National Capital Region
Transportation Planning Board

2015 AMENDMENT | CLRP

Financially Constrained Long Range Transportation Plan for the National Capital Region

AIR QUALITY CONFORMITY ANALYSIS

of The 2015 CLRP Amendment and FY2015-2020 TIP

October 21, 2015

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ABSTRACT

TITLE: Air Quality Conformity Analysis of the 2015 Constrained Long Range Plan Amendment and the FY2015-2020 Transportation Improvement Program for the Washington Metropolitan Region

DATE: October 21, 2015

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 2015 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 all carbon monoxide, ozone season volatile organic compound and nitrogen oxide, and fine particle ($PM_{2.5}$) pollutants (direct $PM_{2.5}$ and precursor nitrogen oxide) emissions budgets established by the Metropolitan Washington Air Quality Committee (MWAQC), and found adequate or approved the EPA. These results provide a basis for a determination of conformity of the 2015 CLRP Amendment and FY2015-2020 TIP.

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EXECUTIVE SUMMARY

This report documents the air quality conformity analysis of the 2015 Constrained Long Range Plan Amendment (CLRP) and FY2015-2020 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 that areas achieve and maintain Federal air quality standards. A conformity determination estimates emissions that will result from an area's transportation system, and demonstrates that those emissions are within limits outlined in state air quality implementation plans.

For the 2015 CLRP Amendment emissions estimates for all pollutants were developed for 2015, 2017, 2025, 2030, and 2040 forecast years. The following summarizes the pollutants included in this analysis:

- Ozone Season VOC and NOx. On May 21, 2012 EPA designated the Metropolitan Washington, DC, (DC-MD-VA) region as 'marginal' nonattainment for the 2008 ozone National Ambient Air Quality Standards (NAAQS). Under a 'marginal' designation it is not necessary to develop updated mobile budgets; however, the region must still adhere to those currently approved by EPA under the old 1997 standard. 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, under which the region was designated as 'moderate' nonattainment. 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 Volatile Organic Compounds (VOC) and 146.1 tons/day of Nitrogen Oxides (NOx) for the 2009 Attainment Plan and 144.3 tons/day of NOx for the 2010 Contingency Plan.

- Fine Particles ($PM_{2.5}$). On December 17, 2004 EPA designated the Metropolitan Washington, DC, (DC-MD-VA) region as nonattainment for the 1997 Fine Particles NAAQS. On May 22, 2013 MWAQC approved a $PM_{2.5}$ Redesignation Request and a Maintenance Plan 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. On November 5, 2014,

EPA approved the Maintenance Plan. The Maintenance Plan includes two tiers of mobile budgets. Tier 1 budgets were based on mobile emission inventory projections for 2017 and 2025, and are 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 will become effective if it is 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 will be made through the interagency consultation process. Tier 1 mobile budgets are 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 are 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.

- Wintertime CO. The region is designated as a Maintenance Area for mobile source wintertime CO, and is required to show that CO emissions from on-road mobile sources do not exceed the approved budget of 1671.5 tons/day.

The results show that the 2015 CLRP Amendment and FY2015-2020 TIP demonstrate adherence to relevant mobile source emissions budgets for all forecast years. This analysis provides a basis for a determination of conformity for the 2015 CLRP and FY2015-2020 TIP.

TABLE OF CONTENTS

LIST OF EXHIBITS

LIST OF APPENDICES

LIST OF REFERENCES

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

2. Transportation Planning Board Consultation Procedures With Respect to Transportation Conformity Regulations Governing TPB Plans and Programs, May 20, 1998, NCRTPB/MWCOG. https://www.mwcog.org/uploads/pub-documents/8ltbWg20050707145627.pdf

3. Revised Carbon Monoxide Maintenance Plan and Revised 1990 Carbon Monoxide Base Year Emissions Inventory for the WASHINGTON DC-MD-VA MAINTENANCE AREA, prepared by Metropolitan Washington Council of Governments for the District of Columbia Department of Health, Maryland Department of the Environment and the Virginia Department of Environmental Quality on the behalf of the Metropolitan Washington Air Quality Committee, February 19, 2004. http://www.mwcog.org/uploads/committee-documents/y1ZbWA20040217114823.pdf

4. Calibration Report for the TPB Travel Forecasting Model, Version 2.3, on the 3722-Zone Area System. Final Report. Washington DC: National Capital Region Transportation Planning Board, January 20, 2012. http://www.mwcog.org/transportation/activities/models/files/FY2012/V2.3_Calibration_Report_v14.pdf

5. "2010 Validation of the Version 2.3 Travel Demand Model", Technical Memorandum from Ronald Milone - June 30, 2013. http://www.mwcog.org/transportation/activities/models/files/2010_Validation_Memo_v3.pdf

6. User's Guide for the TPB Travel Forecasting Model Version 2.3, Build 52, on the 3722-Zone Area System. Washington DC: National Capital Region Transportation Planning Board, September 18, 2013. http://www.mwcog.org/transportation/activities/models/files/V2.3.52_Users_Guide_v2_w_appA.pdf

7. "HOT Lane Toll and Toll setting in 2013 CLRP", Technical Memorandum from Jinchul Park-September 3, 2013.

8. "Developing Land Use Input Files for the Version 2.3 Travel Model Using Round 8.4 Cooperative Forecasts and the CTPP – Based Employment Adjustment Factors". Technical Memorandum from Dzung Ngo – April 6, 2015 & revised September 1, 2015.

9. "Round 8.4-Based Exogenous Demand Inputs to the Travel Model", Technical Memorandum from Ronald Milone – April 16, 2015.

10. "An Update to the Vehicle Population Projection Methodology – Used for regional Air Quality Conformity Analysis" Technical Memorandum from Yu Gao, JC Park and Elena Constantine – September 5, 2014. http://www.mwcog.org/uploads/committee-documents/al1YWVte20140905134441.pdf

11. "MOVES2014 Model Preparation & Testing for Use in Regional Air Quality Conformity Analysis"- Presentation to the TPB Technical Committee by Jinchul Park. April 3, 2015. http://www.mwcog.org/uploads/committee-documents/ZV1WXlZb20150326130542.pdf

12. Participation Plan, 2014 Update; September 17, 2014. http://www.mwcog.org/uploads/committee-documents/YF1YWVZZ20140911142542.pdf

13. Financial Analysis: Analysis of Financial Resources for the 2014 Financially Constrained Long-Range Transportation Plan (CLRP), October 15, 2014, National Capital Region Transportation Planning Board. http://www.mwcog.org/clrp/resources/

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
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 R2-2016

October 21, 2015

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

RESOLUTION FINDING THAT THE 2015 CONSTRAINED LONG RANGE PLAN AMENDMENT AND FY2015-2020 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 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 January 15, 2015, approved by the TPB at its February 18, 2015 meeting, and amended to include the use of EPA's new MOtor Vehicle Emissions Model (MOVES 2014) on April 15, 2015; and

WHEREAS, highway and transit project inputs submitted for inclusion in the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP were released for public comment on January 15, 2015, and approved by the TPB at its February 18, 2015 meeting; and

WHEREAS, on September 10, 2015, the draft results of the Air Quality Conformity Analysis of the 2015 CLRP Amendment and the FY2015-2020 TIP were released for a 30-day public comment period and inter-agency review; and

WHEREAS, the analysis reported in *Air Quality Conformity Analysis of the 2015 Constrained Long Range Plan Amendment and the FY2015-2020 Transportation Improvement Program for the Washington Metropolitan Region*, dated October 21, 2015, demonstrates adherence to all mobile source emissions budgets for all pollutants analyzed: (1) ground level ozone precursors- Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx), (2) fine particulate matter – $PM_{2.5}$ direct and $PM_{2.5}$ Precursor NOx, and (3) Wintertime Carbon Monoxide (CO), meets all regulatory, planning and interagency consultation requirements,

and therefore provides the basis for a finding of conformity of the plan with the requirements of the CAAA; and

WHEREAS, in the attached letter of September 29, 2015, the Metropolitan Washington Air Quality Committee (MWAQC) has provided favorable comments on the *Air Quality Conformity Analysis of the 2015 Constrained Long Range Plan Amendment and the FY2015-2020 Transportation Improvement Program for the Washington Metropolitan Region*;

NOW, THEREFORE, BE IT RESOLVED THAT THE NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD determines that the 2015 Constrained Long Range Plan Amendment and the FY2015-2020 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 October 21, 2015.

Metropolitan Washington Air Quality Committee

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September 29, 2015

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

Dear Chair Mendelson:

Thank you for providing an opportunity to the Metropolitan Washington Air Quality Committee (MWAQC) to comment on the draft 2015 Constrained Long Range Plan (CLRP) and the FY2015-2020 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 approved motor vehicle emissions budgets (MVEBs) for the 1997 8-hour ozone national ambient air quality standard (NAAQS), the 1997 annual fine particulate matter ($PM_{2.5}$) NAAQS; and the 1971 carbon monoxide (CO) NAAQS.

The Washington region is currently working toward meeting the 2008 ozone standard of 75 parts per billion (ppb). Data for the period 2012 through 2014 showed the region's design value for ozone at 76 ppb, which indicated that the region did not attain the above NAAQS by the deadline (July 20, 2015). However, the region requested the U.S. Environmental Protection Agency (EPA) to extend the above attainment deadline by one year to July 20, 2016 based on the Clean Air Act provisions. EPA has proposed the approval of the extension request. Draft data (as of September 22, 2015) for the period 2013 through 2015 shows the region's ozone design value is now at 70 ppb, has made significant progress and is likely to meet the current ozone NAAQS of 75ppb.

However, MWAQC also notes that EPA recently proposed a revision to the ozone NAAQS in the range of 65-70 ppb. EPA is expected to publish the final NAAQS by October 1, 2015. The region may need to reduce its emissions even further in order to meet the tougher standard. While the recently adopted Tier 3 program will provide significant emissions reduction benefits from the transportation sector, MWAQC will need the support and consultation with TPB to examine emissions and to identify new cost-effective strategies and opportunities to reduce onroad mobile emissions further in order to attain a lower standard. In that respect, MWAQC appreciates the efforts of the Multi-Sector Greenhouse Gas Work-Group to reduce greenhouse gas and ozone precursors, such as nitrogen oxides (NO_x), from transportation and non-transportation sectors.

In its $PM_{2.5}$ Maintenance Plan submitted in May 2013 to the EPA, the Washington region committed to update MVEBs for $PM_{2.5}$ and NO_x using the latest models. EPA released a new

version of the mobile emissions model called MOVES2014 in July 2014. This 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 MOVES2014, the 2014 motor vehicle registration data, and the most current version of TPB's Travel Demand Model to update the annual $PM_{2.5}$ and NO_x MVEBs.

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. We urge TPB's continued investment in VMT and emission reduction strategies such as public transit and ride-sharing, 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 2008 ozone standard and potentially more stringent ozone standard expected in October this year and to maintain the attainment status for the 2012 annual PM2.5 standard.

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

Sincerely,

Hon. David Snyder
Chair, Metropolitan Washington Air Quality Committee

I. INTRODUCTION

The Washington region is currently designated as nonattainment for the federal health standards for ozone, and as a maintenance area for fine particles ($PM_{2.5}$) and wintertime carbon monoxide (CO). Clean air legislation in 1977 mandated that a metropolitan planning organization 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.

II. CONFORMITY REGULATIONS

Background

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 EPA to define the boundaries of "nonattainment" areas for various pollutants. These are geographic areas whose air quality does not meet Federal air quality standards. The law also established nonattainment 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 nonattainment 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 nonattainment 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 Washington region is currently designated as a maintenance area for fine particles and wintertime CO.

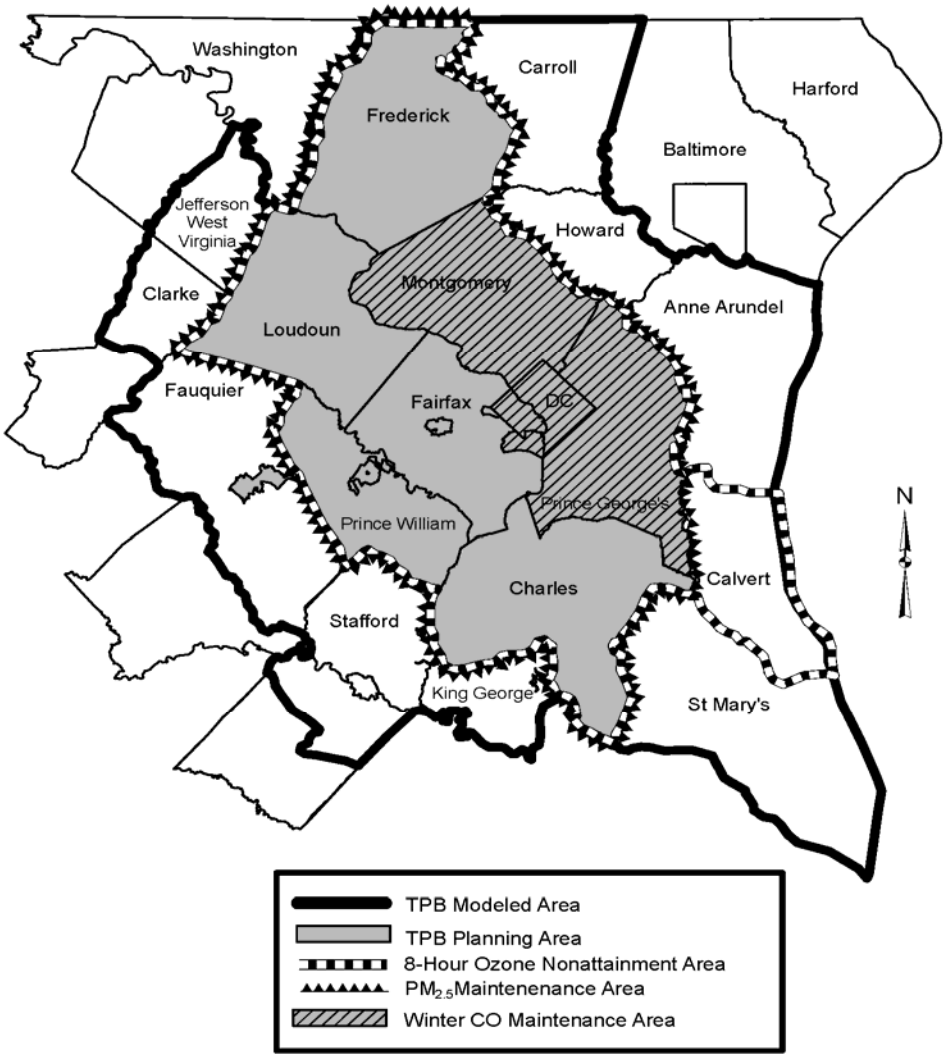
The concept of transportation conformity was introduced in the Clean Air Act (CAA) of 1977, which included a provision to ensure that Federal funding and approval go to those transportation activities that are consistent with air quality goals. These goals are set in each state's air quality implementation 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.

III. POLLUTANTS

The Washington Metropolitan Region is currently designated as nonattainment for ozone season pollutants. It is designated as a maintenance area for fine particles ($PM_{2.5}$) pollutants and wintertime carbon monoxide (CO). The geography of the nonattainment or maintenance area varies by pollutant. The map in Exhibit 1 outlines the boundaries of the each pollutant's nonattainment or maintenance area.

EXHIBIT 1
TPB Transportation Planning Area and
Washington, DC-MD-VA Nonattainment & Maintenance Areas



Ozone Season Pollutants

On May 21, 2012 EPA designated the Metropolitan Washington, DC, (DC-MD-VA) region as 'marginal' nonattainment for the 2008 ozone National Ambient Air Quality Standards (NAAQS). Under a 'marginal' designation it is not necessary to develop updated mobile budgets; however, the region must still adhere to those currently approved by EPA under the old 1997 standard. 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, under which the region was designated as 'moderate'. 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 Volatile Organic Compounds (VOC) and 146.1 tons/day of Nitrogen Oxides (NOx) for the 2009 Attainment Plan and 144.3 tons/day of NOx for the 2010 Contingency Plan.

Fine Particles Pollutants

On December 17, 2004 the Environmental Protection Agency (EPA) designated 224 counties, as well as the District of Columbia, that exceeded the health-based standards for fine particles ($PM_{2.5}$) as nonattainment areas. $PM_{2.5}$ standards refer to particulate matter less than or equal to 2.5 micrometers in diameter. The Washington, DC-MD-VA area was designated as nonattainment for $PM_{2.5}$ (see Exhibit 1 for area). On January 12, 2009, however, the EPA, using local monitored data, determined that the region had attained the 1997 $PM_{2.5}$ NAAQS 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 $PM_{2.5}$ Fine Particles NAAQS.

On May 22, 2013 MWAQC approved a $PM_{2.5}$ Redesignation Request and a Maintenance Plan 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 includes two tiers of mobile budgets. Tier 1 budgets were based on mobile emission inventory projections for 2017 and 2025, and are 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 will become effective if it is 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 will be made through the interagency consultation process. Tier 1 mobile budgets are 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 are 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.

Wintertime Carbon Monoxide

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. 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 3) was completed on February 19, 2004, and provides for attainment of the CO standard in the Washington DC-MD-VA attainment area through March 16, 2016. As a maintenance area, the region is required to show that pollutants do not exceed the approved mobile budget of 1671.5 tons/day.

IV. 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 January 2015. 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 February 18, 2015 and then was subsequently revised to include the use of EPA's new emissions model, MOVES2014. Exhibit 2 summarizes the key technical components of this conformity analysis.

EXHIBIT 2
Summary of Technical Approach

TECHNICAL CONSIDERATION:	Ozone	Wintertime CO	Fine Particles
	VOC, NOx	CO	Direct PM2.5, Precursor NOx
Emissions Model	MOVES2014*		
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 with the Wintertime CO Maintenance Plan approved by EPA in 2005. All budgets set using Mobile6 emissions model.	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.
Emissions Analysis Timeframe	Daily	Daily	Annual
Vehicle Fleet Data	2014 vehicle registration data for all jurisdictions*		
Geography	8-hour ozone non-attainment area	DC, Arlington, Alexandria, Montgomery Co., Prince George's Co.	8-hour ozone non-attainment area less Calvert County
Network Inputs	Regionally significant projects*		
Land Activity	Cooperative Forecasts Round 8.4*		
Modeled Area	3,722 TAZ System		
Travel Demand Model	Version 2.3.57 or latest		

***** components revised this year

Technical work activities for the 2015 CLRP Amendment and FY2015-2020 TIP included the preparation of travel demand forecasts (Vehicle Miles Traveled and trip data) and emissions inventories (daily ozone season VOC and NOx emissions, yearly direct $PM_{2.5}$ and $PM_{2.5}$ precursor NOx emissions, and daily wintertime CO emissions) for each of the specified analysis years (2015, 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.

V. TRAVEL FORECASTS

Travel Model

The preparation of travel forecasts for each of the conformity alternatives was carried out using the Version 2.3.57 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 4). 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 5).

As part of the technical methods originally employed in 2000, transit capacity constraint procedures, constraining trips to and through the regional core at 2020 levels, were applied to better relate transit forecast levels with transit carrying ability. These procedures are documented in the Version 2.3 travel model Calibration Report (Reference 4) and User's Guide (Reference 6).

As in recent years' analyses, in addition to existing toll facilities, the 2015 CLRP Amendment and FY2015-2020 TIP includes portions of I-95 in Virginia and I-66 inside and outside of the Capital Beltway as managed facilities, with time-of-day tolls used to ensure that a high level of service is maintained throughout the day. The Version 2.3 travel model Calibration Report and a HOT Lanes Modeling memo (Reference 7) document these procedures.

Network Development

Work on this task began last winter with the request for project inputs to the 2015 CLRP Amendment and FY2015-2020 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 February 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 show up at the regional level (e.g., intersection improvements, improvements to a facility which is not contained in the regional networks). Exhibit 3 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 nonattainment areas to enable better simulation results within the nonattainment areas. 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 nonattainment area for each pollutant.

EXHIBIT 3
RAIL AND ROAD MILES
(modeled area)

	LOV LANE MILES TOTAL	HOV/HOT LANE MILES TOTAL	METRORAIL MILES TOTAL	COMMUTER RAIL * MILES TOTAL	STREETCAR, LIGHTRAIL ** MILES TOTAL
2015	22,908	302	119	220	3
2017	23,054	310	131	220	6
2025	23,868	410	131	220	30
2030	23,992	447	131	220	30
2040	24,157	472	131	220	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.

VDOT Alternatives

The Virginia Department of Transportation (VDOT) requested that two alternatives, A and B, for an I-66 HOT lanes project outside the Capital Beltway, be included in this air quality conformity analysis. A description of the alternatives is included in Attachment B. Generally, for the purpose of the conformity assessment, the difference between the alternatives is variation in access points on the facility (shown on pages B-43 & B-44).

Concurrent with the conformity assessment, VDOT continued with project development activities and has substantially completed project level environmental and traffic studies. VDOT has also conducted an extensive series of public informational meetings, hearings and stakeholder consultations with local jurisdictions in Northern

Virginia. Based on the results of the analyses, and in response to input from local jurisdictions, the public, and stakeholders, VDOT has developed a draft locally preferred alternative for the I-66 multi-modal improvements outside the Capital Beltway.

VDOT compared the draft locally preferred alternative with the two alternatives included in the conformity analysis and determined that it most closely matches alternative B in terms of traffic access and operations, which are the main considerations for the regional air quality conformity analysis. Therefore VDOT has requested that the project definition as outlined under Alternative B be included in the 2015 amendment to the CLRP. A September 3, 2015 letter from VDOT to the TPB discusses the I-66 alternatives, and includes this request. The letter also highlights the differences between the locally preferred alternative that is currently under development and alternative B proposed to be included in the CLRP.

VDOT's schedule includes a presentation of the draft locally preferred alternative to the Commonwealth Transportation Board (CTB) on September 11, and the CTB is expected to select the final alternative at the end of October. Following the CTB action, VDOT plans to seek FHWA approval of the NEPA document for the project before proceeding with the design phase. Upon finalization of the project designs, any changes to the project relative to Alternative B will be reflected in a future update of the TPB's CLRP and its air quality conformity analysis.

Land Activity

The COG Board approved the draft Round 8.4 Cooperative Forecasts for use in the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP in February, 2015. This update from Round 8.3 includes changes in Alexandria, Arlington, Fairfax, and Prince William. It also includes updates in the Baltimore region (BMC Round 8A) in Anne Arundel, Carroll, and Howard counties. Round 8.4 is very similar to Round 8.3, with the largest changes including decreases in employment in Arlington County and decreases in households and population in Prince William County. Exhibit 4 presents Round 8.4 household data for each of the years in the conformity analysis. Exhibit 5 presents similar data for the employment assumptions, and Exhibit 6 presents population assumptions. The employment data reflect census adjustments (References 8 & 9).

EXHIBIT 4
HOUSEHOLD DATA

MODELED AREA	2015	2017	2020	2025	2030	2040
DISTRICT OF COLUMBIA	287,112	294,489	305,550	323,191	340,307	370,758
MONTGOMERY	377,524	385,296	396,955	414,873	434,767	460,161
PRINCE GEORGE'S	323,364	328,465	336,107	348,307	359,878	379,020
ARLINGTON	104,317	106,349	109,394	116,624	122,230	133,319
ALEXANDRIA	71,202	73,658	77,352	82,624	85,830	93,188
FAIRFAX	417,625	425,070	436,288	461,808	486,298	528,472
LOUDOUN	122,644	129,391	139,505	151,558	158,142	164,297
PRINCE WILLIAM	157,614	164,681	175,294	186,253	195,251	208,220
FAUQUIER	25,337	25,981	26,954	28,616	30,272	33,801
FREDERICK	89,935	92,546	96,471	103,944	111,118	123,247
CHARLES	57,528	60,235	64,299	70,833	75,847	85,901
HOWARD	112,173	116,866	123,899	130,948	135,517	139,497
ANNE ARUNDEL	206,441	209,268	213,504	220,565	227,626	241,542
CALVERT	34,298	34,991	36,027	37,374	38,348	40,301
CARROLL	64,142	64,972	66,219	68,025	69,692	72,853
FREDERICKSBURG (VA) & N. SPOTSYLVANIA	47,742	49,894	53,122	57,878	62,604	69,306
CLARKE & JEFFERSON	29,378	30,455	32,064	34,783	37,347	42,371
KING GEORGE	9,808	10,379	11,237	12,808	14,366	17,142
SAINT MARY'S	44,443	46,408	49,352	53,960	58,143	66,509
STAFFORD	49,673	52,815	57,533	65,473	73,367	87,670
TOTAL	2,632,300	2,702,209	2,807,126	2,970,445	3,116,950	3,357,575

SOURCE:

MWCOG Round 8.4 Cooperative Forecasts
BMC Round 8A Cooperative Forecasts
George Washington Regional Commission/ Fredericksburg Area MPO February 2013
TAZ Refinements of the January 2012 GWRC/FAMPO Long Range Transportation Plan: Updated Control Estimates and Forecasts for Fredericksburg, King George, Spotsylvania, and Stafford
Tri-County Council for Southern Maryland data for Calvert, Charles, and St. Mary's
COG/TPB Staff used Virginia Employment Commission Population Projections, February 2013 for Clark and Fauquier Counties
COG/TPB Staff used West VA University Population Projections, February 2013 for Jefferson County

EXHIBIT 5
EMPLOYMENT DATA

MODELED AREA	2015	2017	2020	2025	2030	2040
DISTRICT OF COLUMBIA	814,957	833,701	861,814	905,846	944,096	1,001,814
MONTGOMERY	532,004	544,949	564,377	598,824	635,264	715,121
PRINCE GEORGE'S	356,958	365,324	377,879	403,134	427,514	497,652
ARLINGTON	219,147	223,039	228,892	243,562	265,677	301,276
ALEXANDRIA	108,712	111,250	115,060	130,585	145,288	163,401
FAIRFAX	693,803	719,557	758,260	814,740	866,739	930,665
LOUDOUN	163,850	177,217	197,265	224,249	248,803	278,216
PRINCE WILLIAM	162,143	170,594	183,305	205,101	227,276	273,954
FAUQUIER	29,270	30,016	31,135	33,071	34,996	39,086
FREDERICK	102,014	103,707	106,242	109,802	114,558	125,556
CHARLES	68,439	69,758	71,731	74,731	77,537	83,138
HOWARD	172,812	178,092	186,016	199,220	212,423	229,077
ANNE ARUNDEL	321,497	328,898	339,999	353,540	367,849	398,624
CALVERT	41,059	42,422	44,457	46,258	47,159	48,955
CARROLL	67,955	69,087	70,782	72,937	75,227	79,379
FREDERICKSBURG (VA) & N. SPOTSYLVANIA	78,759	81,609	85,881	92,897	99,865	116,175
CLARKE & JEFFERSON	27,533	28,329	29,530	31,348	33,052	36,300
KING GEORGE	17,804	18,433	19,377	20,947	22,490	25,747
SAINT MARY'S	64,083	65,350	67,268	70,093	71,969	75,862
STAFFORD	52,681	54,970	58,399	64,304	70,170	84,159
TOTAL	4,095,480	4,216,302	4,397,669	4,695,189	4,987,952	5,504,157

SOURCE:

MWCOG Round 8.4 Cooperative Forecasts
BMC Round 8A Cooperative Forecasts
George Washington Regional Commission/ Fredericksburg Area MPO February 2013
TAZ Refinements of the January 2012 GWRC/FAMPO Long Range Transportation Plan: Updated Control Estimates and Forecasts for Fredericksburg, King George, Spotsylvania, and Stafford
Tri-County Council for Southern Maryland data for Calvert, Charles, and St. Mary's
COG/TPB Staff used Virginia Employment Commission Population Projections, February 2013 for Clark and Fauquier Counties
COG/TPB Staff used West VA University Population Projections, February 2013 for Jefferson County

NOTE: Includes Census Adjustment
Includes Household and Group Quarters Population

EXHIBIT 6
POPULATION DATA

MODELED AREA	2015	2017	2020	2025	2030	2040
DISTRICT OF COLUMBIA	660,528	682,499	715,494	764,267	808,718	883,568
MONTGOMERY	1,020,036	1,038,835	1,067,030	1,109,953	1,153,912	1,202,769
PRINCE GEORGE'S	881,379	888,788	899,912	926,944	950,030	995,503
ARLINGTON	222,213	226,387	232,650	247,357	259,757	282,998
ALEXANDRIA	147,669	153,677	162,681	171,292	176,259	191,405
FAIRFAX	1,158,653	1,174,744	1,198,897	1,255,627	1,310,772	1,406,187
LOUDOUN	367,957	387,970	417,986	452,242	468,664	484,498
PRINCE WILLIAM	481,855	500,504	528,485	557,549	581,616	617,427
FAUQUIER	69,658	71,440	74,114	78,710	83,306	93,022
FREDERICK	241,616	248,507	258,849	278,654	297,708	329,955
CHARLES	160,098	166,434	175,953	191,475	202,552	224,871
HOWARD	309,043	318,338	332,273	346,517	357,094	366,352
ANNE ARUNDEL	559,618	567,770	580,006	593,594	606,688	628,047
CALVERT	96,500	98,081	100,450	103,253	105,099	108,882
CARROLL	170,549	172,687	175,900	179,437	183,258	189,574
FREDERICKSBURG (VA) & N. SPOTSYLVANIA	133,403	138,651	146,515	158,276	169,994	189,052
CLARKE & JEFFERSON	72,419	74,540	77,714	82,518	87,075	95,697
KING GEORGE	26,911	28,237	30,226	34,029	37,819	44,707
SAINT MARY'S	118,184	122,945	130,098	141,135	151,403	173,832
STAFFORD	149,386	157,536	169,774	191,249	212,671	251,851
TOTAL	7,047,675	7,218,570	7,475,007	7,864,078	8,204,395	8,760,197

SOURCE:

MWCOG Round 8.4 Cooperative Forecasts
BMC Round 8A Cooperative Forecasts
George Washington Regional Commission/ Fredericksburg Area MPO February 2013
TAZ Refinements of the January 2012 GWRC/FAMPO Long Range Transportation Plan: Updated Control Estimates and Forecasts for Fredericksburg, King George, Spotsylvania, and Stafford
Tri-County Council for Southern Maryland data for Calvert, Charles, and St. Mary's
COG/TPB Staff used Virginia Employment Commission Population Projections, February 2013 for Clark and Fauquier Counties
COG/TPB Staff used West VA University Population Projections, February 2013 for Jefferson County

Travel Summaries

After coding the networks, staff executed the travel forecasting process using the Version 2.3.57 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 paper fare cards or 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 7A and 7B. VMT summaries are shown in Exhibit 8.

EXHIBIT 7A

2015 CLRP AND FY2015-2020 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 (%)
2015	3,975,147	3,147,292	2,684,052	463,240	2,891,387	1.09	827,855	20.83%
2017	4,072,387	3,205,865	2,736,294	469,572	2,944,813	1.09	866,522	21.28%
2025	4,444,363	3,470,287	2,928,450	541,837	3,159,381	1.10	974,076	21.92%
2025 (Alt A)	4,444,142	3,465,049	2,926,882	538,167	3,157,528	1.10	979,093	22.03%
2025 (Alt B)	4,444,146	3,465,202	2,926,793	538,409	3,157,396	1.10	978,944	22.03%
2030	4,638,253	3,624,218	3,032,719	591,499	3,279,587	1.11	1,014,034	21.86%
2030 (Alt A)	4,637,809	3,618,315	3,030,691	587,624	3,277,134	1.10	1,019,494	21.98%
2030 (Alt B)	4,637,722	3,617,995	3,028,733	589,262	3,275,269	1.10	1,019,727	21.99%
2040	4,959,405	3,865,947	3,223,465	642,482	3,489,747	1.11	1,093,457	22.05%
2040 (Alt A)	4,958,779	3,856,504	3,217,708	638,796	3,483,111	1.11	1,102,275	22.23%
2040 (Alt B)	4,958,822	3,856,374	3,215,762	640,612	3,481,517	1.11	1,102,448	22.23%

EXHIBIT 7B

2015 CLRP AND FY2015-2020 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 (%)
2015	19,286,184	18,127,755	9,396,583	8,731,172	12,915,068	1.40	1,158,429	6.01%
2017	19,699,537	18,485,763	9,549,443	8,936,320	13,146,445	1.41	1,213,773	6.16%
2025	21,252,131	19,878,681	10,139,613	9,739,068	14,040,920	1.42	1,373,450	6.46%
2025 (Alt A)	21,251,136	19,864,930	10,132,022	9,732,908	14,030,394	1.42	1,386,206	6.52%
2025 (Alt B)	21,251,060	19,865,031	10,132,773	9,732,258	14,031,151	1.42	1,386,029	6.52%
2030	22,034,196	20,605,720	10,447,746	10,157,975	14,507,219	1.42	1,428,476	6.48%
2030 (Alt A)	22,032,906	20,591,361	10,439,035	10,152,326	14,495,994	1.42	1,441,545	6.54%
2030 (Alt B)	22,032,667	20,589,990	10,437,610	10,152,380	14,494,256	1.42	1,442,677	6.55%
2040	23,288,519	21,751,801	10,935,381	10,816,421	15,245,696	1.43	1,536,718	6.60%
2040 (Alt A)	23,286,936	21,731,777	10,922,775	10,809,002	15,229,645	1.43	1,555,158	6.68%
2040 (Alt B)	23,287,171	21,731,692	10,920,093	10,811,599	15,227,243	1.43	1,555,479	6.68%

EXHIBIT 8

2015 CLRP / FY2015-2020 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
2015	13,931,290	689,332	861,184	1,369,758	16,851,564	166,671,622
2017	14,193,359	703,084	887,067	1,401,178	17,184,688	170,199,356
2025	15,219,294	760,082	990,370	1,525,767	18,495,513	185,053,351
2025 (Alt A)	15,208,816	760,014	990,370	1,525,912	18,485,112	185,271,749
2025 (Alt B)	15,209,535	760,155	990,370	1,525,657	18,485,717	185,329,806
2030	15,776,287	791,427	1,053,992	1,598,224	19,219,930	193,913,410
2030 (Alt A)	15,764,866	791,316	1,053,990	1,597,966	19,208,138	194,151,352
2030 (Alt B)	15,763,170	791,451	1,053,991	1,597,975	19,206,587	194,139,846
2040	16,622,132	850,086	1,165,910	1,731,290	20,369,418	206,396,348
2040 (Alt A)	16,605,914	849,923	1,165,910	1,731,190	20,352,937	206,656,745
2040 (Alt B)	16,603,519	850,057	1,165,910	1,731,049	20,350,535	206,596,299

VI. EMISSIONS

MOVES

The US Environmental Protection Agency **(**EPA**)** released a new version of its mobile emissions model, MOtor Vehicle Emissions Simulator **(**MOVES2014**),** in July 2014, for use in transportation conformity and State Implementation Plan activities. MOVES2014 allows users to benefit from new regulations promulgated since the release of the previous version of the software, MOVES2010. These include:

- Tier 3 emissions standards that phase in beginning in 2017 for cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty trucks, and Tier 3 fuel standards that require lower sulfur gasoline beginning in 2017.
- Heavy-duty engine and vehicle greenhouse gas (GHG) regulations that phase in during vehicle model years 2014-2018.
- The second phase of light-duty vehicle GHG regulations that phase in for vehicle model years 2017-2025 cars and light trucks.

The EPA encouraged use of the latest model as expeditiously as possible, but also provided a two-year grace period before the MOVES2014 model was required for use in regional conformity analyses. TPB staff completed model preparation and testing in

time for use in the conformity analysis of the 2015 CLRP Amendment. As part of the Interagency Consultation, staff shared the testing results (Reference 11) with the state air and transportation agencies, as well as with the TPB Technical Committee and the MWAQC Technical Advisory Committee. The TPB approved the use of the MOVES2014 model in April, 2015 for the conformity analysis of the 2015 CLRP Amendment.

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 9 summarizes these categories, and indicates the methodology used to develop these data.

EXHIBIT 9

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 10) derived from actual vehicle population data from the period 1975-2011 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 fed into the EPA-provided annual VMT converter with local monthly adjustment factors and weekend-day adjustment factors. The converter develops annual VMT in 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 D 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 2.3.57). 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

Ozone Season

The emissions results for ozone season pollutants are summarized in Exhibits 10 and 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.

$PM_{2.5}$

Direct $PM_{2.5}$ and precursor NOx emissions totals are shown in Exhibits 12 and 13. The $PM_{2.5}$ direct and $PM_{2.5}$ Precursor NOx emissions are shown in relation to the Tier 1 level mobile budgets contained in the region's $PM_{2.5}$ Maintenance SIP. The Tier 2 level mobile budgets for these pollutants are available for conformity on an as/if needed basis. Current analysis indicates no such need and, as such, Tier 1 level budgets are in effect and are the only ones included on the graphs. As seen for ozone season pollutants, fine particles pollutants show significant reductions through time. These are attributed to cleaner vehicles and fuel standards, including Tier 2 and Tier 3 federal standards, and the heavy duty engine rule.

Wintertime CO

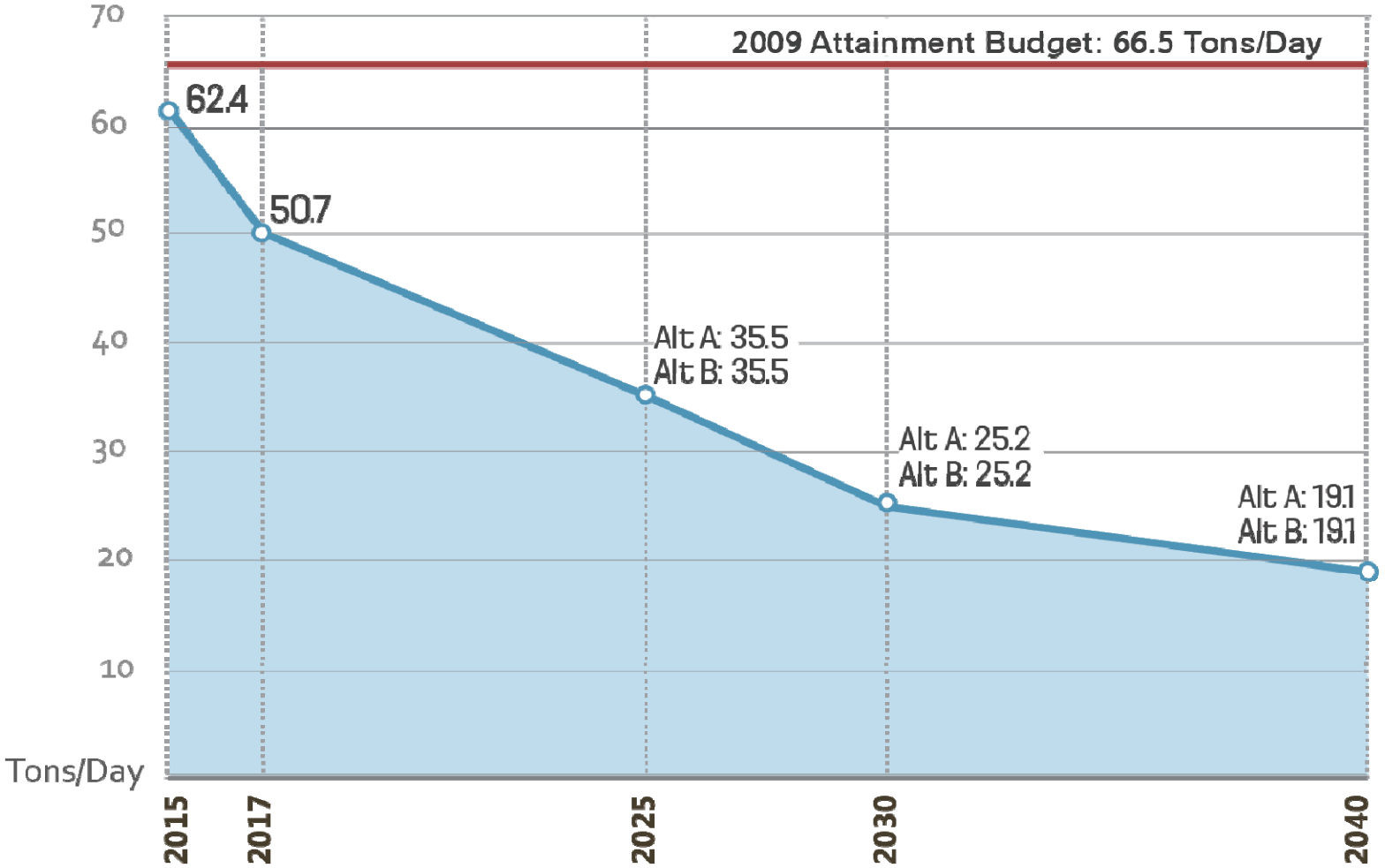
Wintertime CO emissions are shown in Exhibit 14. They are shown in relation to the mobile budget in the Wintertime CO Maintenance Plan.

2015 CLRP Amendment Emissions Inventories vs. Budgets

Exhibits 10-14 display net emissions for each forecast year. The charts show that emissions are within the mobile budgets for all analyzed pollutants for all forecast years.

NOTE: The Mobile Budget shown was developed in 2007, as part of the 8-Hour Ozone SIP, in response to the 1997 Ozone Standard. This budget, as the most current approved by EPA, is required for use in any conformity analysis assessing ozone season pollutants.

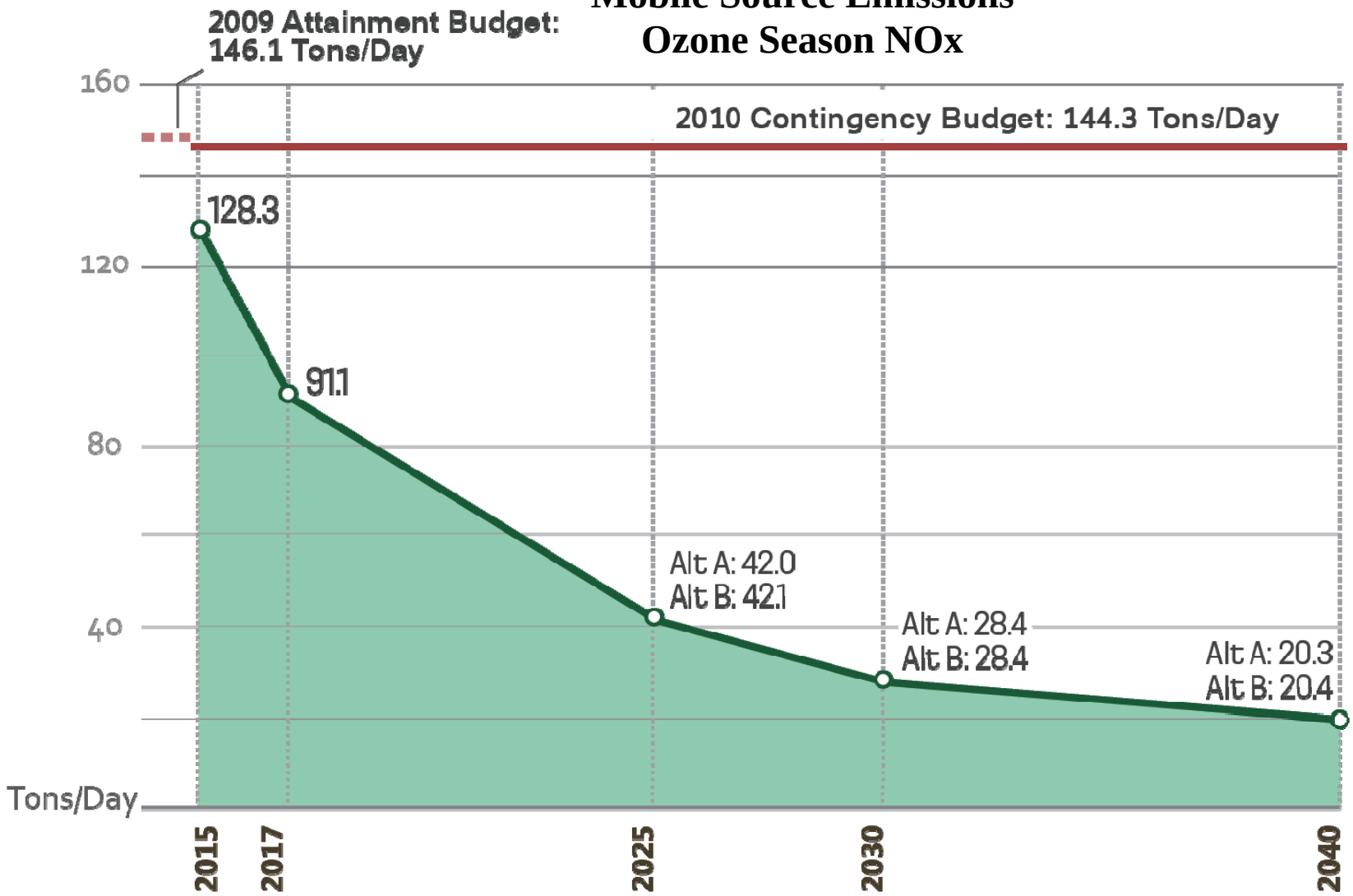
EXHIBIT 10
AIR QUALITY CONFORMITY
2015 CLRP Amendment
& FY2015-2020 TIP
Mobile Source Emissions
Ozone Season VOC



TCMs and TERMS are not included in totals.

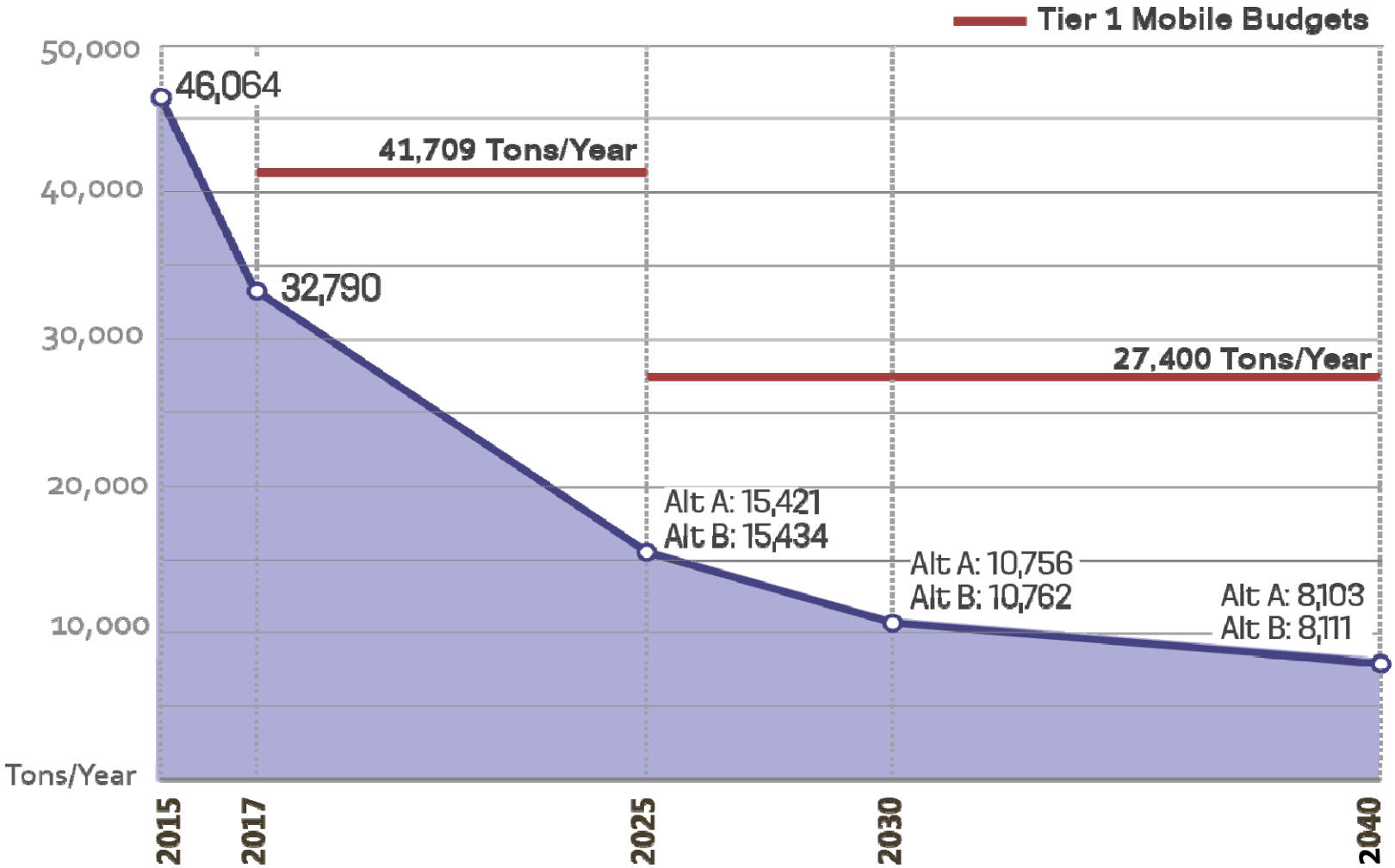
NOTE: The Mobile Budgets shown were developed in 2007, as part of the 8-Hour Ozone SIP, in response to the 1997 Ozone Standard. These budgets, as the most current approved by EPA, are required for use in any conformity analysis assessing ozone season pollutants.

EXHIBIT 11
AIR QUALITY CONFORMITY
2015 CLRP Amendment &
FY2015-2020 TIP
Mobile Source Emissions
Ozone Season NOx



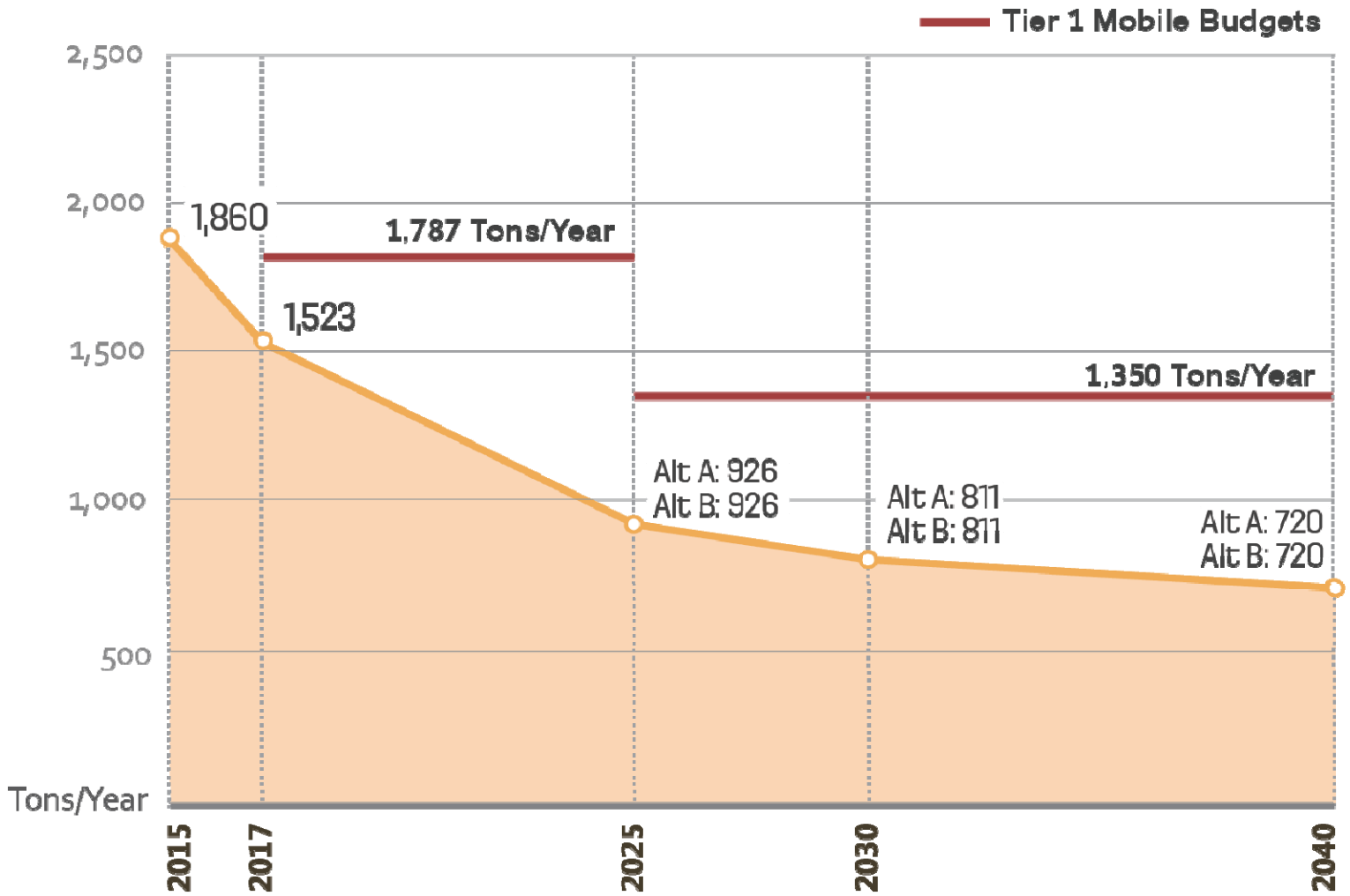
TCMs and TERMS are not included in totals.

EXHIBIT 12
AIR QUALITY CONFORMITY
2015 CLRP Amendment
& FY2015-2020 TIP
Mobile Source Emissions
$PM_{2.5}$ Precursor NOx



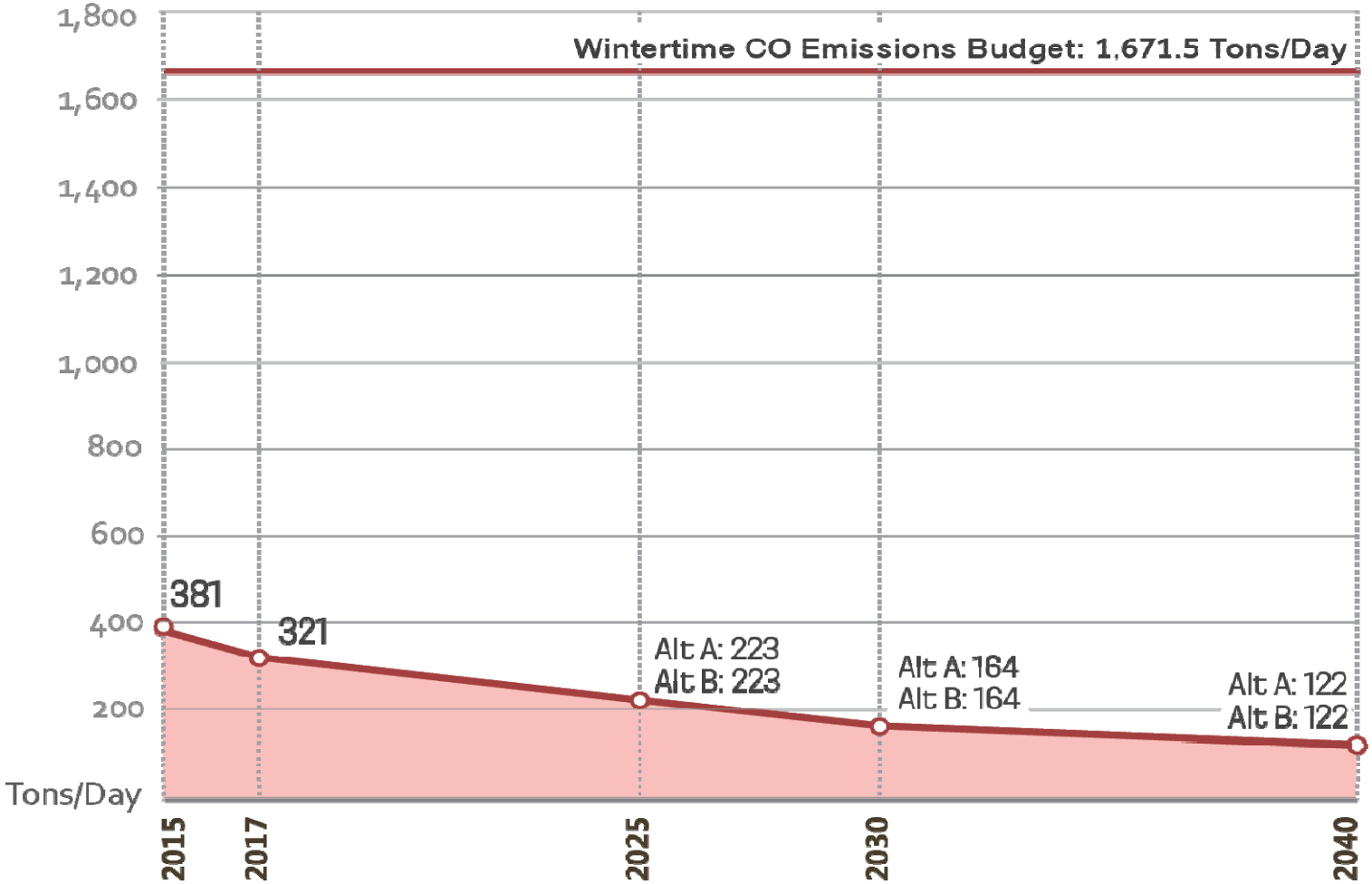
TCMs and TERMS are not included in totals.

EXHIBIT 13
AIR QUALITY CONFORMITY
2015 CLRP Amendment
& FY2015-2020 TIP
Mobile Source Emissions
$PM_{2.5}$ Direct



TCMs and TERMS are not included in totals.

EXHIBIT 14
AIR QUALITY CONFORMITY
2015 CLRP Amendment
& FY2015-2020 TIP
Mobile Source Emissions
Wintertime CO



TCMs and TERMS are not included in totals.

TERMs

Transportation Emission Reduction Measures (TERMs) are strategies or actions that the TPB can employ to offset increases in 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.

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 2015 CLRP Amendment and FY2015-2020 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 15 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 15
2015 CLRP Amendment
TRANSPORTATION EMISSIONS REDUCTION MEASURES
SUMMARY TABLE

ADDITIONAL EMISSIONS REDUCTIONS – ALL TERMs COMBINED					
Years	Ozone - VOC (tons/day)	Ozone – Nox (tons/day)	PM2.5 Direct (tons/year)	Precursor NOx (tons/year)	Winter CO (tons/day)
2015	0.06	0.08	0.88	24.16	0.71
2017	0.07	0.08	1.06	22.64	0.92
2025 Alt A	0.09	0.07	1.46	19.80	1.26
2025 Alt B	0.09	0.07	1.46	19.77	1.26
2030 Alt A	0.08	0.05	1.69	15.81	1.19
2030 Alt B	0.08	0.05	1.69	15.79	1.19
2040 Alt A	0.09	0.04	2.18	14.37	1.28
2040 Alt B	0.09	0.04	2.17	14.35	1.28

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

Transportation Control Measures (TCMs)

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 F of this report.

VII. 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 2). 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, Moving Ahead for Progress in the 21st Century (MAP-21), signed into law in 2012. Public participation is recognized as an integral part of the planning process.

The Region's fourth *Participation Plan* (Reference 12), 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.

The TPB publishes two newsletters, the *TPB Weekly Report* and *TPB News*. The *TPB Weekly Report* www.mwcog.org/tpbweeklyreport is an online publication designed to provide concise and timely updates of recent TPB research, analysis, outreach and planning. It reaches several hundred TPB stakeholders, media representatives, governmental agencies staff and members of the general public. *TPB News,* http://www.mwcog.org/store/item.asp?PUBLICATION_ID=94 is an online and print publication designed to provide concise updates pertaining to recent planning activities and events. It also includes a 3-month schedule of all advisory committee meetings.

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 16 lists these opportunities.

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 2015 CLRP Amendment and FY2015-2020 TIP are also included in Appendix C.

EXHIBIT 16
CONFORMITY SCHEDULE

2014	October 15*	TPB is briefed on the draft Call for Projects document and summary brochure.
	November 19	TPB releases final Call for Projects. Transportation agencies begin submitting project information through online database.
	December 12	**DEADLINE:** Transportation agencies complete online submission of draft project inputs.
2015	January 9	Technical Committee reviews draft CLRP & TIP project submissions and draft Scope of Work for the Air Quality Conformity Analysis.
	January 15	CLRP & TIP project submissions and draft Scope of Work released for **30-day comment period**.
	January 21*	TPB is briefed on project submissions and draft Scope of Work.
	February 10	TPB staff briefs Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) on submissions and Scope of Work.
	February 14	Comment period ends.
	February 18*	TPB reviews comments and is asked to approve project submissions and draft Scope of Work.
	April 3	**DEADLINE:** Transportation agencies finalize CLRP forms (including Congestion Management Documentation forms where needed) and amendments to the FY 2015-2020 TIP**.** Submissions must not impact conformity inputs. Note that the deadline for changes affecting conformity inputs was February 18, 2015.
	September 4	Technical Committee reviews draft CLRP & TIP and Conformity Analysis.
	September 10	Draft CLRP & TIP and Conformity Analysis are released for **30-day comment period** at Citizens Advisory Committee (CAC) meeting. CLRP Performance Analysis and Regional Priorities Plan Assessment are also published.
	September 16*	TPB is briefed on the draft CLRP & TIP and Conformity Analysis.
	September (TBD)	TPB staff briefs MWAQC TAC on the draft CLRP & TIP and Conformity Analysis.
	October 10	Comment period ends.
	October 21*	TPB reviews comments and responses to comments, and is presented with the draft CLRP & TIP and Conformity Analysis for adoption.

*Regular monthly TPB meeting

VIII. 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 last year and included a financial analysis of the regional transportation plan and program. A report (Reference 13) 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 $244 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 17 shows the balanced revenue and expenditures tables for the CLRP.

EXHIBIT 17
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 of this year's new or updated projects do not impact the financial analysis; however, there are three new projects with significant costs. These are the I-66 inside and outside the Capital Beltway HOT lanes, and the US 1 BRT. The preliminary funding information for the three projects is shown on the description sheet for each project. 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.

IX. 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 18 lists the sections of the regulations relevant for the analysis of the 2015 CLRP Amendment and FY2015-2020 TIP. The following discussion indicates the manner in which each criterion was met.

EXHIBIT 18

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 8.4 Cooperative Forecasts were approved for use in the conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP. These forecasts were developed and reviewed with an explicit perspective on transportation and land use interaction.

Travel demand modeling methods incorporating the latest travel time refinements were used in this study. Other 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 2015) 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 MOVES2014, 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; a monthly newsletter; 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 in Chapter VII, and in Appendix C of this document. General information is summarized in a report called the TPB Participation Plan (Reference 12).

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 F 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) 2014 CLRP, adopted by the TPB in October, 2014 and approved by the FHWA on January 5, 2015.

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 nonattainment 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 $PM_{2.5}$ Resignation 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 in earlier in this report, this analysis includes use of the existing budgets developed as part of the 8-hour ozone SIP and the $PM_{2.5}$ maintenance SIP. Approved budgets exist for all pollutants under consideration. The mobile emissions inventories for all analysis years were compared to these budgets. Total VOC, NOx, Fine Particles, and CO 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.

X. FINDINGS

The analytical results described above provide a basis, in relation to US EPA conformity regulations, for a determination of conformity of the year 2015 Constrained Long Range Plan Amendment and FY2015-2020 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 ASSESSMENT: 2015 CONSTRAINED LONG RANGE PLAN AND FY2015-2020 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 2015 Constrained Long Range Plan (CLRP) and FY2015-2020 Transportation Improvement Program (TIP) were finalized at the February 18, 2015 TPB meeting. This scope of work reflects the tasks and schedule designed for the air quality conformity assessment leading to adoption of the plan on October 21, 2015. 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), as well as maintenance of the wintertime carbon monoxide (CO) standard.

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 assessment.

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 (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. The Maintenance Plan was approved by EPA effective November 5, 2014.

- Wintertime CO will be assessed by comparing the forecast year pollutant levels to the budgets in the CO Maintenance Plan. The Maintenance Plan was approved by EPA effective June 3, 2005.

III. TECHNICAL APPROACH

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

	Ozone	**Wintertime CO**	**Fine Particles**
Pollutant	VOC, NOx	CO	Direct PM2.5, Precursor NOx
Emissions Model	**MOVES2014** ~~MOVES2010a~~		
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 with the Wintertime CO Maintenance Plan approved by EPA in 2005. All budgets set using Mobile6 emissions model..	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.
Emissions Analysis Timeframe	Daily	Daily	Annual
Vehicle Fleet Data	NEW! 2014 vehicle registration data for all jurisdictions		
Geography	8-hour ozone non-attainment area	DC, Arlington, Alexandria, Montgomery Co., Prince George's Co.	8-hour ozone non-attainment area less Calvert County
Network Inputs	Regionally significant projects		
Land Activity	NEW! Cooperative Forecasts Round 8.4		
Modeled Area	3,722 TAZ System		
Travel Demand Model	Version 2.3.57 or latest		

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 assessment: documentation and comments
- CLRP Performance
- Process: comments and responses

V. WORK TASKS

The work tasks associated with the 2015 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 2014
   - Fares current to February 2014

3. Update Vehicle Fleet Data based on the 2014 VIN

4. Review and Update Land Activity files to reflect Round 8.4 Cooperative Forecasts with respect to:
   - Households by auto ownership, population, and employment
   - Coordination with agencies outside the MWCOG Cooperative Forecast area (BMC, FAMPO, etc.)
   - Zonal data files
   - Employment Data Census Adjustment
   - Exogenous Travel (external, through trips etc.)

5. Prepare forecast year highway, HOV, and transit networks including regionally significant projects (including I-66 Alternative A), as follows:
   - 2015, 2017, 2020, 2025, 2030, and 2040 highway networks, including HOV & HOT routes with all facilities assumed at HOV-3 for 2020 and beyond
   - 2015, 2017, 2020, 2025, 2030, and 2040 transit network input files
   - Update highway tolls, as necessary

6. VDOT I-66 Alternative B (additional access/ramps outside the beltway):
   - Modify 2025,2030, and 2040 networks
   - Execute travel demand modeling for 2025, 2030, and 2040
   - Calculate emissions for 2025, 2030, and 2040

7. VDOT I-66 Alternative: No-Build:
   - Modify 2025,2030, and 2040 networks
   - Execute travel demand modeling for 2025, 2030, and 2040
   - Calculate emissions for 2025, 2030, and 2040

8. Execute travel demand modeling for years 2015, 2017, 2020, 2025, 2030, and 2040; for years 2025, 2030, and 2040 by applying a transit constraint at 2020 levels through the core of the TPB planning area.

9. Derive Mobile Emissions Estimates for years 2015, 2017, 2025, 2030, and 2040

10. Identify extent to which plan provides for expeditious implementation of TCMs contained in ozone state implementation plans and provide emissions reductions estimates for TERMs in current TIP

11. Document timely implementation of TCMs and estimated emissions reductions from TERMs in the FY2015-2020 TIP; under the oversight of the Technical Committee and the TPB, identify additional measures, if needed, should the plan or program fail the budget test and incorporate measures into the plan

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

13. 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
    - Address comments and present to TPB for action
    - Finalize report and forward to FHWA, FTA and EPA

SCHEDULE FOR DEVELOPMENT & ADOPTION

of the 2015 Update of the Financially Constrained Long-Range Transportation Plan (CLRP)
& FY 2015-2020 Transportation Improvement Program (TIP)

2014	October 15*	TPB is briefed on the draft Call for Projects document and summary brochure.
	November 19	TPB releases final Call for Projects. Transportation agencies begin submitting project information through online database.
	December 12	**DEADLINE:** Transportation agencies complete online submission of draft project inputs.
2015	January 9	Technical Committee reviews draft CLRP & TIP project submissions and draft Scope of Work for the Air Quality Conformity Analysis.
	January 15	CLRP & TIP project submissions and draft Scope of Work released for **30-day comment period**.
	January 21*	TPB is briefed on project submissions and draft Scope of Work.
	February 10	TPB staff briefs Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) on submissions and Scope of Work.
	February 14	Comment period ends.
	February 18*	TPB reviews comments and is asked to approve project submissions and draft Scope of Work.
	April 3	**DEADLINE:** Transportation agencies finalize CLRP forms (including Congestion Management Documentation forms where needed) and amendments to the FY 2015-2020 TIP**.** Submissions must not impact conformity inputs. Note that the deadline for changes affecting conformity inputs was February 18, 2015.
	September 4	Technical Committee reviews draft CLRP & TIP and Conformity Analysis.
	September 10	Draft CLRP & TIP and Conformity Analysis are released for **30-day comment period** at Citizens Advisory Committee (CAC) meeting. CLRP Performance Analysis and Regional Priorities Plan Assessment are also published.
	September 16*	TPB is briefed on the draft CLRP & TIP and Conformity Analysis.
	September (TBD)	TPB staff briefs MWAQC TAC on the draft CLRP & TIP and Conformity Analysis.
	October 10	Comment period ends.
	October 21*	TPB reviews comments and responses to comments, and is presented with the draft CLRP & TIP and Conformity Analysis for adoption.

*Regular monthly TPB meeting

Metropolitan Washington Air Quality Committee

Suite 300, 777 North Capitol Street, N.E. Washington, D.C. 20002-4239 202-962-3200 Fax: 202-962-3203

April 15, 2015

Honorable Philip Mendelson, Chair
National Capital Region Transportation Planning Board
777 North Capitol Street, NE
Washington, D.C. 20002

Dear Chair Mendelson:

Metropolitan Washington Air Quality Committee (MWAQC) is pleased to learn that the Transportation Planning Board (TPB) is planning to implement the U.S. Environmental Protection Agency's (EPA) latest onroad mobile emission estimation model called MOVES2014 for onroad mobile emission estimation purposes starting with the upcoming 2015 CLRP & FY2015-2020 TIP analysis. MWAQC commends TPB's plan for implementing the above model ahead of EPA suggested deadline for the transportation conformity purposes. We also commend TPB for sharing the model evaluation studies and analyses with MWAQC through the interagency consultation process.

MWAQC believes that the implementation of MOVES2014 will help the Washington region estimate its emissions of precursors of ozone and fine particles, carbon monoxide, and greenhouse gases for the onroad mobile sector using the latest approved methodology and all current and upcoming approved federal, state, and local control programs. This is essential as the Washington region moves forward to address the current 2008 ozone standard and the more stringent ozone standard expected to be announced this year and to facilitate the ongoing greenhouse gas reduction initiatives.

Thank you again and we look forward to continue working with you on various air quality issues facing the Washington region.

Sincerely,

Hon. David Snyder, Chair
Metropolitan Washington Air Quality Committee

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
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

MEMORANDUM

TO: Transportation Planning Board

FROM: Andrew Austin, Transportation Planner

SUBJECT: Briefing on the Draft 2015 CLRP Amendment

DATE: September 10, 2015

In November 2014, the TPB released the Call for Projects for the CLRP and the FY 2015-2020 TIP. The projects submitted by each agency were approved for by the TPB for inclusion in the Air Quality Conformity Analysis in February 2015. Since then the travel demand modeling and air quality analysis has been completed and the CLRP has been found to meet the air quality requirements set forth by the EPA.

The capital improvement projects that have impacts on the capacity of the region's road and transit systems are listed in the "2015 CLRP and FY 2015-2020 TIP Air Quality Conformity Inputs" table, included in Appendix B of the Air Quality Conformity Analysis report. That table includes more than 500 projects, and highlights almost 200 changes to limits and/or completion dates for previously approved projects or new projects. Included with this memo is a summary of the major new projects and changes to existing projects, summarized below.

Summary of Major Additions and Changes to Projects in the CLRP

In the District of Columbia, DDOT proposes to add ten dedicated bike lane projects to its existing bicycle network. These projects will remove one or more lanes for vehicular traffic on approximately 9 miles of streets throughout the city. Description forms for these projects are included in Attachment A.

DDOT also proposes to remove the Benning Road Streetcar Spur project.

No new major projects are proposed this year in Maryland.

In Virginia, VDOT proposes to add two new projects on I-66. The first project, I-66 Multimodal Improvements inside the Beltway, would convert I-66 to a managed Express Lanes facility, with dynamic, congestion-based tolling in both directions during the morning and evening peak periods. This project also includes enhanced bus services, expanded bicycle and pedestrian facilities, and a widening of I-66 from N. Fairfax Drive to I-495.

777 North Capitol Street NE, Suite 300, Washington, DC 20002-4290
Web: www.mwcog.org/tpb Phone: (202) 962-3315 Fax: (202) 962-3202

The second project would reconfigure I-66 outside the Beltway between I-495 and US Route 15 to have three general-purpose lanes and two managed Express lanes in each direction. This project will also include a new high-frequency bus service and additional or expanded commuter park-and-ride lots. Description forms for these projects are included in Attachment A.

On behalf of the Virginia Department of Rail and Public Transit, VDOT proposes to implement a Bus Rapid Transit (BRT) system that would run in a dedicated Transitway along US Route 1 between Huntington Metro Station and Woodbridge. This project was included in the Air Quality Conformity inputs that were released for public comment in January of this year, but this project had not been highlighted as a "major addition" at that time due to a lack of detailed information.

At the request of Arlington County, VDOT proposes to remove the Columbia Pike Streetcar and Crystal City Streetcar projects due to the recent withdrawal of funding support for these two projects by Arlington County.

No new major additional capacity projects are proposed by WMATA at this time.

Exhibit 1 on the following pages provides a further summary of the Major Additions and Changes including maps, costs and completion dates. A complete listing of proposed additions and changes to all projects in the CLRP can be found in the 2015 CLRP and the FY 2015-2020 TIP Air Quality Conformity Inputs table, included in Appendix B of the Air Quality Conformity Analysis report. These documents can be found online at www.mwcog.org/CLRP2015.

Public Comment on the CLRP and TIP

At the September 10 meeting of the Citizens Advisory Committee, the Draft 2015 Amendment to the CLRP and FY 2015-2020 TIP was released for a 30 day public comment period, along with the Air Quality Conformity Analysis and the Performance Analysis. The comment period will close on Saturday, October 10. Interested parties may submit their comments via any of these means:

- Online at www.mwcog.org/TPBcomment
- Via email at TPBcomment@mwcog.org
- By phone at (202) 962-3262, TDD: (202) 962-3213

The TPB will be asked to approve the 2015 Amendment to the CLRP at its meeting on October 21.

District of Columbia

Dedicated Bike Lanes, Citywide

Length: 9 miles

Complete: 2015

Cost: $470,000

The District Department of Transportation (DDOT) proposes to add a series of dedicated bike lane projects that will remove one or more lanes for vehicular traffic on 10 different roadways by reducing lanes as follows:

a. 4th St. SW, M St. to P St.
4 to 2 lanes

b. 6th St. NE, Florida Ave. to K St.
2 to 1 lane

c. 7th St. NW, New York Ave. to N St.
4 to 2 lanes

d. 12th St. NW, Pennsylvania Ave. to Massachusetts Ave.
4 to 3 lanes

e. 14th St. NW, Florida Ave. to Columbia Rd.
4 to 2 lanes

f. Brentwood Pkwy. NE, 6th St./Penn St. to 9th St.
4 to 2 lanes

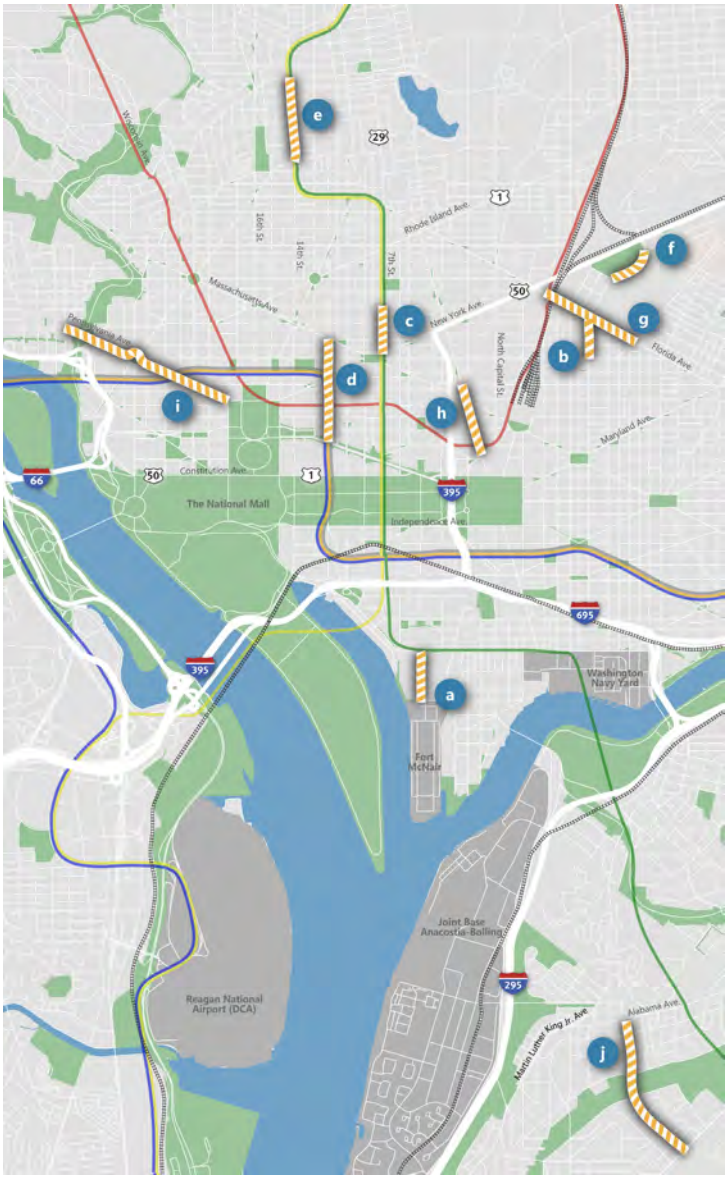
g. Florida Ave. NE, 2nd St. to West Virginia Ave.
6 to 4 or 5 lanes

h. New Jersey Ave. NW, H St. to Louisiana Ave.
4 to 2 lanes

i. Pennsylvania Ave. NW, 17th St. to 29th St.
4/6 to 2 or 4 lanes

j. Wheeler Rd. SE, Alabama Ave. to Southern Ave.
4 to 2 lanes

See description forms on pages A1-A11 of Attachment A for more information.



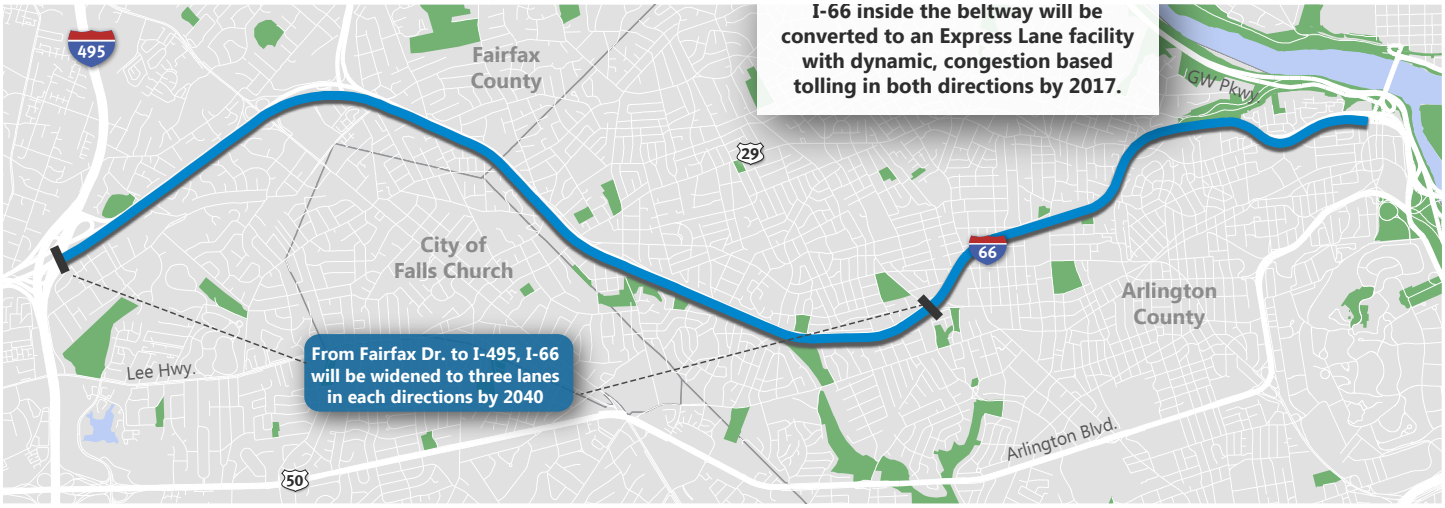
Remove: Benning Road Streetcar Spur

The 2014 Update to the CLRP included the addition of a streetcar spur line running from Benning Rd. along Minnesota Ave. to the Minnesota Ave. Metro Station. This project is being withdrawn from the CLRP.

VIRGINIA

I-66 Multimodal Improvement Project, Inside the Beltway US Route 29 in Rosslyn to I-495

Length: 10 miles
Complete: 2017, 2040
Cost: $350 million



The Virginia Department of Transportation (VDOT) proposes to convert I-66 inside the Capital Beltway into a managed express lanes facility with dynamic, congestion-based tolling for all vehicles with less than three occupants, in both directions during the morning and evening peak periods. VDOT plans to implement this conversion by 2017. VDOT also proposes widening I-66 to 3 lanes in both directions between Fairfax Dr. and I-495 (and from 3 to 4 lanes on eastbound I-66 from the Dulles Toll Road to Washington Blvd.) The widening is projected to be complete by 2040.

VDOT proposes to implement a number of multimodal improvements with this project, including enhanced bus service and completion of elements of the bicycle and pedestrian network around the corridor. Tolls from the managed express lanes will be used to fund further multimodal improvements.

The currently approved CLRP includes an assumption that the existing HOV requirement on I-66 inside the Beltway would increase from 2 to 3 occupants in 2020. This proposed project would advance that requirement to 2017 inside the Beltway. The CLRP also currently includes two spot improvement projects that provide additional lanes on westbound I-66 between Westmoreland Dr./Washington Blvd. and Haycock Rd./Dulless Access Highway (complete in 2015), and between Lee Highway/Spout Run and Glebe Rd. (complete in 2020).

See the CLRP Project Description Form and supplemental materials provided by VDOT on pages A13 - A24 in Attachment A for more information.

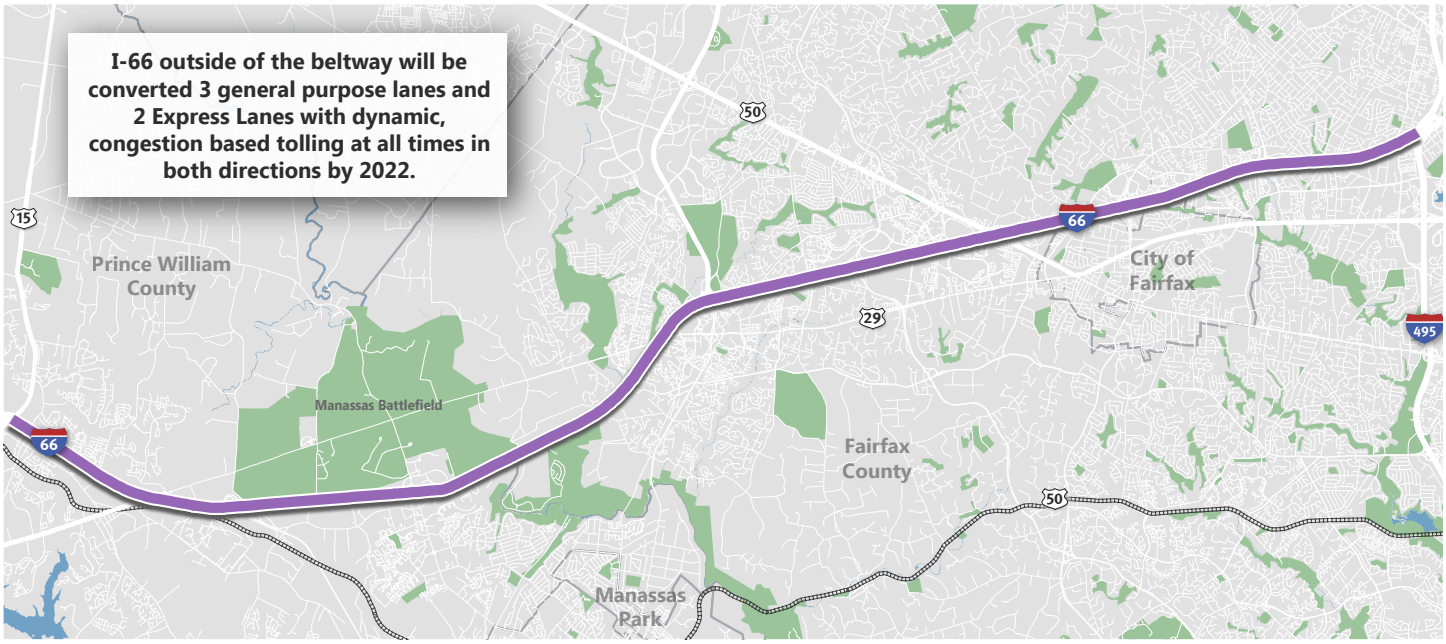
Exhibit 1: Summary of Major Additions and Changes for the 2015 CLRP Amendment

I-66 Corridor Improvements outside the Capital Beltway
I-495 to US Route 15 in Prince William County

Length: 25 miles

Complete: 2022

Cost: $2-3 billion



VDOT proposes to reconfigure I-66 outside the Capital Beltway to have two managed express lanes and three general purpose lanes in each direction. Please see the 2015 CLRP Air Quality Conformity Inputs table for further details on lane configurations. The managed express lanes would use dynamic, congestion-based tolling for vehicles with less than 3 occupants at all times to maintain free-flow conditions.

VDOT has proposed two alternative sets of access and egress points between the express lanes and the general purpose lanes. Both alternatives (A and B) are detailed in the Air Quality Conformity Inputs table and will be analyzed separately.

Multimodal aspects of the proposed project include implementation of a new high-frequency bus service and the construction of new, and expansion of existing commuter park-and-ride lots.

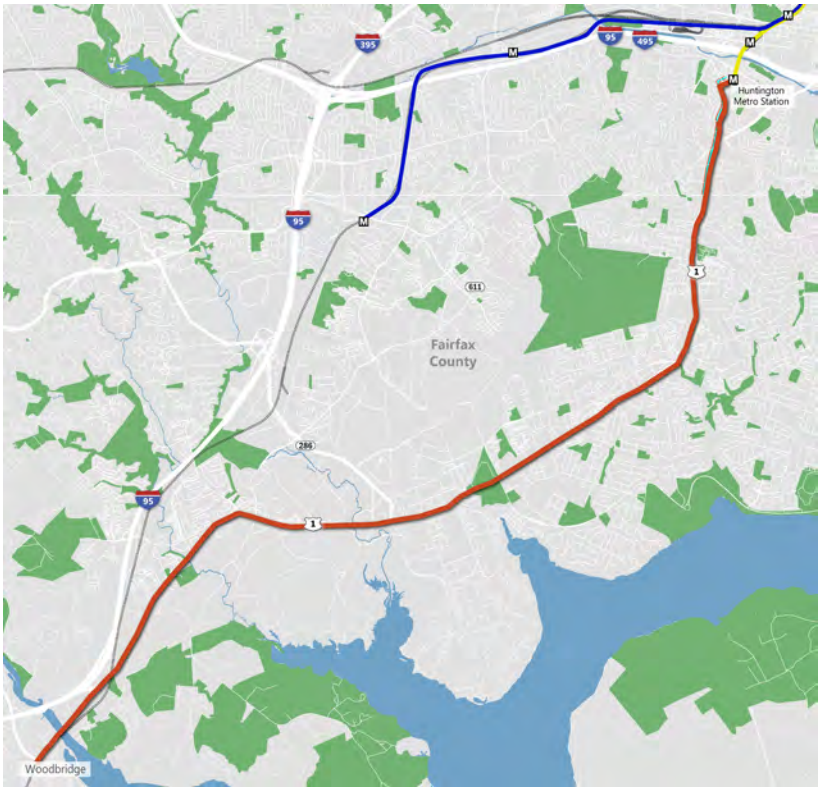
See the CLRP Project Description Form and supplemental materials provided by VDOT on pages A25 - A40 in Attachment A for more information.

Remove: Columbia Pike Streetcar and Crystal City Streetcar Projects

The Columbia Pike Streetcar project between Skyline Center and Pentagon City was added to the CLRP in 2008 and was scheduled to be complete in 2017. The Crystal City Streetcar from the Pentagon City Metro Station to Four Mile Run at the Alexandria city line was added in 2011 and was projected to be complete by 2019. Due to recent policy and funding changes in Arlington County, both projects are proposed for removal.

US 1, Richmond Highway Bus Rapid Transit
Huntington Metro Station to Woodbridge VRE Station

Length: 15 miles
Complete: 2032
Cost: $1 billion



VDOT is proposing to implement a Bus Rapid Transit (BRT) system in three phases. The first phase will run from the Huntington Metro Station via North Kings Highway to US 1, Richmond Highway where it will run on a dedicated transitway located in the median to Hybla Valley. This phase is scheduled to be complete in 2026. The second phase would extend BRT service on a dedicated, median transitway to Fort Belvoir by 2028. The third phase extends the dedicated transitway and BRT service to the Woodbridge VRE Station. This segment is expected to be complete in 2032. The project will also include a 10-foot shared use path on both sides of US Route 1.

See the CLRP Project Description Form on page A41 in Attachment A for more information.

Attachment A

Project Description Forms and Supplemental Materials

BASIC PROJECT INFORMATION

1. Submitting Agency: DDOT
2. Secondary Agency:
3. Agency Project ID:
4. Project Type: ☐ Interstate ☐ Primary ☐ Secondary ☐ Urban ☐ Bridge ☒ Bike/Ped ☐ Transit ☐ CMAQ ☐ ITS ☐ Enhancement ☐ Other ☐ Federal Lands Highways Program ☐ Human Service Transportation Coordination ☐ TERMs
5. Category: ☐ System Expansion; ☐ System Maintenance; ☐ Operational Program; ☐ Study; ☒ Other
6. Project Name: **Dedicated Bike Lanes, Citywide**

	Prefix	Route	Name	Modifier
7. Facility:			See facilities and limits in description below	
8. From:				
9. To:				

10. Description:

4th Street SW from M Street to P Street

This project will reduce roadway capacity through converting the existing roadway configuration from four general purpose travel lanes to two lanes with a center turn lane and bicycle lanes.
Length: 0.3 mile
Cost $10,000

6th Street NE from Florida Avenue to K Street

This project will implement recommendations from the recent Florida Ave study. It will reduce roadway capacity through the conversion of the existing roadway from two-way to one-way operation with one general purpose travel lane and two-way protected bicycle lanes on the east side of the road.
Length: 0.26 mile
Cost: $30,000

7th Street NW from New York Avenue to N Street

This project will reduce roadway capacity through converting the existing roadway configuration from four general purpose travel lanes to two lanes with a center turn lane and bicycle lanes.
Length: 0.3 mile
Cost: $20,000

12th Street NW from Pennsylvania Avenue to Massachusetts Avenue

12th St is a four lane, one-way northbound road with two rush-hour restricted parking lanes. This project will reduce rush-hour roadway capacity by one lane by changing the east side rush-hour restricted parking lane to full-time parking and adding a bicycle lane.
Length: 0.64 mile
Cost $20,000

14th Street NW from Florida Avenue to Columbia Road

This project will reduce roadway capacity through converting the existing roadway configuration from four general purpose travel lanes to two lanes with a center turn lane and bicycle lanes. It will connect existing bike lanes, making it the longest continuous bike lane corridor in the city.
Length: 0.52 mile
Cost: $20,000

Adams Mill Road NW from Kenyon Street to Klingle Road

Adams Mill Road has two southbound lanes and one northbound lane. This project will reduce roadway capacity through the elimination of one of the southbound lanes to provide room for the addition of 5' bicycle lanes on either side of the roadway. It will provide a bicycle connection between the National Zoo and Mount Pleasant to Klingle Road/Porter Street and neighborhoods to the west of Rock Creek Park.
Length: 0.24 mile
Cost: $10,000

Brentwood Parkway NE from 6th Street/Penn Street to 9th Street

This project will reduce roadway capacity through converting the existing roadway configuration from four general purpose travel lanes to three lanes. Traffic analysis is still required to determine which lane would be eliminated. The extra space will be used for bicycle lanes on either side of the road, or a two-way protected bicycle lane on one side of the street. This will connect the 6th St NE bike lanes to the 9th St Bridge.
Length: 0.22
Cost: $10,000

New Jersey Avenue NW from H Street to Louisiana Avenue

This project will reduce roadway capacity through converting the existing roadway configuration from four general purpose travel lanes to two lanes with a center turn lane and bicycle lanes.
Length: 0.45 mile
Cost: $25,000

Wheeler Road SE from Alabama Avenue to Southern Avenue

This project will reduce roadway capacity through converting the existing roadway configuration from four general purpose travel lanes to two lanes with a center turn lane and bicycle lanes.
Length: 0.94 mile
Cost: $35,000

11. Projected Completion Year: 2015
12. Project Manager: Mike Goodno
13. Project Manager E-Mail: mike.goodno@dc.gov
14. Project Information URL:
15. Total Miles: 3.9
16. Schematic:
17. Documentation:
18. Jurisdictions: Washington, DC
19. Baseline Cost (in Thousands): $180 cost estimate as of 12/05/14
20. Amended Cost (in Thousands): cost estimate as of MM/DD/YYYY
21. Funding Sources: ☐ Federal; ☐ State; ☒ Local; ☐ Private; ☐ Bonds; ☐ Other

Regional Policy Framework

22. **Provide a Comprehensive Range of Transportation Options**

Please identify all travel mode options that this project provides, enhances, supports, or promotes.

☐Single Driver	☐Carpool/HOV		
☐Metrorail	☐Commuter Rail	☐Streetcar/Light Rail	
☐BRT	☐Express/Commuter bus	☐Metrobus	☐Local Bus
☒Bicycling	☐Walking	☐Other	

Does this project improve accessibility for historically transportation-disadvantaged individuals (i.e., persons with disabilities, low-incomes, and/or limited English proficiency?) ☒Yes ☐No

23. **Promote Regional Activity Centers**
Does this project begin or end in an Activity Center? ☒Yes ☐No
Does this project connect two or more Activity Centers? ☐Yes ☒No
Does this project promote non-auto travel within one or more Activity Centers? ☒Yes ☐No

24. **Ensure System Maintenance, Preservation, and Safety**
Does this project contribute to enhanced system maintenance, preservation, or safety? ☐Yes ☒No

25. **Maximize Operational Effectiveness and Safety**
Does this project reduce travel time on highways and/or transit without building new capacity (e.g., ITS, bus priority treatments, etc.)? ☐Yes ☒No
Does this project enhance safety for motorists, transit users, pedestrians, and/or bicyclists? ☒Yes ☐No

26. **Protect and Enhance the Natural Environment**
Is this project expected to contribute to reductions in emissions of criteria pollutants? ☒Yes ☐No
Is this project expected to contribute to reductions in emissions of greenhouse gases? ☒Yes ☐No

27. **Support Interregional and International Travel and Commerce**
Please identify all <u>freight carrier modes</u> that this project enhances, supports, or promotes.
☐Long-Haul Truck ☐Local Delivery ☐Rail ☐Air
Please identify all <u>passenger carrier modes</u> that this project enhances, supports, or promotes.
☐Air ☐Amtrak intercity passenger rail ☐Intercity bus

28. **Additional Policy Framework**
In the box below, please provide any additional information that describes how this project further supports or advances these and other regional goals.

<u>MAP-21 PLANNING FACTORS</u>

29. Please identify any and all planning factors that are addressed by this project:
a. ☐ Support the **economic vitality** of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
b. ☐ Increase the **safety** of the transportation system for all motorized and non-motorized users.
i. Is this project being proposed specifically to address a safety issue? ☐ Yes; ☐ No
ii. If yes, briefly describe (in quantifiable terms, where possible) the nature of the safety problem:
c. ☐ Increase the ability of the transportation system to support **homeland security** and to safeguard the personal security of all motorized and non-motorized users.
d. ☒ Increase **accessibility and mobility** of people.
e. ☐ Increase accessibility and mobility of **freight.**
f. ☒ Protect and enhance the **environment**, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
g. ☒ Enhance the **integration and connectivity** of the transportation system, across and between modes, for people and freight.
h. ☐ Promote efficient system **management and operation**.
i. ☐ Emphasize the **preservation** of the existing transportation system.

ENVIRONMENTAL MITIGATION

30. Have any potential mitigation activities been identified for this project? ☐ Yes; ☒ No
    a. If yes, what types of mitigation activities have been identified?
       ☐ Air Quality; ☐ Floodplains; ☐ Socioeconomics; ☐ Geology, Soils and Groundwater; ☐ Vibrations; ☐ Energy; ☐ Noise; ☐ Surface Water; ☐ Hazardous and Contaminated Materials; ☐ Wetlands

CONGESTION MANAGEMENT INFORMATION

31. Congested Conditions
    a. Do traffic congestion conditions necessitate the proposed project or program? ☐ Yes; ☒ No
    b. If so, is the congestion recurring or non-recurring? ☐ Recurring; ☐ Non-recurring
    c. If the congestion is on another facility, please identify it:
32. Capacity
    a. Is this a capacity-increasing project on a limited access highway or other principal arterial? ☐ Yes; ☒ No
    b. If the answer to Question 26.a was "yes", are any of the following exemption criteria true about the project? (Choose one, or indicate that none of the exemption criteria apply):

       ☐ None of the exemption criteria apply to this project – a Congestion Management Documentation Form is required
       ☐ The project will not use federal funds in any phase of development or construction (100% state, local, and/or private funding)
       ☐ The number of lane-miles added to the highway system by the project totals less than one lane-mile
       ☐ The project is an intersection reconstruction or other traffic engineering improvement, including replacement of an at-grade intersection with an interchange
       ☒ The project, such as a transit, bicycle or pedestrian facility, will not allow private single-occupant motor vehicles
       ☐ The project consists of preliminary studies or engineering only, and is not funded for construction
       ☒ The construction costs for the project are less than $10 million.
    c. If the project is not exempt and requires a Congestion Management Documentation Form, click here to open a blank Congestion Management Documentation Form.

RECORD MANAGEMENT

33. Completed Year:
34. ☐ Project is being withdrawn from the CLRP.
35. Withdrawn Date: MM/DD/YYYY
36. Record Creator:
37. Created On:
38. Last Updated by:
39. Last Updated On:
40. Comments:

BASIC PROJECT INFORMATION

1. Submitting Agency: District Department of Transportation
2. Secondary Agency: Policy, Planning and Sustainability Administration (PPSA)
3. Agency Project ID: ZU202A
4. Project Type: ☐ Interstate X Primary ☐ Secondary X Urban ☐ Bridge X Bike/Ped ☐ Transit ☐ CMAQ ☐ ITS X Enhancement ☐ Other ☐ Federal Lands Highways Program ☐ Human Service Transportation Coordination ☐ TERMs
5. Category: ☐ System Expansion; X System Maintenance; ☐ Operational Program; Study; ☐ Other
6. Project Name: *Florida Avenue NE, Multimodal Transportation Study*

	Prefix	Route	Name	Modifier
7. Facility:			Florida Avenue NE	
8. From (☐ at):			2nd Street, NE	
9. To:			West Virginia Avenue	

10. Description: This project is the implementation of the recommended alternative from the *Florida Avenue Multimodal Corridor Study. The corridor will be reconstructed as shown in the recommended Alternative (**attached**).* ***The reconstruction will reduce the number of lanes from six lanes to four lanes in order to improve safety for all users through dedicated left-turn lanes, bicycle facilities, wider sidewalks and shorter crossing distances, decreased curb-to-curb street width and on-street parking to promote slower auto speeds, and pedestrian-scale lighting; increases the tree canopy and green infrastructure along the corridor; and significantly improves non-auto conditions for users, particularly the large deaf community in the area.***

11. Projected Completion Year: 2022
12. Project Manager: Gabe Onyeador
13. Project Manager E-Mail: gabe.onyeador@dc.gov
14. Project Information URL: www.floridaavesafety.org
15. Total Miles: *1.25 miles*
16. Schematic: *see attached*
17. Documentation: *Final report for corridor planning study*
18. Jurisdictions: *District of Columbia ANCs 5C, 5D, 5E, 6A, 6C*
19. Baseline Cost (in Thousands): $12,000 cost estimate as of 10/20/2014
20. Amended Cost (in Thousands): cost estimate as of MM/DD/YYYY
21. Funding Sources: X Federal; ☐ State; ☐ Local; ☐ Private; ☐ Bonds; ☐ Other

Regional Policy Framework

22. **Provide a Comprehensive Range of Transportation Options**

Please identify all travel mode options that this project provides, enhances, supports, or promotes.

X Single Driver	☐Carpool/HOV		
X Metrorail	☐Commuter Rail	☐Streetcar/Light Rail	
☐BRT	☐Express/Commuter bus	X Metrobus	☐Local Bus
X Bicycling	X Walking	☐Other	

Does this project improve accessibility for historically transportation-disadvantaged individuals (i.e., persons with disabilities, low-incomes, and/or limited English proficiency?) X Yes ☐No

23. **Promote Regional Activity Centers**
Does this project begin or end in an Activity Center? X Yes ☐No
Does this project connect two or more Activity Centers? X Yes ☐No
Does this project promote non-auto travel within one or more Activity Centers? X Yes ☐No

24. **Ensure System Maintenance, Preservation, and Safety**
Does this project contribute to enhanced system maintenance, preservation, or safety? X Yes ☐No

25. **Maximize Operational Effectiveness and Safety**
Does this project reduce travel time on highways and/or transit without building new capacity (e.g., ITS, bus priority treatments, etc.)? ☐Yes X No
Does this project enhance safety for motorists, transit users, pedestrians, and/or bicyclists? X Yes ☐No

26. **Protect and Enhance the Natural Environment**
Is this project expected to contribute to reductions in emissions of criteria pollutants? ☐Yes X No
Is this project expected to contribute to reductions in emissions of greenhouse gases? ☐Yes X No

27. **Support Interregional and International Travel and Commerce**

Please identify all <u>freight carrier modes</u> that this project enhances, supports, or promotes.

X Long-Haul Truck X Local Delivery ☐Rail ☐Air

Please identify all <u>passenger carrier modes</u> that this project enhances, supports, or promotes.

☐Air ☐Amtrak intercity passenger rail X Intercity bus

28. **Additional Policy Framework**

In the box below, please provide any additional information that describes how this project further supports or advances these and other regional goals.

The Recommended Alternative for Florida Avenue NE was developed through careful consideration of community priorities, the overall function of the roadway, and physical constraints along the corridor. The Alternative ensures adequate auto mobility on the corridor is maintained; improves safety for all users through dedicated left-turn lanes, bicycle facilities, wider sidewalks and shorter crossing distances, decreased curb-to-curb street width and on-street parking to promote slower auto speeds, and pedestrian-scale lighting; increases the tree canopy and green infrastructure along the corridor; and significantly improves non-auto conditions for users, particularly the large deaf community in the area.

<u>MAP-21 PLANNING FACTORS</u>

29. Please identify any and all planning factors that are addressed by this project:

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

b. X Increase the **safety** of the transportation system for all motorized and non-motorized users.

i. Is this project being proposed specifically to address a safety issue? X Yes; ☐ No

ii. If yes, briefly describe (in quantifiable terms, where possible) the nature of the safety problem:

A number of issues affect corridor safety, particularly for the non-auto community. These include high auto speeds (85th %-ile speeds approximately 10 mph higher than speed limit), long and poor crossing facilities (six-lane cross section with several uncontrolled crossing locations), inadequate sidewalk infrastructure (sidewalk on south side of corridor is approximately 4 feet wide with numerous instances with less than 2 feet of clearance), and no pedestrian-scale lighting (corridor includes high number of pedestrians walking between NoMa Metro station and Gallaudet University, particularly deaf users that must rely on amenities such as lighting to navigate street safely), and a lack of bicycle facilities on a heavy bike corridor. Intersections with high left-turning volumes experienced a high number of crashes in the 3-year data collection span, including 46 total crashes at 4th Street, 24 at 6th Street, and 24 at West Virginia Avenue. There were 15 pedestrian-related crashes (one being a fatality at 11th Street) and 13 bike-related crashes along the study corridor during the same data collection period.

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

d. ☐ Increase **accessibility and mobility** of people.

e. X Increase accessibility and mobility of **freight.**

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

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

h. X Promote efficient system **management and operation**.

i. X Emphasize the **preservation** of the existing transportation system.

ENVIRONMENTAL MITIGATION

30. Have any potential mitigation activities been identified for this project? ☐ Yes; X No

a. If yes, what types of mitigation activities have been identified?

☐ Air Quality; ☐ Floodplains; ☐ Socioeconomics; ☐ Geology, Soils and Groundwater; ☐ Vibrations; ☐ Energy; ☐ Noise; ☐ Surface Water; ☐ Hazardous and Contaminated Materials; ☐ Wetlands

CONGESTION MANAGEMENT INFORMATION

31. Congested Conditions

a. Do traffic congestion conditions necessitate the proposed project or program? ☐ Yes; X No

b. If so, is the congestion recurring or non-recurring? ☐ Recurring; ☐ Non-recurring

c. If the congestion is on another facility, please identify it:

32. Capacity

a. Is this a capacity-increasing project on a limited access highway or other principal arterial? ☐ Yes; X No

b. If the answer to Question 26.a was "yes", are any of the following exemption criteria true about the project? (Choose one, or indicate that none of the exemption criteria apply):

☐ None of the exemption criteria apply to this project – a Congestion Management Documentation Form is required
☐ The project will not use federal funds in any phase of development or construction (100% state, local, and/or private funding)
☐ The number of lane-miles added to the highway system by the project totals less than one lane-mile
☐ The project is an intersection reconstruction or other traffic engineering improvement, including replacement of an at-grade intersection with an interchange
☐ The project, such as a transit, bicycle or pedestrian facility, will not allow private single-occupant motor vehicles
X The project consists of preliminary studies or engineering only, and is not funded for construction

☐ The construction costs for the project are less than $10 million.

c. If the project is not exempt and requires a Congestion Management Documentation Form, click here to open a blank Congestion Management Documentation Form.

RECORD MANAGEMENT

33. Completed Year:
34. ☐ Project is being withdrawn from the CLRP.
35. Withdrawn Date: MM/DD/YYYY
36. Record Creator:
37. Created On:
38. Last Updated by:
39. Last Updated On:
40. Comments:

BASIC PROJECT INFORMATION

1. Submitting Agency: DDOT
2. Secondary Agency:
3. Agency Project ID:
4. Project Type: ☐ Interstate ☐ Primary ☐ Secondary ☐ Urban ☐ Bridge ☒ Bike/Ped ☐ Transit ☐ CMAQ ☐ ITS ☐ Enhancement ☐ Other ☐ Federal Lands Highways Program ☐ Human Service Transportation Coordination ☐ TERMs
5. Category: ☐ System Expansion; ☐ System Maintenance; ☐ Operational Program; ☐ Study; ☒ Other
6. Project Name: Pennsylvania Avenue NW Protected Bicycle Lanes

	Prefix	Route	Name	Modifier
7. Facility:			Pennsylvania Avenue NW	
8. From (☐ at):			17th Street	
9. To:			29th Street	

10. Description: Pennsylvania Avenue is a four to six lane corridor with two additional parking lanes. This project will reduce roadway capacity by reducing the existing travel lanes by one to two lanes and installing protected bicycle lanes.
    - 17th to 18th Streets will be reduced from 6 to 4 lanes
    - 18th to 20th Street will be reduced from 5 to 4 lanes
    - 20th to 26th Streets will be reduced from 6 to 4 lanes
    - 26th to 28th Streets will be reduced from 5 to 4 lanes
    - 28th to 29th Streets will be reduced from 4 to 2 lanes
11. Projected Completion Year: 2015
12. Project Manager: Mike Goodno
13. Project Manager E-Mail: mike.goodno@dc.gov
14. Project Information URL:
15. Total Miles: 1.03
16. Schematic:
17. Documentation:
18. Jurisdictions: Washington, DC
19. Baseline Cost (in Thousands): 250,000 cost estimate as of 12/05/14
20. Amended Cost (in Thousands): cost estimate as of MM/DD/YYYY
21. Funding Sources: ☐ Federal; ☐ State; ☒ Local; ☐ Private; ☐ Bonds; ☐ Other

Regional Policy Framework

22. **Provide a Comprehensive Range of Transportation Options**

Please identify all travel mode options that this project provides, enhances, supports, or promotes.

☐Single Driver	☐Carpool/HOV		
☐Metrorail	☐Commuter Rail	☐Streetcar/Light Rail	
☐BRT	☐Express/Commuter bus	☐Metrobus	☐Local Bus
☒Bicycling	☐Walking	☐Other	

Does this project improve accessibility for historically transportation-disadvantaged individuals (i.e., persons with disabilities, low-incomes, and/or limited English proficiency?) [X] Yes [ ] No

23. **Promote Regional Activity Centers**
Does this project begin or end in an Activity Center? [X] Yes [ ] No
Does this project connect two or more Activity Centers? [X] Yes [ ] No
Does this project promote non-auto travel within one or more Activity Centers? [X] Yes [ ] No

24. **Ensure System Maintenance, Preservation, and Safety**
Does this project contribute to enhanced system maintenance, preservation, or safety? [ ] Yes [X] No

25. **Maximize Operational Effectiveness and Safety**
Does this project reduce travel time on highways and/or transit without building new capacity (e.g., ITS, bus priority treatments, etc.)? [ ] Yes [X] No
Does this project enhance safety for motorists, transit users, pedestrians, and/or bicyclists? [X] Yes [ ] No

26. **Protect and Enhance the Natural Environment**
Is this project expected to contribute to reductions in emissions of criteria pollutants? [X] Yes [ ] No
Is this project expected to contribute to reductions in emissions of greenhouse gases? [X] Yes [ ] No

27. **Support Interregional and International Travel and Commerce**

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

[ ] Long-Haul Truck [ ] Local Delivery [ ] Rail [ ] Air

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

[ ] Air [ ] Amtrak intercity passenger rail [ ] Intercity bus

28. **Additional Policy Framework**

In the box below, please provide any additional information that describes how this project further supports or advances these and other regional goals.

MAP-21 PLANNING FACTORS

29. Please identify any and all planning factors that are addressed by this project:

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

b. ☐ Increase the **safety** of the transportation system for all motorized and non-motorized users.

i. Is this project being proposed specifically to address a safety issue? ☐ Yes; ☐ No

ii. If yes, briefly describe (in quantifiable terms, where possible) the nature of the safety problem:

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

d. [X] Increase **accessibility and mobility** of people.

e. ☐ Increase accessibility and mobility of **freight.**

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

g. [X] Enhance the **integration and connectivity** of the transportation system, across and between modes, for people and freight.

h. ☐ Promote efficient system **management and operation**.

i. ☐ Emphasize the **preservation** of the existing transportation system.

ENVIRONMENTAL MITIGATION

30. Have any potential mitigation activities been identified for this project? ☐ Yes; ☒ No
    a. If yes, what types of mitigation activities have been identified?
    ☐ Air Quality; ☐ Floodplains; ☐ Socioeconomics; ☐ Geology, Soils and Groundwater; ☐ Vibrations; ☐ Energy; ☐ Noise; ☐ Surface Water; ☐ Hazardous and Contaminated Materials; ☐ Wetlands

CONGESTION MANAGEMENT INFORMATION

31. Congested Conditions
    a. Do traffic congestion conditions necessitate the proposed project or program? ☐ Yes; ☒ No
    b. If so, is the congestion recurring or non-recurring? ☐ Recurring; ☐ Non-recurring
    c. If the congestion is on another facility, please identify it:
32. Capacity
    a. Is this a capacity-increasing project on a limited access highway or other principal arterial? ☐ Yes; ☒ No
    b. If the answer to Question 26.a was "yes", are any of the following exemption criteria true about the project? (Choose one, or indicate that none of the exemption criteria apply):

    ☐ None of the exemption criteria apply to this project – a Congestion Management Documentation Form is required
    ☐ The project will not use federal funds in any phase of development or construction (100% state, local, and/or private funding)
    ☐ The number of lane-miles added to the highway system by the project totals less than one lane-mile
    ☐ The project is an intersection reconstruction or other traffic engineering improvement, including replacement of an at-grade intersection with an interchange
    ☒ The project, such as a transit, bicycle or pedestrian facility, will not allow private single-occupant motor vehicles
    ☐ The project consists of preliminary studies or engineering only, and is not funded for construction
    ☒ The construction costs for the project are less than $10 million.

    c. If the project is not exempt and requires a Congestion Management Documentation Form, click here to open a blank Congestion Management Documentation Form.

RECORD MANAGEMENT

33. Completed Year:
34. ☐ Project is being withdrawn from the CLRP.
35. Withdrawn Date: MM/DD/YYYY
36. Record Creator:
37. Created On:
38. Last Updated by:
39. Last Updated On:
40. Comments:

FINANCIALLY CONSTRAINED LONG-RANGE TRANSPORTATION PLAN FOR 2040
PROJECT DESCRIPTION FORM
BASIC PROJECT INFORMATION

1. Submitting Agency: **Virginia Department of Transportation**

2. Secondary Agency: **Virginia Department of Rail and Public Transportation**

3. Agency Project ID: **UPC 97586**

4. Project Type:
X Interstate ☐ Primary ☐ Secondary ☐ Urban ☐ Bridge **X** Bike/Ped
X Transit ☐ CMAQ ☐ ITS ☐ Enhancement ☐ Other
☐ Federal Lands Highways Program ☐ Human Service Transportation Coordination
☐ TERMs

5. Category:
X System Expansion; ☐ System Maintenance; **X** Operational Program;
☐ Study; ☐ Other

6. Project Name: **I-66 Multimodal Improvement Project, inside the Beltway**
Prefix Route Name Modifier

7. Facility: **I-66**

8. From: **I-495, Fairfax County**

9. To: **Route 29 near Rosslyn, Arlington County**

10. Description:

The I-66 Multimodal Improvement Project (the "Project") is based on the recommendations from the June 2012 Final Report of the I-66 Multimodal Study inside the Beltway. The study team for the Multimodal Study included local, state, regional and federal stakeholders who participated in an interactive process which resulted in endorsements from these partners. The study, which built upon the 2009 Department of Rail and Public Transportation (DRPT) I-66 Transit/Transportation Demand Management (TDM) study, evaluated and recommended various multimodal improvements in the corridor that were further refined in the August 2013 Supplemental Report. The recommended improvements from the study included transit, bike/ped, TDM, integrated corridor management (ICM), tolling, and widening components, making this a truly multimodal solution for the corridor.

VDOT/DRPT is initiating an environmental assessment (NEPA) process to advance the multimodal improvements identified in the I-66 Multimodal Study. This process will assess the Project's impacts on social, cultural, economic and natural resources (such as air, noise, and water quality). The environmental process will provide opportunities for the public and stakeholders to provide comments and feedback throughout the study. In February of 2015 VDOT is beginning a comprehensive toll and revenue study to determine the expected

project revenue by year. Also during this time, VDOT will be working with corridor stakeholders, including local jurisdictional partners, to review the results of the revenue study and prioritize the list of multimodal and operational improvements. The multimodal improvements will be grouped into three categories: for Group 1, the stakeholder team will identify and evaluate low cost quickly implementable corridor improvements to be done in conjunction with the tolling component.

. Group 2 projects are expected by 2025. Group 3 multimodal projects are expected by 2040. In addition, a Stakeholder Technical Advisory Group is being established with local, state, regional and federal partners. The Project may be updated in future CLRPs in response to the environmental process, public outreach, and stakeholder input.

The tolling component of the Project will be implemented first, concurrent with the selected Group I Multi-modal improvements, and the tolls will be used to help fund the multimodal improvements in the corridor inside the Beltway. The tolling includes conversion of the existing I-66 facility inside the Capital Beltway to an Express Lanes facility with the following characteristics:

- Dynamic tolling in both directions during the peak periods only;
- HOV-3+ vehicles ride free at all times;
- Facility free to all traffic during off-peak periods;
- Consistent with current policy, heavy trucks will be prohibited.

The **transit** components include all the current improvements in the CLRP plus new priority bus routes on I-66, Route 29, and Route 50; Metrorail station improvements at Ballston and East Falls Church, and service enhancements for numerous routes in the study area inside the Beltway. Consideration will also be given to Metrorail core capacity improvements (8-car trains) that will address capacity concerns in the I-66 corridor.

For the **bicycle/pedestrian** components, the Multimodal Study identified approximately 60 capital and operating projects inside the Beltway. The Supplemental Report examined projects deemed to be the most regionally significant of the 60, based on (1) projects that can impact bicycling and walking for relatively large numbers of people and (2) projects that enhance the connectivity and functionality of the regional network. Sample projects include:

- Custis trail/W&OD trail improvements
- Fairfax Drive connector
- Arlington Boulevard trail- Glebe Rd. to City of Fairfax
- West Falls Church connector trail
- VA 7 – Tysons to Falls Church

The **TDM** elements of the Project were built on those recommended in the DRPT Transit and TDM Study of 2009, and in the 2012 Multimodal Study were grouped into high, medium and low impact, based on the ability of each measure to impact travel demand. High impact strategies included rideshare program operational support, enhanced telework, van priority access, direct transit subsidies, and enhanced employer outreach. Medium impact

strategies included vanpool driver incentives, I-66 corridor carpool startup incentives, and regionwide financial incentives. Lower impact strategies included enhanced corridor marketing, enhanced vanpool insurance pool, capital assistance for vanpools, and flexible vanpool network strategies.

The Project **ICM** recommendation also includes the addition of dynamic merge/junction control, speed harmonization, advanced parking management systems for park-and-ride lots, multimodal traveler information including travel time information by mode, and implementing signal priority for transit vehicles in the corridor.

Lastly, the environmental study will also include consideration of a later phase to **widen** I-66 from I-495 to Fairfax Drive near Ballston, as identified in the I-66 Multimodal Study. Eastbound widening includes the addition of a third through lane between I-495 and Fairfax Drive near Ballston; westbound widening includes adding a lane between the Sycamore Street off-ramp west to the Washington Blvd. on-ramp and from the Dulles Connector to I-495. The environmental study will consider this widening with a horizon year of 2040, and will also test an interim year of 2025 for this improvement.

Tolling Policy

As on the other Express Lane facilities in the region, tolls would be congestion-based. To use this section of I-66 inside the Beltway during the peak periods in either direction, motorists would have the choice of forming a 3+ carpool, taking transit, or paying a toll. Carpools of three or more persons, buses, motorcycles, and emergency response vehicles will ride free. Other vehicles not meeting the occupancy requirement will be required to pay a toll, using electronic toll collection equipment, at a rate that will vary based on the level of congestion, to ensure free-flow conditions as specified by Federal and State regulations.

The region's current Constrained Long Range Plan calls for all HOV lanes in Northern Virginia to be HOV-3+ by 2020. Allowing HOV-3 vehicles to ride free is consistent with this policy change, and will also match the occupancy requirement on I-495 and the I-95 Express Lanes. The Project provides a seamless network of Express lanes by connecting to adjacent Express facilities.

It is envisioned that VDOT will operate and maintain the facility. Toll revenues will be used to offset design, construction, operating and maintenance costs of the project. Project revenues will also provide a funding source for multimodal improvements identified in the Description section of this project.

MAP-21 mandates strict performance standards which are intended to ensure free-flowing conditions on the Express lanes. The proposed Express lanes project will include performance monitoring as an integral part of the project and ensure that the MAP-21 mandated performance standards are complied with as a minimum. More specifically, the project will meet all applicable requirements of MAP-21 regarding "HOV Facility Management, Operation, Monitoring, and Enforcement" as described in Section 166 of Title 23 U.S.C., inclusive of the amendments (deletions, insertions and additions) prescribed by MAP-21 Section 1514 "HOV FACILITIES". This includes a minimum average operating speed of 45 mph for 90% of the time over a specific period of time during the peak period.

Schedule

Project development and procurement will take place in 2015, followed by construction starting in 2016. Tolling is expected to enter operations in 2017, along with the first (Group 1) multimodal improvements. The Group 2 multimodal improvements are expected by 2025. Group 3 multimodal improvements and widening are expected by 2040.

Federal Environmental Review ("NEPA") Process

Project scoping is currently underway and will result in the appropriate level of NEPA documentation in coordination with FHWA and FTA as appropriate.

Coordination with Other Projects

The Project will be coordinated closely with other initiatives such as the Active Traffic Management (ATM) project and the potential I-66 Express Lanes project outside the Beltway. The Project will also be coordinated with future improvements that may be underway in the corridor.

Financial Plan

The total baseline cost for the Project is estimated to be approximately $350M (in year of expenditure dollars). This estimate includes the cost of tolling, multimodal improvements, and roadway widening.

Stakeholder Outreach

VDOT and DRPT will work closely with Arlington County, Fairfax County, the City of Falls Church, transit providers, and other stakeholders to implement a comprehensive outreach program. The outreach program will provide the opportunity for direct engagement with various groups along the corridor, including the local political leadership, transit service providers, various other interest groups, and business and community leaders. There will also be opportunities for the public to learn more about the Project, as well as provide comments, both through the CLRP process and the NEPA process.

11. Projected Completion Year: **2017 (tolling, Group 1 multimodal), 2025 (Group 2 multimodal), 2040 (Group 3 multimodal, widening)**

12. Project Manager: **Ms Susan Shaw, P.E.**

13. Project Manager E-Mail: **susan.shaw@VDOT.Virginia.gov**

14. Project Information URL: **<to be determined>**

15. Total Miles: **10 miles (approximate)**

16. Schematic:

17. Documentation: **<to be determined>**

18. Jurisdictions: **Fairfax County, Arlington County**

19. Baseline Cost (in Thousands): **$350,000**
20. Amended Cost (in Thousands): cost estimate as of MM/DD/YYYY

21. Funding Sources: **X** Federal; **X** State; ☐ Local; ☐ Private; ☐ Bonds; **X** Other

Regional Policy Framework

22. **Provide a Comprehensive Range of Transportation Options**
Please identify all travel mode options that this project provides, enhances, supports, or promotes.

X Single Driver **X** Carpool/HOV **X** Metrorail ☐Commuter Rail ☐Streetcar/Light Rail
☐BRT **X** Express/Commuter bus **X** Metrobus **X** Local Bus **X** Bicycling **X** Walking ☐Other

Does this project improve accessibility for historically transportation-disadvantaged individuals (i.e., persons with disabilities, low-incomes, and/or limited English proficiency?) **x** Yes ☐No

23. **Promote Dynamic Activity Centers**

Does this project begin or end in an Activity Center? **X** Yes ☐No
Does this project connect two or more Activity Centers? **X** Yes ☐No
Does this project promote non-auto travel within one or more Activity Centers? **X** Yes ☐No

24. **Ensure System Maintenance, Preservation, and Safety**
Does this project contribute to enhanced system maintenance, preservation, or safety?
X Yes ☐No

25. **Maximize Operational Effectiveness and Safety**
Does this project reduce travel time on highways and/or transit without building new capacity (e.g., ITS, bus priority treatments, etc.)? **X** Yes ☐No

Does this project enhance safety for motorists, transit users, pedestrians, and/or bicyclists?
X Yes ☐No

26. **Protect and Enhance the Natural Environment**
Is this project expected to contribute to reductions in emissions of criteria pollutants and/or greenhouse gases? **X** Yes ☐No

27. **Support Interregional and International Travel and Commerce**
Please identify all freight carrier modes that this project enhances, supports, or promotes.
☐Long-Haul Truck ☐Local Delivery ☐Rail ☐Air

Please identify all passenger carrier modes that this project enhances, supports, or promotes.
☐Air ☐Amtrak intercity passenger rail **X** Intercity bus

28. **Additional Policy Framework**
In the box below, please provide any additional information that describes how this project further supports or advances these and other regional goals.

MAP-21 PLANNING FACTORS

29. Please identify any and all planning factors that are addressed by this project:

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

b. **X** Increase the **safety** of the transportation system for all motorized and non-motorized users.
i. Is this project being proposed specifically to address a safety issue? ☐ Yes; **X** No
ii. If yes, briefly describe (in quantifiable terms, where possible) the nature of the safety problem:

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

d. **X** Increase **accessibility and mobility** of people.

e. **X** Increase accessibility and mobility of **freight.**

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

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

h. **X** Promote efficient system **management and operation**.

i. **X** Emphasize the **preservation** of the existing transportation system.

ENVIRONMENTAL MITIGATION

30. Have any potential mitigation activities been identified for this project? ☐ Yes; **X** No

a. If yes, what types of mitigation activities have been identified?
☐ Air Quality; ☐ Floodplains; ☐ Socioeconomics; ☐ Geology, Soils and Groundwater; ☐

Vibrations;
☐ Energy; ☐ Noise; ☐ Surface Water; ☐ Hazardous and Contaminated Materials; ☐ Wetlands

The Environmental Process has not started yet. VDOT will assess the environmental impacts of the project as required by State and Federal law.

CONGESTION MANAGEMENT INFORMATION

31. Congested Conditions

a. Do traffic congestion conditions necessitate the proposed project or program?
X Yes; ☐ No

b. If so, is the congestion recurring or non-recurring? **X** Recurring; ☐ Non-recurring

c. If the congestion is on another facility, please identify it:

32. Capacity

a. Is this a capacity-increasing project on a limited access highway or other principal arterial? **X** Yes; ☐ No

b. If the answer to Question 32.a was "yes", are any of the following exemption criteria true about the project? (Choose one, or indicate that none of the exemption criteria apply):

X None of the exemption criteria apply to this project – a Congestion Management Documentation Form is required

☐ The project will not use federal funds in any phase of development or construction (100% state, local, and/or private funding)

☐ The number of lane-miles added to the highway system by the project totals less than one lane-mile

☐ The project is an intersection reconstruction or other traffic engineering improvement, including replacement of an at-grade intersection with an interchange

☐ The project, such as a transit, bicycle or pedestrian facility, will not allow private single-occupant motor vehicles

☐ The project consists of preliminary studies or engineering only, and is not funded for construction

☐ The construction costs for the project are less than $10 million.

c. If the project is not exempt and requires a Congestion Management Documentation Form, click here to open a blank Congestion Management Documentation Form.

RECORD MANAGEMENT

33. Completed Year:

34. ☐ Project is being withdrawn from the CLRP.

35. Withdrawn Date: MM/DD/YYYY

36. Record Creator:

37. Created On:

38. Last Updated by:

39. Last Updated On:

40. Comments:

Transit Service Enhancements for I-66 Inside the Beltway 2015 CLRP Submission (placeholder subject to change**)

Route	Change
New Outside the Beltway Services	
Rapid Bus Service from outside the Beltway: Haymarket to Arlington/DC Gainesville to Arlington/DC Manassas to Arlington/DC	Bi-directonal, all day + weekend
New Priority Bus Services	
U.S. 29 Priority Bus	Bi-directional, all day service
U.S. 50 Priority Bus – via Ballston	Bi-directional, all day service
U.S. 50 Priority Bus – via U.S. 50	Add route from Fair Lakes to D.C. core along U.S. 50
U.S. 50 Priority Bus – Tysons	Add route from Tysons Corner along U.S. 50 and Wilson Boulevard
Local Routes in Study Area:	
Metrobus 1B	Increase peak-period frequency; improve inbound runtime
Metrobus 1C	Increase peak and off-peak frequencies
Metrobus 1E	Improve runtime
Metrobus 2C	Increase peak and off-peak frequencies
Metrobus 3A	Extend routing to NVCC and East Falls Church and increase frequency
Metrobus 3E	Add reverse-peak direction service and increase peak-direction service frequency; add off-peak service
Metrobus 3T	Increase off-peak-period frequency
Metrobus 4A	Reroute to end at Seven Corners; increase frequency
Metrobus 4E	Increase peak-period frequency, improve runtime
Metrobus 4H	Improve runtime
Metrobus 10B	Increase peak-period frequency
Metrobus 15L	Increase peak-period frequency
Metrobus 22A	Increase peak-period frequency
Metrobus 23A	Increase peak-period frequency
Metrobus 23C	Increase peak-period frequency
Metrobus 25A	Increase peak and off-peak frequencies
Metrobus 25B	Increase northbound off-peak frequency and peak frequencies in both directions
Metrobus 28A	Increase peak-period frequency, improve runtime
Metrobus 28E	New route between Skyline Plaza and East Falls Church
Metrobus 38B	Increase frequency
ART	
ART 42	Increase the reverse-peak direction, peak-period frequency
ART 45	Increase peak-period frequency, improve run time
ART 52	Increase peak and off-peak frequencies
ART #75	Extend routing to Shirlington and Virginia Square; add off-peak service
ART #77	Extend to Rosslyn and increase frequency
New ART1	Add route between Arlington Hall and Crystal City
New ART2	Add route between Court House and Pentagon City

**Services subject to change based on environmental study, public outreach, and stakeholder working group inputs.

Draft 2/11/15

FINANCIALLY CONSTRAINED LONG-RANGE TRANSPORTATION PLAN FOR 2040
PROJECT DESCRIPTION FORM
BASIC PROJECT INFORMATION

1. Submitting Agency: **Virginia Department of Transportation**

2. Secondary Agency: **Virginia Department of Rail & Public Transportation**

3. Agency Project ID: **0066-96A-297, P101 UPC#105500**

4. Project Type:
   X Interstate ☐ Primary ☐ Secondary ☐ Urban ☐ Bridge ☐ Bike/Ped
   X Transit ☐ CMAQ **X** ITS ☐ Enhancement ☐ Other
   ☐ Federal Lands Highways Program ☐ Human Service Transportation Coordination
   ☐ TERMs

5. Category:
   X System Expansion; ☐ System Maintenance; **X** Operational Program;
   ☐ Study; ☐ Other

6. Project Name: **I-66 Corridor Improvements Project Outside the Beltway**
   Prefix Route Name Modifier

7. Facility: **I-66**

8. From: **US 15, Prince William County**

9. To: **I-495, Fairfax County**

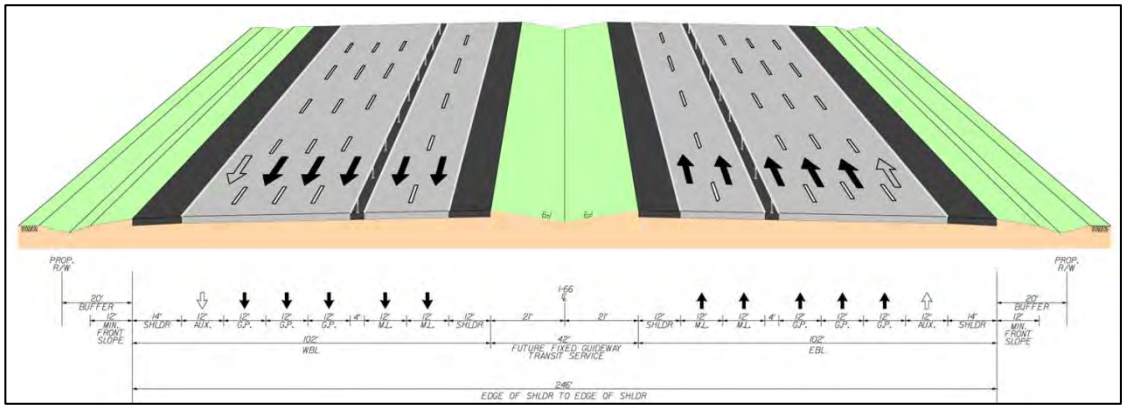
10. Description:

The Commonwealth's I-66 Corridor Improvements Project ("Project") outside the Beltway includes:

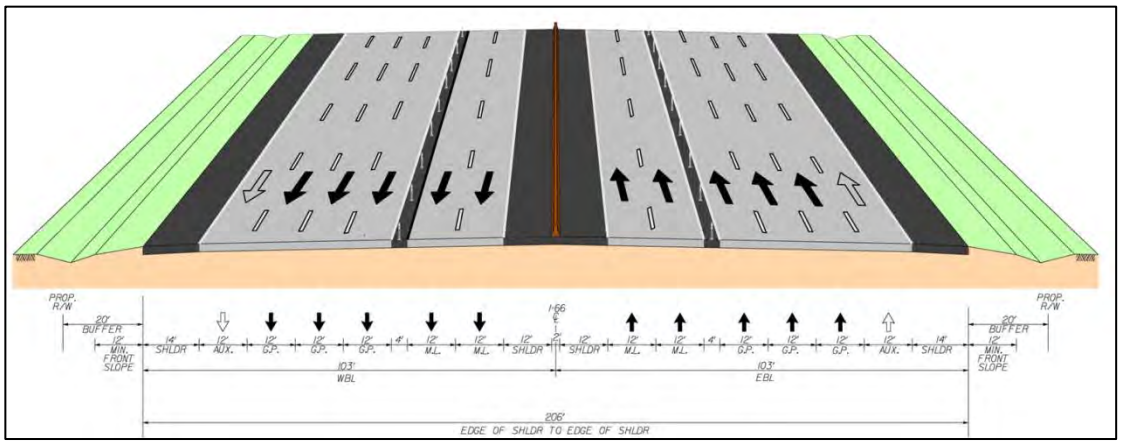
- Three general purpose lanes in each direction (with auxiliary lanes where needed);
- Two barrier-separated managed express lanes in each direction (the existing high-occupancy vehicle (HOV) lane will be converted to an express lane and one new express lane will be added);
- New high-frequency bus service with more predictable travel times;
- Direct access ramps to and from the managed lanes;
- New or expanded commuter park and ride lots in the corridor.

Below are two alternative typical sections being considered, depending on anticipated transit needs and impacts along the corridor.

Alternative 2A – Flexible Barrier with Buffer & Median reserved for Future Center Transit



Alternative 2B – Flexible Barrier with Buffer and No Median



As on the I-495 and I-95 Express Lanes, access to the I-66 Express Lanes will

be available to automobiles, motorcycles, light-trucks, emergency vehicles, buses and transit vehicles only. Vehicles with three or more occupants and motorcycles would travel on the Express Lanes for free, as per the code of the Commonwealth of Virginia and Federal law. The facility will be operated and HOV occupancy and toll payment enforced in a manner that complies with the statutory requirements of the Commonwealth**.** Other vehicles not meeting the occupancy requirement of 3+ will pay a toll, using electronic toll collection equipment, at a rate that will vary based on congestion, to ensure free-flow conditions as specified by Federal regulations.

The region's current Constrained Long Range Plan calls for all HOV lanes in Northern Virginia to be HOV-3+ by 2020. Allowing HOV-3's to ride free is consistent with this policy change, and will also match the High Occupancy Toll lane occupancy requirement on 495 and 95. The Project expands the NoVA network of Express lanes by connecting to the I-495 Express Lanes Project, which also connects to the newly constructed I-95 Express Lanes.

The project includes a robust transit component, consisting of new and modified commuter bus services providing one-seat rides between park and ride lots and major regional destinations, and new frequent all-day Rapid Bus service on I-66 to complement Metrorail in the corridor. New and expanded park and ride lots are included throughout the corridor, with easy or direct access to the managed lanes. Finally, to promote and incentivize alternative modes in the corridor, new and enhanced corridor transportation demand management strategies will be included as part of the project (see attachments).

Bicycle and Pedestrian accommodations in the corridor are currently being developed in cooperation with the localities, and will be consistent with VDOT's Policy for Integrating Bicycle and Pedestrian Accommodations (www.virginiadot.org/**bike**ped**policy**/).

Project construction, operations and maintenance will be procured using Virginia's Public-Private Transportation Act (PPTA) legislation leading to the selection of a private consortium ("Concessionaire"). A comprehensive agreement will ultimately outline all of the terms and conditions of the Public-Private Partnership.

Tolling Policy

Express lanes use dynamic pricing to maintain free-flowing conditions for all users, even during rush hour. The toll rates will vary throughout the day corresponding to demand and congestion levels. Toll prices will be adjusted in response to the level of traffic to ensure free flowing operations.

Dynamic message signs will provide drivers with current toll rates so they can choose whether or not to use the lanes. Toll collection on the Express Lanes

will be totally electronic. There will be no toll booths. The dynamic message signs will be supplemented by other notification/communications methods to ensure all users, including transit operators, have as much advance notice of traffic conditions as is possible.

MAP-21 mandates strict performance standards which are intended to ensure free-flowing conditions on the Express lanes. The proposed Express lanes project will include performance monitoring as an integral part of the project and ensure that the MAP-21 mandated performance standards are complied with as a minimum. More specifically, the project will meet all applicable requirements of MAP-21 regarding "HOV Facility Management, Operation, Monitoring, and Enforcement" as described in Section 166 of Title 23 U.S.C., inclusive of the amendments (deletions, insertions and additions) prescribed by MAP-21 Section 1514 "HOV FACILITIES". This includes a minimum average operating speed of 45 mph for 90% of the time over a specific period of time during the peak period.

Schedule

Construction for the Project is projected to begin in 2017, with an estimated construction completion time of 4-5 years. The facility is expected to enter operations in early 2021-2022. The current schedule calls for environmental review in compliance with Federal (NEPA) and state regulations. FHWA has further conditioned environmental approval to the Project being included in a conforming Transportation Improvement Program ("TIP") and Constrained Long Range Plan ("CLRP") for construction.

Federal Environmental Review ("NEPA") Process

The Tier 2 Environmental Assessment scope builds upon and includes a combination of concepts identified in the Tier 1 Environmental Impact Statement. It will evaluate site-specific conditions and potential effects the proposed improvements would have on air quality, noise, neighborhoods, parks, recreation areas, historic properties, wetlands and streams. The environmental review is currently being conducted in full accordance and compliance with Federal and state law. FHWA is the 'Lead Agency' for the NEPA document and will provide document review / approval and issuance of FONSI at the conclusion of the process.

Transportation Management Plan

As a matter of policy, practice and a reflection the agency's commitment to safety, VDOT adopts Transportation Management Plans for its construction projects. Such Plans are also required by FHWA for large projects such as this initiative. The congestion mitigation plans used for projects such as the Springfield Interchange, the I-495 Express Lanes, and the I-95 Express Lanes

have been very successful in managing traffic during construction. VDOT and the Concessionaire will similarly implement a robust Transportation Management Plan for this Project.

Coordination with Other Projects in the Corridor

This project is being coordinated with other active projects in the corridor such as:

- Vaden Drive ramp improvements
- Active Traffic Management (ATM) project
- Route 28 / I-66 interchange improvements
- US 15 / I-66 interchange improvements
- HOV lane project from Gainesville to US 15

Financial Plan

The total cost for the proposed Project is estimated to be approximately $2 – 3 billion in year of expenditure dollars. Funding sources for the Project will include a combination of private and public equity and third party debt, including private bank loans and/or Private Activity Bonds, with the potential for TIFIA funding as a form of subordinated debt. As the Project progresses, VDOT will explore all avenues of funding to ensure the lowest cost of capital for the Project.

The Concessionaire will be fully authorized to toll the facility, which will serve to pay debt service, operating and maintenance costs and return on equity. Toll revenue will be the main source of revenue. The Commonwealth will enter into a Comprehensive Agreement with the selected Concessionaire, which will authorize the Concessionaire to raise the necessary funds to construct the Project.

Stakeholder Outreach

A Stakeholder Technical Advisory Group (STAG) has been established and meets regularly. The STAG provides the opportunity for direct engagement with various groups along the corridor, including local jurisdictions, environmental resource agencies, transit service providers, and various other agencies. Stakeholder and public outreach is a high priority for the I-66 project team. A Transit/TDM Technical Advisory Group (TTAG) is also actively engaged in project development. There are opportunities for the public to learn more about the Project, as well as provide comments, through public meetings, the project website, and community dialogs in addition to other items. The Project may be updated in future CLRPs in response to the environmental process, public outreach, and stakeholder input.

11. Projected Completion Year: **2022**

12. Project Manager: **Ms Susan Shaw, P.E.**

13. Project Manager E-Mail: **susan.shaw@VDOT.Virginia.gov**

14. Project Information URL: **http://www.transform66.org**

15. Total Miles: **25 miles**

16. Schematic: **See figures in items 9 and 10 above.**

17. Documentation: **The graphics included in the response to items 9 and 10 above will be uploaded to allow a more readable version.**

18. Jurisdictions: **Fairfax County, Prince William County**

19. Baseline Cost (in Thousands): **$2,000,000 - $3,000,000 (approximately 2 to 3 $billion) combined public & private cost estimate as of 11/10/2014**

20. Amended Cost (in Thousands): cost estimate as of MM/DD/YYYY

21. Funding Sources: **X** Federal; **X** State; **X** Local; **X** Private; **X** Bonds; ☐ Other

Regional Policy Framework

22. **Provide a Comprehensive Range of Transportation Options**
Please identify all travel mode options that this project provides, enhances, supports, or promotes.

X Single Driver **X** Carpool/HOV **X** Metrorail ☐Commuter Rail ☐Streetcar/Light Rail
X BRT **X** Express/Commuter bus **X** Metrobus **X** Local Bus **X** Bicycling **X** Walking ☐Other

Does this project improve accessibility for historically transportation-disadvantaged individuals (i.e., persons with disabilities, low-incomes, and/or limited English proficiency?) **X** Yes ☐No

23. **Promote Dynamic Activity Centers**
Does this project begin or end in an Activity Center? **X** Yes ☐No
Does this project connect two or more Activity Centers? **X** Yes ☐No
Does this project promote non-auto travel within one or more Activity Centers? **X** Yes ☐No

24. **Ensure System Maintenance, Preservation, and Safety**
Does this project contribute to enhanced system maintenance, preservation, or safety?
X Yes ☐No

25. **Maximize Operational Effectiveness and Safety**
Does this project reduce travel time on highways and/or transit without building new capacity (e.g., ITS, bus priority treatments, etc.)? ☐Yes **X** No

Does this project enhance safety for motorists, transit users, pedestrians, and/or bicyclists?
X Yes ☐No

26. **Protect and Enhance the Natural Environment**
Is this project expected to contribute to reductions in emissions of criteria pollutants and/or greenhouse gases? **X** Yes ☐No

27. **Support Interregional and International Travel and Commerce**
Please identify all freight carrier modes that this project enhances, supports, or promotes.
X Long-Haul Truck **X** Local Delivery ☐Rail ☐Air

Please identify all passenger carrier modes that this project enhances, supports, or promotes.
☐Air ☐Amtrak intercity passenger rail **X** Intercity bus

28. **Additional Policy Framework**
In the box below, please provide any additional information that describes how this project further supports or advances these and other regional goals.

MAP-21 PLANNING FACTORS

29. Please identify any and all planning factors that are addressed by this project:

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

b. **X** Increase the **safety** of the transportation system for all motorized and non-motorized users.
i. Is this project being proposed specifically to address a safety issue? **X** Yes; ☐ No
ii. If yes, briefly describe (in quantifiable terms, where possible) the nature of the safety problem:

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

d. **X** Increase **accessibility and mobility** of people.

e. **X** Increase accessibility and mobility of **freight.**

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

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

h. **X** Promote efficient system **management and operation**.

i. **X** Emphasize the **preservation** of the existing transportation system.

ENVIRONMENTAL MITIGATION

30. Have any potential mitigation activities been identified for this project? **X** Yes; ☐ No

a. If yes, what types of mitigation activities have been identified?

☐ Air Quality; **X** Floodplains; **X** Socioeconomics; **X** Geology, Soils and Groundwater; ☐ Vibrations;
☐ Energy; **X** Noise; ☐ Surface Water; **X** Hazardous and Contaminated Materials; **X** Wetlands

CONGESTION MANAGEMENT INFORMATION

31. Congested Conditions

a. Do traffic congestion conditions necessitate the proposed project or program?
X Yes; ☐ No

b. If so, is the congestion recurring or non-recurring? **X** Recurring; ☐ Non-recurring

c. If the congestion is on another facility, please identify it:

32. Capacity

a. Is this a capacity-increasing project on a limited access highway or other principal arterial? **X** Yes; ☐No

b. If the answer to Question 32.a was "yes", are any of the following exemption criteria true about the project? (Choose one, or indicate that none of the exemption criteria apply):

X None of the exemption criteria apply to this project – a Congestion Management Documentation Form is required

☐ The project will not use federal funds in any phase of development or construction (100% state, local, and/or private funding)

☐ The number of lane-miles added to the highway system by the project totals less than one lane-mile

☐ The project is an intersection reconstruction or other traffic engineering improvement, including replacement of an at-grade intersection with an interchange

☐ The project, such as a transit, bicycle or pedestrian facility, will not allow private single-occupant motor vehicles

☐ The project consists of preliminary studies or engineering only, and is not funded for construction

☐ The construction costs for the project are less than $10 million.

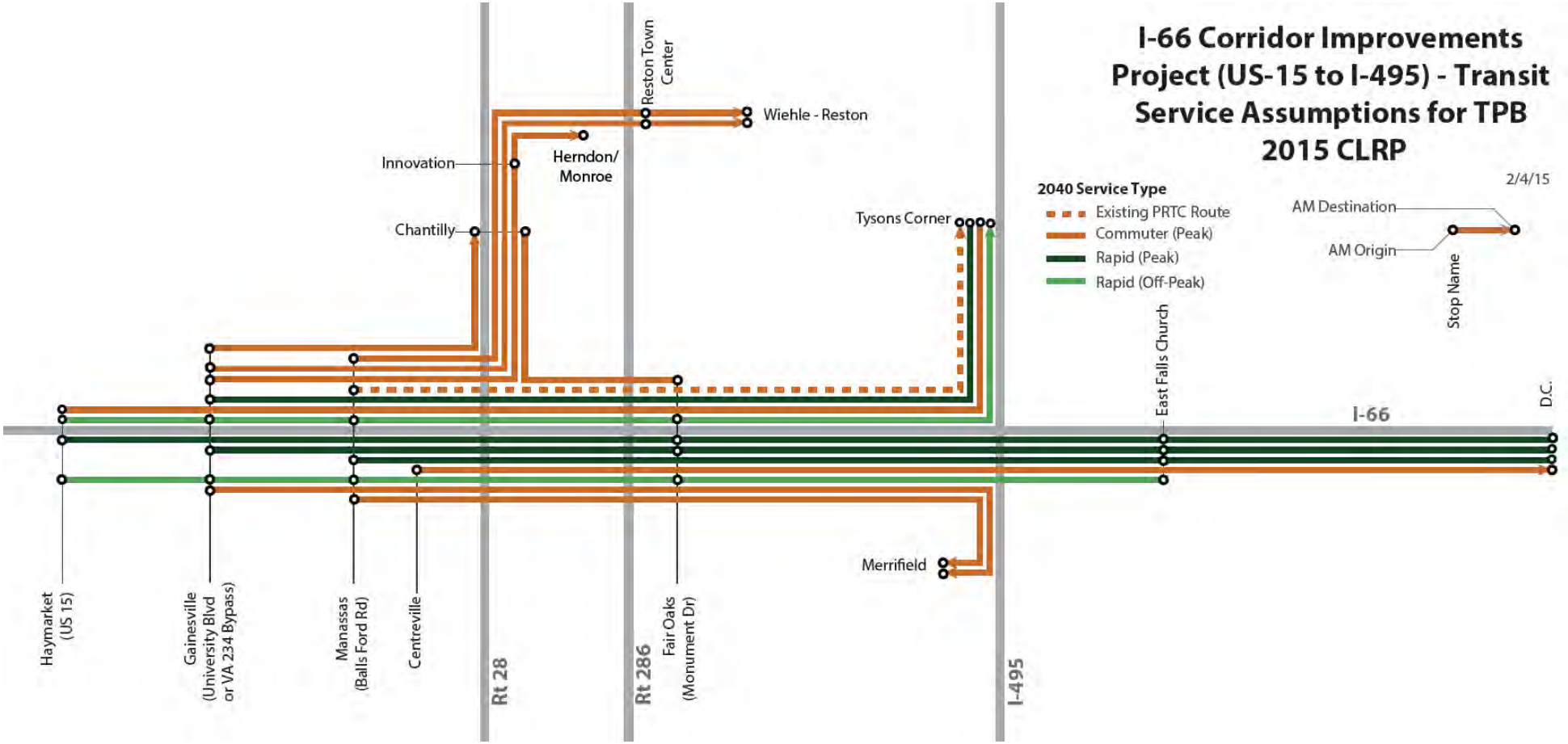
c. If the project is not exempt and requires a Congestion Management Documentation Form, click here to open a blank Congestion Management Documentation Form.

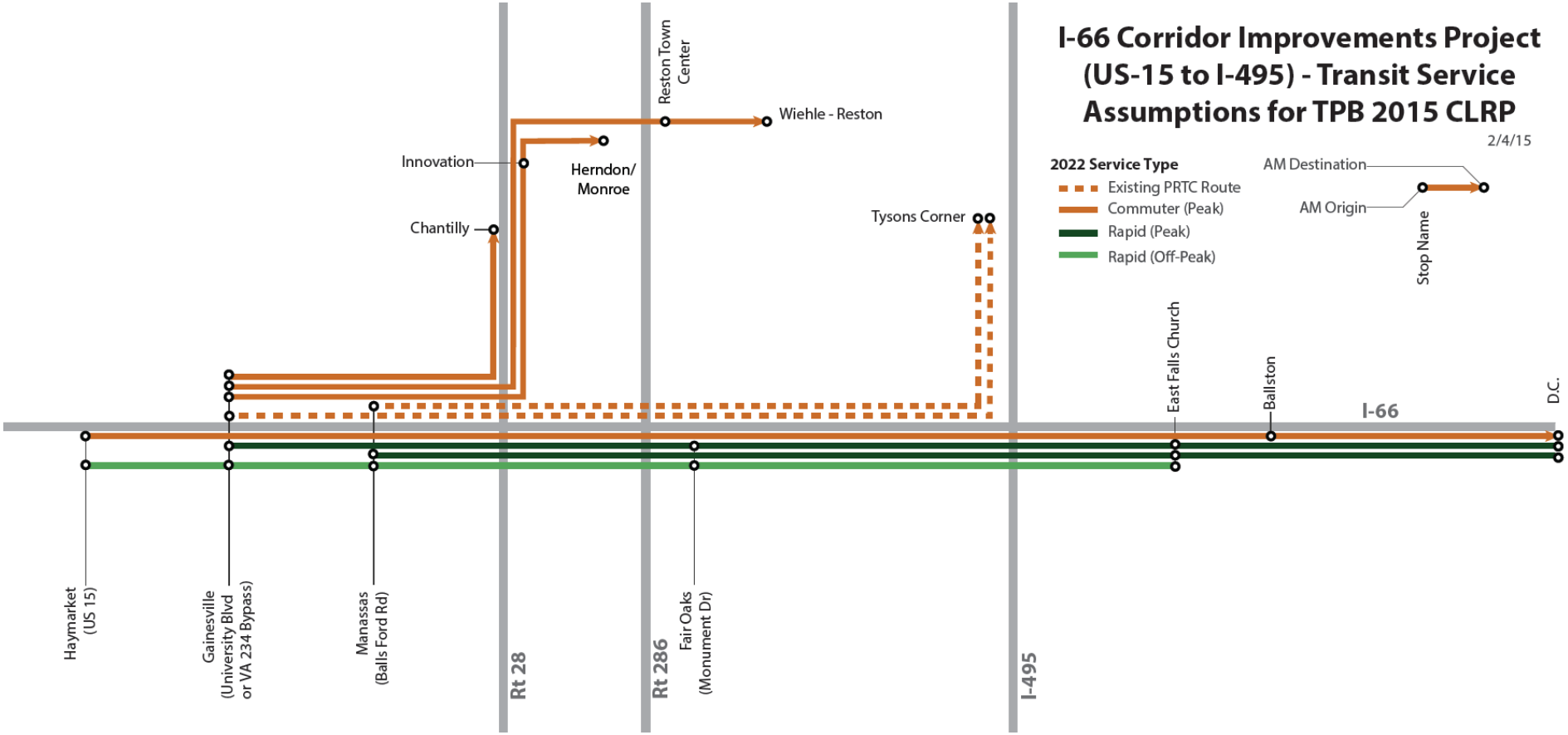
RECORD MANAGEMENT

33. Completed Year:

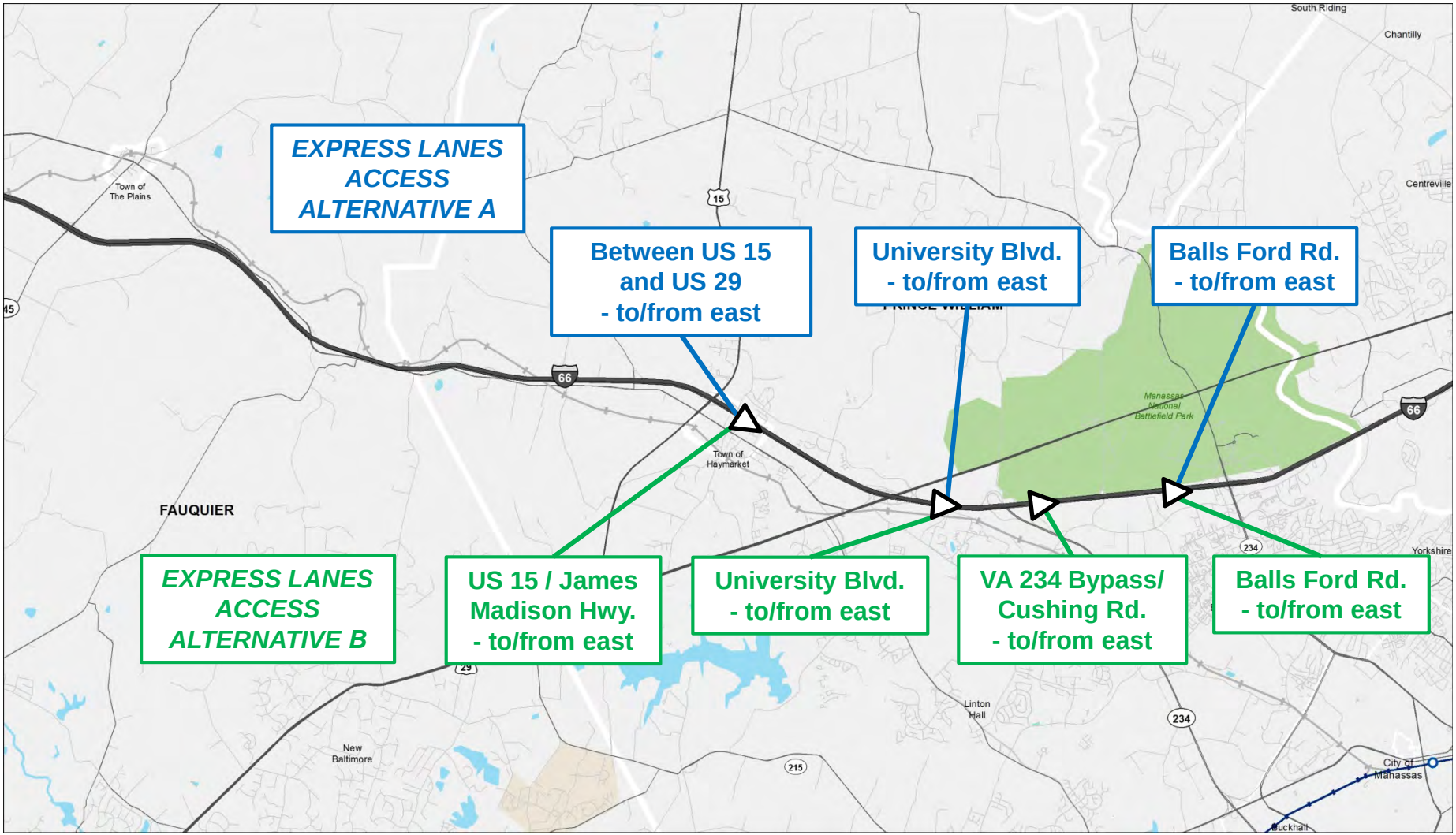
I-66 Corridor Improvements Project (US 15 to I-495) - Transit Service Assumptions for TPB 2015 CLRP									
Route	New/ Existing	Year	Notes	Direction	Times	2022 Average Peak Frequency (minutes)	2022 Average Off-Peak Frequency (minutes)	2040 Average Peak Frequency (minutes)	2040 Average Off-Peak Frequency (minutes)
Haymarket to Arlington/Downtown DC Commuter Bus	New	2022		Peak Only	Peak Only	60	-	Replaced by Rapid Bus Service	
Haymarket to Arlington/Downtown Rapid Bus	New	2040	Stop at Monument; One off-peak route serves Haymarket, Gainesville & Manassas and terminates at E. Falls Church.	Bi-directional	All-day + Weekend	-	-	30	30
Haymarket to Tysons Corner Commuter Bus	New	2040		Peak Only	Peak Only	-	-	45	-
Gainesville to East Falls Church/ Downtown DC Rapid Bus		2022	Stop at Monument; One off-peak route serves Haymarket, Gainesville & Manassas and terminates at E. Falls Church.	Bi-directional	All-day + Weekend	25	60	10	30
Gainesville to Tysons Corner Commuter Bus	*Existing*		*PRTC's Linton Hall Metro Direct*	*Peak Only*	*Peak Only*	*30*	-	*Continued operation of existing service at the discretion of PRTC with Rapid Bus in place.*	
Gainesville to Tysons Corner Rapid Bus		2040	One off-peak route serves Haymarket, Gainesville & Manassas.	Bi-directional	All-day + Weekend	-	-	25	60
Gainesville to Merrifield Commuter Bus		2040		Peak Only	Peak Only	-	-	35	-
Gainesville to Reston Commuter Bus		2022		Peak Only	Peak Only	45	-	25	-
Gainesville to Innovation/Herndon Commuter Bus		2022		Peak Only	Peak Only	60	-	30	-
Gainesville to Chantilly Commuter Bus		2022		Peak Only	Peak Only	60	-	25	-
Manassas to East Falls Church/Downtown DC Rapid Bus		2022	One off-peak route serves Haymarket, Gainesville & Manassas and terminates at E. Falls Church.	Bi-directional	All-day + Weekend	45	60	25	30
Manassas to Tysons Corner Commuter Bus	*Existing*		*PRTC's Manassas Metro Direct*	*Peak Only*	*Limited mid-day*	*30*	*60*	*30*	*60*
Manassas to Merrifield Commuter Bus		2040		Peak Only	Peak Only	-	-	45	-
Manassas to Reston Commuter Bus		2040		Peak Only	Peak Only	-	-	60	-
Centerville to Downtown DC Commuter Bus		2040		Peak Only	Peak Only	-	-	25	-
Fair Oaks to Chantilly Commuter Bus		2040		Bi-directional	Peak Only	-	-	60	-

**Existing PRTC Metro Direct services shown for informational purposes only*


I-66 Corridor Improvements Project (US-15 to I-495) - Transit Service Assumptions for TPB 2015 CLRP
2/4/15
2040 Service Type
Existing PRTC Route
Commuter (Peak)
Rapid (Peak)
Rapid (Off-Peak)
AM Destination
AM Origin
Stop Name
Reston Town Center
Wiehle - Reston
Herndon/ Monroe
Innovation
Chantilly
Tysons Corner
East Falls Church
I-66
D.C.
Haymarket (US 15)
Gainesville (University Blvd or VA 234 Bypass)
Manassas (Balls Ford Rd)
Centreville
Rt 28
Rt 286
Fair Oaks (Monument Dr)
I-495
Merrifield

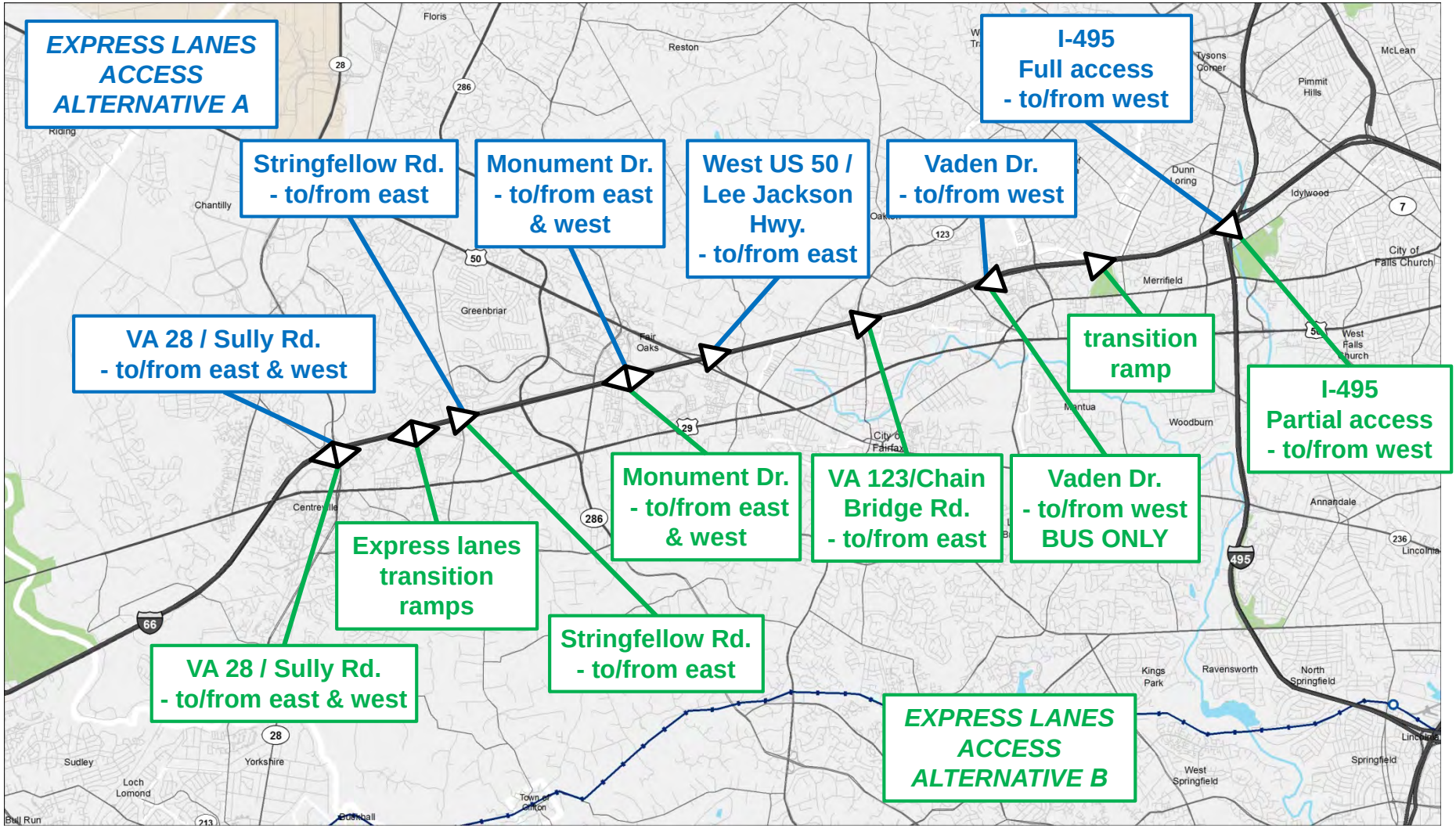

I-66 Corridor Improvements Project
(US-15 to I-495) - Transit Service
Assumptions for TPB 2015 CLRP
2/4/15
2022 Service Type
Existing PRTC Route
Commuter (Peak)
Rapid (Peak)
Rapid (Off-Peak)
AM Destination
AM Origin
Stop Name
Reston Town Center
Wiehle - Reston
Innovation
Herndon/ Monroe
Chantilly
Tysons Corner
East Falls Church
Ballston
I-66
D.C.
Haymarket (US 15)
Gainesville (University Blvd or VA 234 Bypass)
Manassas (Balls Ford Rd)
Rt 28
Rt 286
Fair Oaks (Monument Dr)
I-495

Preliminary Access Alternatives (Prince William County)



Excerpted from January 9, 2015 VDOT presentation to TPB.

Preliminary Access Alternatives (Fairfax County)



Excerpted from January 9, 2015 VDOT presentation to TPB.

FINANCIALLY CONSTRAINED LONG-RANGE TRANSPORTATION PLAN FOR 2040
PROJECT DESCRIPTION FORM

BASIC PROJECT INFORMATION

1. Submitting Agency: Fairfax County
2. Secondary Agency: VDRPT
3. Agency Project ID:
4. Project Type: ☐ Interstate ☐ Primary ☐ Secondary ☐ Urban ☐ Bridge ☐ Bike/Ped ☑ Transit ☐ CMAQ ☐ ITS ☐ Enhancement ☐ Other ☐ Federal Lands Highways Program ☐ Human Service Transportation Coordination ☐ TERMs
5. Category: ☑ System Expansion; ☐ System Maintenance; ☐ Operational Program; ☐ Study; ☐ Other
6. Project Name: US 1 Bus Rapid Transit from Huntington Metro Station to Woodbridge VRE Station

	Prefix	Route	Name	Modifier
7. Facility:	US	1	Richmond Highway	BRT
8. From:			North Kings Highway/Huntington Metro Station	
9. To:			Woodbridge VRE Station	

10. Description: Phase 1: BRT will operate in dedicated median lanes in Fairfax County between Huntington Metro Station and an interim terminal at Hybla Valley (complete 2026).

    Phase 2: BRT will operate in dedicated median lanes in Fairfax County between Huntington Metro Station and an interim terminal at Fort Belvoir (complete 2028).

    Phase 3: BRT will operate in dedicated median lanes in Fairfax County and in mixed traffic in Prince William County between Huntington Metro Station and Woodbridge VRE Station (complete 2032).
11. Projected Completion Year: 2032
12. Project Manager:
13. Project Manager E-Mail:
14. Project Information URL:
15. Total Miles: 15
16. Schematic:
17. Documentation:
18. Jurisdictions: Fairfax County, Prince William County
19. Baseline Cost (in Thousands): $1 billion cost estimate as of 01/29/2015
20. Amended Cost (in Thousands): cost estimate as of MM/DD/YYYY
21. Funding Sources: ☑ Federal; ☑ State; ☑ Local; ☐ Private; ☑ Bonds; ☐ Other

Regional Policy Framework

22. **Provide a Comprehensive Range of Transportation Options**

    Please identify all travel mode options that this project provides, enhances, supports, or promotes.

☐Single Driver	☐Carpool/HOV		
☐Metrorail	☐Commuter Rail	☐Streetcar/Light Rail	
☑BRT	☐Express/Commuter bus	☐Metrobus	☐Local Bus
☐Bicycling	☐Walking	☐Other	

Does this project improve accessibility for historically transportation-disadvantaged individuals (i.e., persons with disabilities, low-incomes, and/or limited English proficiency?) ☑Yes ☐No

23. **Promote Regional Activity Centers**
Does this project begin or end in an Activity Center? ☑Yes ☐No
Does this project connect two or more Activity Centers? ☑Yes ☐No
Does this project promote non-auto travel within one or more Activity Centers? ☐Yes ☐No

24. **Ensure System Maintenance, Preservation, and Safety**
Does this project contribute to enhanced system maintenance, preservation, or safety? ☑Yes ☐No

25. **Maximize Operational Effectiveness and Safety**
Does this project reduce travel time on highways and/or transit without building new capacity (e.g., ITS, bus priority treatments, etc.)? ☐Yes ☑No
Does this project enhance safety for motorists, transit users, pedestrians, and/or bicyclists? ☑Yes ☐No

26. **Protect and Enhance the Natural Environment**
Is this project expected to contribute to reductions in emissions of criteria pollutants? ☑Yes ☐No
Is this project expected to contribute to reductions in emissions of greenhouse gases? ☑Yes ☐No

27. **Support Interregional and International Travel and Commerce**

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

☐Long-Haul Truck ☐Local Delivery ☐Rail ☐Air

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

☐Air ☐Amtrak intercity passenger rail ☐Intercity bus

28. **Additional Policy Framework**

In the box below, please provide any additional information that describes how this project further supports or advances these and other regional goals.

MAP-21 PLANNING FACTORS

29. Please identify any and all planning factors that are addressed by this project:

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

b. ☑ Increase the **safety** of the transportation system for all motorized and non-motorized users.

i. Is this project being proposed specifically to address a safety issue? ☐ Yes; ☑ No

ii. If yes, briefly describe (in quantifiable terms, where possible) the nature of the safety problem:

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

d. ☑ Increase **accessibility and mobility** of people.

e. ☐ Increase accessibility and mobility of **freight.**

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

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

h. ☑ Promote efficient system **management and operation**.

i. ☐ Emphasize the **preservation** of the existing transportation system.

ENVIRONMENTAL MITIGATION

30. Have any potential mitigation activities been identified for this project? ☐ Yes; ☑No
    a. If yes, what types of mitigation activities have been identified?
    ☐ Air Quality; ☐ Floodplains; ☐ Socioeconomics; ☐ Geology, Soils and Groundwater; ☐ Vibrations; ☐ Energy; ☐ Noise; ☐ Surface Water; ☐ Hazardous and Contaminated Materials; ☐ Wetlands

CONGESTION MANAGEMENT INFORMATION

31. Congested Conditions
    a. Do traffic congestion conditions necessitate the proposed project or program? ☑ Yes; ☐ No
    b. If so, is the congestion recurring or non-recurring? ☑ Recurring; ☐ Non-recurring
    c. If the congestion is on another facility, please identify it:
32. Capacity
    a. Is this a capacity-increasing project on a limited access highway or other principal arterial? ☑ Yes; ☐ No
    b. If the answer to Question 26.a was "yes", are any of the following exemption criteria true about the project? (Choose one, or indicate that none of the exemption criteria apply):

    ☐ None of the exemption criteria apply to this project – a Congestion Management Documentation Form is required
    ☐ The project will not use federal funds in any phase of development or construction (100% state, local, and/or private funding)
    ☐ The number of lane-miles added to the highway system by the project totals less than one lane-mile
    ☐ The project is an intersection reconstruction or other traffic engineering improvement, including replacement of an at-grade intersection with an interchange
    ☑ The project, such as a transit, bicycle or pedestrian facility, will not allow private single-occupant motor vehicles
    ☐ The project consists of preliminary studies or engineering only, and is not funded for construction
    ☐ The construction costs for the project are less than $10 million.

    c. If the project is not exempt and requires a Congestion Management Documentation Form, click here to open a blank Congestion Management Documentation Form.

RECORD MANAGEMENT

33. Completed Year:
34. ☐ Project is being withdrawn from the CLRP.
35. Withdrawn Date: MM/DD/YYYY
36. Record Creator:
37. Created On:
38. Last Updated by:
39. Last Updated On:
40. Comments:

2015 CLRP AMENDMENT AND FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (transit)

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
DDOT						
614	DCSTCARA	Construct	Anacostia Streetcar Extension	Howard Road Firth Sterling	Good Hope Road SE	*2017* ~~*2016*~~
~~615~~		~~Construct~~	~~Benning Rd. Streetcar Spur~~	~~Benning Rd.~~	~~Minnesota Ave. Metro Station~~	~~*2015*~~
613	DCSTHST2	Construct	Benning Road Streetcar	Oklahoma Avenue NE	45th Street/Benning Road Metro	*2020* ~~*2016*~~
668	DCMALL	Implement	DC Circulator	National Mall Area Route		2015
664	CATHEXT	Implement ~~Study~~	DC Circulator Expansion	**Union Station to Georgetown Route** ~~Phase I TDP Routes Wisconsin/Woodley~~	**Extension to** National Cathedral	2017 ~~Not Coded~~
	WATEREXT	Implement ~~Study~~	DC Circulator Expansion	**Union Station to Navy Yard Route** ~~Phase I TDP Routes Navy Yard/ M Street SE~~	**Extension to** Waterfront ~~/ Maine Ave. SW~~	2017 ~~Not Coded~~
	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* ~~*2015*~~
582		Study	H St. NW Peak Period Bus-Only Lanes	17th St. NW	New York Ave. NW	Not Coded
544	DCSTHST2	Construct	H Street/Benning Road Streetcar	3rd Street NE (near Union Station)	Oklahoma Avenue, NE	2015 ~~2014~~
583		Study	I St. NW Peak Period Bus Only Lanes	13th St. NW	Pennsylvania Ave. NW	Not Coded
	KSTBUS	Reconstruct	K St. Transitway	Mt. Vernon Square/9th St. NW	Washington Circle/23rd St. NW	2020 ~~2015~~
612	DCSTMST	Construct	M Street SE/SW Streetcar	Good Hope Road SE	Maine Avenue SW	2020
610	DCSTGTWN	Construct	Union Station/Georgetown Streetcar	K St. / 34th St. NW ~~Wisconsin Ave. under Whitehurst Freeway NW~~	3rd/H St. (near Union Station)	2020
	TIGER16TH	Implement	16th St. Bus Priority Improvements (TIGER GRANT)			2016 ~~2015~~
	TIGERGA	Implement	Georgia Ave. Bus Priority Improvements (TIGER GRANT)			2016 ~~2015~~
	TIGERWI	Implement	Wisconsin Ave. Bus Priority Improvements (TIGER GRANT)	Friendship Heights Metro Station	Naylor Road Metrorail Station	2016 ~~2015~~

2015 CLRP AMENDMENT AND FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (transit)

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
	TIGERTRK	Implement	Roosevelt Bridge to K St. Bus Priority Improvements (TIGER GRANT)			2016 ~~2015~~
	TIGER14TH	Implement	14th St. Bus Priority Improvements (TIGER GRANT)			2016 ~~2015~~
MDOT/MTA						
587		Implement	Brunswick - Additional Access Point			2029
588		Implement	Brunswick - New Station			
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
482		Construct	Takoma/Langley Park Transit Center	Intersection New Hampshire Ave. and University Blvd.	Takoma/Langley Park	2015
	TIGERADD	Implement	Addison Rd. Bus Improvements (TIGER GRANT)			2016
	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						

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2015 CLRP AMENDMENT AND FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS
(transit)

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
514		Modify	Revised Metrorail Operating Plan			
462		Implement	Anacostia/Congress Heights Bus Improvements			2012
466		Implement	Eastover/Addison Bus Improvements			2014
461		Implement	East-West Highway (Prince George's County) Bus Improvements			2012
460		Implement	Greenbelt/Twinbrook Bus Improvements			2012
463		Implement	Little River Turnpike/Duke Street Bus Improvements			2015
467		Implement	North Capitol Street Bus Improvements			2015
465		Implement	Rhode Island Avenue (DC) Bus Improvements			2013
468		Implement	Silver Line Corridor Bus Service			2013
459		Implement	U Street/Garfield Bus Improvements			2011
464		Implement	University Boulevard/East-West Highway Bus Improvments			2013
VDOT						
	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)	Crystal City Metro Station	2015 ~~2014~~
~~676~~		~~Construct~~	~~Crystal City Streetcar~~	~~Vicinity of Glebe Rd. Ext-City/County Line~~	~~Pentagon City Metro Station~~	~~2019~~
488	MWAYBRT	Construct	Potomac Yard Transit Bus Lanes (2 lanes)	Four Mile Run	Braddock Road	2014
677		Study	US 1 Corridor Streetcar Conversion	Four Mile Run	Braddock Road	Not Coded
489	POTYDS	Construct	Metro Station (Proposed)	Potomac Yard		2021
~~490~~		~~Construct~~	~~Columbia Pike Streetcar~~	~~Skyline Center~~	~~Pentagon City~~	~~2017~~
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

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2015 CLRP AMENDMENT AND FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (transit)

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
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
502	SILVER1	Construct	Dulles Corridor Metrorail	East Falls Church Metrorail Station	Wiehle Avenue	Complete
503	SILVER 2	Construct	Dulles Corridor Metrorail	Wiehle-Reston East Station	VA 772	2016
629	POTSHRS	Construct	VRE - Potomac Shores Commuter Rail Station	Potomac Shores	Prince William County	2017
	VRESPOTS	Construct	VRE - Spotsylvania Station	extend VRE to Spotsylvania		2015
504	VREFREQ	Implement	VRE Service Improvements (Reduce Headways)	Fredericksburg and Manassas lines		2020
630		Construct	VRE 3rd Track	Arkendale, Stafford Co.	Powell's Creek, Prince William County	2015
506	TIGERVAN	Implement	West End Transitway (TIGER Grant) ~~Van Dorn - Pentagon BRT~~	Van Dorn Street Metro	Pentagon	2015
505	VANDBRT	Construct	West End Transitway (City Funded) ~~Van Dorn - Pentagon BRT~~	Van Dorn Street Metro	Pentagon	2019
507		Construct	Landmark Transit Center	Duke Street and Van Dorn Street		2023
508	ALEXBUS	Implement	DASH Service Expansion	citywide		2019
	BELTHOT	Implement	Beltway HOT lanes transit service			2020
	BELTHOT	Implement	Beltway HOT lanes transit service			2030
	TIGERVA7	Implement	VA 7 Bus Priority Improvements (TIGER GRANT)	Alexandria	Tyson's Corner	2016
Needs Record		Construct	Van Dorn Metro Station Access Improvements	Van Dorn St. Metro		2017
509	DUKEBUS	Construct	Duke Street ~~BRT~~ 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
	I66HOTI	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Inside the beltway		2025

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2015 CLRP AMENDMENT AND FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (transit)

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
	I66HOTI	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Inside the beltway		2040
	I66HOTO	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Outside the beltway		2022
	I66HOTO	Implement	I-66 Corridor Enhanced Bus Service (details shown with project description sheet)	Outside the beltway		2040
		Construct	I-66 Corridor Park and Ride lot	US 15 in Haymarket		2022
		Construct	I-66 Corridor Park and Ride lot	University Blvd. in Gainesville		2022
		Construct	I-66 Corridor Park and Ride lot	Balls Ford Road in Manassas		2022
		Expand	I-66 Corridor Park and Ride lot	Prince William Parkway		2022
		Expand	I-66 Corridor Park and Ride lot	Stringfellow Road		2022
		Expand	I-66 Corridor Park and Ride lot	Monument Drive		2022
	FFXBUS	Expand	Fairfax Connector Bus Service Expansion	Countywide		2021
	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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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS
(highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
DDOT											
550		MRR08A	Study	Long Bridge	Alexandria	L'Enfant					Not Coded
539	DI10		Downgrade	Southeast Boulevard	11th Street SE	Pennsylvania Ave. SE Barney Circle	1	3			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
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~~
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
541	DP9A	AW011, AW024A, AW001A, AW025A, CKTB6	Widen	South Capitol Street Corridor: Frederick Douglas Bridge	Independence Avenue	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 ~~2014~~

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VDOT I-66 Alternatives (A and B) Identified with varied shading.

2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility From	Facility To	Lanes From	Lanes To	Completion Date
582			Study	H St. NW Peak Period Bus-Only Lanes	17th St. NW	New York Ave. NW					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 ~~2014~~
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	~~2014~~ 2015
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
700	DS7		Reduce Capacity	4th Street SW	M Street	P Street			4	2	2015
701	DS8		Reduce Capacity	6th Street NE	Florida Avenue	K Street			2	1	2015
702	DS9		Reduce Capacity	7th Street NW	New York Avenue	N Street			4	2	2015
703	DS10		Reduce Capacity	12th Street NW	Pennsylvania Avenue	Massachusetts Avenue			4	3	2015
704	DS11		Reduce Capacity	14th Street NW	Florida Avenue	Columbia Road			4	2	2015
705	DS12		Reduce Capacity	Brentwood Parkway NE	6th Street/Penn Street	9th Street			4	2	2015
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
707	NRS		Reduce Capacity	New Jersey Avenue NW	H Street	Louisiana Ave			4	2	2015
713	DS14		Reduce Capacity	Pennsylvania Avenue NW	18th Street	20th Street			5	4	2015
712	DS15		Reduce Capacity	Pennsylvania Avenue NW	17th Street	18th Street			6	4	2015
715	DS16		Reduce Capacity	Pennsylvania Avenue NW	26th Street	28th Street			5	4	2015
716	DS17		Reduce Capacity	Pennsylvania Avenue NW	28th Street	29th Street			4	2	2015
714	DS18		Reduce Capacity	Pennsylvania Avenue NW	20th Street	26th Street			6	4	2015
709	DS19		Reduce Capacity	Wheeler Road SE	Alabama Avenue	Southern Avenue			4	2	2015
MDOT/State Highway Administration											
Interstate											
126	MI2Q	MO8391	Construct	I 270 Interchange	at Watkins Mill Road Extended		1	1	8	8+2	2018 ~~2016~~
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

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VDOT I-66 Alternatives (A and B) Identified with varied shading.

2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
151	MI4a	FR5801	Reconstruct	I 70	at Meadow Road		1	1			2020
121	MI1F	PG4191	Construct	I 95	at Contee Road with C/D lanes		1	1	8	8+4	Complete
108	MI1P	PG3331	Construct	I-95/I-495	at Greenbelt Metro Station		1	1	8	8+2	2020
439	MP12a		Construct	MD 200 (ICC)	I 95	US 1	0	1	0	4	Complete
696			Study	I 495 /I 270Y / I270	Potomac River (American Legion Bridge)	I 370					Not Coded
Primary											
139	MP10A	PG2531	Reconstruct	US 1	College Avenue	Sunnyside Avenue	2	2	4	4	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
127	MP2C	AT1981	Widen	MD 3 Robert Crain Highway	I595/US 50/US 301	Anne Arundel County Line	2	2	4	6	2030
355	NRS	PG9171	Construct	MD 4	at Westphalia Road		2	5	4	6	2020
393	NRS	PG6181	Construct	MD 4 Pennsylvania Avenue	at Suitland Parkway		2	5	4	6	2019 ~~2016~~
212	MP3A	PG9171	Widen/Upgrade	MD 4 Pennsylvania Avenue	I-95/I-495	MD 223	2	1	4	6	2035
394	MI1K	PG4941	Construct	MD 5	I-95/I-495	Branch Ave. Metro Station	1	1	8	8	2017 ~~2020~~
440	NRS		Construct	MD 5	at Earnshaw/Burch Hill Roads		2	5	4	6	2025
205	MP4F	PG3916	Widen/Upgrade	MD 5 Branch Avenue	US 301 at T.B.	North of I95 /I 495	2	5	4	6	2025
354	NRS	PG1751	Construct	MD 5	at MD 373 and Brandywine Road Relocated		2	5	4	6	2017 ~~2018~~
441	NRS		Construct	MD 5	at Surratts Road		2	5	4	6	2025
358	MP15	FR5711	Construct	US 15 Catoctin Mountain Highway	at Monocacy Blvd.		2	2	6	6	2017 ~~2016~~
357	MP16		Construct	US 15 / US 340	Jefferson Tech Park		1	1	4	4	2015 ~~2016~~
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
391	FP2	FR3881	Widen	MD 85 Buckeystown Pike	English Muffin Way	north of Grove Road	2	2	2/4	4/6	2020
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 ~~2020~~

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility From	Facility To	Lanes From	Lanes To	Completion Date
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 ~~A 305~~	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 ~~South of Brookville~~	North of Brookville	0	2	0	2	2018 ~~2020~~
392	NRS	MO8521	Upgrade	MD 97 Georgia Avenue	at MD 28 Norbeck Road		2	2	6	6	2030 ~~2020~~
135	NRS	MO8541	Upgrade	MD 97 Georgia Avenue	at Randolph Road		2	2	6	6	2016 ~~2015~~
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
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 ~~MD 355~~	Randolph Road	East of Parklawn Drive ~~CSX Railroad~~	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							2020 ~~2012~~
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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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
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
362	NRS		Reconstruct	Addison Road	Sherieff Road	MD 704	4	4	2	2	2014
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
388	PGS9a		Widen	Bowie Race Track Road	MD 450 Annapolis Road	Old Chapel Road	4	4	2	4	2015
389	PGS9b		Widen	Bowie Race Track Road	MD 197 Laurel-Bowie Road	Old Chapel Road	4	4	2	4	2015
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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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	2015
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
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
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
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
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
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
163	PGS34b		Construct	Hill Road	MD 704 ML King Jr Highway	Sheriff Road	0	4	0	2	2015
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
213	PGS40a		Widen	Lottsford Road	Archer Lane	MD 193 Enterprise Road	3	3	2	4	2012
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	
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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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	2015
364	PGS52		Reconstruct	Oxon Hill Road	Fort Foote Road North	MD 210 @ Livingston Sq.Shopping Center	4	4	2	2	2015
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
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
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	2015
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
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
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	westbound ramp to Columbia Park Road						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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS
(highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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
	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
	AA8b		Widen	MD 175	MD 170	BW Parkway		2	4	6	2015
	AA30		Widen	MD 198	MD 32	BW Parkway	2	2	2	4	2025
	AA34a		Widen	MD 713	MD 175	Arundel Mills Boulevard		2	2	4	2025
	AA34b		Widen	MD 713	Arundel Mills Boulevard	MD 176		2	4	6	2025
Carroll County											
	CA1B		Widen	MD 140	Sullivan Road	Market St.		1	4/6	8	2025
	CA1C		reconstruct	MD 140 (w/ intchg @ MD 191)	Baltimore County Line	Kays Mill Rd.			4	4	2020
	CA2a		Widen	MD 26	MD 32	Reservoir			2	4	2015
	in base		Widen	MD 32	MD 26	Howard County Line		2	2	4	2020
	CA5		Widen	MD 97	MD 140	Pleasant Valley Rd		2	2	4	2020
	nrs		Construct	Boxwood Dr. Ext	Dogwood Dr. Terminus	MD 43 Ext.			0	2	2015
Howard County											
	HW1b		Widen	I-70	US 29	US 40	1	1	4	8	2025
	HW20		Widen	US 1	MD 100	PG/ Howard Line			4	6	2025
	HW10b		Widen	US 29 NB	Seneca Dr.	Middle Patuxent River		5	4	6	2015
	HW3c		Widen	MD 32	Cedar Lane	Anne Arundel County Line		1	4/6	8	2025
	HW3d		Widen	MD 32	MD 99	Carroll County Line		2	2	4	2025
	HW3e		construct/ reconstruct	MD 32 (interchanges)	@ I-70/ @ MD 144 @ Linden Church Rd/Dayton Shop @Rosemary Lane						2014
	HW6d		Widen	MD 108	Woodland Rd.	1200' w. of Centennial Ln.	2	2	2	4	2014
	HW8b		Widen	MD 216	High School Access Rd.	Maple Lawn Blvd.		3	2	4	2015
	nrs		Widen	Guilford Rd.	US 1	Dorsey Run Road			2	4	2017
	HW14c		Widen	Snowden River Parkway	MD 100	Broken Land Parkway		3	4	6	2020
VDOT											
Federal Lands											
433	FED3a		Construct	Manassas Battlefield Bypass	US 29 West of Centerville	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			2/4	0	2035

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ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
435	FED3c		Remove/Close	VA 234 Sudley Road	Southern Park Boundary	Northern Park Boundary			2	0	2030 ~~2020~~
652	FED2	77404	Widen	Old Mill Rd. (future Mulligan Rd.)	US 1	VA 611 Telegraph Road	4	4		4	2014
Interstate											
426 268	VI1w	93577 100566	Widen	I 66 HOV 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	Transit Ramps- from EB & to WB	Saintsbury Dr.	1	1	0	2	2014
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
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 + 2 HOT each direction	2022

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ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
718	VI1Z	105500	Widen / Revise Operations	I-66	US 50	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+ 2 HOT in each direction	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 3 in both directions during peak period	2017
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	2040
789	VI1XC		Construct/Widen	I 66 Eastbound	Washington Blvd. Off-Ramp	***North Fairfax Drive***	1	1	2	3	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
748	**I66R30 I66R31 I66R32 I66R33 I66R34**	**Alt A**	**Construct**	**I-66 Express Lanes Interchange Ramps**	**EB Expr to NB GP EB Expr to SB GP NB GP to WB Expr SB GP to WB Expr SB Expr to WB Expr**	**I-495 Interchange (Capital Beltway GP and Express Lanes)**	**0**	**1**	**0**	**1**	**2022**
749	**I66R35 I66R36 I66R37**	**Alt A**	**Construct**	**I-66 General Purpose Lanes Interchange Ramps**	**EB GP to SB Expr EB GP to NB Expr NB Expr to WB GP**	**I-495 Interchange (Capital Beltway GP and Express Lanes)**	**0**	**1**	**0**	**1**	**2022**

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
750		Alt A	Relocate / Reconstruct	I-495 Interchange Ramp	Dual-lane loop ramp from NB I-495 GP to I-66 GP relocated to dual-lane flyover	@ I-66	1	1	2	2	2022
751		Alt A	Reconstruct	I-495 Interchange Ramps	EB GP to SB GP WB GP to SB GP WB GP to SB Expr NB GP to EB GP NB Expr to WB Expr SB GP to WB GP	@ I-66	1	1	1	1	2022
752	I66R31 I66R32 I66R34	*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*	*2022*
753	I66R37	*Alt B*	*Construct*	*I-66 General Purpose Lanes Interchange Ramp*	*NB Expr to WB GP*	*I-495 Interchange (Capital Beltway GP and Express Lanes)*	*0*	*1*	*0*	*1*	*2022*
754		*Alt B*	*Relocate / Reconstruct*	*I-495 Interchange Ramp*	*Dual-lane loop ramp from NB I-495 GP to I-66 GP relocated to dual-lane flyover*	*@ I-66*	*1*	*1*	*2*	*2*	*2022*
755		*Alt B*	*Reconstruct*	*I-495 Interchange Ramps*	*EB GP to SB GP* *WB GP to SB GP* *WB GP to SB Expr* *NB GP to EB GP*	*@ I-66*	*1*	*1*	*—*	*—*	*2022*
756	I66R29	*Alt B*	*Construct*	*I-66 flyover ramp*	*EB general purpose to EB express lanes*	*.5 mile east of VA 243*	*0*	*1*	*0*	*1*	*2022*
757		Alt A	Reconstruct	I-66 Interchange	Cloverleaf interchange converted to diverging diamond interchange	@ Nutley Street (VA 243)	1	1	—	—	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	Alt A	Revise Operations	I-66 Express Lanes Interchange Ramps	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 Only Operations from existing HOV Lanes	Bus / HOV-3 / HOT from proposed Express Lanes	2022

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ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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*
761		Alt A	Reconstruct	I-66 Interchange	Reconfigured interchange to eliminate C-D roads & replace EB to NB loop ramp with flyover	@ Chain Bridge Road (VA 123)	1	1	—	—	2022
762		*Alt B*	*Reconstruct*	*I-66 Interchange*	*Reconfigured interchange to eliminate C-D roads & replace EB to NB loop ramp with flyover*	*@ Chain Bridge Road (VA 123)*	*1*	*1*	—	—	*2022*
763	I66R25 I66R26	*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*	*2022*
764		Alt A	Reconstruct	I-66 Interchange	Reconfigured interchange to replace NWB to WB loop ramp with flyover	@ Lee Jackson Mem Highway (US 50)	1	1	—	—	2022
765	I66R23 I66R24	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	2022
766		*Alt B*	*Reconstruct*	*I-66 Interchange*	*Reconfigured interchange to replace NWB to WB loop ramp with flyover*	*@ Lee Jackson Mem Highway (US 50)*	*1*	*1*	—	—	*2022*
767	I66R19 I66R20 I66R21 I66R22	Alt A	Relocate / Reconstruct / Revise Operations	I-66 Interchange	Reconfigured interchange to 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	2022

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ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility From	Facility To	Lanes From	Lanes To	Completion Date
768	I66R19 I66R20 I66R21 I66R22	*Alt B*	*Relocate / Reconstruct / Revise Operations*	*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*	*2022*
769	I66R17 I66R18	Alt A	Revise Operations	I-66 Express Lanes Interchange Ramps	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 Reversible by time of day	2022
770	I66R17 I66R18	*Alt B*	*Relocate / Revise Operations*	*I-66 Express Lanes Interchange Ramps*	*EB on-ramp, WB off-ramp to/from I-66 Express lanes, relocated north of I-66*	*@ Stringfellow Road*	*1*	*1*	*Bus / HOV-2 Reversible by time of day*	*Bus / HOV-3 / HOT Movements in both directions 24 hrs/day*	*2022*
771	I66R16	*Alt B*	*Construct*	*I-66 flyover ramp*	*EB express lanes to EB general purpose*	*1 mile west of VA 286*	*0*	*1*	*0*	*1*	*2022*

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS
(highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
772	I66R16	Alt B	Construct	I-66 slip ramp	EB general purpose to EB express lanes	1 mile west of VA 286	0	1	0	1	2022
773	I66R15	Alt B	Construct	I-66 flyover ramp	WB express lanes to WB general purpose	1 mile west of VA 286	0	1	0	1	2022
774	I66R15	Alt B	Construct	I-66 slip ramp	WB general purpose to WB express lanes	1 mile west of VA 286	0	1	0	1	2022
775	I66R11 I66R12 I66R12 I66R13 I66R13 I66R14	Alt A	Construct	I-66 Express Lanes Interchange Ramps	EB Expr to NB GP WB Expr to NB GP WB Expr to SB GP NB GP to EB Expr SB GP to EB Expr SB GP to WB Expr	Route 28 Interchange	0	1	0	1	2022
776	I66R11 I66R12 I66R13 I66R14	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	Route 28 Interchange	0	1	0	1	2022
777	I66R9 I66R10	Alt A	Construct	I-66 Express Lanes Interchange Ramps	EB on-ramp, WB off-ramp to/from I-66 Express lanes	@ Balls Ford Road Connector .75 mile west of VA Bus 234	0	1	0	1	2022
778	I66R9 I66R10	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 .5 mile west of VA Bus 234	0	1	0	1	2022
779	I66R7 I66R8	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	2022
780	I66R5 I66R6	Alt A	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	2022
781	I66R5 I66R6	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	2022
782	I66R4	Alt A	Construct	I-66 flyover ramp	EB general purpose to EB express lanes	.85 mile east of US 15	0	1	0	1	2022
783	I66R3	Alt A	Construct	I-66 flyover ramp	WB express lanes to WB general purpose	.7 mile east of US 15	0	1	0	1	2022
784	I66R1 I66R2	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 .4 mile west of US 15	0	1	0	1	2022
785	VSP49C	Alt B	Construct	I-66 Express Lanes Access Connector Road	Heathcote Boulevard Extension	John Marshall Highway (VA 55)	0	1	0	1	2022
270	VI2AC		Reconstruct	I 95 Interchange	VA 613 Van Dorn Street		1	1			2015

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
3	VI2RB		Widen	I 395 HOV Lanes ramp	Eads Street Exit ramp		1	1	1	2	2014
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
430	VI2s	70849	Construct	I 395 northbound Auxiliary Lane	.28 mi. n. of Duke street northbound on ramp	Sanger Avenue	1	1	3	4	2015
444	VI2T		Widen	I 395 southbound	VA 236 Duke Street (north of)	VA 648 Edsall Road (south of)	1	1	3	4	2018
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)						2018 ~~2016~~
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	~~1~~ 0	1	0	1	2025 ~~2015~~
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	~~1~~ 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	~~1~~ 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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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
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
438	VI2R6A	UPC# 96261	Construct	I 395 NB HOV to Seminary & Seminary to SB HOV Ramps	Seminary Road Interchange		0	1	0	1	2015
20	VI4Iaux1		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	VI4Iaux2		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	VI4Iaux3		Widen	I 495 Capital Beltway NB Auxiliary Lane	Braddock Road On Ramp	VA 236 Off Ramp	1	1	4+2	5+2	2030
24	VI4Iaux5		Widen	I 495 Capital Beltway NB Auxiliary Lane	VA 236 On Ramp	Gallows Road Off Ramp	1	1	4+2	5+2	2030
25	VI4Iaux6		Widen	I 495 Capital Beltway SB Auxiliary Lane	Gallows Road On Ramp	VA 236 Off Ramp	1	1	4+2	5+2	2030
29	VI4Iaux10		Widen	I 495 Capital Beltway NB Auxiliary Lane	US 50 On Ramp	I 66 Off Ramp	1	1	5+2	6+2	2030
32	VI4Iaux13		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	VI4Iaux16		Widen	I 495 Capital Beltway SB Auxiliary Lane	VA 123 On Ramp	VA 7 Off Ramp	1	1	5+2	6+2	2030
38	VI4Iaux19		Widen	I 495 Capital Beltway NB Auxiliary Lane	VA 267 On Ramp	VA 193 Off Ramp	1	1	4+2	5+2	2030
39	VI4Iaux20		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

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ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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 ~~2015~~
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
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 III)	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					2015
536	VP21F		Construct	VA 267 Dulles Greenway Egress Ramp	at Hawling Farm Boulevard (Future)		0	1	0	1	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
631	VP1AD	90339	Widen	US 1 Jefferson Davis Highway	Brady's Hill Road	VA 234 Dumfries Road	2	2	4	6	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		Widen	US 1 Jefferson Davis Highway	Featherstone Road	Mary's Way	2	2	4	6	2020
239	VP1P		Widen	US 1 Jefferson Davis Highway (part of 1/123 interchange)	Mary's Way	Annapolis Way	2	2	4	6	2018
633	NRS		Reconstruct	US 1 Jefferson Davis Highway	at VA 123 Gordon Boulevard						2019 ~~2018~~
634	VSP63	100938	Construct	Belmont Bay Drive Extension	US 1 Jefferson Davis Highway	Heron's View Way			0	4	2019 ~~2018~~
85	VP1AG		Widen	US 1 Jefferson Davis Highway	Annapolis Way	Lorton Road	2	2	4	6	2035
322	VP1U	VP1U	Widen	US 1 Jefferson Davis Highway	VA 235 North	VA 235 South	2	2	4	6	2025
653	NRS		Study	VA 7 Interchange	VA 690				0	4	Not Coded
686	NRS	58599	Construct	VA 7 WB Truck Climbing Lane	VA 9	VA 7 Business West	5	1	4	5	2015
86	VP2JA	16006	Widen	VA 7 Bypass	VA 7 West	US 15 South King Street South	5	1	4	6	2040

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							From	To	From	To	
299	VP2J		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	2015
221	VP2M		Widen	VA 7	Reston Avenue	West Approach to Bridge over Dulles Toll Road	2	2	4	6	2025
626	NRS	82135	Construct	VA 7 Leesburg Pike	Bridge over Dulles Toll Road		2	2	4	6	2030
627	VP2La		Widen	VA 7 Leesburg Pike	Dulles Toll Road	VA 123 Chain Bridge Road	2	2	6	8	Complete
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
685	NRS	99256	~~Close~~	VA 7 /US 15 Bypass	Overpass at Sycolin Road		1	1	4	4	Complete
682	NRS	105584	Construct	VA 7 Overpass at	George Washington Boulevard		0	4	0	4	2022
~~680~~	~~NRS~~	~~100435~~	~~Construct~~	~~VA 7~~	~~Lexington Drive Overpass~~		~~1~~	~~1~~	~~6~~	~~6~~	~~2020~~
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 ~~0~~	6 ~~4~~	2017
253	VP4E		Widen	US 15 James Madison Highway	US 29 Lee Highway	~~I 66~~ VA 55	3	3	2	4	2040
655	NRS		Widen	US 15 James Madison Highway	Monroe Glen Drive	Thoroughfare Road	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
90	VP6KB	92080	Widen	VA 28 Nokesville Road	VA 215 Vint Hill Road Relocated	VA 619 Linton Hall Road	3	3	2	6	2015
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	VA 619 Linton Hall Road	3	3	4	6	2020
310	VP6EAA		Widen~~/Upgrade~~	VA 28 PPTA Phase II	I 66	US 50	***5*** ~~2~~	***5*** ~~1~~	6	8	2025
310	VP6EBB		Widen~~/Upgrade~~	VA 28 PPTA Phase II	US 50	Sterling Blvd.	***5*** ~~2~~	***5*** ~~1~~	6	8	***2016*** ~~2025~~
310	VP6ECC		Widen~~/Upgrade~~	VA 28 PPTA Phase II	Sterling Blvd.	VA 7	***5*** ~~2~~	***5*** ~~1~~	6	8	2025
344	VP6EB	78906	Construct	VA 28 Interchange at	VA 209 Innovation Avenue		1	1	6	6	2015
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	2015
624	VP7AE	52326	Construct	US 29 Interchange	VA 55 Linton Hall VA 619						2015
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

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							From	To	From	To	
401	VSP57A		Construct	McGraws Corner ~~Route 29 (Parallel)~~	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
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	2015 ~~2014~~
93	VP8R	68757	Widen	US 50	VA 609 Pleasant Valley	VA 28	2	2	4/5	6	2015 ~~2014~~
319	VP8H		Widen	US 50	ECL City of Fairfax	Arlington County Line	2	2	4	6	2025
273	VP8O	13531	Reconstruct	US 50 Interchange	VA 237 .223 miles East	VA 237 .424 miles East					Complete
94	NRS		Construct	US 50 Interchange	VA 606 Loudoun County Parkway		2	2	6 ~~0~~	6 ~~4~~	2025
657	NRS		Construct	US 50 Interchange	West Spine/Gum Springs Road		2	2	6 ~~0~~	6 ~~4~~	2035
658	NRS		Construct	US 50 Interchange	South Riding Boulevard		2	2	6 ~~0~~	6 ~~4~~	2035
659	NRS		Construct	US 50 Interchange	Tall Cedars Parkway		2	2	6 ~~0~~	6 ~~4~~	2035
245	VP10G	100938	Widen	VA 123	US 1	Annapolis Way	2	2	4	6	2019 ~~2018~~
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
590	VP24B		Widen	VA 215 Vint Hill Road	VA 655 Schaeffer Lane	~~1566~~ Sudley Manor Drive	4	4	2	4	2020
678		105420/T143	Construct	VA 234 Bypass Interchange	Balls Ford Road Relocated						2020
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)					2015
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 ~~2020~~

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400			Construct	VA 286 Fairfax County Parkway Interchange	VA 7700 Fair Lakes parkway and Monument Drive		2	5	4	6	Complete
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
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	2014
739			Construct	VA 294 Prince William Parkway	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 (Bi-County Parkway)	VA 234 Bypass@I-66	US 50		5		4	2030 ~~2020~~
Urban											
313	VU28B	100518	Construct	Battlefield Parkway	US 15 south of Leesburg	Dulles Greenway	0	2	0	4	2020
52	VU30F	50100	Widen	East Elden Street	Monroe Street	Fairfax County Parkway	3	2	4	6	2019
328	VU52	77378	Widen	Eisenhower Avenue	Mill Road	Holland Lane	3	3	4	6	2016
553	VU55	104830	Widen	Evergreen Mills Road	US 15 S. King Street	South City Limits of Leesburg	3	3	2	4	2022
681	VU56		Construct	Farrington Aveneue	Van Dorn Street at Eisenhower Avenue	Edsall Road	0	4	0	2	2035
267	VU10B		Widen	Spring Street	Herndon Parkway East	Fairfax County Parkway	3	2	4	6	2020 ~~2017~~
232	VU33	78853	Widen	Sycolin Road	VA7/US 15 Bypass	SCL of Leesburg	3	3	2	4	2020
398 554	VU32	17687 103999	Widen	US 15 South King Street	Evergreen Mills Road	SCL of Leesburg	3	2	2	4	2015
382	NRS	89890/LEE S0001	Widen	VA 773 Edwards Ferry Road	.2 mi. s. of East Market St.	0.3 Mi. N. of Edwards Ferry Road	2	2	4	4 ~~2~~	2020
290	VU45	15960 (PE & RW Only)	Widen	VA 234 Dumfries Road Business ~~VA 234 Dumfries Road~~	South Corporate Limits	Hastings Drive	3	3	2	4	2018

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VDOT I-66 Alternatives (A and B) Identified with varied shading.

2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

9/09/2015

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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	Construct	Herndon Parkway (East): Transit Drop-off/Pick-Up Access to Metrorail Station	East of Rte 666/van Buren Street (@ 593 Herndon Parkway)	West of Rte 675 / Spring Street (@ 575 Herndon Parkway	2	2	4	4	2017
725	NRS	UPC # 89889	Construct	Herndon Parkway	Van Buren Street						2017
57	VU54		Construct	Southern Collector Road	VA 7 Main Street at VA 287	A Street (2,200 feet north of Yaxley)	0	2	0	2	Complete
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 ~~2016~~
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 ~~2014~~
60	VSF4c		Widen	VA 611 Telegraph Road	VA 613 Beulah St.	Leaf Road North	3	3	2	4	2014
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 633 S. Kings Highway	VA 613 S. Van Dorn	3	3	2	4	2015
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 ~~2014~~
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	2015
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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility From	Facility To	Lanes From	Lanes To	Completion Date
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
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	Lockridge Road Northbound			0	2	2020
330	VSL1B	97529, 105064	Widen/Upgrade	VA 606 Old Ox Rd	VA 634 Moran Rd	VA 621 Evergreen Mills Rd	4	3	2	4	2017 ~~2020~~
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 Ryan Rd / Loudoun County Parkway	0	3	0	4	2015
275	VSL10bb		Widen/Upgrade	VA 607 Loudoun County Parkway	W&OD Trail	Redskin Park Drive	4	3	4 ~~2~~	6	2025
323	VSL10bf		Widen/Upgrade	VA 607 Loudoun County Parkway (dirt road)	Redskin Park Drive	Gloucester Parkway	4	3	2	4	2015 ~~2014~~
689	VSL54		Widen	Farmwell Road	Smith Switch	Ashburn Road	4	4	2	6	2017
683	NRS		Construct	Waxpool Road/ Loudoun County Parkway Interchange					0	4	2019
335	VSL45	VSL45	Widen/Upgrade	VA 643 ~~VA 643 (Sycolin Road) Phas II~~	Leesburg Town Limits	Crosstrails Boulevard	4	3	2	4	2018 ~~2035~~
72	VSL4ac	76244 & 99481	Widen	VA 659 Belmont Ridge Road	VA 7 Leesburg Pike	Dulles Greenway ~~Croson Lane~~	4	3	2	4	2018
746	VSL4AD		Widen/Upgrade	VA 659 Belmont Ridge Road	Croson Lane	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	3	2	4	Complete
297	VSL4f		Widen/Upgrade	VA 659 Gum Spring Rd.	Prince William County Line	VA 620 Braddock Road	4	3	2	4	2035
641	VSL58		Construct	VA 772 Transit Station Connector Bridge	Dulles Greenway	VA 772 Transit Station			0	4	2019
662	NRS	69870	Construct	VA 868 Davis Drive	VA 606 Old Ox Road	VA 846 Sterling Boulevard		4	0	4	2025
333	VSL46	68767, 70760, 93144, 93899, 105331	Construct	VA 1036 Pacific Boulevard	VA 846 Sterling Boulevard	Richfield Way ~~Gloucester Parkway~~	0	3	0	4	2016 ~~2013~~
74	VSL52	104418	Construct	VA 2150 Cloucester Parkway	VA 607 Loudoun County Parkway	VA 1036 Pacific Boulevard	0	3	0	4	2016

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
573 574 575	VSL61		Construct	Arcola Boulevard (Southern Segment)	US 50	Loudoun County Parkway	0	4	0	4	2022
76	VSL40F	10858	Construct	Clairborne Parkway	Croson Lane	Ryan Road	0	4	2	4	2015
577	VSL56		Construct	Crosstrail Boulevard	Sycolin Road	Kincaid Boulevard	0	4	0	4	2019
578 580	VSL62		Widen	Evergreen Mills Road (Eastern Segment)	Loudoun County Parkway	Belmont Ridge Road	4	4	2	4	2025
564	NRS		Construct	Glascock Road (Eastern Segment)	Arcola Boulevard	Loudoun County Parkway	0	4	0	4	2023
565	NRS		Construct	Glascock Road (Western Segment)	Arcola Boulevard	Northstar Boulevard	0	4	0	4	2023
568	VSL57		Construct	Mooreview Parkway (Missing Link)	Amberleigh Farm Drive	Old Ryan Road	0	4	0	4	2019
~~569~~	~~VP12Q~~		~~Construct~~	~~Northstar Boulevard (Missing Link #78)~~ MOVED TO PRIMARY PROJECTS PART OF VP12O	~~US 50~~	~~Tall Cedars Parkway~~		~~5~~	~~0~~	~~4~~	~~2019~~
570	VP12R		Construct	Northstar Boulevard (Missing Link #79)	Shreveport Drive	US 50	0	3 ~~2~~	0	~~3~~ 4	2022
~~571~~	~~VP12P~~		~~Construct~~	~~Northstar Boulevard (Missing Link #80)~~ MOVED TO PRIMARY PROJECTS PART OF VP12O	~~Tall Cedars Parkway~~	~~Braddock Road~~		~~5~~	~~0~~	~~4~~	~~2017~~
572	VSL59		Construct	Prentice Drive (Western Segment)	Loudoun County Parkway	Loudoun Station Drive	0	4	0	4	2019
556	VSL59		Construct	Prentice Drive Eastern Segment	Lockridge	Loudoun County Parkway	0	4	0	4	2019
75 557	VSL48A	91773	Construct	RIverside Parkway	River Creek Parkway	Upper Meadow Drive/Kingsport Dr.	4	4	2	4	2015 ~~2014~~
561	VSL49A		Construct	Russell Branch Parkway (Eastern Segment)	Ashburn Village Road	Ashburn Road	0	4	0	4	2017
559	VSL49B		Construct	Russell Branch Parkway (Western Segment)	Belmont Ridge Road	Tournament Parkway	0	4	0	4	2017
560	VSL55		Construct	Shreveport Drive (Eastern Segment)	Belmont Ridge Road	Loudoun Cuonty Parkway	0	4	0	4	2017
563	VSL55A		Construct	Shreveport Drive (Western Segment)	Evergreen Mills Road	Belmont Ridge Road	0	4	0	4	2017
562	VSL60	105783	Construct	Sterling Boulevard Extension	Pacific Boulevard	Moran Road	0	4	0	4	2019
77	VSL53		Construct	Tall Cedars Parkway	Pinebrook Road	Gum Springs Road`			0	4	2015
576	VSL63		Construct	Creighton Road (completion of eastern end)	Belmont Ridge Road	Evergreen Mills Road	0	4	0	4	2013
555			Widen	VA 2119 WaxpoolRoad	Demott Road	Ashburn Boulevard	4	4	2	4	2018
Prince William County											

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS (highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
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
219	VSP25b	104802	Widen	VA 1781 New Telegraph Road/Summit School Road	Horner Road/Park'n'Ride Lot Access ~~VA 849 Caton Hill Road~~	VA 2190 Summit School Road Extension	4	4	2	4	2020
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
367	VSP3a		Widen/Upgrade	VA 621 Balls Ford Road	Miramar Drive ~~VA 234 Sudley Road~~	Bethlehem Road ~~Ashton Avenue~~	4	3	2	4	2030 ~~2040~~
79	VSP3b	80347	Widen/Upgrade	VA 621 Balls Ford Road	Bethlehem Road ~~Ashton Avenue~~	Doane Drive ~~Groveton Road~~	4	3	2	4	2030 ~~2025~~
690	VSP64		Construct	VA 621 Balls Ford Road Relocated	Doane Drive	Devlin Road	0	3	0	4	2020
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 ~~2015~~
244	NRS	90499	Reconstruct	VA 643 Purcell Road	VA 234 Dumfries Rd.	Vista Brook Dr. ~~VA 642 Hoadly Road~~	4	4	2	2	2017 ~~2025~~
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	104896	Construct	University Boulevard/Devlin ~~University Boulevard/Progress Ct.~~	Sudley Manor Drive	Wellington Rd/Progress Ct.	0	3	0	4	2020 ~~2016~~
82	VSP2i	92999	Widen	VA 619 Fuller Road	US 1	VA 619 Fuller Heights Road Relocated			2	4	2016 ~~2015~~
593	VSP65		Widen	VA 638 Neabsco Mills Road	US 1 Jefferson Davis Highway	VA 784 Dale Boulevard			2	4	2020
642	VSP62a		Construct	Rollins Ford Road	Wellington Road	Linton Hall Road	0	3	0	4	2020
371	VSP62	90226 T6494	Construct	Rollins Ford Road	Songsparrow/Yellow Hammer Drive	VA 215 Vint Hill Road			0	4	Complete
591	VSP66		Construct	VA 627 Van Buren Road	VA 234 Dumfries Road	VA 610 Cardinal Drive	0	4	0	4	2035
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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS
(highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
FAMPO											
	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
			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

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2015 CLRP AMENDMENT and FY2015-2020 TIP AIR QUALITY CONFORMITY INPUTS
(highway)

ConID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
							From	To	From	To	
			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											
	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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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 monthly newsletter the *TPB News;*
        - Information in other publications, including the TPB *Weekly Report;*
        - 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.
    - All meetings of the TPB's committees are open to 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 2015 CLRP Amendment and FY2015-2020 TIP

The following lists TPB consultation and public comment opportunities during the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP:

- October 3rd, 2014 – TPB Technical Committee presentation on the draft call for projects and schedule for the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP;
- October 10th, 2014 – Monthly conformity consultation letter referenced the draft call for projects and schedule for the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP;
- October 15th, 2014 – Opportunity for public comment at the TPB meeting;
- October 15th, 2014 – TPB presentation on the draft call for projects and schedule for the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP;
- November 7th, 2014 – TPB Technical Committee presentation on the draft call for projects and schedule for the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP;
- November 13th, 2014 – Monthly conformity consultation letter referenced the final call for projects and schedule for the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP;
- November 13th , 2014 – TPB Citizen Advisory Committee (CAC) presentation on the draft call for projects for the 2015 CLRP Amendment and FY 2015-2020 TIP;
- November 19th, 2014 – Opportunity for public comment at the TPB meeting;
- November 19th, 2014 – TPB presentation on the final call for projects and schedule for the air quality conformity analysis of the 2015 CLRP Amendment and FY 2015-2020 TIP;
- December 2nd, 2014 – ***TPB Weekly Report*** discusses 2015 CLRP;
- December 2nd, 2014 – Draft call for projects and schedule for the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP included in the TPB's monthly newsletter the ***TPB News***;
- January 9th, 2015 – TPB Technical Committee presentation on inputs and draft scope of work for the air quality conformity analysis of the 2015 CLRP Amendment and the FY2015-2020 TIP;
- January 12th, 2015 – Paid advertisement posted in the ***Afro-American*** announcing a 30-day public comment period for project inputs and scope of work;
- January 13th, 2015 – MWAQC Technical Advisory Committee (TAC) presentation on inputs and draft scope of work for the air quality conformity analysis;
- January 15th, 2015 – Project inputs and draft scope of work released for 30-day public comment and documents posted on web;

- January 15th, 2015 – Paid advertisement posted in the ***Washington Hispanic*** and ***Washington Post*** announcing a 30-day public comment period for project inputs and scope of work;
- January 15th, 2015 – TPB CAC presentation on inputs and draft scope of work for the air quality conformity analysis;
- January 15th, 2015 – Monthly conformity consultation letter referenced the inputs and the draft scope of work for the air quality conformity analysis;
- January 20th, 2015 – Major projects changes for the 2015 CLRP Amendment are discussed in TPB's weekly newsletter the ***TPB Weekly Report***;
- January 21st, 2015 – Opportunity for public comment at TPB meeting;
- January 21st, 2015 – TPB presentation on inputs and the draft scope of work;
- February 12th, 2015 – Review of comments received and approval of inputs announced for the TPB February 18th, 2015 meeting as an agenda item in the TPB's monthly newsletter the ***TPB News***;
- February 12th, 2015 – Monthly conformity consultation letter referenced the upcoming discussion of comments received and recommended responses and TPB approval of inputs and scope of work for the air quality conformity analysis;
- February 18th, 2015 – Opportunity for public comment at the TPB meeting;
- February 18th, 2015 – TPB presentation on comments received and recommended responses and TPB approval of inputs and scope of work for the air quality conformity analysis;
- March 1st, 2015 – Approval of project inputs and scope of work included in the TPB's monthly newsletter the ***TPB News***;
- March 3rd, 2015 – Proposed I-66 Express Toll Lanes project discuss in the TPB's weekly newsletter the ***TPB Weekly Report***;
- April 1st, 2015 – Approval of an update to the scope of work to use MOtor Vehicle Emission Simulator (MOVES) 2014 announced for the TPB April 21, 2015 meeting as an agenda item in the TPB's monthly newsletter the ***TPB News***;
- April 3rd, 2015 – TPB Technical Committee presentation on the update to the scope of work to use MOVES2014 in the air quality conformity analysis;
- April 10th, 2015 – Monthly conformity consultation letter referenced the update to the scope of work;
- April 21th, 2015 – Opportunity for public comment at the TPB meeting;
- April 21th, 2015 – TPB presentation on approval of the update to the scope of work to use MOVES2014 in the air quality conformity analysis;
- June 2nd, 2015 – Approval of updated scope of work included in the TPB's weekly newsletter the ***TPB Weekly Report***;
- September 1st, 2015 – A briefing on the draft air quality conformity analysis of the 2015 CLRP Amendment announced for the TPB September 16, 2015 meeting as an agenda item in the TPB's monthly newsletter the ***TPB News***;

- September 4th, 2015 – TPB Technical Committee presentation on the draft air quality conformity analysis of the 2015 CLRP Amendment and on the CLRP performance analysis;
- September 4th, 2015 – Paid advertisement posted in the ***Washington Hispanic*** announcing a 30-day public comment period for the 2015 CLRP Amendment and the FY2015-2020 TIP, and the accompanying air quality conformity analysis;
- September 8th, 2015 – MWAQC TAC presentation on the draft air quality conformity analysis;
- September 10th, 2015 – Draft CLRP and TIP conformity analysis released for 30-day public comment period and posted on web;
- September 10th, 2015 – TPB CAC presentation on the draft conformity analysis and on the CLRP Performance Analysis;
- September 10th, 2015 – Paid advertisement posted in the ***Washington Post*** announcing a 30-day public comment period for the 2015 CLRP Amendment and the FY2015-2020 TIP, and the accompanying air quality conformity analysis;
- September 11th, 2015 – Monthly conformity consultation letter referenced results and announced public comment period;
- September 12th, 2015 – Paid advertisement posted in the ***Afro-American*** announcing a 30-day public comment period for the 2015 CLRP Amendment and the 2015-2020 TIP, and the accompanying air quality conformity analysis;
- September 16th, 2015 – Opportunity for public comment at the TPB meeting;
- September 16th, 2015 – TPB presentation on the draft conformity analysis of the 2015 CLRP Amendment and on the CLRP performance analysis;
- October 15th, 2015 – Monthly conformity consultation letter referenced results for the air quality conformity analysis of the 2015 CLRP Amendment and FY2015-2020 TIP;
- October 21st, 2015 – Opportunity for public comment at the TPB meeting;
- October 21st, 2015 – TPB responded to comments received during public comment period and approved the air quality conformity analysis and the 2015 CLRP Amendment and FY2015-2020 TIP.

Note: All TPB and TPB subcommittee meetings are open to the public

February 12, 2015

TO: Transportation Consultation Agencies
(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
Director, Department of
Transportation Planning

SUBJECT: Consultation with respect to TPB plans and programs

Enclosure:
1) Agenda for February 18, 2015 TPB meeting

This memo transmits the agenda for the February 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 subcommittees). A schedule of monthly meetings is listed in the Calendar of Events) in *TPB NEWS*.

The February 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 assessment for the 2015 Constrained Long Range Plan (CLRP) and FY 2015-2020 Transportation Improvement Program (TIP). At the January 21 meeting, the Board was briefed on the project submissions which were released for a 30-day public comment period that ended February 14.

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 assessment for the 2015 CLRP and FY 2015-2020 TIP. At the January 21 meeting, the Board was briefed on the scope which was

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

released for a 30-day public comment period that ended February 14.

Item 10 is an information item in which the Board will be briefed on the draft Unified Planning Work Program (UPWP) for FY2016 (July 1, 2015 through June 30, 2016). The Board will be asked to approve the FY 2016 UPWP at its March 18 meeting.

Item 13 is a notice item in which the District Department of Transportation (DDOT) has requested an amendment to update projects and funding in the District section of the FY 2015-2020 TIP. The Board will be asked to approve this amendment at its March 18 meeting.

MEETING NOTICE

Date: February 18, 2015
Time: 12 noon
Place: COG Board Room

AGENDA
(BEGINS PROMPTLY AT NOON)

12 noon 1. **Public Comment on TPB Procedures and Activities**
.....Chairman Mendelson

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 asked to bring written copies of their remarks (65 copies) for distribution at the meeting.

12:20 pm 2. **Approval of Minutes of January 21 meeting**
..... Chairman Mendelson

12:25 pm 3. **Report of Technical Committee**
..... Mr. Rawlings
Chair, Technical Committee

12:30 pm 4. **Report of the Citizens Advisory Committee**
..... Mr. Summersgill
Chair, Citizens Advisory Committee

12:40 pm 5. **Report of Steering Committee**
.....Mr. Srikanth
Director, Department of
Transportation Planning (DTP)

12:50 pm 6. **Chair's Remarks**
.....Chairman Mendelson

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ACTION ITEMS

12:55 pm 7. **Review of Comments Received and Approval of Project Submissions for the Air Quality Conformity Assessment for the 2015 Financially Constrained Long Range Transportation Plan (CLRP) and the FY 2015-2020 Transportation Improvement Program (TIP)**

..... Mr. Srikanth

At the January 21 meeting, the Board was briefed on the major project changes submitted for inclusion in the air quality conformity assessment for the 2015 CLRP and FY 2015-2020 TIP which were released for a 30-day public comment period that ended February 14. 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 assessment for the 2015 CLRP and FY 2015-2020 TIP.

Action: Adopt Resolution R14-2015 to approve the project submissions for inclusion in the air quality conformity assessment for the 2015 CLRP and FY 2015-2020 TIP.

1:15 pm 8. **Approval of Scope of Work for the Air Quality Conformity Assessment for the 2015 CLRP and the FY 2015-2020 TIP**

..... Ms. Posey, DTP

At the January 21 meeting, the Board was briefed on the draft scope of work for the air quality conformity assessment for the 2015 CLRP and FY 2015-2020 TIP which was released for a 30-day public comment period that ended February 14. 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 assessment for the 2015 CLRP and FY 2015-2020 TIP.

Action: Approve the enclosed scope of work for the air quality conformity assessment for the 2015 CLRP and FY 2015-2020.

INFORMATION ITEMS

1:20 pm 9. **Briefing on the COG Cooperative Forecasting Process**

.....Mr. DesJardin
Director, COG Department of Community Planning and Services (DCPS)

At its February 11 meeting the COG Board approved the Draft Round 8.4 Cooperative Forecasts for use by the TPB in the Air Quality Conformity Analysis of the 2015 Financially Constrained Long-Range Plan and FY 2015 to 2020 Transportation Improvement Program. The Board will be briefed on the COG Cooperative Forecasting Process and the Round 8.4 Forecasts of future population, household and employment growth in the region.

1:30 pm 10. **Review of Draft FY 2016 Unified Planning Work Program (UPWP)**

..... Mr. Srikanth

The Board will be briefed on the enclosed draft Unified Planning Work Program (UPWP) for FY 2016 (July 1, 2015 through June 30, 2016). The Board will be asked to approve the FY2016 UPWP at its March 18 meeting.

1:40 pm 11. **Briefing on the Draft FY 2016 Commuter Connections Work Program (CCWP)**

..... Mr. Ramfos, DTP

The Board will be briefed on the draft Commuter Connections Work Program (CCWP) for FY 2016 (July 1, 2015 through June 30, 2016). The Board will be asked to approve the FY 2016 CCWP at its March 18 meeting.

1:45 pm 12. **Briefing on the Implementation of the TPB Regional Priority Bus Project under the Transportation Investments Generating Economic Recovery (TIGER) Program**

..... Mr. Randall, DTP

The Board will be briefed on the current status of the TPB Regional Priority Bus Project, which includes 16 project components being implemented by five project owners under a $58 million TIGER grant administered by FTA.

NOTICE ITEM

1:55 pm 13. **Notice of Proposed Amendment to Update Projects and Funding in the District of Columbia Section of the FY 2015-2020 TIP**

..... Mr. Zimbabwe

Notice is provided that the District Department of Transportation (DDOT) has requested an amendment to update projects and funding in the District section of the FY 2015-2020 TIP. The Board will be asked to approve this amendment at the March 18 meeting.

1:58 pm 14. **Other Business**

2:00 pm 15. **Adjourn**

Lunch will be available for Board members and alternates at 11:30 am

Alternative formats of this agenda and all other meeting materials are available upon request. Email: accommodations@mwcog.org. Phone: 202-962-3300 or 202-962-3213 (TDD). Please allow seven working days for preparation of the material. Electronic versions are available at www.mwcog.org.

TPB News December 2014

TPB news
A Publication of the National Capital Region Transportation Planning Board

Volume XXII, Issue 5 *December 2014*

"Call for Projects" Approval Kicks Off 2015 CLRP Update

The next annual update of the region's 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 2015 CLRP update.

The TPB approved the Call for Projects and analysis schedule at its November 19 meeting. The annual update is an opportunity for area transportation agencies to submit for inclusion in the CLRP any new regionally significant highway, transit, or bicycle and pedestrian projects they expect to build, operate, and maintain between now and 2040, or to make any changes to projects already in the plan.

This year's Call for Projects includes a new element—a summary brochure more explicitly highlighting 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.

In particular, the brochure includes a list of top regional needs that agencies should consider, including reducing congestion on area roadways and transit systems, providing more high-quality transportation options between and within Activity Centers, and reducing

(Continued on page 4)

TPB Approves Coordinated Human Service Transportation Plan

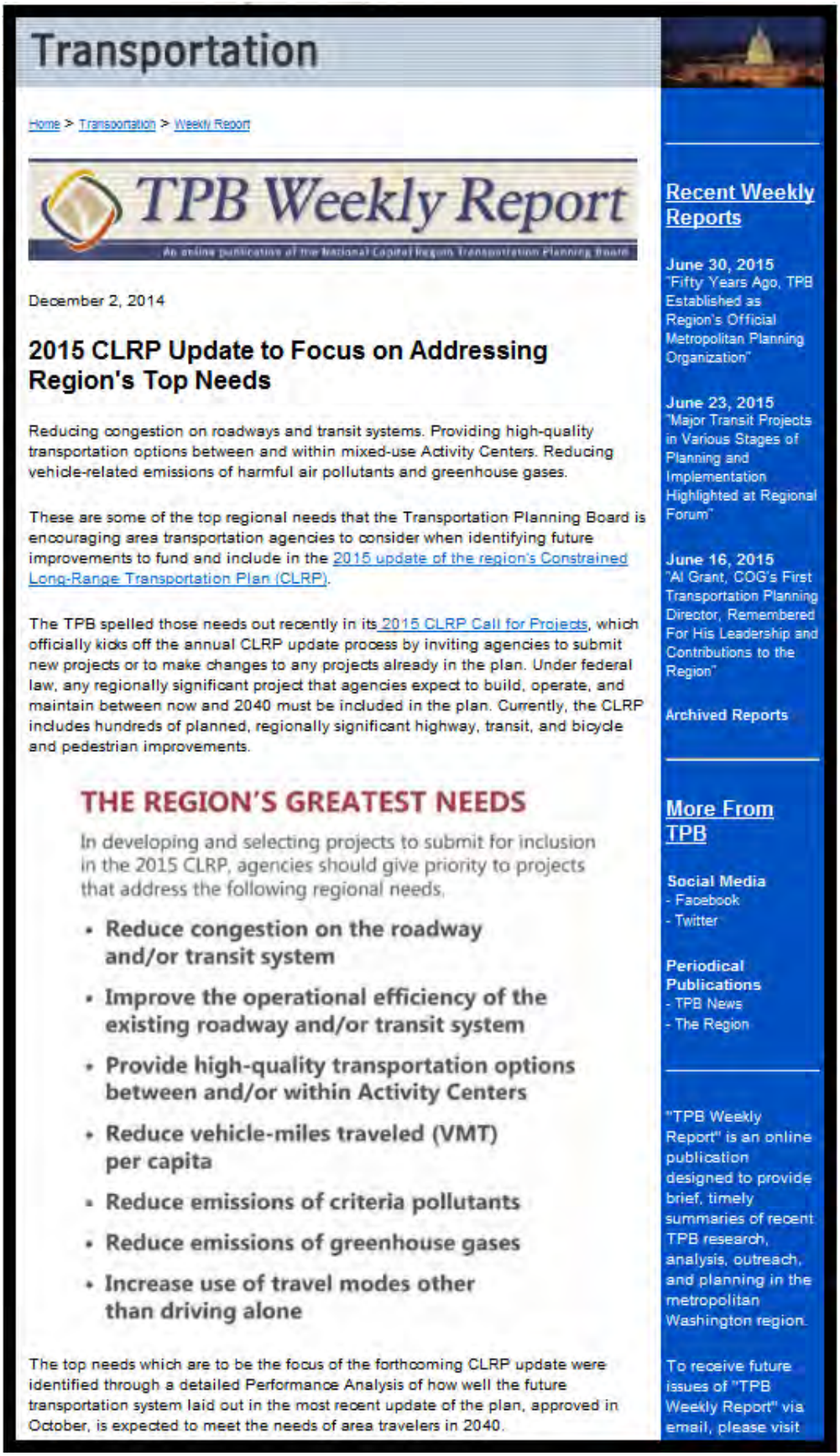
At its November 19 meeting, the TPB approved an update to the region's Coordinated Human Service Transportation Plan. The plan identifies and prioritizes transportation needs of individuals with disabilities and older adults, and provides guidance on selection criteria for projects to receive funding under the new federal Enhanced Mobility of Seniors and Individuals with Disabilities program.

The updated plan reassesses the unmet transportation needs, first described in 2007, of people with disabilities and older adults in the Washington region. Unmet needs identified by the plan include: greater coordination of transportation services and programs within and across jurisdictions, more customer-focused services, more training for transportation providers, and improved information and marketing for existing specialized transportation services.

These needs are also strategies that can inform

http://www.mwcog.org/uploads/pub-documents/v15bXVY20141212151648.pdf

TPB Weekly Report December 2, 2014



Transportation

Home > Transportation > Weekly Report

TPB Weekly Report

An online publication of the National Capital Region Transportation Planning Board

December 2, 2014

2015 CLRP Update to Focus on Addressing Region's Top Needs

Reducing congestion on roadways and transit systems. Providing high-quality transportation options between and within mixed-use Activity Centers. Reducing vehicle-related emissions of harmful air pollutants and greenhouse gases.

These are some of the top regional needs that the Transportation Planning Board is encouraging area transportation agencies to consider when identifying future improvements to fund and include in the 2015 update of the region's Constrained Long-Range Transportation Plan (CLRP).

The TPB spelled those needs out recently in its 2015 CLRP Call for Projects, which officially kicks off the annual CLRP update process by inviting agencies to submit new projects or to make changes to any projects already in the plan. Under federal law, any regionally significant project that agencies expect to build, operate, and maintain between now and 2040 must be included in the plan. Currently, the CLRP includes hundreds of planned, regionally significant highway, transit, and bicycle and pedestrian improvements.

THE REGION'S GREATEST NEEDS

In developing and selecting projects to submit for inclusion in the 2015 CLRP, agencies should give priority to projects that address the following regional needs.

- Reduce congestion on the roadway and/or transit system
- Improve the operational efficiency of the existing roadway and/or transit system
- Provide high-quality transportation options between and/or within Activity Centers
- Reduce vehicle-miles traveled (VMT) per capita
- Reduce emissions of criteria pollutants
- Reduce emissions of greenhouse gases
- Increase use of travel modes other than driving alone

The top needs which are to be the focus of the forthcoming CLRP update were identified through a detailed Performance Analysis of how well the future transportation system laid out in the most recent update of the plan, approved in October, is expected to meet the needs of area travelers in 2040.

Recent Weekly Reports

June 30, 2015
"Fifty Years Ago, TPB Established as Region's Official Metropolitan Planning Organization"

June 23, 2015
"Major Transit Projects in Various Stages of Planning and Implementation Highlighted at Regional Forum"

June 16, 2015
"Al Grant, COG's First Transportation Planning Director, Remembered For His Leadership and Contributions to the Region"

Archived Reports

More From TPB

Social Media
- Facebook
- Twitter

Periodical Publications
- TPB News
- The Region

"TPB Weekly Report" is an online publication designed to provide brief, timely summaries of recent TPB research, analysis, outreach, and planning in the metropolitan Washington region.

To receive future issues of "TPB Weekly Report" via email, please visit

http://www.mwcog.org/transportation/weeklyreport/2014/12-02.asp

NATIONAL CAPITAL REGION
TRANSPORTATION PLANNING BOARD

Comment Period Notice

Draft 2015 Amendment to the Financially Constrained Long-Range Transportation Plan (CLRP) and the Air Quality Conformity Analysis

Comment period open Thursday, September 10 until 11:59 p.m. on Saturday, October 10, 2015.

The Transportation Planning Board (TPB) has released the draft 2015 Amendment to the CLRP and its accompanying Air Quality Conformity Analysis for a 30-day comment period. The public and any TPB member or stakeholder may submit comments. The following materials related to the 2015 Amendment and the Conformity Analysis are available for review and comment on the CLRP website at www.mwcog.org/CLRP2015:

- **Summary of major new projects and changes to existing projects proposed for the 2015 CLRP Amendment**
- **Complete listing of all transit, HOV and roadway improvements included in the Draft Air Quality Conformity Analysis of the 2015 CLRP Amendment**
- **Summary Report and Presentation for the Draft Air Quality Conformity Analysis**
- **Performance Analysis of the Draft 2015 CLRP Amendment**
- **Summary Brochure of the Draft 2015 CLRP Amendment**

Comments may be submitted:

- **Online at www.mwcog.org/TPBcomment**
- **By Email: TPBcomment@mwcog.org**
- **By Mail to The Hon. Phil Mendelson, Chairman**
  National Capital Region Transportation Planning Board
  777 North Capitol Street, NE
  Suite 300
  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 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 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.

TPB CLRP Website

http://www.mwcog.org/clrp/update/schedule.asp

PUBLIC COMMENT PERIOD

FOR THE WASHINGTON REGION´S 2015 CONSTRAINED LONG-RANGE TRANSPORTATION PLAN AND DRAFT SCOPE OF WORK FOR THE AIR QUALITY CONFORMITY ANALYSIS

On Thursday, January 15, 2015 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 2015 update to the National Capital Region´s Financially Constrained Long-Range Transportation Plan (CLRP). The TPB also released the draft Scope of Work for the Air Quality Conformity Analysis. The 30-day public comment period will close at midnight on Saturday, February 14, 2015.

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 February 18, 2015.These materials are available for review online at www.mwcog.org/clrp 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.

PERIÓDO DE COMENTARIO PÚBLICO

PARA EL PLAN RESTRINGIDO DE TRANSPORTACIÓN A LARGO PLAZO PARA LA REGIÓN DE WASHINGTON 2015 Y EL BORRADOR DEL ÁMBITO DE TRABAJO PARA EL ANÁLISIS DE CONFORMIDAD DE LA CALIDAD DEL AIRE

El jueves, 15 de enero, 2015 el Consejo de Planificación de la Transportación de la Región Nacional de la Capital (TPB) lanzó para comentario público el borrador de la presentación del proyecto para el Análisis de Conformidad de la Calidad del Aire de la actualización del 2015 del Plan de Transportación Restringido finacieramente a largo plazo para la Región de Washington (CLRP). El TPB también lanzó el borrador 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, 14 de febrero, 2015. Se le pedirá al TPB que apruebe los aportes del proyecto y el ámbito de trabajo para el Análisis de Conformidad de la Calidad del Aire en su reunión del 18 de febrero del 2015.

Estos materiales están disponibles para revisar en línea en www.mwcog.org/clrp y en las oficinas del 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 ocoupación (HOV), tránsito, bicicletas y peatones, 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 Enmiendas de la Acta de Aire Limpio de 1990.

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

Escribir: **National Capital Region Transportation Planning Board**
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 period 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.

Washington Post January 15, 2015

PUBLIC COMMENT PERIOD FOR THE WASHINGTON REGION'S

PUBLIC COMMENT PERIOD

FOR THE WASHINGTON REGION'S 2015 CONSTRAINED LONG-RANGE TRANSPORTATION PLAN AND DRAFT SCOPE OF WORK FOR THE AIR QUALITY CONFORMITY ANALYSIS

On Thursday, January 15, 2015 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 2015 update to the National Capital Region's Financially Constrained Long-Range Transportation Plan (CLRP). The TPB also released the draft Scope of Work for the Air Quality Conformity Analysis. The 30-day public comment period will close at midnight on Saturday, February 14, 2015. 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 February 18, 2015.

These materials are available for review online at **www.mwcog.org/clrp** 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.

PERIÓDO DE COMENTARIO PÚBLICO

Para la propuesta de actualización del 2015 para la región de Washington para el plan restringido a largo plazo (CLRP), FY 2015-2020, Programa de Mejoramiento de Transportación (TIP), y Análisis de Conformidad de la Calidad del Aire

El Consejo de Planificación de la Transportación de la Región Nacional de la Capital (TPB) iniciará un periodo de comentario de 30 días para la propuesta de actualización del 2015 para el plan restringido a largo plazo (CLRP), y enmiendas al FY 2015-2020, Programa de Mejoramiento de Transportación (TIP), acompañado del Análisis de Conformidad de la Calidad del Aire, el 10 de septiembre en la reunión TPB, Comité de Asesores Ciudadanos. 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, 10 de octubre del 2015. Está programado la aprobación de estos documentos en la reunión TPB del 16 de octubre del 2015. Los miembros del público están invitados a revisar estos documentos de borrador en la página web de CLRP, www.mwcog.org/clrp2015/ 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 ocoupación (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 2015 y el 2020. 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 el Acta de Enmiendas 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, Phil Mendelson, 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 en español, o para someter una demanda 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.

Washington Post September 10, 2015

PUBLIC COMMENT PERIOD FOR THE WASHINGTON REGION'S PROPOSED 2015 UPDATE TO THE CONSTRAINED LONG-RANGE PLAN (CLRP), FY 2015-2020 TRANSPORTATION IMPROVEMENT PROGRAM (TIP), AND AIR QUALITY CONFORMITY ANALYSIS

The National Capital Region Transportation Planning Board (TPB) will initiate a 30-day public comment period for the proposed 2015 update to the Constrained Long-Range Plan (CLRP) and amendments to the FY2015-2020 Transportation Improvement Program (TIP), and the accompanying air quality conformity analysis, on September 10 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 October 10, 2015. These documents are scheduled to be approved at the October 16, 2015 TPB meeting. Members of the public are invited to review these draft documents on the CLRP website, **www.mwcog.org/clrp2015/**. 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 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.

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 Phil Mendelson, 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, or to file a Title VI related complaint, see https://www.mwcog.org/publications/nondiscrimination.asp or call (202) 962-3200. If information is needed in another language, then contact (202) 962-3200.

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For additional information or for special assistance, please call (202) 962-3311 or (202) 962-3213 (TDD).

**PUBLIC COMMENT PERIOD
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APPENDIX D

Documentation of

Data Development Process for

Mobile Source Emissions Calculations

MEMORANDUM

TO: Files

FROM: Jinchul (JC) Park

Date: May 14, 2015

SUBJECT: Mobile Source Emissions Process and Data Development for the Air Quality Conformity Analysis of the 2015 CLRP Amendment

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 2.3.57 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 MOVES2014; (3) execution of MOVES with modeling characteristics; and (4) summary of MOVES input using MySQL summary scripts. The overall modeling sequences are graphically 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.

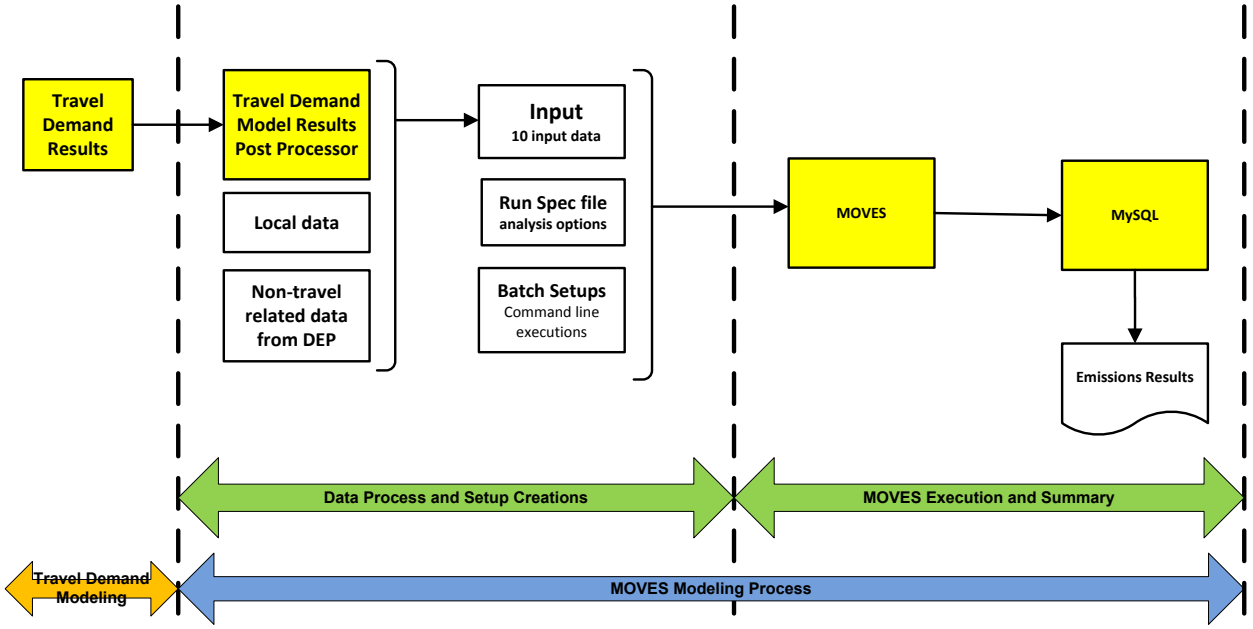

Figure 1. MOVES Modeling Process

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.

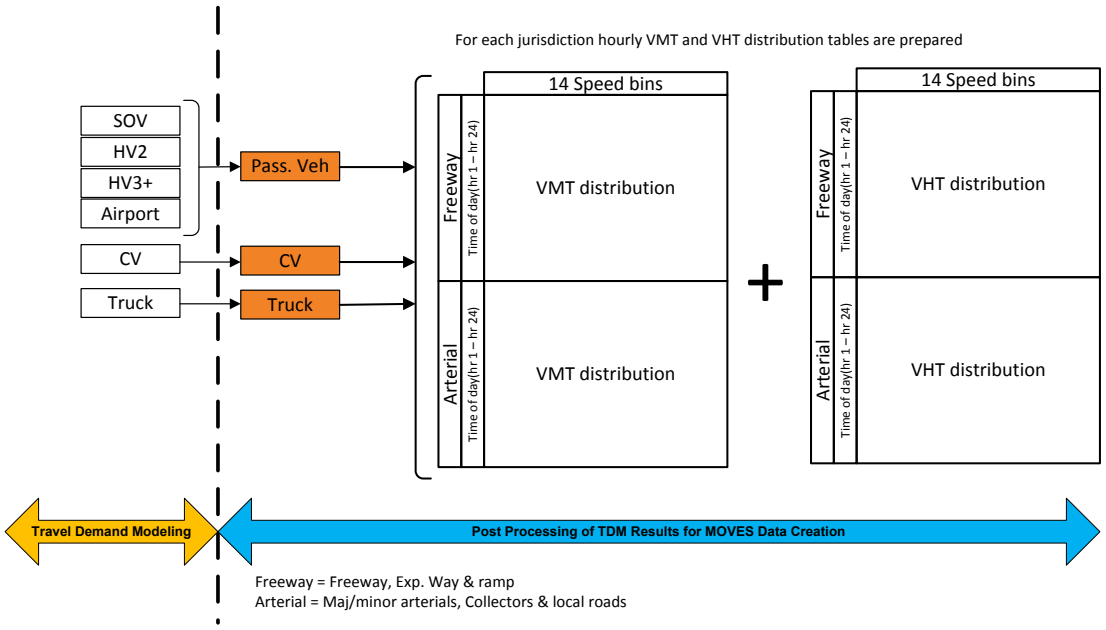

Figure 2. Post Processing Process of Travel Demand Results

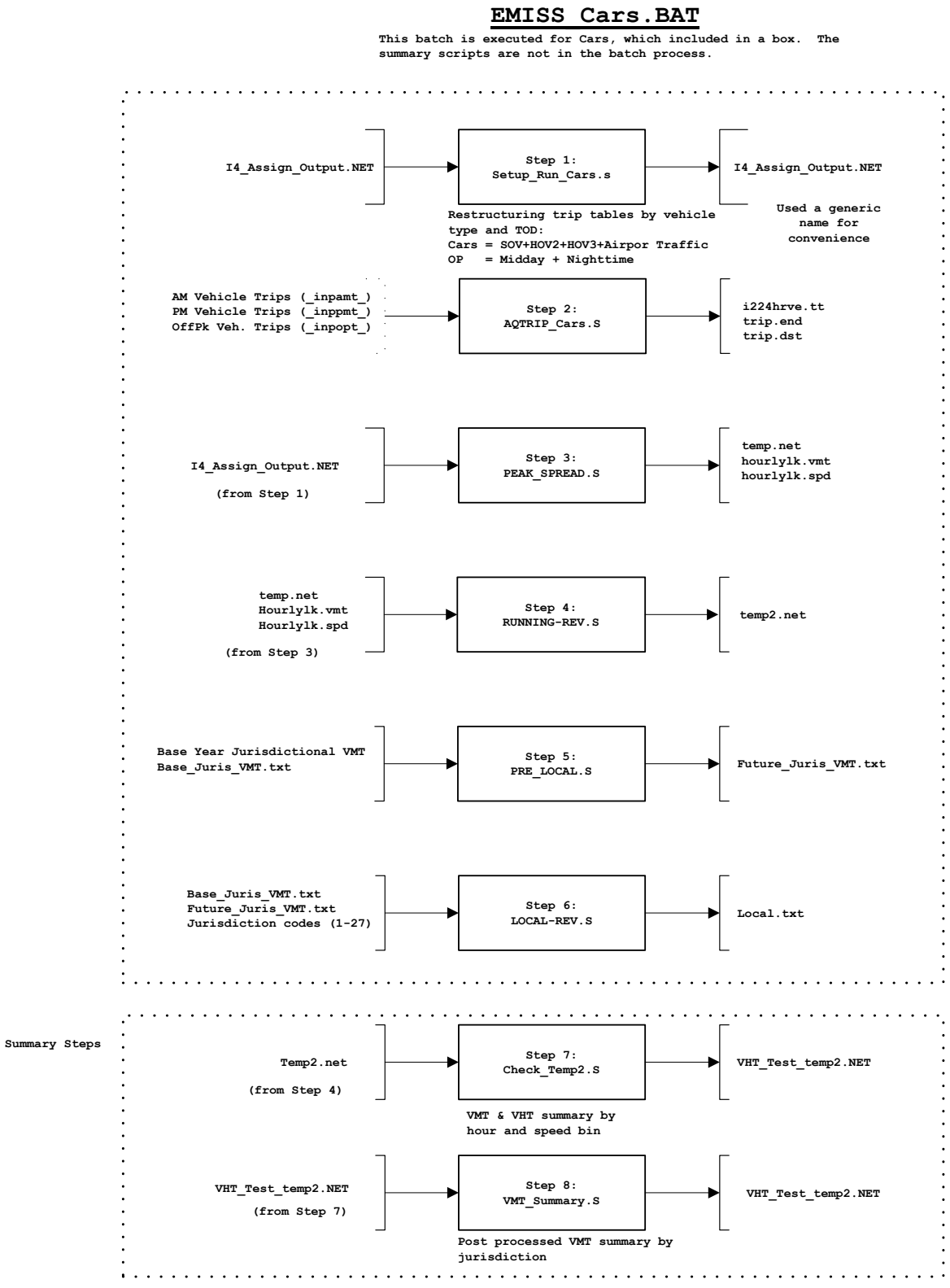

Figure 3. Sample Post Processing flowchart for Passenger Vehicles

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 2015 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 2015 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);

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

[2] RegistrationDistributionConverter_Veh16

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

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.

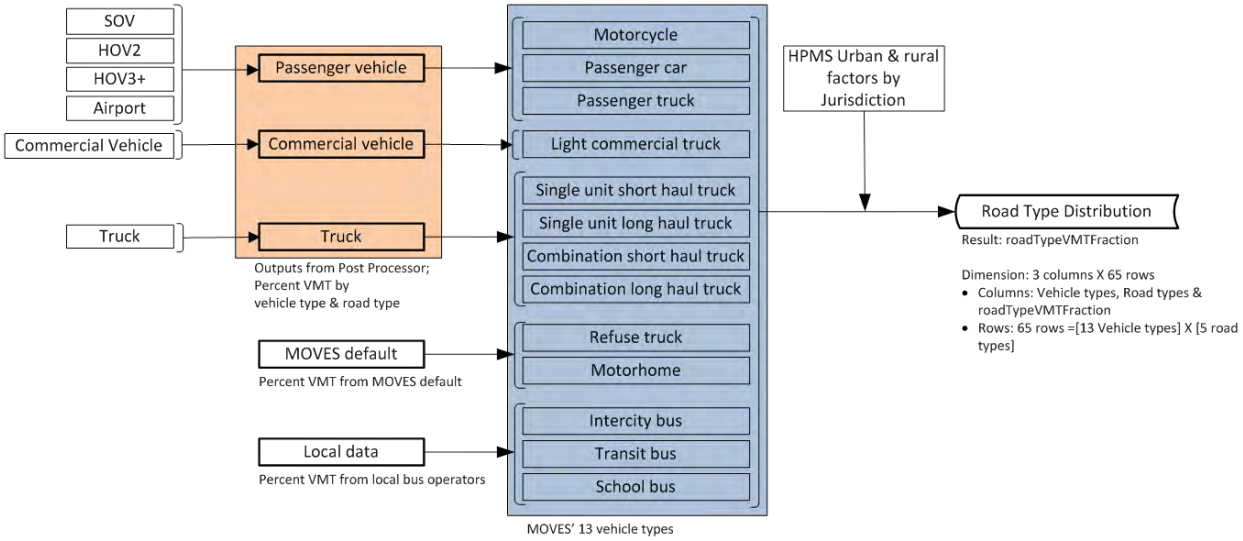

Figure 4. Road Type Distribution Development Process

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: Local data provided by Fairfax County

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:

*W*Source: Local data provided by the Washington Metropolitan Area Transit Authority

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. 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				
		2015	2017	2025	2030	2040
DC	District of Columbia	293,080	300,237	328,864	346,756	382,541
MD	Calvert Co.	89,956	93,532	107,839	116,781	134,664
	Charles Co.	136,237	140,899	159,547	171,202	194,512
	Frederick Co.	225,071	232,657	262,998	281,962	319,889
	Montgomery Co.	760,028	777,623	848,000	891,986	979,958
	Prince George's Co.	624,943	635,257	676,513	702,298	753,868
	SUB TOTAL 1 - MD	1,836,235	1,879,967	2,054,898	2,164,229	2,382,892
VA	City of Alexandria	132,817	135,672	147,093	154,232	168,509
	Arlington Co.	149,484	151,709	160,608	166,170	177,295
	Fairfax Co.	958,938	986,753	1,098,015	1,167,554	1,306,631
	Loudoun Co.	273,162	286,855	341,626	375,858	444,323
	Prince William Co.	394,357	411,349	479,319	521,800	606,762
	SUB TOTAL 2 - VA	1,908,758	1,972,339	2,226,662	2,385,614	2,703,519
TOTAL		4,038,072	4,152,542	4,610,424	4,896,600	5,468,952

Table 5. Vehicle Population Forecasts (Source Type Population)

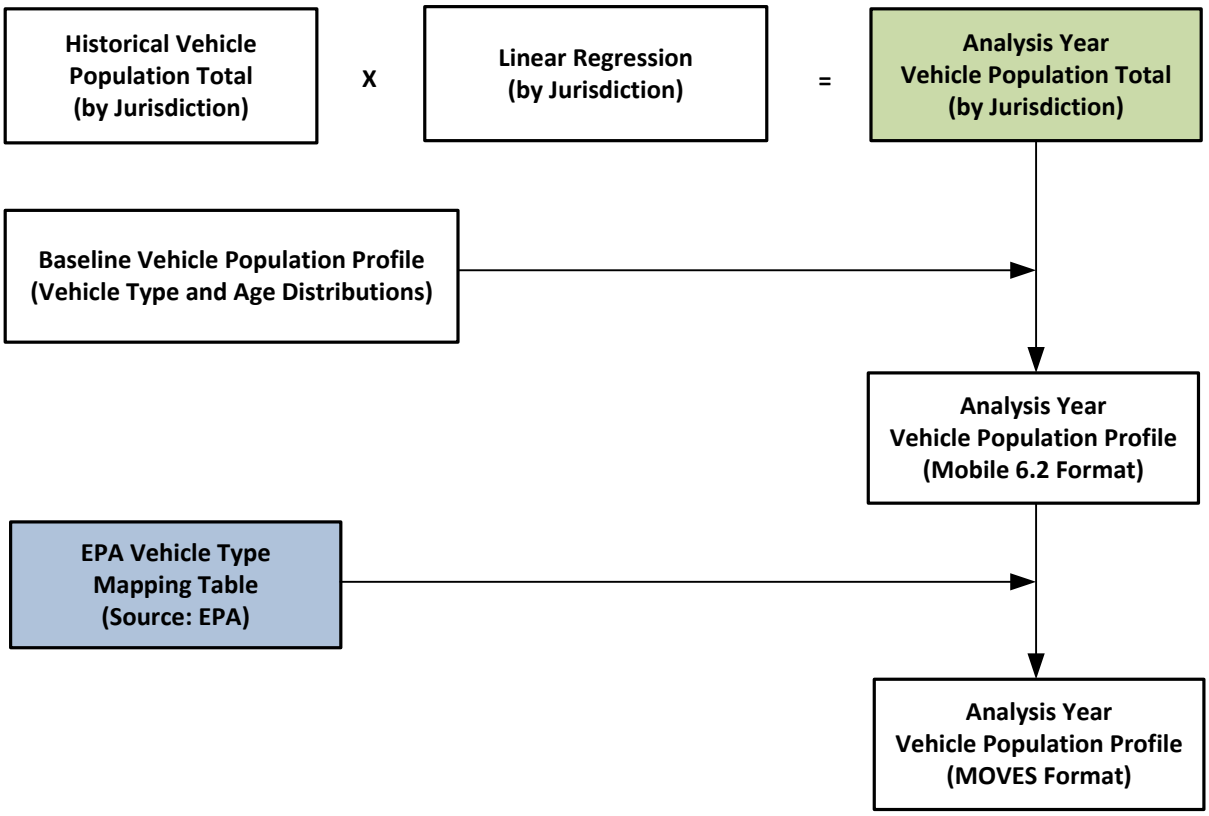

Figure 5. Source Type Population Development Process of Future Analysis Year

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

MOVES2014, 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 postprocessing.
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.

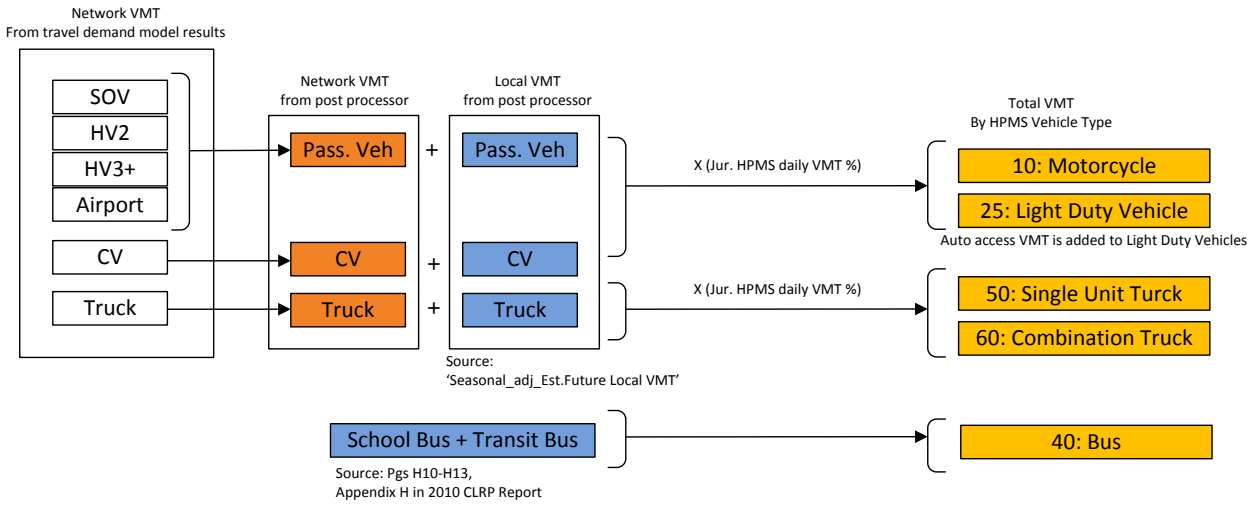

Figure 6. Annual VMT Calculation Process

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 NON-TRAVEL RELATED INPUTS

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 from a 2007 Ozone attainment SIP (submitted to EPA in May 2007) for the 1997 ozone NAAQS. The data – while remained 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 MOVES2014 and MOVES2010a, data used for the 2014 CLRP analysis were also used for the 2015 CLRP analysis in the same format.

- Fine Particles ($PM_{2.5}$): Meteorology data from a 2013 $PM_{2.5}$ Maintenance Plan (submitted to EPA in May 2013) for the 1997 annual $PM_{2.5}$ NAAQS. Since the original data was already in MOVES2010a ready format, which is the same as the MOVE2014 format, no further data conversion was necessary.

- Carbon Monoxide (CO): Meteorology data from a 1995 CO Maintenance Plan (submitted to EPA in September 1995) for the 1971 CO NAAQS. The 1995 database did not contain relative humidity percentages, which is a MOVES input requirement. Therefore, hourly relative humidity percentages were developed in consultation with and oversight by MWAQC in a MOVES-compatible format in order to be used for conformity analyses purposes. The original temperature data – while remained unchanged in content –were reformatted from the original format Mobile5a -- the prevailing emissions estimating model in 1995 -- to MOVES2010a ready format the 2014 CLRP analysis[1]. Since there is no difference in meteorology data format for MOVES2014 and MOVES2010a, data used for the 2014 CLRP analysis were also used for the 2015 CLRP analysis in the same format.

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

B. Fuel Supply and Formulation

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 MOVES2014 ready format.

For analysis year 2015, 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 MOVES2014 ready format.

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

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 (MOVES2014 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:

   MOVES2014 Cal-Lev Database File - MOVES2014_caleviii2011;
   MOVES2014 ZEV Program Information - Included in all MD MS-Excel input files as a tab (ZEV_AVFT_MD_moves2014)

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 E

Transportation Emissions Reduction Measures (TERMS)

TRANSPORTATION EMISSIONS REDUCTION MEASURES (TERMs) ANALYSIS

for the
2015 CLRP Amendment and FY2015-2020 TIP

TECHNICAL DOCUMENTATION

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Table of Contents

List of Tables

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 2015 CLRP using the travel demand model and MOVES2014 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 FY2015-2020 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 MOVES2014 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)
- Winter CO (Short Tons/Day)

Emission reduction results are provided by the specific analysis years analyzed as part of the 2015 CLRP Air Quality Conformity assessment: 2015, 2017, 2025, 2030 and 2040. The conformity work included two scenarios for the analysis years 2025, 2030 and 2040 (indicated as Alternative A and Alternative B) which relate to varying freeway ramp configurations for the I-66 HOT lanes (outside of the Capital Beltway).

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 Tables 2 and 3. Table 4 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 2015 CLRP with Alternative A

Analysis Year	AAWD VMT from Travel Demand Forecasts	Annual Growth between Analysis Year
2015	166,671,622	na
2017	170,199,356	1.06%
2025 Alt A	185,271,749	1.11%
2030 Alt A	194,151,352	0.96%
2040 Alt A	206,656,745	0.64%
Avg. Annual Growth		0.94%

[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. Average Annual VMT Growth in 2015 CLRP with Alternative B

Analysis Year	AAWD VMT from Travel Demand Forecasts	Annual Growth between Analysis Years
2015	166,671,622	na
2017	170,199,356	1.06%
2025 Alt B	185,329,806	1.11%
2030 Alt B	194,139,846	0.95%
2040 Alt B	206,596,299	0.64%
Avg. Annual Growth		0.94%

Table 4. Projection of Future Commuter Connections VMT Reduction in 2015 CLRP

Analysis Year*	Alternative A VMT Reductions	Alternative B VMT Reductions
1999	716,954	716,954
2002	1,708,613	1,708,613
2005	2,499,637	2,499,637
2008	2,453,895	2,453,895
2011	2,418,264	2,418,264
2014	2,473,326	2,473,326
2015	2,496,624	2,496,587
2017	2,543,881	2,543,767
2025	2,742,024	2,741,574
2030	2,873,626	2,872,940
2040	3,156,083	3,154,858

*1999 to 2014: Historical VMT from Commuter Connections;

2015 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 2015 (Alternative B) adjusted VMT reduction was calculated as:

2,496,587 (2015 reduction) – 2,453,895 (2008 reduction) = 42,692

The adjusted reductions (per day and per year) are shown in Table 5.

Table 5. Projection of Adjusted VMT Reductions

Year	Ozone VOC and NO_x (VMT/day)	$PM_{2.5}$ Direct and Precursor NOx (VMT/year)	Winter CO (VMT/day)
2008	0	0	0
2015	42,692	10,672,977	42,692
2017	89,872	22,468,018	89,872
2025 Alt A	288,129	72,032,243	288,129
2025 Alt B	287,679	71,919,713	287,679
2030 Alt A	419,731	104,932,819	419,731
2030 Alt B	419,045	104,761,289	419,045
2040 Alt A	702,188	175,546,904	702,188
2040 Alt B	700,963	175,240,793	700,963

The VMT reductions in Table 5 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 MOVES2014 (see Table 6). The projected daily or annual VMTs in Table 5 are multiplied to corresponding emission rates in Table 6 to calculate emission reductions of Commuter Connections in Table 7.

Table 6. Emission Rates in 2015 CLRP (grams/mile)

Year	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx	Winter CO
2015	0.372	0.472	0.02	0.52	5.095
2017	0.301	0.307	0.02	0.34	4.293
2025 Alt A	0.201	0.143	0.01	0.16	2.864
2025 Alt B	0.201	0.143	0.01	0.16	2.863
2030 Alt A	0.135	0.081	0.01	0.10	2.030
2030 Alt B	0.135	0.081	0.01	0.10	2.030
2040 Alt A	0.095	0.043	0.01	0.06	1.429
2040 Alt B	0.095	0.043	0.01	0.06	1.429

Table 7. Emission Reductions by Commuter Connections in 2015 CLRP (short tons/year)

Year	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx	Winter CO
2015	0.018	0.022	0.21	6.08	0.240
2017	0.030	0.030	0.40	8.38	0.425
2025 Alt A	0.064	0.045	0.99	12.98	0.910
2025 Alt B	0.064	0.045	0.99	12.96	0.908
2030 Alt A	0.063	0.038	1.28	11.48	0.939
2030 Alt B	0.063	0.038	1.28	11.47	0.938
2040 Alt A	0.074	0.033	1.83	11.54	1.106
2040 Alt B	0.073	0.033	1.83	11.52	1.104

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:

- 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 MOVES2014 model.
- '…..MATOC is typically involved in approximately 20 minor incidents and one major freeway, arterial or transit incident of regional significance per month….'

[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.*

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 2015 CLRP Air Quality Conformity Analyses, as follows:

$$\mathrm{Rate_i\ (grams\ per\ mile)} = \frac{\text{Total Regional Emissions, by Analysis Year, 2015 CLRP AQC}}{\text{Total Regional VMT, by Analysis Year, 2015 CLRP AQC}}$$

The resulting regional emission rates were developed in Table 8.

- *Mobile Emissions Savings Development attributable to MATOC:*

$$\text{Emissions Savings (grams per mile)} = \text{Queue VMT Savings} * \mathrm{Rate_i} * \mathrm{Rate_{adj}}$$

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 9.

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

MOBILE EMISSIONS RATES – REGIONAL INCIDENT MGMT PROGRAM (gr/mile)					
Year	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx	Winter CO
2015	0.529	1.087	0.04	0.93	5.345
2017	0.421	0.757	0.03	0.65	4.447
2025 Alt A	0.273	0.324	0.02	0.28	2.921
2025 Alt B	0.273	0.324	0.02	0.28	2.921
2030 Alt A	0.185	0.209	0.01	0.19	2.072
2030 Alt B	0.185	0.209	0.01	0.19	2.073
2040 Alt A	0.133	0.142	0.01	0.13	1.470
2040 Alt B	0.133	0.142	0.01	0.13	1.471

Table 9. Mobile Emissions Reductions (Regional Incident Management Program)

EMISSIONS REDUCTIONS – REGIONAL INCIDENT MGMT PROGRAM					
Year	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx	Winter CO
	(short tons/day)		(short tons/year)		(short tons/day)
2015	0.016	0.033	0.41	10.19	0.164
2017	0.013	0.023	0.33	7.11	0.136
2025 Alt A	0.008	0.010	0.19	3.10	0.089
2025 Alt B	0.008	0.010	0.19	3.10	0.089
2030 Alt A	0.006	0.006	0.16	2.07	0.063
2030 Alt B	0.006	0.006	0.16	2.07	0.063
2040 Alt A	0.004	0.004	0.13	1.47	0.045
2040 Alt B	0.004	0.004	0.13	1.48	0.045

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.

---

[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 2015 CLRP & FY2015-2020 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 2015: 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 2015: 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 6) were multiplied by the above VMT reductions by milestone year to yield mobile emission reductions from pedestrian facilities expansions (Table 10).

Table 10. Mobile Emissions Reductions (Pedestrian Facilities)

EMISSIONS REDUCTIONS - PEDESTRIAN FACILITIES EXPANSIONS					
Year	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx	Winter CO
	(short tons/day)		(short tons/year)		(short tons/day)
2015	0.001	0.002	0.02	0.46	0.018
2017	0.008	0.008	0.11	2.27	0.115
2025 Alt A	0.007	0.005	0.10	1.36	0.096
2025 Alt B	0.007	0.005	0.10	1.36	0.096
2030 Alt A	0.005	0.003	0.09	0.83	0.068
2030 Alt B	0.005	0.003	0.09	0.83	0.068
2040 Alt A	0.003	0.001	0.08	0.50	0.048
2040 Alt B	0.003	0.001	0.08	0.50	0.048

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, and their capacities were obtained from several sources such as Commuter Connections Program, state DOTs and local jurisdictions (see Table 11 for more details).

Average travel distance estimates, 18.12 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 18.12 miles (Table 11) was calculated from local data, which is within the range of the average distances reported by the other sources.

Table 11. Informal Carpool Lots Capacity and Trip Length to Work

SLUG LOTS SUMMARIES	TAZ ID	2014 Parking Spaces	Average HBW Trip length (miles)
Beltway (I-95 south of I-495)	925 (926)	265	11.6
Autumn Willow Park	1654	105	14.4
AMF Centreville Lanes	1658	31	15.9
Greenbriar Park	1665	60	12.9
Apple Federal Credit Union	2039	12	13.0
Potomac Station	2263	50	17.6
Crossroads United Methodist Church	2302	90	18.0
Ashburn Farm	2303	20	17.6
Broadlands	2304	30	16.9
Ashburn Village	2340	40	17.8
Sterling Park Shopping Center	2375	46	13.9
Harbor Drive	2668	183	16.7
Prince William Stadium	2678	190	18.2
Princedale	2712	75	22.0
Montclair Commuter Lot	2729 (2728)	49	22.2
Good Shepherd United Methodist Church	2732	58	17.9
Cherrydale Road	2732	30	17.9
Bethel United Methodist Church	2745	49	18.1
Rosemont	2820	44	29.5
Jefferson	2826	105	28.9
Woodsboro	2879	23	27.1
New Market	2888	54	26.9
Urbana (North Lot)	2899	250	19.1
Frederick Armory	2914	125	16.3
Frederick Stadium	2934	112	17.9
Mount Zion East	2940	36	20.3
Lusby	3324	30	26.0
Weighted Average Trip Length (Lots to work)			18.12

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 2013 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 52,234 miles. Using the emission rates in Table 6, emission reductions from the informal carpool lots were derived in Table 12.

Table 12. Mobile Emissions Reductions from Informal Carpool Lots

REGIONAL EMISSIONS REDUCTIONS – INFORMAL CARPOOLING LOTS					
Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx	Winter CO
	(short tons/day)		(short tons/year)		(short tons/day)
2015	0.021	0.027	0.25	7.43	0.293
2017	0.017	0.018	0.23	4.87	0.247
2025 Alt A	0.012	0.008	0.18	2.35	0.165
2025 Alt B	0.012	0.008	0.18	2.35	0.165
2030 Alt A	0.008	0.005	0.16	1.43	0.117
2030 Alt B	0.008	0.005	0.16	1.43	0.117
2040 Alt A	0.005	0.002	0.14	0.86	0.082
2040 Alt B	0.005	0.002	0.14	0.86	0.082

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 13.

Table 13. Mobile Emissions Reductions (All TERMs Combined)

REGIONAL EMISSIONS REDUCTIONS – ALL TERMs COMBINED					
Years	Ozone VOC	Ozone NOx	PM2.5 Direct	Precursor NOx	Winter CO
	(short tons/day)		(short tons/year)		(short tons/day)
2015	0.056	0.084	0.88	24.16	0.715
2017	0.068	0.080	1.06	22.64	0.924
2025 Alt A	0.091	0.068	1.46	19.80	1.260
2025 Alt B	0.090	0.068	1.46	19.77	1.258
2030 Alt A	0.081	0.051	1.69	15.81	1.187
2030 Alt B	0.081	0.051	1.69	15.79	1.186
2040 Alt A	0.086	0.041	2.18	14.37	1.281
2040 Alt B	0.086	0.041	2.17	14.35	1.279

APPENDIX F

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.

777 North Capitol Street NE, Suite 300, Washington, DC 20002-4290
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

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