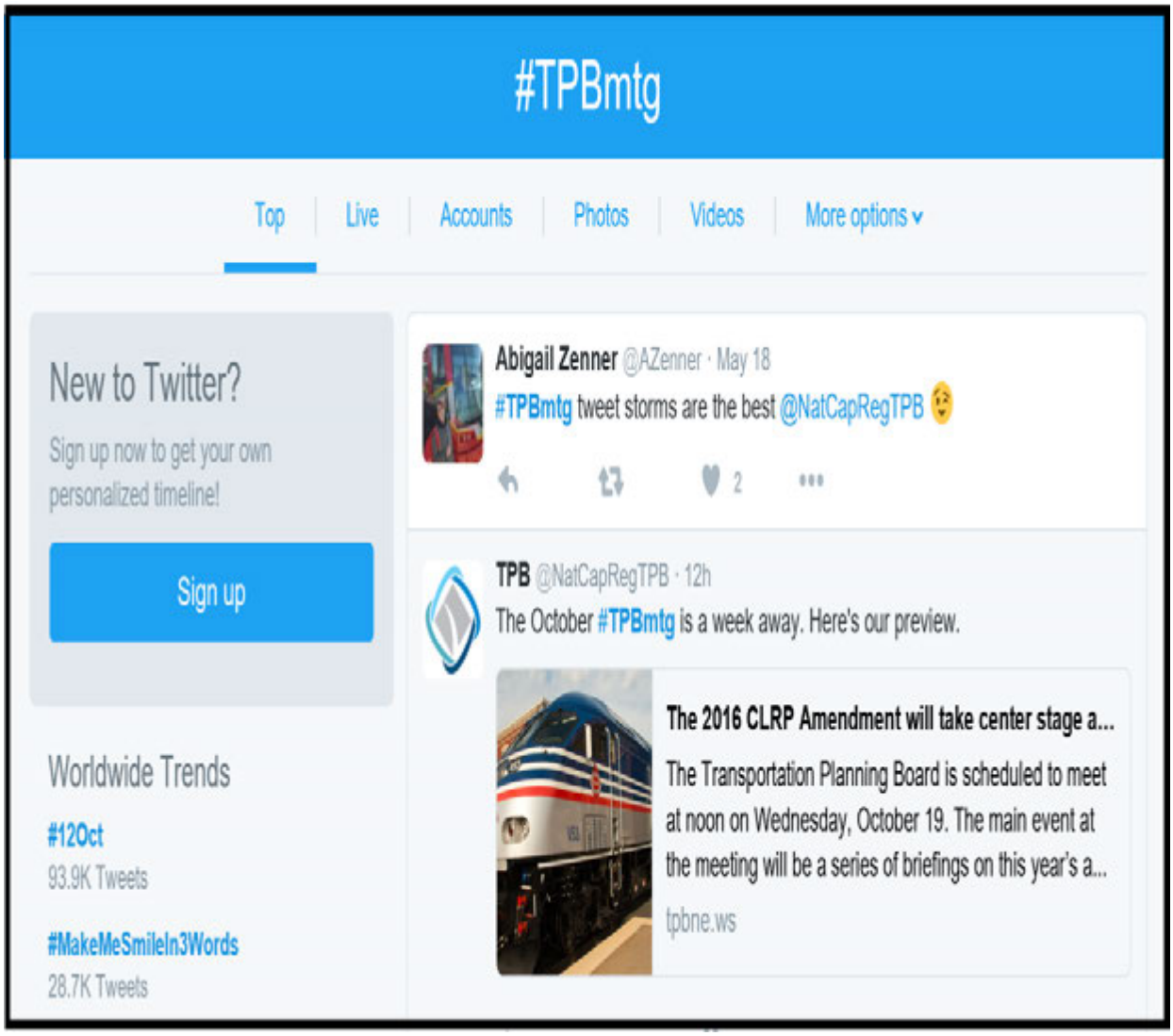
Ever wonder how area transportation agencies prioritize and fund major projects and programs? Or which projects are slated for funding and construction in the next few years? On September 15, the TPB will host a public forum to shed greater light on the prioritization process and to take a closer look at the region's six-year transportation spending plan, known as the Transportation Improvement Program, or TIP.

http://www.tpbne.ws/more-news/learn-about-transportation-project-prioritization-at-the-sept-15-tip-forum/

PUBLIC FORUM FY2017-2022 TIP September 15, 2016

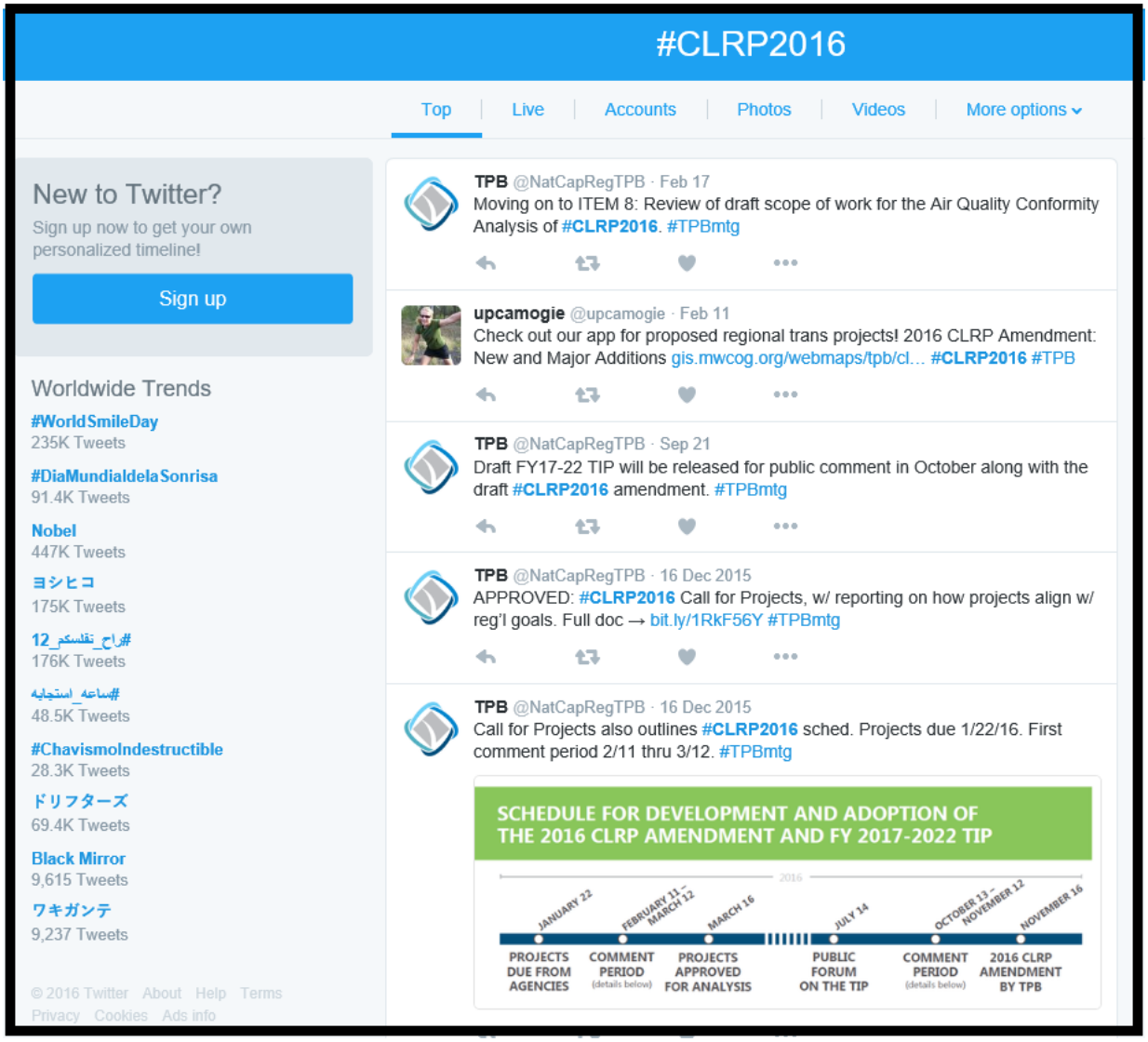


TPB Twitter for 2016 CLRP Amendment at TPB October 19, 2016 Meeting



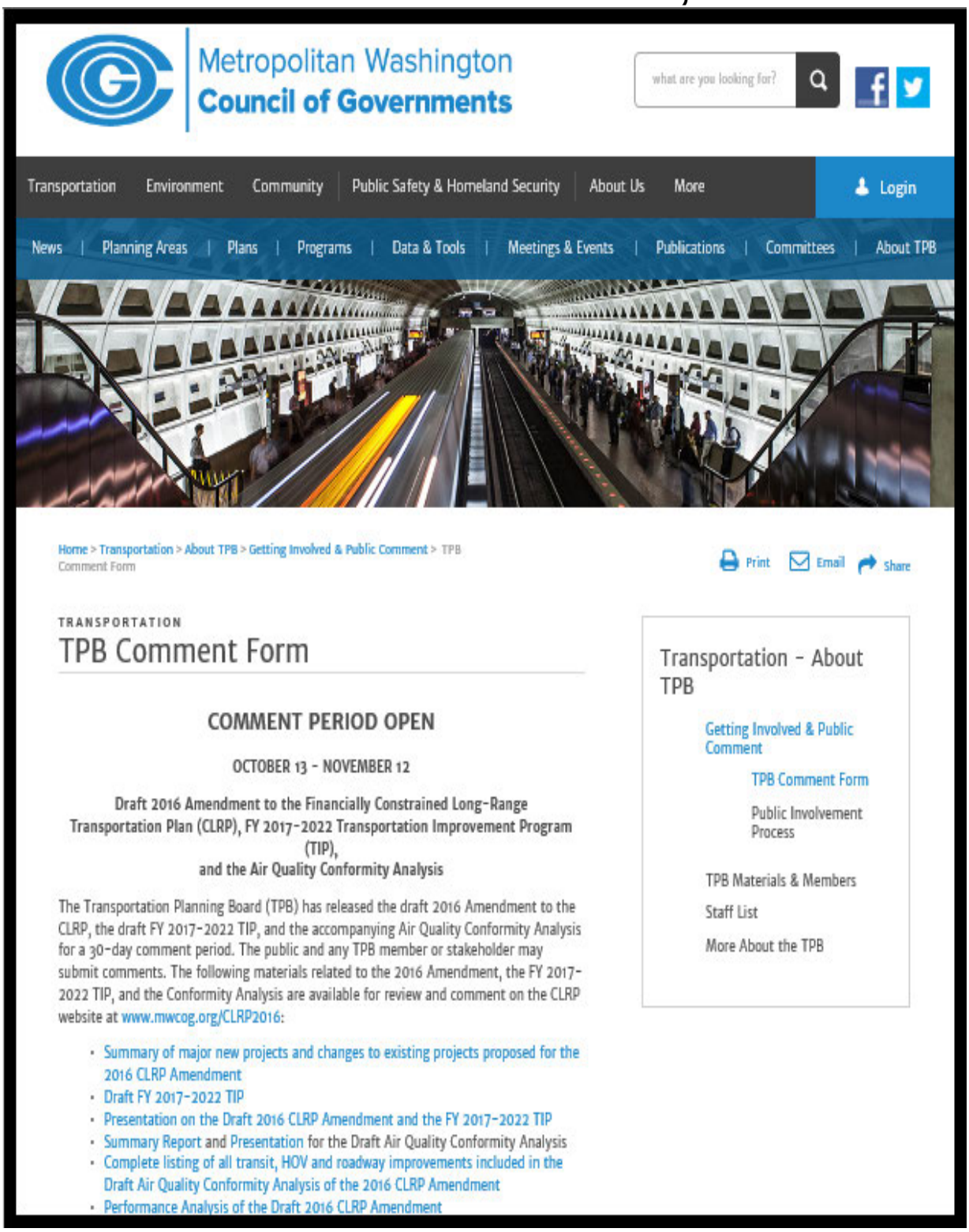
https://twitter.com/hashtag/TPBmtg?src=hash

TPB Twitter 2016 CLRP Public Comments



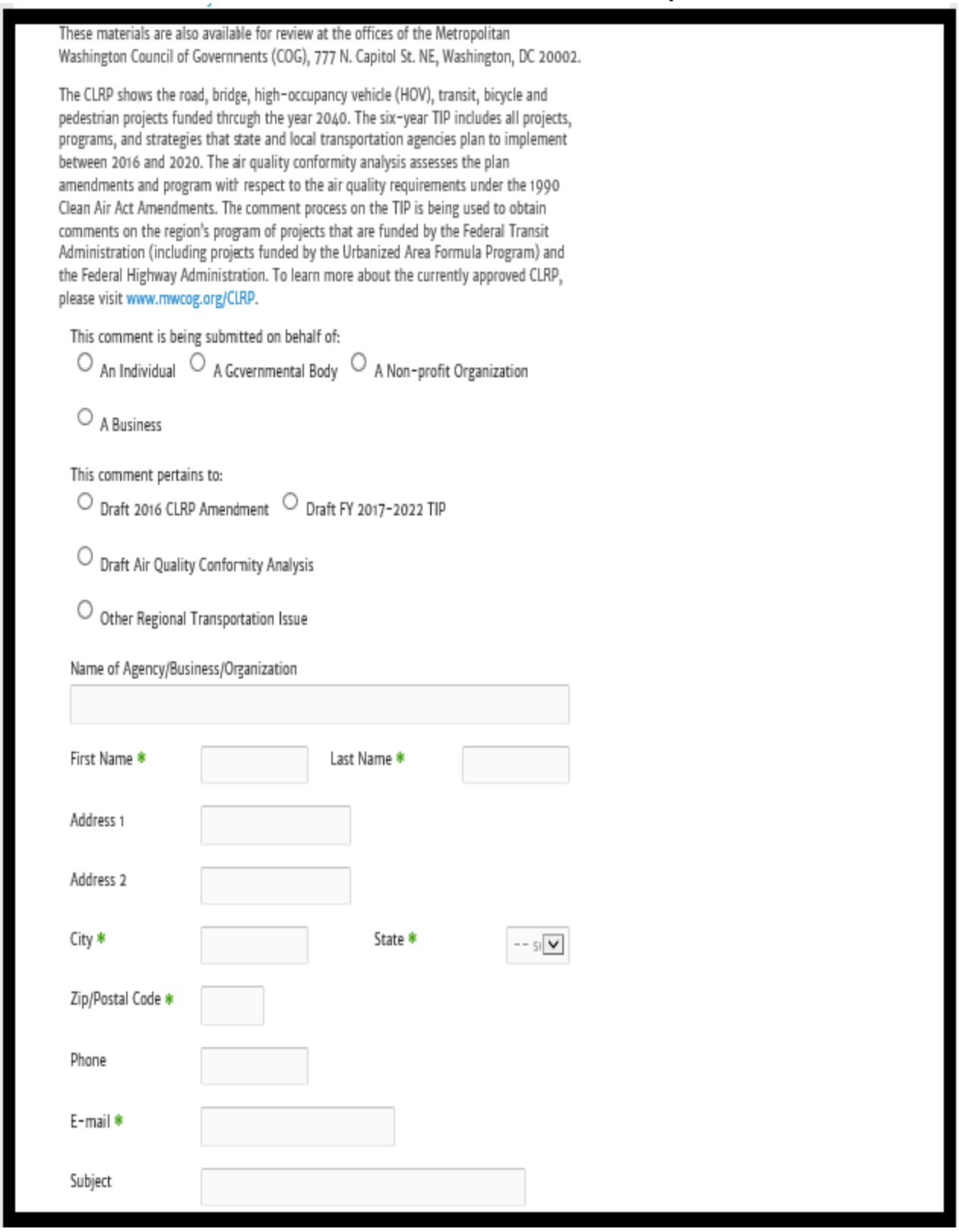
https://twitter.com/search?q=%23CLRP2016&ref_src=twsrc%5Etfw

TPB Public Comment Period
October 13 – November 12, 2016



http://old.mwcog.org/clrp/update/comment.asp

TPB Public Comment Period
October 13 – November 12, 2016



These materials are also available for review at the offices of the Metropolitan Washington Council of Governments (COG), 777 N. Capitol St. NE, Washington, DC 20002.

The CLRP shows the road, bridge, high-occupancy vehicle (HOV), transit, bicycle and pedestrian projects funded thrcugh the year 2040. The six-year TIP includes all projects, programs, and strategies that state and local transportation agencies plan to implement between 2016 and 2020. The air quality conformity analysis assesses the plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments. The comment process on the TIP is being used to obtain comments on the region's program of projects that are funded by the Federal Transit Administration (including projects funded by the Urbanized Area Formula Program) and the Federal Highway Administration. To learn more about the currently approved CLRP, please visit www.mwcog.org/CLRP.

This comment is being submitted on behalf of:

○ An Individual ○ A Gcvernmental Body ○ A Non-profit Organization

○ A Business

This comment pertains to:

○ Draft 2016 CLRP Amendment ○ Draft FY 2017-2022 TIP

○ Draft Air Quality Conformity Analysis

○ Other Regional Transportation Issue

Name of Agency/Business/Organization

First Name * Last Name *

Address 1

Address 2

City * State *

Zip/Postal Code *

Phone

E-mail *

Subject

http://old.mwcog.org/clrp/update/comment.asp

TPB Public Comment Period
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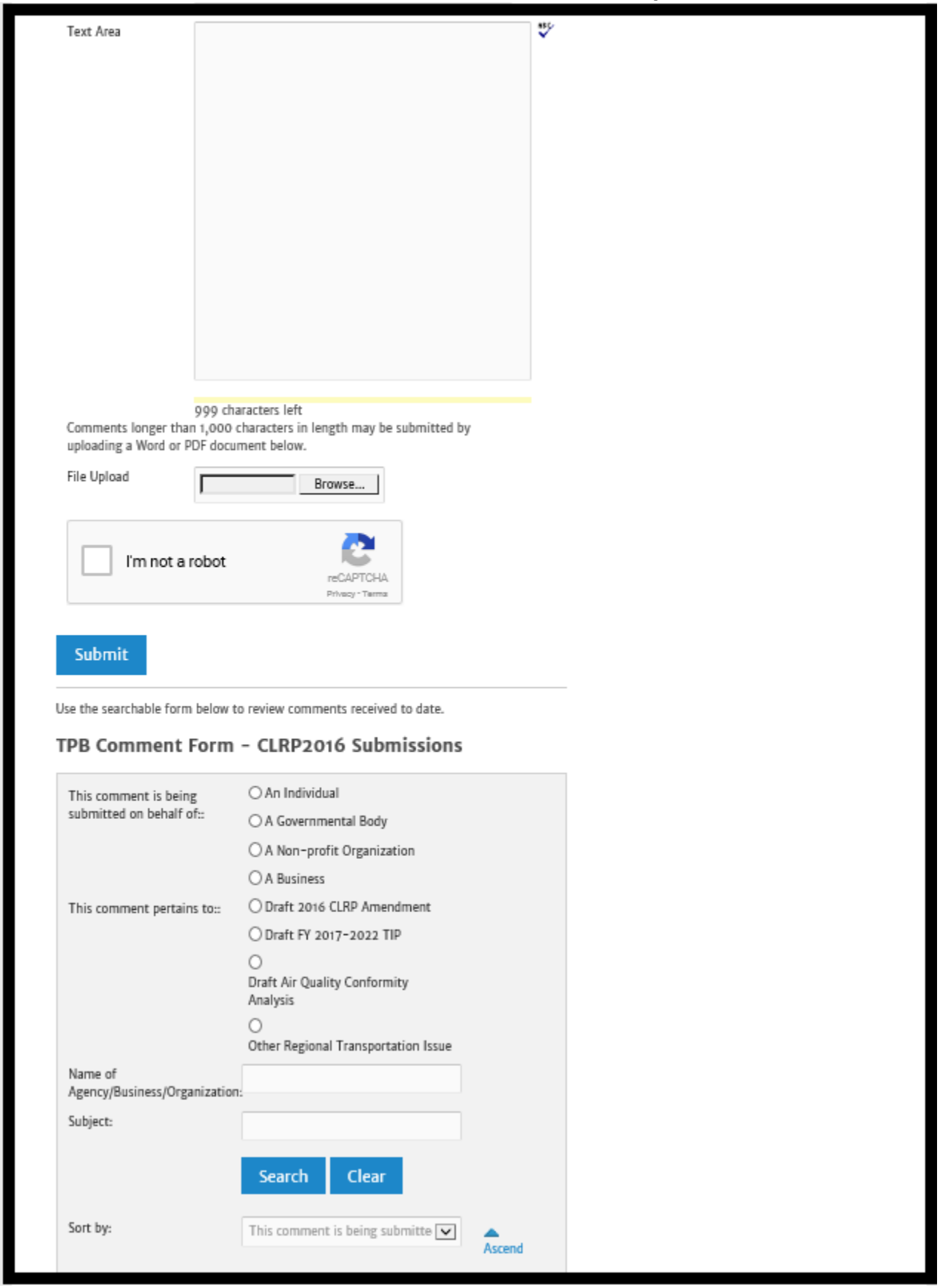

http://old.mwcog.org/clrp/update/comment.asp

National Capital Region
Transportation Planning Board

The 2016 CLRP Amendment will take center stage at the Oct. 19 TPB meeting

Posted by TPB News on October 11, 2016

The Transportation Planning Board is scheduled to meet at noon on Wednesday, October 19. The main event at the meeting will be a series of briefings on this year's amendment to the region's Constrained Long-Range Transportation Plan (CLRP) as well as the latest update to the six-year Transportation Improvement Program (TIP). The TPB will release drafts of both documents on Thursday, October 13, for a 30-day public comment period.

- **Overview of the 2016 CLRP Amendment and FY 2017-2022 TIP**
  Board members will be briefed on the major new projects and changes to existing projects slated for inclusion in this year's CLRP amendment. The major new projects include new Express Lanes on I-395 and a VRE commuter rail extension in Virginia, and new bus-only lanes on 16th Street in the District of Columbia. The briefing will also include details about the six-year TIP, including amounts and sources of funding for projects programmed for planning and/or construction through 2022.

- **Results of the Air Quality Conformity Analysis of the draft 2016 CLRP Amendment**
  Under federal law, transportation-related emissions under the CLRP and TIP must be consistent with emissions levels set forth in air quality plans adopted by the states. This is a requirement in all metropolitan areas that are currently not in attainment of certain federal air quality standards. Each time the TPB updates the CLRP, it conducts an analysis of future emissions under the plan to ensure conformity with adopted emissions limits. The results of this year's analysis will be presented to the TPB for the first time at its October meeting.

- **Performance Analysis of the draft 2016 CLRP Amendment**
  Before the TPB approves amendments to the CLRP, it analyzes the future performance of the plan, including how travel demand and travel conditions in the region are expected to change. The board will be briefed on the results of this year's analysis, which also includes an assessment of how the plan supports the goals and strategies outlined in the Regional Transportation Priorities Plan.

http://www.tpbne.ws/more-news/the-2016-clrp-amendment-will-take-center-stage-at-the-oct-19-tpb-meeting/

http://www.tpbne.ws/featured/trains-buses-new-lanes-for-cars-and-bikes-highlights-from-the-2016-clrp-amendment/

PUBLIC COMMENT PERIOD

FOR THE NATIONAL CAPITAL REGION´S 2016 CONSTRAINED LONG-RANGE TRANSPORTATION PLAN AMENDMENT AND DRAFT SCOPE OF WORK FOR THE AIR QUALITY CONFORMITY ANALYSIS

On Thursday, February 11, 2016 the National Capital Region Transportation Planning Board (TPB) will release for public comment the draft project submissions for the Air Quality Conformity Analysis of the 2016 Financially Constrained Long-Range Transportation Plan (CLRP) Amendment. The TPB will also release the draft Scope of Work for the Air Quality Conformity Analysis. The 30-day public comment period will close at midnight on Saturday, March 12, 2016. The TPB will be asked to approve the project inputs and the scope of work for the Air Quality Conformity Analysis at their meeting on March 16, 2016.

These materials are available for review online at www.mwcog.org/clrp2016 and at the offices of the Metropolitan Washington Council of Governments (COG), 777 N. Capitol St. NE, Washington, DC 20002.

The CLRP shows the road, bridge, high-occupancy vehicle (HOV), transit, bicycle and pedestrian projects funded through the year 2040. The air quality conformity analysis assesses the CLRP with respect to the air quality requirements under the 1990 Clean Air Act Amendments.

Comments may be submitted by any of the following means:

Write: National Capital Region Transportation Planning Board
777 North Capitol Street NE Suite 300
Washington, DC 20002-4239

Online: www.mwcog.org/TPBcomment

Email: TPBComment@mwcog.org

In Person: Interested citizens may make a statement during the public comment period at the beginning of each TPB meeting, at 12 noon on the third Wednesday of every month, except August. To participate, call (202) 962-3315.

The Metropolitan Washington Council of Governments (COG) fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations prohibiting discrimination in all programs and activities. For more information, or to file a Title VI related complaint, see www.mwcog.org/publications/nondiscrimination.asp or call (202) 962-3200. If information is needed in another language, then contact (202) 962-3200.

El Consejo Metropolitano de Gobiernos de Washington (COG) cumple con el Título VI de la Ley sobre los Derechos Civiles de 1964 y otras leyes y reglamentos en todos sus programas y actividades. Para obtener información en español, o para someter una demanda relacionado al Título VI, visite nuestra pági-na web www.mwcog.org/publications/nondiscrimination.asp o llame al (202) 962-3300. Para obtener información en otra idioma, llame al (202) 962-3200.

PERIÓDO DE COMENTARIO PÚBLICO

PARA LA ENMIENDA AL PLAN DE TRANSPORTE A LARGO PLAZO CON FINANCIAS RESTRINGIDOS 2016 DEL REGIÓN DE LA CAPITAL NACIONAL Y EL BORRADOR DEL ÁMBITO DE TRABAJO PARA EL ANÁLISIS DE CONFORMIDAD DE LA CALIDAD DEL AIRE

El jueves, 11 de febrero de 2016 la Junta de Planificación de Transporte para la Región de la Capital Nacional (TPB) lanzó para comentario público el borrador de la presentación de proyectos para el Análisis de Conformidad de la Calidad del Aire de la enmienda al Plan de Transporte a Largo Plazo con Financias Restringidos 2016 (CLRP). La TPB también lanzó el borrado del Ámbito de Trabajo para el Análisis de Conformidad de la Calidad del Aire. El período de comentarios de 30 días se cerrará a la media noche del sábado, 12 de marzo de 2016. Se le pedirá al TPB que apruebe los aportes de los proyectos y el ámbito de trabajo para el Análisis de Conformidad de la Calidad del Aire en su reunión del 16 de marzo de 2016.

Estos materiales están disponibles para revisar en línea en www.mwcog.org/clrp y en las oficinas del Metropolitan Washington Council of Governments (Consejo de Gobiernos de área Metropolitana de Washington), 777 N. Capitol St. NE, Washington, DC 20002.

El CLRP enseña los proyectos de calles, puentes, vías de alta ocupación, tránsito, bicicletas y peatonales, con fondos hasta el año 2040. El análisis de conformidad de la calidad del aire evalúa al CLRP con respeto a los requerimientos de calidad de aire bajo las 1990 Clean Air Act Amendments.

Sus comentarios pueden ser presentados en cualquiera de las siguientes formas:

Escribir: **National Capital Region Transportation Planning Board**
(Junta de Planificación de Transporte para la Región de la Capital Nacional)
777 North Capitol Street NE Suite 300
Washington, DC 20002-4239

En Línea: **www.mwcog.org/TPBcomment**

Correo Electrónico: **TPBComment@mwcog.org**

En Persona: Ciudadanos interesados pueden hacer sus comentarios durante el periodo de comentarios públicos al comienzo de cada reunion del TPB el tercer miércoles de cada mes, excepto en agosto. Para participar, llamar al (202) 962 3315.

El Consejo de Gobiernos de área Metropolitana de Washington cumple con el Título VI de la Ley sobre los Derechos Civiles de 1964 (Title VI of the Civil Rights Act of 1964) y otras leyes y reglamentos en todos sus programas y actividades. Para obtener información en español, o para someter una demanda relacionado al Título VI, visite nuestra página web www.mwcog.org/publications/nondiscrimination.asp o llame al (202) 962-3300. Para obtener información en otra idioma, llame al (202) 962-3200.

Washington Post February 11, 2016

PUBLIC COMMENT PERIOD FOR THE NATIONAL CAPITAL REGION'S

PUBLIC COMMENT PERIOD
FOR THE NATIONAL CAPITAL REGION'S
2016 CONSTRAINED LONG-RANGE TRANSPORTATION PLAN AMENDMENT
AND DRAFT SCOPE OF WORK FOR THE AIR QUALITY CONFORMITY ANALYSIS

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Appeared in: ***Washington Post*** on Thursday, 02/11/2016

PUBLIC COMMENT PERIOD
FOR THE WASHINGTON REGION´S PROPOSED 2016 AMENDMENT TO THE CONSTRAINED LONG-RANGE PLAN (CLRP), FY 2017-2022 TRANSPORTATION IMPROVEMENT PROGRAM (TIP), AND AIR QUALITY CONFORMITY ANALYSIS

The National Capital Region Transportation Planning Board (TPB) is the region's designated metropolitan planning organization (MPO), with responsibility for federally-required metropolitan transportation planning for the District of Columbia, Suburban Maryland, and Northern Virginia. The TPB will initiate a 30-day public comment period for the proposed 2016 amendment to the Constrained Long-Range Plan (CLRP) and the draft FY2017-2022 Transportation Improvement Program (TIP), and the accompanying air quality conformity analysis, on October 13 at the TPB Citizen Advisory Committee (CAC) meeting. The CAC meets from 6 pm to 8 pm in the Metropolitan Washington Council of Governments (COG) first floor conference center, 777 N. Capitol St. NE, Washington, DC 20002. This public comment period will extend through Saturday November 12, 2016. These documents are scheduled to be approved at the November 16, 2016 TPB meeting. Members of the public are invited to review these draft documents on the CLRP website, www.mwcog.org/clrp2016/. These materials may also be reviewed at the Metropolitan Washington Council of Governments (COG), 777 N. Capitol St. NE, Washington, DC 20002.

The CLRP shows the road, bridge, high-occupancy vehicle (HOV), transit, bicycle and pedestrian projects funded through the year 2040. The six-year TIP includes all projects, programs, and strategies that state and local transportation agencies plan to implement between 2017 and 2022. The air quality conformity analysis assesses the plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments. The comment process on the TIP is being used to obtain comments on the region's program of projects that are funded by the Federal Transit Administration (including projects funded by the Urbanized Area Formula Program) and the Federal Highway Administration.

Members of the public are invited to submit comments on the draft documents on-line at www.mwcog.org/TPBcomment/. Written comments can also be mailed to TPB Chairman Timothy Lovain, Metropolitan Washington Council of Governments (COG), 777 N. Capitol St. NE, Suite 300, Washington, DC 20002.

El Consejo Metropolitano de Gobiernos de Washington (COG) cumple con el Título VI de la Ley sobre los Derechos Civiles de 1964 y otras leyes y reglamentos en todos sus programas y actividades. Para obtener información en español, o para someter un pleito relacionado al Título VI, visite nuestra página web https://www.mwcog.org/publications/nondiscrimination.asp o llame al (202) 962-3300. Para obtener información en otra idioma, llame al (202) 962-3300.

PERIODO DE COMENTARIO PÚBLICO

Para la propuesta de enmienda al plan 2016 de transporte a largo plazo con fondos restringidos para la región de Washington (CLRP), FY 2017-2022 Programa de Mejoramiento de Transportación (TIP), y Análisis de Conformidad de la Calidad del Aire.

El junta de Planificación de Transporte para la Región de la Capital Nacional (TPB) es la organización nacional de planificación designada para la región (MPO) con responsabilidad de la planificación de la transportación metropolitana requerida por el gobierno federal para el Distrito de Columbia, el sur de Maryland y el norte de Virginia. El TPB iniciará un periodo de comentario de 30 días para la propuesta de enmienda al plan 2016 de Transporte a Largo Plazo con fondos restrigidos para la región de Washington (CLRP), y el borrador al FY 2017-2022 Programa de Mejoramiento de Transportación (TIP), acompañado del Análisis de Conformidad de la Calidad del Aire, el 13 de octubre en la reunión TPB, Comité de Asesores Ciudadanos (CAC). El CAC se reune de 6 p.m. a 8 p.m. en el Consejo de Gobiernos de la área Metropolitana de Washington (COG), centro de conferencias en el primer piso, 777 N. Capitol St. NE, Washington, DC 20002. Este periodo de comentario público se extenderá hasta el sábado, 12 de noviembre del 2016. Está programado la aprobación de estos documentos en la reunión TPB del 16 de noviembre del 2016. Los miembros del público están invitados a revisar estos documentos de borrador en la página web de CLRP, www.mwcog.org/clrp2016/ Se pueden ver estos documentos también en el Consejo de Gobiernos de la área Metropolitana de Washington (COG), 777 N. Capitol St. NE, Washington, DC 20002.

El CLRP enseña los proyectos de carreteras, puentes, vías de alta ocupación (HOV), tránsito, bicicletas y peatones, con fondos hasta el año 2040. El TIP de seis años, incluye todos los proyectos, programas, y estrategias que las agencias estatales y locales planifican implementar entre el 2017 y el 2022. La conformidad de la calidad del aire evalúa las enmiendas del plan y el programa con respeto a los requisitos de la calidad del aire bajo las Enmiendas del Acta de Aire Limpio de 1990. El proceso de comentarios sobre el TIP se está usando para obtener comentarios en el programa de proyectos de la región que son financiados por la Administración Federal de Tránsito (que incluye proyectos financiados por el Programa de Fórmula de Área Urbanizada) y la Administración Federal de Carreteras.

Se invita a los miembros del público a presentar sus comentarios sobre los documentos de borrador en línea en: www.mwcog.org/TPBcomment/. Comentarios escritos pueden ser enviados al Presidente del TPB, Timothy Lovain, Consejo de Gobiernos de la Área Metropolitana de Washington (COG), 777 N. Capitol St. NE, Oficina 300, Washington, DC 20002.

El Consejo de Gobiernos de la área Metropolitana de Washington (COG) cumple con el Título VI de la Ley sobre los Derechos Civiles de 1964 y otras leyes y reglamentos en todos sus programas y actividades. Para obtener información, para someter un pleito relacionado al Título VI, u obtener información en otro idioma, visite nuestra página web https://www.mwcog.org/publications/nondiscrimination o llame al (202)962-3300.

Washington Post October 13, 2016

PUBLIC COMMENT PERIOD FOR THE WASHINGTON REGION'S PROPOSED 2016 AMENDMENT TO THE CONSTRAINED LONG-RANGE PLAN (CLRP), FY 2017-2022 TRANSPORTATION IMPROVEMENT PROGRAM (TIP), AND AIR QUALITY CONFORMITY ANALYSIS

The National Capital Region Transportation Planning Board (TPB) is the region's designated metropolitan planning organization (MPO), with responsibility for federally-required metropolitan transportation planning for the District of Columbia, Suburban Maryland, and Northern Virginia. The TPB will initiate a 30-day public comment period for the proposed 2016 amendment to the Constrained Long-Range Plan (CLRP) and the draft FY2017-2022 Transportation Improvement Program (TIP), and the accompanying air quality conformity analysis, on October 13 at the TPB Citizen Advisory Committee (CAC) meeting. The CAC meets from 6 pm to 8 pm in the Metropolitan Washington Council of Governments (COG) first floor conference center, 777 N. Capitol St. NE, Washington, DC 20002. This public comment period will extend through Saturday November 12, 2016. These documents are scheduled to be approved at the November 16, 2016 TPB meeting. Members of the public are invited to review these draft documents on the CLRP website, www.mwcog.org/clrp2016/. These materials may also be reviewed at the Metropolitan Washington Council of Governments (COG), 777 N. Capitol St. NE, Washington, DC 20002.

The CLRP shows the road, bridge, high-occupancy vehicle (HOV), transit, bicycle and pedestrian projects funded through the year 2040. The six-year TIP includes all projects, programs, and strategies that state and local transportation agencies plan to implement between 2017 and 2022. The air quality conformity analysis assesses the plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments. The comment process on the TIP is being used to obtain comments on the region's program of projects that are funded by the Federal Transit Administration (including projects funded by the Urbanized Area Formula Program) and the Federal Highway Administration.

Members of the public are invited to submit comments on the draft documents on-line at www.mwcog.org/TPBcomment/ or by email to TPBcomment@mwcog.org. Written comments can also be mailed to TPB Chairman Timothy Lovain, Metropolitan Washington Council of Governments (COG), 777 N. Capitol St. NE, Suite 300, Washington, DC 20002.

The Metropolitan Washington Council of Governments (COG) fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations prohibiting discrimination in all programs and activities. For more information, to file a Title VI related complaint, or to obtain information in another language, visit www.mwcog.org/nondiscrimination or call (202) 962-3300.

El Consejo de Gobiernos del Área Metropolitana de Washington (COG) cumple con el Título VI de la Ley sobre los Derechos Civiles de 1964 y otras leyes y reglamentos en todos sus programas y actividades. Para obtener más información, someter un pleito relacionado al Título VI, u obtener información en otro idioma, visite www.mwcog.org/nondiscrimination o llame al (202) 962-3300

National Capital Region
Transportation Planning Board

MEMORANDUM

TO: Jane Posey, TPB Transportation Engineer

FROM: Benjamin Hampton, TPB Communications Manager
Abigail Zenner, TPB Communications Specialist

SUBJECT: Digital outreach for the FY 2017-2022 TIP Forum

DATE: September 22, 2016

The TPB held a public forum for the FY 2017-2022 Transportation Improvement Program (TIP) on the evening of September 15, 2016. As it has in the past, staff sent an e-blast and mailed postcards to nearly 1,000 TPB members, stakeholders, and members of the general public announcing the date and time of the forum. This year, TPB communications staff helped further promote and raise awareness of the event using its new "TPB News" e-newsletter and digital news site as well as the TPB's existing Twitter and Facebook social media channels. Communications staff also helped set up a live-streaming option for remote participation in the forum.

WEBSITE VIEWS AND E-NEWSLETTER TRAFFIC

Communications staff wrote and published a TPB News article on August 23 describing the TIP Forum and providing links for readers to get more information and to sign up to attend. The article was promoted in the TPB News e-newsletter on August 23 and again on September 13. The article was also posted on the COG homepage.

The article was viewed a total of 96 times during the three-week period leading up to the forum. Readers reached the article from the TPB News e-newsletter, Twitter, Facebook, and the TIP Forum event page on the COG website.

The article was featured in two editions of the TPB News e-newsletter. In the first one, 373 recipients opened the email and 20 recipients clicked on the link to the article. In the second one, 439 recipients opened the email and six people clicked on the article link. The number of "opens" indicates how many people probably saw basic information about the forum. The number of "click-throughs" indicates how many people engaged further to get more information about the event.

E-newsletter Date	Opens	Article "Click-throughs"
TPB News email 8/23/16	373	20
TPB News email 9/13/16	439	6

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SOCIAL MEDIA OUTREACH AND ENGAGEMENT

At the time of this outreach campaign, the TPB had approximately 650 Twitter followers and 325 Facebook followers. Between August 23 and September 18, communications staff tweeted about the TIP Forum a total of 30 times and posted 3 times to Facebook. On Twitter, promotion of the event came in four main waves:

- **Initial promotion** (August 23-26): 6 tweets focused on announcing the forum and linking people to the TPB News article
- **Lead-up reminder** (September 8-15): 16 tweets reminding our followers that the forum was coming up and how they could participate, including via live-stream
- **Real-time coverage** (September 15): 5 tweets letting our followers know that the TIP Forum was underway and encouraging them to tune in to the live-stream
- **Follow-up coverage** (September 16-18): 3 tweets letting our followers know how they could listen to the recorded audio of the forum

Impressions per tweet ranged from 90 to over 600. One standout tweet on September 8 gained 653 impressions thanks to Retweets and Mentions by TPB followers. Retweets and Mentions make tweets visible to more people, including people who don't already follow the TPB. The following chart highlights the top three tweets promoting this year's TIP Forum.

Tweet	Date	Total Impressions
Don't forget: Our #TIPForum is this Thursday 9/15 at 7 PM. Get more info and register at [EVENT URL]	9/12/16	422
Our #TIPForum is a week away learn more and register [EVENT URL]	9/8/16	653
Learn about how agencies fund major projects & get your questions answered at out Sep TIP forum. More: [EVENT URL]	8/26/16	449

This was the first time that we have taken a coordinated approach to using social media to reach our stakeholders regarding the TIP Forum. These numbers can serve as a baseline for future outreach efforts for public meetings. Employing targeted outreach methods like mentioning key agencies or groups or reaching out to key influencers could help further expand the reach of this work.

LIVE-STREAM PARTICIPATION

A total of 5 individuals tuned in to the live-stream of the TIP Forum. Using the interactive functionality of the webinar set-up for the forum, participants asked several questions that staff read aloud during the discussion portion of the forum.

APPENDIX D

TPB C-SMMPO Agreement

TPB R6-2016
January 20, 2016

NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D.C. 20002

RESOLUTION ON AGREEMENT BETWEEN THE NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD AND THE CALVERT-ST. MARY'S METROPOLITAN PLANNING ORGANIZATION AND CALVERT COUNTY, MARYLAND

WHEREAS, the National Capital Region Transportation Planning Board (TPB) is the officially designated Metropolitan Planning Organization (MPO) for the Metropolitan Washington area; and

WHEREAS, the TPB's planning area is part of the Washington, DC-MD-VA 8-Hour Ozone Nonattainment area, as shown on the map in Attachment A, and as such, is subject to regional air quality conformity analysis of its Transportation Plans and Transportation Improvement Programs (TIPs); and

WHEREAS, the Washington, DC-MD-VA 8-Hour Ozone Nonattainment area also includes Calvert County, and transportation projects within Calvert County have been included in TPB's regional air quality conformity analysis as appropriate; and

WHEREAS, the Calvert-St. Mary's Metropolitan Planning Organization (C-SMMPO) is the newly officially designated MPO for Southern Maryland, whose planning area includes Calvert County, as shown on the map in Attachment B; and

WHEREAS, under federal surface transportation legislation (23 U.S.C. § 134 and 49 U.S.C. § 5303) related to MPO Consultation in Plan and TIP Coordination for Nonattainment areas, "If more than one metropolitan planning organization has authority within a metropolitan area or an area which is designated as a nonattainment area for ozone or carbon monoxide under the Clean Air Act (42 U.S.C. § 7401 et seq.), each metropolitan planning organization shall consult with the other metropolitan planning organizations designated for such area and the State in the coordination of plans and TIPs" and

WHEREAS, the TPB and the C-SMMPO have agreed to consult with the Maryland Department of Transportation (MDOT) in the coordination of their respective plans and TIPS; and

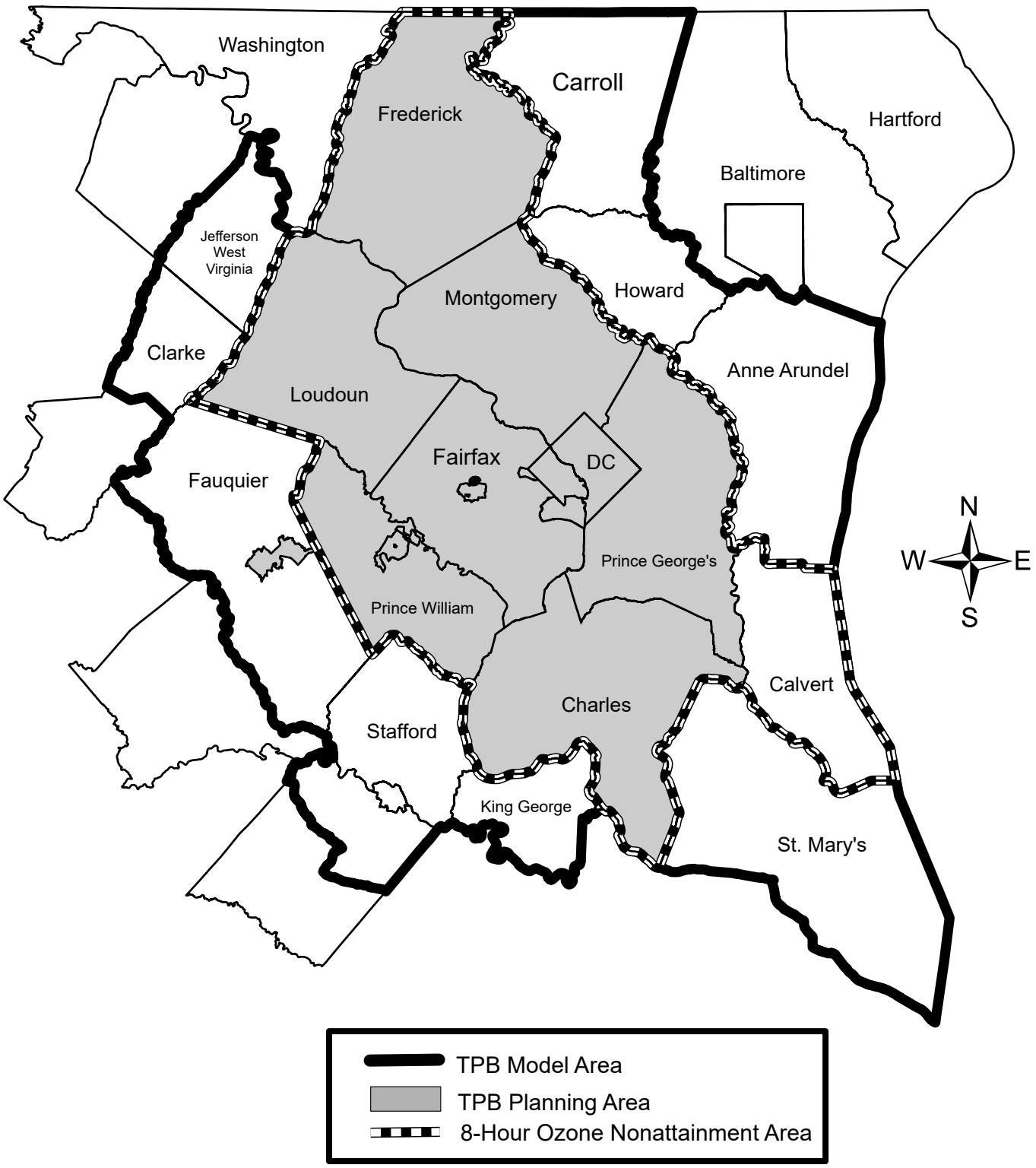
WHEREAS, the TPB, the C-SMMPO, and Calvert County have agreed to a process where C-SMMPO will develop Plans and TIPs to include Calvert County projects, and the TPB will continue to include these Calvert County projects in its regional air quality conformity analysis;

NOW, THEREFORE, BE IT RESOLVED THAT THE NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD approves execution, by its Chairman, of the attached ***Agreement between the National Capital Region Transportation Planning Board (TPB) and the Calvert-St. Mary's***

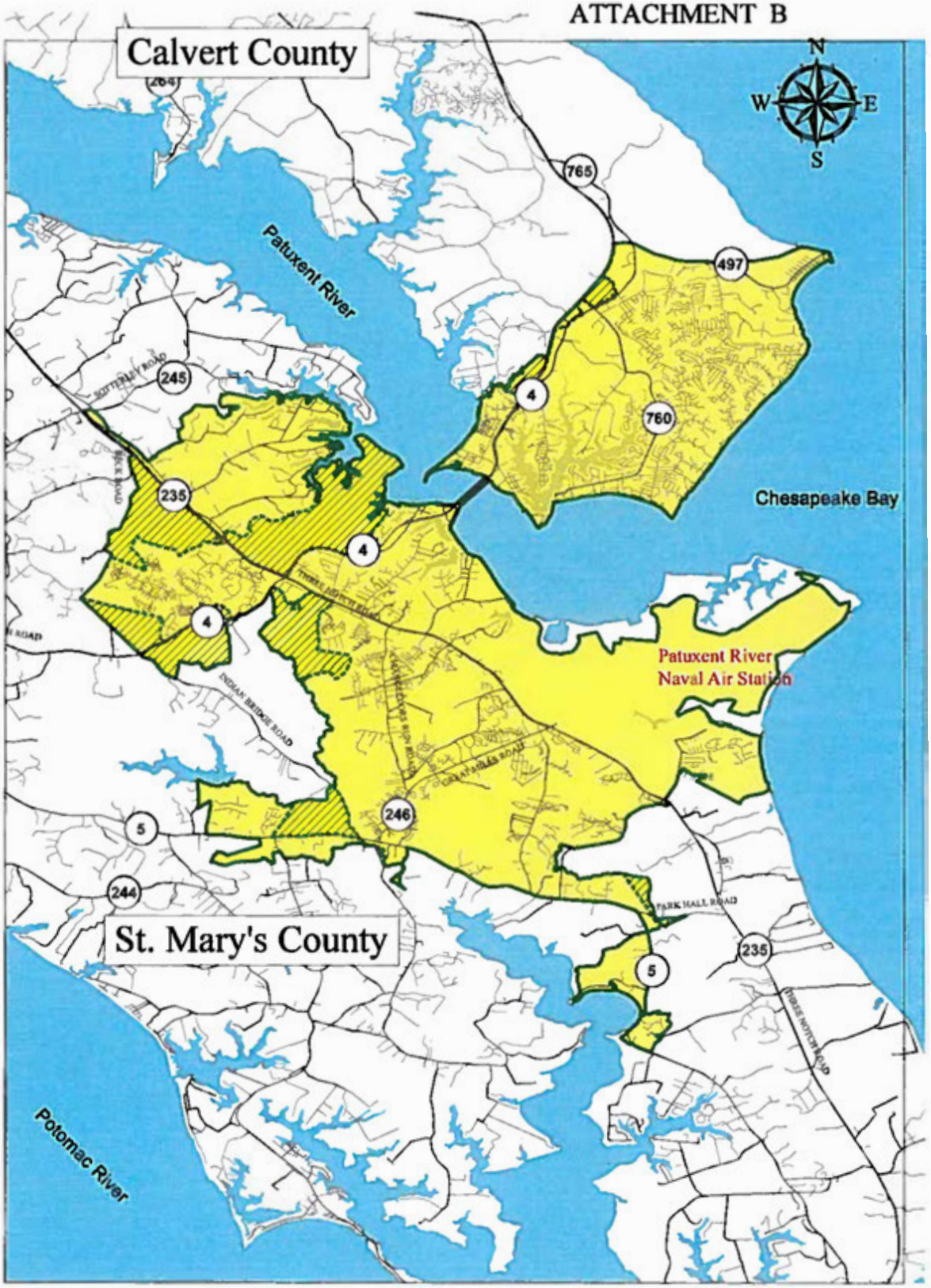
Metropolitan Planning Organization (C-SMMPO) and Calvert County, Maryland on the conformity analysis and determination of transportation plans, programs, and projects in Calvert County, Maryland document to ensure that transportation plans, programs, and projects in Calvert County are assessed for regional air quality conformity as is required in the Clean Air Act Amendments of 1990 (with subsequent amendments).

Adopted by the Transportation Planning Board at its regular meeting on January 20, 2016

TPB Transportation Planning Areas



ATTACHMENT B



Legend

- Boundary Line
- Urbanized Area Boundary Incorporated into Adjusted Urbanized Area
- Adjusted Urbanized Area
- Metropolitan Planning Area

Calvert - St. Mary's Metropolitan Planning Organization Adjusted Urbanized Area and Metropolitan Planning Area

Agreement between the National Capital Region Transportation Planning Board (TPB) and the Calvert-St. Mary's Metropolitan Planning Organization (C-SMMPO) and Calvert County, Maryland on the conformity analysis and determination of transportation plans, programs, and projects in Calvert County, Maryland

Recognizing that Calvert County, Maryland, is a member of the C-SMMPO and is included in the Washington DC-MD-VA 8-hour Ozone Nonattainment area, TPB and C-SMMPO and Calvert County agree upon the following procedures for ensuring that transportation plans, programs, and projects in Calvert County are assessed for regional air quality conformity as is required in the Clean Air Act Amendments of 1990 (with subsequent amendments):

1. Transportation plans, programs, and projects in the C-SMMPO Metropolitan Planning Area (MPA) of Calvert County will be included in the Long Range Transportation Plan and Transportation Improvement Program developed by the C-SMMPO.

2. The C-SMMPO and Calvert County, in consultation with the Maryland Department of Transportation (MDOT), will submit the plan, program, and project inputs for Calvert and for the C-SMMPO MPA to the TPB for inclusion in each update of the TPB's regional air quality conformity analysis and determination for the Washington, DC-MD-VA 8-Hour Ozone Nonattainment area.

3. The timeframe for analysis and coordination will be outlined by the schedule in the TPB's *Call For Projects* document for each cycle.

4. The TPB's *Air Quality Conformity Scope of Work* will provide details regarding the steps taken to ensure compliance with the Federal Transportation Conformity Rule (40 CFR 51 and 93). For example, the TPB will coordinate with Calvert County and the State of Maryland to obtain all necessary analysis inputs and latest planning assumptions (e.g., land activity, vehicle registration data, etc.).

5. Project level conformity analyses will continue to be performed by the State, and assessed through the interagency consultation process, as is currently done for all state projects.

6. Calvert County will be involved in all aspects of the TPB's air quality conformity analysis and determination including its interagency consultation process:

    - Formal involvement for Calvert County on the TPB will be provided through MDOT, and through Calvert County's membership on the

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MWCOG.ORG/TPB (202) 962-3200

Metropolitan Washington Air Quality Committee (MWAQC) and on the MWAQC Technical Advisory Committee.

- Informal involvement by Calvert County will be provided through participation by representatives of Calvert County in TPB committees and processes concerned with regional air quality conformity, including receipt of all materials and participation in all meetings, discussions, and reviews.

7. The TPB will provide copies of the conformity report to C-SMMPO and Calvert County at the completion of each conformity cycle. As relevant, portions of the TPB conformity report will be included in the C-SMMPO Plan and TIP documentation to demonstrate conformity.

This agreement will remain in effect for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) and all future NAAQS applicable to Calvert County.

Executed by the undersigned this _____day of_____2016:

Tim Lovain, Chair
National Capital Region Transportation
Planning Board

Steven R. Weems, Chairperson
Calvert – St. Mary's Metropolitan
Planning Organization

Evan K. Slaughenhoupt Jr, President
Board of County Commissioners
Calvert County, Maryland

Approved for legal sufficiency
on January 27, 2016 by

County Attorney

Department of Community Planning and Building
INTEROFFICE MEMORANDUM

TO: Board of County Commissioners
VIA: Terry Shannon, County Administrator TLS
VIA: Thomas Barnett, Director of Community Planning and Building
FROM: Patricia Haddon, Principal Planner
DATE: January 27, 2016
SUBJECT: Agreement between the National Capital Region Transportation Planning Board and the Calvert-St. Mary's Metropolitan Planning Organization and Calvert County, Maryland on the conformity analysis and determination to transportation plans, programs, and projects in Calvert County, Maryland

Background:
In their letter of July 24, 2015, to Dr. Kwame Arhin, Planning & Program Manager of the Federal Highway Administration, Maryland Division, the Calvert-St. Mary's Metropolitan Planning Organization (C-SMMPO) advised that they were coordinating the required air quality conformity analysis with the MPO for the National Capital Region, Transportation Planning Board (TPB), as Calvert County's portion of the C-SMMPO was within the non-attainment area for the 2008 8-Hour Ozone area within the National Capital Region.

Transportation plans, programs and projects in Calvert County must be included in the conformity analysis and determination carried out by the TPB for the Washington Metropolitan Statistical Area, as per a Proposal for Satisfying Federal Metropolitan Planning Requirements for Charles and Calvert Counties (Attachment A) and TPBs current resolution, adopted in 1993 (Attachment B.)

The TPB resolution (R23-93, Resolution Responding to Governor Schaefer's Letter Concerning the Metropolitan Planning Boundary in Maryland) which includes Calvert county in the TPB's air quality conformity analysis was the result of coordination between the State transportation air agencies and the Federal Highway Administration (FHA) and the Federal Transit Administration (FTA), in response to requirements in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991.

Discussion
Since the establishment and inclusion of Calvert County in the C-SMMPO, the TPB staff has initiated discussions with the Maryland Department of Transportation to review and update the 1993 resolution. Updates have resulted in the attached agreement between TPB, the C-SMMPO, and Calvert County to address analysis issues related to inclusion of C-SMMPO and Calvert County transportation plans, projects and programs in TPB's regional air quality conformity analysis. The agreement has been reviewed by the TPB, MDOT, the C-SMMPO, FHA and FTA, and the County Attorney, John Norris. The agreement requires BOCC approval and signature.

Conclusion/Recommendation:
Staff requests the BOCC review and authorize signature of the attached agreement by the President of the County Commissioners, Evan Slaughenhoupt.

Attachments: 3

ATTACHMENT A

Proposalfor Satisfying Federal Metropolitan Planning Requirements
for Charles and Calvert Counties

The TPB proposes the conformity procedures defined in parts 1-4 below. These procedures affirm the practices that have been used for the past two years for the Metropolitan Washington Region non-attainment area as a means for assuring conformity in Charles and Calvert Counties.

1. The TPB agrees with Governor Schaefer that Charles and Calvert Counties not be a part of the planning area covered by the TPB.

2. Transportation plans, programs and projects in Charles and Calvert Counties will be excluded from the TPB's Long-Range Transportation Plan and six-year Transportation Improvement Program (TIP). and included in the statewide Long-Range Transportation Plan and state-wide Transportation Improvement Program (STIP) developed by the State of Maryland.

3. Transportation plans, programs and projects in Charles and Calvert Counties will be included in the conformity analysis and determination carried out by the TPB for the Washington Metropolitan Statistical Area (MSA). Conformity determinations concerning proposed added projects will be based on a system level analysis for the non-attainment area.

4. Charles and Calvert Counties will be involved in all aspects of the conformity analysis and determinations.

   Formal involvement for Charles and Calvert Counties will be provided through the Maryland Department of Transportation on the TPB, and through Charles and Calvert Counties' membership on MWAQC and its Technical Staff Coordination Committee (TSCC).

- Informal involvement by Charles and Calvert Counties will be provided through participation by their representatives in COG and TPB committees and processes concerned with conformity, including receipt of all materials and participation in all meetings, discussions, and reviews.

These procedures are subject to amendment should they be found in conflict with the final rule on conformity promulgated by the U.S. Environmental Protection Agency.

ATTACHMENT B

TPB R23-93
December 16, 1993

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS
NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
777 North Capitol Street, N.E.
Washington, D. C. 20002

RESOLUTION RESPONDING TO GOVERNOR SCHAEFER'S LETTER CONCERNING THE METROPOLITAN PLANNING BOUNDARY IN MARYLAND

WHEREAS, the National Capital Region Transportation Planning Board (TPB) is the officially designated Metropolitan Planning Organization (MPO) for the Metropolitan Washington area; and

WHEREAS, the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 requires MPO boundaries to "at least include the boundaries of the non-attainment area, except as otherwise provided by agreement between the metropolitan planning organization and the Governor;" and

WHEREAS, in a letter of April 16, 1992, the Governor of Maryland presented a proposal to the TPB under which "the Washington area MPO boundaries should not be expanded to encompass Charles and Calvert Counties;" and

WHEREAS, on September 16, 1992, the Transportation Planning Board (TPB) requested that the Metropolitan Washington Air Quality Committee (MWAQC) consider and provide comments to the TPB on the implications of Governor Schaefer's request for air quality planning and conformity findings in the Metropolitan Washington Area; and

WHEREAS, there has been extensive coordination with the State Transportation Agencies and the State Air Quality Agencies, who are members of MWAQC, and with Federal Highway Administration (FHWA) and Federal Transit Administration (FTA); and

WHEREAS, on December 9, 1992, the MWAQC adopted a set of recommendations to the TPB on responding to Governor Schaefer's request; and has transmitted those recommendations to the TPB; and

WHEREAS, the "Interim Guidance on the ISTEA Metropolitan Planning Requirements" issued by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) of April 6, 1992, contains the following guidance on Metropolitan boundaries:

"In non attainment areas, if the MPO and the Governor agree to exclude a portion of the nonattainment area, they must be able to demonstrate how conformity will be ensured in the excluded portion. Such proposals should be coordinated with FHWA, FTA, EPA, the state transportation agency.and the state air quality agency before a final decision is made".

NOW, THEREFORE, BE IT RESOLVED THAT: The National Capital Region Transportation Planning Board endorses the MWAQC recommendations as defined in Attachment A, agrees to respond favorably to the April 16, 1992 request of the Governor of Maryland, and also to transmit copies to the Federal Highway Administration, the Federal Transit Administration, and the Environmental Protection Agency.

Adopted by the Transportation Planning Board at its regular meeting on December 16, 1992.

National Capital Region
Transportation Planning Board

MEMORANDUM

TO: Files

FROM: Jane Posey, TPB Transportation Engineer

SUBJECT: TPB Coordination with C-SMMPO for 2016 CLRP conformity analysis

DATE: November 16, 2016

Calvert County, Maryland is in the Washington, DC-MD-VA 8-hour ozone non-attainment area, and is also a member of the new southern Maryland Metropolitan Planning Organization (MPO), Calvert-Saint Mary's MPO (C-SMMPO). Projects in Calvert County have always been included in the Transportation Planning Board's air quality conformity analyses, but with the creation of the new MPO, it was necessary to formalize coordination between the TPB and C-SMMPO to ensure that Calvert County's transportation plans, programs, and projects are assessed for regional air quality conformity.

In January 2016, the TPB adopted Resolution TPB R6-2016, approving a coordination agreement between the TPB, the C-SMMPO, and Calvert County, MD. The agreement outlines a process where C-SMMPO will develop Plans and Transportation Improvement Programs (TIPs) to include Calvert County projects, and the TPB will continue to include these Calvert County projects in its regional air quality conformity analysis. The agreement lists the seven tasks, below, to be followed for each conformity cycle. Following each task is a record (in italics) of the steps taken, or procedures used, to complete the task during the TPB's air quality conformity analysis of the 2016 Constrained Long Range Plan (CLRP).

1. Transportation plans, programs, and projects in the C-SMMPO Metropolitan Planning Area (MPA) of Calvert County will be included in the Long Range Transportation Plan and Transportation Improvement Program developed by the C-SMMPO.

   Transportation plans, programs, and projects in the C-SMMPO Metropolitan Planning Area (MPA) of Calvert County have been included in the 2016 Long Range Transportation Plan (LRTP) and 2015 Transportation Improvement Program (TIP) developed by the C-SMMPO. The C-SMMPO adopted its Plan (http://www.calvert-stmarysmpo.com/156/Long-Range-Transportation-Plan-LRTP) in March 2016, and its TIP (http://www.calvert-stmarysmpo.com/155/Transportation-Improvement-Program-TIP) in in June 2015 with amendments in January and February 2016.

2. The C-SMMPO and Calvert County, in consultation with the Maryland Department of Transportation (MDOT), will submit the plan, program, and project inputs for Calvert and for the C-SMMPO MPA to the TPB for inclusion in each update of the TPB's regional air quality conformity

analysis and determination for the Washington, DC-MD-VA 8-Hour Ozone Nonattainment area.

The C-SMMPO, Calvert County, and MDOT submitted projects in February 2016 to the TPB for the update to the TPB's regional air quality conformity analysis and determination for the Washington, DC-MD-VA 8-Hour Ozone non-attainment area. The TPB approved project inputs for the air quality conformity analysis of the 2016 CLRP and FY2017-2022 TIP in March 2016. Inputs from the C-SMMPO included: 1) a replacement of the Thomas Johnson Bridge over the Patuxent River with a 4-lane structure, 2) a widening of MD 4 from the Thomas Johnson Bridge to MD 235, 3) the construction of an interchange at MD 4/MD 235, and 4) a widening of MD 4 from the Thomas Johnson Bridge to Patuxent Point Parkway.

3. The timeframe for analysis and coordination will be outlined by the schedule in the TPB's *Call For Project*s document for each cycle.

   The TPB released the final "Call For Projects" document in December 2015. The document included a schedule for the air quality conformity analysis of the 2016 CLRP and FY2017-2022 TIP. The schedule called for project inputs to be approved by the TPB in March 2016 and for the approval of the completed conformity analysis by the TPB in November 2016. MDOT shared the schedule, including the project input deadline, with C-SMMPO staff.

4. The TPB's *Air Quality Conformity Scope of Work* will provide details regarding the steps taken to ensure compliance with the Federal Transportation Conformity Rule (40 CFR 51 and 93). For example, the TPB will coordinate with Calvert County and the State of Maryland to obtain all necessary analysis inputs and latest planning assumptions (e.g., land activity, vehicle registration data, etc.).

   The TPB's Scope of Work for the air quality conformity analysis of the 2016 CLRP and FY2017-2022 called for coordination with C-SMMPO and the use of updated inputs and the latest planning assumptions. TPB coordinated with various Maryland agencies and with C-SMMPO to get the latest planning assumptions for Calvert County. The Council of Governments' (COG) Department of Community Planning and Services obtained land activity (household, population, and employment) data for Calvert and St. Mary's Counties from the Maryland Department of Planning. The Maryland Department of the Environment provided vehicle registration data, and other data, such as fuel and inspection/maintenance information, for use as input to the Motor Vehicle Emissions (MOVES2014a) model.

5. Project level conformity analyses will continue to be performed by the State, and assessed through the interagency consultation process, as is currently done for all state projects.

At this time there is no requirement for project level conformity analyses in Calvert County, as the county is not a non-attainment or maintenance area for fine particles ($PM_{2.5}$) or CO pollutants.

6. Calvert County will be involved in all aspects of the TPB's air quality conformity analysis and determination including its interagency consultation process:

   - Formal involvement for Calvert County on the TPB will be provided through MDOT, and through Calvert County's membership on the Metropolitan Washington Air Quality Committee (MWAQC) and on the MWAQC Technical Advisory Committee.

     MDOT representatives are active members of the TPB and are members of the TPB's subcommittees. Calvert County is a member of the Metropolitan Washington Air Quality Committee (MWAQC) and is represented on the MWAQC Technical Advisory Committee (TAC). All aspects of the conformity analysis (inputs, analysis, results) were presented to the TPB Technical Committee, the TPB, and MWAQC TAC at various times throughout the interagency consultation process.

   - Informal involvement by Calvert County will be provided through participation by representatives of Calvert County in TPB committees and processes concerned with regional air quality conformity, including receipt of all materials and participation in all meetings, discussions, and reviews.

     MDOT and representatives of C-SMMPO are included on the mailing list for the TPB's monthly consultation letter, which announced all items related to the conformity analysis and provided links to all related documents.

7. The TPB will provide copies of the conformity report to C-SMMPO and Calvert County at the completion of each conformity cycle. As relevant, portions of the TPB conformity report will be included in the C-SMMPO Plan and TIP documentation to demonstrate conformity.

   The TPB will provide hard copies, and access to the electronic copies, of the final air quality conformity report after the Board approves the conformity analysis in November 2016.

APPENDIX E

Documentation of Data Development Process for Mobile Source Emissions Calculations

MEMORANDUM

TO: Files

FROM: Jinchul (JC) Park, Principal Transportation Engineer

SUBJECT: Mobile Source Emissions Process and Data Development for the Air Quality Conformity Analysis of the 2016 CLRP Amendment

DATE: October 19, 2016

1.0 BACKGROUND

This technical appendix documents four categories of data preparation executed for MOVES model: (1) post processing of travel demand results; (2) development of travel-related inputs based on travel demand results of MWCOG/TPB's Version 2.3.66 travel demand model and local data; (3) non-travel related inputs such as meteorology, fuel supply and formulation, and inspection/maintenance (I/M) programs and state-specific policy programs; and (4) 2014 vehicle registration data obtained from agencies in the District of Columbia, the Commonwealth of Virginia, and the state of Maryland. MOVES model requires two broad sets of data (i.e., travel and non-travel related data) and policy programs specific to each state's requirements. Travel related data were created through data development methods established and recommended by the MOVES Task Force. Post processing of travel demand results is a pre-requisite for developing travel related data.

Emissions calculations are composed of mainly four tasks to be executed in order: (1) creation of travel and non-travel related data; (2) conversion of the data into MOVES format using XML batch processing built in MOVES2014a; (3) execution of MOVES with modeling characteristics; and (4) summary of MOVES input using MySQL summary scripts. The overall modeling sequences are illustrated in Figure 1.

The data inputs are obtained from a variety of sources as shown in Table 1. Local data are applied in emissions calculations where available; otherwise, MWCOG/TPB uses MOVES default data. Table 1 exhibits MOVES input data by locality and supplies sources of the data.

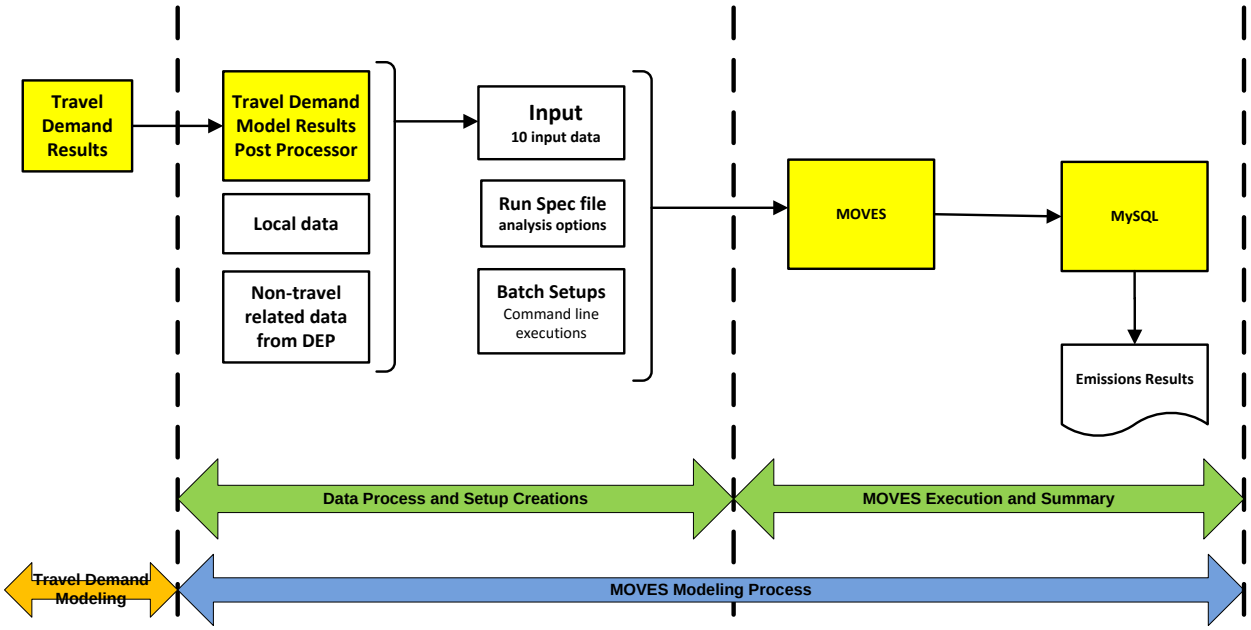

Figure 1. MOVES Modeling Process

Data Type	No	Data Category	Data Table Name	Locality	Data Source
Travel	1	Age Distribution	**sourceTypeAgeDistribution**	County	based on VIN
	2	Average Speed Distribution	**avgSpeedDistribution**	County	based on TDM's post-processor outputs + school bus/refuse truck data from Fairfax Co. + Transit bus from WMATA
	3	Road Type Distribution	**roadTypeDistribution**	County	based on TDM's post-processor outputs
	4	Source Type Population	**sourceTypeYear**	County	based on CLRP Vehicle Projection & VIN
	5	Vehicle Type VMT	**HPMSVTypeYear**	County	based on TDM's post-processor outputs
			monthVMTFraction	Region	based on Regional Data
			dayVMTFraction	Region	based on Regional Data
			hourVMTFraction	Region	based on Regional Data
	6	Ramp Fraction	**roadType**	Region	8% of the urban/rural restricted access roads
Non Travel	7	Fuel	**FuelSupply**	State	from state air agency (state-wide data)
	8		**FuelFormulation**	State	from state air agency (state-wide data)
	9	I/M Programs	**IMCoverage**	State	from state air agency (state-wide data)
	10	Meteorology Data	**zoneMonthHour**	Jurisdiction	from DEP (by each jurisdiction)

Table 1. MOVES Input Data

2.0 POST PROCESSING OF TRAVEL DEMAND RESULTS

Post processing is used to create vehicle hours of travel (VHT) and vehicle miles traveled (VMT) distributions, which later will be used to create travel related MOVES data. An emissions post processor had been used to calculate emissions in the Mobile 6.2 model, but with MOVES, post processing is tailored to only create VHT and VMT distributions for each vehicle type.

For each analysis year travel demand results are post processed to obtain hourly jurisdictional VHT and VMT distributions by Mobile's 14 speed bins and three vehicle types (i.e., passenger vehicles,

commercial vehicles and trucks) for two facility types. In post processing six travel markets from the travel demand model results are grouped into three vehicle types as follows:

- Passenger Vehicles (PVs) = SOV + HOV2 + HOV3 or more Airport Passenger Trips;
- Commercial Vehicles (CVs) = Commercial Vehicles;
- Heavy Duty Vehicles (HDVs) = Trucks;

And six facility types are grouped into two as follows:

- Freeway = freeway + expressway + freeway ramp; and
- Arterials = major arterial + minor arterial + collector.

The post processor is then executed four times for each analysis year: one for each vehicle type and another for all vehicles combined. As a result of post processing travel demand results, a user should have hourly jurisdictional VMT and VHT distributions by Mobile's 14 speed bins, and two facility types. Figure 2 illustrates the post processing of travel demand results, and Figure 3 exhibits an example of a post processing flowchart for passenger vehicles.

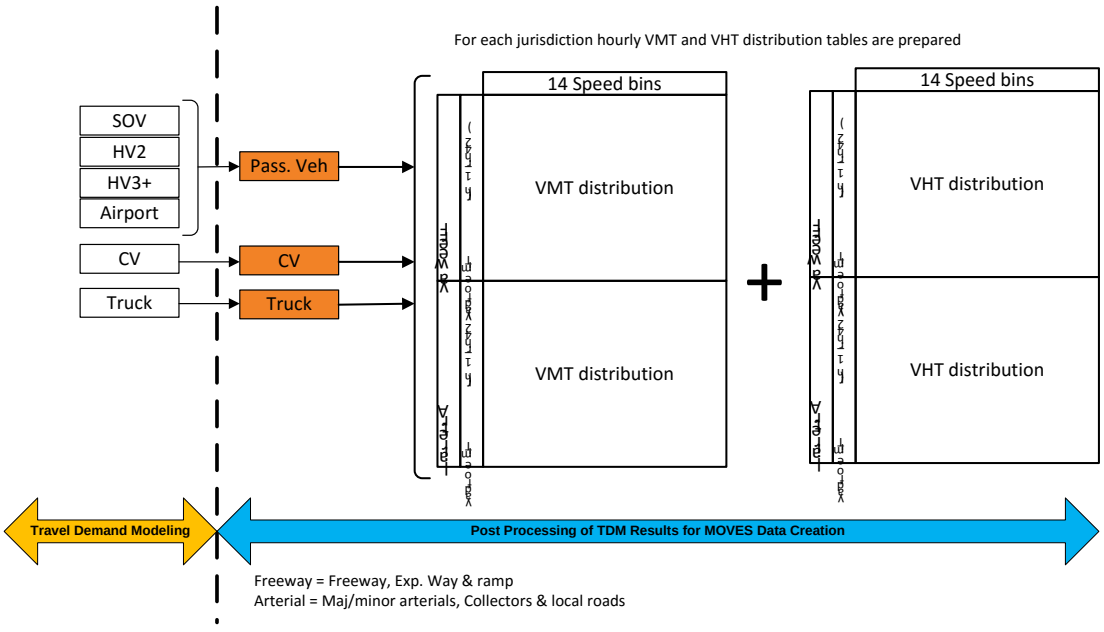

Figure 2. Post Processing Process of Travel Demand Results

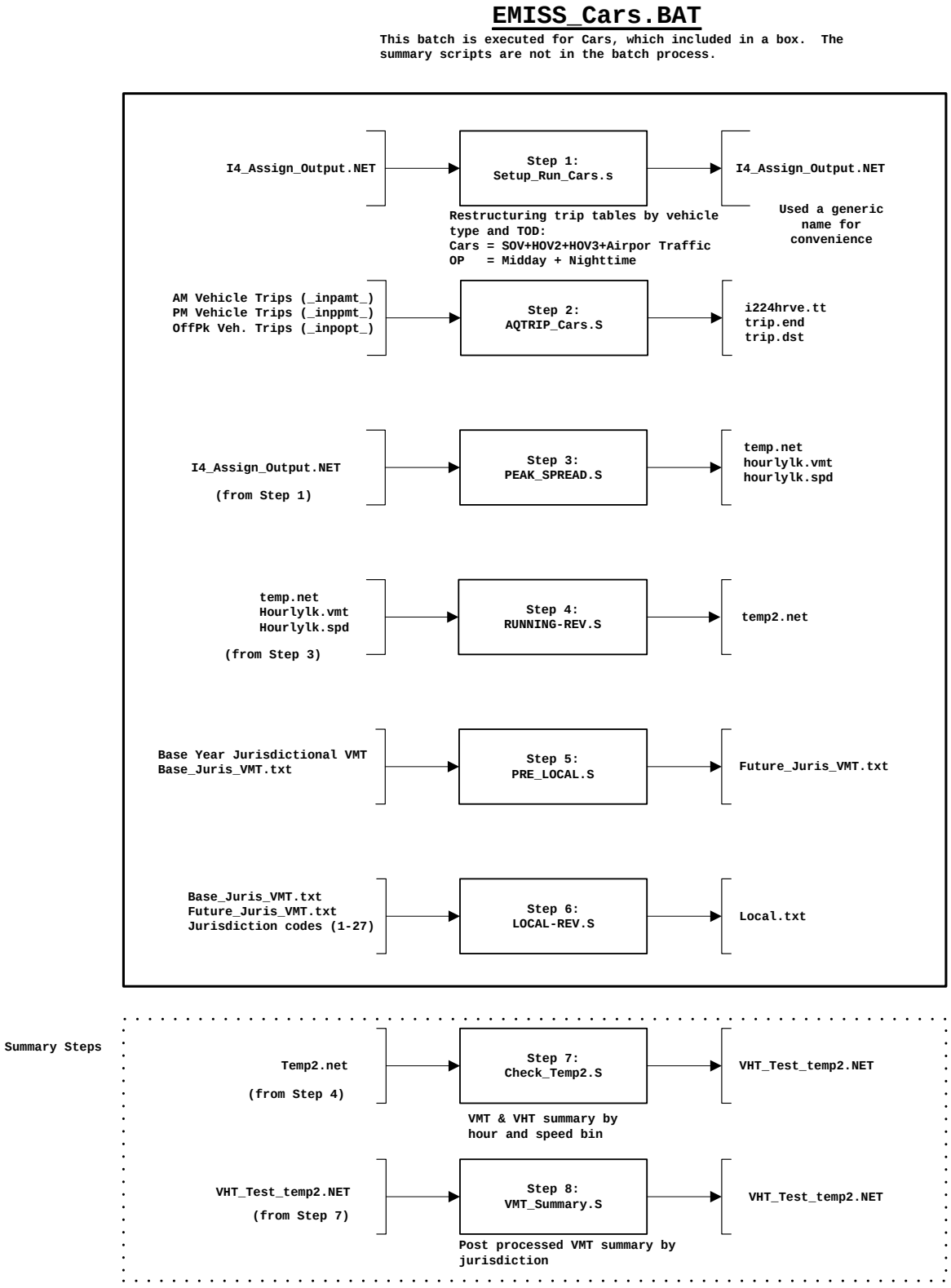

Figure 3. Sample Post Processing flowchart for Passenger Vehicles

3.0. TRAVEL RELATED INPUTS

A. Age Distribution

Every three years since 2005, Departments of Motor Vehicles of the District of Columbia, Maryland, and Virginia have been supplying MWCOG/TPB with vehicle registration data for use in Air Quality Conformity (AQC) Determinations and State Implementation Plan (SIP) updates. 2014 Vehicle Identification Number (VIN) data are a snapshot of vehicle registrations by year, collected by Departments of Motor Vehicles in each state. The most recent VIN data contain a broad range of attributes of the vehicles registered in the jurisdictions of the Metropolitan Washington DC non-attainment area. The latest data are used in the development of future year vehicle population profiles (i.e., vehicle age and vehicle type distribution) for all the analysis years in the air quality conformity analysis of the 2016 CLRP.

Prior to using the VIN data as input to MOVES, the 'raw' vehicle registration data are decoded using a commercial decoding software program[1]. Following EPA's guidelines, the data are decoded in two steps: (1) the 'raw' data are decoded to a Mobile 6.2 format; and (2) the Mobile 6.2 format vehicle population distributions are converted to a MOVES format using an EPA converter[2]. Thus, 16 Mobile vehicle types and 25 vehicle age categories are mapped into MOVES' 13 vehicle and 31 vehicle age categories. The vehicle population mapping process is shown in greater detail in Table AS1 in the Appendix Supplement section. The vehicle population of the 2014 VIN data was reviewed by the MWCOG/TPB technical oversight committees prior to becoming approved for transportation planning applications. The VIN data were formally approved by MWCOG/TPB to be used for the 2016 CLRP Air Quality Conformity analysis in February, 2015.

B. Average Speed Distribution

The MWCOG/TPB regional travel demand model calculates link-level traffic volumes, not average link-level speed estimates. Vehicle Hours of Travel (VHT) distributions were selected as a suitable proxy for average speed distribution. MWCOG/TPB's regional travel demand model results are first processed to derive VHT distributions by six vehicle categories:

- Single Occupancy Vehicles (SOV);
- High Occupancy Vehicles 2 (HOV2);
- High Occupancy Vehicles 3+ (HOV3 or more);
- Commercial Vehicles;
- Trucks; and
- Airport Passenger Trips.

[1] VinPower, Copyright; ESP Data Solutions Inc., Product version 4.0.0.16

[2] RegistrationDistributionConverter_Veh16

Through post-processing, six VHT distributions are first classified by three vehicle types, Mobile's 14 speed bins, hour of the day, and two facility types (i.e., freeways and arterials); and later reclassified into MOVES's 16 speed bins, hour of the day, day of the week (i.e., weekdays and weekend days), and four facility types for non-attainment jurisdictions. Six vehicle types from the travel demand model are reclassified into three vehicle types as follows:

- Passenger Vehicles (PVs) = SOV + HOV2 + HOV3 or more + Airport Passenger Trips;
- Commercial Vehicles (CVs) = Commercial Vehicles; and
- Heavy Duty Vehicles (HDVs) = Trucks.

MOVES requires: (1) 16 speed bins from 2.5 mph to 75 mph in increments of 5 mph; and (2) four road types, which are a combination of two facility types (i.e., restricted and unrestricted) and two environmental settings (i.e., urban and rural settings). The restricted facilities include freeways, expressways and freeway ramps, while the unrestricted facilities include major/minor arterials, collectors, and local roads. The following assumptions are used to develop average speed distributions fulfilling MOVES requirements stated above:

1. VHT Distribution to Restricted Facilities:

    a. All vehicle types:
        - Weekday VHT Distribution:
            - All Day: Hourly distribution for all vehicles
        - Weekend VHT Distribution:
            - 11:00 am – 7:00 pm: Distribution across the 13 MOVES vehicle type categories reflecting the 3:00 pm hour on a weekday
            - 7:01 pm – 10:59 am: Distribution across the 13 MOVES vehicle type categories reflecting the 12:00 am hour on a weekday

2. VHT Distribution to Unrestricted Facilities:

    a. All vehicle types exclusive of refuse trucks, school buses and transit buses:
        - Weekday VHT Distribution:
            - All Day: Hourly distribution for all vehicles
        - Weekend VHT Distribution:
            - 11:00 am – 7:00 pm: Distribution reflecting the 3:00 pm hour on a weekday
            - 7:01 pm – 10:59 am: Distribution reflecting the 12:00 am hour on a weekday

    b. Refuse trucks: Refuse trucks operate on a 3-phase cycle: Phase 1 is the period of driving from the dispatch garage to trash collection sites; Phase 2 is the period of the actual trash/recycle collection; Phase 3 is the period of driving back to transfer stations. Using local data from Fairfax County, VA, the average speed of Phases 1 and 3 were assumed to be in the range of 22.5-27.5 miles per hour (i.e., MOVES Speed Bin 6), and the average speed of Phase 2 was assumed to be in the range of 2.5-7.5 miles per hour (i.e., MOVES Speed Bin 2). Based on the above assumptions the refuse truck vehicle type VHT distributions were as follows:

- Weekday VHT Distribution (Table 2):
  - 5:00 am–5:00 pm (Trash Collection): VHT hourly distributions according to Phases 1, 2 and 3.
  - 5:01 pm–5:00 am (On Road Phase): VHT hourly distribution consists of Phase 2.
- Weekend VHT Distribution:
  - All Day: VHT distribution made up of Phase 1 and Phase 3 (on road phases)

Speed Bins	Speed Range	5:00 AM - 5:00 PM	5:01 PM - 4:59 AM
1	speed < 2.5mph	0.00%	0.00%
2	2.5mph <= speed < 7.5mph	62.65%	0.00%
3	7.5mph <= speed < 12.5mph	0.00%	0.00%
4	12.5mph <= speed < 17.5mph	0.00%	0.00%
5	17.5mph <= speed <22.5mph	0.00%	0.00%
6	22.5mph <= speed < 27.5mph	37.35%	100.00%
7	27.5mph <= speed < 32.5mph	0.00%	0.00%
8	32.5mph <= speed < 37.5mph	0.00%	0.00%
9	37.5mph <= speed < 42.5mph	0.00%	0.00%
10	42.5mph <= speed < 47.5mph	0.00%	0.00%
11	47.5mph <= speed < 52.5mph	0.00%	0.00%
12	52.5mph <= speed < 57.5mph	0.00%	0.00%
13	57.5mph <= speed < 62.5mph	0.00%	0.00%
14	62.5mph <= speed < 67.5mph	0.00%	0.00%
15	67.5mph <= speed < 72.5mph	0.00%	0.00%
16	72.5mph <= speed	0.00%	0.00%

Source: Fairfax Co., VA

Table 2. Average Weekday VHT Distribution for Refuse Trucks

c. School buses:
- Weekday VHT Distribution:
  - 6:00 am – 6:00 pm: VHT distribution per Table 3
  - 6:00 pm – 6:00 am: VHT distribution of heavy duty vehicles

- Weekend VHT Distribution:
  - 11:00 am–7:00 pm: VHT Distribution of heavy duty vehicles at 3:00 pm on a weekday
  - 7:00 pm – 11:00 am: VHT Distribution of heavy duty vehicles at 12:00 am on a weekday

d. Transit buses:
- Weekday VHT Distributions (Table 4):
  - 6:00 – 9:00 am: Per WMATA's bus speed distribution of the AM peak period
  - 9:00 am–3:00 pm: Per WMATA's bus speed distribution of the off-peak period
  - 3:00 - 6:00 pm: Per WMATA's bus speed distribution of the PM peak period
  - 6:00pm-6:00 am: Per WMATA's bus speed distribution of the off-peak period

- Weekend VHT Distribution (Table 4):
  - All Day: Per WMATA's bus speed distribution of the off-peak period.

C. Road Type Distribution

Road type distribution develops Vehicle Miles Traveled (VMT) distribution by MOVES 13 vehicle types and four facility types. The method of developing VMT distribution is as follows:

1. Through post-processing of travel demand results, jurisdictional VMT distributions of six vehicle types are reclassified to VMT distributions by three vehicle types as follows:

   - Passenger Vehicles (PVs) = SOV + HOV2 + HOV3 or more + Airport Passenger Trips;
   - Commercial Vehicles (CVs) = Commercial Vehicles; and
   - Heavy Duty Vehicles (HDVs) = Trucks.

2. VMT percentages by three vehicle types are allocated to MOVES vehicle types as follows:

   - Passenger Vehicles (PVs): VMT percentages by facility type are applied to motorcycles, passenger cars and passenger trucks;
   - Commercial Vehicles (CVs): VMT percentages by facility type are applied to commercial trucks;
   - Heavy Duty Vehicles (HDVs): VMT percentages by facility type are applied to single unit short and long haul trucks, and combination short and long haul trucks;
   - Refuse Trucks and Motor Homes: MOVES default percentage values;
   - School, Transit and Intercity Buses: Local network percentages from local data sources (i.e., local bus operators); and
   - Urban and rural percentage split factors are used to further allocate facility type VMT between urban and rural facilities. These factors vary by jurisdiction, and are based on the latest Highway Performance Monitoring System (HPMS) VMT data provided by the three state transportation agencies. Figure 4 illustrates the process of allocating VMT by vehicle type, facility type, and urban/rural split.

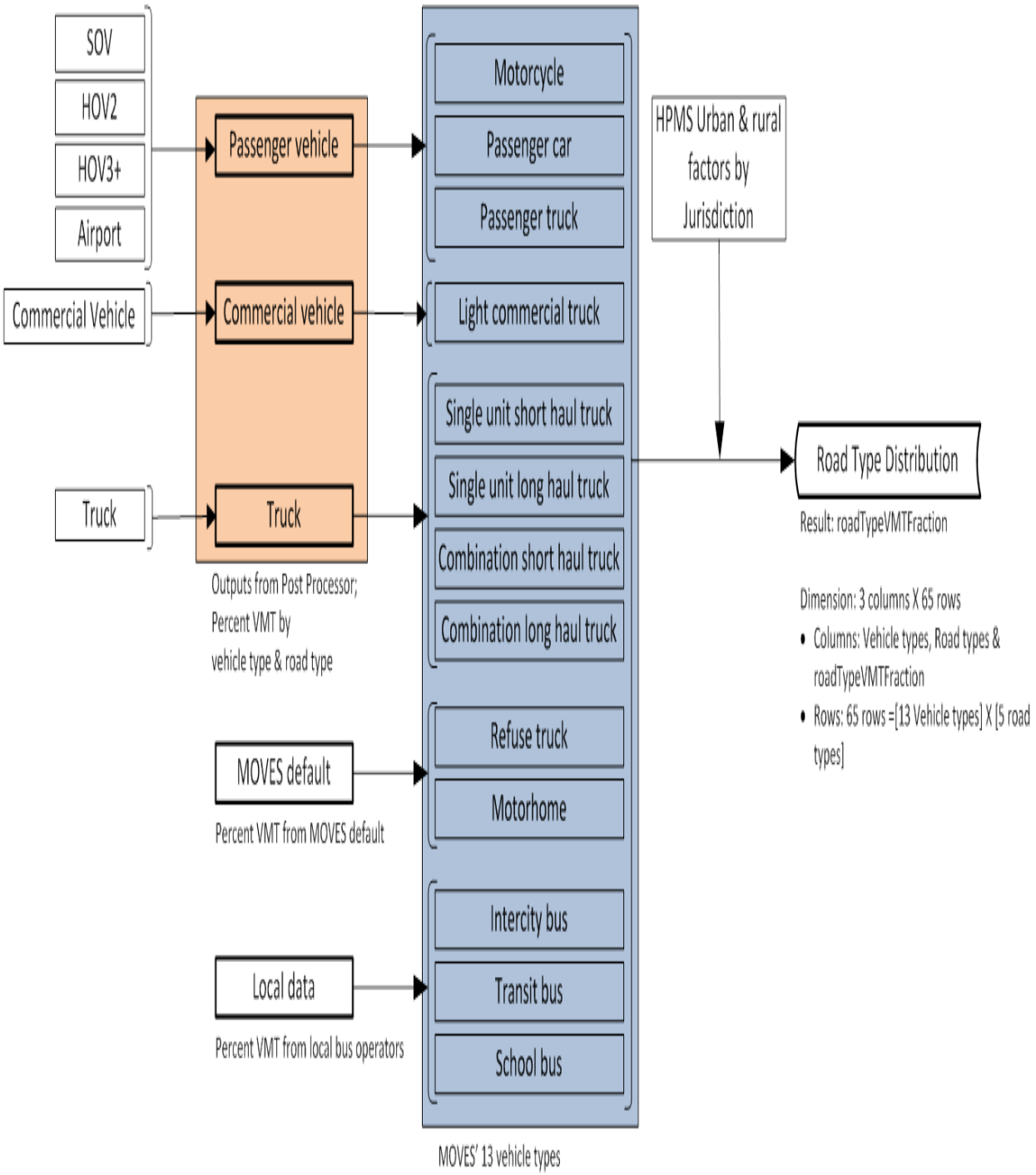

Figure 4. Road Type Distribution Development Process

Speed Bins	Speed Range	Bus Trip 1	Bus Trip 2	Bus Trip 3	Bus Trip 4	Bus Trip 5	Bus Trip 6	Bus Trip 7	Bus Trip 8	Bus Trip 9	Bus Trip 10	Bus Trip 11	Weighted Average
1	speed < 2.5mph	35.20%	24.30%	17.58%	14.65%	7.90%	16.11%	6.65%	18.30%	25.76%	16.18%	17.67%	**19.21%**
2	2.5mph <= speed < 7.5mph	10.87%	11.57%	6.45%	11.04%	29.89%	20.20%	44.83%	11.01%	9.68%	6.49%	9.12%	**14.39%**
3	7.5mph <= speed < 12.5mph	10.90%	9.35%	12.89%	6.50%	26.31%	17.69%	3.34%	9.12%	9.52%	6.69%	8.69%	**10.92%**
4	12.5mph <= speed < 17.5mph	8.81%	9.18%	8.59%	9.45%	6.00%	11.13%	23.76%	10.12%	9.98%	8.46%	10.32%	**10.37%**
5	17.5mph <= speed <22.5mph	5.01%	10.15%	5.18%	14.04%	3.04%	5.94%	4.09%	10.36%	7.57%	9.74%	12.02%	**8.30%**
6	22.5mph <= speed < 27.5mph	8.91%	8.55%	11.62%	12.59%	6.18%	5.30%	3.54%	7.29%	7.11%	8.87%	11.73%	**8.13%**
7	27.5mph <= speed < 32.5mph	8.79%	7.97%	14.36%	11.28%	5.86%	13.33%	6.35%	9.43%	5.37%	10.06%	10.20%	**9.41%**
8	32.5mph <= speed < 37.5mph	5.33%	9.10%	5.86%	13.43%	7.62%	3.32%	6.36%	13.79%	8.68%	12.04%	6.81%	**7.81%**
9	37.5mph <= speed < 42.5mph	3.43%	6.89%	8.69%	7.02%	4.80%	3.76%	1.07%	7.94%	9.79%	13.81%	8.16%	**7.22%**
10	42.5mph <= speed < 47.5mph	1.72%	2.44%	8.79%	0.00%	2.40%	2.87%	0.00%	1.31%	5.83%	5.15%	4.75%	**3.42%**
11	47.5mph <= speed < 52.5mph	0.68%	0.00%	0.00%	0.00%	0.00%	0.36%	0.00%	0.67%	0.31%	2.27%	0.36%	**0.59%**
12	52.5mph <= speed < 57.5mph	0.34%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.67%	0.41%	0.24%	0.18%	**0.23%**
13	57.5mph <= speed < 62.5mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
14	62.5mph <= speed < 67.5mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
15	67.5mph <= speed < 72.5mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
16	72.5mph <= speed	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**

Source: Fairfax Co., VA

Table 3. VHT Distribution of School Buses (6:00 am – 6:00 pm)

avgSpeedBinID	avgBinSpeed	avgSpeedBinDesc	6:00AM-9:00AM	3:00PM-6:00PM	9:01AM-2:59PM/6:01PM-5:59AM
1	2.5	speed < 2.5mph	**9.94%**	**9.10%**	**7.92%**
2	5	2.5mph <= speed < 7.5mph	**13.79%**	**18.95%**	**14.49%**
3	10	7.5mph <= speed < 12.5mph	**34.07%**	**37.86%**	**31.36%**
4	15	12.5mph <= speed < 17.5mph	**28.52%**	**23.97%**	**29.17%**
5	20	17.5mph <= speed <22.5mph	**10.02%**	**5.92%**	**10.77%**
6	25	22.5mph <= speed < 27.5mph	**1.88%**	**1.84%**	**3.91%**
7	30	27.5mph <= speed < 32.5mph	**0.92%**	**0.85%**	**1.04%**
8	35	32.5mph <= speed < 37.5mph	**0.34%**	**0.60%**	**0.72%**
9	40	37.5mph <= speed < 42.5mph	**0.14%**	**0.50%**	**0.35%**
10	45	42.5mph <= speed < 47.5mph	**0.05%**	**0.15%**	**0.15%**
11	50	47.5mph <= speed < 52.5mph	**0.31%**	**0.28%**	**0.06%**
12	55	52.5mph <= speed < 57.5mph	**0.00%**	**0.00%**	**0.06%**
13	60	57.5mph <= speed < 62.5mph	**0.00%**	**0.00%**	**0.00%**
14	65	62.5mph <= speed < 67.5mph	**0.00%**	**0.00%**	**0.00%**
15	70	67.5mph <= speed < 72.5mph	**0.00%**	**0.00%**	**0.00%**
16	75	72.5mph <= speed	**0.00%**	**0.00%**	**0.00%**

Source: Washington Metropolitan Area Transit Authority (WMATA)

Table 4. VHT Distribution of Transit Buses

D. Source Type Population (Vehicle Population)

Source type population, or vehicle population, is acquired from the vehicle registration data. The VIN decoding software outputs vehicle population totals by Mobile 6.2 vehicle types. The vehicle population from the VIN data is then used to estimate vehicle population for each analysis year. Methods of estimating vehicle population vary by analysis year and availability of VIN data. For example:

- Case 1: If a VIN data year is the same as an analysis year, vehicle population total of the VIN data is used without any change;
- Case 2: If an analysis year is historical and is between any two VIN data years, vehicle population total of the analysis year is calculated using an interpolation method based on the two sets of VIN data; and
- Case 3: If an analysis year is a future year, regression analysis is used to project future vehicle population totals based on available VIN data (collected from 1975 to 2014), which draws the 'best fitting' line among scattered VIN data points.

Table 5 exhibits vehicle population forecasts based on this method including the use of the new 2014 VIN data. Vehicle profiles of the 2014 VIN data are used to develop future year vehicle profiles by jurisdiction. Vehicle profiles are prepared in a Mobile format in this data processing first, and are converted to a MOVES vehicle type using a vehicle mapping table provided by EPA (see Table AS1 in the Appendix). Figure 5 shows the process of calculating source type population.

TABLE 5 - SOURCE TYPE POPULATION FORECASTS Jurisdictions in the Non-Attainment Area						
State	Jurisdiction	Analysis Years				
		2016	2017	2025	2030	2040
DC	District of Columbia	296,658	300,237	328,864	346,756	382,541
MD	Calvert Co.	91,744	93,532	107,839	116,781	134,664
	Charles Co.	138,568	140,899	159,547	171,202	194,512
	Frederick Co.	228,864	232,657	262,998	281,962	319,889
	Montgomery Co.	768,826	777,623	848,000	891,986	979,958
	Prince George's Co.	630,100	635,257	676,513	702,298	753,868
	SUB TOTAL 1 - MD	1,858,101	1,879,967	2,054,898	2,164,229	2,382,892
VA	City of Alexandria	134,244	135,672	147,093	154,232	168,509
	Arlington Co.	150,597	151,709	160,608	166,170	177,295
	Fairfax Co.	972,846	986,753	1,098,015	1,167,554	1,306,631
	Loudoun Co.	280,008	286,855	341,626	375,858	444,323
	Prince William Co.	402,853	411,349	479,319	521,800	606,762
	SUB TOTAL 2 - VA	1,940,548	1,972,339	2,226,662	2,385,614	2,703,519
TOTAL		4,095,307	4,152,542	4,610,424	4,896,600	5,468,952

Table 5. Vehicle Population Forecasts (Source Type Population)

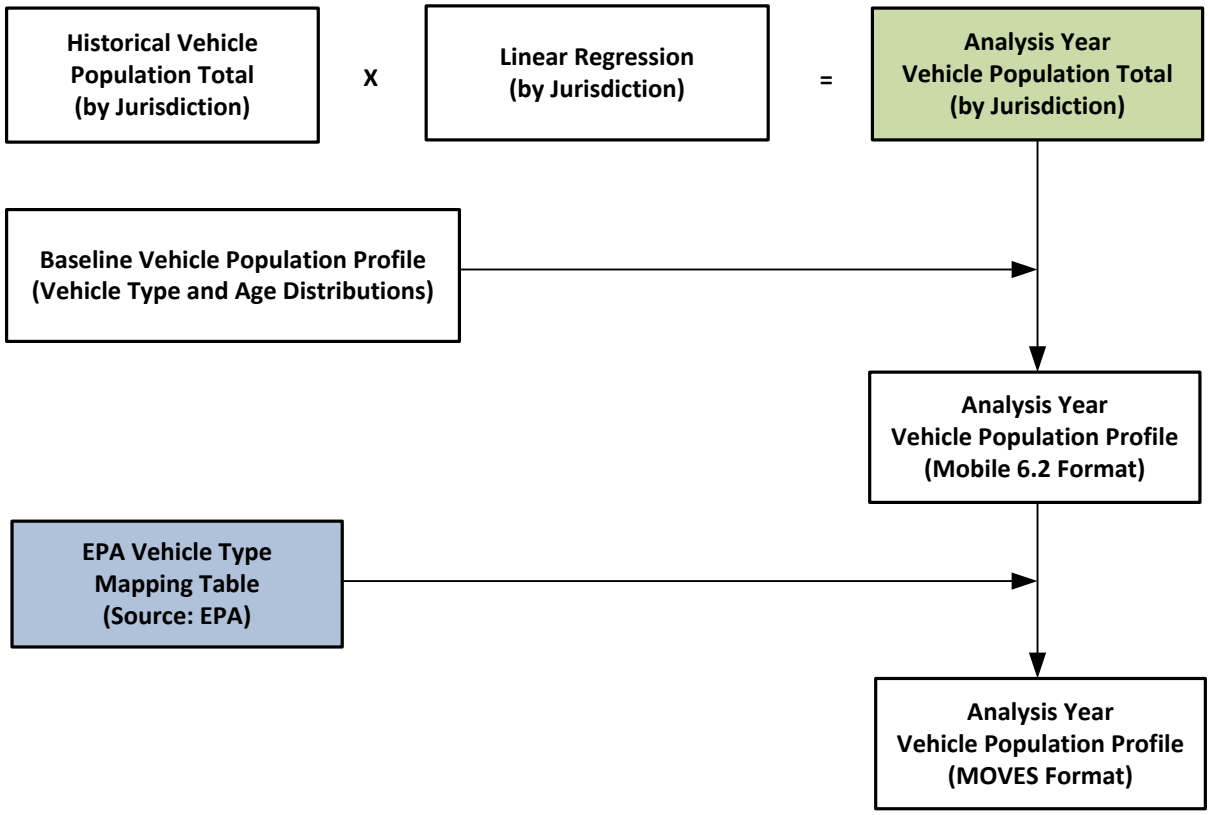

Figure 5. Source Type Population Development Process of Future Analysis Year

E. Vehicle Type VMT and VMT Percent by Hour, Day, and Month

MOVES2014a, the most recent MOVES version, requires annual VMT by five Highway Performance Monitoring System (HPMS) vehicle types. These are:

- Motorcycle (sourceTypeID = 10);
- Light duty vehicle (sourceTypeID = 25);
- Buses (sourceTypeID = 40);
- Single unit trucks (sourceTypeID = 50); and
- Combination trucks (sourceTypeID =60).

Average annual weekday VMT estimates include data from the travel demand model as well as estimates of VMT from local streets, which are not included in the travel model. Travel demand model VMT is divided into three vehicle types: passenger vehicles, commercial vehicles, and heavy duty vehicles. Local VMT is developed by using a combination of observed and simulated data in post processing.

The local VMT shares are added to VMT from the travel model to produce total VMT. The resulting total VMT for the three vehicle types are classified by five MOVES vehicle types using jurisdictional HPMS VMT percent. Auto access VMT for transit riders acquired from Metrorail Survey are added to the VMT of Light Duty Vehicles (sourceTypeID = 25). Figure 6 illustrates the process of developing annual VMT.

The average annual weekday VMT total by five HPMS vehicle types is then fed into an EPA converter, AAD VMT Calculator HPMS.XLS, with local monthly adjustment factors and weekend-day adjustment factors. The converter generates three VMT fractions, 'monthVMTfraction,' 'dayVMTfraction' and 'hourlyVMTfraction' as outputs.

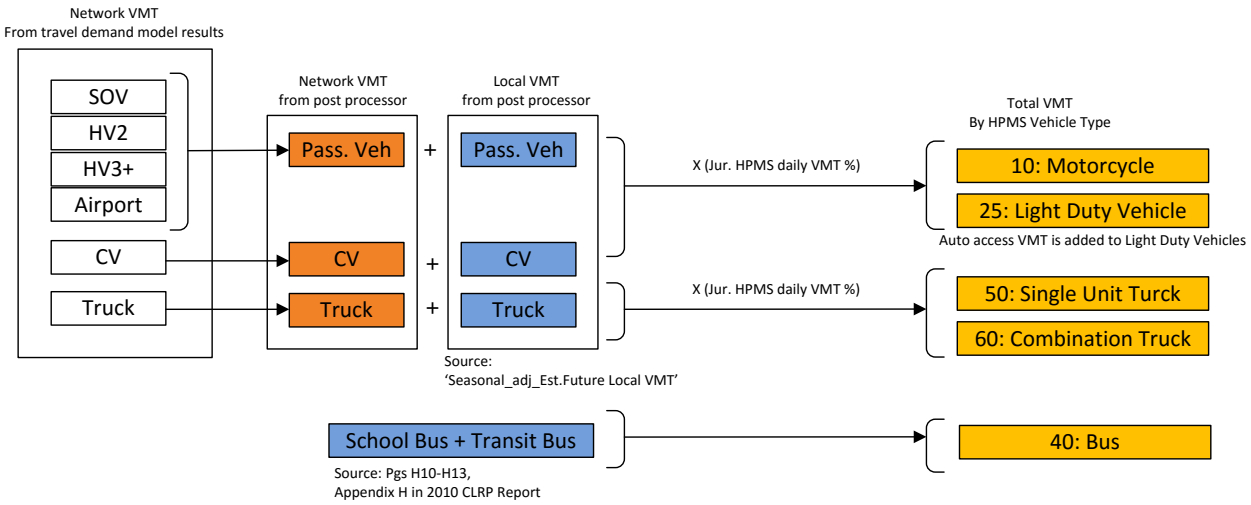

Figure 6. Annual VMT Calculation Process

F. Ramp Fraction

Local data are used to estimate the local ramp fraction using a method approved by the MOVES Task Force. The locally-derived percentage is equal to 8 percent of VHT, which, coincidentally, is the same as the MOVES default value.

4.0 DEP Inputs - 2016 CLRP Analysis

A. METEOROLOGY

Meteorology data used in the conformity analysis vary by pollutant. For each pollutant they match the data used in the appropriate State Implementation Plan (SIP) or Maintenance Plan demonstrating attainment or maintenance of the national ambient air quality standard (NAAQS) for the pertinent pollutant. The meteorology data used are as follows:

- Ozone: Meteorology data are from a 2007 Ozone attainment SIP (submitted to EPA in May 2007) for the 1997 ozone NAAQS. The data, while unchanged in content, were reformatted from the original format, Mobile6.2-compatible, the prevailing emissions estimating model in 2007, to MOVES2010a ready format for the 2014 CLRP analysis[3]. Since there is no difference in meteorology data format for MOVES2014a and MOVES2010a, data used for the 2014 CLRP analysis were also used for the 2016 CLRP analysis in the same format.

B. FUEL SUPPLY, FORMULATION, & FUEL USAGE FRACTION

The state air agencies of the District of Columbia, the state of Maryland, and the Commonwealth of Virginia provided fuel characteristics data for the analysis years in a MOVES2014a ready format.

For analysis year 2016, the gasoline sulfur content was 30 ppm or lower. For analysis year 2017 and beyond, the gasoline sulfur content used was 10 ppm, which is an assumption that is consistent with the 2014 Tier 3 rule of EPA.

C. INSPECTION/MAINTENANCE (I/M) PROGRAMS

The District of Columbia, Maryland, and Virginia provided details of I/M programs for all analysis years in MOVES2014a ready format.

[3] Sunil Kumar, "Development of Meteorology Inputs for Existing Conformity Analyses (Ozone & PM2.5 – 1997 Standards, CO – 1971 Standard", July 20, 2013.

In addition to the above inputs there are state-specific programs that were taken into account in the analyses:

D. STATE SPECIFIC CONTROL PROGRAMS

1. Early NLEV: The District of Columbia, Maryland, and Virginia adopted an Early NLEV program, which is reflected in all analysis years. Early NLEV input database file – MOVES2014_early_NLEV

2. Stage II: Varies by jurisdiction as follows:
   - District of Columbia: 1999 onwards - Refueling vapor program adjustment- 0.9, Refueling spill program adjustment- 0.5 (MOVES2014a defaults)

   - Maryland: 1999 onwards - Refueling vapor program adjustment- 0.7, Refueling spill program adjustment- 0.7, MOVES2014 Stage II database file - md_stageii_yy

   - Virginia: 2015 onwards - Refueling vapor program adjustment- 0, Refueling spill program adjustment- 0, MOVES2014 Stage II database file - va_stage2_input_20140507

3. CAL-LEV /ZEV Programs: Since 2011 Maryland adopted CAL-LEV program and as such it is reflected in all analysis years. The following auxiliary files, provided by the Maryland Department of the Environment (MDE), were used to model these programs in the Maryland jurisdictions:

   MOVES2014a Cal-Lev Database File - MOVES2014_caleviii2011;
   MOVES2014a ZEV Program Information - Included in all MD MS-Excel input files as a tab (ZEV_AVFT_MD_moves2014a)

APPENDIX SUPPLEMENT

TABLE AS1 - Population Mapping from MOBILE6.2 Vehicle Types to MOVES Source Types

MOBILE6.2 Vehicle		MOVES Source Type		
ID	Name	ID	Name	Fraction
1	LDGV	21	Passenger Car	1.00
2	LDGT1	31	Passenger Truck	0.78
		32	Light Commercial Truck	0.22
3	LDGT2	31	Passenger Truck	0.78
		32	Light Commercial Truck	0.22
4	LDGT3	31	Passenger Truck	0.78
		32	Light Commercial Truck	0.22
5	LDGT4	31	Passenger Truck	0.78
		32	Light Commercial Truck	0.22
6	HDGV2B	31	Passenger Truck	0.63
		32	Light Commercial Truck	0.37
7	HDGV3	31	Passenger Truck	0.63
		32	Light Commercial Truck	0.37
8	HDGV4	31	Passenger Truck	0.06
		32	Light Commercial Truck	0.94
9	HDGV5	31	Passenger Truck	0.06
		32	Light Commercial Truck	0.94
10	HDGV6	43	School Bus	0.04
		52	Single Unit Short-haul Truck	0.69
		53	Single Unit Long-haul Truck	0.03
		54	Motor Home	0.23
		61	Combination Short-haul Truck	0.01
11	HDGV7	43	School Bus	0.04
		52	Single Unit Short-haul Truck	0.69
		53	Single Unit Long-haul Truck	0.03
		54	Motor Home	0.23
		61	Combination Short-haul Truck	0.01
12	HDGV8A	52	Single Unit Short-haul Truck	0.90
		53	Single Unit Long-haul Truck	0.08
		61	Combination Short-haul Truck	0.02
13	HDGV8B	52	Single Unit Short-haul Truck	0.90
		53	Single Unit Long-haul Truck	0.08
		61	Combination Short-haul Truck	0.02
14	LDDV	21	Passenger Car	1.00

TABLE AS1 - Population Mapping from MOBILE6.2 Vehicle Types to MOVES Source Types

MOBILE6.2 Vehicle Type		MOVES Source Type		
ID	Name	ID	Name	Fraction
15	LDDT12	31	Passenger Truck	0.42
		32	Light Commercial Truck	0.58
16	HDDV2B	31	Passenger Truck	0.43
		32	Light Commercial Truck	0.57
17	HDDV3	31	Passenger Truck	0.43
		32	Light Commercial Truck	0.57
18	HDDV4	31	Passenger Truck	0.10
		32	Light Commercial Truck	0.90
19	HDDV5	31	Passenger Truck	0.10
		32	Light Commercial Truck	0.90
20	HDDV6	51	Refuse Truck	0.01
		52	Single Unit Short-haul Truck	0.72
		53	Single Unit Long-haul Truck	0.06
		54	Motor Home	0.07
		61	Combination Short-haul Truck	0.11
		62	Combination Long-haul Truck	0.03
21	HDDV7	51	Refuse Truck	0.01
		52	Single Unit Short-haul Truck	0.72
		53	Single Unit Long-haul Truck	0.06
		54	Motor Home	0.07
		61	Combination Short-haul Truck	0.11
		62	Combination Long-haul Truck	0.03
22	HDDV8A	51	Refuse Truck	0.02
		52	Single Unit Short-haul Truck	0.30
		53	Single Unit Long-haul Truck	0.02
		61	Combination Short-haul Truck	0.35
		62	Combination Long-haul Truck	0.31
23	HDDV8B	51	Refuse Truck	0.02
		52	Single Unit Short-haul Truck	0.30
		53	Single Unit Long-haul Truck	0.02
		61	Combination Short-haul Truck	0.35
		62	Combination Long-haul Truck	0.31
24	MC	11	Motorcycle	1.00
25	HDGB	43	School Bus	1.00
26	HDDBT	41	Intercity Bus	0.62
		42	Transit Bus	0.38
27	HDDBS	43	School Bus	1.00
28	LDDT34	31	Passenger Truck	0.42
		32	Light Commercial Truck	0.58

APPENDIX F

Transportation Emissions Reduction Measures (TERMS)

TRANSPORTATION EMISSIONS REDUCTION MEASURES (TERMs) ANALYSIS

for the
2016 CLRP Amendment and FY2017-2022 TIP

TECHNICAL DOCUMENTATION

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BACKGROUND

Mobile emissions forecasts are developed on the basis of modeled travel demand. The TPB's travel model takes into account the key influences on trip making such as where future development will occur and what future transportation projects will be built. The model, however, does not explicitly account for other programs that are much smaller in scale but are nonetheless expected to influence trip-making in the future. These strategies or actions are known as Transportation Emission Reduction Measures or TERMs. TERMs may be considered to offset forecasted mobile emission levels by reducing the number of vehicle trips (VT), reducing vehicle miles traveled (VMT) or by reducing delay. Common examples of TERMs typically include ridesharing and telecommuting programs, improved transit and bicycling facilities and clean fuel vehicle programs. As these programs generally affect a small segment of the regional population, the mobile emissions impacts resulting from individual TERMs may be estimated using relatively simple spreadsheet-based techniques.

TPB staff's analysis of the 2016 CLRP using the travel demand model and MOVES2014a model has shown that mobile emissions forecasts will be well within the existing SIP emission budgets. Therefore, there is no immediate need to identify additional emissions reduction strategies for the purpose of attaining air quality conformity. Nonetheless, an analysis of TERM impacts has been undertaken to demonstrate the amount of emission reductions that would be expected from TERMs actions if such a need was warranted.

This document presents an evaluation of emission reductions that might be expected from four TERMs categories:

1. MWCOG/TPB Commuter Connections Program: The Commuter Connections Program has been a cornerstone for regional travel demand management (TDM) and emissions reductions since its inception in 1999. The program encourages the use of alternatives to the single occupant driver mode. The program currently serves a substantial geographic area that extends well beyond the TPB member area.

2. Regional Incident Management Program (MATOC): The Metropolitan Area Transportation Operations Coordination (MATOC) promotes communication and timely information sharing among the region's "first-responders" to emergency incidents that occur on the region's transportation system. Effective responses to incidents reduces fuel consumption attributed to delay which, in turn, yields emissions reduction benefits.

3. Pedestrian Facilities Expansions & Enhancements: The FY2017-2022 Transportation Improvement Program (TIP) includes pedestrian and bicycle facility improvements in the form of trails, bicycle paths, dedicated bicycle lanes and sidewalks. These types of projects are considered a TERM strategy as they encourage the use of non-auto modes.

4. Informal Carpool Lots (Slugging): "Slugging" is a term that refers to an informal carpooling practice that has evolved in the I-95 corridor for decades. I-95 and I-395 HOV lanes provide substantial travel time savings in the corridor and thus provide a clear incentive for travelers to form carpools during peak periods. Slugging is essentially an informal arrangement by which prospective carpooling passengers queue up at designated locations to be paired with auto drivers searching for passengers. This arrangement for forming multi-occupant vehicles reduces single occupant driving and serves to minimize the overall delay of the system.

The emissions reductions estimated in this document are intended to provide an approximate estimate of the emissions reductions that might be expected from each TERM category using emission rates derived from the most recent MOVES2014a modeling conducted by TPB staff. Emission reductions are calculated for each pollutant analyzed in the TPB's conformity assessment, namely:

- Summer Ozone VOC (Short Tons/Day)
- Summer Ozone NOx (Short Tons/Day)
- Annual PM 2.5 (Short Tons/Year)
- Annual Precursor NOx (Short Tons/Year)

Emission reduction results are provided by the specific analysis years analyzed as part of the 2016 CLRP Air Quality Conformity assessment: 2016, 2017, 2025, 2030 and 2040.

A. EMISSIONS REDUCTIONS FROM MWCOG/TPB COMMUTER CONNECTIONS PROGRAM

Mobile emission reductions attributed to the Commuter Connections Program were estimated as follows: Staff obtained historical daily VMT reductions documented in the Commuter Connections' TERMs analysis reports[1] as a basis for developing future VMT estimates. The reductions are shown in Table 1. The table indicates that for Audit #6 (year 2014), 2.47 million vehicle miles were removed from the highway system. Next, the reported reductions were extrapolated into the future based on rates implied by the travel demand model. The growth rates are shown in Table 2. Table 3 shows the resulting historical VMT reductions and the extrapolated reductions (from a 2014 base year).

Table 1. Historical VMT Reductions from Commuter Connections

Program	Audit #1	Audit #2	Audit #3	Audit #4	Audit #5	Audit #6
Year	1999	2002	2005	2008	2011	2014
Telework Resource Center	606,908	279,692	226,913	413,703	241,834	205,511
Guaranteed Ride Home	13,069	202,058	334,088	227,428	208,346	212,834
Expanded Telecommuting	0	0	36,859	0	0	0
Integrated Rideshare	6,977	117,940	146,612	199.079	51,589	66,442
Employer Outreach	90,000	1,107,698	1,339,818	968,047	1,656,726	1,327,044
Employer Outreach–Bicycling	0	1,225	3,431	0	0	0
Mass Marketing	0	0	132,861	69,274	78,297	173,269
Commuter Operations Center	0	0	279,055	575,237	180,409	488,226
TOTAL	716,964	1,708,613	2,499,637	2,453,895	2,418,264	2,473,326

Table 2. Average Annual VMT Growth in 2016 CLRP

Analysis Year	AAWD VMT from Travel Demand Forecasts	Annual Growth between Analysis Year
2016	167,131,322	0.00%
2017	169,105,830	1.18%
2025	183,903,579	1.09%
2030	192,993,850	0.99%
2040	205,201,570	0.63%
Avg. Annual Growth		0.97%

[1] *"Transportation Emission Measure (TERM) Analysis Report", which has been published in September 1999 (Audit #1 of the FY1997-FY1999 period), March 2003 (Audit#2 of the FY2000-FY2002 period), January 2006 (Audit#3 of the FY2003-FY2005 period), January 2009 (Audit#4 of the FY2006-FY2008 period), January 2012 (Audit#5t of the FY2009-FY2011 period) and November 2014 (Audit #6 of the FY2012-FY2014 period).*

Table 3. Projection of Future Commuter Connections VMT Reduction in 2016 CLRP

Analysis Year	VMT Reductions
1999	716,954
2002	1,708,613
2005	2,499,637
2008	2,453,895
2011	2,418,264
2014	2,473,326
2016	2,521,746
2017	2,546,310
2025	2,751,636
2030	2,888,289
2040	3,182,294

*1999 to 2014: Historical VMT from Commuter Connections;

2016 and beyond: Forecasted VMT.

As the TPB travel model was calibrated with 2007/08 data, the "affect" of the Commuter Connections Program was already reflected in the travel behavior data used to calibrate the travel model. Thus, to avoid "double-counting" in this regard, the estimated VMT reductions shown in Table 4 were adjusted by subtraction, so that VMT reductions would begin after a 2008 "base year." For example, the year 2016 adjusted VMT reduction was calculated as:

2,521,746 (2016 reduction) – 2,453,895 (2008 reduction) = 67,851

The adjusted reductions (per day and per year) are shown in Table 4.

Table 4. Projection of Adjusted VMT Reductions

Year	Ozone VOC and NO_x (VMT/day)	$PM_{2.5}$ Direct and Precursor NOx (VMT/year)
2008	0	0
2016	67,851	16,962,661
2017	92,415	23,103,695
2025	297,741	74,435,126
2030	434,394	108,598,583
2040	728,399	182,099,712

The VMT reductions in Table 4 were next multiplied by emission rates reflecting passenger cars and passenger trucks to arrive at mobile emissions reductions. The emission rates were derived by dividing year-specific passenger car/truck emissions by passenger car/truck vehicle miles as developed by the MOVES2014a (see Table 5). The projected daily or annual VMTs in Table 4 are multiplied to corresponding emission rates in Table 5 to calculate emission reductions of Commuter Connections in Table 6.

Table 5. **Emission Rates in 2016 CLRP (grams/mile)**

Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx
2016	0.337	0.407	0.02	0.45
2017	0.301	0.301	0.01	0.34
2025	0.204	0.142	0.01	0.16
2030	0.139	0.081	0.01	0.10
2040	0.098	0.043	0.01	0.06

Table 6. Emission Reductions by Commuter Connections in 2016 CLRP (short tons/year)

Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx
2016	0.025	0.030	0.30	8.36
2017	0.031	0.031	0.37	8.56
2025	0.067	0.046	0.95	13.44
2030	0.066	0.039	1.21	11.94
2040	0.078	0.034	1.71	12.07

note: unit for daily pollutants such as Ozone VOC , NOX or Winter CO is short tons per day; and

for annual pollutants such as PM2.5 direct or Precursor NOX is short tons per year.

B. EMISSIONS REDUCTIONS FROM THE REGIONAL INCIDENT MANAGEMENT PROGRAM

The Metropolitan Area Transportation Operations Coordination (MATOC) Program – a jointly funded program by the state of Maryland, the District of Columbia, and the Commonwealth of Virginia - monitors, gathers and communicates timely incident information, so that transportation agencies may better coordinate their respective response activities in order to reduce travel delay and fuel consumption and better inform the public. The information allows travelers to make informed travel decisions by deferring/delaying trip making, taking an alternate route, or switching modes of travel.

Mobile emissions reductions from the MATOC program were estimated by calculating the differences in delay that result with and without the MATOC program. A methodology was developed especially for this analysis based on published data[2] and the following assumptions:

[2] *MATOC Benefit-Cost Analysis White Paper", June 2010 authored by Sabra, Wang & Associates, Inc., on behalf of MWCOG and under the guidance of the MATOC Steering Committee.*

- Fairfax County, VA, was selected for developing emissions rates by speed bin from the MOVES model as it has a balanced mix of restricted-access facilities (i.e., highways and expressways) and unrestricted-access facilities (i.e., arterials, collectors and local roads).
- Queue travel speeds after a highway/expressway incident typically fall in the 12.5 - 17.5 mph speed bin in the MOVES2014a model.
- '…..MATOC is typically involved in approximately 20 minor incidents and one major freeway, arterial or transit incident of regional significance per month….'

Methodology

The methodology is composed of three elements: (1) development of speed specific emission rates; (2) development of regional emission rates; and (3) development of mobile emission savings:

- *Speed Specific Emission Rates Development*: An adjustment factor, $\mathrm{Rate_{adj}}$, was developed to align 'non-speed sensitive' mobile emission rates developed as part of the conformity assessment from MOVES Inventory Approach with a low speed range, 12.5-17.5 mph, which is a typical queue speed after incident occurrences:

$$\mathrm{Rate_{adj}} = \frac{\mathrm{P\_Rate_e}}{\mathrm{P\_Rate_i}}$$

Where:

$\mathrm{P\_Rate_e}$ (grams per mile) was derived using MOVES' Emission Rate Approach for Fairfax County, for year 2015 based on the 2012 CLRP Air Quality Conformity Assessment, and applicable to the 4th MOVES Speed Bin (i.e., 12.5-17.5 mph); and

$\mathrm{P\_Rate_i}$ (grams per mile) was derived using MOVES' Inventory Approach for Fairfax County, for year 2015 based on the 2012 CLRP Air Quality Conformity Assessment as follows:

$$\mathrm{P\_Rate_i} = \frac{\text{Total Emissions FFX Co., 2012 CLRP, Yr 2015}}{\text{Total VMT FFX Co., 2012 CLRP, Yr 2015}}$$

For Ozone (VOC and NOx) daily emissions the corresponding rate was 1.30.

- *Regional Emission Rates Development*: Total Emissions in the region by pollutant and analysis year were divided by the corresponding VMT from the 2016 CLRP Air Quality Conformity Analyses, as follows:

$$\mathrm{Rate_i\ (grams\ per\ mile)} = \frac{\text{Total Regional Emissions, by Analysis Year, 2016 CLRP AQC}}{\text{Total Regional VMT, by Analysis Year, 2016 CLRP AQC}}$$

The resulting regional emission rates were developed in Table 7.

- *Mobile Emissions Savings Development attributable to MATOC:*

$$\text{Emissions Savings (grams per mile)} = \text{Queue VMT Savings} * \text{Rate}_{\text{i}} * \text{Rate}_{\text{adj}}$$

Assumed Major Incident Queue VMT Savings = 452,120 (vehicle miles)
Assumed Minor Incident Queue VMT Savings = 19,040 (vehicle miles)

Assumed Daily Emissions Savings (grams per mile) by Pollutant =
1/30 (1 major incident per month) X Emissions Savings from Major Incident +
20/30 (20 minor incidents per month) X Emissions Saving from Minor Incident

Assumed Annual Emissions Savings (grams per mile) by Pollutant =
12 (1 major incident per month) X Emissions Savings from Major Incident +
240 (20 minor incidents per month) X Emissions Savings from Minor Incident

Based on assumptions above total emissions savings from the MATOC program are calculated as in Table 8.

Table 7. Mobile Emissions Rates (Regional Incident Management Program)

Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx
2016	0.473	0.931	0.031	0.794
2017	0.418	0.727	0.027	0.626
2025	0.276	0.313	0.016	0.274
2030	0.189	0.200	0.013	0.181
2040	0.136	0.134	0.011	0.128

Table 8. Mobile Emissions Reductions (Regional Incident Management Program)

Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx
2016	0.014	0.028	0.34	8.75
2017	0.013	0.022	0.30	6.90
2025	0.008	0.010	0.17	3.02
2030	0.006	0.006	0.14	2.00
2040	0.004	0.004	0.12	1.41

note: unit for daily pollutants such as Ozone VOC , NOX or Winter CO is short tons per day; and
for annual pollutants such as PM2.5 direct or Precursor NOX is short tons per year.

C. EMISSIONS REDUCTIONS FROM THE PEDESTRIAN FACILITIES EXPANSIONS & ENHANCEMENTS

A methodology was developed to estimate mobile emissions reductions from VMT savings realized from travelers choosing non-motorized modes of travel instead of driving. It is assumption-driven[3], so that the resulting emission reductions are dependent on the following assumptions:

- Facility construction/expansions/enhancements were post-2007/2008;
- Baseline Year 2010 Pedestrian Facilities Length = 634 miles[4]. VMT estimates were based only on Home-Based-Work (HBW) trips from the regional travel demand model;
- Average Trip Length (ATL) = 3 miles[5]; and
- Non-motorized HBW trips percentage = 3% of the regional total HBW trips[6].

Methodology:

- Baseline (Year 2010) VMT reductions from use of the pedestrian facilities are as a function of non-motorized HBW trips percentage, HBW trips (regional total), and average trip length:

Baseline VMT Reductions = HBW Bike Trips % x HBW Trips x ATL

Where:
HBW Bike Trips Percentage = 3%;
Average Weekday HBW Trips (Year 2010) = 3,659,233; and
Average Trip Length (ATL) = 3.0 miles.

- Baseline (Year 2010) VMT reductions per mile are estimated as follows:

VMT Reductions per mile = Baseline VMT Reductions/Baseline Length of pedestrian facilities

Where:
Baseline VMT Reductions = 0.03 x 3,659,233 x 3.0 = 329,330.97;
Baseline (Year 2010 Regional Total) Pedestrian Facilities Length = 634 miles; and
VMT Reductions (per mile) = 329,330.97/634 = 519.45.

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[3] *Caltrans/Air Resources Board analysis, dated December, 1995, which was developed by COMSIS Corporation, for FHWA & FTA, and which was previously used by MWCOG/DTP staff for TERMs analyses starting in 1993*

[4] "*2010 Bicycle and Pedestrian Plan for the National Capital Region Report", TPB, October 2010*

[5] *2012 TPB Geographically Focused Household Travel Survey*

[6] *2010 TPB State of the Commute Report, June 2011*

- Forecasting of VMT Reductions per mile based on the mileage of new or expanded pedestrian facilities included in the 2016 CLRP & FY2017-2022 TIP beyond 2007/2008 according to their forecasted completion years. Facilities without adequate numerical data not allowing computations were omitted. For projects without a stated completion year, it was assumed that they would be completed when the funding was programed. Consistent with the above, the following pedestrian facilities expansions were assumed:

  Year 2016: 6.27 lane miles
  Year 2017: 46.85 lane miles
  Year 2025 - 2040: 58.25 lane miles

  Future average weekday VMT reductions due to the above lane mile additions:
  Year 2016: 6.27 miles x 519.45 = 3,257 vehicle miles
  Year 2017: 46.85 miles x 519.45 = 24,336 vehicle miles
  Year 2025 - 2040: 58.25 miles x 519.45 = 30,258 vehicle miles

The emissions rates previously used in the Commuter Connections calculations (Table 5) were multiplied by the above VMT reductions by milestone year to yield mobile emission reductions from pedestrian facilities expansions (Table 9).

Table 9. Mobile Emissions Reductions (Pedestrian Facilities)

Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx
2016	0.001	0.001	0.01	0.40
2017	0.008	0.008	0.10	2.25
2025	0.007	0.005	0.10	1.37
2030	0.005	0.003	0.08	0.83
2040	0.003	0.001	0.07	0.50

D. EMISSIONS REDUCTIONS FROM INFORMAL CARPOOLING

"Slugging" is an informal carpooling arrangement that occurs at several locations in the I-95 corridor in Virginia which offers dedicated HOV lanes.

Park & Ride lots without transit service were inventoried in 2016, and their capacities were obtained from several sources such as Commuter Connections Program, state DOTs and local jurisdictions (see Table 10 for more details).

Average travel distance estimates, 19.12 miles, from such facilities to work were derived from the weighted average Home-Based Work (HBW) trip lengths of traffic analysis zones (TAZs) containing slug lots. The estimates were derived directly from the TPB regional travel demand model for year 2012. Furthermore, the following assumptions were made:

1. TAZs containing each slug lot were considered as the origin of each HBW trip for this exercise because it is the starting point of the 'slugged' trip to work.
2. TAZs containing work trip destinations were considered as the destination of each HBW trip for this exercise, so that the methodology assumes the spatial distribution of slugged trips is the same as that of HBW trips in the region.
3. The slugged trips are made along the shortest path during AM peak period.
4. The average slugged trip distance was calculated as the weighted average trip distances for each slug lot, so that the computations take into account the size/utilization of each lot.
5. TAZs 926 and 2728 were used as proxies for TAZs 925 and 2729, respectively, because no household population data are associated with TAZs 926 and 2728.
6. Average vehicle mile calculations are based on trip productions which include both 'to work' and 'from work' direction.

According to the paper of 'Methods to find the Cost-Effectiveness of Funding Air Quality Projects, May 2005' by Caltrans/Air Resources Board, a default 16 miles is suggested as the length of auto trips eliminated for Ridesharing programs. According to the paper of 'Reasonably Available Control Measure (RACM) Analysis for the Baltimore Region, July 2001' by Maryland Department of Environment (MDE), an estimated 13 miles were reduced for one way travel by people who rideshare in Guaranteed Ride Home Program based on Baltimore Metropolitan Council (BMC) Travel Demand Model Validation Report. The resulting weighted average distance of 19.12 miles (Table 10) was calculated from local data, which is within the range of the average distances reported by the other sources.

Table 10. Informal Carpool Lots Capacity and Trip Length to Work

SLUG LOTS SUMMARIES	TAZ ID	2016 Parking Spaces	Average HBW Trip length (in miles)
Beltway (I-95 south of I-495)	925 (926)	265	11.60
Autumn Willow Park	1654	100	14.40
Greenbriar Park	1665	60	12.90
Apple Federal Credit Union	2039	12	13.00
Potomac Station	2263	50	17.60
Crossroads United Methodist Church	2302	90	18.00
Broadlands	2304	30	16.90
Ashburn Village	2340	40	17.80
Sterling Park Shopping Center	2375	46	13.90
Harbor Drive	2668	222	16.70
Prince William Stadium	2678	190	18.20
Princedale	2712	75	22.00
Montclair Commuter Lot	2729(2728)	52	22.20
Good Shepherd United Methodist Church	2732	62	17.90
Cherrydale Road	2732	30	17.90
Bethel United Methodist Church	2745	49	18.10
Rosemont	2820	46	29.50
Jefferson	2826	99	28.90
Woodsboro	2879	20	27.10
New Market	2888	54	26.90
Urbana (North Lot)	2899	303	19.10
Frederick Armory	2914	230	16.30
Frederick Stadium	2934	110	17.90
Mount Zion East	2940	37	20.30
Lusby	3324	16	26.00
S Fraley Blvd (US-1) & Graham Park Rd	2784	55	19.90
Dale Blvd & Kirkdale Dr	2739	41	20.90
Dale Blvd just west of I-95 Exit-156	2732	85	18.60
Dale Blvd & N Forestdale Ave	2750	20	18.90
Old Bridge Rd & Oakwood Dr	2672	44	18.70
VA-784 (Dale Blvd) & Ashdale Ave	2751	12	18.70
Annapolis Way & Marina Way	2763	50	15.90
Jefferson Davis Hwy & Joplin Rd	2803	31	18.10
Weighted Average Trip Length (Lots to work)			19.12

Average weekday VMT reductions were derived by multiplying capacities of the lots – reduced by 1/3 to account for less-than-full lots – by average weekday travel distances to/from these lots. The capacity reduction assumption is consistent with Washington Metropolitan Area Transit

Authority (WMATA) observations (in Washington Examiner article on March 19, 2013), earlier TPB TERMs analyses, and literature research from metropolitan areas in California.

Base Year 2016 lot capacities were kept constant for the analysis years because: (1) no reliable historical data were available to allow the development of trend lines (where such data were available, the data were fragmented and deemed not reliable for extrapolation); (2) prospects for Park & Ride lot expansions were considered, but the expansions could be limited as most of these facilities are located in developed areas. As data become available, the zero growth assumption may be revisited and potentially changed. Based on these assumptions the average weekday VMT estimate was equal to 66,945 miles. Using the emission rates in Table 5, emission reductions from the informal carpool lots were derived in Table 11.

Table 11. Mobile Emissions Reductions from Informal Carpool Lots

REGIONAL EMISSIONS REDUCTIONS – INFORMAL CARPOOLING LOTS				
Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx
	(short tons/day)		(short tons/year)	
2016	0.025	0.030	0.29	8.25
2017	0.022	0.022	0.27	6.20
2025	0.015	0.010	0.21	3.02
2030	0.010	0.006	0.19	1.84
2040	0.007	0.003	0.16	1.11

E. SUMMARY OF TOTAL MOBILE EMISSIONS REDUCTIONS TERMS ANALYZED

The mobile emissions reductions attributed to all of the TERMs described above are summarized in Table 12.

Table 12. Mobile Emissions Reductions (All TERMs Combined)

REGIONAL EMISSIONS REDUCTIONS – ALL TERMs COMBINED				
Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx
	(short tons/day)		(short tons/year)	
2016	0.066	0.090	0.95	25.77
2017	0.074	0.083	1.04	23.91
2025	0.097	0.071	1.43	20.84
2030	0.087	0.054	1.63	16.60
2040	0.093	0.043	2.06	15.09

APPENDIX G

Transportation Control Measures (TCMs) Implementation

MEMORANDUM

September 11, 2014

To: **Files**

From: **Jane Posey**
Senior Transportation Engineer

Subject: **TCM Reporting: All TCMs Completed**

The transportation conformity rule and the Clean Air Act require that Transportation Control Measures (TCMs) in approved State Implementation Plans (SIPs) be implemented in a timely manner according to the schedules in the SIP. If a nonattainment or maintenance area cannot determine that TCMs are meeting the timely implementation requirement, the Long Range Plan or Transportation Improvement Program does not conform.

Table F-1 lists all TCMs included in the Washington DC- Maryland-Virginia Region's 1-Hour Ozone SIP (adopted by the Metropolitan Washington Air Quality Committee-- MWAQC on 2/19/04), the 8-Hour Ozone SIP (adopted by MWAQC on 5/23/07), and the $PM_{2.5}$ SIP (adopted by MWAQC on 3/7/2008). Following the table are TCM implementation status letters from the agencies responsible for the completion of each project. These letters confirm that all of the TCM's in Table F-1 were completed in a timely manner.

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Web: www.mwcog.org/tpb Phone: (202) 962-3315 Fax: (202) 962-3202

TABLE F-1
DC-MD-VA Region State Implementation Plan
TRANSPORTATION CONTROL MEASURES (TCMs)

ID	Description	Responsible Agency
DC-1	Bicycle Lane in D. C. (8 miles)	DDOT
DC-2	New CNG Powered Trash Trucks (2 Vehicles)	DDOT
DC-3	Bicycle Racks in D.C. (150 Racks)	DDOT
MD-1	Maryland Suburban Bus Replacements	MCG, PG
MD-2	Transit Parking Facilities (at Lake Forest, Tulagi, Germantown)	MDOT
MD-3	MARC Replacement/Expansion Coaches	MARC
MD-4	Bicycle Facilities	MDOT
MD-5	Park and Ride Facilities (at MD5/MD205, MD210/MD 373, I-270/MD 80)	MDOT
MD-6	Grosvenor Metro Garage (1300 spaces)	MDOT
MD-7	Maryland Park & Ride Lots (at MD 210/MD 373, I-270/ MD 124, MD 2/MD 4, MD 231/ Fairgrounds, MD 117/I-270, MD 2/MD 4)	MDOT
NV-1	Northern Virginia Districtwide Park-And-Ride Spaces (1872 spaces)	VDOT
NV-2	Transit Access Improvements (200 VRE Parking Spaces)	VDOT
NV-3	Purchase Of New Transit Buses (52 WMATA buses)	VDOT
NV-4	Improved Pedestrian Access	VDOT
NV-5	Construction of Bus Shelters (12 shelters)	City of Fairfax
NV-6	Park & Ride Spaces (3200 spaces)	VDOT
NV-7	Bicycle Lanes/Trails in Northern Virginia (12 miles)	VDOT
NV-8	Bicycle Lockers in Northern Virginia (100 lockers)	VDOT
NV-9	Hybrid Light Duty Vehicles (25 vehicles)	Fairfax County
NV-10	Bicycle Trails/Lanes in Northern Virginia (29 miles)	Arlington County P.W. County
NV-11	Sidewalk improvements in Northern Virginia (1.5 miles)	VDOT
NV-12	11 New CNG Buses in place of Diesel Buses	Arlington County
WM-1	Bicycle Racks on Buses (1458 racks)	WMATA
WM-2	ULSD; CRT Filters (886 buses)	WMATA
WM-3	CNG Buses (164 buses)	WMATA

NOTE: The projects in this list include all TCMs in the 1-Hour Ozone SIP (adopted by MWAQC 2/19/04), the 8-Hour Ozone SIP (adopted by MWAQC 5/23/07), and the $PM_{2.5}$ SIP (adopted by MWAQC on 3/7/2008).

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

d. Policy, Planning and Sustainability Administration

August 11, 2014

Mr. Kanti Srikanth, Director
Department of Transportation Planning
Metropolitan Washington Council of Governments
777 North Capitol Street, N.E., Suite 300
Washington, D.C. 20002-4239

RE: Confirmation of Transportation Control Measures (TCMs) Completion

Dear Mr. Srikanth:

The Transportation Control Measures (TCMs) commitments made by the District Department of Transportation (DDOT) as a part of a regional coordinated effort to mitigate ozone emissions from on-road mobile sources have been completed as demonstrated in pervious conformity determinations. The summary of the status remains unchanged in that all TCMs committed by DDOT have been completed. Listed below are the TCM projects in our jurisdiction, completion years, and reference to the provided documentation.

ID	Description	Completion Year	Reference
DC-1	Bicycle Lanes (8 miles)	2004	DDOT internal documents
DC-2	CNG Powered Refuse Haulers (2)	2004	DDOT Letter 6/6/2004
DC-3	Bicycle Racks (150)	2004	DDOT Letter 6/6/2004

District Department of Transportation | 55 M Street, SE, Suite 400, Washington, DC 20003 | 202.673.6813 | ddot.dc.gov

Should you have any questions, please contact Mark Rawlings at (202) 671-2234 or mark.rawlings@dc.gov.

Sincerely,

Sam Zimbabwe
Associate Director

Maryland Department of Transportation
The Secretary's Office

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

James T. Smith, Jr.
Secretary

August 6, 2014

Mr. Gerald Miller
Co-Director of Transportation Planning (Acting)
Transportation Planning Board
Metropolitan Washington Council of Governments
777 N. Capitol Street, N.E., Suite 300
Washington, D.C. 20002-4239

Re: Confirmation of Transportation Control Measures (TCMs) Completion

Dear Mr. Miller,

The Transportation Control Measures (TCMs) commitments made by the Maryland Department of Transportation (MDOT) as part of a regional coordinated effort to mitigate ozone emissions from on-road mobile sources have been completed as demonstrated in previous conformity determinations. The summary of the status remains unchanged in that all of the TCMs that have been committed to by MDOT have been duly completed/implemented. Listed below are the TCM projects in our jurisdictional area, their completion years, and the reference to the documentation that had been provided:

ID	Description	Completion Year	Reference
MD-1	Maryland Suburban Bus Replacements	2003	MDOT letter 7/29/2003
MD-2	Transit Parking Facilities (@ Lake Forest, Tulagi, Germantown)	2003	MDOT letter 7/29/2003
MD-3	MARC Replacement/Expansion Coaches	2004	MDOT letter 7/29/2003
MD-4	Bicycle Facilities	2003	MDOT letter 7/29/2003
MD-5	Park & Ride Facilities (@ MD5/MD205, MD210/MD373, I-270/MD80	2003	MDOT letter 8/25/2004
MD-6	Grosvenor Metro Garage (1,300 spaces)	2004	Montgomery County email 7/30/2004
MD-7	Park & Ride Facilities (@ MD210/MD373, I-270/MD124, MD2/MD4, MD231/Fairgrounds, MD117/I-270, MD2/MD4)	2001	MDOT letter 9/3/2003

My telephone number is _____
Toll Free Number 1-888-713-1414 TTY Users Call Via MD Relay
7201 Corporate Center Drive, Hanover, Maryland 21076

We appreciate your cooperation in this matter. If you have any questions or comments, please do not hesitate to me at 410-865-1279, toll-free at 888-713-1414 or via email at lerickson@mdot.state.md.us.

Thank You,

Lyn Erickson, Manager
Office of Planning and Capital Programming

Attachment
cc: Mr. Donald A. Halligan, Director, Office of Planning and Capital Programming
Maryland Department of Transportation
Ms. Heather Murphy, Deputy Director, Office of Planning and Capital Programming
Maryland Department of Transportation
Michael W. Nixon, Manager, Office of Planning and Capital Programming
Maryland Department of Transportation
Mr. Howard Simons, Air Quality Specialist, Office of Planning and Capital Programming
Maryland Department of Transportation

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
4975 Alliance Drive
Fairfax, VA 22030

CHARLES A. KILPATRICK, P.E.
COMMISSIONER

August 21, 2014

Mr. Kanathur Srikanth
Director of Transportation Planning
Transportation Planning Board
Metropolitan Washington Council of Governments
777 N. Capitol Street, N.E., Suite 300
Washington, D.C. 20002-4239

Re: Confirmation of Transportation Control Measures (TCMs) Completion

Dear Mr. Srikanth,

The Transportation Control Measures (TCMs) commitments made by our agency as part of a regional coordinated effort to mitigate ozone emissions from on-road mobile sources have been completed in a timely manner and consistent with the agreed upon schedule. Listed below are the TCM projects in our jurisdictional area and their completion years:

ID	Description	Completion Year
VA-1	Northern Virginia Districtwide Park & Ride Facilities (1,872 Parking Spaces)	1996-1999
VA-2	Transit Access Improvements (200 VRE Parking Spaces)	1994 & 2002
VA-3	Purchase of New Transit Buses (52 WMATA Buses)	1995-1996
VA-4	Improved Pedestrian Access	2001-2004
VA-5	Construction of Bus Shelters (12 Shelters)	2000-2004
VA-6	Park & Ride Facilities (3,200 Parking Spaces)	2000-2002
VA-7	Northern Virginia Bicycle Lanes/Trails (12 miles)	1999-2003
VA-8	Northern Virginia Bicycle Lockers (100 Lockers)	1997-2002
VA-9	Hybrid light Duty Vehicles purchase (25 Vehicles)	2002-2003
VA-10	Northern Virginia Bicycle Lanes/Trails (29 miles)	2000-2003
VA-11	Northern Virginia Sidewalk Improvements (1.5 miles)	2001-2003
VA-12	CNG Bus Replacements for Diesel Buses (11 Vehicles)	2002-2003

Thank you for the TPB's cooperation assistance and cooperation. Please contact me if you need any additional information.

Sincerely,

Norman Whitaker, AICP
Transportation Planning Manager
C: Maria Sinner, P.E.

August 5, 2014

Mr. Gerald Miller
Co-Director of Transportation Planning (Acting)
Transportation Planning Board
Metropolitan Washington Council of Governments
777 N. Capitol Street, N.E., Suite 300
Washington, D.C. 20002-4239

Re: Confirmation of Transportation Control Measures (TCMs) Completion

Dear Mr. Miller,

The Transportation Control Measures (TCMs) commitments made by our agency as part of a regional coordinated effort to mitigate ozone emissions from on-road mobile sources have been completed in a timely manner and consistent with the agreed upon schedule. Listed below are the TCM projects in our jurisdictional area and their completion years:

ID	Description	Completion Year
WM-1	Bicycle Racks on Buses (1,458 Racks)	2004
WM-2	Ultra Low Sulfur Diesel Fuel with CRT Filters (886 Buses)	2004
WM-3	CNG Buses Purchase (164 Buses)	2004

Sincerely,

Shyam Kannan
Managing Director
Office of Planning

Washington Metropolitan Area Transit Authority

600 Fifth Street, NW
Washington, D.C. 20001
202/962-1234

By Metrorail:
Judiciary Square-Red Line
Gallery Place-Chinatown
Red, Green and Yellow Lines

A District of Columbia Maryland and Virginia Transit Partnership