

AIR QUALITY CONFORMITY DETERMINATION
OF THE 2011 CONSTRAINED LONG RANGE PLAN
FOR THE
WASHINGTON METROPOLITAN REGION

November 16, 2011

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NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD
METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

ABSTRACT

TITLE: Air Quality Conformity Determination Of The 2011 Constrained Long Range Plan For The Washington Metropolitan Region

DATE: November 16, 2011

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 the assessment of the 2011 Constrained Long Range Plan (CLRP) with respect to air quality conformity requirements under the 1990 Clean Air Act Amendments. The assessment 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 assessment 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 emission 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), which are either approved or under review by the EPA. Additionally, the "action scenario" (forecast year) emissions for fine particles are not greater than the base year 2002 emissions, thus satisfying the requirement for pollutants without an established budget. These results provide a basis for a determination of conformity of the 2011 CLRP.

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EXECUTIVE SUMMARY

This report documents the air quality conformity assessment of the 2011 Constrained Long Range Plan (CLRP) 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) and by 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 assessment is a responsibility of the National Capital Region Transportation Planning Board.

The following summarizes the pollutants included in this assessment:

- **Ozone Season Volatile Organic Compounds (VOC) and Nitrogen Oxides (NO_x).** Ozone season pollutants must not exceed EPA approved totals from the Metropolitan Washington Air Quality Committee's (MWAQC's) Motor Vehicle Emissions Budgets (MVEBs) from the 8-hour Ozone State Implementation Plan (SIP). MWAQC adopted the 8-hour ozone SIP in May, 2007, and on September 4, 2009, EPA found adequate the 2008 Reasonable Further Progress (RFP) budgets, and stated that the Metropolitan Washington region must use these budgets for future conformity determinations for the 8-hour ozone standard. The RFP budget for VOC is 70.8 tons/day, and for NO_x is 159.8 tons/day.
- **Fine Particles (PM_{2.5}).** In the absence of approved budgets EPA, allows for an assessment that shows emissions in "action" scenarios are no greater than those in a 2002 base. This criterion was established and applied, with the concurrence of MWAQC, in prior PM_{2.5} conformity assessments.
- **Wintertime Carbon Monoxide (CO).** The region is in maintenance for mobile source wintertime CO, and is required to show that pollutants do not exceed the approved budget of 1671.5 tons/day.

Emissions estimates for all pollutants were developed for 2002, 2016, 2020, 2030, and 2040 forecast years, using both network analysis and off-line emissions assessment. The results show that the 2011 CLRP demonstrates adherence to relevant mobile source emissions budgets for all forecast years, and that forecast year fine particles pollutants emissions are not greater than the base year 2002 emissions. This analysis provides a basis for a determination of conformity for the 2011 CLRP.

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LIST OF REFERENCES

1. 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, Federal Register, November 24, 1993, with updates most recently on March 24, 2010, EPA.
2. Transportation Planning Board Consultation Procedures With Respect to Transportation Conformity Regulations Governing TPB Plans and Programs, May 20, 1998, NC RTPB/MWCOG.
3. February 22, 1996 memo from Michael J. Clifford to the TPB Technical Committee, "Impacts of Increased Speed Limits on Mobile Emissions".
4. "Redesignation of the Metropolitan Washington Carbon Monoxide Area to Attainment and Approval of the Area's Maintenance Plan and Emissions Inventory", SIP revisions submitted to EPA by Virginia on October 4, 1995 and by the District of Columbia and Maryland on October 12, 1995.
5. Analysis of Potential Transportation Emissions Reduction Measures (TERMs) For The 2009 CLRP and FY2010-2015 TIP, June 5, 2009, TPB.
6. State Implementation Plan (SIP) Revision, Phase II Attainment Plan, for the Washington DC-MD-VA Nonattainment Area, February 3, 2000, MWAQC.
7. "Heavy Duty Diesel Vehicles on Local Roads Study", May 8, 2002 technical memorandum from Robert Griffiths to the TPB.
8. Responses to a Critique of the Travel Demand and Air Emissions Models of the National Capital Region Transportation Planning Board, A Compendium of Comments, Responses, and Related Documents, June 13, 2002, TPB.
9. Technical Guidance on the Use of MOBILE6.2 for Emission Inventory Preparation, US EPA August, 2004 and User's Guide to MOBILE6.1 and MOBILE6.2, Mobile Source Emission Factor Model, US EPA, August, 2003.
10. "Methodology for Studying Highway Tolls Using the V2.1/TP+, C Model", December 16, 2003 technical memorandum from Ron Milone to the ICC files.
11. Application for Developing MOBILE6 Inputs to Metropolitan Washington Council of Governments (MWCOG) Transportation Model: Draft User's Guide. E.H. Pechan & Associates, July, 2006.

12. "Update on Air Quality Planning Activities- Topic 1: VIN Decode Results", May 10, 2006 memorandum from Michael Clifford to the TPB
13. "PM_{2.5} and PM₁₀ Hot-Spot Analyses in Project-Level Transportation Conformity Determinations for the New PM_{2.5} and Existing PM₁₀ National Ambient Air Quality Standards" [Federal Register: March 10, 2006 (Volume 71, Number 47)]
14. Plan To Improve Air Quality In The Washington, DC-MD-VA Region, State Implementation Plan (SIP) for 8-Hour Ozone Standard Prepared for: District of Columbia Department of Environment, Maryland Department of the Environment and Virginia Department of Environmental Quality on behalf of the Metropolitan Washington Air Quality Committee, May 23, 2007.
15. Round 8.0 Cooperative Forecast was approved by the COG Board in November, 2010. Round 8.0 Cooperative Forecasting was updated in 2011 to Round 8.0a to include new land activity data in the Baltimore Region.
16. Plan to Improve Air Quality in the Washington DC-MD-VA Region, State Implementation Plan (SIP) for Fine Particle (PM_{2.5}) Standard and 2002 Base Year Inventory for the Washington DC-MD-VA Nonattainment Area. Prepared by: Metropolitan Washington Council of Governments for the District of Columbia Department of Environment, Maryland Department of the Environment, and Virginia Department of Environmental Quality on behalf of the Metropolitan Washington Air Quality Committee, March 7, 2008.
17. TPB Version 2.3 Travel Forecasting Model for the 3, 722 Zone Area System: User's Guide-Draft Report, April 29, 2011
18. Adequacy Status of the Metropolitan Washington DC Area (DC-MD-VA) 8-Hour Ozone Non-Attainment Area's Reasonable Further Progress Plan Vehicle Emission Budgets for Transportation Conformity Purpose Federal Register 74FR45853, EPA September 21, 2009
19. Approval and Promulgation of Air Quality Implementation Plans; District of Columbia, Maryland, and Virginia; 2002 Base year Emission Inventory, Reasonable Further Progress Plan, contingency measures, Reasonably Available Control Measures, and Transportation Conformity Budgets for the Washington, DC 1997 8-Hour Moderate Ozone Nonattainment Area Federal Register 76FR58116, EPA September 20, 2011.
20. Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; Redesignation of the Metropolitan Washington Carbon Monoxide Area to Attainment and Approval of the Area's Maintenance

Plan and Emission Inventory; Commonwealth of Virginia, District of Columbia and State of Maryland. 96FR 1104 January 30, 1996

21. 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
22. Air Quality Conformity Assessment - Maryland Department of Transportation / District of Columbia Department of Public Works Amendments to 1999 Constrained Long Range Plan and FY2000-2005 Transportation Improvement Program, July 19, 2000, TPB.
23. "Round 8.0 - Based Travel Model Inputs to the Version 2.2 Travel Model", July 26, 2010 technical memorandum from Ronald Milone to DTP Technical staff.
24. Participation Plan, December 19, 2007, TPB.

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
DC DOT	District of Columbia Department of Transportation
DTP	(COG's) Department of Transportation Planning
FAMPO	Fredericksburg Area Metropolitan Planning Organization
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
G/MI	Grams Per Mile
HOV	High Occupancy Vehicle
I/M	Inspection and Maintenance
LOV	Low Occupancy Vehicle
MDOT	Maryland Department of Transportation
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
MWAQC	Metropolitan Washington Air Quality Committee
MWCOG	Metropolitan Washington Council of Governments
NO _x	Nitrogen Oxides
P's & A's	Productions and Attractions
PM _{2.5}	Fine Particles
PNR	Park and Ride Lot
SIP	State Implementation Plan
TAD	Transportation Analysis District
TAZ	Transportation Analysis Zone
TCM	Transportation Control Measure
TERM	Transportation Emission Reduction Measure
T/D	Tons Per Day
TIP	Transportation Improvement Program
TPB	Transportation Planning Board
US DOT	United States Department of Transportation
US EPA	United States Environmental Protection Agency
V/C	Volume to Capacity Ratio
VDOT	Virginia Department of Transportation
VDRPT	Virginia Department of Rail and Public Transportation
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WMATA	Washington Metropolitan Area Transit Authority

TPB R5-2012
November 16, 2011

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

**RESOLUTION FINDING THAT THE 2011 CONSTRAINED LONG RANGE PLAN
CONFORMS 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) with the state implementation plans for air quality attainment within the Metropolitan Washington non-attainment area; and

WHEREAS, a work program was developed to address all procedures and requirements, including public and interagency consultation, and the work program was released for public comment on February 10 and approved by the TPB at its March 16, 2011 meeting; and

WHEREAS, on March 16, 2011, the TPB approved the projects submitted for inclusion in the air quality conformity assessment for the 2011 CLRP; and

WHEREAS, in each year's update of the CLRP between 2000 and 2011, the TPB has explicitly accounted for the funding uncertainties affecting the Metrorail system capacity and levels of service beyond 2005 by constraining transit ridership to or through the core area; and

WHEREAS, after accounting for the "Metro Matters" commitments for Metro's near-term funding and the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) legislation and state matching, the transit ridership constraint to or through the

core area was applied in the both the 2010 CLRP and 2011 CLRP conformity analyses using 2020 ridership levels for 2030 and 2040; and

WHEREAS, on October 11, 2011, the draft results of the Air Quality Conformity Determination of the 2011 CLRP were released for a 30-day public comment period and inter-agency review; and

WHEREAS, the analysis reported in *Air Quality Conformity Determination of the 2011 Constrained Long Range Plan for the Washington Metropolitan Region*, dated November 16, 2011, demonstrates adherence to all mobile source emissions budgets for volatile organic compounds, nitrogen oxides, carbon monoxide and fine particle emissions (PM_{2.5}), and demonstrates that PM_{2.5} emissions meet the requirement that such emissions are not greater than 2002 levels, 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 November 9, 2011, the Metropolitan Washington Air Quality Committee (MWAQC) has provided favorable comments on the Air Quality Conformity Determination of the 2011 Constrained Long Range Plan for the Washington Metropolitan Region;

NOW, THEREFORE, BE IT RESOLVED THAT THE NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD determines that the 2011 Constrained Long Range Plan conforms to all requirements of the Clean Air Act Amendments of 1990.

Adopted by the Transportation Planning Board at its regular meeting on November 16, 2011

I. INTRODUCTION

The Washington region is currently designated nonattainment for the federal health standards for ozone and fine particles (PM_{2.5}). Clean air legislation in 1977 provided 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 conformed 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 emission 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 and fine particles (PM_{2.5}).

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 goes 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 on March 24, 2010. 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.

The conformity regulations are comprehensive, covering definitions and specific technical, procedural, consultation and policy aspects of the analyses. Criteria and procedures to be employed are related to the area's standing with EPA in terms of its status in meeting state implementation plan requirements. Different tests apply depending on the time period and whether SIP revisions have been filed with EPA, which establish emissions budgets leading towards reasonable further progress and attainment of air quality standards.

Consultation

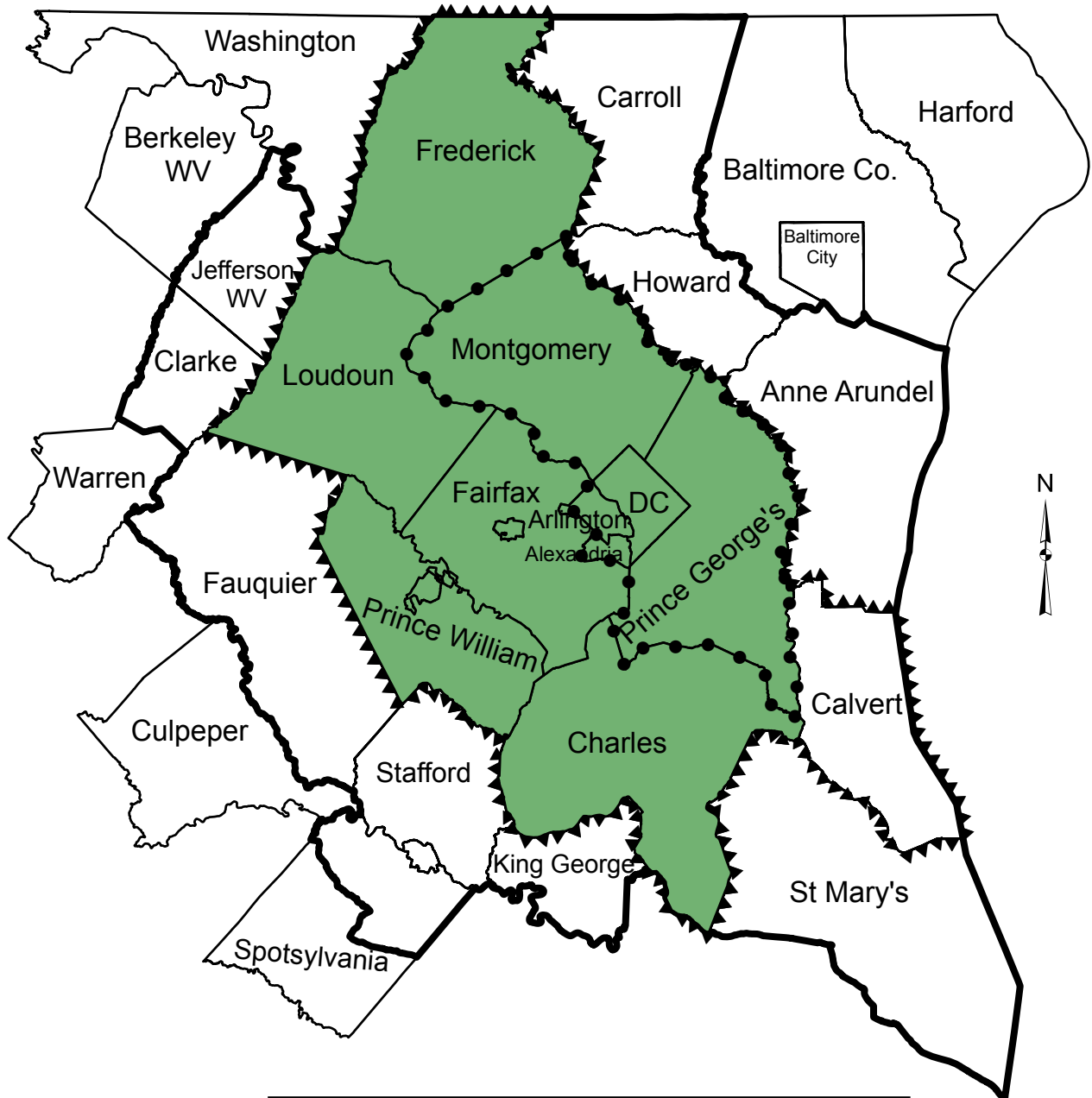
The conformity regulations require that Metropolitan Planning Organizations (MPOs) make Transportation Plans, TIPs, and conformity determinations available to the public, and to accept and respond to public comment. The Transportation Planning Board (TPB) staff went through a lengthy process involving 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.

III. POLLUTANTS

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

EXHIBIT 1

Washington, D.C.- Maryland - Virginia Planning Areas



Ozone Season Pollutants

On April 15, 2004 EPA designated the Washington, DC - MD - VA region as 'moderate' nonattainment for the 1997 8-hour ozone standard. In 2007 the Metropolitan Washington Air Quality Committee (MWAQC) developed an 8-hour ozone SIP (Reference 14). As part of the 8-hour ozone SIP, MWAQC developed mobile budgets for VOC and NOx.

As required by federal guidance, MWAQC established 2008 budgets to show "reasonable further progress" (RFP budgets) in addition to the 2009 and 2010 attainment year budgets. EPA found adequate (Reference 18) the 2008 RFP budgets, and stated that the Washington Metropolitan region must use these budgets for future conformity determinations for the 8-Hour ozone standard. EPA formally approved (Reference 19) these budgets on September 20, 2011. The 2008 RFP budget for VOC is 70.8 tons/day, and for NOx is 159.8 tons/day.

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 nonattainment for PM_{2.5} (see Exhibit 1 for area).

As published in the January 5, 2005 Federal Register, these PM_{2.5} nonattainment designations became effective on April 5, 2005. By this date nonattainment areas were required to submit to EPA a SIP to define the expected methods for reducing the fine particulate matter level in the air and emissions of PM_{2.5} precursors. MWAQC adopted the Plan (Reference 16) on March 7, 2008 and submitted it to EPA prior to the April 5, 2008 deadline. As with other SIPs, MWAQC developed motor vehicle emissions budgets to be used as benchmarks as part of the conformity determination of the CLRP and TIP. The 2009 attainment year budgets are 1,105.4 tons/year and 52,052.9 tons/year for direct PM_{2.5} and precursor NOx, respectively. The 2010 contingency budget, which is only set for precursor NOx, is 51,395.9 tons/year. EPA has yet to approve these budgets, so they are not yet required to be used in an air quality conformity determination. In the absence of approved budgets, EPA allows for an assessment that shows emissions in "action" scenarios are no greater than those in a 2002 base. This criterion was established and applied, with the concurrence of MWAQC, in prior PM_{2.5} conformity assessments.

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 period 1996-

2007. EPA approved (Reference 20) 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 21) 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 METHODS

Approach

In developing the work program for this year's conformity assessment, 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. Mobile emissions budgets set in the PM_{2.5} SIP have been submitted to EPA for approval, but have not yet been found adequate. Since it was possible that the budgets could be found adequate before the TPB was scheduled to act on the conformity assessment this year, it was necessary to assess the pollutant levels for each milestone year relative to the new budgets, as well as a comparison to the 2002 base.

Tasks included: preparation of forecast years representing 2002, 2016, 2020, 2030, and 2040 for ozone season, PM_{2.5} precursors, and wintertime CO analysis; use of current land activity forecasts for the region (Round 8.0a Cooperative Forecasts- Reference 15); use of the new Version 2.3 (Reference 17) travel demand modeling process which includes an updated Transportation Analysis Zone (TAZ) structure; use of a refined Mobile Emissions Post-Processor (Appendix E using latest travel demand and mobile emissions planning assumptions), and Mobile6.2. Staff conducted a parallel technical process to identify and analyze Transportation Emission Reduction Measures (TERMs) for ozone season pollutants, as well as for PM_{2.5} pollutants, under the oversight of the TPB Technical Committee and its Travel Management Subcommittee. This work is documented in Reference 5.

Staff drafted a work program for the analysis and presented it to regional technical and policy committees starting in February 2011. Staff also coordinated the draft work program with EPA, FHWA, FTA and the state and local air management agencies through the TPB consultation procedures. This scope was adopted by the TPB on March 16th, 2011. Staff execution of the work activities is described in the following overview.

Technical Work Activities

Technical work activities for the 2011 CLRP included the preparation of: daily ozone season volatile organic compound (VOC) and nitrogen oxide (NO_x) emissions; yearly direct PM_{2.5} and PM_{2.5} precursor NO_x emissions; and daily wintertime carbon monoxide (CO) emissions inventories for specified years (base year 2002 and forecast years 2016, 2020, 2030, and 2040). These inventories address a primary conformity assessment criterion to demonstrate that the plan adheres to established mobile source emissions budgets for ozone season, PM_{2.5} and wintertime CO pollutants. The inventories also allow the baseline (2002) vs. action (forecast year) comparison required for the PM_{2.5} pollutants until the mobile budgets are found adequate.

The mobile source emissions estimation process utilized in this analysis involved the separate estimation of travel, vehicle and additional components. This structure is shown in Exhibit 2. While lengthy modeling procedures are involved to compute various travel components (number of trips, vehicle miles of travel, system performance, etc.) and rates of emissions (cold start emissions, tailpipe emissions, etc.) for each simulation, the calculation of mobile source emissions ultimately becomes a simple multiplication of a travel component by a rate of emissions associated with that component. As seen in the exhibit, the number of trip origins multiplied by a (gram/trip) cold start emissions rate yields an estimate of startup emissions. Vehicle miles of travel (VMT) multiplied by a (gram/mile) rate yields running emissions, and so on.

Exhibit 2 also illustrates the comprehensive scope of emissions contained in the mobile source inventory, addressing elements not directly available from current travel demand modeling procedures. This includes emissions associated with the number of vehicles in the region, "auto access" emissions and bus emissions.

Emissions impacts associated with Congestion Mitigation and Air Quality (CMAQ) projects were also analyzed, in an off-line basis primarily by the sponsoring agencies, as a requirement associated with their use. These projects, and other similar projects funded by categories other than CMAQ, are also specifically considered in the analysis for the emissions budget and emissions reductions tests. Exhibit 3 presents an overview of the network analysis work activities and shows their interrelationship. This schematic illustrates the major operations only. It is useful, however, in conveying an overview of the major steps of the emissions calculation process from a data processing vantage. The "post-processor" is the emissions calculation software in use at COG for conformity analyses and SIP planning. Spreadsheets 1 - 3 address calculations required in assessing vehicle, auto access, school bus, and transit bus emissions, respectively.

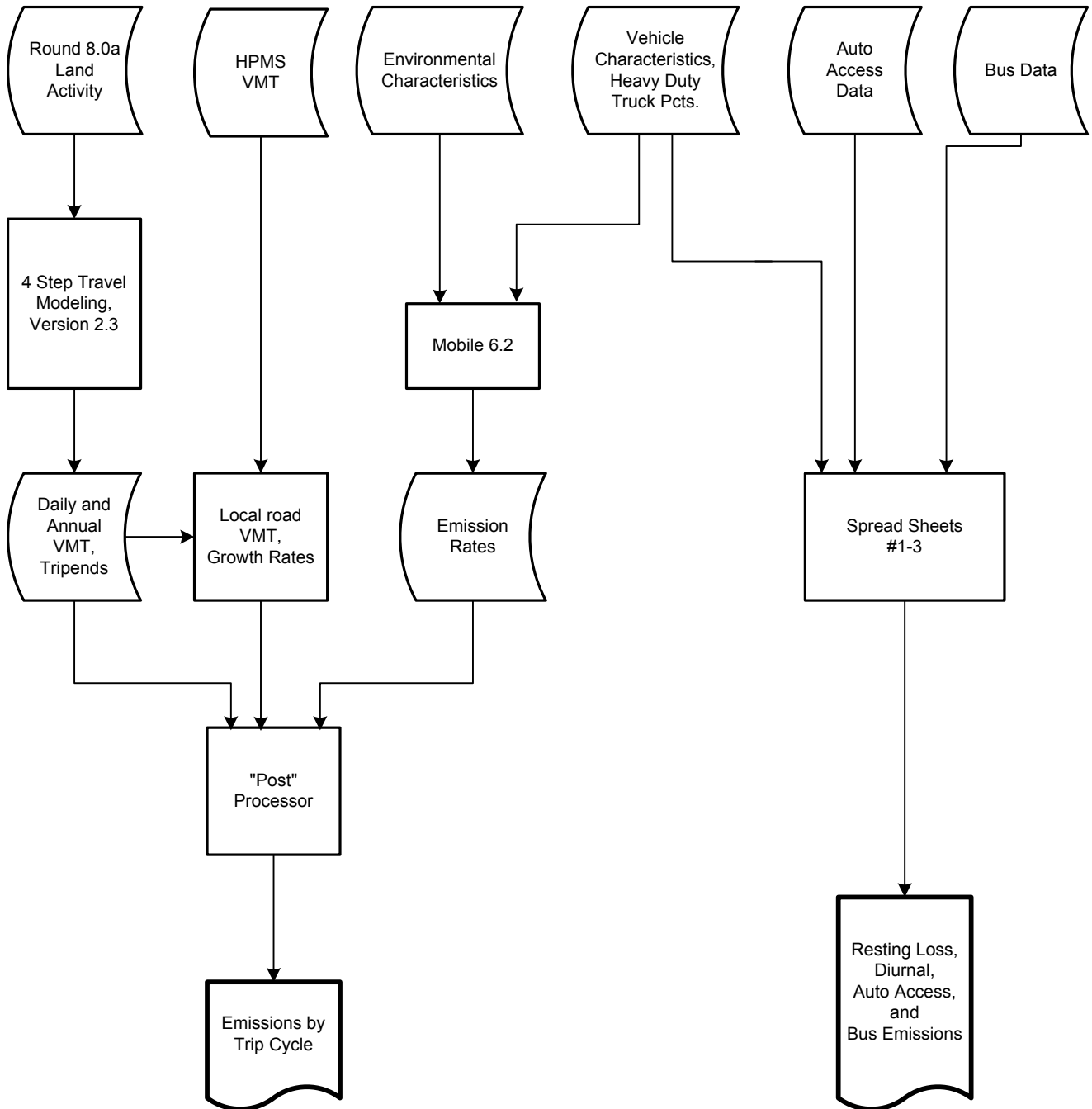
EXHIBIT 2

Analysis Structure for On-Road Mobile Source Emissions

	<u>Transportation Component</u>	X	<u>Emission Factor</u>	=	<u>Emissions</u>
A. Network	1. Trip origins		Cold start rate (g/trip)		Startup
	2. VMT		Stabilized rate (g/mile)		Running
	3. Trip destinations		Hot soak (g/trip)		Hot soak
B. Off-Network	4. Number of vehicles (gasoline fueled)		Diurnal rate (g/day)		Diurnal evaporative
	5. Number of vehicles (gasoline fueled)		Resting loss (g/day)		Resting loss
	6. Auto access to transit		Travel components (above)		Startup, running, hot soak
	7. School & transit bus VMT		(HDDV) Stabilized rate (g/mile)		Running
	8. Local Road VMT		Stabilized Rate (g/mile)		Running

EXHIBIT 3

ON-ROAD MOBILE SOURCE EMISSIONS CALCULATIONS



11CLRPEXH3.VSD

V. TRAVEL FORECASTS

As mentioned above, the preparation of travel forecasts for each of the conformity alternatives was carried out using the new Version 2.3 travel modeling process. The Version 2.3 travel demand model was used for the first time in an air quality conformity analysis. The model includes a finer-grain zone system (3722 instead of 2191 TAZs) and a more detailed street base than that of the Version 2.2 model. Staff completely recalibrated and re-validated the new model using the 2007/2008 household survey, numerous on-board transit surveys, 2007 Highway Performance Monitoring System (HPMS) traffic count data, and 2007 American Community Survey (ACS) data. The new model, reviewed extensively by the Travel Forecasting Subcommittee, contains numerous upgrades and additional technical parameters, enabling an improved analysis of travel in the region. For more information, review the December 2010 presentation to the TPB Technical Committee, or the Version 2.3 model documentation (Reference 17), both of which are located on the COG website.

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 Reference 22.

As in recent years' analyses, in addition to existing toll facilities, the 2011 CLRP includes the ICC in Maryland, and portions of the Virginia beltway and Shirley highway as managed facilities, with time-of-day tolls used to ensure that a high level of service is maintained throughout the day. References 10 and 17 document these procedures.

Ozone season and wintertime CO pollutants are reported for an average weekday (tons per day). However PM_{2.5} pollutants are reported using annual totals, which also requires the application of seasonal travel adjustment factors. Since seasonal travel totals have to include weekend travel as well as weekday travel, it was necessary to prepare adjustment factors to represent ADT occurring in each season of the year. The lower table in Exhibit 10 presents the seasonal adjustment factor necessary to develop ADT VMT for each season.

Network Development

Work on this task began last winter with the request for project inputs to the 2011 CLRP. All project submissions were reviewed and organized by DTP staff into transportation networks for appropriate forecast years, according to the project's completion date as estimated by the programming agency. The TPB approved the final project inputs at its March meeting.

In this air quality conformity assessment the definition of what constitutes a “regionally significant” project was changed. In the past, any project that changed any link in the regional highway or transit network was considered “regionally significant”. The new definition maintains the same threshold for “regional significant” as in the past, but accounts for the finer-grain zone system and more detailed street base.

Summaries of key assumptions for each forecast year are contained as Exhibits 4 - 6. Exhibit 4 shows major transit elements. Exhibit 5 shows coded HOV & HOT improvements. Exhibit 6 presents mileage summaries for the highway system, according to LOV and HOV/HOT lane miles, and for the rail transit system.

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 into gravity model, modal choice and assignment 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).

The COG modeled area includes counties outside the MSA to enable better simulation results within the MSA. 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. As stated above, the modeled area, and the nonattainment areas for each pollutant analyzed, are shown in Exhibit 1.

EXHIBIT 4**MAJOR TRANSIT IMPROVEMENTS FROM 2002 BASE**

	SERVICE	LIMIT
2002:		
	MARC	Frederick to Pt. of Rocks
2016:		
		SAME AS 2002, PLUS
	Metrorail	Addison Road to Largo
	Metrorail	NY Avenue Station
	MetroRail / Marc	Silver Spring Intermodal Transit Facility/Phase II
	Metrorail	Dulles Corridor (East Falls Church to VA 772)
	Streetcar	Anacostia Streetcar Phase I (Firth Sterling/S. Capitol St. to Howard Rd/MLK Jr. Ave.)
	Streetcar	Anacostia Streetcar Phase II (Howard Rd/MLK Jr. Ave. SE to Good Hope Rd/MLK Jr. Ave. SE)
	Streetcar	H St. / Benning Rd Streetcar (Union Station to 45th Street/Benning Road Metro)
	Streetcar	Columbia Pike (Skyline Center to Pentagon City)
	Transitway	K St. (Mt. Vernon Sq./9th St. NW to Wash. Circle/ 23rd St. NW)
	VRE	Cherry Hill Commuter Rail Station
	Bus	Georgia Avenue Rapid Bus (Eastern Ave./Silver Spring Metro Station to Archives Navy Memorial Metro Station)
	Bus	Pennsylvania Avenue Rapid Bus (Archives Navy Memorial Metro Station to Naylor Rd Metro Station)
	Bus	ICC Corridor Bus Improvements

EXHIBIT 4**MAJOR TRANSIT IMPROVEMENTS FROM 2002 BASE**

	SERVICE	LIMIT
	Bus	New and Modified Service for Beltway HOT lanes-2013 level
	Busway	Crystal City/Potomac Yards Busway (Glebe Road Ext. to Crystal City Metro)
	Busway	Potomac Yard Transit Bus Lanes (Four Mile Run to Braddock Road)
2020:		
		SAME AS 2016, PLUS
	Metrorail	Potomac Yards Station
	Rail	Purple Line Transitway (Bethesda to New Carrollton)
	Corridor Cities Transitway	Shady Grove to Comsat
	Streetcar	Route 1 Corridor (Vicinity of Glebe Rd. Ext.-City/County line to Pentagon City Metro Station)
	VRE	Manassas & Fredericksburg lines Service Improvements
	Bus	New and Modified Service for Beltway HOT lanes-2020 level
2030		
		SAME AS 2020, PLUS
	Bus	New and Modified Service for Beltway HOT lanes-2030 level

CODED HOV/HOT IMPROVEMENTS FROM 2002 BASE:

	FACILITY	IMPROVEMENT	LIMITS	DEFINITION
2002:				
	US 50	Construct	E. of US 301 / MD 3 to E. of I-95/I-495	2+
2016:				
	I-66	Widen	SAME AS 2002, PLUS VA 234 (Prince Wm. Parkway) to VA 234 Business (Sudley Road)	2+
	I-95 Wilson Bridge	Construct	US 1 (VA) to MD 210	2+
	I-66	Widen	US 29 (Gainesville) to VA 234 (Prince William Parkway)	2+
	I-95/I-395	Widen/Construct	Approx. 2 mi. N of I-495 to VA 17 (Spotsylvania Co. exit 126)	3+
	I-495	Construct	1mi.east of I-395/I-95 to S. of George Washington Parkway (HOT)	3+
2020:				
	I-66	Widen	SAME AS 2016, PLUS US 15 to US 29 (Gainesville)	3+
2030:				
	I-270	Const./Re-sign	SAME AS 2020, PLUS Shady Grove Metro to Biggs Ford Road	3+
	I-495	Construct	American Legion Bridge to S. of George Washington Parkway (HOT)	3+
	Fran./Sprfld. Pkwy.	Construct	Ffx. County Pkwy. to Frontier Drive	3+
	Fran./Sprfld. Pkwy.	Upgrade	VA 638 (Rolling Rd.) to VA 617 (Backlick Rd.)	3+
2040:				
	Fairfax Co. Pkwy	Construct	SAME AS 2030, PLUS VA 267 (Dulles Toll Rd) to I-66	3+

NOTE: All HOV facilites assumed HOV 3+ by 2020

EXHIBIT 6
RAIL AND ROAD MILES
 (modeled area)

	LOV	HOV/HOT	METRORAIL	MD/DC*	VA**
	LANE MILES	LANE MILES	MILES	NON-METRO RAIL MILES	NON-METRO RAIL MILES
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
2002	21,711	187	103	116	95
2016	23,061	341	131	131	100
2020	23,649	341	131	169	100
2030	24,272	372	131	169	100
2040	24,522	372	131	169	100

* Includes MARC, Purple Line Transitway, and Corridor Cities Transitway in Maryland, and Anacostia, H St., & Benning Rd. Street Cars in the District of Columbia

** Includes VRE and Arlington Streetcar (Columbia Pike)

Transportation/Land Use Interaction

The COG Board approved Round 8.0 Cooperative Forecasts in November, 2010. The forecasts reflect both the small area land use distributions throughout the Washington region, and also the latest planning assumptions for areas that are outside the Washington region. When the Baltimore Metropolitan Council recently updated its land use data, COG included those data in a new round of cooperative forecasts, Round 8.0a. The new data were used for the conformity analysis of the 2011 CLRP. Exhibit 7 presents Round 8.0a household data for each of the years in the conformity assessment. Exhibit 8 presents similar data for the employment assumptions. The employment data reflect census adjustments (see Reference 23).

Trip Table Development

After coding the networks, staff proceeded with the trip generation and trip distribution steps within the travel forecasting process. The travel modeling process utilized in this work represents a trip generation and distribution model set based upon results obtained through analysis of the 2007/2008 Household Travel Survey, WMATA on-board transit surveys, and 2007 HPMS traffic count data in model calibration. Separate person trip tables were prepared for home based work and nonwork purposes (for input to the mode choice modeling process) and for all other travel, i.e., taxi, visitor/tourist, school and through trips. The work and nonwork person trip tables were input to the mode choice process, and the output vehicle trip tables from that process were subsequently merged with the other trip purposes for each forecast year and used in traffic assignment. Capacity restrained speeds which are output from the traffic assignment process were then fed back into trip distribution and iterations of the entire process occur until equilibrium travel time conditions are achieved throughout the modeling process. Summary mode choice results are shown in Exhibit 9. Summary results from the last iteration of the process, for all trip purposes, are shown in the upper table of Exhibit 10. This table shows vehicle trips in the region increasing by 43%, from 14.8 million in 2002 to 21.2 million in the year 2040. As mentioned above, the lower table in Exhibit 10 presents the seasonal adjustment factor necessary to convert AAWDT to ADT for each season, for use in emissions calculations.

EXHIBIT 7
HOUSEHOLD DATA

MSA:	2002	2016	2020	2030	2040	2040/2002
D.C.	250368	289210	296765	317235	338980	1.35
MONTGOMERY	333721	381202	398000	438000	463000	1.39
PR.GEORGES	293125	321489	331066	348806	360110	1.23
ARLINGTON	89022	109350	114382	121341	124207	1.40
ALEXANDRIA	63658	69544	73678	82884	90555	1.42
FAIRFAX	373857	423440	442272	479839	502041	1.34
LOUDOUN	70936	115614	127409	150209	158299	2.23
PR. WILLIAM	120216	175818	188801	214454	231495	1.93
FREDERICK	73839	97562	104139	123125	147529	2.00
CHARLES	43963	58877	64299	75847	85901	1.95
STAFFORD	31991	53467	59037	72712	86205	2.69
CALVERT	27231	34648	36027	38348	40301	1.48
SUBTOTAL	1,771,927	2,130,221	2,235,875	2,462,800	2,628,623	1.48
ADDITIONAL COUNTIES:						
HOWARD	94669	119279	125600	135486	137773	1.46
ANNE ARUNDEL	184157	212270	217782	229371	234332	1.27
CARROLL	55264	66475	69614	76111	81464	1.47
FREDERICKSBURG (VA)	8372	11852	12462	13971	15469	1.85
JEFFERSON	17015	23743	25957	33075	41527	2.44
N. SPOTSYLVANIA	26738	44243	48536	58796	68631	2.57
FAUQUIER	21446	31932	35730	47502	63154	2.94
CLARKE	5162	6483	6722	7487	8308	1.61
K. GEORGE	6698	10358	11411	14030	16659	2.49
ST. MARY'S	32358	45406	49352	58143	66509	2.06
SUBTOTAL	451,879	572,041	603,166	673,972	733,826	1.62
TOTAL	2,223,806	2,702,262	2,839,041	3,136,772	3,362,449	1.51

SOURCE:

MWCOG Round 8.0a Cooperative Forecasts
 BMC Round 7-C Cooperative Forecasts
 GWRC/FAMPO Regional Demographic Control Forecasts for 2035 CLRP, June 2008
 Tri-County Council for Southern Maryland data for Calvert, Charles and St. Mary's

EXHIBIT 8
EMPLOYMENT DATA

MSA:	2002	2016	2020	2030	2040	2040/2002
D.C.	746305	831978	868256	923988	977163	1.31
MONTGOMERY	483874	548995	585000	673000	723000	1.49
PR.GEORGES	342830	372836	383635	419635	474635	1.38
ARLINGTON	187611	223332	243835	268606	281120	1.50
ALEXANDRIA	95861	118958	124115	142257	160447	1.67
FAIRFAX	624887	738102	788508	863803	917484	1.47
LOUDOUN	104548	175340	206458	257195	285415	2.73
PR. WILLIAM	127700	171087	188769	232597	280697	2.20
FREDERICK	106624	152823	158278	167257	175109	1.64
CHARLES	48557	69099	71731	77537	83138	1.71
STAFFORD	32668	49828	54627	65101	74224	2.27
CALVERT	26637	41736	44457	47159	48955	1.84
SUBTOTAL	2,928,102	3,494,114	3,717,669	4,138,135	4,481,387	1.53
ADDITIONAL COUNTIES:						
HOWARD	140776	183911	194977	221168	231902	1.65
ANNE ARUNDEL	260720	313692	329042	358320	370904	1.42
CARROLL	57356	69854	70813	72456	74090	1.29
FREDERICKSBURG (VA)	23746	32013	34848	41034	46360	1.95
JEFFERSON	17010	24093	26115	30675	35780	2.10
N. SPOTSYLVANIA	29775	39756	43578	51966	59240	1.99
FAUQUIER	22308	31551	35762	43360	52578	2.36
CLARKE	6077	7328	7685	8550	9518	1.57
K. GEORGE	9345	11732	13150	16390	19339	2.07
ST. MARY'S	49613	64715	67268	71969	75862	1.53
SUBTOTAL	616,726	778,645	823,238	915,888	975,573	1.58
TOTAL	3,544,828	4,272,759	4,540,907	5,054,023	5,456,960	1.54

SOURCE:

MWCOG Round 8.0a Cooperative Forecasts
 BMC Round 7-C Cooperative Forecasts
 GWRC/FAMPO Regional Demographic Control Forecasts for 2035 CLRP, June 2008
 Tri-County Council for Southern Maryland data for Calvert, Charles and St. Mary's

NOTE: Includes Census Adjustment

EXHIBIT 9A

**2011 CLRP AIR QUALITY CONFORMITY
DAILY REGIONAL HOME BASED WORK PURPOSE MODE ANALYSIS BY YEAR
(Based on Mode Choice Output - Final 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 (%)
2002	3,416,996	2,691,684	2,298,111	393,573	2,474,699	1.09	725,312	21.23%
2016	4,112,907	3,248,015	2,747,726	500,289	2,967,341	1.09	864,892	21.03%
2020	4,310,654	3,388,274	2,830,582	557,692	3,061,795	1.11	922,380	21.40%
2030	4,745,051	3,753,714	3,085,649	668,064	3,353,127	1.12	991,337	20.89%
2040	5,077,318	4,025,382	3,281,382	744,000	3,575,200	1.13	1,051,936	20.72%

EXHIBIT 9B

**2011 CLRP AIR QUALITY CONFORMITY
DAILY REGIONAL ANALYSIS BY YEAR FOR ALL TRIP PURPOSES
(Based on Mode Choice Output - Final 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 (%)
2002	16,937,717	15,845,227	8,292,091	7,553,136	11,348,559	1.40	1,092,489	6.45%
2016	20,156,068	18,860,782	9,691,146	9,169,636	13,378,413	1.41	1,295,286	6.43%
2020	21,044,484	19,660,720	10,002,198	9,658,522	13,867,397	1.42	1,383,764	6.58%
2030	22,985,308	21,494,994	10,761,538	10,733,456	15,032,911	1.43	1,490,314	6.48%
2040	24,456,141	22,879,278	11,340,598	11,538,680	15,917,035	1.44	1,576,862	6.45%

*Note: Starting in 2020, all HOV facilities are HOV3+

EXHIBIT 10

2011 CLRP AIR QUALITY CONFORMITY MODELED AREA TRIPS AND VEHICLE MILES TRAVELED (000's) AVERAGE WEEKDAY TRAFFIC (AWDT) (Based on Final Iteration)

YEAR	WORK AND NON-WORK AUTO DRV	TRUCKS (Med + Hvy)	MISC + THRU TRIPS	COMMERCIAL VEHICLES	TOTAL VEH. TRIPS	TOTAL VMT
2002	12,189,746	656,922	724,160	1,252,029	14,822,857	149,388,892
2016	14,431,623	759,480	891,964	1,441,057	17,524,124	176,980,133
2020	14,990,638	793,853	944,212	1,512,234	18,240,937	184,427,424
2030	16,283,785	865,458	1,061,848	1,651,593	19,862,684	201,999,848
2040	17,312,204	921,343	1,170,905	1,764,303	21,168,755	217,182,430

Adjustment Factors to Convert AAWDT to Appropriate Season:

Ozone Season AWDT: 1.03

Winter Season AWDT: 0.96

PM_{2.5} Annual:

Season (ADT)	Factor
Season 1 (Jan- Apr)	0.9177
Season 2 (May- Sept)	0.9751
Season 3 (Oct- Dec)	0.9212

NOTE: AWDT reflects a five day average
ADT reflects a seven day average

Modal Choice

Transit networks were coded for all forecast years and mode choice analyses were executed based upon specific transit representations for 2002, 2016, 2020, 2030, and 2040. Transit capacity constraint procedures, in which 2020 constrains later years (Reference 22), were executed for the 2030 and 2040 forecast years.

Transit fares include the latest assumptions for all coded transit service. Transit fares reflect policies such as price differentials for those who use SmarTrip vs. those who use paper fare cards or cash, and surcharges for those who travel in the peak-of-the-peak. The 2011 CLRP shows growth in transit trips, with approximately a 44% increase in transit travel from 2002 to the year 2040.

Traffic Assignment

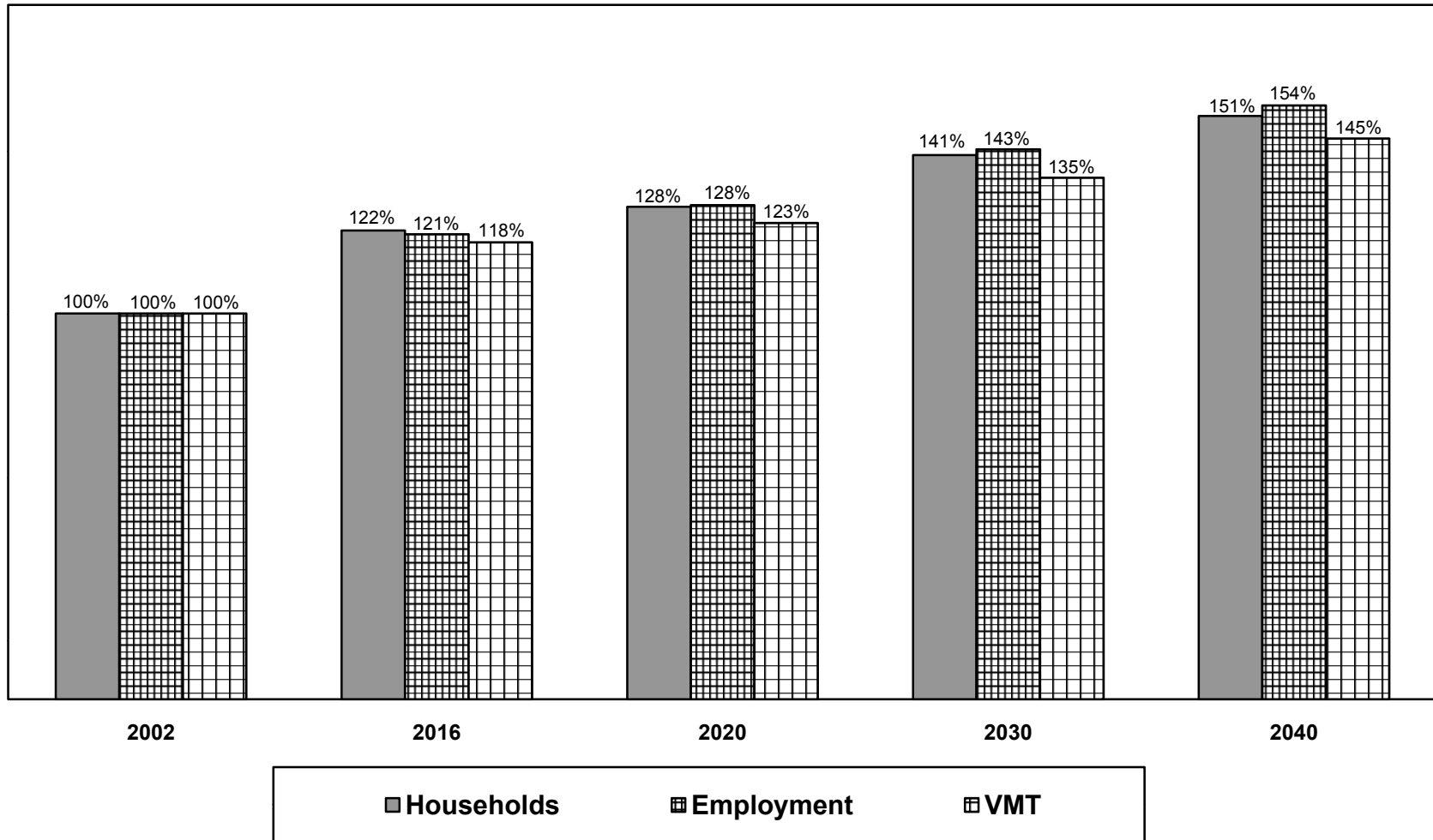
Following the preparation of total vehicle travel demands, the resulting table was applied in traffic assignment to estimate vehicle loadings on each facility in the region. After multiple iterations of the process using the speed feedback procedures, this concluded the traditional travel forecasting elements of the conformity analysis. VMT summaries, showing a 45% increase from 2002 to 2040, are contained in Exhibit 10. Exhibit 11 shows percentage changes in vehicle miles traveled (VMT) through time compared with percentage changes in households and jobs.

VI. EMISSIONS

Rates

In conjunction with COG's Department of Environmental Programs staff and with consultant assistance of E.H. Pechan and Associates, Transportation Planning staff developed mobile source emission factors for PM_{2.5} pollutants, wintertime CO, and ozone precursors. These factors represented the rates of volatile organic compounds, carbon monoxide, direct particles, and nitrogen oxides produced by cars and trucks on the highway system. This work involved the application of EPA's MOBILE6.2 model, using vehicular and other characteristics specific to the Washington region, to develop factors which would be applied to the travel estimates associated with each forecast year. The model estimates the pollution rates based upon a variety of different vehicle characteristics (vehicle age, type, weight, fuel, speed, inspection/maintenance program) and environmental characteristics (ambient temperature, humidity). This year's emission factors include the use of 2008 vehicle registration data, as well as the Maryland Department of the Environment's (MDE) data reflecting the adoption of Phase I of California's Low-Emission Vehicle II (LEV II) program in Maryland.

EXHIBIT 11 DAILY VMT vs CHANGES IN LAND ACTIVITY (Modeled Area)



The rates for each pollutant, shown using Fairfax County data as an illustration in Exhibits 12 and 13 for VOC and NO_x, respectively, were developed following execution of the model in one mph speed increments, by jurisdiction, for each analysis year. The charts show significantly reduced rates through time, primarily due to the impacts of having cleaner vehicles in the fleet. Exhibit 14 presents direct PM_{2.5} emissions rates through time, by season; data are arrayed in a bar chart since these emissions rates do not vary by vehicle speed.

The mobile emissions post processor, which is a series of programs that uses travel demand and emission rates to calculate mobile source emissions estimates, was updated in the following ways:

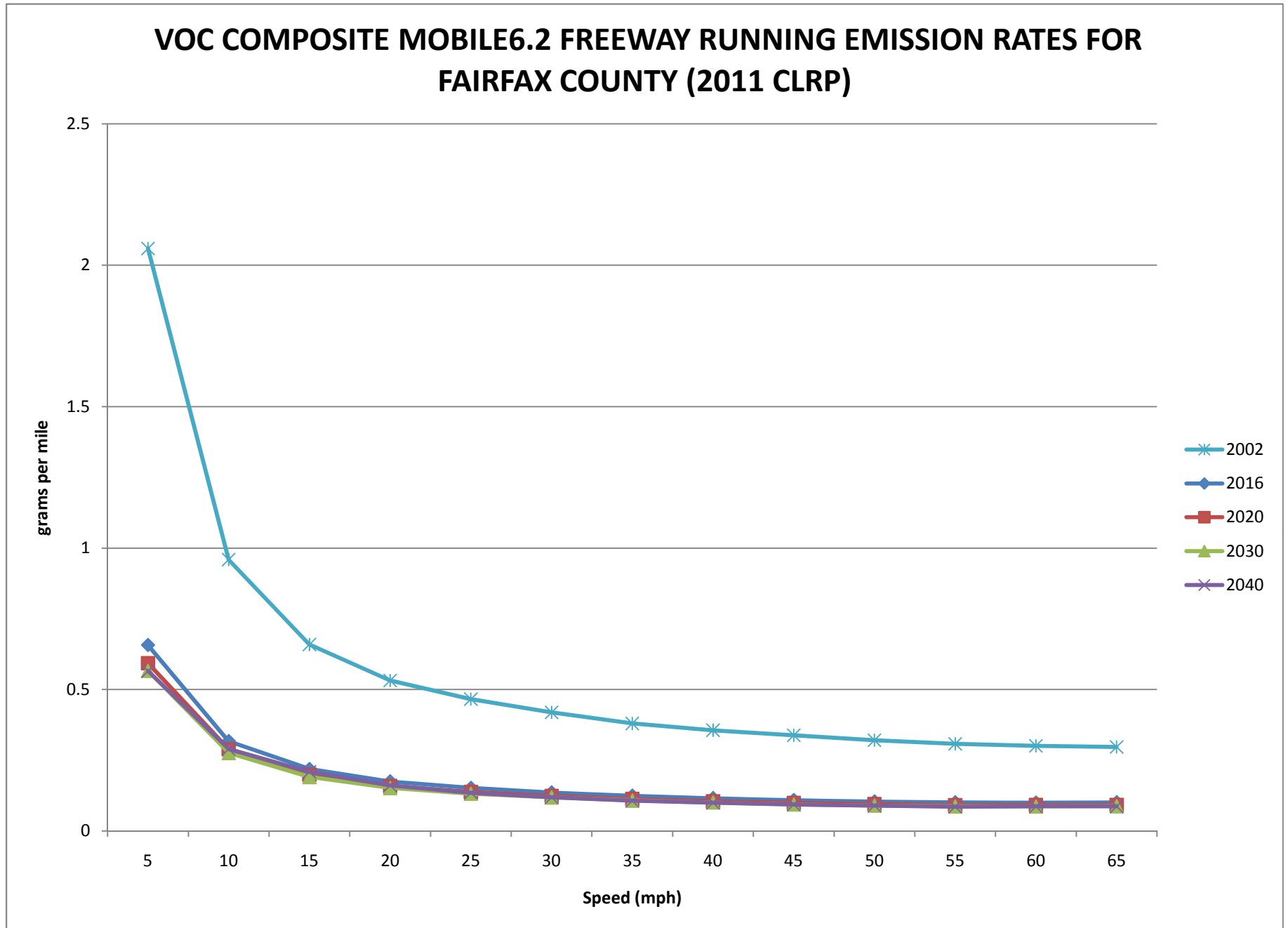
- Ozone season factor, used to convert average daily to the ozone season conditions (changed from 1.05 to 1.03)
- Peaking characteristics (to account for the four-hour modeled PM peak period in Version 2.3, instead of three in Version 2.2)
- Hourly vehicle distribution, resulting in different hourly link level volumes, V/C ratios and speeds
- Local VMT modeling

Appendix D documents the input assumptions and Appendix E documents the emission factor results of this work.

Calculations

While travel demand forecasts are prepared for the modeled area, emissions summaries are calculated for each pollutant's specified nonattainment area (or maintenance area, in the case of winter CO). Each of these planning areas is shown in Exhibit 1.

Two types of calculations are made for each pollutant. The first involves applying emissions rates directly to the travel demand results, to yield origin, network running, and destination emissions. The second deals with preparing estimates of emissions associated with diurnals, resting losses, auto access to transit, and buses. These are addressed on an off-line basis since they are not directly derived from the TPB travel demand modeling process. The technical methods associated with performing these off-line assessments are contained in Appendices F to H. Exhibit 3 provides an overview of the analysis structure and emissions calculation process and also identifies where each calculation takes place.



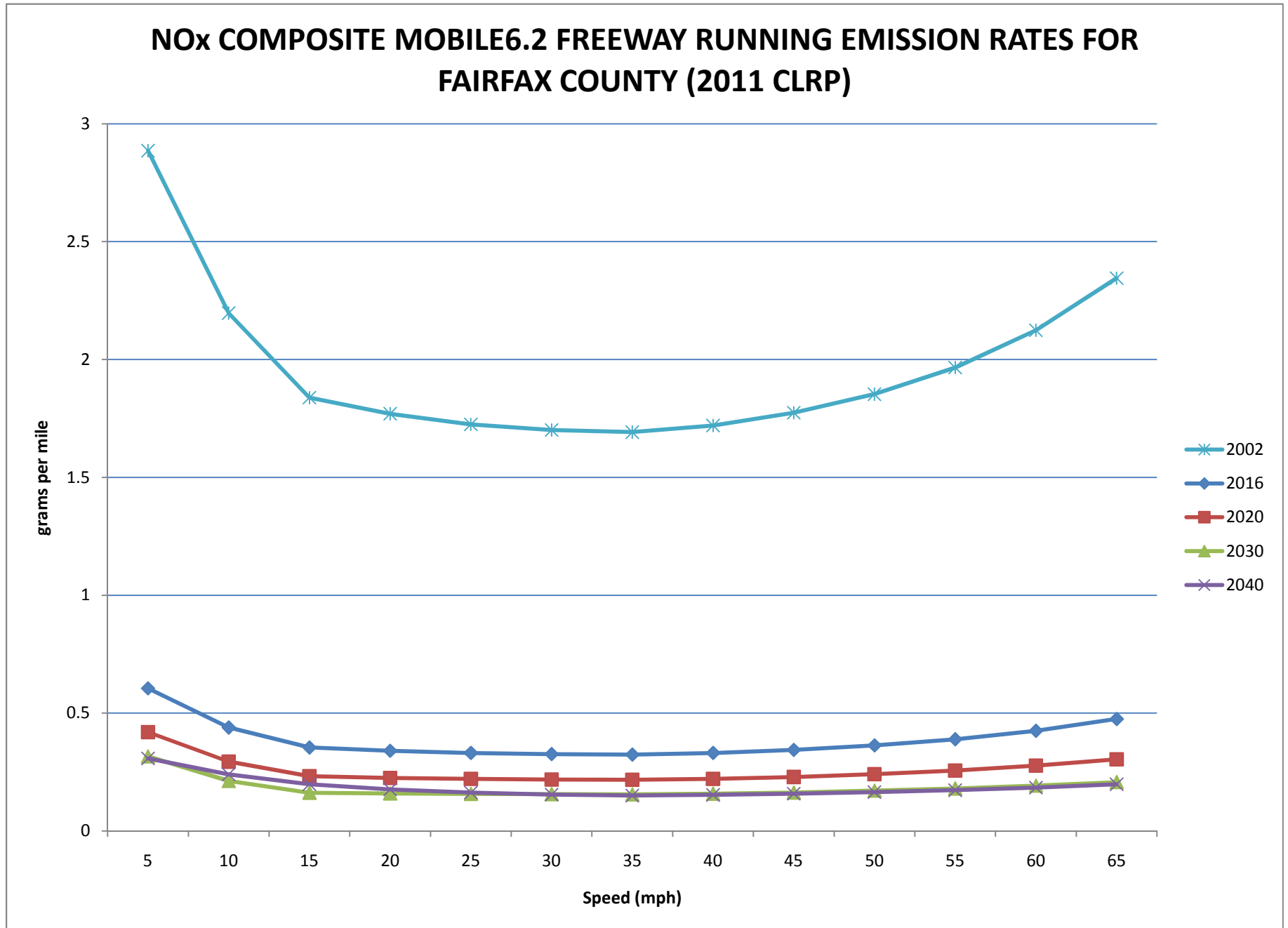
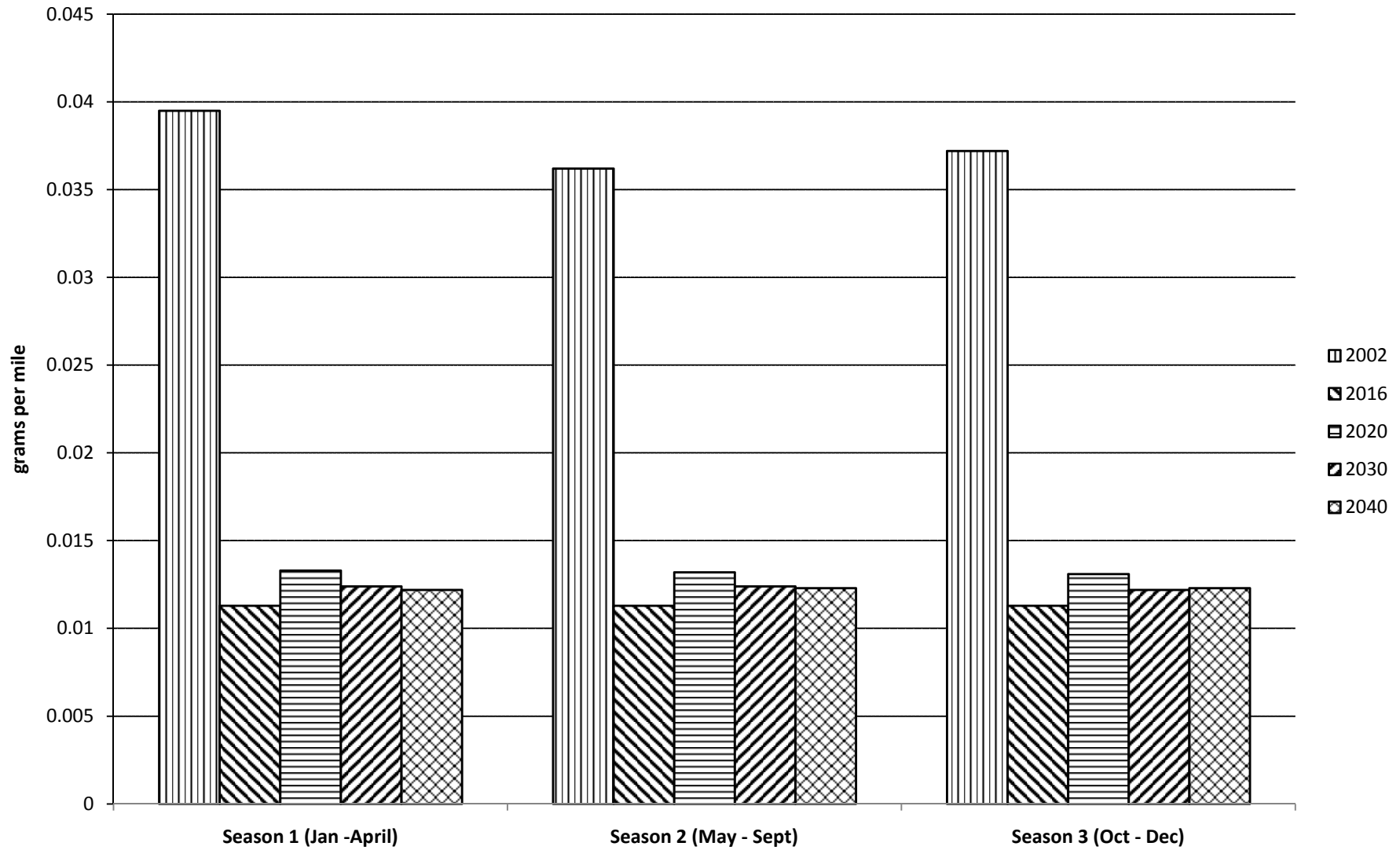


Exhibit 14 DIRECT PM_{2.5} EMISSION RATES FOR FAIRFAX COUNTY (MAJOR ROADS NETWORK)



As mentioned earlier, each pollutant is assessed based on varying criteria. The approved mobile emissions budget for ozone season VOC is 70.8 tons/day, and for NO_x is 159.8 tons/day. With no approved mobile budgets for PM_{2.5} pollutants, EPA allows for an assessment that shows emissions in “action” scenarios are no greater than those in a 2002 base. This criterion was established and applied, with the concurrence of MWAQC, in all PM_{2.5} conformity assessments done to date. The region is in maintenance for mobile source wintertime CO and is required to show that pollutant levels do not exceed the approved budget of 1671.5 tons/day.

Mobile Emissions Inventories

Prior to calculation of daily mobile source emissions, the above (AAWDT) travel forecasts were first factored by seasonal adjustments (a 1.03 ozone season factor or a 0.96 winter season factor) to yield VMT appropriate to each season being analyzed. Staff then applied the appropriate Mobile6.2 emissions factors to the travel demand forecasts to prepare mobile source emissions inventories for each forecast year. Exhibit 15 shows, for purposes of illustration, emissions for each jurisdiction in the 8-hour ozone nonattainment area. The categories of emissions also include the additional elements of: running emissions on local streets, and vehicle related emissions for diurnals and resting loss; and regional estimates of auto access emissions, and bus emissions.

The emissions results for ozone season pollutants are summarized in Exhibit 16. This chart contains VOC and NO_x emissions for network and off-network components for each analysis year, and also compares totals against emissions budgets where relevant. The table shows dramatic reductions throughout time. 2040 VOC and NO_x emissions represent about 13 percent and less than 10 percent, respectively, of their 1990 levels. The results reflect the impact of the cleaner fleet (continuing fleet turnover) and related programs, with slowing VMT growth rates through time. Net emissions for each forecast year are shown as the bottom line of the summary table. Both VOC and NO_x emissions are within the mobile budgets for all forecast years.

Exhibit 15
Eight-Hour Ozone Area
 2011 CLRP
 DAILY MOBILE SOURCE EMISSIONS
 BY JURISDICTION AND TRIP CYCLE
 Year: 2016
 VOC TONS PER DAY

JURIS	ORIGIN	RUNNING		DESTINATION	VEHICLE RELATED EMISSIONS		TOTAL CYCLE
		NETWORK	LOCAL		DIURNAL	REST. LOSS	
District of Columbia	0.60	2.04	0.69	0.55	0.07	0.32	4.26
Montgomery	0.98	3.50	0.47	0.91	0.22	1.01	7.09
Prince George's	0.82	3.90	0.65	0.80	0.20	1.00	7.38
Calvert	0.12	0.32	0.06	0.12	0.04	0.19	0.85
Charles	0.19	0.55	0.10	0.20	0.05	0.25	1.35
Frederick	0.33	1.47	0.25	0.34	0.08	0.41	2.89
Arlington	0.26	0.74	0.12	0.22	0.03	0.16	1.53
Fairfax	1.24	4.55	0.54	1.00	0.22	1.03	8.58
Loudoun	0.46	1.33	0.22	0.29	0.07	0.32	2.70
Pr.William	0.51	1.61	0.37	0.42	0.09	0.47	3.47
City of Alexandria	0.16	0.41	0.05	0.14	0.03	0.14	0.92
Sub Total	5.68	20.44	3.52	4.98	1.10	5.30	41.02
AUTO ACCESS							0.47
TRANSIT BUS							0.15
SCHOOL BUS							0.24
TOTAL EMISSIONS							41.88

AIR QUALITY CONFORMITY
Summary Table - 8-Hour Ozone Nonattainment Area
Mobile Source Emissions Inventories
for 2011 CLRP
(Tons/Day)

	2002		2016		2020		2030		2040	
	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
I Network										
Start	18.6640	9.4570	5.6780	2.8520	4.8820	2.0560	4.6290	1.6220	4.73	1.65
Running	54.7220	219.0150	20.4350	53.8700	18.7690	36.3390	19.4750	27.1900	21.232	27.876
Soak	8.5290	-----	4.9810	-----	3.8800	-----	3.2250	-----	3.342	-----
II Off-Network										
Diurnal	2.3600	-----	1.1046	-----	0.8819	-----	0.6385	-----	0.69514	-----
Resting Loss	11.9300	-----	5.3034	-----	3.6598	-----	2.5344	-----	2.80516	-----
Local Roads	9.9070	11.3920	3.5190	3.4130	3.1830	2.5220	3.2630	2.1940	3.476	2.308
School Buses	0.4200	5.9700	0.2425	2.5389	0.2152	1.6817	0.1675	0.4888	0.163	0.2663
Transit Buses	0.3800	6.5115	0.1461	1.8584	0.1300	1.0310	0.1305	0.3645	0.1305	0.2753
Auto Access	1.2917	1.5867	0.4675	0.4488	0.4057	0.3502	0.3840	0.3104	0.40354	0.3256
Total	108.2037	253.9322	41.8771	64.9811	36.0066	43.9799	34.4468	32.1697	36.9773	32.7012

TCMs	-0.36	-0.078	-0.18	-0.41	-0.13	-0.28	-0.13	-0.27	-0.13	-0.27
Net Emissions	107.84	253.85	41.70	64.58	35.88	43.70	34.32	31.90	36.85	32.43

Mobile Emissions Budgets:			66.50	144.30	66.50	144.30	66.50	144.30	66.50	144.30
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Budget Adherence Margin:			24.80	79.72	30.62	100.60	32.18	112.40	29.65	111.87
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To develop the yearly total PM_{2.5} emissions, travel and emissions were estimated throughout the year by applying (three) seasonal factors to the primary travel data, followed by applying emissions rates for each of the seasons, and summarizing to obtain yearly totals. Direct PM_{2.5} and precursor NO_x emissions are shown in Exhibits 17 and 18 and exhibit similar dramatic reductions through time despite the steady increases in vehicle trips and VMT in the forecast years. These reductions are largely attributable to Tier II vehicle standards, cleaner fuels, and the heavy duty engine rule, and will continue to generate additional emissions reductions through time as fleet turnover replaces older vehicles / truck engines with much cleaner ones.

Wintertime CO emissions are shown in Exhibit 19. These same general trends through time of dramatic emissions reductions are also seen here; levels are easily within the CO emissions budget level.

Exhibits 20 and 21 present the VOC and NO_x results in a graphical format, which perhaps illustrates even better the steady and significant downward trends occurring in both VOC and NO_x emissions. Historical emissions reductions from the clean air act amendments 1990 base have been well documented in the past (especially VOC emissions which dropped from about 295 tons per day (T/D) to about 108 T/D in 2002, but NO_x emissions have also dropped by more than 100 T/D from 367 to 254 T/D). From 2002 to year 2016, VOC emissions will be cut further, more than in half, from 108 T/D to about 42 T/D, and NO_x emissions experience even greater reductions, from 254 T/D to 65 T/D. Exhibit 22 presents precursor NO_x results. Exhibit 23 presents direct PM_{2.5} results. The data show emissions much lower than base year 2002 conditions, as well as being below the budget levels in all cases.

Exhibit 24 portrays similar information for wintertime CO conditions. These exhibits show that the mobile source inventories for the CLRP, for each pollutant in each analysis year and scenario, adhere to each relevant emissions budget.

The data in exhibits 16 - 24 show that estimated emissions are either within the mobile source emissions budget for each pollutant (including PM_{2.5} budgets awaiting EPA's approval actions), or meet emissions reduction requirements in the case of PM_{2.5} pollutants. In recognition of the fact that estimated emissions are within the mobile source budget for each pollutant, no additional transportation emissions reduction measures are required to demonstrate conformity.

EXHIBIT 17
AIR QUALITY CONFORMITY SUMMARY TABLE
Direct PM_{2.5} Emissions
Mobile Source Emissions Inventories
for 2011 CLRP
(Tons)

SEASON 1 (JAN-APR)		Days	Direct PM _{2.5}									
			2002		2016		2020		2030		2040	
			Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
	Major Roads	120	4.09	490.32	1.82	217.92	1.70	204.48	1.76	210.72	1.85	222.00
	Local Roads	120	0.22	26.04	0.15	17.52	0.15	17.64	0.16	18.84	0.17	20.16
	School Buses	76	0.33	25.08	0.09	7.19	0.03	2.17	0.02	1.30	0.01	1.02
	Transit Buses	120	0.25	30.00	0.03	3.65	0.01	1.58	0.01	1.18	0.01	1.10
	Auto Access	83	0.01	0.83	0.01	0.81	0.01	0.86	0.01	0.93	0.01	0.98
	Total (Daily)		4.89		2.10		1.90		1.95			
	TOTAL			572.27		247.09		226.73		232.97		245.26

SEASON 2 (MAY-SEP)		Days	Direct PM _{2.5}									
			2002		2016		2020		2030		2040	
			Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
	Major Roads	153	4.02	614.60	1.91	291.77	1.80	275.25	1.86	285.19	1.98	302.5
	Local Roads	153	0.21	32.13	0.15	23.41	0.16	23.72	0.17	25.55	0.18	27.2
	School Buses	83	0.32	26.56	0.09	7.26	0.03	2.25	0.02	1.39	0.01	1.12
	Transit Buses	153	0.25	38.25	0.03	4.41	0.01	1.96	0.01	1.48	0.01	1.40
	Auto Access	107	0.01	1.07	0.01	1.12	0.01	1.19	0.01	1.28	0.01	1.36
	Total (Daily)		4.81		2.19		2.01		2.07			
	TOTAL			712.61		327.97		304.36		314.90		333.59

SEASON 3 (OCT-DEC)		Days	Direct PM _{2.5}									
			2002		2016		2020		2030		2040	
			Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
	Major Roads	92	3.85	354.29	1.78	163.30	1.69	155.30	1.74	160.17	1.87	171.95
	Local Roads	92	0.21	19.32	0.15	13.43	0.15	13.43	0.16	14.54	0.17	15.46
	School Buses	55	0.27	14.85	0.06	3.26	0.03	1.49	0.01	0.74	0.01	0.74
	Transit Buses	92	0.22	20.24	0.02	1.96	0.01	1.16	0.01	0.84	0.01	0.84
	Auto Access	61	0.01	0.61	0.01	0.60	0.01	0.64	0.01	0.69	0.01	0.73
	Total (Daily)		4.56		2.01		1.88		1.93			
	TOTAL			409.31		182.55		172.01		176.98		189.71

ANNUAL TOTAL			1,694.19		757.61		703.10		724.84		768.57
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Mobile Emissions Budgets: 1105.4

Budget Adherence Margin: 347.79

EXHIBIT 18
AIR QUALITY CONFORMITY SUMMARY TABLE
PM_{2.5} Precursor Emissions: NOx
Mobile Source Emissions Inventories
for 2011 CLRP
(Tons)

SEASON 1 (JAN-APR)		Days	Precursor NOx									
			2002		2016		2020		2030		2040	
			Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
	Major Roads-Starts	120	15.65	1877.40	4.33	519.24	3.00	360.12	2.28	273.96	2.30	276.36
	Major Roads-VMT	120	253.10	30372.48	57.33	6879.36	38.21	4585.08	28.44	3412.32	29.18	3501.48
	Local Roads	120	14.48	1737.60	3.67	440.52	2.60	312.24	2.18	261.72	2.30	276.12
	School Buses	76	4.86	369.36	2.22	168.82	1.48	112.33	0.41	31.24	0.21	16.31
	Transit Buses	120	6.04	724.80	1.84	220.81	1.00	120.04	0.34	40.95	0.25	30.36
	Auto Access	83	2.09	173.47	0.35	29.11	0.26	21.72	0.22	18.66	0.31	26.02
	Total (Daily)		296.22		69.74		46.55		33.88			
	SEASON 1 TOTAL			35,255.11		8,257.86		5,511.53		4,038.86		4,126.65

SEASON 2 (MAY-SEP)		Days	Precursor NOx									
			2002		2016		2020		2030		2040	
			Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
	Major Roads-Starts	153	10.32	1578.50	3.13	478.89	2.21	337.67	1.71	262.24	1.73	265.00
	Major Roads-VMT	153	216.30	33094.36	50.45	7719.31	33.79	5169.56	25.10	3840.45	25.97	3972.95
	Local Roads	153	11.40	1744.05	3.08	471.24	2.24	343.33	1.92	294.07	2.03	311.05
	School Buses	83	4.81	399.23	2.05	169.82	1.36	112.49	0.39	32.70	0.21	17.81
	Transit Buses	153	5.99	916.47	1.73	264.50	0.95	145.01	0.34	51.27	0.25	38.71
	Auto Access	107	1.48	158.36	0.27	29.15	0.21	22.38	0.18	19.78	0.26	27.64
	Total (Daily)		250.30		60.71		40.75		29.65			
	SEASON 2 TOTAL			37,890.97		9,132.91		6,130.44		4,500.50		4,633.16

SEASON 3 (OCT-DEC)		Days	Precursor NOx									
			2002		2016		2020		2030		2040	
			Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal	Daily	seasonal
	Major Roads-Starts	92	14.52	1335.84	3.76	345.64	2.74	251.71	2.16	198.26	2.18	200.56
	Major Roads-VMT	92	237.16	21819.00	49.39	4543.60	34.82	3203.35	26.99	2483.36	28.52	2623.56
	Local Roads	92	13.66	1257.09	3.17	291.73	2.38	218.50	2.07	190.62	2.21	203.23
	School Buses	55	4.77	262.35	1.97	108.38	1.30	71.60	0.31	17.04	0.21	11.80
	Transit Buses	92	5.78	531.76	1.58	145.16	0.84	77.42	0.29	26.98	0.25	23.28
	Auto Access	61	1.99	121.39	0.31	18.75	0.24	14.71	0.21	13.11	0.30	18.36
	Total (Daily)		277.89		60.17		42.31		32.04			
	SEASON 3 TOTAL			25,327.42		5,453.26		3,837.29		2,929.37		3,080.79

ANNUAL TOTAL			98,473.50		22,844.04		15,479.26		11,468.73		11,840.61
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Mobile Emissions Budget: 51,359.90

Budget Adherence Margin: 28,515.86

EXHIBIT 19
Summary Table
Mobile Source Emissions Inventories - Winter CO
CO Maintenance Area
for 2011 CLRP
(Tons/Day)

	1990 Winter CO	2016 Winter CO	2020 Winter CO	2030 Winter CO	2040 Winter CO
I Network					
Start	1051.80	216.22	209.92	214.66	220.40
Running	1403.80	262.86	251.33	256.94	270.34
II Off-Network					
Local Roads	97.90	24.30	23.55	24.30	25.57
School Buses	1.20	0.31	0.21	0.10	0.06
Transit Buses	3.50	0.56	0.28	0.16	0.14
Auto Access	31.30	10.75	10.67	11.06	11.70
TOTAL	2589.5	515.0	496.0	507.2	528.2
CO Budget		1671.50	1671.50	1671.50	1671.50

EXHIBIT 20

Mobile Source VOC Emissions for the 8-Hour Ozone Nonattainment Area 2011 CLRP

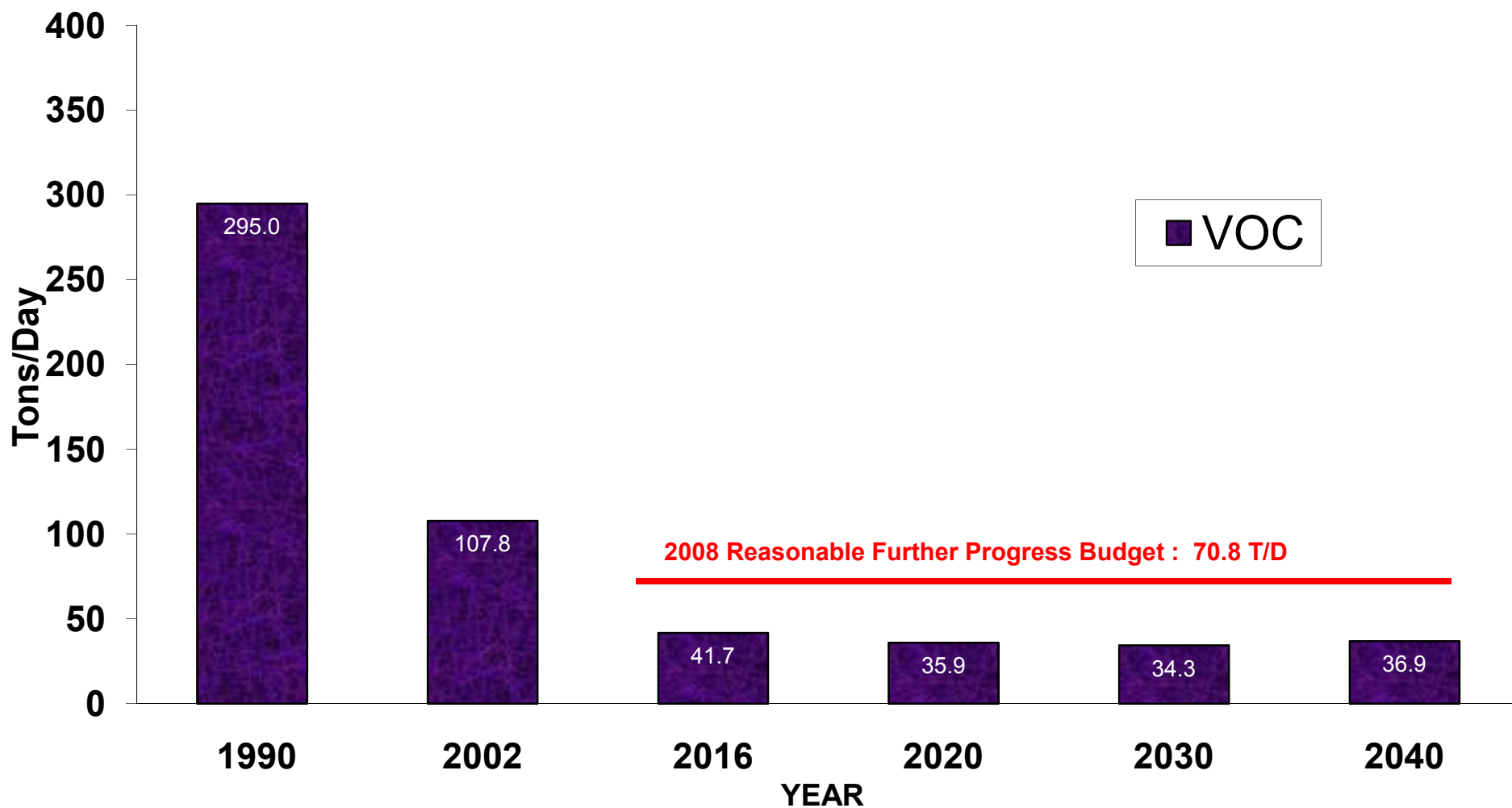


EXHIBIT 21

Mobile Source NOx Emissions for the 8-Hour Ozone Nonattainment Area 2011 CLRP

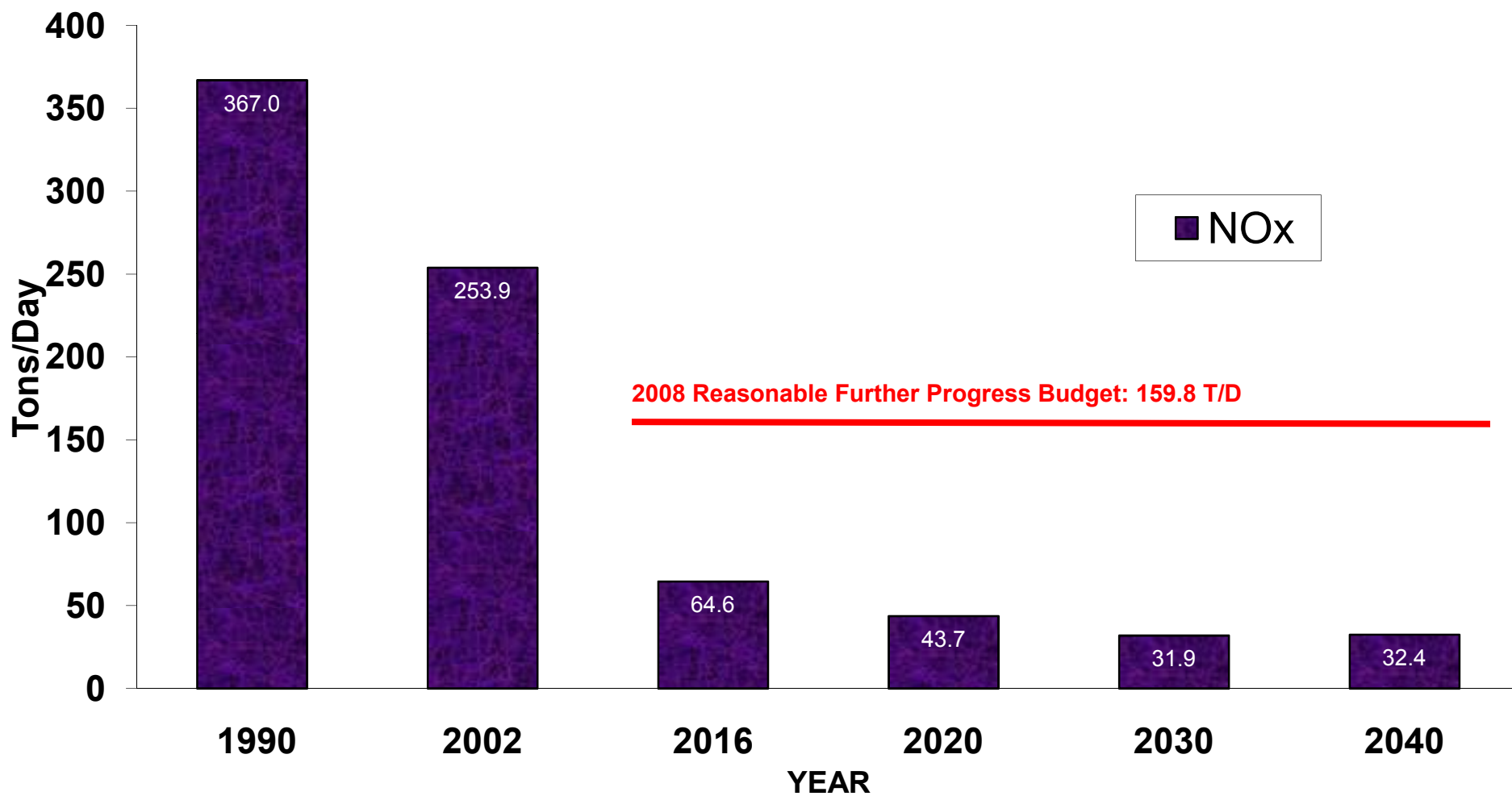


EXHIBIT 22

Mobile Source Emissions

2011 CLRP Precursor NOx

NOTE: The PM_{2.5} budgets have been submitted to EPA, but have not yet been deemed adequate for use in conformity. The region adheres to these budgets, even though it is not yet required.

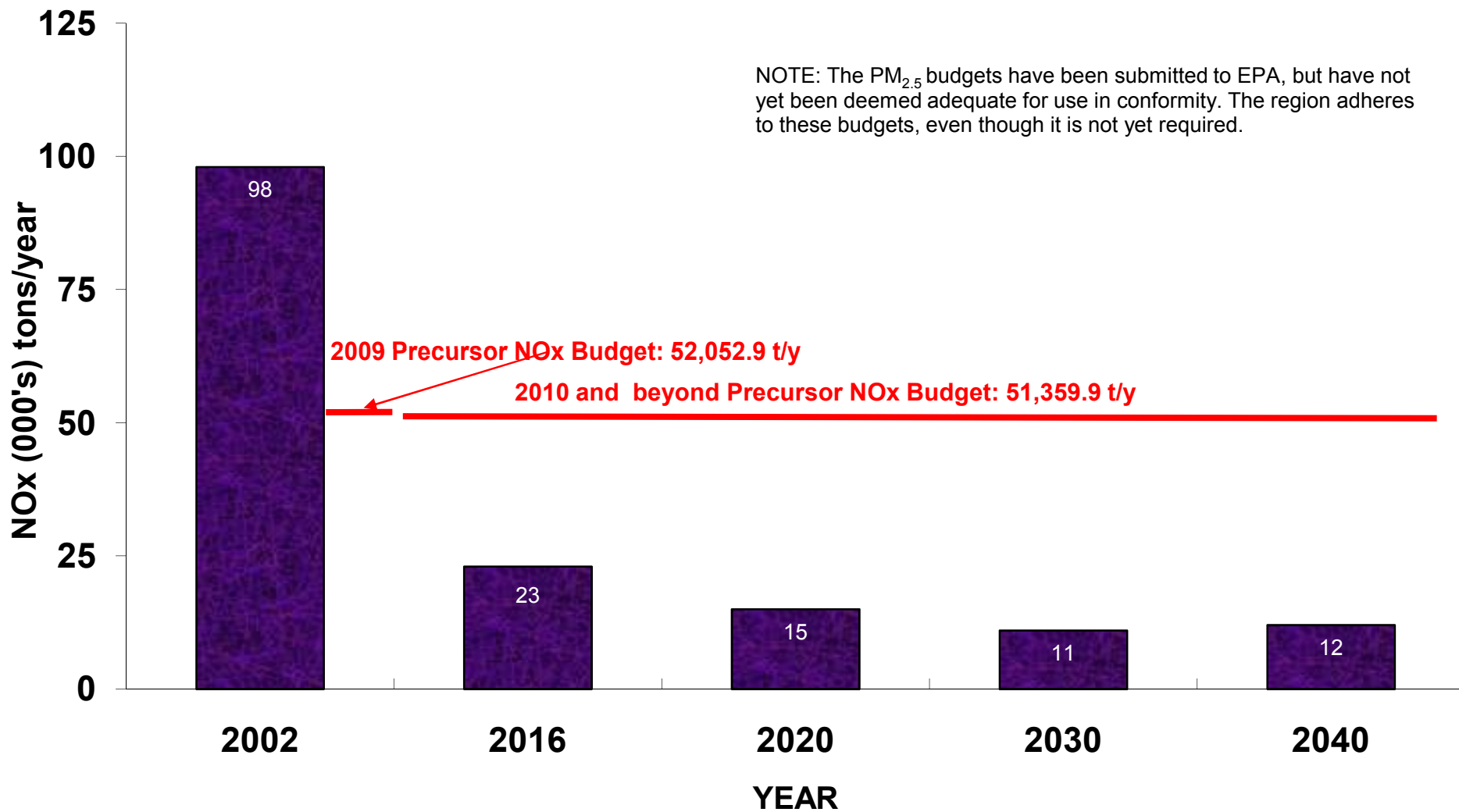


EXHIBIT 23

Mobile Source Emissions

2011 CLRP

Direct PM_{2.5}

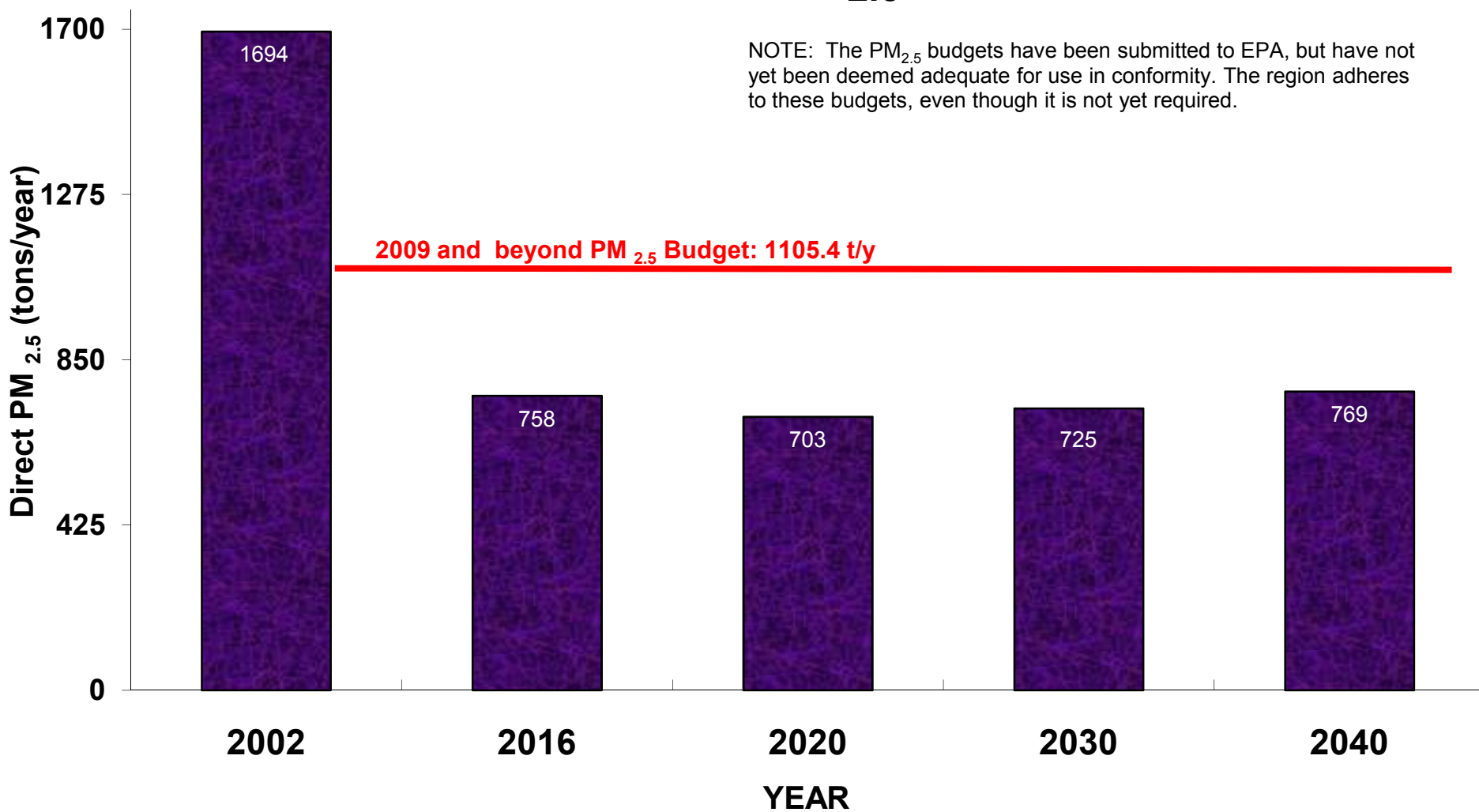
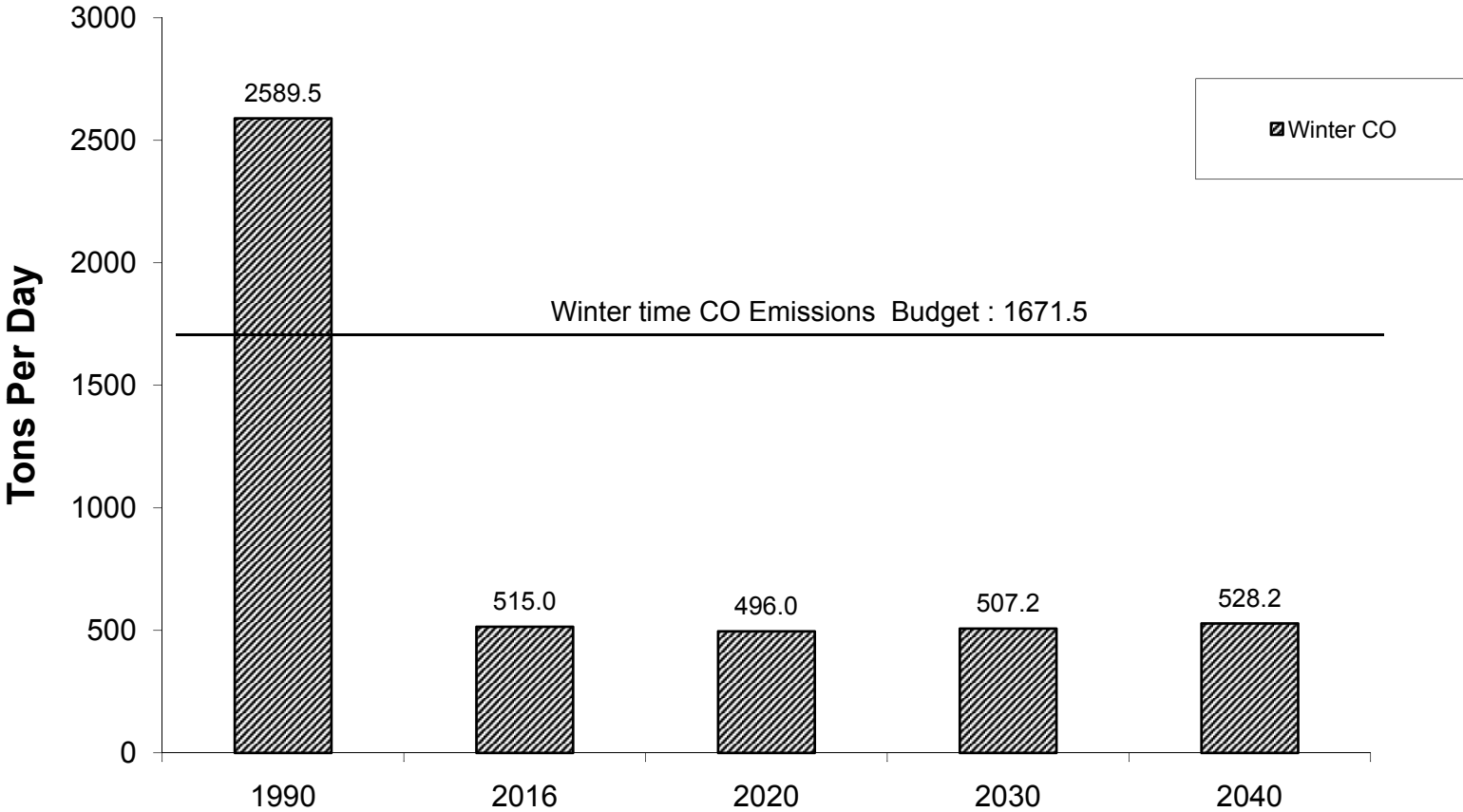


Exhibit 24 Mobile Source Winter CO Emissions 2011 CLRP CO Maintenance Area



Transportation Emissions Reduction Measures

The emissions inventory data contained in the previous summary tables reflect total mobile source network and off-network emissions. However, there are also emissions benefits associated with certain other transportation programs and projects. These benefits, estimated on an off-line basis, are also creditable in conformity analyses. Exhibit 25 represents a summary table of these transportation emissions reduction measures, or TERMS, which have been previously planned or programmed by the TPB. They are arrayed in a 'Tracking Sheet' format to document the implementation status of each, with part A of the table documenting ozone season and part B documenting PM_{2.5} pollutants. The summary result of these measures, shown as the bottom line for each section of the table, amounts to additional reductions in 2011 of better than 2 tons per day of VOC and almost 5 tons per day of NO_x, and 18 and 898 tons per year of direct PM_{2.5} and precursor NO_x, respectively. Only those projects which have been affirmed by the implementing agency as having been completed, or are on a realistic schedule towards implementation, are being credited in this emissions analysis. These summary tables were prepared following COG staff's review of implementation status reports prepared by programming agencies; the agency status reports are contained in Appendix I. Combining network and off-network emissions results shown in each summary table with the additional reductions from TERMS would further improve the emissions margins for each pollutant.

EXHIBIT 25
TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part A - Daily Ozone Precursor Emissions

10/12/2011

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP - Specific Vehicle Type, TCM - Transportation Control Measures

NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	EMISSIONS (gpm)																								Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2008		2009		2010		2015		2016		2020		2030		2040								
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX					
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.001	0.003	0.0006	0.0016	0.0006	0.0014	0.0006	0.0014	0.0005	0.0013	0.0004	0.0007	0.0003	0.0005	0.0003	0.0005	0.0003	0.0005	0.0003	0.0005	C				
19	X	1994-99	PRTC	VRE Woodbridge Parking Expansion (add 500 spaces)	X					2002-2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-				
20	X	1994-99	ALEX	King St. Metrorail access improvements	X					2006	0.0018	0.0026	0.0013	0.0016	0.0012	0.0014	0.0012	0.0014	0.0009	0.0013	0.0008	0.0007	0.0007	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	C				
38	X	1995-00	MDOT	Signal Systems - MD 85 Executive Way to MD 355	X				1996	Pre 2000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	TR					
39	X	1995-00	MDOT	Signal Systems - MD 355, I-70 ramps to Grove Rd.	X				1996	n/a			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	TR					
44	X	1995-00	MDOT	Signal Systems - MD 410, 62nd Ave. to Riverdale Rd.	X				1996	2002			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	TR					
48	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.001	0.003	0.0006	0.0016	0.0006	0.0014	0.0006	0.0014	0.0009	0.0027	0.0004	0.0007	0.0003	0.0005	0.0003	0.0005	0.0003	0.0005	0.0003	C (TCM)					
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.008	0.024	0.0058	0.0148	0.0054	0.0133	0.0053	0.0132	0.0074	0.0242	0.0035	0.0069	0.0029	0.0051	0.0026	0.0042	0.0026	0.0042	0.0026	C (TCM)					
51	X	1995-00	VDOT	Alexandria Telecommuting Pilot Program	X					2000 & 2001			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	C					
52	X	1995-00	VDOT	Fairfax County Bus Shelter (Fairfax Co. TDM program)			X		2000	2001			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	C					
54	X	1995-00	VDOT	City of Fairfax Bus Shelters	X				1999	2004	0.0000	0.0009	0.0000	0.0005	0.0000	0.0005	0.0000	0.0005	0.0000	0.0004	0.0000	0.0002	0.0000	0.0002	0.0000	0.0002	0.0000	0.0002	0.0000	0.0002	C (TCM)				
56	X	1995-00	VDOT	Cherry Hill VRE Access			X			Jul-08	0.0065	0.0206	-	-	0.0042	0.0114	0.0041	0.0113	0.0033	0.0090	0.0028	0.0059	0.0023	0.0044	0.0020	0.0036	0.0020	0.0036	0.0020	C (TCM)					
58	X	1995-00	WMATA	Bus Replacement (172 buses)	X				1998	1998	0.0690	0.2520	0.0690	0.2520	0.0690	0.2520	0.0690	0.2520	0.0000	0.0000	0.0461	0.1323					0.0000	0.0000	0.0000	SP (TCM)					
59	X	1995-00	MCG	Shady Grove West Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C					
60	X	1995-00	MCG	White Oak Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C					
61	X	1995-00	MCG	Bicycle Facilities			X		FY99		0.0028	0.0017	0.0019	0.0011	0.0018	0.0009	0.0018	0.0009	0.0014	0.0009	0.0012	0.0005	0.0010	0.0004	0.0009	0.0003	0.0009	0.0003	0.0003	C					
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail			X				0.0046	0.0069	0.0032	0.0042	0.0030	0.0038	0.0029	0.0038	0.0019	0.0031	0.0020	0.0020	0.0016	0.0015	0.0015	0.0012	0.0015	0.0012	0.0012	C					
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0037	0.0103	0.0026	0.0063	0.0024	0.0057	0.0024	0.0057	0.0033	0.0099	0.0016	0.0030	0.0013	0.0022	0.0012	0.0018	0.0012	0.0018	0.0012	C					
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0296	0.0894	0.0206	0.0550	0.0191	0.0494	0.0189	0.0490	0.0284	0.0636	0.0126	0.0257	0.0104	0.0189	0.0094	0.0157	0.0093	0.0157	0.0093	C (TCM)					
66	X	1995-00	VDOT	Commuter Lots - District Wide	X				varies	1995, 2001	0.0102	0.0284	0.0071	0.0174	0.0066	0.0157	0.0065	0.0156	0.0065	0.0193	0.0043	0.0082	0.0036	0.0060	0.0032	0.0050	0.0032	0.0050	0.0032	C					
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	end	0.0092	0.0172	0.0065	0.0106	0.0060	0.0095	0.0059	0.0094	0.0047	0.0090	0.0039	0.0050	0.0033	0.0036	0.0029	0.0030	0.0029	0.0030	0.0029	C					
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X				1999/2000		0.0000	0.0086	0.0000	0.0053	0.0000	0.0047	0.0000	0.0047	0.0000	0.0045	0.0000	0.0025	0.0000	0.0018	0.0000	0.0015	0.0000	0.0015	0.0000	C					
69	X	1995-00	VDOT	Bicycle Trails and Facilities (Arlington & Fairfax Co - 7 locations)			X		varies	2010-12	0.0018	0.0146	0.0013	0.0090	0.0012	0.0081	0.0012	0.0080	0.0093	0.0076	0.0008	0.0042	0.0007	0.0031	0.0006	0.0026	0.0006	0.0026	0.0006	C					
70	X	1995-00	VDOT	Improved Access to Metrorail Stations (VRE 2 Stn)			X		varies	2000-2012	0.0005	0.0009	0.0002	0.0003	0.0001	0.0002	0.0003	0.0005	0.0005	0.0009	0.0002	0.0002	0.0002	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	C					
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X				1997		0.0092	0.0172	0.0065	0.0106	0.0060	0.0095	0.0029	0.0047	0.0047	0.0090	0.0020	0.0025	0.0033	0.0036	0.0029	0.0030	0.0029	0.0030	0.0029	C					
72	X	1995-00	DC	Bicycle Facilities	X						0.0222	0.0172	0.0155	0.0106	0.0143	0.0095	0.0141	0.0094	0.0116	0.0094	0.0095	0.0050	0.0078	0.0036	0.0070	0.0030	0.0070	0.0030	0.0030	C					
73	X	1995-00	REGION	COG Regional Ridesharing Support	X				on-going		0.0000	0.0000	0.0799	0.1474	0.1393	0.2550	0.1380	0.2534	0.0000	0.0000	0.0926	0.1325	0.0778	0.0980	0.0710	0.0818	0.0705	0.0816	0.0705	C					
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X				on-going		0.0431	0.0897	0.0429	0.0778	0.0503	0.0890	0.0498	0.0884	0.0180	0.0295	0.0333	0.0463	0.0279	0.0342	0.0254	0.0285	0.0252	0.0284	0.0252	C					
75	X	1995-00	REGION	M-92 Telecommuting Support	X				on-going		0.2886	0.6135	0.0714	0.1222	0.1162	0.1891	0.1147	0.1878	0.1794	0.3002	0.0768	0.0985	0.0639	0.0726	0.0576	0.0603	0.0572	0.0602	0.0572	C					
77		1996-01	VDOT	Duke Street Pedestrian Bridge	X				2005	2007	n/a	n/a					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-						
79	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #85)			X		1999	summer 2000	0.0018	0.0026	0.0013	0.0016	0.0012	0.0014	0.0012	0.0014	0.0009	0.0013	0.0008	0.0007	0.0007	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	C					
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X				1997	1997 Onwards	0.0018	0.0026	0.0013	0.0016	0.0012	0.0014	0.0012	0.0014	0.0010	0.0030	0.0008	0.0007	0.0007	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	C					
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail			X		2000	2010-11	0.0009	0.0009			0.0006	0.0005	0.0006	0.0005	0.0005	0.0004	0.0004	0.0002	0.0003	0.0002	0.0003	0.0002	0.0003	0.0002	0.0003	C					
83	X	1996-01	WMATA	Bus Replacement (see line 58, above)	X				1998		Credit taken in line 58, above																								SP
85	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #79)	X				1999	2001	0.0009	0.0009	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	0.0005	0.0013	0.0004	0.0002	0.0003	0.0002	0.0003	0.0002	0.0003	0.0002	0.0003	0.0002	C				
90	X	1996-01	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X				on-going		0.5595	1.0434	0.5491	0.9096	0.3443	0.5499	0.3398	0.5461	0.2347	0.3449	0.2274	0.2865	0.1887	0.2111	0.1698	0.1753	0.1687	0.1748	0.1687	C					
91	X	1996-01	REGION	M-70a Bicycle Parking			X		1999		0.0065	0.0060	0.0045	0.0037	0.0042	0.0033	0.0041	0.0033	0.0047	0.0045	0.0028	0.0017	0.0023	0.0013	0.0020	0.0011	0.0020	0.0011	0.0020	C					
92	X	STADIUM ANALYSIS	M-92 Telecommuting Support ¹																																

EXHIBIT 25
TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part A - Daily Ozone Precursor Emissions

10/12/2011

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP - Specific Vehicle Type, TCM - Transportation Control Measures

NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	EMISSIONS																								Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2008		2009		2010		2015		2016		2020		2030		2040								
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX			
167	X	2003-08	MCG	Free Bus Service on Selected Routes on I-270	X				2004		0.0017	0.0030	0.0012	0.0018	0.0011	0.0017	0.0011	0.0016	0.0007	0.0010	0.0007	0.0009	0.0006	0.0006	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	c		
168	X	2003-08	MCG	Annual Sidewalk Program	X				2004		0.0275	0.0480	0.0192	0.0295	0.0178	0.0285	0.0176	0.0263	0.0116	0.0159	0.0117	0.0138	0.0097	0.0102	0.0087	0.0084	0.0087	0.0084	0.0087	0.0084	c				
169		2003-08	MDOT	Bethesda Breeze/International Express Metrobus			X		2005	Removed	0.0060	0.0097	0.0042	0.0059	0.0039	0.0053	0.0038	0.0053	0.0025	0.0032	0.0026	0.0028	0.0021	0.0020	0.0019	0.0017	0.0019	0.0017	c						
170		2003-08	MDOT	Bethesda-B, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot			X		2005	Removed	0.0142	0.0189	0.0099	0.0116	0.0092	0.0104	0.0091	0.0104	0.0060	0.0064	0.0061	0.0054	0.0050	0.0040	0.0045	0.0033	0.0045	0.0033	c						
171		2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)			X		2005	Removed	0.0093	0.0142	0.0065	0.0087	0.0060	0.0078	0.0059	0.0078	0.0039	0.0047	0.0040	0.0041	0.0033	0.0030	0.0029	0.0025	0.0029	0.0025	c						
172	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	X				2005	2002	0.0150	0.0267	0.0105	0.0164	0.0097	0.0147	0.0096	0.0146	0.0063	0.0088	0.0064	0.0077	0.0053	0.0057	0.0048	0.0047	0.0047	0.0047	c						
173	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bike/Pedestrian)	X				2005	2004	0.0052	0.0030	0.0037	0.0018	0.0034	0.0017	0.0033	0.0016	0.0023	0.0011	0.0022	0.0009	0.0018	0.0006	0.0017	0.0005	0.0016	0.0005	c						
174	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	Ongoing	0.0046	0.0026	0.0032	0.0016	0.0030	0.0014	0.0029	0.0014	0.0020	0.0010	0.0020	0.0008	0.0016	0.0006	0.0015	0.0005	0.0014	0.0005	c						
175	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.0228	0.0586	0.0159	0.0360	0.0147	0.0323	0.0145	0.0321	0.0094	0.0191	0.0097	0.0169	0.0080	0.0124	0.0072	0.0103	0.0072	0.0103	c						
176	X	2003-08	VDOT	Universal Transportation Access Program	X				2005	2005-07	0.0019	0.0034	0.0013	0.0021	0.0012	0.0019	0.0012	0.0019	0.0008	0.0011	0.0008	0.0010	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	c						
177	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative			X		2008 onward		0.0006	0.0013			0.0004	0.0007	0.0004	0.0007	0.0003	0.0004	0.0003	0.0004	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	c						
178	X	2003-08	VDOT	Mobile Commuter Stores	X				2005	2005	0.0035	0.0071	0.0024	0.0044	0.0022	0.0039	0.0022	0.0039	0.0014	0.0023	0.0015	0.0020	0.0012	0.0015	0.0011	0.0012	0.0011	0.0012	c						
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA)	X				2005	Fall 2006	0.0012	0.0022	0.0008	0.0013	0.0008	0.0012	0.0008	0.0012	0.0005	0.0007	0.0005	0.0006	0.0004	0.0005	0.0004	0.0004	0.0004	0.0004	c						
180	X	2003-08	VDOT	Commuter Choice	X				2005		0.0015	0.0025	0.0011	0.0016	0.0010	0.0014	0.0010	0.0014	0.0007	0.0008	0.0007	0.0007	0.0005	0.0005	0.0005	0.0004	0.0005	0.0004	c						
181	X	2003-08	VDOT	Employer Shuttle Services			X		2005		0.0184	0.0301	0.0128	0.0185	0.0119	0.0166	0.0117	0.0165	0.0077	0.0100	0.0078	0.0087	0.0065	0.0064	0.0058	0.0053	0.0058	0.0053	c						
184	X	2003-08	VDOT	Van Start / Van Save	X				2005	till 2006	0.0022	0.0047	0.0016	0.0029	0.0015	0.0026	0.0014	0.0025			0.0010	0.0013							c						
185	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0019	0.0047	0.0013	0.0029	0.0012	0.0026	0.0012	0.0026	0.0008	0.0015	0.0008	0.0013	0.0007	0.0010	0.0006	0.0008	0.0006	0.0008	c						
187	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0025	0.0053	0.0018	0.0033	0.0016	0.0029	0.0016	0.0029	0.0011	0.0017	0.0011	0.0015	0.0009	0.0011	0.0008	0.0009	0.0008	0.0009	c						
190	X	2003-08	VDOT	Employer Vanpool Program (Bridge deck)	X				2005	2004 - 2008	0.0015	0.0034	0.0011	0.0021	0.0010	0.0019					0.0000	0.0000							c						
191	X	2003-08	VDOT	Town of Leesburg P&R Lot	X				2005	2010	0.0031	0.0071					0.0020	0.0039	0.0013	0.0023	0.0013	0.0020	0.0011	0.0015	0.0010	0.0012	0.0010	0.0012	c						
192	X	2003-08	VDOT	District-wide P&R Lots	X				2005	2001-2005	0.0182	0.0406	0.0127	0.0249	0.0118	0.0224	0.0116	0.0222	0.0076	0.0133	0.0078	0.0117	0.0064	0.0086	0.0058	0.0071	0.0057	0.0071	c						
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations	X				2005	2005	0.0235	0.0604	0.0164	0.0372	0.0152	0.0334	0.0150	0.0331	0.0097	0.0197	0.0100	0.0174	0.0083	0.0128	0.0074	0.0106	0.0074	0.0106	c						
196	X	2003-08	WMATA	64 CNG Buses (Purchased in 2001)	X				2005	2004	0.0021	0.0870	0.0021	0.0870	0.0021	0.0870	0.0021	0.0870	0.0021	0.0870	0.0014	0.0457							SP (TCM)						
197	X	2003-08	WMATA	250 CNG Buses (175 buses by Dec. 2004; 75 buses by mid 2006)	X				2005	Jun-06	0.0083	0.3400	0.0083	0.3400	0.0083	0.3400	0.0083	0.3400	0.0083	0.3400	0.0055	0.1786							SP						
198	X	2003-08	WMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004	0.0138	0.0755	0.0138	0.0755	0.0138	0.0755	0.0138	0.0755	0.0138	0.0755	0.0092	0.0396							SP						
199	X	2003-08	WMATA	Car Sharing Program	X				2005	2004	0.0013	0.0033	0.0009	0.0020	0.0008	0.0018	0.0008	0.0018	0.0005	0.0011	0.0005	0.0009	0.0005	0.0007	0.0004	0.0006	0.0004	0.0006	c						
200	X	2003-08	WMATA	Bikes Racks on WMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0020	0.0035	0.0014	0.0021	0.0013	0.0019	0.0012	0.0019	0.0008	0.0012	0.0008	0.0010	0.0007	0.0007	0.0006	0.0007	0.0006	0.0007	c (TCM)						
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)			X		2005		0.0055	0.013	0.0055	0.0133	0.0055	0.0133	0.0055	0.0133	0.0055	0.013	0.004	0.007	0.0055	0.0133					SP						
203	X	2003-08	MDOT	Replace 55 Montgomery County 10 yr. old buses w/ new CNG buses			X		2005	Ongoing	0.0459	0.1628	0.0459	0.1628	0.0459	0.1628	0.0459	0.1628		0.2861	0.0307	0.0855	0.0459	0.1628					SP						
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)			X		2005		0.0121	0.0221	0.0084	0.0136	0.0078	0.0122	0.0077	0.0121	0.0051	0.007	0.005	0.006	0.0043	0.0047	0.0038	0.0039	0.0038	0.0039	c						
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			X		2005	2005	0.0042	0.0108	0.0030	0.0066	0.0027	0.0060	0.0027	0.0059	0.0017	0.0035	0.0018	0.0031	0.0015	0.0023	0.0013	0.0019	0.0013	0.0019	c						
206		2003-08	MDOT	Additional Bike Lockers at Metro-Stations			X		2005		0.0213	0.0379	0.0149	0.0233	0.0138	0.0209	0.0136	0.0208	0.0090	0.0125	0.0091	0.0109	0.0075	0.0080	0.0067	0.0067	0.0067	0.0066	c						
207	X	2003-08	MDOT	Bike Facilities at PnR Lots or other similar location			X		2005	2005	0.0150	0.0300	0.0105	0.0185	0.0097	0.0166	0.0096	0.0165	0.0063	0.0099	0.0064	0.0086	0.0053	0.0064	0.0048	0.0053	0.0047	0.0053	c						
208		2003-08	MDOT	CNG Fueling Stations			X		2005		0.1270	0.1170	0.1270	0.1170	0.1270	0.1170	0.1270	0.1170			0.0849	0.0614							SP						
209		2003-08	MDOT	Gas cap replacements (ROP Credit)			X		2005		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SP						
210		2003-08	MDOT	Gas can turnover (ROP Credit)			X		2005		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SP						
211	X	2003-08	MDOT	External Bicycle Racks on WMATA Buses (486 MD buses)	X				2005	2002	0.0023	0.0040	0.0016	0.0025	0.0015	0.0022	0.0014	0.0022	0.0009	0.0013	0.0010	0.0012	0.0008	0.0008	0.0007	0.0007	0.0007	0.0007	c (TCM)						
212	X	2003-08	MDOT	Bike Pedestrian Trail - Anacostia River Walk			X		2005	Ongoing	0.0009	0.0008	0.0007	0.0005	0.0006	0.0005	0.0006	0.0005	0.0004	0.0003	0.0004	0.0002	0.0003	0.0002	0.0003	0.0001</									

EXHIBIT 25
TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part A - Daily Ozone Precursor Emissions

10/12/2011

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	2005		2008		2009		2010		2015		2016		2020		2030		2040		Project Category *		
					FULL	SCALED-BACK	UNDER-WAY	REM			VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX		VOC	NOX
223	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. (37 spaces)	X				2008	2008							0.0007	0.0013			0.0004	0.0007	0.0004	0.0005	0.0003	0.0004	0.0003	0.0004			
224	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. - expansion (39 spaces)					2011	2011											Credits included in TS 224 (for 37+ 39 spaces)										
225	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 70 & MD 355 (100 spaces)			X		2010	2010							0.0009	0.0017			0.0006	0.0009	0.0005	0.0007	0.0005	0.0006	0.0005	0.0006			
226	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 270 & MD 80 (164 spaces)	X				2009	2009							0.0014	0.0028			0.0010	0.0015	0.0008	0.0011	0.0007	0.0009	0.0007	0.0009			
227	X	2008-13	MDOT	MDOT Syglat System Reviewing			X		2010	on-going											Credits shown in Regional signal TERM - TS 220										
228	X	2008-13	MDOT	MDOT Takoma Langely Transit Center			X		2012	2012							0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
Available Emissions Credits											3.716	7.556	2.752	5.400	2.471	4.856	2.456	4.797	2.164	3.704	1.639	2.505	1.430	1.113	1.284	0.747	1.271	0.744			

**TRANSPORTATION EMISSION REDUCTION MEASURES (CLRP Projects Only)
Part A - Daily Ozone Precursor Emissions**

Project Category: TR - Traffic Stream, C - Commute, H - Engine Technology (Heavy Dudy Vehicles), SP- Specific Vehicle Type

NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				PROJECTED COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED								Project Category
					FULL	SCALED-BACK	UNDER-WAY	REM			2016		2020		2030		2040		
											VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx	
221	X	1995-00 TIP	REGION	M-24 Speed Limit Adherence	X				2010		-0.0050	0.1437	-0.0021	0.1206	0.0005	0.0377	0.0005	0.0376	TR
222		1996-01 TIP	MGC	Rock Spring Park Pedestrian Amenities				X			0.0007	0.0021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
223	X	1996-01 TIP	MGC	Olney Transit Center Park and Ride					2015		0.0013	0.0042	0.0009	0.0030	0.0003	0.0007	0.0003	0.0007	C
224	X	1996-01 TIP	MGC	Damascus Park and Ride						2003	0.0007	0.0021	0.0004	0.0015	0.0001	0.0003	0.0001	0.0003	C
225	X	1996-01 TIP	DC	M-103 Taxicab Replacement (DC)				X	2015		0.0000	0.0000	0.1745	0.3000	0.3490	0.6000	0.3467	0.5984	H
226	X	STADIUM ANALYSIS		M-103 Taxicab Replacement (MD)				X	2008		0.0000	0.0000	0.1560	0.2400	0.1560	0.2400	0.1550	0.2394	H
227	X	1997-02 TIP	MDOT	Shady Grove West Transit Center Park and Ride				X			0.0000	0.0053	0.0000	0.0038	0.0000	0.0009	0.0000	0.0009	C
228	X	1997-02 TIP	MGC	Olney Transit Center Park and Ride					2015		0.0000	0.0000	0.0004	0.0012	0.0003	0.0007	0.0003	0.0007	C
229	X	1997-02 TIP	MGC	White Oak Park and Ride					2008		0.0000	0.0105	0.0000	0.0076	0.0000	0.0017	0.0000	0.0017	C
230	X	1997-02 TIP	MGC	Damascus Park and Ride						2003	0.0000	0.0000	0.0002	0.0005	0.0001	0.0003	0.0001	0.0003	C
231	X	1997-02 TIP	MGC	Four Corners Transit Center					2015		0.0000	0.0005	0.0000	0.0004	0.0000	0.0001	0.0000	0.0001	C
232		1997-02 TIP	MGC	Burtonsville Transit Center				X			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
233	X	1997-02 TIP	MGC	Silver Spring Transit Access							0.0000	0.0005	0.0000	0.0003	0.0000	0.0002	0.0000	0.0002	C
234	X	1997-02 TIP	MGC	Shady Grove Parking Construction						2003	0.0033	0.0100	0.0021	0.0072	0.0007	0.0017	0.0007	0.0017	C

PLAN TOTAL	0.0004	0.1715	0.0019	0.1424	0.0022	0.0434	0.0021	0.0432
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GRAND TOTAL (Current Measures + CLRP plan)	1.639	2.676	1.432	1.255	1.286	0.791	1.274	0.787
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DEFINITIONS: Project Numbers implemented fully prior to 2000 were removed from the TERM Tracking Sheet

CREDIT TAKEN (X means emissions reduction credits taken):

TIP - Emissions credits are taken for projects being implemented, according to the progress reporting schedules provided by the implementing agencies (contained in Appendix J of Conformity Document). No credit has been taken for projects in which only some components of the measure have been implemented.

CLRP - Credit is taken for each of these elements of the CLRP according to the schedule provided by the implementing agency.

IMPLEMENTATION STATUS:

FULL = project is completed as planned at the time of analysis.

SCALED BACK = project is completed, but at a different level than assumed at the time of analysis (i.e., purchased 50 buses instead of 100)

UNDERWAY = project is not complete, but is close enough that credit may be taken (i.e., under construction, NOT just out for bid)

REMOVED = project no longer expected to be implemented or constructed

COMPLETION DATE:

PROJECTED = project completion date originally expected (i.e., at time of emissions analysis)

ACTUAL = actual year project was open for use, or expected to be open for use if under construction

REMOVED

projects Emissions credits are not counted in total available emissions credits

1 Line items 218, 216, 179, 92 are all credited as part of M-92 Regional Telecommute Support TERM, line item # 75

2 Line item 108 & 219 credits are taken only for year 2010

TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part B - Yearly PM_{2.5} and Precursor NOx Emissions

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP - Specific Vehicle Type, TCM - Transportation Control Measures

NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	2016		2020		2030		2040		Project Category *				
					FULL	SCALED BACK	UNDERWAY	REM			PM2.6	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.6	Precursor NOx					
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.0095	0.1374	0.0095	0.1000	0.0095	0.0830	0.0095	0.0689	C				
19	X	1994-99	PRTC	VRE Woodbridge Parking Expansion (add 500 spaces)	X					2002-2003	n/a	n/a	n/a	n/a	n/a	n/a			-				
20	X	1994-99	ALEX	King St. Metrorail access improvements	X					2006	0.0095	0.1374	0.0095	0.1000	0.0095	0.0830	0.0095	0.0689	C				
38	X	1995-00	MDOT	Signal Systems - MD 85 Executive Way to MD 355	X				1996	Pre 2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	TR				
39	X	1995-00	MDOT	Signal Systems - MD 355, I-70 ramps to Grove Rd.	X				1996	n/a	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	TR				
44	X	1995-00	MDOT	Signal Systems - MD 410, 62nd Ave. to Riverdale Rd.	X				1996	2002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	TR				
48	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0095	0.1374	0.0095	0.1000	0.0095	0.0830	0.0095	0.0689	C (TCM)				
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0891	1.2820	0.0891	0.9332	0.0891	0.7745	0.0891	0.6428	C (TCM)				
51	X	1995-00	VDOT	Alexandria Telecommuting Pilot Program	X					2000 & 2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C				
52	X	1995-00	VDOT	Fairfax County Bus Shelter (Fairfax Co. TDM program)			X		2000	2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C				
54	X	1995-00	VDOT	City of Fairfax Bus Shelters	X				1999	2004	0.0032	0.0458	0.0032	0.0333	0.0032	0.0277	0.0032	0.0230	C (TCM)				
56	X	1995-00	VDOT	Cherry Hill VRE Access			X			Jul-08	0.0764	1.0988	0.0764	0.7999	0.0764	0.6639	0.0764	0.5510	C (TCM)				
58	X	1995-00	WMATA	Bus Replacement (172 buses)	X				1998	1998									SP (TCM)				
59	X	1995-00	MCG	Shady Grove West Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C				
60	X	1995-00	MCG	White Oak Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C				
61	X	1995-00	MCG	Bicycle Facilities			X		FY99		0.0064	0.0916	0.0064	0.0667	0.0064	0.0553	0.0064	0.0459	C				
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail			X				0.0255	0.3663	0.0255	0.2666	0.0255	0.2213	0.0255	0.1837	C				
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0382	0.5494	0.0382	0.4000	0.0382	0.3319	0.0382	0.2755	C				
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.3309	4.7617	0.3309	3.4663	0.3309	2.8768	0.3309	2.3875	C (TCM)				
66	X	1995-00	VDOT	Commuter Lots - District Wide			X		varies	1995, 2001	0.1050	1.5109	0.1050	1.0999	0.1050	0.9128	0.1050	0.7576	C				
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	2000 end	0.0636	0.9157	0.0636	0.6666	0.0636	0.5532	0.0636	0.4591	C				
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X					1999/2000	0.0318	0.4579	0.0318	0.3333	0.0318	0.2766	0.0318	0.2296	C				
69	X	1995-00	VDOT	Bicycle Trails and Facilities (Arlington & Fairfax Co - 7 locations)			X		varies	2010-12	0.0541	0.7783	0.0541	0.5666	0.0541	0.4702	0.0541	0.3903	C				
70	X	1995-00	VDOT	Improved Access to Metrorail Stations (VRE 2 Stn)			X		varies	2000-2012	0.0032	0.0458	0.0032	0.0333	0.0032	0.0277	0.0032	0.0230	C				
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X				1997		0.0636	0.9157	0.0636	0.6666	0.0636	0.5532	0.0636	0.4591	C				
72	X	1995-00	DC	Bicycle Facilities	X						0.0636	0.9157	0.0636	0.6666	0.0636	0.5532	0.0636	0.4591	C				
73	X	1995-00	REGION	COG Regional Ridesharing Support	X					on-going	1.7913	24.4149	1.7913	17.8484	1.7913	14.9204	1.7913	12.3829	C				
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.6199	8.5312	0.6199	6.2319	0.6199	5.2028	0.6199	4.3180	C				
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	1.2883	18.1945	1.2883	13.2638	1.2883	11.0351	1.2883	9.1583	C				
77		1996-01	VDOT	Duke Street Pedestrian Bridge	X				2005	2007	n/a	n/a	n/a	n/a	n/a	n/a			-				
79	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #85)			X		1999	Summer 2001	0.0095	0.1374	0.0095	0.1000	0.0095	0.0830	0.0095	0.0689	C				
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X				1997	1997 Onwards	0.0095	0.1374	0.0095	0.1000	0.0095	0.0830	0.0095	0.0689	C				
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail			X		2000	2010-11	0.0032	0.0458	0.0032	0.0333	0.0032	0.0277	0.0032	0.0230	C				
83	X	1996-01	WMATA	Bus Replacement (see line 58, above)	X					1998	Credit taken in line 58, above												SP
85	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #79)	X				1999	2001	0.0032	0.0458	0.0032	0.0333	0.0032	0.0277	0.0032	0.0230	C				
90	X	1996-01	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X					on-going	3.7262	52.9524	3.7262	38.5840	3.7262	32.0744	3.7262	26.6195	C				
91	X	1996-01	REGION	M-70a Bicycle Parking			X		1999		0.0223	0.3205	0.0223	0.2333	0.0223	0.1936	0.0223	0.1607	C				
92	X		STADIUM ANALYSIS	M-92 Telecommuting Support ¹	Combined with item #75															C			
95	X	1997-02	MCG	Germantown Transit Center	X				2005		0.0605	0.8699	0.0605	0.6333	0.0605	0.5256	0.0605	0.4362	C (TCM)				
102	X	1997-02	PG	Prince George's County Bus Replacement	X				1998	1998									SP (TCM)				

TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part B - Yearly PM_{2.5} and Precursor NOx Emissions

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NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	2016		2020		2030		2040		Project Category *
					FULL	SCALED BACK	UNDERWAY	REM			PM2.6	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.6	Precursor NOx	
106	X	1997-02	VDOT	PRTC Employer Commuting Outreach Program	X				1977 on-going	0.0016	0.0229	0.0016	0.0167	0.0016	0.0138	0.0016	0.0115	C	
107	X	1997-02	VDOT	PRTC Multimodal Strategic Marketing Implementation Plan	X				1977 on-going	0.0016	0.0229	0.0016	0.0167	0.0016	0.0138	0.0016	0.0115	C	
108	X	1997-02	MDOT	M-103 Taxicab Replacement in Maryland ²	X				2005	Stopped								SP	
109	X	1997-02	REGION	M-70b Employer Outreach for Bicycles	X				1998	on going	0.0035	0.0587	0.0035	0.0423	0.0035	0.0344	0.0035	0.0286	C
110		1997-02	VDOT	M-77b Vanpool Incentive Programs in Virginia				X	1999	delayed	n/a	n/a	n/a	n/a	n/a	n/a		C	
111	X	1998-03	WMATA	Bus Replacement (108 buses)	X				1999	1999								SP	
112	X	1998-03	MCG	Montgomery County Bus Replacement	X					Ongoing								SP	
113	X	1998-03	PG	Prince George's County Bus Replacement	X				1998	Ongoing								SP	
114	X	1998-03	FDC	Frederick County Bus Replacement	X													SP	
117	X	1998-03	VDOT	Arlington County Four Mile Run Bike Trail	X				1999	2009	0.0032	0.0458	0.0032	0.0333	0.0032	0.0277	0.0032	0.0230	C
118	X	1998-03	VDOT	Northern Virginia Turn Bays	X				2000	1998	0.0056	0.0806	0.0056	0.0587	0.0056	0.0487	0.0056	0.0404	TR
119	X	1998-03	VDOT	Fairfax City Bus Replacement	X				2001	2003								SP	
121	X	1998-03	WMATA	WMATA Bus Replacement (252 buses)	X				2001	2001								SP	
122	X	97 & 98 TIP	REGION	M-101a Mass Marketing Campaign (Consumer)				X		2005	0.21571884	2.9697	0.2157	2.1692	0.2157	1.8109	0.2157	1.5029	C
123	X	1999-04	MDOT	Various Park and Ride Lots (I-270/MD124, 450 & I-170/MD-75, 54 spaces)		X			2001/1999	2001	0.1146	1.6483	0.1146	1.1999	0.1146	0.9958	0.1146	0.8265	C
124	X	1999-04	MDOT	Signal Systems (197/MD-198, MD-382 TO US-301, US301)	X				2000	2002	-0.0112	-0.1612	-0.0112	-0.1173	-0.0112	-0.0974	-0.0112	-0.0808	TR
125	X	1999-04	VDOT	Transit Center at 7 Corners	X				2002	2001	0.0064	0.0916	0.0064	0.0667	0.0064	0.0553	0.0064	0.0459	C
126	X	1999-04	VDOT	Falls Church Clean Diesel Bus Service	X				2000	2003								SP	
127	X	1999-04	VDOT	VA 234 Bike Trail			X		2001	2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C
128	X	1999-04	VDOT	PRTC Ridesharing	X				on-going	2000 ongoing	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C
130	X	1996-01	VDOT	M-14: I-66 Feeder Bus Fare Buy Down	X					1998 onward	0.1750	2.5182	0.1750	1.8331	0.1750	1.5214	0.1750	1.2626	C
131	X	2000-05	MDOT	Various park and Ride Lots	X				2002	2003	0.1035	1.4885	0.1035	1.0836	0.1035	0.8993	0.1035	0.7464	C
132	X	2000-05	MDOT	Signal Systems	X				Varies	on-going	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	TR
133	X	2000-05	VDOT	250 Spaces at Gambrell/Hoopes Rds. Park and Ride	X				2002	2004	0.0573	0.8241	0.0573	0.5999	0.0573	0.4979	0.0573	0.4132	C
134	X	2000-05	VDOT	300 Spaces at Backlick Rd	X				2003	2007	0.0414	0.5952	0.0414	0.4333	0.0414	0.3596	0.0414	0.2984	C
135	X	2000-05	VDOT	Accotink-Gateway Connector Trail	X				2002	2005	0.0318	0.4579	0.0318	0.3333	0.0318	0.2766	0.0318	0.2296	C
136	X	2000-05	VDOT	Columbia Pike Trail			X		2000	2009	0.0255	0.3663	0.0255	0.2666	0.0255	0.2213	0.0255	0.1837	C
137	X	2000-05	VDOT	Lee Highway trail	X				2000	2007	0.0127	0.1831	0.0127	0.1333	0.0127	0.1106	0.0127	0.0918	C
138	X	2000-05	VDOT	Arlington Bus Shelter Improvements	X				2005	2005	0.0032	0.0458	0.0032	0.0333	0.0032	0.0277	0.0032	0.0230	C
139	X	2000-05	VDOT	Pentagon Metrostation Improvements	X				2003	2003	0.0541	0.7783	0.0541	0.5666	0.0541	0.4702	0.0541	0.3903	C
140	X	2000-05	MDOT	East/West Intersection Improvements			X		2005	2005	0.0795	1.1446	0.0795	0.8332	0.0795	0.6915	0.0795	0.5739	C
141	X	2001-06	Feds	Federal Transit/Ridesharing subsidy	X				on-going		0.6078	8.7450	0.6078	6.3660	0.6078	5.2833	0.6078	4.3848	C
142	X	2002-07	WMATA	100 CNG buses	X				2002										SP (TCM)
143	X	2002-07	WMATA	ULSD with CRT filters	X				2006	Jun-06	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	H (TCM)
144		2003-08	DC	Replace 23 12 Taxicabs with CNG cabs				X	2005	2006									H
145	X	2003-08	DC	D.C. Incident Response & Traffic Management System	X				2005	2004	0.2761	3.9730	0.2761	2.8922	0.2761	2.4003	0.2761	1.9921	TR
146	X	2003-08	DC	Bicycle Lane in D. C. (35 Mile)	X				2005	2008	0.0428	0.8392	0.0428	0.6134	0.0428	0.4896	0.0428	0.4064	C (TCM)
147	X	2003-08	DC	Bicycle Racks in D. C. (500)	X				2005	2004	0.0040	0.0955	0.0040	0.0699	0.0040	0.0547	0.0040	0.0454	C (TCM)
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600)	X				2005	2003	0.0206	0.2982	0.0206	0.2171	0.0206	0.1800	0.0206	0.1494	C (TCM)
149		2003-08	DC	CNG Rental Cars (18)				X	2005										SP

TERM TRACKING SHEET
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					FULL	SCALED BACK	UNDERWAY	REMOVED			PM2.6	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.6	Precursor NOx	
150	X	2003-08	DC	Sidewalks in D.C. (\$ 5 million)	X				2005	2004	0.3688	5.3710	0.3688	3.9106	0.3688	3.2400	0.3688	2.6889	C
151	X	2003-08	DC	CNG Refuse Haulers (2)	X				2005	2004									H (TCM)
152	X	2003-08	DC	Circulator /Feeder Bus Routes	X				2005	2003	0.1325	1.9373	0.1325	1.4106	0.1325	1.1681	0.1325	0.9694	C
153	X	2003-08	MDOT	Commuter Tax Credit	X				2005	n/a	0.8145	11.8243	0.8145	8.6087	0.8145	7.1356	0.8145	5.9220	C
155		2003-08	MDOT	Employer Vanpool Program (WWB)				X	2005										C
156	X	2003-08	MDOT	Green Line Link			X		2005	n/a	0.0326	0.4503	0.0326	0.3276	0.0326	0.2735	0.0326	0.2270	C
157	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland			X		2005	2005	0.0704	0.9256	0.0704	0.6728	0.0704	0.5660	0.0704	0.4697	C
158	X	2003-08	MDOT	Prince George's County- Bus Exp			X		2005	n/a	0.4574	6.3152	0.4574	4.5942	0.4574	3.8360	0.4574	3.1836	C
159	X	2003-08	MDOT	MTA - Bus Service Expansion			X		2005	n/a	0.1108	1.5063	0.1108	1.0955	0.1108	0.9168	0.1108	0.7609	C
160	X	2003-08	MDOT	Ride- On - Super Discount			X		2005	n/a	0.0094	0.1366	0.0094	0.0995	0.0094	0.0824	0.0094	0.0684	C
161	X	2003-08	Regional	Regional Traveler Information Systems			X		2005	VA:2000 before	3.6007	51.8103	3.6007	37.7158	3.6007	31.3014	3.6007	25.9780	TR
162	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA)			X		2005	n/a	0.1654	2.4082	0.1654	1.7534	0.1654	1.4527	0.1654	1.2056	C
163	X	2003-08	MCG	Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage	X				2004		0.0765	0.9986	0.0765	0.7258	0.0765	0.6113	0.0765	0.5073	C (TCM)
164	X	2003-08	MCG	Bethesda Shuttle Bus Services	X				2004		0.0316	0.4617	0.0316	0.3362	0.0316	0.2784	0.0316	0.2310	C
165	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	X				2004		0.0064	0.0930	0.0064	0.0677	0.0064	0.0561	0.0064	0.0466	C
166	X	2003-08	MCG	New CNG Powered Light Duty Vehicle fleet in the County	X				2004										SP
167	X	2003-08	MCG	Free Bus Service on Selected Routes on I-270	X				2004		0.0110	0.1599	0.0110	0.1164	0.0110	0.0965	0.0110	0.0801	C
168	X	2003-08	MCG	Annual Sidewalk Program	X				2004		0.1756	2.5576	0.1756	1.8622	0.1756	1.5428	0.1756	1.2804	C
169		2003-08	MDOT	Bethesda Breeze/International Express Metrobus				X	2005	Removed	0.0345	0.5169	0.0345	0.3765	0.0345	0.3107	0.0345	0.2579	C
170		2003-08	MDOT	Bethesda-8, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot				X	2005	Removed	0.0623	1.0184	0.0623	0.7427	0.0623	0.6058	0.0623	0.5028	C
171		2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)				X	2005	Removed	0.0496	0.7591	0.0496	0.5531	0.0496	0.4550	0.0496	0.3776	C
172	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	X				2005	2002	0.0983	1.4213	0.0983	1.0347	0.0983	0.8581	0.0983	0.7122	C
173	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bike/Pedestrian)	X				2005	2004	0.0038	0.1712	0.0038	0.1259	0.0038	0.0944	0.0038	0.0783	C
174	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	Ongoing	0.0033	0.1498	0.0033	0.1102	0.0033	0.0826	0.0033	0.0685	C
175	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.2366	3.0876	0.2366	2.2442	0.2366	1.8900	0.2366	1.5685	C
176	X	2003-08	VDOT	Universal Transportation Access Program	X				2005	2005-07	0.0124	0.1806	0.0124	0.1315	0.0124	0.1090	0.0124	0.0904	C
177	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative			X		2008 onward		0.0049	0.0682	0.0049	0.0496	0.0049	0.0414	0.0049	0.0344	C
178	X	2003-08	VDOT	Mobile Commuter Stores	X				2005	2005	0.0273	0.3772	0.0273	0.2744	0.0273	0.2291	0.0273	0.1901	C
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA) ¹	X				2005	Fall 2006	0.0080	0.1153	0.0080	0.0839	0.0080	0.0696	0.0080	0.0578	C
180	X	2003-08	VDOT	Commuter Choice	X				2005		0.0091	0.1356	0.0091	0.0988	0.0091	0.0816	0.0091	0.0677	C
181	X	2003-08	VDOT	Employer Shuttle Services			X		2005		0.1081	1.6096	0.1081	1.1723	0.1081	0.9682	0.1081	0.8035	C
184	X	2003-08	VDOT	Van Start / Van Save	X				2005	till 2006									C
185	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0188	0.2468	0.0188	0.1794	0.0188	0.1509	0.0188	0.1253	C
187	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0204	0.2804	0.0204	0.2040	0.0204	0.1704	0.0204	0.1414	C
190	X	2003-08	VDOT	Employer Vanpool Program (Bridge deck)	X				2005	2004 - 2008									C
191	X	2003-08	VDOT	Town of Leesburg P&R Lot	X				2005	2010	0.0280	0.3755	0.0280	0.2730	0.0280	0.2289	0.0280	0.1900	C
192	X	2003-08	VDOT	District-wide P&R Lots	X				2005	2001-2005	0.1589	2.1456	0.1589	1.5604	0.1589	1.3072	0.1589	1.0848	C
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations	X				2005	2005	0.2440	3.1849	0.2440	2.3149	0.2440	1.9495	0.2440	1.6180	C
196	X	2003-08	WMATA	64 CNG Buses (Purchased in 2001)	X				2005	2004									SP (TCM)
197	X	2003-08	WMATA	250 CNG Buses (175 buses by Dec. 2004; 75 buses by mid 2006)	X				2005	Jun-06									SP

TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part B - Yearly PM_{2.5} and Precursor NOx Emissions

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP - Specific Vehicle Type, TCM - Transportation Control Measures

NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	2016		2020		2030		2040		Project Category *
					FULL	SCALED BACK	UNDERWAY	REMOVED			PM2.6	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.6	Precursor NOx	
198	X	2003-08	WMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004								SP	
199	X	2003-08	WMATA	Car Sharing Program	X				2005	2004	0.0133	0.1732	0.0133	0.1259	0.0133	0.1060	0.0133	0.0880	C
200	X	2003-08	WMATA	Bikes Racks on WMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0128	0.1854	0.0128	0.1350	0.0128	0.1119	0.0128	0.0929	C (TCM)
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)				X	2005		0.0492	0.7082	0.0492	0.5155				SP	
203	X	2003-08	MDOT	Replace 55 Montgomery County 10 yr. old buses w/ new CNG buses			X		2005	Ongoing	0.6024	8.6685	0.6024	6.3103				SP	
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				X	2005		0.0824	1.1787	0.0824	0.8580	0.0824	0.7126	0.0824	0.5914	C
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			X		2005	2005	0.0436	0.5700	0.0436	0.4143	0.0436	0.3488	0.0436	0.2895	C
206		2003-08	MDOT	Additional Bike Lockers at Metro-Stations				X	2005		0.1395	2.0172	0.1395	1.4685	0.1395	1.2179	0.1395	1.0107	C
207	X	2003-08	MDOT	Bike Facilities at PnR Lots or other similar location			X		2005	2005	0.1144	1.5933	0.1144	1.1592	0.1144	0.9667	0.1144	0.8023	C
208		2003-08	MDOT	CNG Fueling Stations				X	2005									SP	
209		2003-08	MDOT	Gas cap replacements (ROP Credit)				X	2005		N/A	N/A	N/A	N/A	N/A	N/A		SP	
210		2003-08	MDOT	Gas can turnover (ROP Credit)				X	2005		N/A	N/A	N/A	N/A	N/A	N/A		SP	
211	X	2003-08	MDOT	External Bicycle Racks on WMATA Buses (486 MD buses)	X				2005	2002	0.0148	0.2137	0.0148	0.1556	0.0148	0.1290	0.0148	0.1071	C (TCM)
212	X	2003-08	MDOT	Bike \ Pedestrian Trail - Anacostia River Walk			X		2005	Ongoing	0.0022	0.0463	0.0022	0.0339	0.0022	0.0268	0.0022	0.0223	C
213		2003-08	MDOT	Transit Prioritization - Queue Jumps				X	2005		0.0225	0.3639	0.0225	0.2654	0.0225	0.2168	0.0225	0.1799	C
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion	X				2005	Ongoing	0.5732	8.3042	0.5732	6.0457	0.5732	5.0126	0.5732	4.1601	C
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			X		2005	Ongoing	0.0567	0.8434	0.0567	0.6142	0.0567	0.5074	0.0567	0.4211	C
216	X	2003-08	MDOT	Telecommuting Expansion ¹	X				2005	Ongoing	0.8466	11.6148	0.8466	8.4488	0.8466	7.0611	0.8466	5.8602	C
217		2003-08	MDOT	Replace older Diesel Engine in Public Sector vehicles				X	2005									H	
218	X	2003-08	VDOT	MV-92 Telecommuting Program - Expanded ¹	X				2005	2005	0.9041	12.4039	0.9041	9.0228	0.9041	7.5408	0.9041	6.2584	C
219	X	2003-08	VDOT	MV-123 Employer Outreach for Public Sector Employees ²	X				2005	2003	0.1574	2.2923	0.1574	1.6690	0.1574	1.3828	0.1574	1.1476	C
220	X	2003-08	REGION	Signal System Optimization	X				2005	2005	1.0065	14.4817	1.0065	10.5421	1.0065	8.7492	1.0065	7.2612	TR
221	X	2007-12	MDOT	Two P & R Lots in Frederick County (99 spaces)	X				2007	2008	0.0121	0.1636	0.0086	0.0831	0.0086	0.0709	0.0086	0.0589	C
222	X	2007-12	MDOT	MDOT P & R Lots at US 340 (66-99 spaces, Frederick Co.)	X				2007	2007									
223	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. (37 spaces)	X				2008	2008	0.0093	0.1256	0.0093	0.0913	0.0093	0.0765	0.0093	0.0635	
224	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. - expansion (39 spaces)			X		2011	2011									
225	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 70 & MD 355 (100 spaces)			X		2010	2010	0.0123	0.1653	0.0123	0.1202	0.0123	0.1007	0.0123	0.0836	
226	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 270 & MD 80 (164 spaces)	X				2009	2009	0.0201	0.2710	0.0201	0.1971	0.0201	0.1652	0.0201	0.1371	
227	X	2008-13	MDOT	MDOT Sygal System Reviewing			X		2010	on-going									
228	X	2008-13	MDOT	MDOT Takoma Langely Transit Center			X		2012	2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Available Emissions Credits											17.655	283.411	15.744	187.199	15.141	150.310	15.141	124.747	

**TRANSPORTATION EMISSION REDUCTION MEASURES (CLRP Projects Only)
Part B - Yearly PM 2.5 and Precursor NOx Emissions**

Project Category: TR - Traffic Stream, C - Commute, H - Engine Technology (Heavy Dudy Vehicles), SP- Specific Vehicle Type

NOS	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				PROJECTED COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/ANNUM REDUCTION CREDITED								Project Category
					FULL	SCALED-BACK	UNDER-WAY	REMOVED			2016		2020		2030		2040		
											PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.6	Precursor NOx	
221	X	1995-00 TIP	REGION	M-24 Speed Limit Adherence					2010		1.8471	26.5777	2.1072	22.0719	0.7941	6.9030	0.7941	5.7290	TR
222		1996-01 TIP	MGC	Rock Spring Park Pedestrian Amenities				X			0.0270	0.3886	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
223	X	1996-01 TIP	MGC	Olney Transit Center Park and Ride					2015		0.0540	0.7772	0.0531	0.5559	0.0147	0.1279	0.0147	0.1062	C
224	X	1996-01 TIP	MGC	Damascus Park and Ride					2003		0.0270	0.3886	0.0265	0.2780	0.0074	0.0640	0.0074	0.0531	C
225	X	1996-01 TIP	DC	M-103 Taxicab Replacement (DC)				X	2015		0.0000	0.0000	5.2412	54.8984	12.6415	109.8936	12.6415	91.2039	H
226	X	STADIUM ANALYSIS		M-103 Taxicab Replacement (MD)				X	2008		0.0000	0.0000	4.1929	43.9187	5.0566	43.9574	5.0566	36.4816	H
227	X	1997-02 TIP	MDOT	Shady Grove West Transit Center Park and Ride				X			0.0675	0.9715	0.0663	0.6949	0.0184	0.1599	0.0184	0.1327	C
228	X	1997-02 TIP	MGC	Olney Transit Center Park and Ride					2015		0.0000	0.0000	0.0218	0.2280	0.0147	0.1279	0.0147	0.1062	C
229	X	1997-02 TIP	MGC	White Oak Park and Ride					2008		0.1350	1.9431	0.1327	1.3898	0.0368	0.3199	0.0368	0.2655	C
230	X	1997-02 TIP	MGC	Damascus Park and Ride					2003		0.0000	0.0000	0.0082	0.0855	0.0055	0.0480	0.0055	0.0398	C
231	X	1997-02 TIP	MGC	Four Corners Transit Center					2015		0.0068	0.0972	0.0066	0.0695	0.0018	0.0160	0.0018	0.0133	C
232		1997-02 TIP	MGC	Burtonsville Transit Center				X			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-
233	X	1997-02 TIP	MGC	Silver Spring Transit Access							0.0068	0.0972	0.0054	0.0570	0.0037	0.0320	0.0037	0.0265	C
234	X	1997-02 TIP	MGC	Shady Grove Parking Construction					2003		0.1283	1.8459	0.1261	1.3204	0.0350	0.3039	0.0350	0.2522	C

PLAN TOTAL											0.3579	31.7268	0.3804	26.0561	0.1196	7.9425	0.1196	6.5917	
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GRAND TOTAL (Current Measures + CLRP plan)											18.013	315.138	16.124	213.255	15.261	158.252	15.261	131.338	
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DEFINITIONS: Project Numbers implemented fully prior to 2000 were removed from the TERM Tracking Sheet

CREDIT TAKEN (X means emissions reduction credits taken):

TIP - Emissions credits are taken for projects being implemented, according to the progress reporting schedules provided by the implementing agencies (contained in Appendix J of Conformity Document). No credit has been taken for projects in which only some components of the measure have been implemented.

CLRP - Credit is taken for each of these elements of the CLRP according to the schedule provided by the implementing agency.

IMPLEMENTATION STATUS:

FULL = project is completed as planned at the time of analysis.

SCALED BACK = project is completed, but at a different level than assumed at the time of analysis (i.e., purchased 50 buses instead of 100)

UNDERWAY = project is not complete, but is close enough that credit may be taken (i.e., under construction, NOT just out for bid)

REMOVED = project no longer expected to be implemented or constructed

COMPLETION DATE:

PROJECTED = project completion date originally expected (i.e., at time of emissions analysis)

ACTUAL = actual year project was open for use, or expected to be open for use if under construction

REMOVED

projects Emissions credits are not counted in total available emissions credits

1 Line items 218, 216, 179, 92 are all credited as part of M-92 Regional Telecommute Support TERM, line item # 75

2 Line item 108 & 219 credits are taken only for year 2010

VII. CONFORMITY ASSESSMENT - CRITERIA AND PROCEDURES

EPA's conformity regulations identify criteria and procedures for the determination of conformity. These regulations vary according to pollutants and to different actions being considered and according to the time period and the area's standing with EPA in terms of meeting SIP milestone requirements. The March 24, 2010 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 26 lists all sections of the regulations relevant at this time to assessment of the 2011 CLRP. The following discussion indicates the manner in which each criterion was met.

Sec. 93.110 Criteria and procedures: Latest planning assumptions.

The conformity assessment is based upon the most current planning assumptions available for the Washington region. Round 8.0a Cooperative Forecasts were approved for use in the conformity analysis of the 2011 CLRP. 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 (March 2011) 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 needed to reflect changing conditions, whether related to travel patterns, TERM effectiveness or other changes, as new data become available.

Exhibit 26

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	Emissions budget and /or Interim
Sec. 93.119	emissions.

TIP:

Sec. 93.113(c)	TCMs.
Sec. 93.118 and/or	Emissions budget and /or Interim
Sec. 93.119	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	Emissions budget and/or Interim
Sec. 93.119	emissions

Sec. 93.111 Criteria and procedures: Latest emissions model.

The current analysis used MOBILE6.2, 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 opportunity 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. The procedures are summarized into a report called the TPB Participation Plan (Reference 24).

Exhibit 27 lists the schedule for public involvement/consultation opportunities associated with the conformity analysis of the 2011 CLRP. Additional materials are contained as Appendix C.

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

The policy element of the 2011 CLRP specifically addresses the implementation of projects and measures designed to achieve air quality attainment goals. Previous TIPs contained CMAQ-funded TERMS and TCM projects which are elements of the regional ozone attainment plan. As a means of addressing this section of the conformity regulations, implementing agencies prepared progress reports on the implementation status of each of these projects. Appendix I contains the responses from each implementing agency, which document the implementation progress. Some are subject to normal delays associated with the programming process.

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) 2010 CLRP, adopted by the TPB in October, 2010, and amended in July, 2011.



Schedule for the 2011 Financially Constrained Long-Range Transportation Plan (CLRP)

*October 20, 2010	TPB is Briefed on Draft Call for Projects
*November 17, 2010	TPB Releases Final Call for Projects - Transportation Agencies Begin Submitting Project Information through On-Line Database
January 21, 2011	<u>DEADLINE:</u> Transportation Agencies Complete On-Line Submission of Draft Project Inputs.
February 4, 2011	Technical Committee Reviews Draft CLRP Project Submissions and Draft Scope of Work for the Air Quality Conformity Assessment
February 10, 2011 Released	CLRP Project Submissions and Draft Scope of Work for Public Comment
*February 16, 2011	TPB is Briefed on Project Submissions and Draft Scope of Work
March 12, 2011	Public Comment Period Ends
*March 16, 2011	TPB Reviews Public Comments and is asked to Approve Project Submissions and Draft Scope of Work
July 1, 2011	<u>DEADLINE:</u> Transportation Agencies Finalize Congestion Management Documentation Forms (where needed) and CLRP Forms ¹ . (Submissions must not impact conformity inputs; note that the deadline for conformity inputs was March 1, 2010).
*September 21, 2011	TPB Receives Status Report on the Draft CLRP and Conformity Assessment
October 13, 2011	Draft CLRP and Conformity Assessment Released for Public Comment at Citizens Advisory Committee (CAC)
*October 19, 2011	TPB Briefed on the Draft CLRP and Conformity Assessment
November 12, 2011	Public Comment Period Ends
*November 16, 2011	TPB Reviews Public Comments and Responses to Comments, and is Presented the Draft CLRP and Conformity Assessment for Adoption
*TPB Meeting	

¹ By this date, the CLRP forms must include information on the Planning Factors, Environmental Mitigation, Congestion Management Information, and Intelligent Transportation Systems; separate Congestion Management Documentation Forms (where needed) must also be finalized.

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

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

Sec. 93.116 Criteria and procedures: Localized CO and PM₁₀ violations (hot spots).

Any project advanced in the current TIP must first have met this criterion as an element of its environmental study. (The Washington area is now in attainment for both carbon monoxide and PM₁₀.)

Sec. 93.117 Criteria and procedures: Compliance with PM₁₀ and PM_{2.5} control measures.

The Washington area is in attainment for PM₁₀. Per PM_{2.5} requirements, a SIP for the Washington nonattainment area was developed and submitted to EPA in April, 2008.

93.118 Motor vehicle emissions budget

As discussed in earlier in this report, this analysis includes use of the: (1) existing budgets developed as part of the 8-hour ozone SIP, and (2) direct PM_{2.5} and precursor NO_x emissions budgets contained in the April 2008 PM_{2.5} SIP submittal which are awaiting EPA's approval or adequacy finding for use in conformity. Total VOC, NO_x, PM_{2.5}, 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

The forecast year PM_{2.5} pollutant emissions are below those of the 2002 base year.

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

VI. FINDINGS

The analytical results described above provide a basis, in relation to US EPA conformity regulations, for a determination of conformity of the year 2011 Constrained Long Range Plan for The Washington Metropolitan Region, with requirements of the Clean Air Act Amendments of 1990.

APPENDIX A

Air Quality Conformity Scope of Work

**AIR QUALITY CONFORMITY ASSESSMENT:
2011 CONSTRAINED LONG RANGE PLAN AMENDMENTS**

SCOPE OF WORK

I. INTRODUCTION

Projects solicited for the 2011 Constrained Long Range Plan (CLRP) are scheduled to be finalized at the March 16, 2011 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 November 16, 2011. This work effort addresses requirements associated with attainment of the ozone standards (volatile organic compounds (VOC) and nitrogen oxides (NO_x) as ozone precursor pollutants), and fine particles (PM_{2.5}) standards (direct particles and precursor NO_x), as well as maintenance of the winter time 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 24, 2010, 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.

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

II. REQUIREMENTS AND APPROACH

A. Criteria (See Exhibit 1)

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, and
3. Contribute to annual emissions reductions.

Assessment criteria for ozone, CO, and PM_{2.5} are discussed below.

Ozone season pollutants will be assessed by comparing the “action” scenarios to the 8-hour ozone area 2008 Reasonable Further Progress (RFP) VOC and NO_x emissions budgets which were deemed adequate for use in conformity by EPA in September 2009.

The region is in maintenance for mobile source wintertime CO and, as in prior conformity assessments, is required to show that pollutant levels do not exceed the approved budget.

PM_{2.5} pollutants will be assessed both by comparing the “action” scenarios to a 2002 base and by comparing the pollutant levels to the budgets submitted by the MWAQC to EPA in April, 2008. PM_{2.5} emissions will be inventoried for yearly totals (instead of on a daily basis as performed for Ozone and CO).

B. Approach (See Table 1 – Summary of Technical Approach)

The analytical approach has several changes since the last conformity assessment. A new version of the travel demand model, Version 2.3, will be released for use in February. A finer-grain zone system (3722 instead of 2191 TAZs), with a more detailed street base, was developed for use with the new model. Ozone season pollutants will no longer be assessed against the 1-hour ozone budgets. Round 8.0 Cooperative Forecasting was updated to Round 8.0a to reflect the inclusion of new land activity data in the Baltimore Region. A new definition of what classifies a project as “regionally significant” was designated (Attachment B).

In addition to the elements below, explicit inputs include: a summary list of major policy and technical input assumptions, shown as Attachment A; and all transportation network elements which will be finalized at the March 16, 2011 TPB meeting.

TABLE 1 – Summary of Technical Approach

	Ozone	Wintertime CO	PM_{2.5}
Pollutant:	VOC, NO _x	CO	Direct particles, Precursor NO _x
Emissions Assessment Criteria:	8-hour 2008 Reasonable Further Progress (RFP) ozone budgets	Approved wintertime CO emissions budget	Reductions from base 2002 inventory & comparison to budgets
Emissions Analysis Time-frame:	Daily	Daily	Annual
Geography:	8-hour ozone non-attainment area	DC, Arl., Alex., Mont., Pr. Geo.	8-hr. area less Calvert County
Network Inputs:	Regionally significant projects		
Land Activity:	NEW! Round 8.0a		
Modeled Area:	NEW! 3722 TAZ SYSTEM		
Travel Demand Model:	NEW! Version 2.3		
Mobile Model:	MOBILE6.2 emissions factors, consistent with the procedures utilized to establish the VOC and NO _x mobile source emissions budgets	MOBILE6.2 Consistent with procedures used to establish the budget	MOBILE6.2 ‘Seasonal’ approach, consistent with procedures used to establish the budget
Emissions Factor Refinements:	Use of 2008 vehicle registration data for all jurisdictions		

III. CONSULTATION

1. Execute TPB consultation procedures (as outlined in the co nsultation procedures report adopted by the TPB on May 20, 1998).

2. Participate in meetings of MWAQC, its Technical Advisory Committee and its Conformity Subcommittee to discuss the scope of work activities, TERM development process, and other elements as needed; discuss at TPB meetings or forums, as needed, the following milestones:
 - CLRP 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
 - Process: comments and responses

IV. WORK TASKS

1. Receive project inputs from programming agencies and organize into conformity documentation listings (endorsement of financially constrained project submissions scheduled for March 16, 2011)
 - Project type, limits, NEPA approval, etc.
 - Phasing with respect to forecast years
 - Transit operating parameters, e.g. schedules, service, fares
 - Action scenarios
2. Review and Update Land Activity files to reflect Round 8.0 Cooperative Forecasts
 - Households by auto ownership, population and employment
 - Zonal data files
3. Prepare forecast year highway, HOV, and transit networks
 - Develop 2002, 2016, 2020, 2030, & 2040 highway networks
 - Prepare 2002, 2016, 2020, 2030, & 2040 transit network input files
 - Update transit fares and highway tolls, as necessary
4. Prepare 2002 travel and emissions estimates
 - Execute travel demand modeling
 - Calculate emissions (daily for ozone season VOC and NO_x for ozone standard requirements; daily for winter CO; yearly for PM_{2.5} direct particles and precursor NO_x)
5. Prepare 2016 travel and emissions estimates
 - Execute travel demand modeling
 - Develop Mobile6.2 emission factors
 - Calculate emissions (daily for ozone season VOC and NO_x for ozone standard requirements; daily for winter CO; yearly for PM_{2.5} direct particles and precursor NO_x)
6. Prepare 2020 travel and emissions estimates
 - Tasks as in year 2016 analysis
7. Prepare 2030 travel and emissions estimates

- Tasks as in year 2020 analysis
 - Apply “transit constraint” using 2020 levels
8. Prepare 2040 travel and emissions estimates
- Tasks as in year 2030 analysis, including transit constraint
9. Identify extent to which plan provides for expeditious implementation of TCMs contained in ozone state implementation plans and emissions mitigation requirements of previous CLRP commitments (TERMs)
- In the CLRP Call for Projects document staff identified previous TCM and TERM commitments and requested a status report from the implementing agencies
 - Staff will review these reports as they are received and update the TERM tracking sheet that was included in the November 17, 2010 air quality conformity report
 - The status reports and the updated TERM tracking sheet will be included in the air quality conformity report.
10. Coordinate / analyze emissions reductions associated with CMAQ and similar projects
- Obtain project-specific emissions reductions from programming agencies
 - Summarize daily ozone season VOC and NO_x reductions for each milestone year
 - Summarize annual direct PM_{2.5} and precursor NO_x PM_{2.5} pollutant reductions; explore additional TERMS
 - With oversight from the Travel Management Subcommittee, as needed, propose and analyze additional measures for their emissions benefits, costs, cost effectiveness, and other evaluation criteria
11. Analyze results of above technical analysis
- Reductions from 1990 (ozone season VOC and NO_x and winter CO) and 2002 base (PM_{2.5})
 - 8-hour ozone season 2008 RFP VOC and NO_x budgets, direct PM_{2.5} and precursor NO_x budgets, and winter CO emissions budgets
 - With oversight from the Travel Management Subcommittee, the Technical Committee and the TPB, identify and recommend additional measures should the plan or program fail any test and incorporate measures into the plan
12. 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

V. SCHEDULE

The schedule for the execution of these work activities is shown in Exhibit 2. The timeline shows completion of the analytical tasks, preparation of a draft report, public and interagency review, response to comments and action by the TPB on November 16, 2011.

Exhibit 1

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	Emissions budget and /or Interim
Sec. 93.119	emissions.

TIP:

Sec. 93.113(c)	TCMs.
Sec. 93.118 and/or	Emissions budget and /or Interim
Sec. 93.119	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	Emissions budget and/or Interim
Sec. 93.119	emissions

Sec. 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.

Sec. 93.111 Criteria and procedures: Latest emissions model.

The conformity determination must be based on the latest emission estimation model available.

Sec. 93.112 Criteria and procedures: Consultation.

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.

Sec. 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.

Sec. 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.

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

The project must come from a conforming plan and program.

Sec. 93.116 Criteria and procedures: Localized CO, PM₁₀, and PM_{2.5} violations (hot spots).

The FHWA/FTA project must not cause or contribute to any new localized CO, PM₁₀, and/or PM_{2.5} violations or increase the frequency or severity of any existing CO, PM₁₀, and /or PM_{2.5} violations in CO, PM₁₀, and PM_{2.5} nonattainment and maintenance areas.

Sec. 93.117 Criteria and procedures: Compliance with PM₁₀ and PM_{2.5} control measures.

The FHWA/FTA project must comply with PM₁₀ and PM_{2.5} control measures in the applicable implementation plan.

Sec. 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).

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

The FHWA/FTA project must satisfy the interim emissions test(s).

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



Schedule for the 2011 Financially Constrained Long-Range Transportation Plan (CLRP)

*October 20, 2010	TPB is Briefed on Draft Call for Projects
*November 17, 2010	TPB Releases Final Call for Projects - Transportation Agencies Begin Submitting Project Information through On-Line Database
January 21, 2011	<u>DEADLINE:</u> Transportation Agencies Complete On-Line Submission of Draft Project Inputs.
February 4, 2011	Technical Committee Reviews Draft CLRP Project Submissions and Draft Scope of Work for the Air Quality Conformity Assessment
February 10, 2011 Released	CLRP Project Submissions and Draft Scope of Work for Public Comment
*February 16, 2011	TPB is Briefed on Project Submissions and Draft Scope of Work
March 12, 2011	Public Comment Period Ends
*March 16, 2011	TPB Reviews Public Comments and is asked to Approve Project Submissions and Draft Scope of Work
July 1, 2011	<u>DEADLINE:</u> Transportation Agencies Finalize Congestion Management Documentation Forms (where needed) and CLRP Forms ¹ . (Submissions must not impact conformity inputs; note that the deadline for conformity inputs was March 1, 2010).
*September 21, 2011	TPB Receives Status Report on the Draft CLRP and Conformity Assessment
October 13, 2011	Draft CLRP and Conformity Assessment Released for Public Comment at Citizens Advisory Committee (CAC)
*October 19, 2011	TPB Briefed on the Draft CLRP and Conformity Assessment
November 12, 2011	Public Comment Period Ends
*November 16, 2011	TPB Reviews Public Comments and Responses to Comments, and is Presented the Draft CLRP and Conformity Assessment for Adoption
*TPB Meeting	

¹ By this date, the CLRP forms must include information on the Planning Factors, Environmental Mitigation, Congestion Management Information, and Intelligent Transportation Systems; separate Congestion Management Documentation Forms (where needed) must also be finalized.



WORK SCOPE ATTACHMENT A

POLICY AND TECHNICAL INPUT ASSUMPTIONS AIR QUALITY CONFORMITY ANALYSIS OF 2011 CLRP

1. Land Activity

- Round 8.0a Cooperative Forecasts

2. Policy and Project Inputs

- Highway, HOV, and transit projects and operating parameters
- Financially constrained project submissions to be advanced by the TPB on 3/16/2011

3. Travel Demand Modeling Methods

- Version 2.3 Travel Model
- All HOV facilities at HOV-3 in 2020 & beyond
- Transit “capacity constraint” procedures (2020 constrains later years)

4. Emissions Factors

- Use MOBILE6.2 emissions factors incorporating 2008 vehicle registration data
- Seasonal PM_{2.5} factors for total directly emitted particles and precursor NO_x

5. Emissions Modeling Methods / Credits

- Yearly PM_{2.5} emissions (total PM_{2.5} and precursor NO_x) using seasonal traffic adjustments and above emissions factors
- Offline emissions analyses

6. Conformity Assessment Criteria

- Emissions budgets for ozone precursors, PM_{2.5} pollutants, and wintertime CO
- Analysis years: 2002, 2016, 2020, 2030, & 2040

ATTACHMENT B

National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202) 962-3202

January 28, 2011

MEMORANDUM

TO: TPB Technical Committee

FROM: Jane A. Posey
Transportation Engineer

SUBJECT: Defining Regional Significance for Conformity

Transportation projects that are defined as “regionally significant” must be included in an air quality conformity analysis before they may be included in the Constrained Long Range Plan (CLRP) or Transportation Improvement Program (TIP). Currently, any project that changes a link in the regional highway or transit network is considered “regionally significant”. With the recent development of a finer-grain zone system, including a more detailed street base and splitting of links to add new connectors to zone centroids, it is necessary to redefine “regionally significant” in order to maintain the same threshold for “regionally significant” as in the past conformity procedures. The conformity regulations define regional significance as follows:

***Regionally significant project* means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area’s transportation network, including at a minimum all principal arterial highways and all fixed-guideway transit facilities that offer an alternative to regional highway travel.**

The following proposed new definition of a “regionally significant” project has been developed to meet the requirements of the conformity regulations while maintaining the same threshold for “regional significance” as in past conformity procedures:

- 1) Any project on a facility that is included in the coded regional network that adds or removes at least one continuous vehicular lane from one major road to the next, or adds a new access/egress location or capacity; or
- 2) Any transit project that adds or modifies fixed-guideway transit facilities (heavy rail, light rail, streetcar, bus rapid transit)

The new definition will be used for all future air quality conformity analysis, starting with the conformity analysis of the 2011 CLRP.

APPENDIX B

List of Project Inputs

Key to the Air Quality Conformity Table:

COLUMN 1:

Agency - identification of submitting agency

COLUMN 2:

Project ID - project identification number (for reference purposes)

COLUMN 3:

Type of improvement - defined as follows:

Construct	=	build a new facility
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 4:

Facility - name of facility to be studied or improved

COLUMNS 5 and 6:

From and To - limits of the project

COLUMN 7:

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 8:

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

COLUMN 9:

Currently under construction or right-of-way acquired? -

- "yes" = the facility is currently under construction and/or right-of-way has been acquired
- "no" = the facility is not currently under construction and right-of-way has not been acquired
- "completed" = the facility is open for use

COLUMN 10:

Project Completion Date or Status - date project will be open for use.

“not coded” indicates that project is not included in the conformity analysis

National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202) 962-3202 TDD: (202) 962-3213

MEMORANDUM

February 10, 2011

To: Transportation Planning Board

From: Ronald F. Kirby
Director, Department of
Transportation Planning

Re: Proposed Significant Additions and Changes to the 2011 Constrained Long-Range Plan for Air Quality Conformity Analysis

On February 10, 2011 the Transportation Planning Board (TPB) released the draft project submissions for the 2011 Update to the National Capital Region's Financially Constrained Long-Range Transportation Plan (CLRP) and the Scope of Work for the Air Quality Conformity Analysis for public comment. The 30-day public comment period will end at midnight on Saturday, March 12, 2011. Interested parties may submit their comments online at www.mwcog.org/transportation/public/, by phone at (202) 962-3262 or TDD: (202) 962-3213, or in person at the TPB meeting on February 16.

The TPB is scheduled to approve the project submissions and the Air Quality Conformity Scope of Work at its meeting on March 16. After approval, these projects will be included in the Air Quality Conformity Analysis of the 2011 CLRP. This process takes several months and is done to ensure that the proposed projects do not prevent the region from meeting its air quality improvement goals in the decades ahead. Once the conformity modeling process is complete, the projects along with the results of the Conformity Analysis will be released for a final 30-day comment period, currently scheduled for October 13 through November 13, 2011.

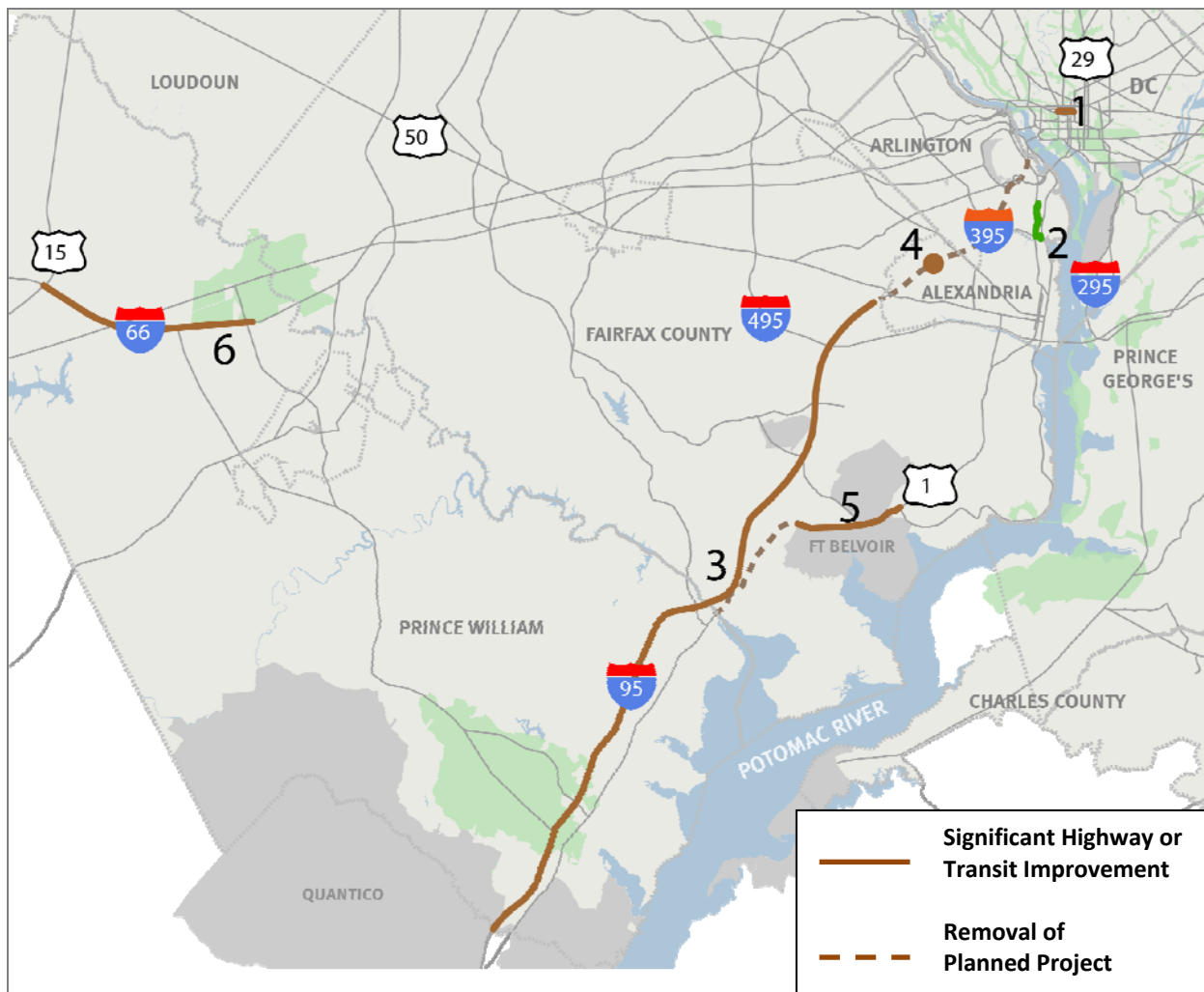
Information on the project submissions is presented in two pieces. First, in this memo, is a list of proposed significant additions and changes to the 2011 CLRP. These include new projects and changes to existing projects. This listing covers changes only to those projects that are considered to be regionally significant, i.e., interstates, principal arterials and some minor arterials, as well as transit facilities. The second piece is a complete listing of all proposed projects and changes titled, "2011 CLRP Air Quality Conformity Inputs." This document is available for review online at <http://www.mwcog.org/clrp/resources/>.

The 2011 Update to the CLRP contains three new major projects and three significant changes to existing projects. The District Department of Transportation is proposing to implement a Bus-Only lane during peak periods on H Street, NW between 17th Street and New York Avenue. The Virginia Department of Transportation (VDOT) is proposing the remainder of the proposed additions and changes. The new projects include a Streetcar system in the US 1 corridor between Pentagon City and the Alexandria city limits, and a reversible on/off ramp connecting I-395 and Seminary Road to and from the south.

The significant changes to major projects proposed by VDOT include limit changes to the I-395/I-95 HOV/Bus/HOT Lanes project, a limit change to the widening of US 1 in Fairfax County, and the widening of general purpose lanes on I-66 in Prince William County.

In addition to including the reconfigured I-395/I-95 HOV/HOT lanes project for the 2011 CLRP inputs, VDOT is requesting to accelerate the approval of this project by making an amendment to the 2010 CLRP. Following this 30-day public comment period, the TPB will be asked to approve this project for inclusion in a separate air quality conformity analysis which will be completed by June. The project amendment and the results of the conformity analysis will be released for a final 30-day public comment period from June 9th to July 9th before the TPB will be asked to approve the amendment to the 2010 CLRP on July 20th. For more information on this amendment, please see Item 15 in the February 16, 2011 TPB meeting materials, where it is included as a notice item.B

Significant Additions and Changes to The 2011 Update to the Financially Constrained Long-Range Transportation Plan



Significant Additions and Changes to the CLRP

1. H STREET, NW PEAK PERIOD BUS-ONLY LANE
2. CRYSTAL CITY – POTOMAC YARD STREETCAR
3. I-395/I-95 HOV AND HOT LANES PROJECT LIMIT CHANGES
4. I-395 HOV LANES REVERSIBLE RAMP FROM/TO SEMINARY ROAD
5. WIDENING OF US 1 PROJECT LIMIT CHANGE
6. WIDEN I-66 GENERAL PURPOSE AND HOV LANES

DISTRICT OF COLUMBIA

1. H Street, NW Peak Period Bus-Only Lane from 17th St. to New York Ave.

H Street NW is one-way, running eastbound between 17th Street and New York Avenue. Parking restrictions are in effect on both sides of the street during morning (7:00 – 9:30 a.m.) and evening (4:00 – 6:30 p.m.) peak periods, allowing for five lanes of traffic. This project proposes to use one of those five lanes as a bus-only lane during the peak periods.

Complete: 2012
Length: 0.5 mile
Cost: \$250,000
Funding: Local



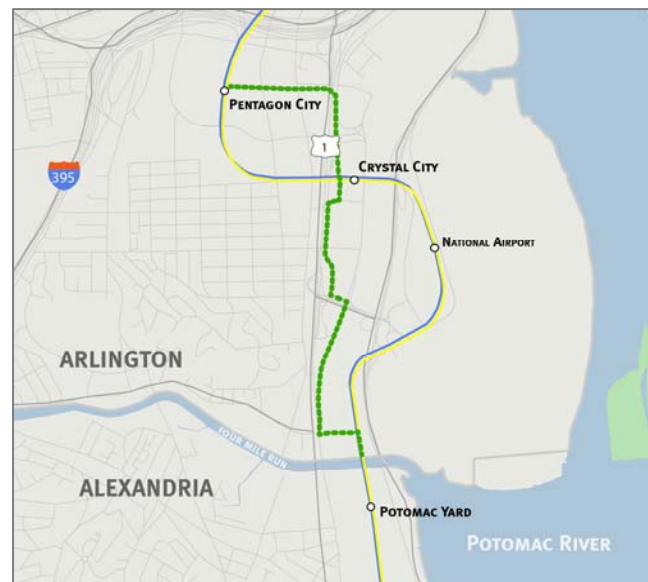
See the project description in Attachment A for more information.

VIRGINIA

2. Crystal City – Potomac Yard Streetcar in Arlington County

This project will construct and operate a streetcar system that runs parallel to US 1 (Jefferson Davis Highway) from the Pentagon City Metro station to Four Mile Run at the city limit of Alexandria. The CLRP currently includes an exclusive bus transitway project along most of the same route that is scheduled to open in 2013. The streetcar system will replace the bus service in 2018.

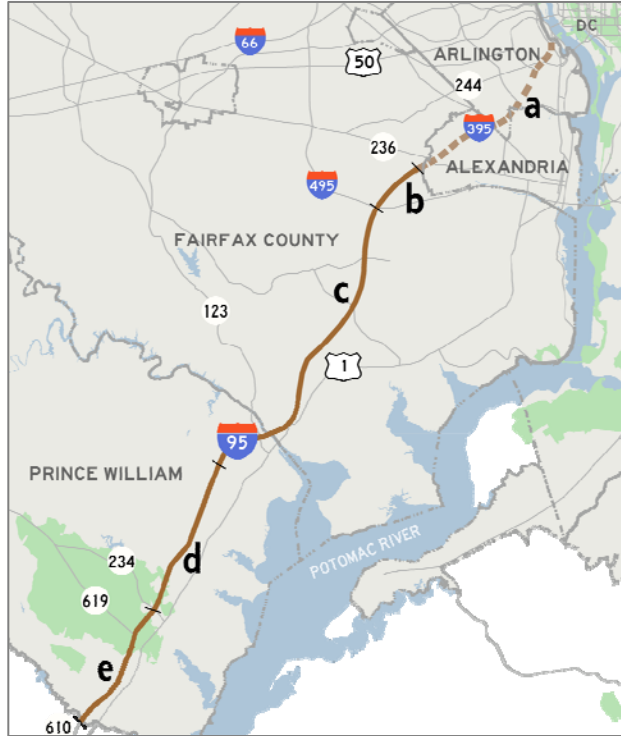
Complete: 2018
Length: 2.25 miles
Cost: \$160 million
Funding: Federal, state and local



See the project description in Attachment A for more information.

**3. I-395/I-95 HOV and HOT Lanes
from 2 miles north of I-495 to VA 610**

This project is currently included in the CLRP as a system of High-Occupancy Toll, or HOT lanes between Eads Street in Arlington County and VA 610 (Garrisonville Road) in Stafford County. HOT lanes will be available to HOV-3, transit and emergency response vehicles free of charge. Other vehicles may use the facility by paying an electronic toll. Tolls will vary based on time of day, day of week, and level of congestion in order to maintain free-flow conditions. VDOT is proposing to reconfigure the project, including the elimination of the implementation of HOT lanes on I-395 inside the Capital Beltway. The changes are summarized in the table below:



Map Index	Current CLRP Project Includes	VDOT Proposed Change to Current CLRP Project	Description of Proposed Configuration
a	3 HOT Lanes	2 HOV Lanes	Eliminate the implementation of HOT lanes on I-395 inside the Capital Beltway
b	3 HOT Lanes	3 HOT Lanes (no change)	Widen the existing HOV facility from 2 to 3 lanes on I-395 from I-495 (Capital Beltway) to approximately 2 miles north, in the vicinity of Turkeycock Run and maintain as HOV lanes
c	3 HOT Lanes	2 HOT Lanes	Widen the existing HOV facility from 2 to 3 lanes on I-95 from I-495 to VA 3000, Prince William Parkway and convert to HOT lanes
d	2 HOT Lanes	2 HOT Lanes (no change)	Convert the existing 2-lane HOV facility from VA 3000, Prince William Parkway to VA 234 (Dumfries Road) into HOT lanes
e	2 HOT Lanes	2 HOT Lanes (no change)	Construct 2 new HOT lanes from VA 234 (Dumfries Rd.) to VA 610 (Garrisonville Rd.)
f	2 HOT Lanes	2 HOT Lanes (no change)	Two HOT lanes will continue 10 miles south to the VA 17/US 1 Massaponax exit in Spotsylvania County. This portion of the project is outside the TPB's planning area and will be coordinated with the Fredericksburg area MPO (FAMPO).

I-395/I-95 HOV and HOT Lanes (continued)

Transit Service Plan

At this time, VDOT is also proposing to remove the elements of the transit service plan that had previously been included in the CLRP as a part of the I-95/I-395 HOV/Bus/HOT Lanes project. VDOT is working with local jurisdictions and transit agencies to develop a revised set of transit and transportation demand management (TDM) improvements for the corridor. These transit and TDM measures will be proposed as a separate project for inclusion in the CLRP at a later date. Please see the table that follows the CLRP project description form in Attachment A for a full listing of the elements from transit service plan being removed.

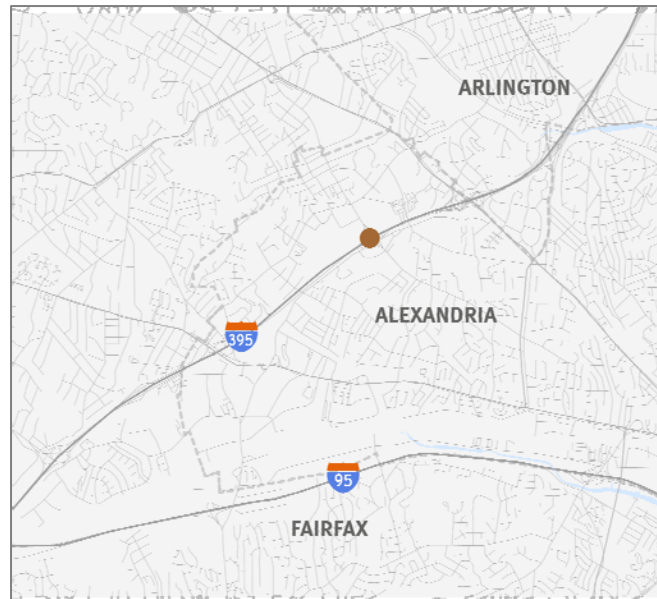
Complete: 2015
Length: 27 miles (not including southern portion from VA 610 to VA17/US 1)
Cost: \$1.01 billion
Funding: Federal, state, local and private

See the project description in Attachment A for more information.

4. I-395 HOV Lanes Reversible Ramp from/to Seminary Road

VDOT is proposing to construct a new reversible on/off ramp that connects Seminary Road and the I-395 HOV lanes to and from the south. This project adds HOV and transit access to accommodate the expected increase in travel generated by Department of Defense employees at the nearby Mark Center.

Complete: 2015
Cost: \$80 million
Funding: Federal and state

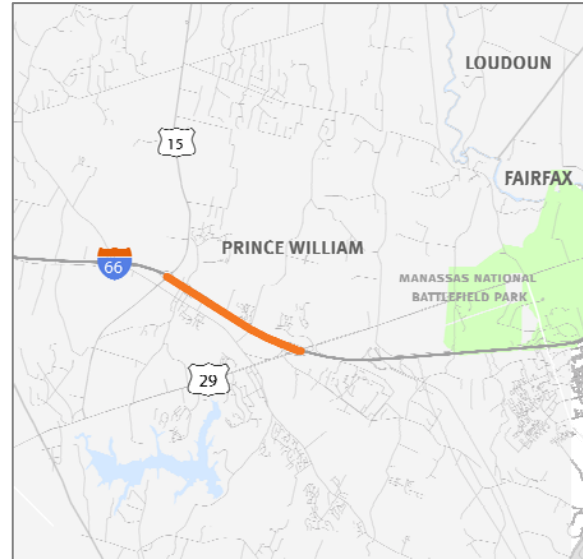


See the project description in Attachment A for more information.

5. Widening of US 1 – Project Limit Change from VA 235 South to VA 611

This project is currently included in the CLRP as a widening of US 1 (Richmond Highway) from 4 to 6 lanes from VA 235 South (Mt. Vernon Memorial Highway) to the Occoquan River/Prince William County Line. VDOT is proposing to remove approximately 4 miles of widening from the southern end of the project and change the southern limit to VA 611 (Telegraph Road).

Complete: 2020
Length: 3.5 miles
Funding: Federal and state

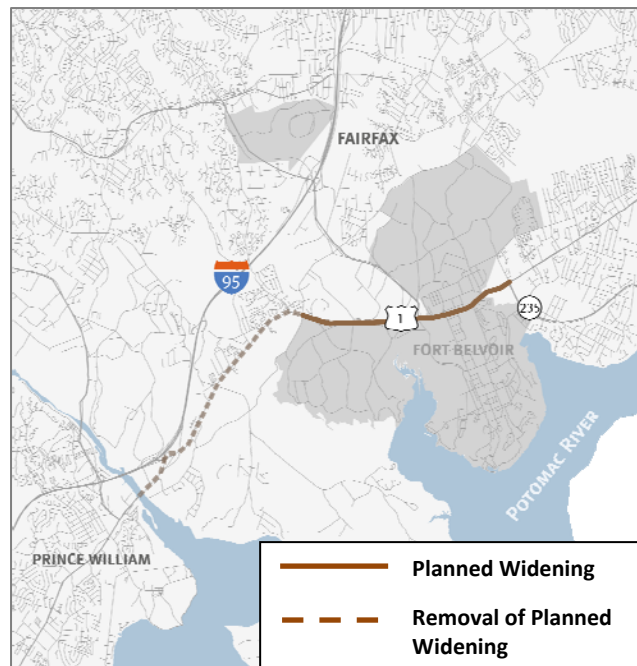


See the project description in Attachment A for more information.

6. Widen I-66 General Purpose and HOV Lanes from US 15 to US 29 (near Gainesville)

This project is currently included in the CLRP as a widening to construct HOV Lanes on I-66 between US 15 (James Madison Highway) and US 29 (Lee Highway) in Gainesville. VDOT is proposing to also add an additional general purpose lane in each direction to I-66 within the same limits. The completion date of the project is advancing from 2020 to 2018.

Length: 2.5 miles
Complete: 2018
Cost: \$131.9 million
Funding: Federal



See the project description in Attachment A for more information.

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Transit)

Agency	Project ID	Improv.	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status
Washington Metropolitan Area Transit Authority							
WMATA		Modify	Revised Metrorail Operating Plan				2010
WMATA		Modify	Revised Metrorail Operating Plan				2011
WMATA		Modify	Revised Metrorail Operating Plan				2015
WMATA		Implement	New Hampshire Avenue bus improvements				2011
WMATA		Implement	U Street / Garfield bus improvements				2011
WMATA		Implement	Greenbelt / Twinbrook bus improvements				2012
WMATA		Implement	George's County) improvements				2012
WMATA		Implement	Anacostia / Congress Heights bus improvements				2012
WMATA		Implement	Little River Turnpike / Duke Street bus improvements				2012
WMATA		Implement	West Highway bus improvements				2013
WMATA		Implement	Rhode Island Avenue Metro to Laurel bus improvements				2013
WMATA		Implement	Rhode Island Avenue (DC) bus improvements				2013
WMATA		Implement	Eastover / Addison bus improvements				2014
WMATA		Implement	Pike - MD US 29 bus improvements				2014

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Transit)

Agency	Project ID	Improv.	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status
WMATA		Implement	North Capitol Street bus improvements				2015
District of Columbia							
DDOT		Construct	Anacostia Streetcar project Phase I (replaces CSX Shepherd Branch project)	Firth Sterling and S. Capitol St. SE	Howard Rd. and MLK Jr. Ave. SE		2012
DDOT		Construct	Anacostia Streetcar Phase II	Howard Rd and MLK Jr. Ave SE	Good Hope Rd. and MLK Jr. Ave. SE		2012
DDOT		Construct	H St. / Benning Rd Streetcar	Union Station	Oklahoma Ave., NE		2012
DDOT		Implement	H St. Bus Lane- peak only	17th St. , NW	New York Ave., NW		
DDOT		Construct	Benning Rd. Streetcar	Oklahoma Ave., NE	45th St. / Benning Rd. Metro		2015
DDOT		Study	Union Station Streetcar	Union Station	Mt. Vernon Sq./ 7th St. NW		not coded
DDOT		Study	K St. Streetcar	Mt. Vernon Sq./9th St. NW	Wisconsin Ave.		not coded
DDOT		Operational Improvements	Pennsylvania Rapid Bus (Operation Enhancements)	Archives Navy Memorial Metro Station	Naylor Road Metrorail Station		2011
DDOT		Reconstruct	K St. Transitway	Mt. Vernon Sq./7th St. NW	Wash.Circle / 23rd St. NW		
DDOT		Implement	16th St. Bus Priority Improvements (TIGER Grant)				by 2016
DDOT		Implement	Georgia Ave Bus Priority Improvements				by 2016
DDOT		Implement	H St./ Benning Rd. Bus Priority Improvements (TIGER Grant)	16th St. NW	Capitol Heights Metro Station		by 2016
DDOT		Implement	Wisconsin Ave. Bus Priority Improvements (TIGER Grant)	Friendship Heights Metro Station	Naylor Road Metrorail Station		by 2016

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Transit)

Agency	Project ID	Improv.	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status
DDOT		Implement	Theodore Roosevelt Bridge to K St. Bus Priority Improvements (TIGER Grant)				by 2016
DDOT		Implement	14th St. Bus Priority Improvements (TIGER Grant)				by 2016
DDOT		Study	Georgia Ave. Streetcar	U Street/Florida Ave NW	New Hampshire Ave. NW		not coded
DDOT		Study	Capitol Hill/8th Street Streetcar	H St. NE	M St. SE		not coded
DDOT		Study	M St. SE Streetcar	11th St. Bridge/MLK Ave. SE	Buzzard Point/SW Waterfront		not coded
DDOT		Study	14th St. NW Streetcar	K St. NW	U St. NW		not coded
Maryland							
MTA		Construct	Purple Line Transitway	Bethesda	New Carrollton	No	2020
MTA		Construct	Silver Spring Transit Center	Phase II		Yes	2011
MTA		Construct	Corridor Cities Transitway	Shady Grove	COMSAT		2020
MTA		Construct	Southern MD Commuter Bus Initiative	Park-and-Ride lots and increase bus service	Waldorf		2010
MTA		Implement	ICC Corridor Bus Service Improvements			No	2012
MTA		Construct	Takoma/ Langley Park Transit Center	Intersection New Hampshire Ave and University Blvd.	Takoma / Langley Park	No	2011
MDSHA		Study	MD 97 (Georgia Avenue) Busway	Glenmont	Olney		not coded
		Implement	Addison Rd. Transit Improvements (TIGER Grant)	near Seat Pleasant	Southern Ave. Metro Station		by 2016
		Implement	US 1 (MD) Bus Priority Improvements (TIGER Grant)				by 2016

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Transit)

Agency	Project ID	Improv.	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status
Montgomery County							
Mont.Co.	MCT7	Construct	Olney Transit Center	adjacent to or north of MD 108		No	2015
Mont.Co.		Construct	University Blvd Bus Enhancement	Kensington	Silver Spring	No	2020
Mont.Co.	MCT22	Construct	Veirs Mill Road Bus Enhancement	Rockville	Wheaton	No	2015
Virginia							
VDOT		Widen	US 1 (bus/right-turn lanes)	VA 235 North	SCL Alexandria (I-95 Capital Beltway)	No	2035
Arlington Co.		Construct	Crystal City / Potomac Yard Busway (2-lane)	Vicinity of Glebe Rd. Ext.- City/County line	Crystal City Metro Station	ROW acquired	2013
Arlington Co.		Construct	Route 1 Corridor Streetcar	Vicinity of Glebe Rd. Ext.- City/County line	Pentagon City Metro Station		2018
VDOT		Construct	Potomac Yard Transit Bus lanes (2 lanes)	Four Mile Run	Braddock Rd.	No	2013
Alex.		Study	Route 1 Corridor Streetcar Conversion	Four Mile Run	Braddock Rd.		not coded
VDOT		Construct	Metro Station (Proposed)	@ Potomac Yards		No	2017
VDOT		Construct	Columbia Pike Streetcar	Skyline Center	Pentagon City	No	2016
VDOT		Construct	Transit Center (Bradlee Shopping Center)	King St. and Braddock Rd.		No	2014
VDOT		Construct	Transit Center (Seven Corners)	Seven Corners Shopping Center		No	2010
VDOT		Construct	Park-and-Ride Lot	Reston East Parking Structure	@ Reston East Park-and-Ride Lot	No	2011

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Transit)

Agency	Project ID	Improv.	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status
VDOT		Construct	Park-and-Ride Lot	Springfield CBD	vic. I-95 & Old Keene Mill Road	No	2014
VDOT		Relocate/ Construct	Park-and-Ride Lot (Leesburg)	Relocate to vic. of Leesburg Bypass and / or the Dulles	700 Spaces	Yes	2010
VDOT		Construct	Lease Commuter Parking Spaces at Lowes Island	Leesburg			2013
VDOT		Construct	Park-and-Ride Lot	Purcellville	100 Space Park & Ride Lot		2015
VDOT		Implement	Loudoun County Commuter Bus Service.	Town of Leesburg -Harrison St & Catocin Circle	400 Space Park & Ride Lot	Yes	2010
VDOT		Construct	Park-and-Ride Lot	Dulles Town Center	300 Spaces	Proffered	2015
VDOT		Construct	Park-and-Ride Lot	US 50 at Stone Ridge	150 Spaces	Proffered	2015
VDOT		Construct	Park-and-Ride Lot	US 50 Dulles at East Gate	200 Spaces	Yes	2025
VDOT		Construct	Park-and-Ride Lot	VA 234 (vicinity of I-66)	at Cushing Road	No	2011
VDOT		Construct	Park & Ride Facility	Round Hill	75 Spaces	ROW acquired	2015
VDOT		Construct	Park & Ride Facility	Brambleton	100 space expansion	No	2015
VDOT		Construct	Park & Ride Facility	Arcola Center	300 Spaces	Proffer	2015
VDOT		Construct	Park-and-Ride Lot	at EPG			2015
VDOT		Construct	Park-and-Ride Lot	Telegraph Rd.	400-500 spaces		2013
VDRPT		Construct	Dulles Corridor Metrorail	East Falls Church Metrorail Station	Wiehle Ave.	No	2013
VDRPT		Construct	Dulles Corridor Metrorail	Wiehle Ave. Station	Route 772	No	2016

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Transit)

Agency	Project ID	Improv.	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status
VRE		Construct	VRE - Cherry Hill Commuter Rail Station	Cherry Hill	Prince William County	No	2012
VRE		Implement	VRE Service Improvements (Reduce Headways)	Fredericksburg and Manassas lines		No	2020
VRE		Construct	VRE- 3rd Track/ Cherry Hill Commuter Rail Station	Arkendale, Stafford Co.	Powell's Creek, Prince William Co.	No	2012
VDOT		Implement	Beltway HOT lanes transit service			No	2013
VDOT		Implement	Beltway HOT lanes transit service			No	2020
VDOT		Implement	Beltway HOT lanes transit service			No	2030
VDOT		Implement	I-95/I-395 HOV /BUS / HOT lanes: TAC transit service	Buses and additional VRE-railcars		No	2012
VDOT		Implement	I-95/I-395 HOV /BUS / HOT lanes: TAC transit service	Buses and additional VRE-railcars		No	2020
VDOT		Implement	I-95/I-395 HOV /BUS / HOT lanes: TAC transit service	Buses and additional VRE-railcars		No	2030
VDOT		Implement	(Fairfax Connector Service Enhancements)			No	2011
		Implement	VA 7 Bus Priority Improvements (TIGER Grant)	Alexandria	Tyson's Corner		by 2016
		Implement	Van Dorn - Pentagon Rapid Bus (TIGER Grant)	Van Dorn St. Metro	Pentagon		2013
Alex.		Study	Van Dorn - Pentagon BRT (City Funded)	Van Dorn St. Metro	Pentagon		not coded
		Implement	I-95/I-395 Multimodal Improvements (TIGER Grant)				by 2016
Alex.		Implement	DASH Bus Expansion	City-Wide			2021
Alex.		Study	Duke Street BRT	King Street Metro	Fairfax County Line		not coded

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2011 CLRP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						District of Columbia					
DDOT	DS3	Construct	Southern Ave. SE	Branch Ave. SE	Naylor Rd. SE			0	2		2016
DDOT		Study	Pennsylvania Ave. NW - add bike lanes	3rd St. NW	14th St. NW			8	6		not coded
DDOT		Study	15th St. NW- add bike lane	Constitution Ave. NW	W. St. NW			6	5		not coded
DDOT		Study	L St. NW - add bike lane	11th St. NW	25th St. NW			4	3		not coded
DDOT		Study	M St. NW - add bike lane	15th St., NW	29th St. NW			4	3		not coded
DDOT		Study	9th St. NW - add bike lane	Constitution Ave. NW	K St. NW			5	4		not coded
DDOT	DP11	Reduce Capacity	Wisconsin Ave.	Garfield St.	34th St.			4/6	4		2011
DDOT	DP12	Reconstruct-1-way to 2-way	17th St. NE/SE	Benning Rd. NE	Potomac Ave. SE			2 SB	1 SB/ 1 NB		2012
DDOT		Reduce Capacity	H St. NW peak period Bus-Only Lanes	17th St. NW	New York Ave. NW			5 pk	4 pk		2012
Maryland											
MDOT Freeway											
MDSHA	MI2q	Construct	I-270	Interchange at Watkins Mill Road Extended		1	1	8	8+2	No	2016
MDSHA	MI2SHOV MI2S	Construct	I-270/US 15 Corridor	Shady Grove Metro	Biggs Ford Rd	1	1	varies		No	2030
MDSHA		Reconstruct	I-270	Interchange at MD 121		1	1	1	2	No	2016
MDSHA	MI4	Widen	I-70	Mt. Phillip Rd.	MD 144FA	1	1	4	6	No	2020
MDSHA	MI4a	Reconstruct	I-70	Interchange at Meadow Rd.	to add missing movements	1	1			No	2020
MDSHA	MI1f	Construct	I-95	Contee Road Relocated w/ CD Roads		1	1	8	8+4	No	2020

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2011 CLRP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compt. Date or Status
						from	to	from	to		
						MDSHA	MI1k	Construct	I-95/I-495 (Capital Beltway)		
MDSHA	MI1p	Study	I-95/I-495 (Capital Beltway)	Interchange at Greenbelt Metro		1	1	8	8+2	No	not coded
MDSHA	MP12	Construct	Intercounty Connector	I-270	MD 97	0	1	0	6	Yes	2011
MDSHA	MP12	Construct	Intercounty Connector	MD 97	I-95 / US 1	0	1	0	6	Yes	2012
MDOT Primary											
MDSHA	MP10a	Reconstruct	US 1 (Baltimore Avenue)	College Avenue	Sunnyside Avenue	2	2	4	4	No	2020
MDSHA	MP10b	Widen	US 1, Baltimore Avenue	Cherry Hill Road	I-95/I-495	2	2	4	6	No	2010
MDSHA	MP9b	Construct	MD 2/4 at Lusby Southern Conn. Rd.	MD 765	MD 2/4 at Lusby	0	2	0	3	No	2040
MDSHA	MP2c	Widen	MD 3 (Robert Crain Highway)	US 50	Anne Arundel County Line	2	2	4	6	No	2030
MDSHA		Construct	MD 4 (Pennsylvania Avenue)	Interchange at Westphalia Rd		2	5	4	6	No	2020
MDSA		Construct	MD 4 (Pennsylvania Avenue)	Interchange at Suitland Pkwy		2	5	4	6	No	2016
MDSHA	MP3a	Upgrade/ Widen	MD 4	MD 223	I-95/I-495	2	1	4	6	No	2035
MDSHA		Construct	MD 5 (Branch Avenue)	Interchange at Earnshaw/Burch Hill Roads		2	5	4	6	No	
MDSHA	MP4f	Upgrade/ Widen	MD 5 (Branch Avenue)	US 301 at T.B.	North of the Capital Beltway	2	5	4	6	No	2025
MDSHA		Construct	MD 5 (Branch Avenue)	Interchange at MD 373/Brandywine Road Rel.		2	5	4	6	No	2016
MDSHA		Construct	MD 5 (Branch Avenue)	Interchange at Surratts Road		2	5	4	6	No	2015
MDSHA	MP15	Construct	US 15	Interchange at Monocacy Blvd.		2	2	6	6	No	2016
MDSHA		Construct	US 29 (Columbia Pike)	Interchange at Musgrove/Fairland Rd.				6	6	No	2025
MDSHA	MP5e	Study	US 29, Columbia Pike	north of MD 650	Howard County Line	2	5	6	6	No	not coded

2011 CLRP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Complt. Date or Status
						from	to	from	to		
						MDSHA		Construct	MD 75 Relocated		
MDSHA	FP2	Widen	MD 85 (Buckeystown Pike)	English Muffin Way	north of Grove Road	2	2	2/4	4/6	No	2020
MDSHA	MP12c	Construct	MD 97 (Brookeville Bypass)	South of Brookeville	North of Brookeville	0	2	0	2	No	2020
MDSHA		Upgrade	MD 97 (Georgia Avenue)	interchange @ MD 28 (Norbeck Road)		2	2	6	6	No	2030
MDSHA		Upgrade	MD 97 (Georgia Avenue)	interchange @ Randolph Road		2	2	6	6	No	2015
MDSHA	MP14	Reconstruct	MD 202 (Largo Town Ctr. Metro Access Improvs.)	at Brightseat Rd		2	2	6	6	No	2020
MDSHA		Upgrade	MD 210 interchange improvs.	@ Livingston Rd. / Kerby Hill Rd.		2	5	6	6		2020
MDSHA	MP6d	Upgrade	MD 210 (Indian Head Highway) with interchange improvements at: Wilson Bridge Dr., Livingston Rd./Palmer Rd., Old Fort Rd. North, Ft. Washington Rd., and Livingston Rd/Swan Creek Rd. Intersections	MD 228	Capital Beltway	2	5	6	6	No	2030
MDSHA	MP8e	Study	US 301	North of Mount Oak Road	US 50	2	5	4/6	6+2	No	not coded
MDTA	MP18	Construct	US 301 Governor Nice Bridge	Charles County, MD	King George County, VA	2	2	2	4	No	2040
MDSHA	MP16	Construct	US 340 Interchange	@US 340 at Jefferson Tech Park		1	1	4	4	No	2016
MDSHA	BRAC	Reconstruct	BRAC Intersection Improvements near the National Naval Medical Center, Bethesda								2012
MDSHA		Construct	MD 355	Montrose/Randolph Rds.	CSX RR	2	2	6	6	No	2015/ 2020
MDOT Secondary											
MDSHA	MS33	Widen	MD 27	MD 355	A 305	2	2	4	6	No	2020

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2011 CLRP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compt. Date or Status
						from	to	from	to		
						MDSHA	MS2f	Widen	MD 28 (Norbeck Road) / MD 198 (Spencerville Road)		
MDSHA	MS32	Widen	MD 117	I-270	Great Seneca Park	2	2	2	4	No	2025
MDSHA	MS34	Study	MD 121	I-270	W. Old Baltimore Rd.	3	3	4	6	No	not coded
MDSHA	MS6b	Widen	MD 124 (Woodfield Road)	Midcounty Highway	S. of Airpark Dr.	2	2	2	6	No	2020
MDSHA	MS6c	Widen	MD 124 (Woodfield Road)	S. of Airpark Dr.	N. of Fieldcrest Rd.	2	2	2	6	complete	2010
MDSHA	MS6d	Widen	MD 124 (Woodfield Road)	N. of Fieldcrest Rd.	Warfield Road	2	2	2	6	No	2020
MDSHA		Study	MD 180/MD 351	Greenfield Dr.	Corporate Dr.					No	not coded
MDSHA	MS35	Widen	MD 197 (Collington Rd.)	MD 450 Relocated	Kenhill Dr.	2	2	2	4/5	No	2025
MDSHA	MS10b	Study	MD 201 (Kenilworth Ave.)	Rittenhouse Road	Pontiac St.	2	2	4	6	No	not coded
MDSHA	MS18d	Widen	MD 450 (Annapolis Road)	Stonybrook Drive	West of MD 3	2	2	2	4	No	2016
Montgomery County											
Mont.Co.	MC11c	Construct	A-305 - MidCounty Highway Extended	MD 355	MD 27	0	3	0	4	No	2010
Mont.Co.	nr	Construct	Burtonsville Access Rd.	MD 198	School Access Rd.	0	4	0	2	No	2013
Mont.Co.	nr	Construct	Chapman Avenue	Randolph Road	Old Georgetown Road	0	3	0	2	No	
Mont.Co.	MC5d	Construct	Father Hurley Blvd.	Wisteria	MD 118 (Germantown Road)	0	2	0	4	Yes	2011
Mont.Co.	MC5c	Widen	Father Hurley/ Ridge Rd.	I-270	existing MD 27	2	2	4	6		2010
Mont.Co.	MC7a	Study	Goshen Rd. South	South of Girard Street	1000 feet north of Warfield Road	3	3	2	4	No	not coded
Mont.Co.	MC43	Construct	I-4 Bridge over I-270	Century Boulevard	Milestone Center Drive	0	3	0	4	No	2015
Mont.Co.	MC11a	Construct	M-83 - Midcounty Highway Extended	MD 27 (Ridge Road)	Middlebrook Road	0	2	0	4-6	No	2020
Mont.Co.	MC11d	Construct	M-83 - Midcounty Highway Extended	Middlebrook Road	Montgomery Village Avenue	0	2	0	4-6	No	2020

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2011 CLRP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						Mont.Co.	MC12f	Widen	MD 118 Ext (Grmntwn. Rd.)		
Mont.Co.	MC14g	Widen	Middlebrook Road Ext.	MD 355	M-83	2	2	3	4	No	2020
Mont.Co.	MC15b	Construct	Montrose Parkway East	Parklawn Drive	MD 586 - Veirs Mill Road	0	2	0	4	No	2015
Mont.Co.	nrs	Construct	Nebel St Extended	Randolph Rd	Target Store Site	0	3	0	4	Yes	2011
Mont.Co.	MC42	Construct	Randolph Road	Parklawn Drive	Rock Creek Park	2	2	4	5	No	2014
Mont.Co.	MC34	Widen	Snouffer School Rd. Fac. Planning	Goshen Rd.	MD 124	3	3	2	4	No	2016
Mont.Co.	MC23a	Construct	Watkins Mill Rd. ext.	I 270 (future interchange)	MD 355	0	2	0	6	Yes	2011
Mont.Co.	MC13	Construct	Woodfield Rd.(MD 124 Ext.)	1200' North of MD 108	MD 27	0	2	0	2	Yes	2011
Mont.Co.		Construct	Executive Blvd. Ext. - East	Rockville Pike (MD 355)	Nebel St. Ext.			0	4		2020
Mont.Co.		Construct	Executive Blvd. Ext. - West	Old Georgetown Rd.	Marinelli Rd.			0	4		2020
Mont.Co.		Construct	Main St./Market St.	Old Georgetown Rd.	Rockville Pike (MD 355)			0	2		2020
Mont.Co.		Construct	Old Georgetown Rd.	Old Georgetown Rd.	Nicholson Lane/TildenLane			0	6		2020
Mont.Co.		Construct	Hoya St.	Executive Blvd.	Montrose Pkwy			0	4		2020
Mont.Co.		Construct	Platt Ridge Dr. Ext.	Jones Bridge Rd.	Montrose Dr.			0	2		2014
Prince Georges County											
PG Co.	PGS3a	Widen	Addison Road	MD 214	Walker Mill Road	3	3	2	4	Yes	2016
PG Co.		Reconstruct	Addison Road	Sheriff Road	MD 704	4	4	2	2	Yes	2014
PG Co.	PGS5	Construct	Allentown Road Relocated	Indian Head Highway (MD 210)	Brinkley Road	0	3	0	4	No	2025
PG Co.	PGS73	Widen	Ardwick-Ardmore Road	MD 704	91st Ave.	4	4	2	4	Yes	2015
PG Co.	PGP4a	Construct	Baltimore Washington Pkwy/Greenbelt Rd (MD 193)	ramp to southbound Baltimore Washington Pkwy		0	5	0	4	No	2025

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2011 CLRP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						PG Co.	PGS75	Widen	Berry Road		
PG Co.	PGS9b	Widen	Bowie Race Track Road	Laurel-Bowie Road (MD 197)	Old Chapel Road	4	4	2	4	No	2015
PG Co.	PGS9a	Widen	Bowie Race Track Road	Annapolis Road (MD 450) north of Piscataway Road (MD 223)	Old Chapel Road	4	4	2	4	No	2015
PG Co.	PGS10	Widen	Brandywine Road		Thrift Road	4	4	2	4	No	2020
PG Co.	PGS76	Widen	Briggs Chaney Road	Montgomery County line	Old Gunpowder Road	3	3	2	4	Yes	2010
PG Co.	PGS12	Widen	Brinkley Road	St. Barnabas Road (MD 414)	Allentown Road (MD 337)	3	3	4	6	No	2020
PG Co.	PGS13	Construct	Brooks Drive Extended	Marlboro Pike	Rollins Avenue	0	3	0	4	No	2020
PG Co.	PGS14	Widen	Cabin Branch Drive	Columbia Park Road	north of Sheriff Road	4	4	2	4	No	2015
PG Co.	PGS16a	Construct	Campus Way North	Lake Arbor Way	south of Lottsford Road	0	4	0	4	No	2004
PG Co.	PGS16b	Construct	Campus Way North Extended	south of Lottsford Road	Evarts Drive	0	4	0	4	No	2020
PG Co.	PGS17	Widen	Cherry Hill Road	Powder Mill Road	Baltimore Avenue (US 1)	3	3	2	4	No	2020
PG Co.	PGS18	Widen	Church Road	Oak Grove Road	Annapolis Road (MD 450)	4	4	2	4	No	2025
PG Co.	PGS20a	Widen	Columbia Park Road	Cabin Branch Road	Columbia Terrace	4	4	2	4	No	2020
PG Co.	PGS20b	Widen	Columbia Park Road	US 50	Cabin Branch Road	4	4	2	4	No	2020
PG Co.	PGS21a	Widen/ Construct	Contee Road	US 1	Old Gunpowder Road	4	4	2	4	Yes	2014
PG Co.	PGS22	Widen	Dangerfield Road	Cheltenham Avenue	Woodyard Road (MD 223)	4	4	2	4	No	2020
PG Co.	PGS24a	Widen	Dower House Road	Woodyard Road (MD 223)	Foxley Road	4	4	2	4	No	2025
PG Co.	PGS24b	Widen	Dower House Road	Foxley Road	Pennsylvania Avenue (MD 4)	4	4	2	6	No	2017
PG Co.	PGS25	Widen	Fisher Road	Brinkley Road	Holton Lane	4	4	2	4	No	2025
PG Co.	PGS26	Construct	Forbes Boulevard Extended	south of Amtrak	Greenbelt Road (MD 193)	0	4	0	4	No	2020

2011 CLRP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compt. Date or Status
						from	to	from	to		
						PG Co.	PGS27	Widen	Forestville Road		
PG Co.	PGS29	Widen	Fort Washington Road	Riverview road	Indian Head Highway (MD 210)	4	4	2	4	No	2025
PG Co.	PGS30a	Widen	Good Luck Road	east of Kenliworth Avenue (MD 201)	Cipriano Road	4	4	2	4	No	2025
PG Co.	PGS30b	Widen	Good Luck Road	Cipriano Road	Greenbelt Road (MD 193)	4	4	2	4	No	2025
PG Co.	PGS87	Widen	Governor Bridge Road	US301	Anne arundel County	4	4	2	4	No	2020
PG Co.	PGS34a	Widen	Hill Road	Central Avenue (MD 214)	ML King Jr Highway (MD 704)	4	4	2	4	No	2018
PG Co.	PGS34b	Construct	Hill Road	ML King Jr Highway (MD 704)	Sheriff Road	0	4	0	2	No	2015
PG Co.	PGS88	Construct	Iverson St. Extended	Wheeler Road	19th Avenue	0	4	0	4	No	2018
PG Co.	PGS35	Widen	Karen Boulevard	Walker Mill Road	Central Avenue (MD 214)	4	4	2	4	No	2020
PG Co.	PGS38a	Widen	Livingston Road	Indian Head Highway (MD 210) at Eastover	Kerby Hill Rd.	4	3/4	2	4	No	2015
PG Co.	PGS38b	Widen	Livingston Road	Piscataway Creek	Farmington Road	2	2	2	4	No	2020
PG Co.	PGS40a	Widen	Lottsford Road	Archer Lane	Enterprise Road (MD 193)	3	3	2	4	No	2012
PG Co.	PGS39b	Widen	Lottsford Vista Road	ML King Jr Highway (MD 704)	Ardwick-Ardmore Road/Relocated	4	4	2	4	No	2020
PG Co.	PGS44b	Widen	Metzerott Road	Adelphi Road	University Boulevard (MD 193)	4	4	2	4	No	2020
PG Co.	PGS44a	Widen	Metzerott Road	New Hampshire Avenue (MD 650)	Adelphi Road	4	4	2	4	No	2020
	PGS45a			Atlantis/Northview Dr.	Mount Oak Road	4	4	4	6		
PG Co.	PGS89	Widen	Mt. Oak	Church Road	Mitchellville Road	3	3	2	4	No	2010
PG Co.	PGS46	Widen	Murkirk Road	west of Baltimore Avenue (US 1)	Odell Road	4	4	2	4	No	2020
PG Co.	PGS47	Widen	Oak Grove and Leeland Roads	Watkins Park Road (MD 193)	Robert Crain Highway (US 301)	4	4	2	4	No	2020

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compt. Date or Status
						from	to	from	to		
						PG Co.	PGS48	Widen	Old Alexandria Ferry Road		
PG Co.	PGS80	Construct	Old Baltimore Pike Extended	Muirkirk Road	Contee Road	0	4	0	2	Yes	2020
PG Co.	PGS50	Widen	Old Branch Avenue	north of Piscataway Road (MD 223)	Allentown Road (MD 337)	4	4	2	4	Yes	2020
PG Co.	PGS90	Construct	Old Fort Rd. Extended	Piscataway Road (MD 223)	Old Fort Rd	0	4	0	4	No	2020
PG Co.	PGS51a	Widen	Old Gunpowder Road	Powder Mill Road	Greencastle Road	3	3	2	4	No	2015
PG Co.	PGS52	Widen	Oxon Hill Road	Fort Foote Rd - North	MD 210	3	3	2	4	No	2011
PG Co.		Widen	Oxon Hill Road	National Harbor Entrance	Fort Foote Rd - North	4	4	2	4	Yes	2013
PG Co.	PGS81	Construct	Presidential Parkway	Suitland Parkway	Melwood Road	0	3	0	6	No	2025
PG Co.	PGS54	Widen	Rhode Island Avenue	University Boulevard (MD 193)	Baltimore Avenue (US 1)	4	4	2	4	No	2017
PG Co.	PGS55b	Widen	Ritchie Marlboro Road	White House Road	Old Marlboro Rd.	3	3	2	4		2020
PG Co.	PGS56a	Widen	Ritchie Road/Forestville Road	Alberta Drive	MD 4 Pennsylvania Avenue	2	2	2	4	Yes	2020
PG Co.	PGS57	Widen	Rollins Avenue	Central Avenue (MD 214)	Walker Mill Road	4	4	2	4	No	2020
PG Co.	PGS58	Widen	Rosaryville Road	Robert Crain Highway (US 301)	Woodyard Road (MD 223)	3	3	2	4	No	2020
PG Co.	PGS60b	Construct	Spine Road	Branch Avenue (MD 5)/US 301	Brandywine Road (MD 381)	3	3	0	4	No	2016
PG Co.	PGS61	Widen	Springfield Road	Lanham-Severn Road (MD 546)	Good Luck Road	4	4	2	4	No	2020
PG Co.	PGS82	Construct	St. Joseph's Drive	MD 202	Ardwick-Ardmore Road	0	4	0	4	No	2015
PG Co.	PGP2	Construct	Suitland Parkway	interchange at Rena/Forestville Roads		5	5	0	0	No	2025
PG Co.	PGS62a	Widen	Suitland Road	Allentown Road (MD 337)	Suitland Parkway	3	3	2	4	No	2018
PG Co.	PGS62b	Widen	Suitland Road	Suitland Parkway	Silver Hill Road (MD 458)	3	3	2	4	No	2018

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Complt. Date or Status
						from	to	from	to		
						PG Co.	PGS63	Widen	Sunnyside Avenue		
PG Co.	PGS64	Widen	Surratts Road	Beverly Avenue	Brandywine Road	4	4	2	4	No	2012
PG Co.	PGS65	Widen	Temple Hill Road	Piscataway Road (MD 223)	St. Barnabas Road (MD 414)	3	3	2	4	No	2020
PG Co.	PGP5a	Construct	US 50/Columbia Park Road Ramp	westbound ramp to Columbia Park Road		5	5	1	1	No	2025
PG Co.	PGP5b	Construct	US 50/Columbia Park Road Ramp	eastbound ramp Cheverly vicinity		5	5	1	1	Yes	2003
PG Co.	PGS67a	Widen	Van Dusen Road	Contee Road	Sandy Springs Road (MD 198)	3	3	2	4	No	2020
PG Co.	PGS67b	Construct	Van Dusen Road Interchange	@Contee Road		0	0	0	0	No	2025
PG Co.	PGS68	Widen	Virginia Manor Road	Muirkirk Road	Contee Road	4	4	2	4	No	2013
PG Co.	PGS69a	Widen	Walker Mill Road	Silver Hill Road	I-95	3	3	2	4	No	2020
PG Co.	PGS91	Widen	Westphalia Rd.	MD 4	Ritchie-Marlboro Rd.	4	3	2	4		2020
PG Co.	PGS70	Widen	Wheeler Road	St. Barnabas Road (MD 414)	District of Columbia limits	2	2	2	4	No	2020
PG Co.	PGS71	Widen	White House Road	Ritchie-Marlboro Road	Largo-Landover Road (MD 202)	3	3	2	6	Yes	2020
PG Co.	PGS72	Widen	Whitfield Chapel Road	Annapolis Road (MD 450)	Ardwick-Ardmore Road	4	4	2	4	No	2020
PG Co.	PGS40b	Construct	Woodmore Road	Enterprise Road (MD 193)	Church Road		3		4	No	2015
PG Co.	PGS42	Widen	Woodyard Road (MD 223)	Rosaryville Road	Dower House Road	2	2	2	4	No	2020
PG Co.	PGS42b	Construct	Woodyard Road Relocated (MD 223)	Piscataway Creek	Livingston Road	0	3	0	2	No	2010
PG Co.	PGS42c	Widen	Woodyard Road Relocated (MD 223)	Piscataway Creek / Floral Park Rd.	Livingston Road / MD 4	3	3	2	4	No	2017

2011 CLRP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Complt. Date or Status
						from	to	from	to		
						City of Frederick					
City of Frederick	FS2	Construct	Monocacy Blvd	Hughes Ford Rd.	Gas House Pike	0	3	0	4	Yes	2012
Charles County											
Chas.Co.	CHS1	Widen/ Realign	Cross County Connector (Billingsly Rd.)	Middletown Rd.	MD 210	3	3	2	4		2009
Anne Arundel County											
BMC	AA1d	Widen	I-97	US 50/301	MD 32/3	1	1	4	6		2025
BMC	AA15a	Widen	I-295	I-195	MD 100	1	1	4	6		2015
BMC	AA15b	Construct	I-295 (New Interchange)	Hanover Road							2015
BMC	AA3e	Widen	MD 2	US 50	MD 10		2	4/5	6		2030
BMC	AA3g	Widen	MD 2	MD 450	South River Bridge	2	2	4	6		2030
BMC	AA4e	Widen	MD 3	MD 32	AA/Prince George Co. Line	2	2	4	6		2030
BMC	AA5c	Widen	MD 32	BW Parkway	Howard County Line		1	4	8		2020
BMC	AA14C	Widen	US50 / MD 301	AA / PG line	Bay Bridge	1	1	6	8		2020
BMC	AA6e	Widen	MD 100	Howard Co. Line	I-97		5/1	4	6		2025
BMC	AA7	Widen	MD 170	MD 175	MD 100		2	2	4		2020
BMC	AA8a	Widen	MD 175	MD 170	BW Parkway		2	2	4		2009
BMC	AA8b	Widen	MD 175	MD 170	BW Parkway		2	4	6		2015
BMC	AA29	Widen	MD 177	MD 100	South Carolina Avenue	2	2	3/2	5		2020
BMC	AA30	Widen	MD 198	MD 32	BW Parkway	2	2	2	4		2015
BMC	AA30a	Widen	MD 198	PG line	BW Parkway	2	2	4	6		2025
BMC		Widen	MD 607	Woods Rd.	MD 173			2	4		2025

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Complt. Date or Status
						from	to	from	to		
						BMC	AA34a	Widen	MD 713		
BMC	AA34b	Widen	MD 713	Arundel Mills Boulevard	MD 176		2	4	6		2025
Carroll County											
BMC	CA3A	Construct	MD 30 (Manchester Bypass)	North of MD 86	Brodbeck Rd		2	0	2		2030
BMC	CA1B	Widen	MD 140	Sullivan Road	Market St.		1	4/6	8		2020
BMC	nrs	Construct	MD 140 (3 new interchange)	@ MD 97S, Center St. & Englar Rd			1	-	-		2020
BMC	CA2a	Widen	MD 26	MD 32	MD 27		2	4	6		2025
BMC	in base	Widen	MD 32	MD 26	Howard County Line		2	2	4		2020
BMC	CA5	Widen	MD 97	MD 140	Pleasant Valley Rd		2	2	4		2020
Howard County											
BMC	HW1b	Widen	I-70	US 29	US 40		1	1	4	6	2020
BMC	HW1a	Reconstruct	I-70 (partial to full interchange)	@ Marriotsville Road			1	1			2020
BMC	HW19	Widen	I-95	Howard / PG line	Balt. / Howard line		1	1	8	10	2020
BMC	nrs	Reconstruct	US 1 (interchange)	@ MD 175							2015
BMC	HW10d	Widen	US 29	I-70	MD 100			5	6	8	2030
BMC	HW10b	Widen	US 29 NB	S. of MD 175	Middle Patuxent River			5	4	6	2010
BMC	HW3c	Widen	MD 32	Cedar Lane	Anne Arundel County Line			1	4/6	8	2015
BMC	HW3b	Widen	MD 32	MD 108	I-70			1	2	4	2015
BMC	HW3d	Widen	MD 32	I-70	Carroll County Line			2	2	4	2030

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
BMC	HW3e	construct/reconstruct	MD 32 (interchanges)	@ I-70/ MD 144 Linden Church Rd/Dayton Shop @Rosemary Lane							2015
BMC		Construct	MD 32 (interchange)	@ Burntwoods Rd.							2009
BMC	HW6c	Widen	MD 108	Trotter Road	MD 32		2	2	4		2025
BMC	HW6d	Widen	MD 108	Woodland Rd.	1200' w. of Centennial Ln.	2	2	2	4		2011
BMC	HW6e	Widen	MD 108	MD 104	MD 175	2	2	2	4		2020
BMC	HW7d	Widen	MD 175	US 1	Anne Arundel County Line		2	2	5		2020
BMC	HW8b	Widen	MD 216	West of US 29	Sanner Road		3	2	4		2020
BMC	nrs	Construct	Dorsey Run Rd., North	MD 103	MD 175			0	4		2011
BMC	nrs	Construct	Dorsey Run Rd., South	MD 175	Gulford Rd.			0	4		2010
BMC	HW16C	Widen	Gorman Road	Stephens Road	US 1		3	2	3		2025
BMC	HW18a	Widen	Marriottsville Road	MD 99	US 40		3	2	6		2015
BMC	nrs	Widen	Patuxent Range Road	US 1	Dorsey Run Road			2	4		2015
BMC	HW11b	Widen	Rodgers Avenue	US 40	Courthouse Drive		3	2	4		2010
BMC	HW13a	Construct	Sanner Road South	Johns Hopkins Road	MD 216		3	0	4		2015
BMC	HW13b	Widen	Sanner Road North	Johns Hopkins Road	Pindell School Road		3	2	4		2015
BMC	HW14c	Widen	Snowden River Parkway	MD 100	Broken Land Parkway		3	4	6		2020
Federal Lands											
Fed. Lands	FED2	Widen	Old Mill Rd.(future Mulligan Rd.)	US 1	VA 611 (Telegraph Rd.)	4	4	0/2	4	Yes	2012

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Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						VIRGINIA					
VDOT Freeway											
VDOT	VI1w	Widen	I-66 HOV during peak and SOV	US 15 (includes intch. reconst.)	US 29 (Gainesville)	1	1	4	8	No	2018
VDOT	VI1z	Reconstruct	I-66 Interchange	@ US 29 (Gainesville)		1	1	-	-	No	2014
VDOT	VI1ca	Widen	I-66 HOV during peak	US 29 (Gainesville)	VA 234 (Prince William Pkwy)	1	1	4	8	complete	2010
VDOT	VI1ab	Reconstruct	I-66 Interchange	@ I-495 (Capital Beltway)		1	1	-	-	Yes	2013
VDOT	VI1aj	Construct	I-66 Vienna Metro Station bus ramp	EB I-66 and Saintsbury Dr.	Saintsbury Dr. and WB I-66	1	1	0	2	No	2014
VDOT		Widen	I-66 EB Auxiliary Lanes	West of Gallows Road	Off Ramp I-495 SB	1	1	3+1	3+1 +2	No	2030
VDOT		Widen	I-66 WB Auxiliary Lanes	On Ramp from SB I-495	West of Gallows Road	1	1	3+1	3+1 +2	No	2030
VDOT	VI1ah	Widen	I-66 EB Auxiliary Lanes	Cedar Lane	West of Gallows Road	1	1	3+1	3+1 +1	No	2030
VDOT	VI1ai	Widen	I-66 WB Auxiliary Lanes	West of Gallows Road	Cedar Lane	1	1	3+1	3+1 +1	No	2030
VDOT	VI1ae	Reconstruct	I-66 WB Operational/ Spot Improvements- extend acceleration/deceleration lanes	Fairfax Dr.	Sycamore St.	1	1	2	3	No	2013
VDOT	VI1af	Reconstruct	I-66 WB Operational/ Spot Improvements- extend acceleration/deceleration lanes	Washington Blvd.	Dulles Airport Access Rd. connector	1	1	3	4	No	2020
VDOT	VI1ag	Reconstruct	I-66 WB Operational/ Spot Improvements	Lee Hwy. / Spout Run	Glebe Rd.	1	1	2	3	No	2020
VDOT	VI2ka	Widen	I-95 (Wilson Bridge and approaches)	VA 241 (Telegraph Rd.)	US 1	1	1	6	12	Yes	2013
VDOT	VI2k	Widen	I-95 (Wilson Bridge and approaches)	US 1	MD 210	1	1	6	12	complete	2011
VDOT	VI2ac	Reconstruct	I-95 Interchange	@ VA 613 (Van Dorn Street)		1	1	-	-	No	2025

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						VDOT	VI2p	Widen	I-95 (provide 4th lane)		
VDOT	VI2ab	Reconstruct	I-95 Interchange	@ VA 642 (Lorton Road)		1	1	-	-	No	2010
VDOT	VI2RB	Widen	I-395 HOV Lanes ramp	exit to Eads St.		1	1	1	2	No	2014
VDOT	VI2r	Widen / Construct	I-395/I-95 HOV/ BUS/ HOT Lanes	Approx. 2 mi. N. of I-495	VA 3000 (Prince William Pkwy)	1	1	2	3	No	2015
VDOT	VI2r	Construct	I-395/I-95 HOV/ BUS/ HOT Lanes	VA 3000 (Prince William Parkway)	S. of VA 234 (Dumfries Rd.)	1	1	2	2	No	2015
VDOT	VI2r	Construct	I-395/I-95 HOV/ BUS/ HOT Lanes	S. of VA 234 (Dumfries Rd.)	VA 610 (Garrisonville Rd.) in Stafford Co.	1	1	0	2	No	2015
VDOT	VI2r	Widen	I-95: HOV / Bus / HOT Ramp:	NB HOV/Bus/HOT lanes	Eads Street	4	4	4	2	No	2012
VDOT	VI2r	Widen	I-95: HOV / Bus / HOT Ramp:	Eads St.	SB HOV/Bus/HOT lanes	4	4	2	3	No	2015
VDOT	VI2r	Remove	I-95: HOV / Bus / HOT Ramp:	SB Express to SB Gen. use lanes	Between S Hayes St. & Washington Blvd.	4	-	4	0	No	2012
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Ramp:	NB HOV/Bus/HOT Lanes	Shirlington Circle	-	4	0	4	No	2012
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Ramp:	Shirlington Circle	SB HOV/Bus/HOT Lanes	-	4	0	4	No	2012
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Bus-Only Ramp:	NB HOV/Bus/HOT Lanes	VA 420 (Seminary Road)- (bus only)	-	4	0	4	No	2012
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Ramp:	VA 420 (Seminary Road)- (bus only)	SB HOV/Bus/HOT Lanes	-	4	0	4	No	2012
VDOT	VI2r11	Construct	I 95: HOV / Bus / HOT Lanes Ramp: Between VA 648 (Edsall) and Turkeycock Run	NB I-395 HOV/HOT lanes	NB I-395 GP	-	1	0	1	No	2015
VDOT	VI2r24	Construct	I 95: HOV / Bus / HOT Reversible Ramp:	NB HOV/Bus/HOT Lanes	VA 7100 (Fairfax Co. Pkwy) (Alban Rd.)	-	1	0	1	No	2015
VDOT	VI2r24	Construct	I 95: HOV / Bus / HOT Reversible Ramp:	VA 7100 (Fairfax Co. Pkwy) (Alban Rd.)	SB HOV/Bus/HOT Lanes	-	1	0	1	No	2015
VDOT	BRAC0004 / VI2ra	Construct	I-95 Reversible Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	NB HOV/BUS/HOT Lanes - Located N of Rte. 7100/I 95 I/C Phase II DAR	EPG Southern Loop Road. - AM Only	1	1	0	1	No	2016

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compt. Date or Status
						from	to	from	to		
						VDOT	BRAC0004 / VI2rb	Construct	I-95 Reversible Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)		
VDOT	BRAC0004/ VI2rc	Construct	I-95 Ramp (Colocated w/ existing slip ramp from HOV to GP lanes)	EPG Southern Loop Road. - PM Only Phase I DAR	NB I 95 GP Lanes	1	1	0	1	No	2012
as represent	BRAC0005 / VI2rd	Widen	I-95 Ramp	SB I 95 General Purpose Lanes	NB Fairfax Co. Parkway / EPG Southern Loop Road	1	1	1	2	complete	2010
FY2011-2016	BRAC	Construct	I-95 NB Off Ramp @ Newington	NB I-95	NB Fairfax County Parkway	1	1	0	1	No	2020
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Ramp:	NB HOT lanes to new bus-station, back to NB HOT-lanes (bus only)	Between VA 7100 (Fairfax-Co. Pkwy.) and VA 642-(Lorton Rd.)	-	4	0	4	No	2012
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Ramp:	SB HOT lanes to new bus-station, back to SB HOT-lanes (bus only)	Between VA 7100 (Fairfax-Co. Pkwy.) and VA 642-(Lorton Rd.)	-	4	0	4	No	2012
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Ramp:	NB HOV/Bus/HOT to Gen-use lanes	Between VA 7100 (Fairfax-Co. Pkwy.) and VA 642-(Lorton Rd.)	0	4	0	4	No	2012
VDOT	VI2r31	Construct	I 95: HOV / Bus / HOT Ramp:	SB Gen Purpose Lanes to SB HOV/Bus/HOT lanes	Between US 1 & VA 123	-	1	0	1	No	2015
VDOT	VI2r37	Construct	I 95: HOV / Bus / HOT Ramp:	SB Gen Purpose Lanes to SB HOV/Bus/HOT lanes	Between Opitz Blvd. and Dale Blvd.	-	1	0	1	No	2015
VDOT	VI2r34	Construct	I 95: HOV / Bus / HOT Ramp:	NB HOV/Bus/HOT to Gen-use lanes	Between VA 123 (Gordon Rd.) & VA 3000 (Prince William Pkwy.)	-	1	0	1	No	2015
VDOT	VI2r	Construct	I-95: HOV / Bus / HOT Ramp:	NB HOV/Bus/HOT to Gen-use lanes	Between VA 610 (Cardinal Rd.) & VA 234 (Dumfries-Rd.)	-	4	0	4	No	2012
VDOT	VI2r43	Construct	I 95: HOV / Bus / HOT Ramp:	SB HOV/Bus/HOT lanes to SB Gen Purpose Lanes	Between Dumfries Rd. and Joplin Rd.	-	1	0	1	No	2015

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						VDOT	VI2r43a	Construct	I 95: HOV / Bus / HOT Ramp:		
VDOT	VI2r45a	Construct	I 95: HOV / Bus / HOT Ramp:	NB HOV/Bus/HOT lanes to NB Gen Purpose Lanes	Between Joplin Rd. and Russell Rd.	-	1	0	1	No	2018
VDOT	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.)	-	1	0	1	No	2015
VDOT	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.)	-	1	0	1	No	2015
VDOT	VI2R6A	Construct	I-395 HOV Lanes Reversible Ramp	NB HOV off-ramp to Seminary Rd. & Seminary Rd. on-ramp to SB HOV		1	1	0	1	No	2015
VDOT	VI2ca	Construct	I-495 access ramps (Phase VIII of I-95/394/495 Interchange)	Backlick Rd. to 1. mi. E. of I95/I395/I495	& SB main & HOT to/from I-495/I-95 EB & WB main & HOV lanes)	1	1	-	-	No	2013
VDOT	VI4Iaux	Widen	I-495 NB Auxiliary Lane	1. mi. East of I-95/395/495	North of Hemming Ave. underpass	1	1	4+2	5+1	Yes	2013
VDOT	VI4Iaux	Widen	I-495 SB Auxiliary Lane	North of Hemming Ave. Underpass	1. mi. East of I-95/395/495	1	1	4+2	5+1	Yes	2013
VDOT	VI4Iaux	Widen	I-495 NB Auxiliary Lane	North of Hemming Ave. Underpass	Off Ramp to Braddock Rd	1	1	4+2	5+2	Yes	2030
VDOT	VI4Iaux	Widen	I-495 SB Auxiliary Lane	On Ramp from Braddock Rd	North of Hemming Ave. Underpass	1	1	4+2	5+2	Yes	2030
VDOT	VI4Iaux	Widen	I-495 NB Auxiliary Lane	On Ramp from Braddock Rd	Off Ramp to Rte 236	1	1	4+2	5+2	Yes	2030
VDOT	VI4Iaux	Widen	I-495 SB Auxiliary Lane	On Ramp from Rte 236	Off Ramp to Braddock Rd	1	1	4+2	5+2	Yes	2013
VDOT	VI4Iaux	Widen	I-495 NB Auxiliary Lane	On Ramp from Rte 236	Off Ramp to Gallows Road	1	1	4+2	5+2	Yes	2030
VDOT	VI4Iaux	Widen	I-495 SB Auxiliary Lane	On Ramp from Gallows Road	Off Ramp to Rte 236	1	1	4+2	5+2	Yes	2030
VDOT	VI4Iaux	Widen	I-495 NB Auxiliary Lane	On Ramp from Gallows Road	Off Ramp to Route 50	1	1	4+2	6+2	Yes	2013

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Complt. Date or Status
						from	to	from	to		
						VDOT	VI4laux	Widen	I-495 SB Auxiliary Lane		
VDOT	VI4laux	Widen	I-495 NB Auxiliary Lane	On Ramp from Route 50	Off Ramp to I-66	1	1	4+2	5+2	Yes	2013
VDOT	VI4laux	Widen	I-495 NB Auxiliary Lane	On Ramp from Route 50	Off Ramp to I-66	1	1	5+2	6+2	Yes	2030
VDOT	VI4laux	Widen	I-495 SB Auxiliary Lane	On Ramp from I-66	Off Ramp to Route 50	1	1	4+2	5+2	Yes	2013
VDOT	VI4laux	Widen	I-495 NB	On ramp from EB I 66	Off Ramp to Rte 7	1	1	4+2	5+2	Yes	2013
VDOT	VI4laux	Widen	I-495 SB Auxiliary Lane	On ramp from Rte 7	Off Ramp to WB I 66	1	1	4+2	5+2	Yes	2030
VDOT	VI4laux	Widen	I-495 NB Auxiliary Lane	On ramp from Rte 7	Off Ramp to Rte 123	1	1	4+2	5+2	Yes	2013
VDOT	VI4laux	Widen	I-495 SB Auxiliary Lane	On ramp from Rte 123	Off Ramp to Route 7	1	1	4+2	5+2	Yes	2013
VDOT	VI4laux	Widen	I-495 SB Auxiliary Lane	On Ramp from Rte 123	Off Ramp to Route 7	1	1	5+2	6+2	Yes	2030
VDOT	VI4laux	Widen	I-495 NB Auxiliary Lane	On Ramp from Rte 123	Off Ramp to Rte 267	1	1	4+2	5+3	Yes	2013
VDOT	VI4laux	Widen	I-495 SB Auxiliary Lane	On Ramp from Route 267	Off Ramp to Route 123	1	1	4+2	5+4	Yes	2013
VDOT	VI4laux	Widen	I-495 NB Auxiliary Lane	On Ramp from Route 267	Off Ramp to Route 193	1	1	4+2	5+2	Yes	2030
VDOT	VI4laux	Widen	I-495 SB Auxiliary Lane	On Ramp from Route 193	Off Ramp to Route 267	1	1	4+2	5+2	Yes	2030
VDOT	VI4k	Construct	I-495 HOT	American Legion Bridge	S. of George Washington Pkwy.	1	1	8	8+2	Yes	2030
VDOT	VI4ka	Construct	I-495 HOT Lanes	S. of George Washington Pkwy	S. of Old Dominion Dr.	1	1	8	8+2	No	2013
VDOT	VI4IHOT	Construct	I-495 HOT	S. of Old Dominion Dr.	Hemming Ave. Underpass	1	1	8	8+4	Yes	2013
VDOT	VI4lb	Construct	I-495 NB Auxiliary Lane	1 mi. east of I-95/I-395/I-495	North of Hemming Ave. Underpass	1	1	8	5+1	Yes	2013
VDOT	VI4lb	Construct	I-495 SB Auxiliary Lane	Hemming Ave. Underpass	1 mi. east of I-95/I-395/I-495	1	1	8	5+1	Yes	2013
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	Provides SB to WB, EB to SB, & NB to WB HOV movements	@ VA 267 (Dulles Toll Road)	1	1	-	-	Yes	2013

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Complt. Date or Status
						from	to	from	to		
						VDOT	part of VI4IHOTa	Construct	I-495 HOT Lanes Interchange		
VDOT	part of VI4IHOTa	Relocate / Re	I-495 HOT Lanes Interchange	Move ramps from left side to right side: NB GP lanes to WB DTR; SB GP lanes to EB DTR	@ VA 267 (Dulles Toll Road)	1	1	1	1	Yes	2030
VDOT		Construct	I-495 Interchange Ramp	SB I-495	WB Dulles Airport Access Highway (DAAH)	0	1	0	1	Yes	2013
VDOT		Construct	I-495 Interchange Ramp	EB Dulles Airport Access Highway (DAAH)	NB I-495	0	1	0	1	Yes	2013
VDOT		Construct	I-495 Interchange Ramp	EB Dulles Airport Access Highway (DAAH)	SB I-495	0	1	0	1	Yes	2013
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	NB to WB, SB to WB, EB to NB, and EB to SB	@ Jones Branch Connector	1	1	-	-	Yes	2013
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	NB to WB, SB to WB, EB to NB, and EB to SB	@ West Park Connector	1	1	-	-	Yes	2013
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	NB to EB, NB to WB, EB to SB, and WB to SB	@ VA 7	1	1	-	-	No	2013
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	Provides SB to WB, WB to SB, EB to SB, NB to WB, WB to NB, & EB to NB movements	@ I-66	1	1	-	-	Yes	2013
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	NB to EB	@ I-66	1	1	-	-	Yes	2013
VDOT	part of VI4IHOT	Relocate	I-495 HOT Lanes Interchange	@ I-66	Left side off ramp from NB I 495 to WB I 66 relocated to combine with right side off ramp from NB I 495 to WB I 66	1	1	1	2	Yes	2013
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	NB to EB, NB to WB, EB to SB, and WB to SB	@ US 29	1	1	-	-	Yes	2013

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compt. Date or Status
						from	to	from	to		
						VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange		
VDOT	part of VI4IHOT	Construct	I-495 HOT Lanes Interchange	EB to NB, WB to NB, SB to EB, and SB to WB	@ VA 620 (Braddock Road)	1	1	-	-	Yes	2013
VDOT	part of VI4IHOTa	Construct	I-495 HOT Lanes Interchange	NB to EB, NB to WB, EB to SB, and WB to SB	@ VA 620 (Braddock Road)	1	1	-	-	Yes	2030
VDOT	MW1	Widen	Dulles Airport Access Road	Dulles Airport	VA 123	1	1	4	6	No	2017
VDOT Primary											
VDOT	VP1ab	Widen	US 1	Joplin Rd.	Brady's Hill Road	2	2	4	6	Yes	2011
VDOT	VP1ad	Widen	US 1	Brady's Hill Road	Cardinal Drive	2	2	4	6	No	2025
VDOT	VP1ae	Widen	US 1	Blackburn Dr/Neabsco Mills Rd	Featherstone Road	2	2	4	6	No	2025
VDOT	VP1a	Widen	US 1	Telegraph Rd.	VA 235 South	2	2	4	6	No	2020
VDOT	VP1u	Widen	US 1	VA 235 South	VA 235 North	2	2	4	6	No	2025
VDOT	VP1p	Widen	US 1 (part of 1/123 interchange)	Occoquan Rd.	Annapolis Way	2	2	4	6	Yes	2017
VDOT	VP2ja	Widen	VA 7 Bypass	VA 7 West	US 15 South (South King St)	5	1	4	6	No	2040
VDOT	VP2j	Widen	VA 7 Bypass	US 15 South (South King St)	VA 7/US 15 East	5	1	4	6	No	2040
VDOT		Construct	VA 7 WB Truck Climbing Lane	VA 9	Business 7 West	5	1	4	5	No	2020
VDOT	VP2m	Widen	VA 7	Reston Avenue	Lewinsville Road	2	2	4	6	No	2025
VDOT	nrs	Construct	VA 7	Bridge over Dulles Toll Road				4	6	No	2030
VDOT	VP2ma		VA 7	Rolling Holly Drive	Reston Avenue			4	6	No	2014
VDOT	VP2L	Widen	VA 7	Dulles Toll Rd.	I-495	2	2	6	8	No	2014

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						VDOT	VP2b	Widen	VA 7		
VDOT		Construct	VA 7 interchange	@ Loudoun County Parkway		-	-	-	-	Complete	2010
VDOT		Construct	VA 7 interchange	@ VA 659 (Belmont Ridge Rd.)		-	-	-	-	No	2020
VDOT	VP4e	Widen	US 15 (James Madison Highway)	US 29	I-66	2	2	2	4	No	2040
VDOT	VP6h	Widen	VA 28	Fauquier County Line	VA 652 (Fitzwater Dr.)	3	3	2	4	No	2025
VDOT	VP6ka	Widen	VA 28	VA 652 (Fitzwater Dr.)	VA 215 (Vint Hill Rd.) Relocated	3	3	2	4	No	2016
VDOT	VP6kb	Widen	VA 28	VA 215 (Vint Hill Rd.) Relocated	VA 619 (Linton Hall Road)	3	3	2	6	No	2016
VDOT	VP6ma	Widen	VA 28 (Nokesville Rd.)	Godwin Drive	Manassas City limits - west	3	2	4	6		2017
VDOT	VP6e	Widen/ Upgrade	VA 28 PPTA (Phase II)	I-66	VA 7	2	1	6	8	No	2025
VDOT	VP6eb	Construct	VA 28 Interchange	@ VA 209 (Innovation Ave.)		-	-	-	-	Yes	2015
VDOT	VP6ec	Construct/ Upgrade	VA 28 Intersection	at Steeplechase Drive		1	1	6	6	Yes	2011
VDOT		Reconst.	VA 28 Interchange	@ New Braddock Rd.		-	-	-	-	Complete	2010
VDOT	VP7ae	Construct	US 29 Interchange	@ VA 55/VA 619		-	-	-	-	No	2014
VDOT	VP7r	Widen	US 29	Virginia Oaks Drive	I-66	2	5	4	6	No	2014
VDOT	VP7s	Widen	US 29 (add NB lane)	I-66	Entrance to Conway Robinson MSF	3	2	4	5	No	2014
VDOT	VP7aa	Widen	US 29	ECL City of Fairfax (vic. Nutley St.)	Espana Court	2	2	4	6	No	2025
VDOT	VP7ab	Complete	US 29	Espana Court	I-495	2	2	4	6	No	2013
VDOT	VSP57a	Construct	Route 29 (Parallel)	US 29 (Lee Highway) (near US 15)	Sommerset Crossing Drive	0	4	0	4	No	2040

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Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						VDOT	VP8q	Widen	US 50		
VDOT	VP8c	Widen	US 50	VA 742 (Poland Rd.)	VA 609 (Pleasant Valley)	2	2	4/5	6	No	2014
VDOT	VP8r	Widen	US 50	VA 609 (Pleasant Valley)	VA 661 (Lee Rd.)	2	2	4/5	6	No	2014
VDOT	VP8h	Widen	US 50	ECL City of Fairfax	Arlington County Line	2	2	4	6	No	2025
VDOT	AR2e	Reconstruct	US 50 (Arlington Blvd.)	ARC/FFX Line	Washington Blvd.	2	2	6	6	No	2015
VDOT	AR2f	Reconstruct	US 50 (Arlington Blvd.)	Pershing Dr.	Ft. Myer Dr.	5	5	6	6	No	2015
VDOT	VP8o	Reconstruct	US 50 Interchange	@ Courthouse Road / 10th Street		1	1	6	8	Yes	2013
VDOT		Construct	US 50 Interchange	VA 606 (Loudoun County Parkway)		-	-	-	-	No	2025
VDOT	VP10g	Widen	VA 123	Route 1	Horner Road	2	2	4	6	No	2017
VDOT	VP10h	Widen	VA 123 (Ox Road)	Hooes Rd.	Fairfax Co. Parkway	2	2	4	6	No	2025
VDOT	VP10f	Widen	VA 123 (Ox Road)	Fairfax Co. Parkway	Burke Center Parkway	2	2	4	6	No	2025
VDOT	VP10r	Widen	VA 123	Burke Center Parkway	Braddock Road	2	2	4	6	No	2025
VDOT		Widen and relocate	VA 215 (Vint Hill Rd.)	VA 28	1 mile west of VA 28	3	3	2	4	No	2016
VDOT	VP13a	Widen	VA 236	Pickett Road	I-395	2	2	4	6	No	2025
VDOT	VP12o	Construct	Tri-County Parkway (CTB alignment C & D)	VA 234 @ I 66	US 50	0	5	0	4	No	2035
VDOT Urban											
VDOT	VU28b	Construct	Battlefield Parkway	US 15 south of Leesburg	Dulles Greenway	0	2	0	4	No	2020
VDOT	VU28f	Construct	Battlefield Parkway	Fort Evans Road	Edwards Ferry Road	0	2	0	4	Yes	2012
VDOT	VU30f	Widen	East Elden Street	Van Buren St.	Fairfax County Parkway	2	2	4	6	No	2016
VDOT	VU52	Widen	Eisenhower Ave.	Stovall St.	Holland Lane	3	3	4	6	No	2013

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(Highway and HOV)

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						from	to	from	to		
						VDOT	VU35b	Construct	Mill Road Extension		
VDOT	VU51a	Construct	Potomac Yard Spine Road	US Route 1	Crystal Dr.	0	4	0	4	No	2014
VDOT	VU10b	Widen	Spring Street	Herndon Parkway East	Fairfax County Parkway	3	3	4	6	No	2014
VDOT	VU33	Widen	Sycolin Road	VA 7/US 15 Bypass	SCL of Leesburg	3	3	2	4	No	2020
VDOT	VU32	Widen	US 15 (South King Street)	Evergreen Mill Road	SCL of Leesburg	3	2	2	4	No	2015
VDOT		Construct	US 15 Bypass Interchange	Edwards Ferry Rd.		2	2	-	-	No	2035
VDOT	VU40	Widen	US 29 (Lee Highway)	US 50	Chain Bridge Road	2	2	4	6	No	2040
VDOT	VU6b	Widen	US 29 (Lee Highway)/US 50	VA 123 (Chain Bridge Road)	Eaton Place	2	2	4	6	No	2013
VDOT	VU29	Construct	VA 123 (Chain Bridge Road)	US 50	I-66	2	2	5	6	No	2013
VDOT		Reconstruct	Chain Bridge Road/Eaton Place Intersection Improvements	intersection at NB Chain Bridge Rd. & Willow Crescent Dr.		2	2			No	2011
VDOT	VU45	Widen	VA 234 (Dumfries Road)	South Corporate Limits	Hastings Drive	3	3	2	4	No	2011
VDOT	VU48b	Widen	Wellington Road	Godwin Drive	VA 28 (Nokesville Road)	3	3	2	4	Yes	2010
VDOT	VU14a	Widen	Liberia Ave.	Rt.e 28	Quarry Road	3	3	4	6		2017
ARLINGTON COUNTY SECONDARY											
VDOT	AR17a	Widen	Washington Blvd.	Wilson	Kirkwood	3	3	3	4	No	2015
FAIRFAX COUNTY SECONDARY											
VDOT	FFX2a	Construct	VA 602 (Reston Pkwy.)	VA 5320 (Sunrise Valley Dr.)	VA 606 (Baron Cameron Avenue)	2	2	4	6	No	2020
VDOT	nr	Reconstruct/ Widen	Rte 603 Beach Mill Road - Bridge over Nichols Branch	Rte 603 Beach Mill Road	Rte 674 Springvale Road (west of intersection)	3	3				2014
VDOT	VSF4f	Widen	VA 611 (Furnace Road)	VA 123 (Ox Road)	VA 642 (Lorton Road)	3	3	2	4	No	2013

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(Highway and HOV)

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						from	to	from	to		
						VDOT	VSF4c	Widen	VA 611 (Telegraph Road)		
VDOT	VSF4ca	Widen	VA 611 (Telegraph Road)	Leaf Road North	VA 635 (Hayfield Road)	3	3	2	4	No	2025
VDOT	VSF4i	Widen	VA 611 (Telegraph Road)	VA 635 (Hayfield Road)	VA 633 (S. Kings Hwy.)	3	3	2	4	No	2025
VDOT	VSF4h	Widen	VA 611 (Telegraph Road)	VA 633 (S. Kings Hwy.)	VA 644 (Franconia Road)	3	3	2	3	No	2025
VDOT	VSF15b	Construct	VA 613 (Van Dorn Street)	@ VA 644 (Franconia Road)	interchange	0	0	0	0	No	2025
VDOT	VSF8g	Widen	VA 620 (Braddock Rd)	VA 7100 (Fairfax Co. Pkwy.)	VA 123 (Ox Road)	3	3	4	6	No	2025
VDOT	VSF8j	Construct/ Widen	VA 620 (New Braddock Rd.)	VA 28	US 29 @ VA 662 (Stone Rd.)	0/4	3	0/2	4	No	2025
VDOT	BRAC	Widen	VA 638 (Rolling Rd.) NB off-ramp @ Fairfax County Pkwy.	NB Rolling Rd.	NB Fairfax County Pkwy	3	3	2	4	No	2020
VDOT		Widen	VA 638 (Rolling Rd.)	VA 7100 (Fairfax Co. Pkwy.)	VA 644 (Old Keene Mill Rd.)	3	3	2	4	No	2015
VDOT	VSF10c	Widen	VA 638 (Pohick Road)	US 1	I-95	3	3	2	4	No	2025
VDOT	VSF13d	Widen	VA 642 (Lorton Road)	VA 123 (Ox Road)	VA 600 (Silverbrook Road)	3	3	2	4	No	2013
VDOT	FFX11a	Widen	VA 645 (Stringfellow Rd.)	US 50	VA 7100 (Fairfax County Parkway)	3	3	2	4	No	2020
VDOT	VSF16g	Widen	VA 645 (Stringfellow Road)	VA 7735 (Fair Lakes Blvd.)	US 50	3	3	2	4	No	2013
VDOT	VSF37	Widen	VA 650 (Gallows Road)	Gatehouse Road	Providence Forest Dr.	2	2	4	6	Yes	2025
VDOT	VSF33d	Widen	VA 651 (Guinea Road)	VA 620 (Braddock Road)	VA 2430 (Braeburn Drive)	3	3	2	4	No	2025
VDOT	VSF33a	Widen	VA 651 (Guinea Road)	VA 6197 (Roberts Parkway)	VA 4807 (Pommeroy Drive)	3	3	2	4	No	2025
VDOT	FFX12a	Construct	VA 651 (New Guinea Rd.)	VA 123 (Ox Road)	Roberts Rd.	0	3	0	4	No	2025
VDOT	VSF17b	Construct	VA 655 (Shirley Gate Road)	VA 7100 (Fairfax County Parkway)	VA 620 (Braddock Road)	0	3	0	4	No	2025
VDOT	VSF18c	Widen	VA 657 (Centreville Road)	VA 8390 (Metrotech Dr.)	VA 668 (McLearen Road)	3	3	4	6	No	2040
VDOT	VSF18h	Widen	VA 657 (Centreville Road)	VA 608 (West Ox Rd)	VA 608 (Frying Pan Rd)	3	3	2	4	Complete	2010

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(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
						VDOT	VSF24	Widen	VA 684 (Spring Hill Road)		
VDOT	VSF25aa	Convert	VA 7100 (Fairfax Co Pkwy HOV)	VA 267 (Dulles Toll Road)	Sunrise Valley Dr.	5	5	6	4+2	No	2035
VDOT	VSF25ea	Widen	VA 7100 (Fairfax Co Pkwy HOV)	Sunrise Valley	Rugby Rd.	5	5	4	4+2	No	2035
VDOT	VSF25e	Widen	VA 7100 (Fairfax Co Pkwy HOV)	Rugby Rd.	US 50	5	5	4	4+2	No	2035
VDOT	VSF25y	Upgrade/ Widen	VA 7100 (Fairfax Co Pkwy HOV)	US 50	VA 7735 (Fair Lakes Pkwy)	2	5	4	4+2	No	2035
VDOT	VSF25z	Upgrade /Widen	VA 7100 (Fairfax Co Pkwy HOV)	VA 7735 (Fair Lakes Pkwy)	I-66	2	5	6	6+2	No	2035
VDOT	VSF25g	Widen	VA 7100 (Fairfax Co Pkwy)	I-66	VA 123 (Ox Road)	5	5	4	6	No	2020
VDOT	VSF25n	Construct	VA 7100 (Fairfax County Parkway) Phase 1	VA 4600 (Fullerton Road)	Donegal La. / Hooes Rd.	0	1	0	4/6	Complete	2010
VDOT	VSF25na	Construct	VA 7100 (Fairfax County Parkway) Phase 3	Donegal La. / Hooes Rd.	VA 7900 (Franconia-Springfield Parkway)	0	1	0	6	Yes	2012
VDOT	BRAC	Construct	VA 7100 (Fairfax County Parkway) Interchange (Phase 3)	@ Franconia Springfield Parkway	Various movements; includes relocated Rolling Rd.	-	-	-	-	Yes	2012
VDOT	BRAC / VSF25nc	Construct	VA 7100 (Fairfax County Parkway) Interchange (Phase 2)	@ Rolling Rd. / EPG Access Road	Ramp movements: EB F.C.Pkwy to NB & SB Rolling Rd. via one ramp; NB Rolling Rd. to EB F.C.Pkwy; NB Rolling Rd. to WB F.C.Pkwy; WB F.C.Pkwy to NB & SB Rolling Rd. via one ramp;	-	-	-	-	Complete	2010
VDOT	BRAC / VSF25nd	Construct	VA 7100 (Fairfax County Parkway) Interchange (Phase 2)	@ Rolling Rd. / EPG Southern Loop Road (SLR)	Ramp movements: EPG (SLR) to NB F.C.Pkwy.; EPG (SLR) to SB F.C.Pkwy.	1	1	0	1/2	Complete	2010

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(Highway and HOV)

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						from	to	from	to		
						VDOT	BRAC / VSF25nb	Construct	VA 7100 (Fairfax County Parkway) Interchange (Phase 4)		
VDOT		Construct	VA 7100 (Fairfax County Parkway) Interchange (Phase 1)	@ Boudinat Drive (BD)	Ramp movements:NB BD to EB F. C. Parkway	-	-	0	2	Complete	2011
VDOT		Construct	VA 7100 Interchange	@ VA 7700 (Fair Lakes Pkwy) & Monument Dr.		2	5	4	6	No	2013
VDOT	VSF39	Widen	VA 7735 (Fair Lakes Pkwy) (3rd EB Lane)	VA 7100	Fair Lakes Circle	4	4	4	5	No	2013
VDOT	VSF26	Construct	VA 7900 HOV (Franconia-Springfield Parkway)	VA 7100 (Fairfax County Parkway)	VA 2677 (Frontier Drive)	5	5	-	2	No	2025
VDOT	VSF26a	Construct	VA 7900 HOV (Franconia-Springfield Parkway)	Interchange @ Neuman St.		1	1	-	-	No	2025
VDOT	VSF26b	Upgrade	VA 7900 HOV (Franconia-Springfield Parkway)	VA 638 (Rolling Rd.)	VA 617 (Backlick Rd.)	5	1	6+2	6+2	No	2025
VDOT	FED2	Widen/ construct	Old Mill Rd. (Future Mulligan Rd)	US 1	VA 611 (Telegraph Road)	4	4	2	4	No	2012
LOUDOUN COUNTY SECONDARY											
VDOT	VSL51	Construct	Atlantic Boulevard	VA 625 (Church Road)	VA 7	-	3	-	4	Yes	2012
VDOT	VSL1b	Widen/ Upgrade	VA 606 (Ldn Co. Pkwy) (nee Old Ox Rd.)	VA 634	VA 621	4	3	2	4	No	2020
VDOT	VSL10c	Construct	VA 607 (Loudoun County Pkwy)	VA 606 / VA 842	VA 772 / VA 607	0	3	0	4	Yes	2015
VDOT	VSL10bb	Widen/ Upgrade	VA 607 (Loudoun County Pkwy)	W&OD Trail	Redskin Park Drive	4	3	2	6	No	2025
VDOT	VSL10bf	Widen/ Upgrade	VA 607 (Loudoun County Pkwy) (dirt road)	Redskin Park Drive	Gloucester Parkway	4	3	2	4	No	2020
VDOT	VSL10bc	Widen	VA 607 (Loudoun County Pkwy)	Redskin Park Drive	Gloucester Parkway	3	3	4	6	No	2025
VDOT	VSL12d	Construct	VA 625 (Waxpool Rd.)	VA 2920 Faulkner Parkway	Unbridled Way	4	3	2	4	No	2012

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						from	to	from	to		
						VDOT	VSL45	Widen/ Upgrade	VA 643 (Sycolin Road) Phase II		
VDOT	VSL4a	Study	VA 659 (Belmont Ridge Rd.) - PE ONLY	National Rec. & Park Ent.	Dulles Greenway	4	3	2	4	No	not coded
VDOT	VSL4ab	Construct	VA 659 (Belmont Ridge Road)	Dulles Greenway	VA 7	4	3	2	4	No	2025
VDOT	VSL4ab	Widen	VA 659 (Belmont Ridge Road)	Dulles Greenway	VA 7	4	3	4	6	No	2035
VDOT	VSL4ab	Construct	VA 659 (Belmont Ridge Road)	VA 7	Russel Branch Parkway	4	3	2	4	No	2020
VDOT	VSL4e	Widen/ Upgrade	VA 659 (Gum Spring Rd.)	VA 620 (Braddock Road)	US 50	4	3	2	4	Yes	2015
VDOT	VSL4f	Widen/ Upgrade	VA 659 (Gum Spring Rd.)	Prince William County Line	VA 620 (Braddock Road)	4	3	2	4	No	2035
VDOT	VSL50	Widen/ Upgrade	VA 773 (Fort Evans Road)	Leesburg Town Limits	Kingsport Rd.	4	3	2	4	No	2015
VDOT	nrs	Construct	VA 868 (Davis Dr.)	VA 606 (Old Ox Road)	VA 846 (Sterling Blvd)	0	4	0	4	No	2025
VDOT	VSL46	Construct	VA 1036 (Pacific Boulevard)	Sterling Blvd.	Gloucester Parkway	0	3	0	4	Yes	2015
VDOT		Construct	VA 2150 (Gloucester Pkwy)	VA 607 (Loudoun County Pkwy)	VA 1036 (Pacific Blvd.)	0	3	0	4	No	2025
VDOT	VSL49	Construct	Russell Branch Parkway	VA 659 (Belmont Ridge Road)	Loudoun County Parkway	0	3	0	4	Yes	2025
PRINCE WILLIAM COUNTY SECONDARY											
VDOT	BRAC	Construct	Bypass Rd.	Russell Rd.	MDIA site entrance	0	3	0	2	No	2011
VDOT	VSP59	Construct	Peaks Mill (Purcell Road east)	Route 643 (Purcell Road)	Route 3000 (Prince William Parkway)	0	4	0	2	No	2035
VDOT	VSP39	Widen	Russell Road	I-95	Ponderosa Y-Gate	3	3	2	4	Complete	2011
VDOT	VSP25b	Widen	VA 1781 (NewTelegraph Rd/Summit School Road)	VA 849 (Caton Hill Road)	VA 640 (Minnieville Rd.)	4	4	2	4	No	2040
VDOT	VSP25c	Widen	VA 1781 (Telegraph Rd.)	VA 3000 (Prince William Parkway)	VA 849 (Caton Hill Rd.)	4	4	2	4	No	2040
VDOT	VSP23d	Widen	VA 3000 (Prince William Pkwy.)	VA 776 (Liberia Ave.)	Hoadly Rd.	2	2	4	6	No	2025

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						from	to	from	to		
						VDOT	VSP23e	Widen	VA 3000 (Prince William Pkwy.)		
VDOT	VSP23f	Widen	VA 3000 (Prince William Pkwy.)	Old Bridge Rd.	Minnieville Rd.	2	2	4	6	No	2020
VDOT	VSP3a	Widen/ Upgrade	VA 621 (Balls Ford Road)	VA 234 (Sudley Road)	Bethlehem Road	4	3	2	4	No	2040
VDOT	VSP3b	Widen/ Upgrade	VA 621 (Balls Ford Road)	Bethlehem Road	VA 234 Bypass	4	3	2	4	No	2040
VDOT	VSP5e	Widen	VA 640 (Minnieville Road)	VA 643 (Spriggs Road)	VA 234	3	3	2	4	No	2016
VDOT	VSP8a	Widen	VA 643 (Purcell Rd.)	VA 234 (Dumfries Rd.)	VA 642 (Hoadly Rd.)	3	3	2	4	No	2025
VDOT	VSP17b	Widen	VA 674 (Wellington Rd.)	VA 621 (Devlin Road)	VA 668 (Rixlew Lane)	3	3	2	4	No	2035
VDOT	VSP18	Widen	VA 676 (Catharpin Rd.)	VA 55 (John Marshall Highway)	Heathcote Blvd.	3	3	2	4	No	2040
VDOT	VSP20c	Widen/ Upgrade	VA 1392 (Rippon Boulevard Extension)	West of Wigeon Way	Rippon VRE Station	4	3	2	4	No	2040
VDOT	VSP47d	Construct	VA 840 (University Blvd.) (nee East-West Connector)	Route 660 (Hornbaker Road)	Sudley Manor Dr.	0	3	0	4	No	2016
VDOT		Widen	Hornbaker Rd.	N. of its intersection with University Blvd.	Thomason Barn Rd.			2	4	No	2016
VDOT	VSP62	Construct	Rollins Ford Rd.	Songsparrow Dr.	VA 215 (Vint Hill Rd.)	0		0	4	No	2016
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	No	2015
		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	No	2015
		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	No	2015
		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	No	2015
		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	No	2015

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(Highway and HOV)

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						from	to	from	to		
								Construct	I 95 : HOV / Bus / HOT Lanes: Ramp		
		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	No	2015
		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	No	2015
		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	No	2015
		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	No	2015
		Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	(St.Co.Airport Access Rd.) and Rt 652	SB GP Lanes to SB HOT Lanes	1	1	0	1	No	2015
		Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	(St.Co.Airport Access Rd.) and Rt 652	NB HOT Lanes to NB GP Lanes	1	1	0	1	No	2015
		Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	(St.Co.Airport Access Rd.) and Rt 652	SB HOT Lanes to SB GP Lanes	1	1	0	1	No	2015
		Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	(St.Co.Airport Access Rd.) and Rt 652	NB GP Lanes to NB HOT Lanes	1	1	0	1	No	2015
		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	No	2015
		Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Just South of Rappahannock River	SB HOT Lanes to SB GP Lanes	1	1	0	1	No	2015
		Construct	I 95 : HOV / Bus / HOT Lanes: Ramp	Just north of Rt 3	NB GP Lanes to NB HOT Lanes	1	1	0	1	No	2015
		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	No	2015
		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	No	2015
		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	No	2015
		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	No	2015
	FA11D	Reconstruct	I-95 interchange	Bypass)/Spotsylvania Parkway		1	1	0	0	No	2020
	FAP5F	Widen	US 1	Prince William County Line	US 17(Warrenton Rd)/VA 218	2	2	4	6	No	2020

2011 CLRP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
							FAP5I	Widen	US 1(Bridge Replacement)		
	FAP5B	Widen	US 1	Princess Anne St.	VA 3 (Plank Rd.)	2	2	4	6	No	2025
	FAP5E	Widen	US 1	VA 620 (Harrison Road)	Spotsylvania Parkway	2	2	4	8	No	2020
	FAP5H	Widen	US 1	Spotsylvania Parkway	VA 608 (Massaponax Church Rd)	2	2	4	6		2015
	FAP5K	Widen	US 1 Business	South City Limit Fredericks.	Jefferson Davis Highway	2	2	2	4		2015
	FAP5G	Widen	US 1	Rt 610	Rt 630	2	2	4	6	No	2025
		Reconstruct	US 1 interchange	at US 17						No	2015
	FAP6A	Widen	US 17 Bypass (Mills Dr.)	I-95	VA 2 (Tidewater Trail)	2	2	2	4	No	2015
	FAP6E	Widen	US 17 Business/VA 2	SCL Frederickburg	US 17 Bypass (Mills Dr.)	2	2	2	4		2035
	FAP6C	Widen	US 17 (Warrenton Rd.)	McLane Drive	Stafford Lakes Parkway	2	2	4	6	No	2015
	FAP6D	Widen	US 17 (Warrenton Rd.)	VA 654 (Bera Church Rd)	VA 612 (Hartwood Road)	2	2	4	6		2030
	FAP7	Widen	VA 218 (Butler Rd)	US 1	VA 218 (White Oak Rd.)	4	4	2	4	No	2025
	FAS23A	Construct	VA 208 Bypass (Spotsylvania)*	.5 mi. w. of VA 1437 on VA 608	.7 mi. w. of VA 606	0	3	0	2	ROW	2015
	FAS40	Widen	VA 208 (Courthouse Road)	US 1 (Jefferson Davis Hwy)	VA 628 (Station Road)	3	3	4	6		2035
FREDERICKSBURG											
	FAP5J	Widen	US 1 Business	Blue-Gray Parkway	South City Limit			2	4		2015
	FAU1	Widen	Fall Hill Ave.	Mary Wash. Blvd. ext.	Carl D. Silver Pkwy			2	4		2015
STAFFORD COUNTY SECONDARY											
	FAS43	Upgrade/ Intersection	VA 606 (Ferry Rd)	VA 3 (Kings Highway)	VA 608 (Brook Rd)	4	3				2030
	FAS37	Upgrade	VA 608 (Brooke Rd.)	VA 605 (New Hope Ch. Rd.)	Dead End	4	3			No	2035

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
							FAS3c	Widen	VA 610 (Garrisonville Rd.)		
	FAS3F	Upgrade/ Intersection	VA 610 (Garrisonville Rd.)	VA 643 (Joshua Road)	Fauquier County Line	4	3				2035
	FAS39	Widen	VA 610 (Garrisonville Rd.)	.13 miles west of VA 643 (Joshua Rd)	.42 miles east of VA 643 (Joshua Rd)	4	4	2	4		2015
	FAS3e	Widen	VA 610 (Garrisonville Rd.)	VA 648 (Shelton Shop Rd.)	VA 641 (Onville Rd)	4	3	5	6	No	2030
	FAS3d	Widen	VA 610 (Garrisonville Rd.)	VA 641 (Onville Rd)	VA 684 (Mine Rd)	4	3	4	6	No	2015
	FAS33	upgrade	VA 616 (Poplar Rd.)	VA 652 (Truslow Rd.)	Fauquier County Line	4	3			No	2035
	FAS34A	upgrade	VA 627 (Mountainview Rd.)	VA 648 (Stefaniga Rd.)	Centreport Pkwy.	4	3			No	2035
	FAS34B	upgrade	VA 627	VA 616	Choptank Rd.	4	3			No	2035
	FAS5b	Widen	VA 630 (Courthouse Rd)	VA 732 (Cedar Lane)	VA 648 (Shelton Shop Rd)	4	4	2	4	No	2025
	FAS41	upgrade	VA 637	I-95	Woodstock Ln.	4	3			No	2035
	FAS35	widen	VA 641 (Onville Rd.)	VA 610 (Garrisonville Rd.)	Quantico Base			2	4		2030
	FAS42	upgrade	VA 644	VA 627	VA 610	4	3			No	2035
	FAS13	Reconstruct	VA 648 (Shelton Shop Rd.)	VA 610 (Garrisonville Rd)	VA 627 (Mountainview Rd)	4	4	2	4	No	2025
SPOTSYLVANIA COUNTY SECONDARY											
	FAS22	Widen	VA 3 (Spotsylvania)	Chewing Lane	VA 627 (Gordon Rd.)	2	2	4	6	No	2015
	FAS27	Widen	VA 608 (Massaponax Church Rd.)	VA 628 (Smith Station Rd)	I-95	3	3	2	4	No	2025
	FAS31	Widen	VA 610 (Old Plank Rd.)	VA 627 (Gordon Rd.)	VA 612 (Catharpin Rd.)	4	4	2	4	No	2030
	FAS18c	Widen	VA 620 (Harrison Rd)	VA 3 (Plank Road)	VA 627 (Gordon Rd.)	4	4	2	4		2015
	FAS9b	Widen	VA 627 (Gordon Rd.)	VA 628 (Smith Station Rd)	VA 620 (Harrison Rd.)	4	4	2	4	No	2015
	FAS9C	Widen	VA 627 (Gordon Rd.)	VA 628 (Smith Station Rd)	VA 613 (Brock Road)	4	4	2	4		2035

Note: Shaded areas represent changes from the 2010 CLRP and FY2011-2016 TIP Amendments

2011 CLRP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

Agency	Project ID	Improv.	Facility	From	To	Facility		Lanes		Under Const. or ROW acquired?	Compl. Date or Status
						from	to	from	to		
							FAS28	Widen	VA 628 (Smith Station Rd)		
	FAS19	Widen	VA 636 (Mine Rd./ Hood Dr.)	VA 208 (Courthouse Rd.)	VA 638 (Lansdowne Rd.)	4	4	2	4	No	2025
	FAS36	Widen	VA 638 (Lansdowne Rd)	SCL Frederickburg	VA 636 (Mine Rd)	3	3	2	4		2035
	FAS20b	Widen	VA 639 (Leavells Rd.)	VA 208 (Courthouse Rd.)	VA 628 (Smith Station Rd.)	4	4	2	4	Yes	2025
	FAS20c	Widen	VA 639 (Bragg Rd.)	VA 618 (River Rd.)	VA 3	4	4	2	4	No	2015
	FAS38	Widen	VA 674 (Chancellor Rd.)	VA 610 (Old Plank Rd)	VA 627 (Gordon Rd.)	4	4	2	4		2035

APPENDIX C

Interagency and Public Involvement Process

National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202)962-3202

**NOTE: Illustration of monthly
Consultation letter**

March 14, 2011

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: Ronald F. Kirby
Director, Department of
Transportation Planning

SUBJECT: Consultation with respect to TPB plans and programs

Enclosure:

- 1) Agenda for March 16, 2011 TPB meeting

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

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

Item 7 is an action item in which the Board will be briefed on the comments received and recommended responses, and asked to approve project submissions for inclusion in the air quality conformity assessment of the 2011 Constrained Long Range Plan (CLRP). At the February 16 meeting, the Board was briefed on the major project changes submitted for inclusion in the air quality conformity assessment. The projects were released for a 30-day public comment period that ended March 12.

Item 8 is an action item in which the Board will be briefed on the comments received and recommended responses, and asked to approve the scope of work for the air quality conformity assessment of the 2011 CLRP. At the February 16 meeting, the Board was briefed on the draft scope of work which was released for a 30-day public comment period that ended March 12.

Item 9 is an action item in which the Board will be briefed on amendments to the FY 2011 Unified Planning Work Program (UPWP), and asked to approve FY 2011 UPWP carryover funding to FY 2012. In addition to carryover project changes, a new project amendment has been proposed to the FY 2011 UPWP technical assistance work programs to provide research support to the state DOT WMATA Governance Work Group. These amendments were recommended for approval by the TPB Technical Committee at its March 4 meeting.

Item 10 is an action item in which the Board will be briefed on, and asked to approve, the final version of the FY 2012 UPWP. The document was recommended for approval by the TPB Technical Committee on March 4, 2011. The draft FY 2012 UPWP was released for public comment on February 10.

Item 12 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 an air quality conformity assessment of an amendment to the 2010 CLRP to modify the I-95/395 HOV/HOT lanes project. The Board will also be asked to approve the scope of work for the air quality conformity assessment for the amendment. At the February 16 meeting, notice was provided that Virginia Department of Transportation (VDOT) had requested an amendment to the 2010 CLRP to remove the I-95/395 HOV/HOT lanes project and its components in its entirety, add a HOV/HOT lanes project on I-95 between I-495 and Garrisonville Road/Route 610 in Stafford County, and add a reversible one-lane ramp from the HOV lanes of I-395 to and from Seminary Road. VDOT has requested that widening of I-66 HOV and general purpose lanes between US 29 and Route 15 also be included in this amendment to the 2010 CLRP. Information on the project submissions for this amendment, and a draft air quality conformity analysis scope of work, were released for a 30-day public comment period on February 10.

National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202) 962-3202

MEETING NOTICE

Date: March 16, 2011
Time: 12 noon
Place: COG Board Room

A-G-E-N-D-A (BEGINS PROMPTLY AT NOON)

- | | | |
|----------|----|---|
| 12 noon | 1. | Public Comment on TPB Procedures and Activities Chair Bowser |
| | | 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 February 16 Meeting Chair Bowser |
| 12:25 pm | 3. | Report of Technical Committee Mr. Kellogg
Chair, Technical Committee |
| 12:30 pm | 4. | Report of Citizen Advisory Committee Mr. Dobelbower
Chair, Citizens Advisory Committee |
| 12:40 pm | 5. | Report of Steering Committee Mr. Kirby
Director, Department of
Transportation Planning (DTP) |
| 12:45 pm | 6. | Chair's Remarks Chair Bowser |

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

ACTION ITEMS

- 12:50 pm 7. **Review of Comments Received and Approval of Project Submissions for the Air Quality Conformity Assessment for the 2011 Financially Constrained Long Range Transportation Plan (CLRP)**

.....Mr. Kirby

At the February 16 meeting, the Board was briefed on the major project changes submitted for inclusion in the air quality conformity assessment for the 2011 CLRP which were released for a 30-day public comment period that ended March 12. The Board will be briefed on the comments received and recommended responses, and asked to approve project submissions for inclusion in the air quality conformity assessment for the 2011 CLRP.

Action: Adopt Resolution R10-2011 to approve project submissions for inclusion in the air quality conformity assessment for the 2011 CLRP.

- 1:00 pm 8. **Approval of Scope of Work for the Air Quality Conformity Assessment for the 2011 CLRP**

.....Ms. Posey, DTP

At the February 16 meeting, the Board was briefed on the draft scope of work for the air quality conformity assessment for the 2011 CLRP, which was released for a 30-day public comment period that ended March 12. The Board will be briefed on the comments received and recommended responses, and asked to approve the scope of work for the air quality conformity assessment for the 2011 CLRP.

Action: Approve the enclosed scope of work for the air quality conformity assessment for the 2011 CLRP.

- 1:05 pm 9. **Approval of Amendments to the FY 2011 Unified Planning Work Program (UPWP), and Approval of FY 2011 UPWP Carryover Funding to FY 2012**

..... Mr. Kirby

Certain projects and budgets in the current FY 2011 UPWP have been identified to be carried over to FY 2012. In addition, a new project amendment has been proposed to the FY 2011 UPWP technical assistance work programs to provide research support to the state DOT WMATA Governance Work Group (GWG). The Board will be briefed on the new project amendment, and on the enclosed amendments to the FY 2011 UPWP and associated FY 2011 carryover funding to FY 2012. These amendments were recommended for approval by the TPB Technical Committee at its March 4 meeting.

Action: Adopt Resolutions R11-2011 and R12-2011 to approve the amendments to the FY 2011 UPWP and the FY 2011 carryover funding to FY 2012.

1:15 pm 10. **Approval of FY 2012 Unified Planning Work Program (UPWP)**
..... Mr. Kirby

The Board will be briefed on the enclosed final version of the FY 2012 UPWP. The document was recommended for approval by the TPB Technical Committee on March 4. The draft FY 2012 UPWP was released for public comment on February 10.

Action: Adopt Resolution R13-2011 to approve the final FY 2012 UPWP.

1:20 pm 11. **Approval of FY 2012 Commuter Connections Work Program (CCWP)** Mr. Ramfos, DTP

The Board will be briefed on the enclosed final version of the FY 2012 CCWP. The document was recommended for approval by the TPB Technical Committee on March 4. The draft FY 2012 CCWP was released for public comment on February 10.

Action: Adopt Resolution R14-2011 to approve the final FY 2012 CCWP.

1:25 pm 12. **Review of Comments Received and Approval of Project Submissions for the Air Quality Conformity Assessment for an Amendment to the 2010 CLRP to Modify the I-95/395 HOV/HOT Lanes Project, Add a Ramp from the HOV Lanes of I-395 to Seminary Road, and Add the Extension of I-66 HOV and General Purpose Lanes from Route 29 to Route 15 in Prince William County, as Requested by the Virginia Department of Transportation (VDOT)**
.....Mr. Moore

At the February 16 meeting, notice was provided that VDOT had requested an amendment to the 2010 CLRP to remove the I-95/395 HOV/HOT lanes project and its components in its entirety, add a HOV/HOT lanes project on I-95 between I-495 and Garrisonville Road/Route 610 in Stafford County, and add a reversible one-lane ramp from the HOV lanes of I-395 to and from Seminary Road. In the enclosed letter of March 4, VDOT has requested that the widening of I-66 HOV and general purpose lanes between US 29 and Route 15 also be included in this amendment to the 2010 CLRP. These amendments to the plan will require an air quality conformity assessment. Information on the project submissions for this amendment and a draft air quality conformity analysis scope of work were released for a 30-day public comment period on February 10. 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, as described in the enclosed materials. The Board will also be asked to approve the enclosed scope of work for the air quality conformity assessment for the amendment.

Action: Adopt Resolution R15-2011 to approve the project submissions for the air quality conformity assessment for the amendment to the 2010 CLRP, and associated conformity assessment scope of work, to modify



Events Calendar



Events Calendar

February 10 2011

Title: Public Meeting on Proposed Changes to the CLRP
Start Time: 06:00 PM
End Time: 07:00 PM
Category: Meeting
Location: Training Center
Contact: Andrew Austin
Phone: (202) 962-3353
Email: [Andrew Austin](mailto:Andrew.Austin@mwco.org)
Description:

The National Capital Region Transportation Planning Board will hold a public meeting on Thursday, February 10, 6:00-7:00 p.m. to discuss proposed changes in the region's Constrained Long-Range Transportation Plan (CLRP). The meeting will be held on the main floor of the Metropolitan Washington Council of Governments (MWCOG), 777 N. Capitol St, NE, Washington, DC 20002.

Among other proposed modifications in the CLRP, the Virginia Department of Transportation (VDOT) has requested major changes in the HOT lanes project on I-395. The CLRP, which is updated annually, has a horizon of 2040 and includes all regionally significant transportation projects that are anticipated to be funded.

The project submissions for this year's CLRP, including project removals and delays, will be released for public comment on February 10. The public comment period will end on March 12. The TPB is scheduled to approve the project submissions on March 16. After this approval, the draft 2011 CLRP will be analyzed to ensure the plan meets federal air quality requirements. The TPB is scheduled to approve the final 2011 CLRP in November.

The public meeting on February 10 will feature a presentation on the draft plan and opportunity for questions and answers.

Document(s) for Download: [Agenda](#)
[Summary of Significant Additions and Changes Proposed for the 2011 Update to the CLRP](#)

? [Download Instructions](#)



Reasonable accommodations are provided for persons with disabilities. Please allow up to 7 business days to process requests.
Phone: 202.962.3300 or 202-962.3213 (TDD). Contact [Andrew Austin](mailto:Andrew.Austin@mwco.org) for assistance.
[Click here for more information.](#)

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**PUBLIC COMMENT PERIOD
FOR THE WASHINGTON |Region's
PROPOSED SUBMISSIONS FOR THE 2011
UPDATE TO THE CONSTRAINED
LONG-RANGE PLAN (CLRP),
AND AIR QUALITY CONFORMITY ANALYSIS**

The National Capital Region Transportation Planning Board (TPB) will initiate a 30-day public comment period for the proposed submissions for the 2011 update to the Constrained Long-Range Plan (CLRP), including an air quality conformity analysis, on February 10. This public comment period will extend through Saturday March 12, 2011. The TPB is scheduled to approve these submissions at its March 16, 2011 meeting. Members of the public are invited to review these draft documents on the COG website, www.mwcog.org/transportation. 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 air quality conformity analysis assesses the plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments.

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

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

**PUBLIC COMMENT PERIOD
FOR THE WASHINGTON REGION'S
PROPOSED SUBMISSIONS FOR THE
2011 UPDATE TO THE CONSTRAINED
LONG-RANGE PLAN (CLRP), AND
AIR QUALITY CONFORMITY ANALYSIS**

The National Capital Region Transportation Planning Board (TPB) will initiate a 30-day public comment period for the proposed submissions for the 2011 update to the Constrained Long-Range Plan (CLRP), including an air quality conformity analysis, on February 10. This public comment period will extend through Saturday March 12, 2011. The TPB is scheduled to approve these submissions at its March 16, 2011 meeting. Members of the public are invited to review these draft documents on the COG website, www.mwco.org/transportation/. 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 air quality conformity analysis assesses the plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments.

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

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

**PUBLIC COMMENT PERIOD
FOR THE WASHINGTON REGION'S PROPOSED
2011 UPDATE TO THE
CONSTRAINED LONG-RANGE PLAN (CLRP),
AND AIR QUALITY CONFORMITY ANALYSIS**

The National Capital Region Transportation Planning Board (TPB) will initiate a 30-day public comment period for the proposed 2011 update to the Constrained Long-Range Plan (CLRP), including an air quality conformity analysis, on October 13, 2011 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. These documents are scheduled to be approved at the November 16, 2011 TPB meeting. This public comment period will extend through 6 pm Saturday November 12, 2011. Members of the public are invited to review these draft documents on the COG website, www.mwco.org/transportation/. These materials may also be reviewed at COG.

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 plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments.

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

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

**PERIODO DE COMENTARIO PUBLICO
PARA LA REGION DE WASHINGTON PROPUESTA
DE ACTUALIZACIÓN DE 2011 A LA RESTRINGIDO
PLAN A LARGO PLAZO (CLRP), Y ANÁLISIS DE
CALIDAD DEL AIRE DE LA CONFORMIDAD**

La Region Capital Nacional Junta de Planificación de Transporte (TPB) se iniciará un período de 30 días de comentarios públicos para el proyecto de 2011 de actualización a la restringida Plan a Largo Plazo (CLRP), incluyendo un análisis de conformidad de la calidad del aire, el 13 de octubre de 2011 en el TPB ciudadano (CAC) de reuniones. El CAC se reúne de 6 pm a 8 pm en el Consejo Metropolitano de Washington de Gobiernos (COG), primer centro de conferencias en la planta, 777 N. Capitol St. NE, Washington, DC 20002. Estos documentos están programados para ser aprobadas en el 16 de Noviembre 2011 la reunión TPB. Este período de comentarios públicos se extenderá hasta las 6 pm Sábado, 12 de Noviembre 2011. Los miembros del publico son invitados para revisar estos documentos en el website de COG, www.mwcog.org/transportation/. Estos materiales tambien pueden ser revisados en COG.

El CLRP muestra el camino, el puente, los vehículos de alta ocupación (HOV), de tránsito, proyectos para ciclistas y peatones financiado a través del año 2040. El análisis de la calidad del aire conforme evalúa las modificaciones del plan y programa con respecto a los requisitos de calidad del aire en la década de 1990 la Ley de Aire Limpio Enmiendas.

Los miembros del público están invitados a presentar sus observaciones sobre los proyectos de documentos en línea en, www.mwcog.org/tpbpubliccomment/. Los comentarios escritos también pueden ser enviados a Metropolitan Washington.

**Council of Governments (COG)
777 N. Capitol St. NE, Suite 300
Washington, DC 20002.**

Para información adicional o para recibir asistencia especial, por favor llame (202) 962-3311 o (202) 962-3213 (TDD).

**PUBLIC COMMENT PERIOD
FOR THE WASHINGTON
REGION'S PROPOSED 2011
UPDATE TO THE CONSTRAINED
LONG-RANGE PLAN (CLRP), AND
AIR QUALITY CONFORMITY
ANALYSIS**

The National Capital Region Transportation Planning Board (TPB) will initiate a 30-day public comment period for the proposed 2011 update to the Constrained Long-Range Plan (CLRP), including an air quality conformity analysis, on October 13, 2011 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. These documents are scheduled to be approved at the November 16, 2011 TPB meeting. This public comment period will extend through 6 pm Saturday, November 12, 2011. Members of the public are invited to review these draft documents on the COG website, www.mwco.org/transportation/. These materials may also be reviewed at COG.

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 plan amendments and program with respect to the air quality requirements under the 1990 Clean Air Act Amendments.

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

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

APPENDIX D

Documentation of Emission Factor Development

Memorandum

Date: September 27, 2011
To: Jane Posey, TPB
From: Sunil Kumar, MWAQC
Subject: Documentation for Some MOBILE6 Inputs for 2016, 2020, 2030, and 2040 Ozone Season Day, Winter Season Day, and Annual Inventories for 2011 CLRP & 2012-2017 TIP

The purpose of this memorandum is to document the MOBILE6 inputs related to meteorology, fuel programs, Inspection & Maintenance (I&M) Programs, Anti Tempering Programs (ATP), additional state-specific emissions control programs, and NOx Rebuild Effects, which were used for developing the onroad emission inventories for calendar years 2016, 2020, 2030, and 2040 for the ozone season day, winter season day, and annual analyses for the 2011 CLRP & 2012-2017 TIP analysis. These inputs are being presented below.

Meteorology

Temperature and humidity used in the ozone SIP (May 2007), PM_{2.5} SIP (March 2008), and CO maintenance plan (September 1995) were used for the ozone season day, winter season day, and annual 2010 CLRP analyses respectively and are being presented below.

Ozone Season Day

Hour	Temperature (°F)	Relative Humidity (%)
1	70.7	84.0
2	74.3	76.5
3	78.6	66.7
4	82.3	59.3
5	85.5	52.9
6	88.1	48.8
7	90.0	45.0
8	91.2	42.1
9	91.9	42.2
10	92.5	43.1
11	92.1	42.3
12	91.0	43.6
13	89.2	47.6
14	86.7	52.3
15	82.8	60.4
16	80.3	67.2
17	78.6	72.2
18	77.7	74.4
19	76.7	78.1
20	75.4	80.9
21	74.9	79.5
22	74.7	79.4
23	74.2	79.3
24	73.6	81.1

Barometric Pressure (inches of mercury (Hg) – 29.8
Winter Season Day

Maximum Temperature (°F) = 33.0

Minimum Temperature (°F) = 53.0

Absolute Humidity (grains/lb) = 75

Annual

Hour	Temperature (°F)			Relative Humidity (%)		
	Winter/Season1 (Jan-Apr)	Summer/Season2 (May-Sep)	Fall/Season3 (Oct-Dec)	Winter/Season1 (Jan-Apr)	Summer/Season2 (May-Sep)	Fall/Season3 (Oct-Dec)
1	36.9	65.7	42.4	72.4	85.1	78.9
2	37.4	67.6	42.6	71.7	81.0	78.7
3	38.9	69.9	43.9	68.2	76.0	77.1
4	41.2	72.3	46.3	63.4	70.4	71.6
5	43.4	74.5	48.8	58.1	65.1	65.8
6	45.5	76.3	50.7	54.2	60.6	60.8
7	47.2	77.9	52.4	50.7	57.6	56.6
8	48.6	78.9	53.6	48.1	55.2	53.9
9	49.7	79.5	54.2	46.5	53.6	52.7
10	50.2	79.5	54.3	45.5	53.6	52.6
11	50.2	79.1	53.7	45.5	54.5	53.9
12	49.3	78.4	52.0	47.1	55.9	57.2
13	47.5	76.9	50.1	49.9	59.2	61.7
14	45.8	74.7	48.8	53.4	64.2	65.1
15	44.3	72.5	47.7	56.9	69.8	67.5
16	43.1	71.2	46.9	59.4	73.5	70.4
17	42.3	69.9	46.3	60.8	76.7	71.6
18	41.4	68.9	45.6	63.0	79.2	73.4
19	40.6	68.0	45.0	65.0	81.1	74.9
20	39.8	67.3	44.6	66.5	82.5	75.8
21	39.0	66.6	44.1	68.0	83.5	76.8
22	38.2	66.2	43.6	69.3	84.3	78.1
23	37.6	65.8	43.2	71.0	84.7	78.1
24	37.2	65.3	42.7	72.0	85.5	79.1

Barometric Pressure (inches of mercury (Hg) – 29.9 (All three seasons)

Fuel Programs

Separate sets of input files were created to model emission factors corresponding to travel in the COG region for each analysis years 1) on network and local roadways, 2) during auto access to transit, and 3) by diesel transit and school buses. While network, local, and auto-access facilities were modeled on a county level, buses were modeled on a regional level. For this reason, two separate sets of fuel programs were developed and are being provided below. Ether & Ethanol oxygen content and market share data are based on the Energy Policy Act (2005) and therefore common for network, local, and auto-access facilities and buses.

Network, Local, Auto-Access

Season	DC - RFG ^a			MD - RFG Counties			MD - NonRFG Counties	VA - RFG Counties			VA - NonRFG Counties
	Gas S ^b (ppm)	RVP	HWY Diesel S (ppm)	Gas S (ppm)	RVP	HWY Diesel S (ppm)	RVP	Gas S (ppm)	RVP	HWY Diesel S (ppm)	RVP
Winter	30.0	10.2	11.0	30.0	11.6	14.8	12.1	30.0	12.9	11.0	12.9
Summer/ Ozone Season	30.0	6.8	11.0	30.0	6.9	8.8	8.2	30.0	6.8	11.0	8.4
Fall	30.0	10.1	11.0	30.0	10.9	9.7	11.5	30.0	12.9	11.0	12.9

^a RFG = Reformulated Gasoline

^b S = Sulfur

Notes:

1. Season average RVP values were developed from monthly RVP values provided by states.
2. Gas & Highway Diesel Sulfur values are Mob6 defaults except for Maryland, which provided its own monthly Highway Diesel Sulfur values (email from M. Khan, MDE dt. 03.10.09).

Bus

Season	Gas S (ppm)	RVP	HWY Diesel S (ppm)
Winter	30.0	12.1	12.5
Summer/ Ozone Season	30.0	6.9	10.1
Fall	30.0	11.8	10.5

Network, Local, Auto-Access, & Bus

Season	Ether Oxy. Content (% by wt)	Ether Market Share (%)	Ethanol Oxy. Content (% by wt.)	Ethanol Market Share (%)
Winter	0.0	0.0	3.5	100.0
Summer/ Ozone Season	0.0	0.0	3.5	100.0
Fall	0.0	0.0	3.5	100.0

Note: Ether & Ethanol Oxygen Content and Market Share data are based on Energy Policy Act (2005).

I/M Programs

Details of the format for the I/M programs listed here can found in the Mobile6 model user guide.

District of Columbia

- * Inspection and Maintenance (I/M) Source File - DCpost2004.IM
- * FEBRUARY 8, 2006
- * District of Columbia's I/M input parameters for MOBILE6 for year 2004 and beyond:
- * The actual start date of the IM240 was 1999
- * The actual start date of the OBD testing was 2004
- * The dates used below for IM240 and OBD testing are needed to obtain the appropriate I/M credit in MOBILE6.

> Exhaust I/M - LDV pre-83 MY IDLE test program #1	
I/M PROGRAM	: 1 1983 2050 2 T/O IDLE
I/M MODEL YEARS	: 1 1972 1983
I/M VEHICLES	: 1 22222 11111111 1
I/M STRINGENCY	: 1 20.0
I/M COMPLIANCE	: 1 96.0
I/M WAIVER RATES	: 1 3.0 3.0
I/M EXEMPTION AGE	: 1 25.0

> Exhaust I/M - LDV MY 84-95 IM240 test program #2 (DC IM240 Start:1999)
I/M PROGRAM : 2 1983 2050 2 T/O IM240
I/M MODEL YEARS : 2 1984 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 20.0
I/M COMPLIANCE : 2 96.0
I/M WAIVER RATES : 2 3.0 3.0
I/M CUTPOINTS : 2 IM ATP\DC.C02
I/M EXEMPTION AGE : 2 25.0

> Evap I/M - LDV pre-95 MY Gas Cap pressure test program #3
I/M PROGRAM : 3 1999 2050 2 T/O GC
I/M MODEL YEARS : 3 1972 1995
I/M VEHICLES : 3 22222 11111111 1
I/M COMPLIANCE : 3 96.0
I/M WAIVER RATES : 3 3.0 3.0
I/M EXEMPTION AGE : 3 25.0

> Exhaust I/M - LDV post-96 MY OBD test program #4(DC OBD Start:Jan 2004)
I/M PROGRAM : 4 1983 2050 2 T/O OBD I/M
I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M STRINGENCY : 4 20.0
I/M COMPLIANCE : 4 96.0
I/M WAIVER RATES : 4 3.0 3.0
I/M EXEMPTION AGE : 4 25.0

> Evap I/M - LDV post-96 OBD Evap test program #5(DC OBD Start:Jan 2004)
I/M PROGRAM : 5 1999 2050 2 T/O EVAP OBD & GC
I/M MODEL YEARS : 5 1996 2050
I/M VEHICLES : 5 22222 11111111 1
I/M STRINGENCY : 5 20.0
I/M COMPLIANCE : 5 96.0
I/M WAIVER RATES : 5 3.0 3.0
I/M EXEMPTION AGE : 5 25.0

> Exhaust I/M - HDGV IDLE program #6
I/M PROGRAM : 6 1983 2050 2 T/O IDLE
I/M MODEL YEARS : 6 1972 2050
I/M VEHICLES : 6 11111 22222111 1
I/M STRINGENCY : 6 20.0
I/M COMPLIANCE : 6 96.0
I/M WAIVER RATES : 6 3.0 3.0
I/M EXEMPTION AGE : 6 25.0

Maryland

- >IM Program as described in post-2009 RFP. Idle, OBD, and Mandatory Gas Cap for Non-OBD Vehicles.
- >Waiver rates based on rates observed for January - June 2006 initial tests through 18 months after testing.
- >Gas Cap waver rate is performance standard.
- >Stringency based on July - December 2007

*Idle older LDGV, LDGT	
I/M PROGRAM	: 1 1984 2050 2 T/O Idle
I/M MODEL YEARS	: 1 1977 1995
I/M VEHICLES	: 1 22222 11111111 1
I/M STRINGENCY	: 1 17.9
I/M COMPLIANCE	: 1 96.0
I/M WAIVER RATES	: 1 13.7 13.7
I/M GRACE PERIOD	: 1 2

*Idle HDGT	
I/M PROGRAM	: 2 1984 2050 2 T/O Idle
I/M MODEL YEARS	: 2 1977 2050
I/M VEHICLES	: 2 11111 22222111 1
I/M STRINGENCY	: 2 17.9
I/M COMPLIANCE	: 2 96.0
I/M WAIVER RATES	: 2 13.7 13.7
I/M GRACE PERIOD	: 2 2

*OBD	
I/M PROGRAM	: 3 1984 2050 2 T/O OBD I/M
I/M MODEL YEARS	: 3 1996 2050
I/M VEHICLES	: 3 22222 11111111 1
I/M STRINGENCY	: 3 17.9
I/M COMPLIANCE	: 3 96.0
I/M WAIVER RATES	: 3 6.3 6.3
I/M GRACE PERIOD	: 3 2

*OBD Evap (Actual Start Year: July 2002)	
I/M PROGRAM	: 4 2002 2050 2 T/O EVAP OBD
I/M MODEL YEARS	: 4 1996 2050
I/M VEHICLES	: 4 22222 11111111 1
I/M COMPLIANCE	: 4 96.0
I/M WAIVER RATES	: 4 6.3 6.3
I/M GRACE PERIOD	: 4 2

*Gas Cap older LDGV, LDGT	
I/M PROGRAM	: 5 2009 2050 2 T/O GC
I/M MODEL YEARS	: 5 1977 1995
I/M VEHICLES	: 5 22222 11111111 1
I/M COMPLIANCE	: 5 96.0
I/M WAIVER RATES	: 5 3.0 3.0
I/M GRACE PERIOD	: 5 2

*Gas Cap HDGT	
I/M PROGRAM	: 6 2009 2050 2 T/O GC
I/M MODEL YEARS	: 6 1977 2050
I/M VEHICLES	: 6 11111 22222111 1
I/M COMPLIANCE	: 6 96.0
I/M WAIVER RATES	: 6 3.0 3.0
I/M GRACE PERIOD	: 6 2

Virginia

Alexandria, Arlington County, Fairfax County, and Prince William

* Virginia's 2009 I/M programs for Alexandria, Arlington County, Fairfax County, and Prince William County.

* I/M Effectiveness reported in Program #3 applies to all exhaust programs modeled as TRC.

* First 4 years exempt.

> Exhaust I/M - IDLE test program #1
I/M PROGRAM : 1 1983 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 1 1968 1980
I/M VEHICLES : 1 22222 21111111 1
I/M STRINGENCY : 1 35
I/M COMPLIANCE : 1 98.0
I/M WAIVER RATES : 1 2.5 2.5
I/M EXEMPTION AGE : 1 24

> Exhaust I/M - ASM final program #2
I/M PROGRAM : 2 1983 2050 2 TRC ASM 2525/5015 FINAL
I/M MODEL YEARS : 2 1981 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 35
I/M COMPLIANCE : 2 98.0
I/M WAIVER RATES : 2 2.5 2.5
I/M EXEMPTION AGE : 2 24

> Exhaust I/M - OBD test program #3
I/M PROGRAM : 3 1983 2050 2 TRC OBD I/M
I/M MODEL YEARS : 3 1996 2050
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 35
I/M COMPLIANCE : 3 98.0
I/M WAIVER RATES : 3 2.5 2.5
I/M EXEMPTION AGE : 3 24
I/M EFFECTIVENESS : 0.94 0.94 0.94
I/M GRACE PERIOD : 3 4

> Evap I/M - Evap OBD test program #4
I/M PROGRAM : 4 1998 2050 2 TRC EVAP OBD & GC
I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M COMPLIANCE : 4 98.0
I/M WAIVER RATES : 4 2.5 2.5
I/M EXEMPTION AGE : 4 24
I/M GRACE PERIOD : 4 4

> Evap I/M - Gas Cap test program #5
I/M PROGRAM : 5 1998 2050 2 TRC GC
I/M MODEL YEARS : 5 1973 1995
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 98.0
I/M WAIVER RATES : 5 2.5 2.5
I/M EXEMPTION AGE : 5 24

> Exhaust I/M - IDLE test program #6
I/M PROGRAM : 6 1983 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 6 1981 2050
I/M VEHICLES : 6 11111 21111111 1
I/M STRINGENCY : 6 35
I/M COMPLIANCE : 6 98.0
I/M WAIVER RATES : 6 2.5 2.5
I/M EXEMPTION AGE : 6 24
I/M GRACE PERIOD : 6 4

> Evap I/M - Gas Cap test program #7
I/M PROGRAM : 7 1998 2050 2 TRC GC
I/M MODEL YEARS : 7 1973 2050
I/M VEHICLES : 7 11111 21111111 1
I/M COMPLIANCE : 7 98.0
I/M WAIVER RATES : 7 2.5 2.5
I/M EXEMPTION AGE : 7 24
I/M GRACE PERIOD : 7 4

Loudoun and Stafford

- * Virginia's 2009 I/M programs for Loudoun and Stafford Counties.
- * I/M Effectiveness reported in Program #3 applies to all exhaust programs modeled as TRC.
- * First 4 years exempt.

> Exhaust I/M - IDLE test program #1
I/M PROGRAM : 1 1998 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 1 1968 1980
I/M VEHICLES : 1 22222 21111111 1
I/M STRINGENCY : 1 35
I/M COMPLIANCE : 1 98.0
I/M WAIVER RATES : 1 2.5 2.5
I/M EXEMPTION AGE : 1 24

> Exhaust I/M - ASM final program #2
I/M PROGRAM : 2 1998 2050 2 TRC ASM 2525/5015 FINAL
I/M MODEL YEARS : 2 1981 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 35
I/M COMPLIANCE : 2 98.0
I/M WAIVER RATES : 2 2.5 2.5
I/M EXEMPTION AGE : 2 24

> Exhaust I/M - OBD test program #3
I/M PROGRAM : 3 1998 2050 2 TRC OBD I/M
I/M MODEL YEARS : 3 1996 2050
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 35
I/M COMPLIANCE : 3 98.0
I/M WAIVER RATES : 3 2.5 2.5
I/M EXEMPTION AGE : 3 24
I/M EFFECTIVENESS : 0.94 0.94 0.94
I/M GRACE PERIOD : 3 4

> Evap I/M - Evap OBD test program #4
I/M PROGRAM : 4 1998 2050 2 TRC EVAP OBD & GC
I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M COMPLIANCE : 4 98.0
I/M WAIVER RATES : 4 2.5 2.5
I/M EXEMPTION AGE : 4 24
I/M GRACE PERIOD : 4 4

> Evap I/M - Gas Cap test program #5
I/M PROGRAM : 5 1998 2050 2 TRC GC
I/M MODEL YEARS : 5 1973 1995
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 98.0
I/M WAIVER RATES : 5 2.5 2.5
I/M EXEMPTION AGE : 5 24

> Exhaust I/M - IDLE test program #6
I/M PROGRAM : 6 1998 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 6 1981 2050
I/M VEHICLES : 6 11111 21111111 1
I/M STRINGENCY : 6 35
I/M COMPLIANCE : 6 98.0
I/M WAIVER RATES : 6 2.5 2.5
I/M EXEMPTION AGE : 6 24
I/M GRACE PERIOD : 6 4

> Evap I/M - Gas Cap test program #7
I/M PROGRAM : 7 1998 2050 2 TRC GC
I/M MODEL YEARS : 7 1973 2050
I/M VEHICLES : 7 11111 21111111 1
I/M COMPLIANCE : 7 98.0
I/M WAIVER RATES : 7 2.5 2.5
I/M EXEMPTION AGE : 7 24
I/M GRACE PERIOD : 7 4

Cut-Points

District of Columbia

Details of the format for the cut-points listed here can found in the Mobile6 model user guide.

Calendar Year: 2016

- * District of Columbia IM cutpoints - applies to calendar year 2016
- * Air Quality Division, District Department of the Environment

>

I/M CUTPOINTS
* Model Years
* 16 15 14 13 12 11 10 09 08 07
* 06 05 04 03 02 01 00 99 98 97
* 96 95 94 93 92

* Block 1 (LDGV, Light LDGT1(EPA LD1))									
0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
0.800	1.200	1.200	1.200	1.200					
15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
15.000	20.000	20.000	20.000	20.000					
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
2.000	2.500	2.500	2.500	2.500					

* Block 2 (Heavy LDGT1, Light LDGT2 (EPA LD2&3))									
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	2.400	2.400	2.400	2.400					
20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
20.000	60.000	60.000	60.000	60.000					
2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
2.500	3.000	3.000	3.000	3.000					

* Block 3 (Heavy LDGT2(EPA LD4))									
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400					
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000					
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.500	4.500	4.500	4.500					

* Block 4 (HDGV)									
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	3.000
3.000	3.000	3.000	3.000	3.000					
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000					
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	6.000
6.000	6.000	6.000	6.000	6.000					

Calendar Year: 2020

* District of Columbia IM cutpoints - applies to calendar year 2020

* Air Quality Division, District Department of the Environment

>

I/M CUTPOINTS									
* Model Years									
* 20	19	18	17	16	15	14	13	12	11
* 10	09	08	07	06	05	04	03	02	01
* 00	99	98	97	96					

* Block 1 (LDGV, Light LDGT1(EPA LD1))									
0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
0.800	0.800	0.800	0.800	0.800					
15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
15.000	15.000	15.000	15.000	15.000					
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
2.000	2.000	2.000	2.000	2.000					

* Block 2 (Heavy LDGT1, Light LDGT2 (EPA LD2&3))									
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	1.000	1.000	1.000	1.000					
20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
20.000	20.000	20.000	20.000	20.000					
2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
2.500	2.500	2.500	2.500	2.500					

* Block 3 (Heavy LDGT2(EPA LD4))									
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400					
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000					
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000					

* Block 4 (HDGV)									
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	3.000	3.000					
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000					
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	6.000	6.000					

Calendar Year: 2030

- * District of Columbia IM cutpoints - applies to calendar year 2030
- * Air Quality Division, District Department of the Environment

>

I/M CUTPOINTS									
* Model Years									
* 30	29	28	27	26	25	24	23	22	21
* 20	19	18	17	16	15	14	13	12	11
* 10	09	08	07	06					

* Block 1 (LDGV, Light LDGT1(EPA LD1))									
0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
0.800	0.800	0.800	0.800	0.800					
15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
15.000	15.000	15.000	15.000	15.000					
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
2.000	2.000	2.000	2.000	2.000					

* Block 2 (Heavy LDGT1, Light LDGT2 (EPA LD2&3))									
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	1.000	1.000	1.000	1.000					
20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
20.000	20.000	20.000	20.000	20.000					
2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
2.500	2.500	2.500	2.500	2.500					

* Block 3 (Heavy LDGT2(EPA LD4))									
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400					
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000					
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000					

* Block 4 (HDGV)									
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
2.400	2.400	2.400	2.400	2.400					
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
60.000	60.000	60.000	60.000	60.000					
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
4.000	4.000	4.000	4.000	4.000					

Calendar Year: 2040

- * District of Columbia IM cutpoints - applies to calendar year 2040
- * Air Quality Division, District Department of the Environment

>

I/M CUTPOINTS									
* Model Years									
* 40	39	38	37	36	35	34	33	32	31
* 30	29	28	27	26	25	24	23	22	21
* 20	19	18	17	16					

Anti-Tampering Programs (ATP)

Anti-tampering Program Parameters for DC

Program Parameters	Recent Update
Program Start Year	1983
First Model Year	1968
Last Model Year	2050
Program Type	Test Only
Inspection Frequency	Biennial
Compliance Rate (%)	96
LDGV	Yes
LDGT1	Yes
LDGT2	Yes
LDGT3	Yes
LDGT4	Yes
HDGV2B	Yes
HDGV3	Yes
HDGV4	Yes
HDGV5	Yes
HDGV6	Yes
HDGV7	No
HDGV8A	No
HDGV8B	No
GAS BUS	No
Inspections Performed	
Air pump system disablement	No
Catalyst removal	Yes
Fuel inlet restrictor disablement	Yes
Tailpipe lead deposit test	No
EGR disablement	No
Evaporative system disablement	No
PCV system disablement	No
Missing gas cap	Yes

Anti-tampering Program Parameters for Maryland

Program Parameters	Recent Update ^{**}
Program Start Year	1989
First Model Year	1977
Last Model Year	2050
Program Type	Test Only
Inspection Frequency	Biennial
Compliance Rate (%)	96
Vehicle Types	
LDGV	Yes
LDGT1	Yes
LDGT2	Yes
LDGT3	Yes
LDGT4	Yes
HDGV2B	Yes
HDGV3	Yes
HDGV4	Yes
HDGV5	Yes
HDGV6	Yes
HDGV7	No
HDGV8A	No
HDGV8B	No
GAS BUS	No
Inspections Performed	
Air pump system disablement	No
Catalyst removal	Yes
Fuel inlet restrictor disablement	Yes
Tailpipe lead deposit test	No
EGR disablement	No
Evaporative system disablement	No
PCV system disablement	No
Missing gas cap	Yes
* Maryland's ATP applies to all counties except St. Mary's County.	

Anti-tampering Program Parameters for Virginia*

Program Parameters	Recent Update
Program Start Year	1989**
First Model Year	1968
Last Model Year	2050
Program Type	Test and Repair Computerized***
Inspection Frequency	Biennial
Compliance Rate (%)	98
Vehicle Types	
LDGV	Yes
LDGT1	Yes
LDGT2	Yes
LDGT3	Yes
LDGT4	Yes
HDGV2B	Yes
HDGV3	No
HDGV4	No
HDGV5	No
HDGV6	No
HDGV7	No
HDGV8A	No
HDGV8B	No
GAS BUS	No
Inspections Performed	
Air pump system disablement	Yes
Catalyst removal	Yes
Fuel inlet restrictor disablement	No
Tailpipe lead deposit test	No
EGR disablement	Yes
Evaporative system disablement	Yes
PCV system disablement	Yes
Missing gas cap	Yes
<p>*Virginia's ATP applies to all jurisdictions except Clark and Spotsylvania counties.</p> <p>**ATP start year is 1998 for Loudoun and Stafford Counties.</p> <p>***Modeled as Test Only (T/O). Per Mobile6 User's Guide (Section 2.8.9.3), EPA no longer support test and repair Benefit discount.</p>	

Additional State-Specific Control Programs

Maryland adopted CAL-LEV II program and it is applicable for any evaluation year beginning 2011. Therefore, this program was modeled for all four conformity analysis years. Following auxiliary files provided by the Maryland Department of the Environment (MDE) staff were used to model the above program for Maryland jurisdictions. Details of the format for these auxiliary files can be found in the Mobile6 model user guide.

LevIIExh.S11 (T2 EXH PHASE-IN)

T2 EXH PHASE-IN
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.100,0.100,0.250,0.250,0.598,0.653,0.653,0.653,0.683
0.000,0.000,0.000,0.300,0.300,0.550,0.550,0.200,0.144,0.144,0.144,0.113
0.000,0.000,0.000,0.200,0.200,0.100,0.100,0.101,0.101,0.101,0.101,0.102
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.061,0.061,0.061,0.061,0.061
0.386,0.787,1.000,0.400,0.400,0.100,0.100,0.040,0.041,0.041,0.041,0.041
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.614,0.213,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.100,0.100,0.250,0.250,0.598,0.653,0.653,0.653,0.683
0.000,0.000,0.000,0.300,0.300,0.550,0.550,0.200,0.144,0.144,0.144,0.113
0.000,0.000,0.000,0.200,0.200,0.100,0.100,0.101,0.101,0.101,0.101,0.102
0.386,0.787,1.000,0.400,0.400,0.100,0.100,0.061,0.061,0.061,0.061,0.061
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.040,0.041,0.041,0.041,0.041
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.614,0.213,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.000
0.000,0.000,0.000,0.100,0.100,0.250,0.250,0.598,0.653,0.653,0.653,0.683
0.000,0.000,0.000,0.300,0.300,0.550,0.550,0.200,0.144,0.144,0.144,0.113
0.000,0.000,0.000,0.200,0.200,0.100,0.100,0.101,0.101,0.101,0.101,0.102
0.386,0.787,1.000,0.400,0.400,0.100,0.100,0.061,0.061,0.061,0.061,0.061
0.000,0.000,0.000,0.000,0.000,0.000,0.000,0.040,0.041,0.041,0.041,0.041

LevIIEvP.S11 (T2 EVAP PHASE-IN)

T2 EVAP PHASE-IN
0.25,0.50,0.75,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
0.25,0.50,0.75,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
0.25,0.50,0.75,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
0.00,0.00,0.00,0.00,0.50,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
0.00,0.00,0.00,0.00,0.50,1.00,1.00,1.00,1.00,1.00,1.00,1.00/

LevIIStd.d (T2 CERT)

T2 CERT

0.000	0.000	0.000	0.000	0.000
0.007	0.007	0.007	0.007	0.007
0.040	0.040	0.040	0.040	0.040
0.051	0.051	0.051	0.051	0.051
0.040	0.040	0.040	0.040	0.040
0.075	0.075	0.075	0.075	0.075
0.100	0.100	0.100	0.125	0.125
0.075	0.075	0.100	0.140	0.140
0.125	0.125	0.125	0.160	0.195
0.040	0.040	0.050	0.100	0.117
0.075	0.075	0.100	0.160	0.195
0.000	0.000	0.000	0.000	0.000

0.000	0.000	0.000	0.000	0.000
1.700	1.700	1.700	1.700	1.700
1.700	1.700	1.700	1.700	1.700
1.700	1.700	1.700	1.700	1.700
1.700	1.700	1.700	1.700	1.700
3.400	3.400	3.400	3.400	3.400
3.400	3.400	3.400	3.400	3.400
3.400	3.400	3.400	3.400	3.400
3.400	3.400	3.400	3.400	3.400
1.700	1.700	2.200	4.400	5.000
3.400	3.400	4.400	4.400	5.000
0.000	0.000	0.000	0.000	0.000

0.000	0.000	0.000	0.000	0.000
0.014	0.014	0.014	0.014	0.014
0.021	0.021	0.021	0.021	0.021
0.029	0.029	0.029	0.029	0.029
0.050	0.050	0.050	0.050	0.050
0.050	0.050	0.050	0.050	0.050
0.140	0.140	0.140	0.140	0.140
0.200	0.200	0.200	0.200	0.200
0.400	0.400	0.400	0.400	0.400
0.200	0.200	0.400	0.400	0.600
0.200	0.200	0.400	0.400	0.600
0.000	0.000	0.000	0.000	0.000/

LevII94.S11 (94+ LDG IMP)

94+ LDG IMPLEMENTATION

- * The data is divided into 5 blocks, one each for LDGV, LDGT1, LDGT2, LDGT3, and LDGT4. In each data block there is one data line for each calendar year from 1994 to 2025. Each line contains the phase-in values for that year for 11 different vehicle standards categories.
- * The first column is Tier0 the second is intermediate Tier1, the third is Tier1, and the fourth column is Tier2. The remaining columns are intermediate TLEV, TLEV, intermediate LEV, LEV, intermediate ULEV, ULEV, and ZEV. These are the standards categories defined by the California LEV program.

* LDGV										
* T0	T1	T1	T2	TLEV	TLEV	LEV	LEV	ULEV	ULEV	ZEV
*(int)		(int)	(int)	(int)	(int)					
0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.3	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.6	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.99	0.0	0.0	0.0	0.0	0.0	0.0	0.01
0.0	0.0	0.0	0.986	0.0	0.0	0.0	0.0	0.0	0.0	0.014
0.0	0.0	0.0	0.986	0.0	0.0	0.0	0.0	0.0	0.0	0.014
0.0	0.0	0.0	0.986	0.0	0.0	0.0	0.0	0.0	0.0	0.014

Memo

To: Air Quality Conformity Files
From: Eulalie G. Lucas
Date: 11/10/2011
Re: Inputs to MOBILE6 Emissions Factor Development: Ozone season, Wintertime CO and PM_{2.5} Annual.

Introduction

This memo documents updates to the preparation of mobile emission rates associated with the air quality analysis of the Air Quality Conformity Determination of the 2011 CLRP. Inputs for this analysis are for typical ozone, winter day and for annual conditions.

Procedures used in the development of MOBILE6.2 inputs decks have not changed and detailed information is available in a January 27, 2003 memo to the Council of Governments (COG) staff from Maureen Mullen of EH Pechan staff. This memo is contained in previous air quality conformity determination reports, e.g., the October 19, 2005 report for the 2005 CLRP and the FY 2006-2011 TIP

Process and Inputs

Development of MOBILE6.2 input decks is an inter-departmental work task. COG's Department of Environmental Programs (DEP) staff requests non- travel related inputs from the states and the District of Columbia air agency staff. DTP staff incorporates these inputs into MOBILE input decks and the decks are returned to DEP staff for review and approval. Once input files are approved the MOBILE model is executed and emission rates are generated. Rates are then applied along with travel data using COG's post-processor, for all milestone years.

The following tables describe and list either Mobile default values or a reference to a local data source. Table 1 shows command line information specific to the current analysis as well as input requirement with a description of these inputs. Table 2 shows trip length distributions and Table 3 shows LEV implementation schedules for COG's non-attainment areas as described in the one-hour and eight-hour ozone day State Implementation Plans. Table 4 is summary of scenarios by analysis type along with a brief description. Table 5 contains values for the distribution of engine starts for three modes stabilized, cold and hot for each hour of the day, separately for weekdays and weekends. Included in this appendix is a memo from Daivamani Sivasailam documenting 2008 vehicle registration and diesel sales fractions, these two inputs vary by jurisdiction and contribute significantly to emission rates development.

Results

Tables 6, 7 and 8 show Vehicle Miles of Travel (VMT) fractions for the three traffic streams modeled: network, local roads and auto access to transit. MOBILE6.2 default heavy duty truck VMT percents are replaced to represent local conditions for network and local roads. The network traffic stream includes all vehicle types and all facility types. Local roads traffic stream accounts for VMT on facility types that are not represented on our network and has a significantly lower heavy duty truck percent. Auto-access to transit traffic stream represents VMT associated with trips made to access transit and does not include heavy duty trucks. Table 9 shows the percent VMT mix associated with school and transit bus operation. Year 2016 is illustrated here but all milestone years are available upon request.

Updates

Part one of this appendix is a memo from Sunil Kumar dated September 27, 2011. His memo lists updates specified by the District of Columbia, Maryland and Virginia air management agencies.

Table 1

**MOBILE62 Run Information Common to All COG Counties
For Ozone day, Annual Runs and Winter CO**

Command	Input	Description
MOBILE6 INPUT FILE	No input required.	Specific to Jurisdiction
REPORT FILE	No input required.	Specifies name for descriptive output file(s).
EMISSIONS TABLE	User-supplied	Specifies a file name for the database output file.
SPREADSHEET	User-supplied	Instructs MOBILE6 to output the average calendar year emission factors in a form suitable for direct input into a spreadsheet program.
POLLUTANTS*	Specific to seasonal runs	Controls which HC, CO, and NOx pollutants will be calculated and output to the database report and descriptive output.
PARTICULATE EF ⁺	PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV	Used for seasonal runs particulate matter (PM _{2.5}) and NOx as a precursor for PM _{2.5} .
EXPRESS HC AS VOC ⁺	No input required.	Directs MOBILE6 to output exhaust HC as volatile organic compounds.
EXPAND EVAPORATIVE ⁺	No input required.	Six evaporative emission types in descriptive output.
EXPAND EXHAUST ⁺	No input required.	Start, running and total exhaust EFs displayed in descriptive output.
NO REFUELING ⁺	No input required.	“zero ” for refueling (Stage 2) emissions.
WE DA TRI LEN DI	Varies. .	Table 2 Varies by time range
94+ LDG IMP	User-supplied	1994 and later fleet penetration fractions for light-duty gasoline vehicles under the Tier 1, NLEV (or California LEV 1), and Tier 2 standards. Table 3
REBUILD EFFECTS	Values supplied by state air agency staff.	Rebuild program effectiveness rate used to reduce heavy-duty diesel vehicle NOx off-cycle emissions for years 2009 and beyond Vary by state: DC 11%,MD 90%, VA 25%
REG DIST	Vary by jurisdiction	2008 Vehicle Registration specific to jurisdiction for 16 composite vehicles types. Updated every three years. See D. Sivasailam memo attached.
ANTI-TAMP PROG	Vary by state	See S. Kumar memo of 9/27/2011
I/M DESC FILE [#]	User-supplied	See S. Kumar memo of 9/27/2011
FUEL PROGRAM	Vary by state	See S. Kumar memo of 9/27/2011
OXYGENATED FUELS	Regional Values	See S. Kumar memo of 9/27/2011
TEMPERATURE	Ozone season	See S. Kumar memo of 9/27/2011
	Seasonal	See S. Kumar memo of 9/27/2011
	Winter	See S. Kumar memo of 9/27/2011
DIESEL FRACTIONS	Vary by jurisdiction	See D. Sivasailam memo attached
FUEL RVP	Vary by jurisdiction Ozone season	See S. Kumar memo of 9/27/2011
	Seasonal	See S. Kumar memo of 9/27/2011
HUMIDITY	Ozone season	See S. Kumar memo of 9/27/2011
	Winter CO	See S. Kumar memo of 9/27/2011
	Seasonal	See S. Kumar memo of 9/27/2011
SCENARIO RECORD	Automatically generated.	Allows user to label individual scenario results. Marks start of new scenario. Table 4

CALENDAR YEAR	Varies.	Calendar year of scenario evaluated.
EVALUATION MONTH	Varies.	Specifies January 1 (1) or July 1 (7) for calendar year of interest.
ALTITUDE	1	High or low altitude of area evaluated.
BAROMETRIC PRES*	User-supplied	See S. Kumar memo of 9/27/2011
AVERAGE SPEED	Varies. .	Table 4 Varies by scenario
SOAK DISTRIBUTION	Regional	Table 5 Varies by operating mode
VMT FRACTIONS	Varies by jurisdiction.	See Tables 6,7,8,9
VMT BY FACILITY	FV4.FV for freeway ramp; FV3.FV for local roads	Values represent MOBILE6 defaults for each scenario.
DIESEL SULFUR*	Varies. by jurisdiction.	See S. Kumar memo of 9/27/2011
PARTICLE SIZE*	Regional	2.5

+ - Does not apply to PM_{2.5} analysis (Annual runs).

* - Applies only when modeling PM_{2.5}.

- Used when an ATP or I/M control programs are in effect.

**Table 2
Trip Length Distributions**

Length of Trip	MWCOG Regional Percentage of VMT (%)	MOBILE6 Default Percentage of VMT (%)
< 10 Minutes	10.86	6.74
11 - 20 Minutes	24.98	18.51
21 - 30 Minutes	19.71	16.78
31 - 40 Minutes	13.44	13.11
41 - 50 Minutes	9.29	8.33
> 50 Minutes	21.72	36.53

**Table 3
LEV Implementation Schedule for MWCOG Region**

Percentage of New Vehicle Sales				
Model Year	Tier 1	Transitional LEV	LEV	Tier 2
1999	30	40 30		0
2000	0	40	60	0
2001	0	0	100	0
2002	0	0	100	0
2003	0	0	100	0
2004+	0	0 0		100

Table 4
Summary of Scenarios Modeled in MOBILE6.2
Network, Local roads and Auto Access to Transit, School and Transit bus
Analysis: Ozone and winter day and annual runs

Scenario Number	Operating Mode	Facility Type	Average Speed	VMT Fractions	Month\Season Sequence
Ozone\Winter Analysis					
1-65	Stabilized	Arterial\Collectors	1-65 mph	Network or Auto Access	
66-130	Stabilized	Freeways excluding Ramps	1-65 mph	Network or Auto Access	
131	Stabilized	Freeway Ramps	34.6 mph	Network or Auto Access	
132	Cold	Local Roadways	12.9 mph	Network or Auto Access	
133	Hot	Local Roadways	12.9 mph	Network or Auto Access	
134	Stabilized	Local Roadways	12.9 mph	Network or Auto Access	
135-179*	Stabilized	Local Roadways as Arterial	1-45 mph	Local	
Seasonal Analysis					
1-195	Stabilized	Arterial\Collectors	1-65 mph	Network or Auto Access	1-3
196-390	Stabilized	Freeways excluding Ramps	1-65 mph	Network or Auto Access	1-4
391-393	Stabilized	Freeway Ramps	34.6 mph	Network or Auto Access	1-3
394-402	Cold	Local Roadways	12.9 mph	Network or Auto Access	1-3 (for each season, data sequence is as follow: cold, hot, then stabilized)
	Hot	Local Roadways	12.9 mph	Network or Auto Access	
	Stabilized	Local Roadways	12.9 mph	Local or Auto Access	
403-537*	Stabilized	Local Roadways as Arterial	1-45 mph	Local	
Transit and School Bus					
1-65	Stabilized	Arterial/Collectors	1-65 mph	100%	Ozone, winter, annual
66	Stabilized	Freeway Ramps	34.6 mph	100%	Ozone, winter, annual
67	Stabilized	Local Road	12.9 mph	100%	Ozone, winter, annual
Notes:					
1. Season: 1 - January thru April; 2 - May thru September; 3 - October thru December					
2. * - Applies to network and local road types only.					

Table 6
2016 Summer VMT Mix Fractions for Network Analysis

Vehicle Type	2016 Summer VMT Mix Fractions										
	DC	Maryland Counties					Virginia Counties				
		Calvert	Charles	Frederick	Montgomery	Prince George's	Alexandria	Arlington	Fairfax	Loudon	Prince William
LDGV	0.2954	0.3011	0.3022	0.3024	0.2925	0.2991	0.2916	0.2939	0.2929	0.2929	0.2929
LDGT1	0.0935	0.0952	0.0911	0.0916	0.0935	0.0914	0.0881	0.0927	0.0945	0.0948	0.0948
LDGT2	0.3456	0.3373	0.3387	0.3422	0.3467	0.3413	0.3496	0.3456	0.3447	0.3442	0.3442
LDGT3	0.1157	0.1147	0.1165	0.1135	0.1183	0.1169	0.1200	0.1179	0.1180	0.1177	0.1177
LDGT4	0.0565	0.0589	0.0588	0.0576	0.0566	0.0584	0.0577	0.0567	0.0568	0.0574	0.0574
HDGV2B	0.0219	0.0211	0.0201	0.0205	0.0203	0.0190	0.0205	0.0204	0.0204	0.0203	0.0203
HDGV3	0.0011	0.0008	0.0007	0.0008	0.0007	0.0007	0.0009	0.0009	0.0009	0.0010	0.0010
HDGV4	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003	0.0003	0.0003	0.0003	0.0003
HDGV5	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
HDGV6	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005
HDGV7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
HDGV8A	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HDGV8B	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LDDV	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0003	0.0003	0.0002	0.0002
LDDT12	0.0002	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001
HDDV2B	0.0059	0.0084	0.0080	0.0082	0.0082	0.0077	0.0074	0.0071	0.0071	0.0071	0.0071
HDDV3	0.0017	0.0023	0.0022	0.0023	0.0021	0.0020	0.0018	0.0017	0.0018	0.0019	0.0019
HDDV4	0.0021	0.0019	0.0019	0.0019	0.0019	0.0018	0.0020	0.0020	0.0020	0.0021	0.0021
HDDV5	0.0027	0.0025	0.0024	0.0025	0.0025	0.0023	0.0021	0.0023	0.0024	0.0025	0.0025
HDDV6	0.0063	0.0079	0.0069	0.0078	0.0075	0.0079	0.0084	0.0070	0.0071	0.0072	0.0072
HDDV7	0.0065	0.0050	0.0062	0.0059	0.0063	0.0064	0.0054	0.0049	0.0062	0.0060	0.0060
HDDV8A	0.0083	0.0079	0.0080	0.0079	0.0080	0.0084	0.0079	0.0083	0.0084	0.0083	0.0083
HDDV8B	0.0296	0.0282	0.0295	0.0282	0.0285	0.0297	0.0296	0.0314	0.0297	0.0297	0.0297
MC	0.0047	0.0045	0.0045	0.0044	0.0042	0.0047	0.0042	0.0044	0.0043	0.0043	0.0043
HDGB	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HDDBT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HDDBS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LDDT34	0.0013	0.0009	0.0010	0.0009	0.0010	0.0009	0.0015	0.0014	0.0015	0.0015	0.0015

Table 7
2016 Summer VMT Mix Fractions for Local Analysis

Vehicle Type	2016 Summer VMT Mix Fractions											
	DC	Maryland Counties					Virginia Counties					
		Calvert	Charles	Frederick	Montgomery	Prince George's	Alexandria	Arlington	Fairfax	Loudon	Prince William	
LDGV	0.2954	0.3011	0.3022	0.3024	0.2925	0.2991	0.2916	0.2939	0.2929	0.2929	0.2929	
LDGT1	0.0935	0.0952	0.0911	0.0916	0.0935	0.0914	0.0881	0.0927	0.0945	0.0948	0.0948	
LDGT2	0.3456	0.3373	0.3387	0.3422	0.3467	0.3413	0.3496	0.3456	0.3447	0.3442	0.3442	
LDGT3	0.1157	0.1147	0.1165	0.1135	0.1183	0.1169	0.1200	0.1179	0.1180	0.1177	0.1177	
LDGT4	0.0565	0.0589	0.0588	0.0576	0.0566	0.0584	0.0577	0.0567	0.0568	0.0574	0.0574	
HDGV2B	0.0219	0.0211	0.0201	0.0205	0.0203	0.0190	0.0205	0.0204	0.0204	0.0203	0.0203	
HDGV3	0.0011	0.0008	0.0007	0.0008	0.0007	0.0007	0.0009	0.0009	0.0009	0.0010	0.0010	
HDGV4	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003	0.0003	0.0003	0.0003	0.0003	
HDGV5	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	
HDGV6	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005	
HDGV7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	
HDGV8A	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
HDGV8B	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
LDDV	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0003	0.0003	0.0002	0.0002	
LDDT12	0.0002	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	
HDDV2B	0.0059	0.0084	0.0080	0.0082	0.0082	0.0077	0.0074	0.0071	0.0071	0.0071	0.0071	
HDDV3	0.0017	0.0023	0.0022	0.0023	0.0021	0.0020	0.0018	0.0017	0.0018	0.0019	0.0019	
HDDV4	0.0021	0.0019	0.0019	0.0019	0.0019	0.0018	0.0020	0.0020	0.0020	0.0021	0.0021	
HDDV5	0.0027	0.0025	0.0024	0.0025	0.0025	0.0023	0.0021	0.0023	0.0024	0.0025	0.0025	
HDDV6	0.0063	0.0079	0.0069	0.0078	0.0075	0.0079	0.0084	0.0070	0.0071	0.0072	0.0072	
HDDV7	0.0065	0.0050	0.0062	0.0059	0.0063	0.0064	0.0054	0.0049	0.0062	0.0060	0.0060	
HDDV8A	0.0083	0.0079	0.0080	0.0079	0.0080	0.0084	0.0079	0.0083	0.0084	0.0083	0.0083	
HDDV8B	0.0296	0.0282	0.0295	0.0282	0.0285	0.0297	0.0296	0.0314	0.0297	0.0297	0.0297	
MC	0.0047	0.0045	0.0045	0.0044	0.0042	0.0047	0.0042	0.0044	0.0043	0.0043	0.0043	
HDGB	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
HDDBT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
HDDBS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
LDDT34	0.0013	0.0009	0.0010	0.0009	0.0010	0.0009	0.0015	0.0014	0.0015	0.0015	0.0015	

Table 8
2016 Summer VMT Mix Fractions for Auto Access to Transit Analysis

Vehicle Type	2016 Summer VMT Mix Fractions											
	DC	Maryland Counties					Virginia Counties					
		Calvert	Charles	Frederick	Montgomery	Prince George's	Alexandria	Arlington	Fairfax	Loudon	Prince William	
LDGV	0.2954	0.3298	0.3309	0.3312	0.2925	0.3274	0.3193	0.3219	0.2929	0.2929	0.2965	
LDGT1	0.0935	0.1043	0.0997	0.1003	0.0935	0.1000	0.0965	0.1016	0.0945	0.0948	0.0951	
LDGT2	0.3456	0.3694	0.3709	0.3748	0.3467	0.3737	0.3829	0.3785	0.3447	0.3442	0.3408	
LDGT3	0.1157	0.1257	0.1275	0.1244	0.1183	0.1281	0.1314	0.1291	0.1180	0.1177	0.1169	
LDGT4	0.0565	0.0645	0.0645	0.0630	0.0566	0.0641	0.0632	0.0621	0.0568	0.0574	0.0575	
HDGV2B	0.0219	0.0000	0.0000	0.0000	0.0203	0.0000	0.0000	0.0000	0.0204	0.0203	0.0200	
HDGV3	0.0011	0.0000	0.0000	0.0000	0.0007	0.0000	0.0000	0.0000	0.0009	0.0010	0.0010	
HDGV4	0.0004	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0003	0.0003	0.0003	
HDGV5	0.0001	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	
HDGV6	0.0003	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0005	0.0005	0.0005	
HDGV7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
HDGV8A	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
HDGV8B	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
LDDV	0.0003	0.0003	0.0003	0.0003	0.0003	0.0004	0.0002	0.0003	0.0003	0.0002	0.0003	
LDDT12	0.0002	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	
HDDV2B	0.0059	0.0000	0.0000	0.0000	0.0082	0.0000	0.0000	0.0000	0.0071	0.0071	0.0070	
HDDV3	0.0017	0.0000	0.0000	0.0000	0.0021	0.0000	0.0000	0.0000	0.0018	0.0019	0.0018	
HDDV4	0.0021	0.0000	0.0000	0.0000	0.0019	0.0000	0.0000	0.0000	0.0020	0.0021	0.0020	
HDDV5	0.0027	0.0000	0.0000	0.0000	0.0025	0.0000	0.0000	0.0000	0.0024	0.0025	0.0023	
HDDV6	0.0063	0.0000	0.0000	0.0000	0.0075	0.0000	0.0000	0.0000	0.0071	0.0072	0.0074	
HDDV7	0.0065	0.0000	0.0000	0.0000	0.0063	0.0000	0.0000	0.0000	0.0062	0.0060	0.0069	
HDDV8A	0.0083	0.0000	0.0000	0.0000	0.0080	0.0000	0.0000	0.0000	0.0084	0.0083	0.0082	
HDDV8B	0.0296	0.0000	0.0000	0.0000	0.0285	0.0000	0.0000	0.0000	0.0297	0.0297	0.0294	
MC	0.0047	0.0049	0.0050	0.0049	0.0042	0.0051	0.0046	0.0048	0.0043	0.0043	0.0045	
HDGB	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
HDDBT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
HDDBS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
LDDT34	0.0013	0.0010	0.0011	0.0010	0.0010	0.0010	0.0017	0.0016	0.0015	0.0015	0.0014	

Table 9
2011 VMT Mix Fractions
For School Bus and Transit Bus Analysis

Vehicle Type	VMT Mix Fractions	
	School Bus	Transit Bus
LDV	0.0000	0.0000
LDT1	0.0000	0.0000
LDT2	0.0000	0.0000
LDT3	0.0000	0.0000
LDT4	0.0000	0.0000
HDV2B	0.0000	0.0000
HDV3	0.0000	0.0000
HDV4	0.0000	0.0000
HDV5	0.0000	0.0000
HDV6	0.0000	0.0000
HDV7	0.0000	0.0000
HDV8A	0.0000	0.0000
HDV8B	0.0000	0.0000
HDBS	1.0000	0.0000
HDBT	0.0000	1.0000
MC	0.0000	0.0000

National Capital Region Transportation Planning Board

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October 12, 2010

To: Air Quality Conformity Files

From: Daivamani Sivasailam
Principal Transportation Engineer

Subject: Development of vehicle age distributions and diesel vehicle percentages for Mobile 6.2 model using VIN decoder software – 2008 Registration Data

Introduction

This memorandum summarizes the methodology used, and the results obtained, in developing Mobile 6 input files of vehicle characteristics data summarized from 2008 District of Columbia, Maryland and Virginia vehicle registration data. EPA's Mobile 6 model requires age distribution (1-25+ years) and diesel fueled vehicle percentages for 16 separate vehicle types (passenger cars, motorcycles, light trucks, and heavy trucks in ascending weight categories). The model then generates 28 vehicle types by applying the diesel percentages to the relevant vehicle types. This work continues the cycle of obtaining consistent vehicle registrations on a 3 year basis. These results will be used in the development of the mobile source emissions inventories for the air quality conformity assessment of 2009 Constrained Long Range Plan (CLRP) and FY 2010-2015 Transportation Improvement Program.

Background

In 2005, Department of Transportation Planning staff embarked on the use of VIN decoder software to develop registration and diesel sales percentages. Similarly during the Summer of 2008 the newest version of the software was purchased and registration data were obtained from the three state air agencies as of July 1, 2008. Using an approach similar to the 2005 exercise staff successfully decoded the VIN numbers and developed jurisdictional level vehicle age distribution and diesel sales fraction files.

Committee Review

Several conference calls and meetings were held with air and transportation department representatives to discuss the results, and a number of changes were suggested to improve the vehicle age distributions and diesel vehicle percentages. Changes to the procedures as compared to the 2005 exercise are listed below.

1) Vehicles Aged 25 Years and Older:

Since the VIN decoder software could not fully decode vehicles manufactured prior to 1981, staff used the registration data base (which contained control totals of total number of vehicle registrations by model year) to identify the total number of vehicles that were 25 years and older. These vehicles were then distributed among the 16 vehicle types using the vehicle type distribution of vehicles aged 25 through 27 that were decoded using the software.

2) Aggregation of Diesel Fractions by Jurisdiction

In Maryland and Northern Virginia, age distributions by vehicle type were developed at the county level. However, diesel percentages by vehicle type were aggregated to represent all counties in Maryland, and all jurisdictions in Northern Virginia. The District's data, due to an under-representation of vehicles for some types, were combined with the urban jurisdictions of Montgomery, Prince George's, Alexandria, Arlington and Fairfax to develop diesel vehicle percentages for the District of Columbia. For school bus and transit bus there is a single regional diesel fraction file.

Detailed Documentation

Three individual detailed memoranda, one each for the District of Columbia, Maryland, and Virginia, have been prepared and are available upon request. These memos detail the work activities including control totals, data tables, and charts of the age distribution and diesel vehicle fractions for each vehicle type.

Final Input Files

Attached are the final input files (XX.RDT) and (XX.DSF) for the Mobile 6.2 model prepared using the vehicle registration data.

Attachments

Alexandria, VA- 2008 Registration Data

* LDV									
0.1468	0.1295	0.0726	0.0577	0.0572	0.0633	0.0595	0.0567	0.0568	0.0469
0.0409	0.0382	0.0292	0.0300	0.0228	0.0186	0.0140	0.0109	0.0100	0.0064
0.0046	0.0036	0.0026	0.0021	0.0189					
* LDT1									
0.0251	0.0689	0.0589	0.0562	0.0328	0.1214	0.1104	0.0962	0.0536	0.0645
0.0711	0.0787	0.0483	0.0120	0.0077	0.0055	0.0066	0.0087	0.0044	0.0077
0.0068	0.0066	0.0077	0.0000	0.0403					
* LDT2									
0.1637	0.1608	0.0731	0.0731	0.0766	0.0630	0.0620	0.0556	0.0503	0.0414
0.0376	0.0301	0.0229	0.0220	0.0169	0.0110	0.0069	0.0058	0.0040	0.0037
0.0031	0.0017	0.0018	0.0009	0.0120					
* LDT3									
0.1798	0.1351	0.1007	0.0783	0.0772	0.0729	0.0605	0.0526	0.0511	0.0435
0.0263	0.0195	0.0166	0.0158	0.0147	0.0078	0.0068	0.0046	0.0043	0.0051
0.0036	0.0021	0.0017	0.0017	0.0176					
* LDT4									
0.2031	0.2115	0.0685	0.0785	0.0862	0.0714	0.0352	0.0379	0.0454	0.0479
0.0337	0.0282	0.0077	0.0073	0.0128	0.0042	0.0031	0.0005	0.0031	0.0026
0.0026	0.0020	0.0020	0.0000	0.0048					
* HDV2B									
0.1247	0.0906	0.0787	0.0861	0.0705	0.0732	0.0656	0.0489	0.0615	0.0391
0.0226	0.0342	0.0225	0.0330	0.0181	0.0133	0.0108	0.0045	0.0054	0.0060
0.0143	0.0104	0.0102	0.0058	0.0500					
* HDV3									
0.1174	0.0741	0.0969	0.0896	0.0515	0.0804	0.0477	0.0398	0.0695	0.0465
0.0256	0.0277	0.0109	0.0532	0.0239	0.0068	0.0051	0.0138	0.0088	0.0084
0.0207	0.0161	0.0127	0.0042	0.0487					
* HDV4									
0.0288	0.0806	0.1727	0.0461	0.0288	0.0576	0.0633	0.0633	0.0864	0.0921
0.0374	0.0604	0.0201	0.0461	0.0201	0.0115	0.0086	0.0115	0.0058	0.0144
0.0115	0.0058	0.0029	0.0029	0.0213					
* HDV5									
0.0326	0.0762	0.0653	0.0435	0.1850	0.1088	0.0000	0.0435	0.0544	0.1197
0.0218	0.0762	0.0544	0.0109	0.0109	0.0109	0.0000	0.0000	0.0109	0.0109
0.0000	0.0326	0.0109	0.0109	0.0098					
* HDV6									
0.1140	0.1374	0.1268	0.1672	0.0484	0.0375	0.0349	0.0433	0.0426	0.0273
0.0245	0.0375	0.0219	0.0304	0.0115	0.0063	0.0112	0.0030	0.0030	0.0002
0.0046	0.0074	0.0118	0.0031	0.0441					
* HDV7									
0.0000	0.0366	0.0366	0.0183	0.0366	0.0275	0.0275	0.0183	0.1465	0.0183
0.0458	0.0366	0.0550	0.0916	0.0000	0.0366	0.0458	0.0641	0.0366	0.0366
0.0092	0.0366	0.0092	0.0092	0.1208					
* HDV8A									
0.0622	0.0957	0.0335	0.0813	0.0478	0.0478	0.0526	0.0526	0.0718	0.0813
0.0383	0.0191	0.0478	0.0431	0.0526	0.0191	0.0191	0.0191	0.0048	0.0191
0.0144	0.0048	0.0144	0.0048	0.0526					
* HDV8B									
0.0769	0.1154	0.0385	0.0769	0.0385	0.0385	0.0769	0.0385	0.0769	0.0769
0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0385					
* HD8S									
0.0876	0.0537	0.0407	0.0093	0.0860	0.0416	0.0644	0.0658	0.0618	0.0723
0.0604	0.0450	0.0197	0.0325	0.0241	0.0139	0.0117	0.0236	0.0415	0.0404
0.0111	0.0179	0.0089	0.0042	0.0618					
* HDBT									
0.0564	0.0312	0.0839	0.1056	0.0594	0.0545	0.0651	0.0641	0.0947	0.0426
0.0634	0.0756	0.0156	0.0208	0.0179	0.0096	0.0166	0.0096	0.0085	0.0259
0.0190	0.0216	0.0015	0.0063	0.0306					
* MC									
0.0528	0.1196	0.1366	0.0838	0.0880	0.0813	0.0686	0.0546	0.0461	0.0285
0.0297	0.0206	0.0182	0.0219	0.0140	0.0079	0.0073	0.0055	0.0067	0.0030
0.0042	0.0055	0.0091	0.0085	0.0779					

Arlington County, VA- 2008 Registration Data

* LDV									
0.0468	0.0743	0.0737	0.0708	0.0731	0.0752	0.0771	0.0720	0.0694	0.0606
0.0522	0.0460	0.0356	0.0353	0.0275	0.0220	0.0177	0.0150	0.0118	0.0081
0.0058	0.0048	0.0036	0.0026	0.0189					
* LDT1									
0.0278	0.0722	0.0559	0.0673	0.0183	0.0861	0.1052	0.1035	0.0618	0.0618
0.0687	0.0644	0.0644	0.0132	0.0061	0.0096	0.0113	0.0070	0.0061	0.0122
0.0104	0.0165	0.0073	0.0026	0.0403					
* LDT2									
0.0521	0.0825	0.0847	0.0907	0.1026	0.0855	0.0820	0.0733	0.0688	0.0515
0.0483	0.0382	0.0299	0.0269	0.0201	0.0140	0.0086	0.0083	0.0057	0.0045
0.0034	0.0026	0.0024	0.0016	0.0120					
* LDT3									
0.0682	0.0772	0.1126	0.0932	0.0947	0.0868	0.0740	0.0703	0.0585	0.0588
0.0305	0.0294	0.0246	0.0219	0.0208	0.0109	0.0083	0.0049	0.0078	0.0105
0.0074	0.0041	0.0040	0.0028	0.0176					
* LDT4									
0.0660	0.1687	0.0687	0.0872	0.1167	0.0959	0.0498	0.0554	0.0567	0.0675
0.0561	0.0305	0.0199	0.0125	0.0125	0.0025	0.0044	0.0033	0.0056	0.0044
0.0037	0.0052	0.0019	0.0002	0.0048					
* HDV2B									
0.0269	0.0454	0.1217	0.0613	0.0725	0.0888	0.0690	0.0787	0.0731	0.0554
0.0241	0.0407	0.0299	0.0368	0.0294	0.0202	0.0107	0.0085	0.0096	0.0138
0.0141	0.0083	0.0056	0.0057	0.0500					
* HDV3									
0.0265	0.0329	0.1241	0.1021	0.0874	0.0833	0.0279	0.0478	0.0619	0.0742
0.0232	0.0501	0.0171	0.0326	0.0227	0.0114	0.0062	0.0066	0.0095	0.0175
0.0379	0.0156	0.0208	0.0118	0.0487					
* HDV4									
0.0087	0.0173	0.0996	0.0779	0.0390	0.0563	0.0779	0.0693	0.0953	0.0563
0.0779	0.0779	0.0173	0.0476	0.0433	0.0303	0.0303	0.0173	0.0043	0.0130
0.0130	0.0043	0.0043	0.0000	0.0213					
* HDV5									
0.0183	0.0550	0.0733	0.1467	0.1100	0.0550	0.0367	0.1284	0.0917	0.1100
0.0000	0.0183	0.0183	0.0183	0.0000	0.0183	0.0183	0.0183	0.0183	0.0000
0.0000	0.0367	0.0000	0.0000	0.0098					
* HDV6									
0.0105	0.0879	0.0910	0.0574	0.1047	0.0441	0.0412	0.0352	0.0729	0.0974
0.0419	0.0726	0.0276	0.0247	0.0178	0.0098	0.0022	0.0165	0.0165	0.0162
0.0025	0.0327	0.0086	0.0241	0.0441					
* HDV7									
0.0000	0.0412	0.0412	0.0000	0.0000	0.0000	0.0137	0.0687	0.0137	0.0412
0.1236	0.0550	0.0137	0.0412	0.0412	0.0412	0.0412	0.0137	0.0137	0.0687
0.0687	0.0275	0.0412	0.0687	0.1208					
* HDV8A									
0.0136	0.0543	0.0950	0.0407	0.0633	0.1131	0.0317	0.0724	0.1629	0.0452
0.0317	0.0136	0.0226	0.0226	0.0317	0.0362	0.0136	0.0226	0.0181	0.0226
0.0226	0.0000	0.0045	0.0045	0.0407					
* HDV8B									
0.0000	0.0588	0.1176	0.0588	0.0588	0.1176	0.0588	0.0588	0.1765	0.0588
0.0588	0.0000	0.0000	0.0000	0.0588	0.0588	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0588					
* HD8S									
0.0876	0.0537	0.0407	0.0093	0.0860	0.0416	0.0644	0.0658	0.0618	0.0723
0.0604	0.0450	0.0197	0.0325	0.0241	0.0139	0.0117	0.0236	0.0415	0.0404
0.0111	0.0179	0.0089	0.0042	0.0618					
* HDBT									
0.0564	0.0312	0.0839	0.1056	0.0594	0.0545	0.0651	0.0641	0.0947	0.0426
0.0634	0.0756	0.0156	0.0208	0.0179	0.0096	0.0166	0.0096	0.0085	0.0259
0.0190	0.0216	0.0015	0.0063	0.0306					
* MC									
0.0459	0.1028	0.1014	0.1097	0.0854	0.0959	0.0615	0.0643	0.0473	0.0317
0.0271	0.0193	0.0216	0.0165	0.0211	0.0142	0.0096	0.0073	0.0092	0.0055
0.0037	0.0028	0.0110	0.0073	0.0779					

Calvert County, MD- 2008 Registration Data

* LDV									
0.0521	0.0741	0.0730	0.0784	0.0721	0.0753	0.0746	0.0657	0.0677	0.0564
0.0496	0.0435	0.0328	0.0347	0.0272	0.0223	0.0167	0.0148	0.0120	0.0085
0.0073	0.0067	0.0059	0.0045	0.0241					
* LDT1									
0.0459	0.0879	0.1116	0.0953	0.0342	0.0798	0.0684	0.0667	0.0293	0.0358
0.0326	0.0277	0.0342	0.0065	0.0033	0.0147	0.0130	0.0065	0.0081	0.0231
0.0442	0.0293	0.0247	0.0114	0.0660					
* LDT2									
0.0396	0.0684	0.0750	0.0926	0.0925	0.0845	0.0819	0.0649	0.0686	0.0538
0.0456	0.0410	0.0303	0.0275	0.0244	0.0190	0.0129	0.0122	0.0096	0.0107
0.0087	0.0069	0.0068	0.0037	0.0190					
* LDT3									
0.0420	0.0684	0.0790	0.0880	0.0998	0.0985	0.0832	0.0685	0.0566	0.0521
0.0346	0.0316	0.0310	0.0326	0.0277	0.0166	0.0129	0.0079	0.0120	0.0082
0.0080	0.0063	0.0055	0.0028	0.0264					
* LDT4									
0.0488	0.1431	0.0981	0.1133	0.1437	0.1018	0.0559	0.0470	0.0437	0.0578
0.0406	0.0289	0.0115	0.0155	0.0115	0.0063	0.0031	0.0044	0.0050	0.0045
0.0045	0.0008	0.0015	0.0012	0.0074					
* HDV2B									
0.0320	0.0471	0.0951	0.0806	0.0929	0.1043	0.0812	0.0616	0.0642	0.0430
0.0223	0.0450	0.0279	0.0317	0.0160	0.0150	0.0132	0.0057	0.0111	0.0148
0.0105	0.0072	0.0098	0.0070	0.0608					
* HDV3									
0.0526	0.0568	0.1295	0.1088	0.0768	0.0866	0.0652	0.0544	0.0470	0.0498
0.0224	0.0292	0.0059	0.0206	0.0109	0.0104	0.0124	0.0047	0.0096	0.0225
0.0211	0.0132	0.0139	0.0049	0.0709					
* HDV4									
0.0379	0.0379	0.0730	0.0433	0.0352	0.1055	0.0595	0.0379	0.0703	0.0703
0.0270	0.0460	0.0406	0.0514	0.0433	0.0243	0.0135	0.0189	0.0270	0.0298
0.0243	0.0162	0.0081	0.0162	0.0425					
* HDV5									
0.0253	0.0505	0.1178	0.1263	0.1263	0.0926	0.0842	0.0253	0.0421	0.0505
0.0253	0.0842	0.0084	0.0505	0.0421	0.0000	0.0084	0.0000	0.0084	0.0000
0.0000	0.0084	0.0000	0.0084	0.0152					
* HDV6									
0.0302	0.0692	0.0693	0.0521	0.1250	0.0778	0.0649	0.0648	0.0908	0.0777
0.0217	0.0131	0.0216	0.0348	0.0217	0.0133	0.0218	0.0044	0.0131	0.0218
0.0174	0.0088	0.0130	0.0044	0.0474					
* HDV7									
0.0000	0.0000	0.0150	0.0450	0.0674	0.0375	0.0150	0.0300	0.0375	0.0225
0.0150	0.0375	0.0075	0.0450	0.0075	0.0225	0.0450	0.0599	0.0749	0.0824
0.0749	0.0300	0.0375	0.0525	0.1382					
* HDV8A									
0.0294	0.0490	0.0588	0.0621	0.0817	0.0490	0.0294	0.0686	0.0621	0.0458
0.0458	0.0392	0.0359	0.0490	0.0425	0.0229	0.0098	0.0392	0.0131	0.0229
0.0229	0.0196	0.0131	0.0163	0.0719					
* HDV8B									
0.0268	0.0536	0.0536	0.0625	0.0804	0.0446	0.0268	0.0714	0.0625	0.0446
0.0446	0.0445	0.0357	0.0536	0.0446	0.0268	0.0089	0.0357	0.0089	0.0179
0.0268	0.0179	0.0179	0.0179	0.0714					
* HD8S									
0.0876	0.0537	0.0407	0.0093	0.0860	0.0416	0.0644	0.0658	0.0618	0.0723
0.0604	0.0450	0.0197	0.0325	0.0241	0.0139	0.0117	0.0236	0.0415	0.0404
0.0111	0.0179	0.0089	0.0042	0.0618					
* HD8T									
0.0564	0.0312	0.0839	0.1056	0.0594	0.0545	0.0651	0.0641	0.0947	0.0426
0.0634	0.0756	0.0156	0.0208	0.0179	0.0096	0.0166	0.0096	0.0085	0.0259
0.0190	0.0216	0.0015	0.0063	0.0306					
* MC									
0.0473	0.1172	0.1052	0.0999	0.0784	0.0905	0.0676	0.0514	0.0455	0.0353
0.0247	0.0191	0.0206	0.0153	0.0109	0.0118	0.0100	0.0050	0.0082	0.0065
0.0071	0.0050	0.0109	0.0088	0.0981					

Charles County, MD- 2008 Registration Data

* LDV										
0.0463	0.0722	0.0745	0.0774	0.0730	0.0800	0.0764	0.0666	0.0703	0.0565	
0.0478	0.0451	0.0352	0.0361	0.0269	0.0217	0.0172	0.0131	0.0105	0.0083	
0.0066	0.0057	0.0047	0.0035	0.0241						
* LDT1										
0.0425	0.0744	0.0600	0.0906	0.0319	0.0853	0.0794	0.0683	0.0410	0.0440	
0.0304	0.0364	0.0486	0.0167	0.0076	0.0094	0.0091	0.0137	0.0139	0.0182	
0.0519	0.0258	0.0182	0.0170	0.0660						
* LDT2										
0.0352	0.0707	0.0732	0.0950	0.0937	0.0865	0.0840	0.0671	0.0655	0.0483	
0.0490	0.0421	0.0301	0.0275	0.0278	0.0185	0.0115	0.0122	0.0089	0.0086	
0.0094	0.0067	0.0058	0.0039	0.0190						
* LDT3										
0.0358	0.0671	0.0910	0.0914	0.1101	0.1024	0.0848	0.0641	0.0537	0.0571	
0.0333	0.0298	0.0279	0.0301	0.0255	0.0142	0.0108	0.0064	0.0097	0.0078	
0.0070	0.0050	0.0053	0.0034	0.0264						
* LDT4										
0.0443	0.1350	0.0900	0.1166	0.1502	0.1028	0.0533	0.0561	0.0530	0.0612	
0.0421	0.0264	0.0119	0.0089	0.0057	0.0049	0.0019	0.0026	0.0050	0.0050	
0.0083	0.0043	0.0015	0.0015	0.0074						
* HDV2B										
0.0309	0.0455	0.0894	0.0751	0.0978	0.0989	0.0751	0.0650	0.0556	0.0488	
0.0210	0.0419	0.0306	0.0348	0.0201	0.0169	0.0128	0.0096	0.0140	0.0143	
0.0121	0.0076	0.0141	0.0074	0.0608						
* HDV3										
0.0347	0.0569	0.1080	0.1027	0.0756	0.0921	0.0925	0.0796	0.0536	0.0469	
0.0176	0.0188	0.0184	0.0177	0.0184	0.0152	0.0015	0.0036	0.0099	0.0146	
0.0110	0.0120	0.0164	0.0114	0.0709						
* HDV4										
0.0417	0.0636	0.0894	0.0457	0.0556	0.0576	0.0715	0.0477	0.0556	0.0556	
0.0258	0.0377	0.0199	0.0338	0.0656	0.0358	0.0219	0.0219	0.0258	0.0417	
0.0278	0.0040	0.0040	0.0079	0.0425						
* HDV5										
0.0556	0.0556	0.1892	0.0779	0.0779	0.0779	0.0779	0.0389	0.0445	0.0779	
0.0278	0.0389	0.0278	0.0334	0.0056	0.0056	0.0167	0.0167	0.0056	0.0000	
0.0167	0.0167	0.0000	0.0000	0.0152						
* HDV6										
0.0080	0.0565	0.0701	0.0565	0.0778	0.0725	0.0590	0.0644	0.0804	0.0725	
0.0404	0.0456	0.0431	0.0379	0.0243	0.0083	0.0189	0.0109	0.0243	0.0164	
0.0135	0.0082	0.0323	0.0107	0.0474						
* HDV7										
0.0270	0.0270	0.0338	0.0575	0.0304	0.0372	0.0406	0.0575	0.0575	0.0270	
0.0439	0.0304	0.0372	0.0642	0.0304	0.0270	0.0237	0.0304	0.0304	0.0338	
0.0203	0.0541	0.0237	0.0169	0.1382						
* HDV8A										
0.0306	0.0881	0.0252	0.0773	0.0414	0.0791	0.0396	0.0629	0.0953	0.0540	
0.0486	0.0252	0.0360	0.0414	0.0198	0.0288	0.0054	0.0198	0.0180	0.0180	
0.0216	0.0252	0.0162	0.0144	0.0683						
* HDV8B										
0.0357	0.0952	0.0238	0.0833	0.0476	0.0833	0.0357	0.0595	0.0952	0.0476	
0.0476	0.0238	0.0357	0.0357	0.0238	0.0238	0.0119	0.0238	0.0119	0.0119	
0.0238	0.0238	0.0119	0.0119	0.0714						
* HD8S										
0.0876	0.0537	0.0407	0.0093	0.0860	0.0416	0.0644	0.0658	0.0618	0.0723	
0.0604	0.0450	0.0197	0.0325	0.0241	0.0139	0.0117	0.0236	0.0415	0.0404	
0.0111	0.0179	0.0089	0.0042	0.0618						
* HDBT										
0.0564	0.0312	0.0839	0.1056	0.0594	0.0545	0.0651	0.0641	0.0947	0.0426	
0.0634	0.0756	0.0156	0.0208	0.0179	0.0096	0.0166	0.0096	0.0085	0.0259	
0.0190	0.0216	0.0015	0.0063	0.0306						
* MC										
0.0495	0.1138	0.1112	0.0993	0.0769	0.0896	0.0678	0.0596	0.0460	0.0335	
0.0251	0.0209	0.0181	0.0153	0.0132	0.0097	0.0091	0.0071	0.0056	0.0065	
0.0039	0.0048	0.0078	0.0076	0.0981						

District of Columbia- 2008 Registration Data

* LDV										
0.0392	0.0695	0.0668	0.0653	0.0679	0.0724	0.0691	0.0718	0.0731	0.0629	
0.0534	0.0521	0.0400	0.0412	0.0313	0.0250	0.0210	0.0157	0.0143	0.0103	
0.0088	0.0068	0.0047	0.0033	0.0142						
* LDT1										
0.0460	0.0272	0.0763	0.0590	0.0201	0.0862	0.1030	0.0888	0.0602	0.0648	
0.0732	0.0726	0.0654	0.0143	0.0091	0.0039	0.0084	0.0026	0.0026	0.0494	
0.0207	0.0138	0.0078	0.0032	0.0215						
* LDT2										
0.0434	0.0763	0.0833	0.0904	0.0959	0.0787	0.0828	0.0695	0.0630	0.0553	
0.0491	0.0429	0.0335	0.0303	0.0236	0.0194	0.0115	0.0100	0.0070	0.0072	
0.0072	0.0056	0.0027	0.0024	0.0090						
* LDT3										
0.0527	0.0673	0.0970	0.0829	0.1017	0.0856	0.0744	0.0623	0.0565	0.0591	
0.0339	0.0312	0.0294	0.0318	0.0273	0.0165	0.0129	0.0085	0.0128	0.0102	
0.0116	0.0074	0.0050	0.0049	0.0173						
* LDT4										
0.0537	0.1422	0.0664	0.0793	0.1236	0.0957	0.0505	0.0606	0.0661	0.0674	
0.0576	0.0444	0.0167	0.0141	0.0102	0.0056	0.0046	0.0042	0.0055	0.0096	
0.0088	0.0033	0.0025	0.0018	0.0055						
* HDV2B										
0.0368	0.0621	0.0694	0.0603	0.0580	0.0628	0.0634	0.0721	0.0712	0.0617	
0.0530	0.0469	0.0320	0.0297	0.0254	0.0210	0.0131	0.0165	0.0157	0.0181	
0.0226	0.0243	0.0073	0.0117	0.0451						
* HDV3										
0.0716	0.0341	0.0585	0.0738	0.0589	0.1298	0.0595	0.0777	0.0544	0.0463	
0.0598	0.0326	0.0134	0.0211	0.0451	0.0197	0.0072	0.0129	0.0191	0.0285	
0.0148	0.0213	0.0076	0.0047	0.0276						
* HDV4										
0.0141	0.0141	0.2322	0.0264	0.0180	0.0225	0.0663	0.0619	0.1136	0.0574	
0.0888	0.0551	0.0259	0.0219	0.0365	0.0141	0.0214	0.0129	0.0219	0.0202	
0.0107	0.0090	0.0051	0.0062	0.0239						
* HDV5										
0.1745	0.0929	0.1266	0.0816	0.1097	0.0450	0.0563	0.0281	0.0366	0.0872	
0.0028	0.0084	0.0028	0.0084	0.0056	0.0028	0.0113	0.0028	0.0028	0.0056	
0.0169	0.0113	0.0225	0.0084	0.0489						
* HDV6										
0.0149	0.0664	0.0582	0.0371	0.0332	0.0235	0.0905	0.0712	0.0455	0.0340	
0.0386	0.0158	0.0243	0.0489	0.0357	0.0374	0.0209	0.0528	0.0177	0.0349	
0.0527	0.0475	0.0076	0.0232	0.0674						
* HDV7										
0.0282	0.0377	0.0282	0.0126	0.0188	0.0628	0.0879	0.0471	0.0534	0.0188	
0.0220	0.0094	0.0094	0.0847	0.0628	0.0471	0.0910	0.0220	0.0471	0.0314	
0.0282	0.0659	0.0157	0.0157	0.0522						
* HDV8A										
0.0431	0.0254	0.0626	0.0450	0.0117	0.0587	0.1037	0.2035	0.0372	0.0548	
0.0215	0.0489	0.0078	0.0196	0.0274	0.0313	0.0059	0.0235	0.0431	0.0000	
0.0587	0.0391	0.0117	0.0000	0.0157						
* HDV8B										
0.0435	0.0290	0.0580	0.0435	0.0145	0.0580	0.1014	0.2029	0.0435	0.0580	
0.0290	0.0435	0.0000	0.0145	0.0290	0.0290	0.0000	0.0290	0.0435	0.0000	
0.0580	0.0435	0.0145	0.0000	0.0145						
* HD8S										
0.0876	0.0537	0.0407	0.0093	0.0860	0.0416	0.0644	0.0658	0.0618	0.0723	
0.0604	0.0450	0.0197	0.0325	0.0241	0.0139	0.0117	0.0236	0.0415	0.0404	
0.0111	0.0179	0.0089	0.0042	0.0618						
* HDET										
0.0564	0.0312	0.0839	0.1056	0.0594	0.0545	0.0651	0.0641	0.0947	0.0426	
0.0634	0.0756	0.0156	0.0208	0.0179	0.0096	0.0166	0.0096	0.0085	0.0259	
0.0190	0.0216	0.0015	0.0063	0.0306						
* MC										
0.0479	0.1423	0.1180	0.0978	0.0853	0.0833	0.0752	0.0614	0.0310	0.0368	
0.0179	0.0651	0.0125	0.0118	0.0317	0.0185	0.0074	0.0047	0.0037	0.0051	
0.0047	0.0013	0.0051	0.0040	0.0274						

Frederick County, MD- 2008 Registration Data

* LDV										
0.0464	0.0683	0.0744	0.0777	0.0740	0.0778	0.0795	0.0704	0.0715	0.0590	
0.0492	0.0443	0.0358	0.0346	0.0257	0.0205	0.0156	0.0138	0.0108	0.0081	
0.0060	0.0055	0.0040	0.0030	0.0241						
* LDT1										
0.0462	0.0676	0.0637	0.0733	0.0256	0.0816	0.0882	0.0866	0.0495	0.0422	
0.0396	0.0388	0.0552	0.0157	0.0109	0.0051	0.0091	0.0074	0.0115	0.0183	
0.0412	0.0308	0.0194	0.0067	0.0660						
* LDT2										
0.0358	0.0682	0.0758	0.0955	0.0965	0.0882	0.0860	0.0707	0.0693	0.0530	
0.0487	0.0394	0.0285	0.0272	0.0241	0.0155	0.0114	0.0103	0.0089	0.0077	
0.0074	0.0057	0.0044	0.0027	0.0190						
* LDT3										
0.0405	0.0578	0.0793	0.0840	0.0991	0.1001	0.0845	0.0661	0.0604	0.0549	
0.0361	0.0309	0.0295	0.0352	0.0275	0.0166	0.0135	0.0077	0.0091	0.0102	
0.0087	0.0093	0.0085	0.0044	0.0264						
* LDT4										
0.0442	0.1264	0.0839	0.1140	0.1429	0.0926	0.0623	0.0536	0.0472	0.0681	
0.0378	0.0352	0.0115	0.0102	0.0108	0.0064	0.0058	0.0027	0.0069	0.0081	
0.0112	0.0085	0.0011	0.0010	0.0074						
* HDV2B										
0.0267	0.0441	0.0768	0.0742	0.1017	0.0938	0.0758	0.0754	0.0613	0.0557	
0.0243	0.0526	0.0315	0.0336	0.0178	0.0141	0.0102	0.0075	0.0126	0.0152	
0.0092	0.0072	0.0102	0.0079	0.0608						
* HDV3										
0.0588	0.0614	0.1241	0.1098	0.0746	0.0721	0.0693	0.0584	0.0552	0.0491	
0.0135	0.0295	0.0190	0.0256	0.0139	0.0125	0.0087	0.0091	0.0121	0.0109	
0.0145	0.0085	0.0109	0.0076	0.0709						
* HDV4										
0.0291	0.0381	0.0762	0.0672	0.0632	0.0602	0.0632	0.0732	0.0712	0.0722	
0.0341	0.0501	0.0341	0.0361	0.0461	0.0221	0.0211	0.0201	0.0150	0.0291	
0.0180	0.0080	0.0050	0.0050	0.0425						
* HDV5										
0.0313	0.0797	0.1309	0.1053	0.0911	0.0882	0.0712	0.0598	0.0712	0.0911	
0.0085	0.0455	0.0199	0.0370	0.0171	0.0114	0.0028	0.0028	0.0085	0.0057	
0.0000	0.0028	0.0000	0.0028	0.0152						
* HDV6										
0.0162	0.0981	0.0797	0.0721	0.0734	0.0436	0.0621	0.0658	0.0832	0.0746	
0.0646	0.0300	0.0152	0.0523	0.0150	0.0213	0.0089	0.0137	0.0126	0.0100	
0.0113	0.0139	0.0087	0.0063	0.0474						
* HDV7										
0.0234	0.0371	0.0234	0.0567	0.0293	0.0430	0.0215	0.0293	0.0547	0.0313	
0.0293	0.0313	0.0176	0.0391	0.0313	0.0215	0.0313	0.0469	0.0489	0.0293	
0.0508	0.0528	0.0469	0.0352	0.1382						
* HDV8A										
0.0217	0.0462	0.0774	0.0943	0.0491	0.0462	0.0283	0.0481	0.0689	0.0745	
0.0302	0.0358	0.0396	0.0481	0.0292	0.0226	0.0151	0.0113	0.0217	0.0170	
0.0349	0.0283	0.0151	0.0142	0.0821						
* HDV8B										
0.0223	0.0446	0.0764	0.0955	0.0478	0.0446	0.0287	0.0478	0.0701	0.0732	
0.0318	0.0350	0.0382	0.0478	0.0287	0.0223	0.0159	0.0127	0.0223	0.0159	
0.0350	0.0287	0.0159	0.0159	0.0828						
* HDV8S										
0.0876	0.0537	0.0407	0.0093	0.0860	0.0416	0.0644	0.0658	0.0618	0.0723	
0.0604	0.0450	0.0197	0.0325	0.0241	0.0139	0.0117	0.0236	0.0415	0.0404	
0.0111	0.0179	0.0089	0.0042	0.0618						
* HDBT										
0.0564	0.0312	0.0839	0.1056	0.0594	0.0545	0.0651	0.0641	0.0947	0.0426	
0.0634	0.0756	0.0156	0.0208	0.0179	0.0096	0.0166	0.0096	0.0085	0.0259	
0.0190	0.0216	0.0015	0.0063	0.0306						
* MC										
0.0497	0.1040	0.1084	0.0973	0.0731	0.0866	0.0681	0.0530	0.0469	0.0315	
0.0292	0.0191	0.0216	0.0151	0.0127	0.0131	0.0105	0.0095	0.0081	0.0066	
0.0082	0.0080	0.0116	0.0100	0.0981						

Fairfax County, VA- 2008 Registration Data

* LDV									
0.0499	0.0776	0.0744	0.0721	0.0723	0.0770	0.0737	0.0699	0.0728	0.0607
0.0518	0.0454	0.0358	0.0355	0.0274	0.0213	0.0167	0.0132	0.0108	0.0077
0.0053	0.0042	0.0031	0.0024	0.0189					
* LDT1									
0.0357	0.0854	0.0583	0.0593	0.0230	0.0996	0.1231	0.0951	0.0555	0.0633
0.0550	0.0640	0.0519	0.0091	0.0075	0.0075	0.0069	0.0080	0.0048	0.0089
0.0134	0.0116	0.0094	0.0035	0.0403					
* LDT2									
0.0494	0.0824	0.0886	0.0967	0.1041	0.0861	0.0835	0.0719	0.0689	0.0530
0.0467	0.0380	0.0278	0.0245	0.0193	0.0131	0.0081	0.0075	0.0049	0.0044
0.0034	0.0026	0.0020	0.0012	0.0120					
* LDT3									
0.0635	0.0789	0.1102	0.0936	0.1095	0.0966	0.0796	0.0684	0.0620	0.0514
0.0296	0.0253	0.0211	0.0237	0.0188	0.0098	0.0069	0.0053	0.0068	0.0070
0.0056	0.0037	0.0030	0.0019	0.0176					
* LDT4									
0.0553	0.1456	0.0862	0.1128	0.1332	0.1003	0.0547	0.0577	0.0530	0.0671
0.0416	0.0321	0.0130	0.0098	0.0099	0.0051	0.0018	0.0016	0.0031	0.0037
0.0041	0.0018	0.0007	0.0008	0.0048					
* HDV2E									
0.0316	0.0527	0.0903	0.0757	0.1019	0.1013	0.0762	0.0740	0.0656	0.0569
0.0266	0.0396	0.0262	0.0335	0.0203	0.0131	0.0107	0.0066	0.0101	0.0104
0.0086	0.0055	0.0070	0.0056	0.0500					
* HDV3									
0.0444	0.0502	0.1242	0.1006	0.0844	0.0754	0.0632	0.0651	0.0656	0.0550
0.0282	0.0333	0.0159	0.0265	0.0219	0.0116	0.0081	0.0069	0.0128	0.0122
0.0190	0.0127	0.0081	0.0061	0.0487					
* HDV4									
0.0237	0.0608	0.0773	0.0762	0.0691	0.0638	0.0758	0.0608	0.0845	0.0848
0.0285	0.0777	0.0267	0.0372	0.0357	0.0165	0.0161	0.0135	0.0109	0.0139
0.0101	0.0064	0.0049	0.0038	0.0213					
* HDV5									
0.0432	0.0833	0.1160	0.0917	0.1023	0.0949	0.0738	0.0569	0.0960	0.0833
0.0148	0.0390	0.0169	0.0285	0.0127	0.0032	0.0042	0.0042	0.0063	0.0032
0.0084	0.0042	0.0021	0.0011	0.0098					
* HDV6									
0.0213	0.0977	0.0786	0.0816	0.0852	0.0353	0.0523	0.0732	0.0764	0.0628
0.0425	0.0452	0.0248	0.0692	0.0144	0.0145	0.0105	0.0081	0.0152	0.0115
0.0097	0.0090	0.0067	0.0101	0.0441					
* HDV7									
0.0151	0.0429	0.0324	0.0498	0.0510	0.0266	0.0348	0.0718	0.0765	0.0533
0.0487	0.0197	0.0266	0.0440	0.0336	0.0185	0.0290	0.0127	0.0452	0.0336
0.0359	0.0382	0.0209	0.0185	0.1208					
* HDV8A									
0.0201	0.0726	0.0659	0.0944	0.0815	0.0648	0.0430	0.0787	0.0921	0.0475
0.0480	0.0436	0.0352	0.0324	0.0296	0.0179	0.0117	0.0151	0.0128	0.0140
0.0145	0.0084	0.0089	0.0028	0.0447					
* HDV8B									
0.0193	0.0740	0.0675	0.0932	0.0804	0.0643	0.0418	0.0804	0.0932	0.0482
0.0482	0.0418	0.0354	0.0322	0.0289	0.0161	0.0129	0.0161	0.0129	0.0129
0.0129	0.0096	0.0096	0.0032	0.0450					
* HD8S									
0.0876	0.0537	0.0407	0.0093	0.0860	0.0416	0.0644	0.0658	0.0618	0.0723
0.0604	0.0450	0.0197	0.0325	0.0241	0.0139	0.0117	0.0236	0.0415	0.0404
0.0111	0.0179	0.0089	0.0042	0.0618					
* HDBT									
0.0564	0.0312	0.0839	0.1056	0.0594	0.0545	0.0651	0.0641	0.0947	0.0426
0.0634	0.0756	0.0156	0.0208	0.0179	0.0096	0.0166	0.0096	0.0085	0.0259
0.0190	0.0216	0.0015	0.0063	0.0306					
* MC									
0.0452	0.1023	0.1040	0.0971	0.0780	0.0953	0.0727	0.0617	0.0550	0.0383
0.0287	0.0214	0.0215	0.0171	0.0150	0.0128	0.0098	0.0066	0.0061	0.0054
0.0050	0.0054	0.0089	0.0088	0.0779					

Loudoun County, VA- 2008 Registration Data

* LDV
0.0581 0.0808 0.0796 0.0797 0.0781 0.0791 0.0756 0.0706 0.0716 0.0596
0.0486 0.0414 0.0327 0.0316 0.0240 0.0186 0.0143 0.0108 0.0088 0.0056
0.0040 0.0034 0.0026 0.0018 0.0189
* LDT1
0.0406 0.0901 0.0736 0.0840 0.0317 0.0977 0.1097 0.0824 0.0514 0.0590
0.0438 0.0425 0.0520 0.0089 0.0082 0.0051 0.0095 0.0108 0.0089 0.0120
0.0141 0.0146 0.0054 0.0038 0.0403
* LDT2
0.0490 0.0871 0.0929 0.1090 0.1100 0.0886 0.0860 0.0726 0.0660 0.0482
0.0417 0.0352 0.0245 0.0192 0.0170 0.0105 0.0068 0.0063 0.0040 0.0042
0.0033 0.0027 0.0018 0.0013 0.0120
* LDT3
0.0614 0.0814 0.1124 0.1060 0.1237 0.1032 0.0795 0.0668 0.0568 0.0460
0.0264 0.0206 0.0185 0.0204 0.0151 0.0099 0.0067 0.0032 0.0058 0.0055
0.0044 0.0033 0.0033 0.0019 0.0176
* LDT4
0.0564 0.1720 0.0817 0.1237 0.1514 0.1078 0.0579 0.0526 0.0427 0.0486
0.0328 0.0232 0.0081 0.0088 0.0088 0.0042 0.0029 0.0007 0.0028 0.0020
0.0035 0.0017 0.0003 0.0007 0.0048
* HDV2B
0.0325 0.0499 0.0869 0.0771 0.1000 0.0990 0.0731 0.0769 0.0798 0.0534
0.0218 0.0431 0.0316 0.0296 0.0193 0.0143 0.0091 0.0059 0.0082 0.0119
0.0062 0.0056 0.0074 0.0074 0.0500
* HDV3
0.0488 0.0540 0.1275 0.1196 0.0930 0.0721 0.0617 0.0663 0.0632 0.0634
0.0177 0.0305 0.0200 0.0182 0.0178 0.0107 0.0073 0.0061 0.0069 0.0142
0.0135 0.0106 0.0056 0.0028 0.0487
* HDV4
0.0397 0.0659 0.1047 0.0605 0.0831 0.0686 0.0596 0.0524 0.0876 0.0921
0.0244 0.0722 0.0289 0.0334 0.0370 0.0117 0.0108 0.0108 0.0090 0.0099
0.0108 0.0036 0.0018 0.0000 0.0213
* HDV5
0.0497 0.0644 0.1693 0.1141 0.1307 0.0939 0.0718 0.0626 0.0644 0.0736
0.0074 0.0129 0.0000 0.0147 0.0129 0.0129 0.0037 0.0018 0.0110 0.0018
0.0055 0.0074 0.0018 0.0018 0.0098
* HDV6
0.0277 0.0868 0.0649 0.1084 0.0926 0.0358 0.0489 0.0640 0.0940 0.0565
0.0560 0.0372 0.0282 0.0441 0.0148 0.0199 0.0145 0.0073 0.0145 0.0108
0.0134 0.0039 0.0073 0.0046 0.0441
* HDV7
0.0221 0.0258 0.0331 0.0497 0.0478 0.0294 0.0166 0.0533 0.0920 0.0515
0.0533 0.0478 0.0294 0.0405 0.0497 0.0239 0.0313 0.0184 0.0349 0.0129
0.0441 0.0386 0.0166 0.0166 0.1208
* HDV8A
0.0161 0.1001 0.0784 0.0784 0.0557 0.0642 0.0491 0.0746 0.0689 0.0548
0.0453 0.0415 0.0189 0.0463 0.0434 0.0198 0.0085 0.0066 0.0161 0.0189
0.0198 0.0094 0.0170 0.0057 0.0425
* HDV8B
0.0180 0.1007 0.0791 0.0791 0.0540 0.0647 0.0504 0.0719 0.0683 0.0540
0.0468 0.0432 0.0180 0.0468 0.0432 0.0180 0.0072 0.0072 0.0144 0.0180
0.0180 0.0108 0.0180 0.0072 0.0432
* HD8S
0.0876 0.0537 0.0407 0.0093 0.0860 0.0416 0.0644 0.0658 0.0618 0.0723
0.0604 0.0450 0.0197 0.0325 0.0241 0.0139 0.0117 0.0236 0.0415 0.0404
0.0111 0.0179 0.0089 0.0042 0.0618
* HDBT
0.0564 0.0312 0.0839 0.1056 0.0594 0.0545 0.0651 0.0641 0.0947 0.0426
0.0634 0.0756 0.0156 0.0208 0.0179 0.0096 0.0166 0.0096 0.0085 0.0259
0.0190 0.0216 0.0015 0.0063 0.0306
* MC
0.0472 0.1071 0.1076 0.0983 0.0710 0.0995 0.0742 0.0606 0.0469 0.0388
0.0255 0.0240 0.0226 0.0185 0.0139 0.0122 0.0093 0.0065 0.0079 0.0076
0.0041 0.0041 0.0063 0.0085 0.0779

Montgomery County, MD- 2008 Registration Data

* LDV
0.0646 0.0753 0.0684 0.0702 0.0709 0.0768 0.0754 0.0702 0.0714 0.0596
0.0514 0.0455 0.0360 0.0358 0.0264 0.0196 0.0154 0.0117 0.0100 0.0066
0.0050 0.0043 0.0030 0.0023 0.0241
* LDT1
0.0434 0.0716 0.0603 0.0529 0.0193 0.1035 0.1246 0.1091 0.0563 0.0621
0.0527 0.0625 0.0496 0.0090 0.0054 0.0042 0.0092 0.0052 0.0054 0.0044
0.0080 0.0077 0.0060 0.0016 0.0660
* LDT2
0.0650 0.0857 0.0862 0.0953 0.1028 0.0861 0.0841 0.0712 0.0674 0.0516
0.0440 0.0355 0.0266 0.0231 0.0168 0.0117 0.0066 0.0057 0.0042 0.0031
0.0030 0.0024 0.0017 0.0010 0.0190
* LDT3
0.0941 0.0743 0.0985 0.0867 0.1075 0.0931 0.0814 0.0685 0.0596 0.0515
0.0277 0.0243 0.0205 0.0214 0.0179 0.0094 0.0068 0.0050 0.0065 0.0060
0.0045 0.0036 0.0029 0.0016 0.0264
* LDT4
0.0650 0.1398 0.0837 0.1020 0.1293 0.0980 0.0608 0.0611 0.0515 0.0664
0.0386 0.0333 0.0131 0.0125 0.0098 0.0046 0.0032 0.0020 0.0049 0.0038
0.0052 0.0023 0.0011 0.0006 0.0074
* HDV2E
0.0485 0.0596 0.0958 0.0799 0.0916 0.0935 0.0766 0.0755 0.0674 0.0527
0.0262 0.0383 0.0266 0.0284 0.0156 0.0112 0.0080 0.0065 0.0080 0.0088
0.0063 0.0045 0.0055 0.0044 0.0608
* HDV3
0.0386 0.0579 0.1198 0.0996 0.0815 0.0716 0.0727 0.0626 0.0574 0.0637
0.0206 0.0263 0.0162 0.0293 0.0182 0.0144 0.0069 0.0091 0.0138 0.0095
0.0126 0.0087 0.0125 0.0056 0.0709
* HDV4
0.0370 0.0441 0.0957 0.0542 0.0714 0.0644 0.0683 0.0741 0.0793 0.0723
0.0309 0.0688 0.0216 0.0397 0.0384 0.0176 0.0119 0.0119 0.0194 0.0132
0.0115 0.0053 0.0026 0.0040 0.0425
* HDV5
0.0679 0.0761 0.1077 0.1288 0.1382 0.1077 0.0761 0.0515 0.0550 0.0621
0.0199 0.0211 0.0117 0.0129 0.0141 0.0105 0.0059 0.0047 0.0047 0.0023
0.0023 0.0035 0.0000 0.0000 0.0152
* HDV6
0.0202 0.1068 0.0672 0.0860 0.0830 0.0462 0.0604 0.0686 0.0760 0.0698
0.0479 0.0530 0.0247 0.0354 0.0134 0.0216 0.0108 0.0089 0.0183 0.0095
0.0082 0.0095 0.0032 0.0038 0.0474
* HDV7
0.0393 0.0328 0.0508 0.0524 0.0393 0.0311 0.0229 0.0590 0.0508 0.0475
0.0393 0.0393 0.0377 0.0311 0.0131 0.0295 0.0344 0.0279 0.0524 0.0279
0.0377 0.0279 0.0197 0.0180 0.1382
* HDV8A
0.0376 0.0716 0.0615 0.0781 0.0701 0.0441 0.0542 0.0463 0.0875 0.0557
0.0499 0.0347 0.0275 0.0304 0.0202 0.0217 0.0123 0.0275 0.0181 0.0210
0.0130 0.0217 0.0123 0.0116 0.0716
* HDV8B
0.0387 0.0718 0.0608 0.0773 0.0691 0.0442 0.0552 0.0470 0.0884 0.0552
0.0497 0.0359 0.0276 0.0304 0.0193 0.0221 0.0110 0.0276 0.0166 0.0221
0.0138 0.0221 0.0110 0.0110 0.0718
* HD8S
0.0876 0.0537 0.0407 0.0093 0.0860 0.0416 0.0644 0.0658 0.0618 0.0723
0.0604 0.0450 0.0197 0.0325 0.0241 0.0139 0.0117 0.0236 0.0415 0.0404
0.0111 0.0179 0.0089 0.0042 0.0618
* HDBT
0.0564 0.0312 0.0839 0.1056 0.0594 0.0545 0.0651 0.0641 0.0947 0.0426
0.0634 0.0756 0.0156 0.0208 0.0179 0.0096 0.0166 0.0096 0.0085 0.0259
0.0190 0.0216 0.0015 0.0063 0.0306
* MC
0.0429 0.1078 0.1038 0.0971 0.0725 0.0888 0.0652 0.0601 0.0453 0.0326
0.0293 0.0206 0.0196 0.0176 0.0147 0.0138 0.0111 0.0083 0.0069 0.0074
0.0084 0.0081 0.0101 0.0102 0.0981

Prince George's County, MD- 2008 Registration Data

* LDV
0.0363 0.0609 0.0652 0.0683 0.0661 0.0727 0.0715 0.0664 0.0733 0.0605
0.0543 0.0514 0.0431 0.0441 0.0348 0.0270 0.0209 0.0158 0.0135 0.0094
0.0071 0.0057 0.0043 0.0032 0.0241
* LDT1
0.0257 0.0559 0.0427 0.0518 0.0230 0.0907 0.1057 0.1137 0.0512 0.0575
0.0490 0.0575 0.0640 0.0160 0.0070 0.0102 0.0083 0.0106 0.0075 0.0186
0.0263 0.0155 0.0173 0.0081 0.0660
* LDT2
0.0330 0.0615 0.0697 0.0856 0.0915 0.0802 0.0819 0.0707 0.0723 0.0585
0.0547 0.0483 0.0383 0.0340 0.0282 0.0182 0.0120 0.0104 0.0080 0.0069
0.0064 0.0048 0.0039 0.0021 0.0190
* LDT3
0.0349 0.0572 0.0853 0.0836 0.1073 0.0979 0.0870 0.0662 0.0651 0.0641
0.0359 0.0318 0.0279 0.0303 0.0247 0.0161 0.0107 0.0078 0.0108 0.0086
0.0068 0.0055 0.0047 0.0034 0.0264
* LDT4
0.0454 0.1278 0.0760 0.0936 0.1278 0.1029 0.0540 0.0672 0.0640 0.0719
0.0584 0.0408 0.0135 0.0103 0.0098 0.0065 0.0023 0.0022 0.0036 0.0046
0.0055 0.0028 0.0010 0.0007 0.0074
* HDV2B
0.0397 0.0494 0.0999 0.0680 0.0777 0.0863 0.0640 0.0699 0.0724 0.0495
0.0307 0.0461 0.0295 0.0349 0.0213 0.0141 0.0118 0.0084 0.0110 0.0127
0.0126 0.0083 0.0104 0.0104 0.0608
* HDV3
0.0550 0.0502 0.1228 0.0835 0.0705 0.0651 0.0604 0.0583 0.0615 0.0633
0.0275 0.0323 0.0155 0.0272 0.0235 0.0089 0.0089 0.0073 0.0131 0.0130
0.0179 0.0203 0.0118 0.0111 0.0709
* HDV4
0.0378 0.0703 0.0789 0.0546 0.0506 0.0687 0.0506 0.0595 0.0891 0.0841
0.0325 0.0516 0.0276 0.0365 0.0509 0.0171 0.0164 0.0125 0.0174 0.0174
0.0171 0.0062 0.0039 0.0059 0.0425
* HDV5
0.0473 0.0946 0.1164 0.0880 0.1230 0.0861 0.0473 0.0549 0.0634 0.0643
0.0161 0.0710 0.0359 0.0237 0.0170 0.0076 0.0085 0.0019 0.0028 0.0057
0.0019 0.0028 0.0019 0.0028 0.0152
* HDV6
0.0426 0.1203 0.1095 0.1059 0.0599 0.0489 0.0537 0.0514 0.0620 0.0520
0.0447 0.0379 0.0299 0.0457 0.0131 0.0144 0.0099 0.0114 0.0115 0.0054
0.0051 0.0063 0.0065 0.0046 0.0474
* HDV7
0.0318 0.0457 0.0498 0.0579 0.0318 0.0416 0.0433 0.0465 0.0579 0.0612
0.0433 0.0277 0.0228 0.0433 0.0212 0.0253 0.0188 0.0367 0.0481 0.0269
0.0318 0.0245 0.0106 0.0131 0.1382
* HDV8A
0.0500 0.0741 0.0887 0.0949 0.0470 0.0587 0.0441 0.0649 0.0587 0.0545
0.0516 0.0250 0.0304 0.0354 0.0221 0.0137 0.0125 0.0121 0.0175 0.0200
0.0158 0.0154 0.0079 0.0083 0.0766
* HDV8B
0.0508 0.0733 0.0883 0.0959 0.0470 0.0583 0.0451 0.0658 0.0583 0.0545
0.0508 0.0244 0.0301 0.0357 0.0226 0.0132 0.0132 0.0132 0.0169 0.0207
0.0150 0.0150 0.0075 0.0075 0.0771
* HD8S
0.0876 0.0537 0.0407 0.0093 0.0860 0.0416 0.0644 0.0658 0.0618 0.0723
0.0604 0.0450 0.0197 0.0325 0.0241 0.0139 0.0117 0.0236 0.0415 0.0404
0.0111 0.0179 0.0089 0.0042 0.0618
* HDBT
0.0564 0.0312 0.0839 0.1056 0.0594 0.0545 0.0651 0.0641 0.0947 0.0426
0.0634 0.0756 0.0156 0.0208 0.0179 0.0096 0.0166 0.0096 0.0085 0.0259
0.0190 0.0216 0.0015 0.0063 0.0306
* MC
0.0453 0.1243 0.1154 0.0976 0.0734 0.0864 0.0691 0.0628 0.0476 0.0346
0.0210 0.0183 0.0186 0.0173 0.0113 0.0085 0.0092 0.0060 0.0058 0.0052
0.0048 0.0047 0.0085 0.0062 0.0981

Prince William County, VA- 2008 Registration Data

* LDV
0.0485 0.0754 0.0752 0.0782 0.0734 0.0765 0.0697 0.0648 0.0690 0.0567
0.0507 0.0461 0.0380 0.0370 0.0297 0.0236 0.0185 0.0149 0.0118 0.0078
0.0055 0.0045 0.0032 0.0024 0.0189
* LDT1
0.0486 0.0967 0.0680 0.0753 0.0224 0.0899 0.0937 0.0760 0.0541 0.0515
0.0372 0.0456 0.0532 0.0119 0.0084 0.0106 0.0097 0.0080 0.0101 0.0186
0.0253 0.0249 0.0154 0.0044 0.0403
* LDT2
0.0380 0.0754 0.0836 0.0963 0.0992 0.0847 0.0823 0.0673 0.0689 0.0522
0.0493 0.0423 0.0312 0.0296 0.0243 0.0166 0.0103 0.0093 0.0071 0.0065
0.0050 0.0038 0.0028 0.0018 0.0120
* LDT3
0.0398 0.0692 0.0968 0.0980 0.1142 0.1022 0.0879 0.0675 0.0639 0.0573
0.0318 0.0266 0.0250 0.0259 0.0197 0.0123 0.0102 0.0051 0.0072 0.0067
0.0056 0.0045 0.0027 0.0023 0.0176
* LDT4
0.0403 0.1263 0.0946 0.1283 0.1487 0.1001 0.0571 0.0557 0.0505 0.0688
0.0432 0.0317 0.0118 0.0090 0.0083 0.0039 0.0025 0.0013 0.0032 0.0034
0.0040 0.0018 0.0005 0.0003 0.0048
* HDV2B
0.0198 0.0402 0.0857 0.0794 0.1047 0.0977 0.0744 0.0794 0.0736 0.0606
0.0301 0.0432 0.0273 0.0281 0.0223 0.0131 0.0096 0.0060 0.0089 0.0127
0.0094 0.0076 0.0085 0.0076 0.0500
* HDV3
0.0380 0.0468 0.1215 0.1343 0.0885 0.0774 0.0684 0.0690 0.0607 0.0659
0.0191 0.0245 0.0134 0.0230 0.0162 0.0096 0.0085 0.0040 0.0110 0.0076
0.0170 0.0101 0.0093 0.0074 0.0487
* HDV4
0.0295 0.0403 0.0869 0.0915 0.0729 0.0636 0.0558 0.0574 0.0737 0.0861
0.0326 0.0512 0.0279 0.0372 0.0458 0.0209 0.0163 0.0093 0.0240 0.0302
0.0202 0.0016 0.0008 0.0031 0.0213
* HDV5
0.0269 0.0688 0.1225 0.0890 0.1427 0.0940 0.0587 0.0688 0.0789 0.0957
0.0050 0.0504 0.0168 0.0101 0.0084 0.0101 0.0067 0.0000 0.0134 0.0134
0.0034 0.0067 0.0000 0.0000 0.0098
* HDV6
0.0284 0.0766 0.1006 0.1021 0.0993 0.0538 0.0637 0.0566 0.0740 0.0659
0.0393 0.0229 0.0236 0.0422 0.0212 0.0159 0.0090 0.0109 0.0133 0.0113
0.0020 0.0100 0.0102 0.0032 0.0441
* HDV7
0.0259 0.0628 0.0499 0.0813 0.0462 0.0462 0.0351 0.0425 0.0646 0.0536
0.0277 0.0425 0.0296 0.0369 0.0166 0.0166 0.0296 0.0148 0.0388 0.0222
0.0222 0.0296 0.0240 0.0203 0.1208
* HDV8A
0.0082 0.0686 0.0890 0.0955 0.0710 0.0620 0.0522 0.0555 0.0694 0.0718
0.0449 0.0384 0.0376 0.0473 0.0310 0.0220 0.0106 0.0073 0.0114 0.0188
0.0212 0.0090 0.0082 0.0049 0.0441
* HDV8B
0.0067 0.0705 0.0906 0.0940 0.0705 0.0604 0.0537 0.0570 0.0705 0.0705
0.0470 0.0403 0.0369 0.0470 0.0302 0.0201 0.0101 0.0067 0.0101 0.0201
0.0201 0.0101 0.0067 0.0067 0.0436
* HD8S
0.0876 0.0537 0.0407 0.0093 0.0860 0.0416 0.0644 0.0658 0.0618 0.0723
0.0604 0.0450 0.0197 0.0325 0.0241 0.0139 0.0117 0.0236 0.0415 0.0404
0.0111 0.0179 0.0089 0.0042 0.0618
* HD8T
0.0564 0.0312 0.0839 0.1056 0.0594 0.0545 0.0651 0.0641 0.0947 0.0426
0.0634 0.0756 0.0156 0.0208 0.0179 0.0096 0.0166 0.0096 0.0085 0.0259
0.0190 0.0216 0.0015 0.0063 0.0306
* MC
0.0445 0.1182 0.1112 0.1094 0.0798 0.0924 0.0706 0.0615 0.0491 0.0368
0.0249 0.0202 0.0209 0.0124 0.0137 0.0096 0.0078 0.0058 0.0049 0.0056
0.0034 0.0053 0.0076 0.0065 0.0779

District of Columbia- 2008 Diesel Sales Fractions

*LDV									
0.0000	0.0000	0.0057	0.0057	0.0025	0.0022	0.0031	0.0020	0.0017	0.0027
0.0021	0.0017	0.0021	0.0021	0.0004	0.0018	0.0027	0.0071	0.0014	0.0009
0.0009	0.0342	0.0197	0.1269	0.1269					
*LDT1									
0.0000	0.0000	0.0127	0.0136	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000
0.0002	0.0000	0.0007	0.0011	0.0040	0.0000	0.0022	0.0013	0.0000	0.0039
0.0014	0.0054	0.0074	0.0115	0.0115					
*LDT2									
0.0000	0.0000	0.0010	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0002	0.0000	0.0002	0.0000	0.0003	0.0002	0.0000	0.0013
0.0006	0.0023	0.0037	0.0034	0.0034					
*LDT3									
0.0066	0.0038	0.0005	0.0000	0.0004	0.0000	0.0002	0.0002	0.0001	0.0007
0.0013	0.0024	0.0021	0.0069	0.0037	0.0034	0.0009	0.0071	0.0053	0.0058
0.0085	0.0153	0.0144	0.0302	0.0302					
*LDT4									
0.0092	0.0024	0.0008	0.0000	0.0005	0.0000	0.0003	0.0002	0.0002	0.0007
0.0010	0.0022	0.0044	0.0192	0.0094	0.0091	0.0040	0.0276	0.0140	0.0130
0.0129	0.0355	0.0595	0.1294	0.1294					
*HDV2B									
0.1827	0.1813	0.2401	0.2472	0.2263	0.1824	0.1887	0.1809	0.1688	0.2256
0.2031	0.2563	0.2171	0.1831	0.1962	0.2278	0.1777	0.1917	0.2028	0.1914
0.1282	0.2577	0.2331	0.1586	0.1586					
*HDV3									
0.5873	0.5419	0.5403	0.5479	0.3985	0.5310	0.4618	0.4162	0.5045	0.5776
0.3933	0.4257	0.4710	0.3796	0.3563	0.5035	0.3854	0.4647	0.5669	0.4169
0.5132	0.4741	0.4139	0.1761	0.1761					
*HDV4									
0.7659	0.7298	0.8404	0.7818	0.7713	0.6388	0.5366	0.4719	0.5624	0.5561
0.6060	0.4581	0.4138	0.5246	0.3365	0.6453	0.2857	0.2803	0.3333	0.3659
0.2443	0.0896	0.0238	0.0204	0.0204					
*HDV5									
0.9442	0.9686	0.9316	0.9305	0.9263	0.8974	0.9324	0.9379	0.8904	0.8911
0.8039	0.6950	0.7606	0.5294	0.8000	0.9565	0.7391	0.5000	0.7500	0.6429
0.3333	0.6316	0.7692	0.0000	0.0000					
*HDV6									
0.9309	0.8810	0.8980	0.9633	0.8973	0.8906	0.9035	0.8921	0.9134	0.8581
0.8766	0.9027	0.8965	0.9151	0.8156	0.8920	0.7168	0.7483	0.7354	0.7290
0.5872	0.6115	0.5407	0.6127	0.6127					
*HDV7									
1.0000	1.0000	1.0000	1.0000	1.0000	0.9914	0.9922	0.9887	0.9752	0.9565
0.9786	0.9070	0.9762	0.9867	1.0000	0.9770	0.9623	0.9091	0.8933	0.9082
0.8889	0.8224	0.7692	0.7963	0.7963					
*HDV8A									
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9940	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9910
0.9833	1.0000	0.9677	1.0000	1.0000					
*HDV8B									
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9900	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000					
*HDBS									
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000					
*HDBT									
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000					

Maryland- 2008 Diesel Sales Fractions

*LDV									
0.0001	0.0000	0.0072	0.0065	0.0030	0.0028	0.0039	0.0025	0.0023	0.0033
0.0024	0.0015	0.0022	0.0022	0.0005	0.0018	0.0025	0.0092	0.0014	0.0015
0.0011	0.0356	0.0213	0.1174	0.1174					
*LDT1									
0.0004	0.0000	0.0137	0.0113	0.0000	0.0002	0.0006	0.0000	0.0000	0.0003
0.0003	0.0000	0.0008	0.0000	0.0093	0.0043	0.0034	0.0020	0.0021	0.0074
0.0021	0.0061	0.0095	0.0106	0.0106					
*LDT2									
0.0000	0.0000	0.0013	0.0009	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
0.0000	0.0000	0.0002	0.0000	0.0004	0.0003	0.0004	0.0002	0.0003	0.0021
0.0011	0.0029	0.0048	0.0041	0.0041					
*LDT3									
0.0050	0.0032	0.0005	0.0001	0.0002	0.0001	0.0001	0.0004	0.0001	0.0006
0.0021	0.0020	0.0036	0.0090	0.0034	0.0034	0.0016	0.0046	0.0062	0.0053
0.0105	0.0135	0.0142	0.0283	0.0283					
*LDT4									
0.0058	0.0017	0.0006	0.0001	0.0002	0.0001	0.0002	0.0005	0.0001	0.0006
0.0016	0.0018	0.0081	0.0254	0.0090	0.0091	0.0057	0.0146	0.0136	0.0096
0.0119	0.0239	0.0663	0.1156	0.1156					
*HDV2B									
0.2489	0.2799	0.3226	0.3024	0.3018	0.2465	0.2574	0.2273	0.2142	0.2780
0.1759	0.3466	0.3010	0.2688	0.2802	0.3135	0.2249	0.2684	0.2284	0.1576
0.1451	0.1966	0.2637	0.1867	0.1867					
*HDV3									
0.7295	0.6937	0.6385	0.6512	0.5498	0.6095	0.5424	0.5236	0.6010	0.6499
0.4335	0.4679	0.5568	0.4406	0.3695	0.5414	0.4535	0.4405	0.5072	0.4088
0.4464	0.4861	0.3768	0.1739	0.1739					
*HDV4									
0.7909	0.7538	0.7521	0.7392	0.7381	0.6108	0.6000	0.5000	0.6163	0.5696
0.4602	0.5439	0.4740	0.6007	0.3858	0.6454	0.3333	0.3107	0.3704	0.4444
0.3361	0.0000	0.0000	0.0476	0.0476					
*HDV5									
0.9242	0.9569	0.9126	0.9405	0.8964	0.8912	0.8476	0.9098	0.8289	0.7977
0.6000	0.5317	0.6230	0.3443	0.6429	0.9091	0.7368	0.5000	0.5833	0.8000
0.7143	0.5455	1.0000	0.2000	0.2000					
*HDV6									
0.9316	0.8757	0.8770	0.9450	0.8068	0.8317	0.8559	0.8795	0.8739	0.8325
0.8966	0.9438	0.9464	0.9586	0.8876	0.9417	0.7353	0.7612	0.8295	0.7308
0.6596	0.6667	0.6042	0.6129	0.6129					
*HDV7									
1.0000	1.0000	1.0000	0.9935	1.0000	1.0000	0.9891	0.9845	0.9868	0.9771
0.9813	0.9091	0.9722	1.0000	0.9500	0.9577	0.9315	0.9417	0.9111	0.9186
0.8942	0.8723	0.8525	0.7895	0.7895					
*HDV8A									
1.0000	1.0000	1.0000	0.9980	1.0000	1.0000	1.0000	1.0000	0.9975	1.0000
1.0000	1.0000	0.9946	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.9911	1.0000	0.9846	1.0000	1.0000					
*HDV8B									
1.0000	1.0000	1.0000	0.9919	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1.0000	1.0000	1.0000	0.9815	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000					
*HDBS									
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000					
*HDBT									
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000					

Virginia- 2008 Diesel Sales Fractions

*LDV									
0.0000	0.0000	0.0068	0.0067	0.0032	0.0024	0.0033	0.0022	0.0020	0.0027
0.0021	0.0017	0.0019	0.0019	0.0003	0.0024	0.0025	0.0055	0.0017	0.0012
0.0002	0.0324	0.0175	0.1350	0.1350					
*LDT1									
0.0000	0.0000	0.0160	0.0180	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0003	0.0035	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0024	0.0012	0.0127	0.0210	0.0210					
*LDT2									
0.0000	0.0000	0.0011	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0010	0.0006	0.0057	0.0052	0.0052					
*LDT3									
0.0069	0.0032	0.0008	0.0000	0.0005	0.0000	0.0001	0.0001	0.0001	0.0011
0.0035	0.0032	0.0037	0.0077	0.0057	0.0029	0.0016	0.0076	0.0065	0.0027
0.0102	0.0098	0.0185	0.0212	0.0212					
*LDT4									
0.0099	0.0023	0.0013	0.0000	0.0005	0.0000	0.0001	0.0001	0.0002	0.0012
0.0034	0.0035	0.0090	0.0251	0.0144	0.0090	0.0069	0.0360	0.0181	0.0074
0.0189	0.0250	0.1038	0.1000	0.1000					
*HDV2B									
0.2244	0.2015	0.2735	0.3024	0.2835	0.2364	0.2169	0.2321	0.2146	0.2567
0.1356	0.2791	0.2887	0.2108	0.2491	0.2957	0.2366	0.2623	0.2062	0.2299
0.1474	0.1680	0.2313	0.2231	0.2231					
*HDV3									
0.6152	0.5965	0.6516	0.6250	0.4485	0.5224	0.5456	0.5118	0.5369	0.5917
0.3981	0.5286	0.5172	0.4000	0.4022	0.5567	0.4167	0.5614	0.5102	0.5000
0.5394	0.5000	0.4304	0.1481	0.1481					
*HDV4									
0.8280	0.7461	0.7872	0.7749	0.7892	0.6648	0.5658	0.5271	0.5501	0.5496
0.4773	0.4439	0.4667	0.5592	0.3868	0.5684	0.3837	0.3529	0.3836	0.4316
0.2500	0.0769	0.0556	0.0000	0.0000					
*HDV5									
0.9545	0.9758	0.9228	0.9346	0.8804	0.9095	0.9384	0.8929	0.8962	0.8653
0.7391	0.4634	0.5938	0.5349	0.6000	0.8889	0.6364	0.6667	0.7273	0.8462
0.2308	0.5882	0.0000	0.0000	0.0000					
&HDV6									
0.9108	0.8445	0.8244	0.9495	0.8416	0.8284	0.8340	0.8966	0.8782	0.8251
0.8802	0.8783	0.8651	0.8745	0.8642	0.8571	0.7593	0.8095	0.7206	0.7736
0.5500	0.6047	0.4634	0.5294	0.5294					
*HDV7									
1.0000	1.0000	0.9875	1.0000	1.0000	0.9701	0.9839	1.0000	0.9524	0.9167
0.9700	0.8784	0.9194	0.9677	0.9706	0.9778	0.9848	0.9459	0.9405	0.8596
0.8356	0.8026	0.6818	0.7143	0.7143					
*HDV8A									
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9947	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9870
1.0000	1.0000	1.0000	1.0000	1.0000					
*HDV8B									
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9865	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000					
*HDBS									
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000					
*HDBT									
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000					

APPENDIX E

Documentation of Mobile Source Emission Calculations (post-processor)

MEMORANDUM

TO: Files

FROM: Ronald Milone

DATE: October 19, 2011

SUBJECT: Mobile Emissions Post Processor for the Version 2.3 Travel Demand Model

1.0 Introduction

This memorandum describes the mobile emissions post processor used in the Air Quality Conformity Determination of the 2011 CLRP. The post processor is a series of computer programs that are used to forecast air pollution attributed to the highway system in the Washington D.C. region. The programs are essentially used to multiply travel demand produced by the TPB's regional travel model (highway link VMT and trip tables) by emission rates developed by the EPA's Mobile 6.2 model.

The post processor has, in recent years, been applied with model outputs of the TPB's Version 2.2 travel demand model and the Mobile 6.2 model¹. With the draft release of the new Version 2.3 travel model in the spring of 2011, TPB staff has recognized the need to implement several updates to the post processor. The updates included expanding zonal dimensions of some programs to accommodate the new 3,722 TAZ system and addressing redefined modeled time periods. The post processor updates also included parameter updates that are consistent with the Version 2.3 model's base year, 2007.

In accordance with air quality planning requirements, the post processor is currently used to compute mobile source emissions associated with volatile organic compounds (VOC)², nitrogen oxide (NOx), carbon monoxide (CO), and particulate matter (PM_{2.5} and precursor NOx). As emission rates are sensitive to temperature, emission calculations are developed for specific seasonal periods. For analysis purposes, VOC and NOx emissions are computed for an average summer weekday conditions. CO emissions are computed for an average winter weekday. PM_{2.5} emissions are computed as annualized figures, based on the development of three individual seasonal calculations.

TPB staff currently estimates mobile emissions explicitly for two source categories: on-network and off-network sources. On-network emissions are generated by travel on the regional highway system and are computed using the regional travel model output. TPB staff develops on-network emissions for individual segments of the drive cycle. The segments include start-up emissions (emissions that occur shortly after the vehicle has been started), stabilized running emissions (emissions from an operating vehicle engine after it is fully "warmed"), and hot soaking (evaporative emissions that occur after the vehicle has been turned off). Alternatively, off-network emissions are concerned with vehicle-based

¹ See 5/26/2009 memorandum from Ronald Milone and Hamid Humeida to Files, Subject: Mobile Emissions Post Processor Description and Results

² VOC emissions are sometimes labeled as "HC" (or hydrocarbons) in the post processor output

evaporation and travel that is not addressed by the regional travel model (i.e., travel on local streets, bus travel, and auto travel related to accessing transit). The post processor currently addresses all on-network and local off-network emission sources. Emissions concerned with the remaining off-network categories are computed using off-line spreadsheet techniques that are not addressed in this memorandum.

As the term “post processor” implies, a key function of the emissions estimation is the refinement of highway volumes and speeds that are produced by the travel model in terms of gross time periods into hourly estimates. This is necessary because the running emission rates are sensitive to vehicle speed. The refinement of modeled speeds involves taking steps to ensure that:

- 1) Hourly link volumes are reasonable with respect to the diurnal profile of traffic
- 2) Hourly link volumes are reasonable with respect to the physical capacity of the link
- 3) Modified speed flow relationships are used to develop realistic hourly link volumes and speeds

Table 1 provides a summary of the emissions calculations by emission class and pollutant. It is notable to point out that the on-network emissions calculations are made at a very disaggregate level. Running emissions are computed at the network link level as a function of vehicle miles traveled (VMT) while trip start and soaking emissions are computed at the transportation analysis zone (TAZ) level, on a per trip basis. In contrast, local running emissions are computed on a jurisdiction level as a function of VMT.

Table 1 Summary of Mobile Emissions Calculation by Emission Type and Pollutant

Emission Type	Pollutant	Emission Rate Description	Travel Unit Description	How Emissions are Computed
Running/ On-Network	VOC CO NOx	gm/mile, by jurisdiction, facility type and speed	Vehicle miles	Emission rate * travel unit, computed at network link level, by hour of day
	PM _{2.5}	gm/mile, by jurisdiction	vehicle miles	Emission rate * travel unit, computed at network link level
Start-Up	VOC CO NOx	gm/trip, by jurisdiction and engine condition (hot/cold)	Vehicle starts	Emission rate * travel unit, computed at TAZ level, by hour of day
Soak	VOC	gm/trip, by jurisdiction	Vehicle stops	Emission rate * travel unit, computed at TAZ level
Running / Local (Off-Network)	VOC CO NOx	gm/mile, by jurisdiction in urbanized areas; by jurisdiction and speed in rural areas	vehicle miles	Emission rate * travel unit, computed at jurisdiction level, stratified by urban and rural areas; rural areas are further stratified by speed ranges
	PM _{2.5}	gm/mile, by jurisdiction	vehicle miles	Emission rate * travel unit, Computed at jurisdiction level

2.0 Overview of the Post Processor Steps

The post processor consists of eight Cube Voyager³ programs that are designed to read Mobile 6.2 generated emission rate files and Version 2.3 travel demand model outputs. The programs are listed in Table 2. There are two sets of programs, one used to compute average weekday emissions for a single-season, and another that is used to compute average daily emissions for three seasons⁴.

Table 2 Table of Post Processor Program Steps

Seq. No.	One-Season Program Name	Three-Season Program Name	Program Description
1	AQTRIP.S	AQTRIP.S	Summarize jurisdiction level vehicle trip distribution
2	ZONESPRD.S	ZONESPRD.S	Distributed daily vehicle trip ends among hourly periods
3	PEAK_SPREAD.S	PEAK_SPREAD_Seasonal.S	Distribute time period link volumes, among hourly periods and develop hourly speeds
4	RUNNING.S	RUNNING_Seasonal.S	Compute running emissions
5	STRT_SKR.S	STRT_SKR_Seasonal.S	Computer trip start and soaking emissions
6	PRE_LOCAL.S	PRE_LOCAL.S	Estimated forecasted local VMT by jurisdiction
7	LOCAL.S	LOCAL_Seasonal.S	Compute local emissions by jurisdiction
8	Report.s	Report.s	Summarize jurisdiction level emissions for the MSA

The above programs are executed logically, in the sequence shown. Appendix A provides a more detailed graphical view of the post processor process flow. The *AQTRIP* program summarizes the final zone level vehicle trips produced by the regional travel demand model and combines them into AM, PM, and off-peak (night and midday periods). The program creates a distribution table indicating the percentage of daily vehicle travel that occurs between jurisdictions. A proportion table is needed because the Mobile emission rates are associated with the jurisdiction of vehicle registration, which is *not* necessarily the jurisdiction where the actual emissions occur. Therefore, the emission rates ultimately applied within the post processor are actually weighted average rates based on daily vehicular travel proportions between jurisdictions.

The *AQTRIP* program also writes vehicle trip-end files by time period which are used in the starting and soaking emissions calculation. The *ZONESPRD.S* program reads the daily trip-end files created above and apportions them among hourly time periods, which is necessary for starting and soaking emissions

³ All previous post processor versions have been TP+ scripts

⁴ The “three season” set of programs are executed three times, once for each season

computation. The *Peak_Spread* program refines the time period-specific link volumes from the loaded highway network and develops hourly volumes and speeds that are subsequently used in the running emission calculation that is made in the *Running* program. The *Strt_Skr* program is used to calculate starting and soaking emission at the TAZ level. The *Pre_Local* and *Local* programs are used to compute local running emissions at the jurisdictional level of analysis. Finally, the *Report* program reads the various output files and creates a single report summarizing running, start, soak, and local emissions for the MSA.

The above programs are executed in a scenario-specific subdirectory, using a batch file that defines the location of the travel model files, the location and name of the Mobile 6.2 generated emission rate files, and seasonal parameters used to adjust the average weekday travel link volumes produced by the travel model to the appropriate seasonal period⁵. The “three-season” batch file additionally contains a parameter specifying the number of days in each seasonal period. This is necessary in order to arrive at annual emissions figures. The single season batch file is named *EMISS.BAT* while the three-season batch file is named *3_Season_Emiss.bat*. The subdirectories used for executing 2011 CLRP air quality work appears in the appendix section of this memorandum (Table 13).

3.0 Seasonal VMT Adjustments

Table 3 indicates the factors used to convert average weekday link volumes produced by the travel model into the seasonal analysis period used for emissions calculation. The table also indicates the key pollutants that are most relevant to each seasonal period. The factors were formulated using 2007 traffic count data collected at permanent count stations throughout the region. While the continuously operating permanent count stations are limited in number (~60 locations), they provide a reasonable basis for understanding seasonal traffic variation in the Washington, D.C. region. The summer weekday period reflects about 2.5% higher traffic level than the average annual weekday condition while the wintertime period reflects about 4% lower traffic, which is consistent with expectations. Conversion factors from average weekday traffic to average annual daily traffic reflect uniformly lower traffic levels relative to average annual weekday traffic levels for each seasonal period (from 2.5 – 8.0% lower) as average annual traffic is inclusive of both weekend as well as weekday conditions.

⁵ Note that the link volume is seasonally adjusted thus affecting the running emission calculation but the trip-related emissions are not seasonally adjusted

Table 3 Conversion Factors for Converting AAWT to Seasonal Travel

Analysis Period	Pollutants Analyzed	Duration of Seasonal Period	Conversion Factor Applied to AAWDT	Result of Conversion
Summer/Ozone Season	VOC	May to September	1.0262	Seasonal AAWDT
	NOx			
Wintertime Season	CO	December to February	0.9573	Seasonal AAWDT
Annual Total (sum of 3 seasons)	PM _{2.5} NOx precursor	January to April	0.9177	Seasonal AADT
		May to September	0.9751	Seasonal AADT
		October to December	0.9212	Seasonal AADT

4.0 Mobile 6.0 Emission Rates

As emissions are affected by atmospheric and weather conditions as well as local fleet characteristics and inspection programs, TPB staff prepares a substantial number of Mobile 6.2-based emission files as input to the post processor. Running and trip-end emission files are therefore produced by season and by jurisdiction group⁶. Running emission rates are further developed by facility type groups and speed (from 0 to 65 in 5 mph increments). In all, 96 files are prepared for each single-season scenario (each file contains VOC, CO, and NOx rates). 320 files are prepared for each 3-season scenario (pollutant-specific files are developed individually). TPB uses a rigid naming system for the development of the emission rate files in order to facilitate tracking and quality control. A listing of single season and 3-season emission rate files for a given scenario is provided in the appendix section of this memorandum (Table 10 and Table 11).

5.0 Starting and Soaking Emissions Calculation

Starting emissions are developed by applying per-trip emission rates to modeled vehicle trips at the zone level, on an hour-by-hour basis. Starting pollutant rates are associated with VOC, CO, and NOx emissions, and are expressed in terms of *cold* and *hot transient* types. Cold starts relate to those auto trips with fully cooled engines (i.e., engines that have been turned off for at least one hour prior to the trip starting time). Alternatively, hot transient starts are those auto trips with warm engines (i.e.,

⁶ Emission rates are developed for 27 jurisdiction and external station groups

engines that have been turned off less than one hour prior to the trip start time). An hourly allocation of trip origins is necessary for the starting emission calculation since the proportion of cold and hot starts is dependent upon the time of day. The assumed hourly distribution of AM, PM, and Off-peak vehicle trips is shown in Table 4. The distribution shown was derived from the 2007/08 Household Travel Survey (HTS). The assumed hourly distribution for cold and hot transient starts is shown on Table 5.

Soaking emissions are associated with the evaporative VOC/HC emissions that result when the engine is turned off. The soak emissions consist of a single emission rate that is applied to trip destinations. There is no temporal component to the soaking emission computation.

The general TAZ level equation for computing starting emissions is as follows:

$$\text{StartEm}_{ih} = \text{Starts}_h * \sum_{j=1}^{27} ((\text{CSR}_j * \text{CPCT}_h + \text{HSR}_j * \text{HPCT}_h) * \text{Tprop}_{ij})$$

Where:

- StartEm_{ih} = Zonal starting-up emissions (in grams) at hour h in jurisdiction i
- Starts_h = Zonal vehicle starts at hour h
- CSR_j = Cold Start rate (gm/trip) for jurisdiction j
- CPCT_h = Cold start proportion at hour h
- HSR_j = Hot Start rate (gm/trip) for jurisdiction j
- HPCT_h = Hot start proportion at hour h
- Tprop_{ij} = Proportion of daily trips between jurisdiction i/j

The TAZ level equation for computing soaking emissions is as follows:

$$\text{SoakEm}_{ih} = \text{Stops}_h * \sum_{j=1}^{27} (\text{HSR}_j * \text{Tprop}_{ij})$$

Where:

- SoakEm_{ih} = Zonal hot soak emissions (in grams) at hour h in jurisdiction i
- Stops_h = Vehicle stops at hour h
- HSR_j = Hot Soak rate (gm/trip) for jurisdiction j
- Tprop_{ij} = Proportion of daily trips between jurisdiction i and jurisdiction j

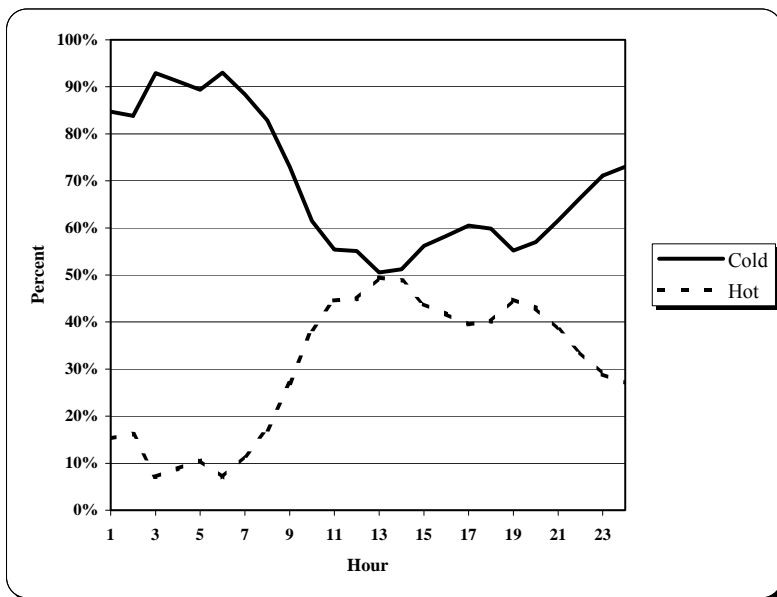
The regional total of starting/soaking emissions is, therefore, based on the result of the above equations accumulated over all TAZs, over all hours of the day. Regional emissions in grams are converted to tons using a conversion factor of 907,184.74 gm/ton.

Table 4 Distribution of AM, PM, and Off-Peak Period Auto Driver Trips among Hourly Periods

Hour No.		% AM	% PM	Off-Peak
1	12mid - 12:59AM			0.20%
2	1:00AM - 1:59AM			0.30%
3	2:00AM - 2:59AM			0.20%
4	3:00AM - 3:59AM			0.10%
5	4:00AM - 4:59AM			0.70%
6	5:00AM - 5:59AM			3.00%
7	6:00AM - 6:59AM	20.50%		0.00%
8	7:00AM - 7:59AM	37.80%		0.00%
9	8:00AM - 8:59AM	41.70%		0.00%
10	9:00AM - 9:59AM			11.90%
11	10:00AM - 10:59AM			10.00%
12	11:00AM - 11:59AM			10.90%
13	12noon - 12:59PM			11.90%
14	1:00PM - 1:59PM			11.30%
15	2:00PM - 2:59PM			11.30%
16	3:00PM - 3:59PM		20.70%	0.00%
17	4:00PM - 4:59PM		24.90%	0.00%
18	5:00PM - 5:59PM		29.40%	0.00%
19	6:00PM - 6:59PM		25.00%	0.00%
20	7:00PM - 7:59PM			11.50%
21	8:00PM - 8:59PM			7.30%
22	9:00PM - 9:59PM			5.30%
23	10:00PM - 10:59PM			2.90%
24	11:00PM - 11:59PM			1.20%
Total		100.00%	100.00%	100.00%

Table 5 Distribution of Cold / Hot Transient Vehicle Starts by Hour

Hour No.		% Cold	% Hot	Total
1	12mid - 12:59AM	84.70%	15.30%	100.00%
2	1:00AM - 1:59AM	83.80%	16.20%	100.00%
3	2:00AM - 2:59AM	92.90%	7.10%	100.00%
4	3:00AM - 3:59AM	91.20%	8.80%	100.00%
5	4:00AM - 4:59AM	89.40%	10.60%	100.00%
6	5:00AM - 5:59AM	93.00%	7.00%	100.00%
7	6:00AM - 6:59AM	88.40%	11.60%	100.00%
8	7:00AM - 7:59AM	82.90%	17.10%	100.00%
9	8:00AM - 8:59AM	73.00%	27.00%	100.00%
10	9:00AM - 9:59AM	61.50%	38.50%	100.00%
11	10:00AM - 10:59AM	55.40%	44.60%	100.00%
12	11:00AM - 11:59AM	55.10%	44.90%	100.00%
13	12noon - 12:59PM	50.50%	49.50%	100.00%
14	1:00PM - 1:59PM	51.20%	48.80%	100.00%
15	2:00PM - 2:59PM	56.20%	43.80%	100.00%
16	3:00PM - 3:59PM	58.30%	41.70%	100.00%
17	4:00PM - 4:59PM	60.50%	39.50%	100.00%
18	5:00PM - 5:59PM	59.90%	40.10%	100.00%
19	6:00PM - 6:59PM	55.20%	44.80%	100.00%
20	7:00PM - 7:59PM	57.00%	43.00%	100.00%
21	8:00PM - 8:59PM	61.60%	38.40%	100.00%
22	9:00PM - 9:59PM	66.40%	33.60%	100.00%
23	10:00PM - 10:59PM	71.10%	28.90%	100.00%
24	11:00PM - 11:59PM	73.00%	27.00%	100.00%



6.0 Running Emissions

Running emissions are associated with VOC/HC, CO, NO_x, and PM_{2.5} pollutants emitted on the regional highway network. They are computed by applying per-mile emission rates to VMT at the network link level, and are computed on an hour-by-hour basis. The calculation is applied on an hourly basis because the running emission rates are provided as a function of highway speed⁷, which varies with congestion throughout the day. As with the trip-end emission calculation, the running emission rate for a given link is a weighted average of all jurisdictional rates based on the proportion of daily vehicle trips from each county to the specific county in which the network link is located. The modeled VMT is adjusted to account for seasonal traffic variation that is relevant to the given scenario.

The allocation of link volumes among hourly periods is done in a two-step manner. First, a default hourly distribution is applied to the traffic on each link based on the facility type and the general peaking orientation, i.e., whether the link volume is oriented toward AM period, the PM period, or neither the AM or PM periods (or a relatively even distribution). The link peaking orientation is established using the following peaking percentage formula:

$$\text{Peaking Percentage} = ((\text{AM Volume} * \text{PM scale factor}) - \text{PM Volume}) / \text{Daily Link Volume}$$

Where:

Peaking Percentage > 7.5%	(AM oriented)
Peaking Percentage < - 7.5%	(PM oriented)
Peaking Percentage >= - 7.5% and <= 7.5%	(Even oriented)

The “PM scale factor” term in the above equation is used to ensure that global sum of AM volumes will match the global PM volume totals. The scaling factor is applied to ensure that a consistent number of AM- and PM- oriented links will be developed for the network system. Default hourly volume distributions associated with specific facility and peaking classifications are shown in Table 6. The distributions shown were developed from a geographically dispersed sample of 1,700 hourly directional traffic counts obtained from VDOT and MDOT for 2007.

In the second step, the initial hourly link volumes are compared to hourly link capacities. Special “peak spreading” measures are taken for cases where initial hourly volumes exceed hourly capacities as detailed on Table 7. In the case of overly congested freeways, the link capacities are moderated to reflect the fact that the “through-put” volumes cannot be sustained when the V/C ratio exceeds 1.0 (see Table 8). The peak spreading procedure detailed on Table 7 is essentially a technique for moving excessive peak hour traffic systematically into shoulder hours. Traffic assignments on rare occasions could produce severely overloaded link volumes to the point where a given link volume could exceed the capacity over *all* hours of the day. Because of this possibility, volume adjustments are *not* made for the first, noon, and last hours (hours 1, 13, and 24), even if a given link volume is determined to exceed capacity in those particular hours. An analysis of overloaded links for 2007 indicated that this condition occurred on about three percent of all links. The resulting “final” hourly link volumes are used to develop V/C ratios and speeds using the speed-flow relationship shown on Table 9.

⁷ The PM_{2.5} emission rate does not vary by speed, but the PM_{2.5} computation is still made on an hourly basis.

Table 6 Hourly Distribution of Daily Traffic by Link Orientation and Facility Type

Hour	AM			PM			EVEN		
	Freeway	Arterial	Collector	Freeway	Arterial	Collector	Freeway	Arterial	Collector
1	0.81%	0.53%	0.43%	1.03%	0.72%	0.57%	0.95%	0.62%	0.56%
2	0.60%	0.32%	0.27%	0.63%	0.40%	0.33%	0.62%	0.37%	0.31%
3	0.56%	0.28%	0.23%	0.47%	0.30%	0.25%	0.51%	0.31%	0.25%
4	0.82%	0.40%	0.31%	0.45%	0.27%	0.25%	0.59%	0.39%	0.32%
5	2.45%	1.21%	1.30%	0.66%	0.50%	0.59%	1.25%	0.95%	0.82%
6	5.76%	3.70%	4.11%	1.84%	1.44%	1.95%	3.24%	2.69%	2.50%
7	7.90%	6.59%	7.76%	3.54%	3.20%	4.00%	5.29%	5.02%	5.02%
8	8.89%	8.90%	9.44%	4.98%	5.13%	5.49%	6.64%	6.90%	6.61%
9	7.72%	8.35%	7.92%	5.07%	5.37%	5.49%	6.56%	6.67%	6.59%
10	6.15%	6.16%	5.55%	4.44%	4.64%	4.65%	5.70%	5.57%	5.50%
11	4.90%	4.92%	4.59%	4.25%	4.36%	4.20%	4.94%	4.90%	4.71%
12	4.53%	4.85%	4.64%	4.42%	4.75%	4.46%	4.95%	5.10%	5.11%
13	4.55%	5.07%	4.91%	4.80%	5.23%	4.95%	5.15%	5.37%	5.41%
14	4.55%	4.99%	4.84%	5.19%	5.38%	5.17%	5.29%	5.35%	5.32%
15	4.94%	5.27%	5.15%	6.63%	6.15%	6.00%	6.01%	5.88%	5.83%
16	5.46%	5.87%	6.05%	8.09%	7.67%	7.77%	6.56%	6.70%	6.88%
17	5.75%	6.30%	6.75%	9.15%	8.95%	9.53%	6.91%	7.41%	7.98%
18	5.87%	6.77%	7.13%	9.34%	9.65%	10.14%	7.15%	7.78%	8.23%
19	4.95%	5.94%	5.83%	7.71%	8.18%	8.04%	6.16%	6.67%	6.84%
20	3.72%	4.59%	4.41%	5.55%	6.04%	5.69%	4.74%	5.14%	5.13%
21	3.01%	3.47%	3.35%	4.14%	4.46%	4.18%	3.69%	3.95%	3.98%
22	2.61%	2.72%	2.57%	3.37%	3.52%	3.17%	3.13%	3.08%	3.07%
23	2.10%	1.79%	1.59%	2.53%	2.30%	1.96%	2.38%	2.00%	1.92%
24	1.39%	1.01%	0.88%	1.74%	1.38%	1.16%	1.58%	1.17%	1.10%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
No of Obs.	37	366	127	41	468	124	78	393	100

Table 7 Peak Spreading Procedure Adjustment Process

<p>Step 1:</p>	<p>The AM peak hour (hour 8) initial volume is compared to the link capacity. If the initial hour 8 volume exceeds capacity, then the hour 8 volume is set to capacity (or a moderated capacity value in the case of freeways) and the excess volume portion is added to the volume in periods occurring before <i>and</i> after the AM peak hour (hours 7 and 9) on a 50/50 basis.</p>
<p>Step 2:</p>	<p>The PM peak hour (hour 18) initial volume is compared to the link capacity. If the initial volume exceeds capacity, then the hour 18 volume is set to capacity (or a moderated capacity value in the case of freeways) and the excess volume portion is added to the volume in periods occurring before <i>and</i> after the PM peak hour (hours 17 and 19) on a 50/50 basis.</p>
<p>Step 3:</p>	<p>The volume occurring during pre-AM peak hours (hours 1 to 7) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a backward-moving fashion. If the volume occurring in hour 7 exceeds capacity then the hour 7 volume is set to capacity and the excess volume portion is added to the volume of hour 6 volume, and so on. There is no volume spreading at hour 1, even for rare cases where the resulting hour 1 volume exceeds capacity.</p>
<p>Step 4:</p>	<p>The volume occurring during post-AM peak hours (hours 9 to 13) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a forward-moving fashion. If the volume occurring in hour 9 exceeds capacity then the hour 9 volume is set to capacity and the excess volume portion is added to the volume of hour 10 volume, and so on. There is no volume spreading at hour 13 (the midday hour), even for rare cases where the resulting hour 13 volume exceeds capacity.</p>
<p>Step 5:</p>	<p>The volume occurring during pre-PM peak hours (hours 13 to 17) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a backward-moving fashion. If the volume occurring in hour 17 exceeds capacity then the hour 17 volume is set to capacity and the excess volume portion is added to the volume of hour 16 volume, and so on. There is no volume spreading at hour 13 (the midday hour), even for rare cases where the resulting hour 13 volume exceeds capacity.</p>
<p>Step 6:</p>	<p>The volume occurring during post-PM peak hours (hours 19 to 24) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a forward-moving fashion. If the volume occurring in hour 19 exceeds capacity then the hour 19 volume is set to capacity and the excess volume portion is added to the volume of hour 20 volume, and so on. There is no volume spreading at hour 24, even for rare cases where the resulting hour 24 volume exceeds capacity.</p>

Table 8 Freeway Through-Put Capacities Under Congested Conditions

V/C	Fwy AT1	Fwy AT2	Fwy AT3	Fwy AT4	Fwy AT5	FWY AT6
1.00	1,900	1,900	2,000	2,000	2,000	2,000
1.20	1,815	1,815	1,910	1,910	1,910	1,910
1.40	1,729	1,729	1,820	1,820	1,820	1,820
1.60	1,729	1,729	1,820	1,820	1,820	1,820
1.80	1,729	1,729	1,820	1,820	1,820	1,820
2.00	1,729	1,729	1,820	1,820	1,820	1,820
2.20	1,729	1,729	1,820	1,820	1,820	1,820
9.99	1,729	1,729	1,820	1,820	1,820	1,820

Table 9 Speed Delay Functions used in the Mobile Emissions Post Processor by Facility Type and Area Type (1-7)

V/C Atp -->	Freeway			Major Arterial				Minor arterial				Collector				Expressway		
	1-2	3-4	5-7	1-2	3-4	5	6-7	1-2	3-4	5	6-7	1-2	3-4	5	6-7	1-2	3-5	6-7
0.000	55.000	60.000	67.000	25.000	35.000	40.000	45.000	20.000	30.000	35.000	40.000	15.000	20.000	25.000	30.000	45.000	50.000	55.000
0.100	54.783	59.764	66.736	24.774	34.683	39.638	44.593	19.762	29.643	34.583	39.523	14.630	19.506	24.383	29.259	44.649	49.610	54.571
0.200	54.479	59.431	66.365	24.464	34.250	39.143	44.036	19.441	29.161	34.022	38.882	14.171	18.895	23.619	28.342	44.166	49.074	53.981
0.300	54.174	59.099	65.994	24.155	33.817	38.648	43.479	19.120	28.680	33.460	38.240	13.713	18.284	22.855	27.426	43.683	48.537	53.390
0.400	53.645	58.522	65.350	23.646	33.105	37.834	42.563	18.611	27.916	32.569	37.222	13.093	17.457	21.822	26.186	42.878	47.642	52.406
0.500	53.116	57.945	64.705	23.138	32.393	37.020	41.648	18.102	27.152	31.678	36.203	12.473	16.631	20.789	24.947	42.073	46.747	51.422
0.600	51.976	56.701	63.316	22.165	31.031	35.465	39.898	17.193	25.790	30.088	34.387	11.631	15.508	19.385	23.262	40.485	44.984	49.482
0.700	50.835	55.456	61.926	21.193	29.670	33.909	38.147	16.285	24.427	28.499	32.570	10.789	14.385	17.982	21.578	38.898	43.220	47.542
0.800	48.329	52.722	58.873	19.427	27.198	31.083	34.969	14.789	22.183	25.880	29.577	9.762	13.016	16.270	19.524	35.880	39.867	43.853
0.900	42.731	46.616	52.054	16.595	23.233	26.552	29.871	12.669	19.003	22.171	25.338	8.643	11.524	14.405	17.286	30.702	34.113	37.524
1.000	27.500	30.000	33.500	12.500	17.500	20.000	22.500	10.000	15.000	17.500	20.000	7.500	10.000	12.500	15.000	22.500	25.000	27.500
1.100	22.610	24.665	27.543	11.200	15.681	17.921	20.161	9.155	13.733	16.022	18.311	7.141	9.521	11.901	14.282	19.893	22.103	24.313
1.170	19.187	20.931	23.373	10.291	14.407	16.465	18.524	8.564	12.846	14.987	17.129	6.889	9.186	11.482	13.779	18.068	20.075	22.083
1.200	17.719	19.330	21.585	9.901	13.861	15.842	17.822	8.311	12.466	14.544	16.622	6.782	9.042	11.303	13.563	17.286	19.206	21.127
1.300	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940
1.400	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940
1.500	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940
1.600	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940
1.800	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940
2.000	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940
2.250	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940
99.990	12.829	13.995	15.628	8.601	12.042	13.762	15.483	7.466	11.200	13.066	14.933	6.423	8.563	10.704	12.845	14.678	16.309	17.940

Subsequent to the development of 'final' hourly link volumes and speeds, the general equation for computing running emissions at the link level is:

$$\text{RunningEm}_{ih} = \text{VMT}_h * \sum_{j=1}^{27} (\text{RRate}_j * \text{Tprop}_{ij})$$

Where:

- RunningEm_{ih} = Running link emissions at hour h in jurisdiction i
VMT_h = Vehicle Miles Travel (after peak-spreading) at hour h
RRate_j = Running rate (gm/mi) as a function of highway speed for jurisdiction j
Tprop_{ij} = Proportion of daily trips between jurisdiction i/j

The regional running emissions are the accumulation of calculated hourly emissions over all network links in the study area. Emissions in grams are converted to tons using a conversion factor of 907,184.74 gm/ton.

7.0 Local Emissions

Local (or off-network) emissions are those generated on smaller facilities that are not included in the regional network. Local emissions are associated with VOC/HC, CO, NOx, and PM 2.5 pollutants and are computed at jurisdiction level by applying per-mile emission rates to the local VMT. However, the local emission calculation requires that local VMT be further allocated among urban and rural categories, as the emission calculation is different.

Local VMT is developed by extrapolating base-year HPMS figures into the future based on the VMT growth forecasts produced by the travel model. TPB staff has summarized base year local VMT at the jurisdiction level for 2007 (see Table 12 in the appendix section of this memorandum).

The calculation steps of local emissions are detailed below:

- 1) Modeled network VMT for the analysis year is summarized at jurisdiction level and merged with the base year information, above.
- 2) Local urban and rural VMT is estimated for the analysis year. First, local VMT is estimated by applying a growth factor to the base year (2007) local VMT. The growth factor is based on modeled VMT change between the base year and analysis year. Next, the base year urban and rural percentages are applied to the local VMT computed for the analysis year.
- 3) Local PM_{2.5} emissions are computed based on total (urban and rural) VMT.
- 4) Urban/local NOx, CO, and VOC emissions are computed using the single local/stabilized emission factor produced by Mobile. This factor is based on an assumed speed of 12.9 mph.
- 5) Rural/local NOx, CO, and VOC emissions are computed by first allocating the rural VMT among speed 'bins' using an assumed average speed profile. The profile reflects a VMT distribution for rural jurisdictions that was summarized from previous modeling files. Next, rural arterial rates are applied to the VMT on the basis of speed.

Previous local emissions calculations have been made using the single (12.9 mph-based) local rate. It is believed that the use of arterial rates at higher speed levels will yield a more accurate emission result for rural areas of the region.

8.0 Conclusions

This memorandum has presented an overview of the technical procedures used to estimate mobile source emissions in the Washington, D.C. region, also known as the post processor. The process combines the travel demand outputs of the regional travel model with emission rates developed with the EPA Mobile 6.2 model. TPB staff has recently updated the post processor to become compliant with the recently released Version 2.3 model, which has been developed using a new 3,722 TAZ system.

Appendix A

Post-Processor Flow Chart

Figure 1

Figure 1 Single-season process

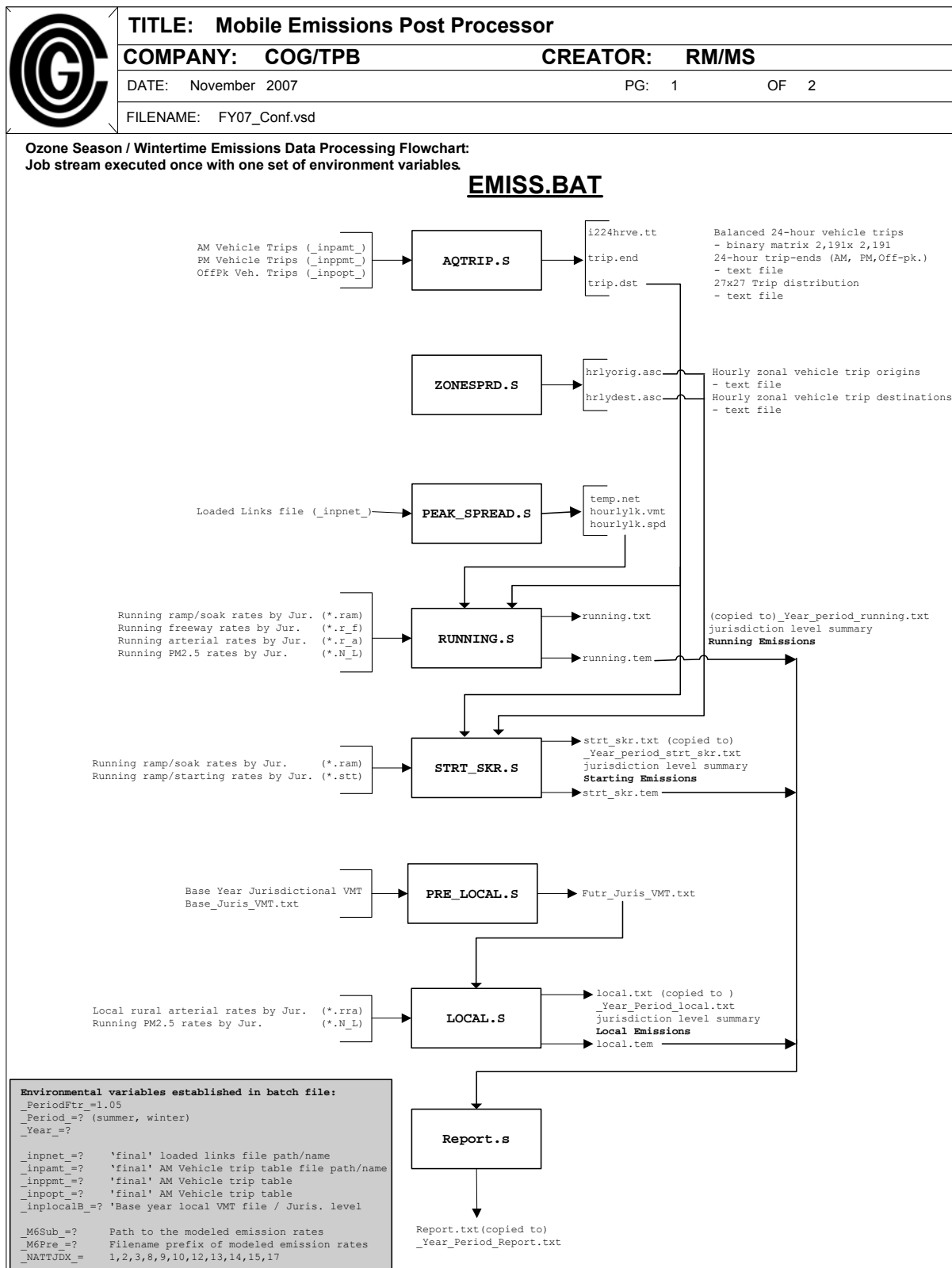
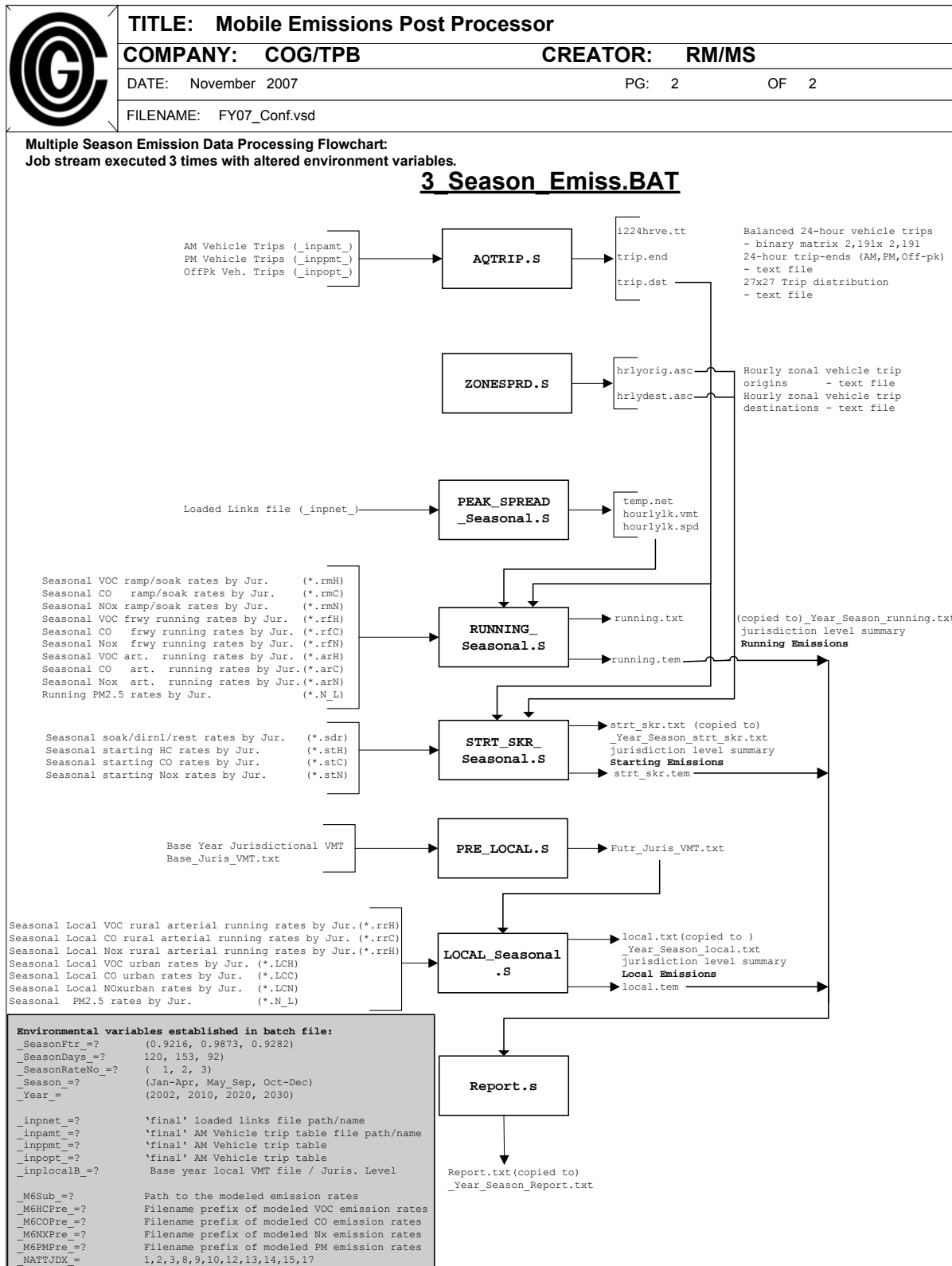


Figure 2

Figure 2 Three-season process



Appendix B

Mobile 6 rates

Table 10

Table 10 Listing of Emission Rate Filenames Prepared for the Post-Processor / Single-Season Post-Processor

Jurisdiction	Running Arterial Rates <i>VOC, CO, Nx Rates by speed</i>	Running Freeway Rates <i>VOC, CO, Nx Rates by speed</i>	Running Freeway Ramp Rates <i>VOC, CO, Nx Rates @ 35 mph</i>	Starting (Hot/Cold) Rates <i>Hot VOC, CO, Nox / Cold VOC, CO, Nox Rates</i>	Running Local Rates <i>VOC, CO, Nox Rates @ 12.9 mph</i>	Running Local -Rural Arterial Rates <i>VOC, CO, Nx Rates by speed</i>
Alexandria	<prefix>AL.r_a	<prefix>AL.r_f	<prefix>AL.ram	<prefix>AL.stt	<prefix>AL.lcl	<prefix>AL.r_r
Arlington	<prefix>AR.r_a	<prefix>AR.r_f	<prefix>AR.ram	<prefix>AR.stt	<prefix>AR.lcl	<prefix>AR.r_r
Calvert	<prefix>CA.r_a	<prefix>CA.r_f	<prefix>CA.ram	<prefix>CA.stt	<prefix>CA.lcl	<prefix>CA.r_r
Charles	<prefix>CH.r_a	<prefix>CH.r_f	<prefix>CH.ram	<prefix>CH.stt	<prefix>CH.lcl	<prefix>CH.r_r
Calvert	<prefix>CL.r_a	<prefix>CL.r_f	<prefix>CL.ram	<prefix>CL.stt	<prefix>CL.lcl	<prefix>CL.r_r
DC	<prefix>DC.r_a	<prefix>DC.r_f	<prefix>DC.ram	<prefix>DC.stt	<prefix>DC.lcl	<prefix>DC.r_r
Frederick	<prefix>FR.r_a	<prefix>FR.r_f	<prefix>FR.ram	<prefix>FR.stt	<prefix>FR.lcl	<prefix>FR.r_r
Fairfax	<prefix>FX.r_a	<prefix>FX.r_f	<prefix>FX.ram	<prefix>FX.stt	<prefix>FX.lcl	<prefix>FX.r_r
Loudoun	<prefix>LD.r_a	<prefix>LD.r_f	<prefix>LD.ram	<prefix>LD.stt	<prefix>LD.lcl	<prefix>LD.r_r
Montgomery	<prefix>MC.r_a	<prefix>MC.r_f	<prefix>MC.ram	<prefix>MC.stt	<prefix>MC.lcl	<prefix>MC.r_r
Pr. George's	<prefix>PG.r_a	<prefix>PG.r_f	<prefix>PG.ram	<prefix>PG.stt	<prefix>PG.lcl	<prefix>PG.r_r
Pr. William	<prefix>PW.r_a	<prefix>PW.r_f	<prefix>PW.ram	<prefix>PW.stt	<prefix>PW.lcl	<prefix>PW.r_r
St. Mary's	<prefix>SM.r_a	<prefix>SM.r_f	<prefix>SM.ram	<prefix>SM.stt	<prefix>SM.lcl	<prefix>SM.r_r
Sprotsylvania	<prefix>SP.r_a	<prefix>SP.r_f	<prefix>SP.ram	<prefix>SP.stt	<prefix>SP.lcl	<prefix>SP.r_r
Stafford	<prefix>ST.r_a	<prefix>ST.r_f	<prefix>ST.ram	<prefix>ST.stt	<prefix>ST.lcl	<prefix>ST.r_r
Washington Co	<prefix>WE.r_a	<prefix>WE.r_f	<prefix>WE.ram	<prefix>WE.stt	<prefix>WE.lcl	<prefix>WE.r_r

Table 11

Table 11 Listing of Emission Rate Filenames Prepared for the Post-Processor / Three – Season Post-Processor

Pollutant	Jurisdiction	Running Arterial Rates	Running Freeway Rates	Running Freeway Ramp Rates	Starting (Hot/Cold) Rates	Running Local Rates	Running Local -Rural Arterial Rates	Pollutant	Jurisdiction	Seasonal PM 2.5 Network and Local Rates
		Seasonal Rates by speed	Seasonal Rates by speed	Seasonal Rates @ 35 mph speed	Seasonal Hot/Cold Rates	Seasonal Rates @ 12.9 mph speed	Seasonal Rates by speed			
CO	Alexandria	<prefix>COAL.arc	<prefix>COAL.frc	<prefix>COAL.rmC	<prefix>COAL.stC	<prefix>COAL.lcC	<prefix>COAL.rrC	PM 2.5 Seasonal Network / Seasonal Local	Alexandria	<prefix>pmAL.N.L
	Arlington	<prefix>COAR.arc	<prefix>COAR.frc	<prefix>COAR.rmC	<prefix>COAR.stC	<prefix>COAR.lcC	<prefix>COAR.rrC		Arlington	<prefix>pmAR.N.L
	Calvert	<prefix>COCA.arc	<prefix>COCA.frc	<prefix>COCA.rmC	<prefix>COCA.stC	<prefix>COCA.lcC	<prefix>COCA.rrC		Calvert	<prefix>pmCA.N.L
	Charles	<prefix>COCH.arc	<prefix>COCH.frc	<prefix>COCH.rmC	<prefix>COCH.stC	<prefix>COCH.lcC	<prefix>COCH.rrC		Charles	<prefix>pmCH.N.L
	Calvert	<prefix>COCL.arc	<prefix>COCL.frc	<prefix>COCL.rmC	<prefix>COCL.stC	<prefix>COCL.lcC	<prefix>COCL.rrC		Calvert	<prefix>pmCL.N.L
	DC	<prefix>CODC.arc	<prefix>CODC.frc	<prefix>CODC.rmC	<prefix>CODC.stC	<prefix>CODC.lcC	<prefix>CODC.rrC		DC	<prefix>pmDC.N.L
	Frederick	<prefix>COFR.arc	<prefix>COFR.frc	<prefix>COFR.rmC	<prefix>COFR.stC	<prefix>COFR.lcC	<prefix>COFR.rrC		Frederick	<prefix>pmFR.N.L
	Fairfax	<prefix>COFX.arc	<prefix>COFX.frc	<prefix>COFX.rmC	<prefix>COFX.stC	<prefix>COFX.lcC	<prefix>COFX.rrC		Fairfax	<prefix>pmFX.N.L
	Loudoun	<prefix>COLD.arc	<prefix>COLD.frc	<prefix>COLD.rmC	<prefix>COLD.stC	<prefix>COLD.lcC	<prefix>COLD.rrC		Loudoun	<prefix>pmLD.N.L
	Montgomery	<prefix>COMC.arc	<prefix>COMC.frc	<prefix>COMC.rmC	<prefix>COMC.stC	<prefix>COMC.lcC	<prefix>COMC.rrC		Montgomery	<prefix>pmMC.N.L
	Pr. George's	<prefix>COPG.arc	<prefix>COPG.frc	<prefix>COPG.rmC	<prefix>COPG.stC	<prefix>COPG.lcC	<prefix>COPG.rrC		Pr. George's	<prefix>pmPG.N.L
	Pr. William	<prefix>COPW.arc	<prefix>COPW.frc	<prefix>COPW.rmC	<prefix>COPW.stC	<prefix>COPW.lcC	<prefix>COPW.rrC		Pr. William	<prefix>pmPW.N.L
	St. Mary's	<prefix>COSM.arc	<prefix>COSM.frc	<prefix>COSM.rmC	<prefix>COSM.stC	<prefix>COSM.lcC	<prefix>COSM.rrC		St. Mary's	<prefix>pmSM.N.L
	Sprotsylvania	<prefix>COSP.arc	<prefix>COSP.frc	<prefix>COSP.rmC	<prefix>COSP.stC	<prefix>COSP.lcC	<prefix>COSP.rrC		Sprotsylvania	<prefix>pmSP.N.L
	Stafford	<prefix>COST.arc	<prefix>COST.frc	<prefix>COST.rmC	<prefix>COST.stC	<prefix>COST.lcC	<prefix>COST.rrC		Stafford	<prefix>pmST.N.L
	Washington Co	<prefix>COWE.arc	<prefix>COWE.frc	<prefix>COWE.rmC	<prefix>COWE.stC	<prefix>COWE.lcC	<prefix>COWE.rrC		Washington Co	<prefix>pmWE.N.L
	VOC	Alexandria	<prefix>HCAL.arH	<prefix>HCAL.frH	<prefix>HCAL.rmH	<prefix>HCAL.stH	<prefix>HCAL.lcH		<prefix>HCAL.rrH	
Arlington		<prefix>HCAR.arH	<prefix>HCAR.frH	<prefix>HCAR.rmH	<prefix>HCAR.stH	<prefix>HCAR.lcH	<prefix>HCAR.rrH	Arlington	<prefix>HCAR.SDR	
Calvert		<prefix>HCCA.arH	<prefix>HCCA.frH	<prefix>HCCA.rmH	<prefix>HCCA.stH	<prefix>HCCA.lcH	<prefix>HCCA.rrH	Calvert	<prefix>HCCA.SDR	
Charles		<prefix>HCCH.arH	<prefix>HCCH.frH	<prefix>HCCH.rmH	<prefix>HCCH.stH	<prefix>HCCH.lcH	<prefix>HCCH.rrH	Charles	<prefix>HCCH.SDR	
Calvert		<prefix>HCCL.arH	<prefix>HCCL.frH	<prefix>HCCL.rmH	<prefix>HCCL.stH	<prefix>HCCL.lcH	<prefix>HCCL.rrH	Calvert	<prefix>HCCL.SDR	
DC		<prefix>HCDC.arH	<prefix>HCDC.frH	<prefix>HCDC.rmH	<prefix>HCDC.stH	<prefix>HCDC.lcH	<prefix>HCDC.rrH	DC	<prefix>HCDC.SDR	
Frederick		<prefix>HCFR.arH	<prefix>HCFR.frH	<prefix>HCFR.rmH	<prefix>HCFR.stH	<prefix>HCFR.lcH	<prefix>HCFR.rrH	Frederick	<prefix>HCFR.SDR	
Fairfax		<prefix>HCFX.arH	<prefix>HCFX.frH	<prefix>HCFX.rmH	<prefix>HCFX.stH	<prefix>HCFX.lcH	<prefix>HCFX.rrH	Fairfax	<prefix>HCFX.SDR	
Loudoun		<prefix>HCLD.arH	<prefix>HCLD.frH	<prefix>HCLD.rmH	<prefix>HCLD.stH	<prefix>HCLD.lcH	<prefix>HCLD.rrH	Loudoun	<prefix>HCLD.SDR	
Montgomery		<prefix>HCMC.arH	<prefix>HCMC.frH	<prefix>HCMC.rmH	<prefix>HCMC.stH	<prefix>HCMC.lcH	<prefix>HCMC.rrH	Montgomery	<prefix>HCMC.SDR	
Pr. George's		<prefix>HCPG.arH	<prefix>HCPG.frH	<prefix>HCPG.rmH	<prefix>HCPG.stH	<prefix>HCPG.lcH	<prefix>HCPG.rrH	Pr. George's	<prefix>HCPG.SDR	
Pr. William		<prefix>HCPW.arH	<prefix>HCPW.frH	<prefix>HCPW.rmH	<prefix>HCPW.stH	<prefix>HCPW.lcH	<prefix>HCPW.rrH	Pr. William	<prefix>HCPW.SDR	
St. Mary's		<prefix>HCSM.arH	<prefix>HCSM.frH	<prefix>HCSM.rmH	<prefix>HCSM.stH	<prefix>HCSM.lcH	<prefix>HCSM.rrH	St. Mary's	<prefix>HCSM.SDR	
Sprotsylvania		<prefix>HCSP.arH	<prefix>HCSP.frH	<prefix>HCSP.rmH	<prefix>HCSP.stH	<prefix>HCSP.lcH	<prefix>HCSP.rrH	Sprotsylvania	<prefix>HCSP.SDR	
Stafford		<prefix>HCST.arH	<prefix>HCST.frH	<prefix>HCST.rmH	<prefix>HCST.stH	<prefix>HCST.lcH	<prefix>HCST.rrH	Stafford	<prefix>HCST.SDR	
Washington Co		<prefix>HCWE.arH	<prefix>HCWE.frH	<prefix>HCWE.rmH	<prefix>HCWE.stH	<prefix>HCWE.lcH	<prefix>HCWE.rrH	Washington Co	<prefix>HCWE.SDR	
NOx		Alexandria	<prefix>NXAL.arN	<prefix>NXAL.frN	<prefix>NXAL.rmN	<prefix>NXAL.stN	<prefix>NXAL.lcN	<prefix>NXAL.rrN	Soak, Diurnal, Resting Loss Rates Seasonal Soak, Seasonal Diurnal, Seasonal Rest Loss	
	Arlington	<prefix>NXAR.arN	<prefix>NXAR.frN	<prefix>NXAR.rmN	<prefix>NXAR.stN	<prefix>NXAR.lcN	<prefix>NXAR.rrN	Arlington		<prefix>NXAR.SDR
	Calvert	<prefix>NXCA.arN	<prefix>NXCA.frN	<prefix>NXCA.rmN	<prefix>NXCA.stN	<prefix>NXCA.lcN	<prefix>NXCA.rrN	Calvert		<prefix>NXCA.SDR
	Charles	<prefix>NXCH.arN	<prefix>NXCH.frN	<prefix>NXCH.rmN	<prefix>NXCH.stN	<prefix>NXCH.lcN	<prefix>NXCH.rrN	Charles		<prefix>NXCH.SDR
	Calvert	<prefix>NXCL.arN	<prefix>NXCL.frN	<prefix>NXCL.rmN	<prefix>NXCL.stN	<prefix>NXCL.lcN	<prefix>NXCL.rrN	Calvert		<prefix>NXCL.SDR
	DC	<prefix>NXDC.arN	<prefix>NXDC.frN	<prefix>NXDC.rmN	<prefix>NXDC.stN	<prefix>NXDC.lcN	<prefix>NXDC.rrN	DC		<prefix>NXDC.SDR
	Frederick	<prefix>NXFR.arN	<prefix>NXFR.frN	<prefix>NXFR.rmN	<prefix>NXFR.stN	<prefix>NXFR.lcN	<prefix>NXFR.rrN	Frederick		<prefix>NXFR.SDR
	Fairfax	<prefix>NXFX.arN	<prefix>NXFX.frN	<prefix>NXFX.rmN	<prefix>NXFX.stN	<prefix>NXFX.lcN	<prefix>NXFX.rrN	Fairfax		<prefix>NXFX.SDR
	Loudoun	<prefix>NXLD.arN	<prefix>NXLD.frN	<prefix>NXLD.rmN	<prefix>NXLD.stN	<prefix>NXLD.lcN	<prefix>NXLD.rrN	Loudoun		<prefix>NXLD.SDR
	Montgomery	<prefix>NXMC.arN	<prefix>NXMC.frN	<prefix>NXMC.rmN	<prefix>NXMC.stN	<prefix>NXMC.lcN	<prefix>NXMC.rrN	Montgomery		<prefix>NXMC.SDR
	Pr. George's	<prefix>NXPG.arN	<prefix>NXPG.frN	<prefix>NXPG.rmN	<prefix>NXPG.stN	<prefix>NXPG.lcN	<prefix>NXPG.rrN	Pr. George's		<prefix>NXPG.SDR
	Pr. William	<prefix>NXPW.arN	<prefix>NXPW.frN	<prefix>NXPW.rmN	<prefix>NXPW.stN	<prefix>NXPW.lcN	<prefix>NXPW.rrN	Pr. William		<prefix>NXPW.SDR
	St. Mary's	<prefix>NXSM.arN	<prefix>NXSM.frN	<prefix>NXSM.rmN	<prefix>NXSM.stN	<prefix>NXSM.lcN	<prefix>NXSM.rrN	St. Mary's		<prefix>NXSM.SDR
	Sprotsylvania	<prefix>NXSP.arN	<prefix>NXSP.frN	<prefix>NXSP.rmN	<prefix>NXSP.stN	<prefix>NXSP.lcN	<prefix>NXSP.rrN	Sprotsylvania		<prefix>NXSP.SDR
	Stafford	<prefix>NXST.arN	<prefix>NXST.frN	<prefix>NXST.rmN	<prefix>NXST.stN	<prefix>NXST.lcN	<prefix>NXST.rrN	Stafford		<prefix>NXST.SDR
	Washington Co	<prefix>NXWE.arN	<prefix>NXWE.frN	<prefix>NXWE.rmN	<prefix>NXWE.stN	<prefix>NXWE.lcN	<prefix>NXWE.rrN	Washington Co		<prefix>NXWE.SDR

Appendix C

Jurisdictional Master VMT Table

Table 12

Table 12 2007 Daily Weekday VMT by Federal Functional Class and Jurisdiction

Jur. Code	Jurisdiction	1.Rural Interstate	2.Rural Other Principal Arterial	6.Rural Minor Arterial	7.Rural Major Collector	8.Rural Minor Collector	9.Rural Local	11.Urban Interstate	12.Urban Other Freeway & Expressway	14.Urban Other Principal Arterial	16.Urban Minor Arterial	17.Urban Collector	19.Urban Local	Total	Total Local VMT	Total Non-Local VMT	Total Urban VMT	Total Rural VMT	% Local	% Non-Local	% Urban	% Rural
0	District of Columbia	0	0	0	0	0	0	1,178,100	1,110,900	2,970,450	2,134,650	877,800	2,110,500	10,382,400	2,110,500	8,271,900	10,382,400	0	20.33%	79.67%	100.00%	0.00%
1	Montgomery County	411,370	0	327,945	284,795	129,452	146,712	6,955,890	621,370	6,320,137	3,095,342	1,743,288	1,455,616	21,491,918	1,602,329	19,889,589	20,191,644	1,300,274	7.46%	92.54%	93.95%	6.05%
2	Prince George's County	112,192	489,041	112,192	258,904	117,945	140,959	8,215,890	4,542,329	4,809,863	2,888,219	1,769,178	1,726,027	25,182,740	1,866,986	23,315,753	23,951,507	1,231,233	7.41%	92.59%	95.11%	4.89%
3	Arlington County	0	0	0	0	0	0	1,495,790	1,312,709	740,883	654,119	188,016	391,612	4,783,129	391,612	4,391,518	4,783,129	0	8.19%	91.81%	100.00%	0.00%
4	City of Alexandria	0	0	0	0	0	0	789,051	38,160	430,137	595,561	104,642	160,122	2,117,674	160,122	1,957,552	2,117,674	0	7.56%	92.44%	100.00%	0.00%
5	Fairfax County	0	0	0	0	0	0	9,646,576	2,050,380	7,478,728	6,100,151	1,523,361	1,720,282	28,519,477	1,720,282	26,799,196	28,519,477	0	6.03%	93.97%	100.00%	0.00%
6	Loudoun County	0	785,989	569,362	606,292	22,844	254,593	0	116,979	1,869,657	407,639	881,145	376,986	5,891,485	631,579	5,259,907	3,652,406	2,239,079	10.72%	89.28%	61.99%	38.01%
7	Prince William County	106,410	95,440	147,671	244,332	26,686	163,398	3,048,641	0	1,499,508	1,978,079	853,500	902,455	9,066,119	1,065,853	8,000,267	8,282,183	783,937	11.76%	88.24%	91.35%	8.65%
9	Frederick County	1,498,767	998,219	385,479	670,274	379,726	512,055	1,536,164	888,904	486,164	486,164	512,055	302,055	8,656,027	814,110	7,841,918	4,211,507	4,444,521	9.41%	90.59%	48.65%	51.35%
10	Howard County	736,438	276,164	253,151	244,521	77,671	218,630	3,057,945	2,885,342	630,000	1,254,247	678,904	661,644	10,974,658	880,274	10,094,384	9,168,082	1,806,575	8.02%	91.98%	83.54%	16.46%
11	Anne Arundel County	983,836	238,767	546,575	184,110	89,178	281,918	2,643,699	4,378,356	2,712,740	2,246,712	1,306,027	1,032,740	16,644,658	1,314,658	15,330,000	14,320,274	2,324,384	7.90%	92.10%	86.04%	13.96%
12	Charles County	0	900,411	258,904	333,699	169,726	215,753	0	0	1,127,671	325,068	233,014	129,452	3,693,699	345,205	3,348,493	1,815,205	1,878,493	9.35%	90.65%	49.14%	50.86%
14	Carroll County	0	143,836	773,836	388,356	184,110	186,986	106,438	0	1,360,685	241,644	195,616	146,712	3,728,219	333,699	3,394,521	2,051,096	1,677,123	8.95%	91.05%	55.02%	44.98%
15	Calvert County	0	969,452	57,534	126,575	132,329	166,849	0	92,055	348,082	103,562	140,959	54,658	2,192,055	221,507	1,970,548	739,315	1,452,740	10.10%	89.90%	33.73%	66.27%
16	St. Mary's County	0	451,644	540,822	293,425	195,616	184,110	0	23,014	514,932	83,425	92,055	54,658	2,433,699	238,767	2,194,932	768,082	1,665,616	9.81%	90.19%	31.56%	68.44%
17	King George County	0	275,350	376,047	134,035	3,657	37,179	0	0	0	0	0	0	826,268	37,179	789,089	0	826,268	4.50%	95.50%	0.00%	100.00%
18	City of Fredericksburg	0	0	0	0	0	0	493,056	0	272,654	104,304	78,482	94,679	1,043,174	94,679	948,495	1,043,174	0	9.08%	90.92%	100.00%	0.00%
19	Stafford County	0	150,880	98,655	155,634	8,349	156,734	2,238,793	0	502,451	132,572	542,032	240,041	4,226,142	396,775	3,829,366	3,655,890	570,252	9.39%	90.61%	86.51%	13.49%
20	Spotsylvania County	933,918	0	362,162	372,546	21,192	162,064	403,896	0	723,212	167,557	315,055	250,767	3,712,368	412,831	3,299,537	1,860,487	1,851,881	11.12%	88.88%	50.12%	49.88%
21	Fauquier County	859,616	1,486,597	315,031	433,123	54,769	231,305	0	0	0	0	0	0	3,380,441	231,305	3,149,136	0	3,380,441	6.84%	93.16%	0.00%	100.00%
22	Clarke County	0	339,087	330,968	70,525	29,029	42,796	0	0	0	0	0	0	812,404	42,796	769,608	0	812,404	5.27%	94.73%	0.00%	100.00%
23	Jefferson County	0	437,189	124,257	215,450	52,689	95,928	0	0	138,432	73,983	39,764	18,218	1,195,908	114,146	1,081,763	270,396	925,512	9.54%	90.46%	22.61%	77.39%
	Total	5,642,547	8,038,065	5,580,589	5,016,594	1,694,968	3,197,969	41,809,931	18,060,498	34,936,386	23,072,998	12,074,892	11,829,223	170,954,662	15,027,192	155,927,469	141,783,929	29,170,733	8.79%	91.21%	82.94%	17.06%

Appendix D

CLRP 2011 Air Quality Work Subdirectory and Input Files

Table 13 2011 CLRP Air Quality Data Processing Subdirectories

Description of Contents	Subdirectory
Location of Post – Processor Executions/Outputs	
2002 Ozone Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2002_ozone
2002 Annual Nx Precursor, PM 2.5	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2002_annual
2016 Ozone Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2016_ozone
2016 Winter Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2016_winterCO
2016 Annual Nx Precursor, PM 2.5	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2016_annual
2020 Ozone Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2020_ozone
2020 Winter Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2020_winterCO
2020 Annual Nx Precursor, PM 2.5	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2020_annual
2030 Ozone Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2030_ozone
2030 Winter Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2030_winterCO
2030 Annual Nx Precursor, PM 2.5	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2030_annual
2040 Ozone Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2040_ozone
2040 Winter Season VOC, CO, Nx	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2040_winterCO
2040 Annual Nx Precursor, PM 2.5	I:\CGV2_2.3.34_Oct_11_Emiss_Conformity2011CLRP\Emissions\2040_annual

Table 14 2011 CLRP Mobile 6.2 Emission Rate File Subdirectories

Emission Rate Inputs	
2002 VOC, CO, Nx rates Ozone Season	I:\CGV2_2_Aug_07_Conformity2008\EMISSIONS\M6RATES\2002
2002 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_2_May_09_Conformity2010\EMISSIONS\m6rates\2002_annual
2016 VOC, CO, Nx rates Ozone Season	I:\CGV2_3_Aug_11_Emiss_Conformity2011CLRP\Emissions\M6RATES\2016_ozone
2016 VOC, CO, Nx rates– Winter Season	I:\CGV2_3_Aug_11_Emiss_Conformity2011CLRP\Emissions\M6RATES\2016_WCO
2016 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_3_Aug_11_Emiss_Conformity2011CLRP\Emissions\M6RATES\2016_annual
2020 VOC, CO, Nx rates Ozone Season	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2020_Ozone
2020 VOC, CO, Nx rates– Winter Season	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2020_WCO
2020 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2020_Season
2030 VOC, CO, Nx rates Ozone Season	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2030_Ozone
2030 VOC, CO, Nx rates– Winter Season	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2030_WCO
2030 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2030_Season
2040 VOC, CO, Nx rates Ozone Season	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2040_Ozone
2040 VOC, CO, Nx rates– Winter Season	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2040_WCO
2040 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_2_Aug_2010_AQC_2010CLRP_FY2011_2016TIP\EMISSIONS\M6RATES\2040_Season

Table 15 2011 CLRP Version 2.3 Travel Model File Subdirectories

Travel Model Inputs	
2002 Travel Model Files	N:\model_app\CGV2_3_Conformity2011CLRP_RR_SA\2002_Conf
2016 Travel Model Files	N:\model_app\CGV2_3_Conformity2011CLRP_RR_SA\2016_Conf
2020 Travel Model Files	N:\model_app\CGV2_3_Conformity2011CLRP_RR_SA\2020_Conf
2030 Travel Model Files	N:\model_app\CGV2_3_Conformity2011CLRP_RR_SA\2030_Conf
2040 Travel Model Files	N:\model_app\CGV2_3_Conformity2011CLRP_RR_SA\2040_Conf

APPENDIX F

Vehicle-related Emissions Calculations

Memo

To: Air Quality Files

From: Anant Choudhary, MWCOG/DTP

Date: September 26, 2011

Re: Vehicle Related Emissions: Diurnal and Resting Loss - 2011 CLRP

This memo illustrates the calculation of Diurnal and Resting Loss emissions associated with the 2011 CLRP. A detailed description of work regarding emissions factor updates using Mobile6 is contained in a report by Maureen Mullen of E.H. Pechan & Associates, dated January 27, 2003. Adopting the approach developed by E.H. Pechan & Associates emissions rates were developed using version 6.2 of mobile model.

There were no updates to either the vehicle forecast component or the procedure used to calculate these emissions. Vehicle ownership forecasts reflect trends through time for each jurisdiction; using the 2008 vehicle registration data, the slope of the forecast trend line in each jurisdiction was maintained but revised to 'intercept' 2008 conditions. A detailed description of this process can be found in a June 9, 2009 memo from Daivamani Sivasailam in Appendix D. This approach is illustrated on the attached graph for Prince George's County. Table 1 shows summary of vehicle registration forecasts. Also included is a copy of a spreadsheet displaying the calculation of diurnal and resting loss emissions for year 2016 (Table 2). The vehicle population for the year 2016 is estimated by interpolating the current data points. Diurnal and Resting Loss emissions for other milestone years 2002, 2020, 2030, and 2040 are available in the Air Quality Conformity files.

The calculation of these emissions is an off-line process utilizing a spreadsheet format with a very basic calculation:

Number of vehicles by jurisdiction X jurisdiction emissions factor = Emissions

Attachments (3)

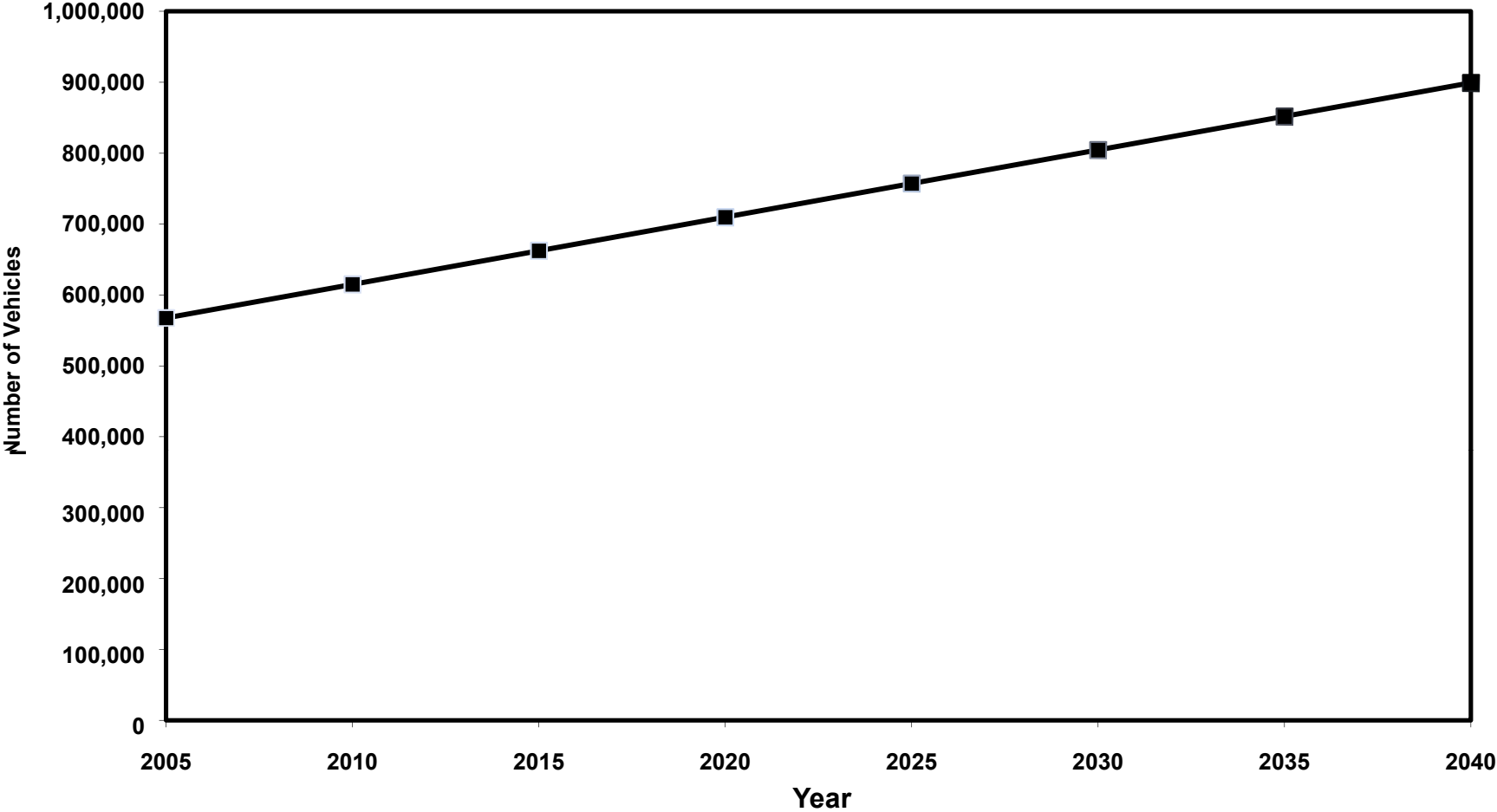
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Table 1
VEHICLE REGISTRATION FORECASTS BY JURISDICTION (USING 2008 VIN)
REGISTRATION ADJUSTED TO YEAR 2008

Jurisdiction	2005	2008	2016	2020	2030	2040
District of Columbia	239,919	243,164	251,817	256,143	266,959	277,775
Calvert	76,827	87,093	114,468	128,155	162,374	196,592
Charles	119,186	129,719	157,806	171,850	206,959	242,068
Frederick	198,819	215,863	261,313	284,039	340,852	397,665
Montgomery	661,659	706,176	824,889	884,245	1,032,636	1,181,027
Prince George's	567,652	596,053	671,789	709,657	804,327	898,997
Alexandria	129,001	130,742	135,385	137,706	143,509	149,312
Arlington	135,070	136,888	141,735	144,159	150,218	156,278
Fairfax	788,113	831,961	948,888	1,007,352	1,153,511	1,299,669
Loudoun	222,115	243,902	302,000	331,049	403,671	476,294
Prince William	295,047	318,329	380,415	411,459	489,067	566,675
Stafford	104,053	115,721	146,835	162,392	201,285	240,178
Total	3,537,462	3,755,611	4,337,341	4,628,206	5,355,368	6,082,530

The above forecasts are based on 2008 vehicle registration data decoded from raw VIN numbers provided by District of Columbia DMV, Maryland MVA, and Virginia DMV.
2005 registration data were adjusted based on the 2008 numbers.

Vehicle Registration for Prince George's County by Year



MVA 2008 Vehicle Registration data

Table 2
DIURNAL AND RESTING LOSS EMISSIONS
VOC
YEAR 2016

JURISDICTION	TOTAL VEHICLES	FACTORS		EMISSIONS	
		DIURNAL (gm/day/veh)	RESTGL (gm/hr/veh)	DIURNAL (Tons/day)	RESTGL (Tons/day)
District of Columbia	251,817	0.241	1.176	0.066	0.320
Montgomery	824,889	0.242	1.130	0.216	1.007
Prince Georges	671,789	0.282	1.382	0.205	1.003
Frederick	261,313	0.301	1.456	0.085	0.411
Charles	157,806	0.294	1.490	0.050	0.254
Calvert	114,468	0.296	1.516	0.037	0.187
Arlington	141,735	0.222	1.075	0.034	0.165
Alexandria	135,385	0.196	0.927	0.029	0.136
Fairfax	948,888	0.216	1.006	0.221	1.031
Loudoun	302,000	0.211	0.990	0.069	0.323
Prince William	380,415	0.229	1.136	0.094	0.467
Stafford	146,835			0.000	0.000
MSA - SUBTOTAL	4,337,341			1.105	5.303
MODELED AREA					
TOTAL	4,337,341			1.105	5.303

Note: 98% of vehicles, which are gas operated, are used to compute Diurnal and Resting Loss emissions
Based on 2008 vehicle registration

APPENDIX G

Auto Access Emissions Calculations

Memorandum

To: Air Quality Files

From: Eulalie G. Lucas
Transportation Engineer

Date: October 11, 2011

Re: Off- Network Emissions Calculations: Auto Access to transit

Introduction:

This memo documents emission associated with auto access to transit for the following: 8-Hour Ozone season precursors VOC and NO_x, Wintertime CO, direct PM_{2.5}, and precursor NO_x. Travel data associated with these emission calculations reflect network updates as part of the air quality conformity analysis of the 2011 Constrained Long Range Plan (CLRP). Procedures used for these calculations are consistent with those used for the Severe State Implementation Plan (SIP) submittal. The following paragraphs describe these procedures and updates.

Auto Access to transit emissions:

VMT Mix percent associated with auto access to transit includes only light duty trucks (LDGT2) and not heavy duty trucks as with network VMT mix percents. The LDGT2 weight category includes Ford Navigators, which are used by some commuters to transit and park and ride lots.

Methodology:

The overall approach remains same as used in the previous analysis except for the change of base year conditions and growth factors. The following paragraphs describe the steps applied.

In the current analysis the year 2000 base conditions were replaced with year 2002 conditions consequently year 2002 transit trips from version 2.3 travel demand model and 8.0a land use data were used to come up with the revised growth factors.

The procedure used in the calculation of emissions associated with auto access to transit is an off-line process. The approach is very simple; it involves the application of an emissions rate to the various components of travel, i.e. start up, running (35 mph for arterials and 45 mph for freeways) and hot soak. For trips originating outside the MSA, only those miles within the MSA are used in the calculation. Forecasting for 'out years' is based on growth rates developed from total internal modeled transit trips. The growth rates are then applied to the MWCOG/DTP 2002 Park and Ride Utilization inventory data.

Separate emissions rates are applied by components of a trip cycle i.e. a start up rate for trip origins, a running rate for the running component and hot soak rate for trip destinations. These three rates represent an average of the twelve composite rates for jurisdictions in the non-attainment area and for seven MOBILE6 vehicle types, HDD fractions were zeroed out of the

VMT Mix. This adjustment was made based on the assumption that heavy duty vehicles such as tractor trailers are typically not used by commuters for trips to and from transit locations or to park and ride lots, however as mentioned in the above paragraph Light Duty Trucks are included in the VMT Mix percents.

As with the other components of the annual emissions inventory for fine particles, seasonal adjustments to travel data associated were applied. Totals for each of the three seasons were then added to provide an annual total for each pollutant.

Results:

This year's analysis included an update to one input: 2002 vmt base. In the previous analysis, year 2000 vmt base was used and the growth factors were derived from the transit trips for year 2000 and the year under consideration. As described earlier, in current analysis since the year 2000 base conditions were replaced with year 2002 conditions, there is a drop in autoaccess emissions for the outer years as compared to previous year's analysis. This drop is attributed to lower growth factors for the outer years.

Total Auto Access Emissions by year are listed in Exhibits 18 and 19 of the AQC report for annual emissions, Exhibits 17 for ozone season and Exhibit 20 for Winter CO. The attached exhibits show detailed results for 2016 for pollutants that are part of this analysis. Results for all other analysis years are contained in the air quality conformity files and are available upon request.

Table
2016 VOC AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(1-HOUR OZONE AREA)
2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016 INSIDE Growth Rate	2016 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	2002 VMT	2016 VMT	E M I S S I O N S						HOT SOAK Rate (gm/mile)	TOTAL (tons/day)		
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total						Arterial %	FREEWAY VMT	Arterial VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING			Total Running	
															Arterial Rate (gm/mile)				Freeway Rate (gm/mile)
COMMUTER RAIL LOTS					1.19	1.19								0.6537	0.1210	0.1077		0.38221667	
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3052.5	3,619	57	43	2,063	1,556	0.0006	0.0006	0.0004	0.0009	0.0004	0.0019
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2040	2,419	57	43	1,379	1,040	0.0004	0.0004	0.0002	0.0006	0.0002	0.0013
DICKERSON	0	15	0	15	18	0	7.5	112.5	133	57	43	76	57	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
BARNESVILLE	0	46	0	46	55	0	7.5	345	409	57	43	233	176	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
GERMANTOWN	0	386	0	386	458	0	7.5	2895	3,432	57	43	1,956	1,476	0.0007	0.0005	0.0004	0.0009	0.0004	0.0019
MET GROVE	0	352	0	352	417	0	7.5	2640	3,130	57	43	1,784	1,346	0.0006	0.0005	0.0003	0.0008	0.0004	0.0017
WAS GROVE	0	15	0	15	18	0	7.5	112.5	133	57	43	76	57	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
GARRETT PARK	0	22	0	22	26	0	7.5	165	196	57	43	112	84	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
BOWIE 50%	50	188	188	375	222	222	7.5	2812.5	3,335	57	43	1,901	1,434	0.0005	0.0005	0.0003	0.0008	0.0003	0.0016
SEABROOK 15%	15	224	40	264	266	47	7.5	1980	2,348	57	43	1,338	1,009	0.0004	0.0004	0.0002	0.0006	0.0002	0.0013
KENSINGTON	0	45	0	45	53	0	7.5	337.5	400	57	43	228	172	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
LAUREL 30%	30	209	90	299	248	106	7.5	2242.5	2,659	57	43	1,515	1,143	0.0004	0.0004	0.0003	0.0007	0.0003	0.0014
GAITHESBURG	0	280	0	280	332	0	7.5	2100	2,490	57	43	1,419	1,071	0.0005	0.0004	0.0003	0.0006	0.0003	0.0014
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	135	160	57	43	91	69	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
RIVERDALE	0	65	0	65	77	0	4.5	292.5	347	57	43	198	149	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
								0	0										
METRO RAIL LOTS								0	0										
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	9885	11,720	57	43	6,680	5,040	0.0018	0.0018	0.0012	0.0030	0.0011	0.0058
ARCHIVES	0	12	0	12	14	0	4.5	54	64	57	43	36	28	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ARLING	0	10	0	10	12	0	4.5	45	53	57	43	30	23	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BALLSTON	0	1175	0	1175	1393	0	4.5	5287.5	6,269	57	43	3,573	2,696	0.0020	0.0010	0.0006	0.0016	0.0012	0.0048
BENN RD	0	520	0	520	617	0	4.5	2340	2,774	57	43	1,581	1,193	0.0009	0.0004	0.0003	0.0007	0.0005	0.0021
BETH	0	395	0	395	468	0	4.5	1777.5	2,107	57	43	1,201	906	0.0007	0.0003	0.0002	0.0005	0.0004	0.0016
BRADD RD	0	10	0	10	12	0	4.5	45	53	57	43	30	23	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BROOKLAND	0	27	0	27	32	0	4.5	121.5	144	57	43	82	62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
CHEVERLY	0	557	0	557	660	0	4.5	2506.5	2,972	57	43	1,694	1,278	0.0010	0.0005	0.0003	0.0008	0.0006	0.0023
CLARENDON	0	554	0	554	657	0	4.5	2493	2,956	57	43	1,685	1,271	0.0009	0.0004	0.0003	0.0008	0.0006	0.0023
CLEVELAND PK	0	366	0	366	434	0	4.5	1647	1,953	57	43	1,113	840	0.0006	0.0003	0.0002	0.0005	0.0004	0.0015
COURT HOUSE	0	256	0	256	304	0	4.5	1152	1,366	57	43	779	587	0.0004	0.0002	0.0001	0.0003	0.0003	0.0010
CRYSTAL CITY	0	347	0	347	411	0	4.5	1561.5	1,851	57	43	1,055	796	0.0006	0.0003	0.0002	0.0005	0.0003	0.0014
DEANWOOD	0	194	0	194	230	0	4.5	873	1,035	57	43	590	445	0.0003	0.0002	0.0001	0.0003	0.0002	0.0008
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	6097.5	7,229	57	43	4,121	3,109	0.0022	0.0011	0.0007	0.0018	0.0013	0.0053
DUPONT CIRCLE	0	165	0	165	196	0	4.5	742.5	880	57	43	502	379	0.0003	0.0001	0.0001	0.0002	0.0002	0.0007
EASTERN MKT	0	178	0	178	211	0	4.5	801	950	57	43	541	408	0.0003	0.0001	0.0001	0.0002	0.0002	0.0007
EAST FALLS CH	0	442	0	442	524	0	4.5	1989	2,358	57	43	1,344	1,014	0.0008	0.0004	0.0002	0.0006	0.0004	0.0018
EIS	0	352	0	352	417	0	4.5	1584	1,878	57	43	1,070	808	0.0006	0.0003	0.0002	0.0005	0.0004	0.0014
FARRAGUT NORTH	0	102	0	102	121	0	4.5	459	544	57	43	310	234	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
FARRAGUT WEST	0	221	0	221	262	0	4.5	994.5	1,179	57	43	672	507	0.0004	0.0002	0.0001	0.0003	0.0002	0.0009
FEDERAL CENTER	0	75	0	75	89	0	4.5	337.5	400	57	43	228	172	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
FEDERAL TRI	0	54	0	54	64	0	4.5	243	288	57	43	164	124	0.0001	0.0000	0.0000	0.0001	0.0001	0.0002
FOGGY	0	102	0	102	121	0	4.5	459	544	57	43	310	234	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
FORT TROTTE	0	445	0	445	528	0	4.5	2002.5	2,374	57	43	1,353	1,021	0.0008	0.0004	0.0002	0.0006	0.0004	0.0018
FRH HEIGHTS	0	679	0	679	805	0	4.5	3055.5	3,623	57	43	2,065	1,558	0.0012	0.0006	0.0004	0.0009	0.0007	0.0028
GALLERY PLACE	0	124	0	124	147	0	4.5	558	662	57	43	377	284	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
GROSVENOR	0	716	0	716	849	0	4.5	3222	3,820	57	43	2,177	1,643	0.0012	0.0006	0.0004	0.0010	0.0007	0.0029
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	23415	27,761	57	43	15,824	11,937	0.0043	0.0042	0.0028	0.0071	0.0025	0.0138
JUD SQUARE	0	110	0	110	130	0	4.5	495	587	57	43	335	252	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
KING ST	0	30	0	30	36	0	4.5	135	160	57	43	91	69	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
								0	0										
								0	0										
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	14100	16,717	57	43	9,529	7,188	0.0028	0.0025	0.0017	0.0042	0.0016	0.0087
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1332	1,579	57	43	900	679	0.0005	0.0002	0.0002	0.0004	0.0003	0.0012
MCPHERSON SQ	0	52	0	52	62	0	4.5	234	277	57	43	158	119	0.0001	0.0000	0.0000	0.0001	0.0001	0.0002
MEDICAL CENTER	0	14	0	14	17	0	4.5	63	75	57	43	43	32	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
METRO CENTER	0	177	0	177	210	0	4.5	796.5	944	57	43	538	406	0.0003	0.0001	0.0001	0.0002	0.0002	0.0007
MINNES	0	353	0	353	419	0	4.5	1588.5	1,883	57	43	1,074	810	0.0006	0.0003	0.0002	0.0005	0.0004	0.0014
NAT AIR	0	87	0	87	103	0	4.5	391.5	464	57	43	265	200	0.0001	0.0001	0.0000	0.0001	0.0001	0.0004
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	15727.5	18,647	57	43	10,629	8,018	0.0027	0.0028	0.0019	0.0047	0.0016	0.0090
PENTAGON	0	561	0	561	665	0	4.5	2524.5	2,993	57	43	1,706	1,287	0.0010	0.0005	0.0003	0.0008	0.0006	0.0023
PENTAGON CITY	0	381	0	381	452	0	4.5	1714.5	2,033	57	43	1,159	874	0.0007	0.0003	0.0002	0.0005	0.0004	0.0015

Table
2016 VOC AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(1-HOUR OZONE AREA)
2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016 INSIDE Growth Rate 1.19	2016 OUTSIDE Growth Rate 1.19	AVERAGE TRIP LENGTH	2002 VMT	2016 VMT	E M I S S I O N S								HOT SOAK Rate (gm/mile) 0.38221667	TOTAL (tons/day)	
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total						ARTERIAL		FREEWAY		COLD START		RUNNING				Total Running
										%	VMT	VMT	VMT	Rate (gm/mile)	Rate (gm/mile)	Rate (gm/mile)	Rate (gm/mile)			
COMMUTER RAIL LOTS																				
POTOMAC AVE	0	533	0	533	632	0	4.5	2398.5	2,844	57	43	1,621	1,223	0.0009	0.0004	0.0003	0.0007	0.0005	0.0022	
ROCKVILLE	0	667	0	667	791	0	4.5	3001.5	3,559	57	43	2,028	1,530	0.0011	0.0005	0.0004	0.0009	0.0007	0.0027	
ROSSLYN	0	356	0	356	422	0	4.5	1602	1,899	57	43	1,083	817	0.0006	0.0003	0.0002	0.0005	0.0004	0.0014	
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	32527.5	38,566	57	43	21,982	16,583	0.0070	0.0059	0.0039	0.0098	0.0041	0.0210	
SILVER SPRING	0	44	0	44	52	0	4.5	198	235	57	43	134	101	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002	
SMITH MALL	0	120	0	120	142	0	4.5	540	640	57	43	365	275	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005	
STADIUM ARM	0	976	0	976	1157	0	4.5	4392	5,207	57	43	2,968	2,239	0.0017	0.0008	0.0005	0.0013	0.0010	0.0040	
TAKOMA PK	0	146	0	146	173	0	4.5	657	779	57	43	444	335	0.0002	0.0001	0.0001	0.0002	0.0001	0.0006	
TENLEYTON	0	17	0	17	20	0	4.5	76.5	91	57	43	52	39	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	
TWINBROOK	0	1136	0	1136	1347	0	4.5	5112	6,061	57	43	3,455	2,606	0.0019	0.0009	0.0006	0.0015	0.0011	0.0046	
UNION STAT	0	378	0	378	448	0	4.5	1701	2,017	57	43	1,150	867	0.0006	0.0003	0.0002	0.0005	0.0004	0.0015	
VAN NESS	0	343	0	343	407	0	4.5	1543.5	1,830	57	43	1,043	787	0.0006	0.0003	0.0002	0.0005	0.0003	0.0014	
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	27982.5	33,177	57	43	18,911	14,266	0.0056	0.0050	0.0034	0.0084	0.0033	0.0173	
VA SQUARE	0	642	0	642	761	0	4.5	2889	3,425	57	43	1,952	1,473	0.0011	0.0005	0.0003	0.0009	0.0006	0.0026	
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	9823.5	11,647	57	43	6,639	5,008	0.0037	0.0018	0.0012	0.0030	0.0022	0.0089	
WHITE FLINT	0	1633	0	1633	1936	0	4.5	7348.5	8,713	57	43	4,966	3,746	0.0028	0.0013	0.0009	0.0022	0.0016	0.0066	
WOODLEY	0	68	0	68	81	0	4.5	306	363	57	43	207	156	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003	
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	2850	3,379	57	43	1,926	1,453	0.0006	0.0005	0.0003	0.0009	0.0003	0.0017	
								0	0											
BUS & CAR POOL LOTS								0	0											
CARTER BARRON	0	798	0	798	946	0	4.5	3591	4,258	57	43	2,427	1,831	0.0014	0.0006	0.0004	0.0011	0.0008	0.0032	
PG PLAZA	0	47	0	47	56	0	4.5	211.5	251	57	43	143	108	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002	
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	450	534	57	43	304	229	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004	
CAP PLAZA	0	100	0	100	119	0	4.5	450	534	57	43	304	229	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004	
EASTOVER	0	100	0	100	119	0	4.5	450	534	57	43	304	229	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004	
FOUR MILE RUN	0	28	0	28	33	0	4.5	126	149	57	43	85	64	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	2610	3,094	57	43	1,764	1,331	0.0010	0.0005	0.0003	0.0008	0.0006	0.0024	
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	216	256	57	43	146	110	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002	
FRED ARMORY	0	33	0	33	39	0	7.5	247.5	293	57	43	167	126	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002	
MYERSVILLE	0	65	0	65	77	0	7.5	487.5	578	57	43	329	249	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003	
ROSEMONT	0	45	0	45	53	0	7.5	337.5	400	57	43	228	172	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002	
URBANA	0	193	0	193	229	0	7.5	1447.5	1,716	57	43	978	738	0.0003	0.0003	0.0002	0.0004	0.0002	0.0010	
JEFFERSON	0	40	0	40	47	0	7.5	300	356	57	43	203	153	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002	
NORBECK RD	0	248	0	248	294	0	7.5	1860	2,205	57	43	1,257	948	0.0004	0.0003	0.0002	0.0006	0.0002	0.0012	
MONTROSE RD	0	650	0	650	771	0	7.5	4875	5,780	57	43	3,295	2,485	0.0011	0.0009	0.0006	0.0015	0.0006	0.0032	
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3225	3,824	57	43	2,179	1,644	0.0006	0.0006	0.0004	0.0010	0.0003	0.0018	
COMUS ROAD	0	30	0	30	36	0	7.5	225	267	57	43	152	115	0.0001	0.0000	0.0000	0.0001	0.0000	0.0001	
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2250	2,668	57	43	1,521	1,147	0.0005	0.0004	0.0003	0.0007	0.0003	0.0015	
BURTONSVILLE	0	500	0	500	593	0	7.5	3750	4,446	57	43	2,534	1,912	0.0009	0.0007	0.0005	0.0011	0.0005	0.0025	
FORCEY MEM.	0	200	0	200	237	0	7.5	1500	1,778	57	43	1,014	765	0.0003	0.0003	0.0002	0.0005	0.0002	0.0010	
TECH ROAD	0	155	0	155	184	0	7.5	1162.5	1,378	57	43	786	593	0.0003	0.0002	0.0001	0.0004	0.0002	0.0008	
BELTWAY	0	265	0	265	314	0	7.5	1987.5	2,356	57	43	1,343	1,013	0.0005	0.0004	0.0002	0.0006	0.0003	0.0013	
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	465	551	57	43	314	237	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003	
ACCOKEEK	0	450	0	450	534	0	7.5	3375	4,001	57	43	2,281	1,721	0.0008	0.0006	0.0004	0.0010	0.0004	0.0022	
ABC DRIVE IN	0	100	0	100	119	0	7.5	750	889	57	43	507	382	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005	
BOWIE 20%	20	526	131	657	623	156	7.5	4927.5	5,842	57	43	3,330	2,512	0.0010	0.0009	0.0006	0.0015	0.0006	0.0031	
CLINTON 50%	50	212	212	424	251	251	7.5	3180	3,770	57	43	2,149	1,621	0.0005	0.0006	0.0004	0.0010	0.0003	0.0018	
OXON HILL 20%	20	519	130	649	616	154	7.5	4867.5	5,771	57	43	3,289	2,482	0.0010	0.0009	0.0006	0.0015	0.0006	0.0030	
EQUESTRIAN CENTER	50	150	150	300	178	178	7.5	2250	2,668	57	43	1,521	1,147	0.0004	0.0004	0.0003	0.0007	0.0002	0.0013	
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	375	445	57	43	253	191	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002	
FT. WASHINGTON	0	412	0	412	488	0	7.5	3090	3,664	57	43	2,088	1,575	0.0007	0.0006	0.0004	0.0009	0.0004	0.0020	
MONTPELLIER REC PARK	0	70	0	70	83	0	7.5	525	622	57	43	355	268	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003	
RESTON	0	1547	0	1547	1834	0	7.5	11602.5	13,756	57	43	7,841	5,915	0.0026	0.0021	0.0014	0.0035	0.0015	0.0077	
GREENBRIAR	0	55	0	55	65	0	7.5	412.5	489	57	43	279	210	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003	
FAIR OAKS	0	150	0	150	178	0	7.5	1125	1,334	57	43	760	574	0.0003	0.0002	0.0001	0.0003	0.0001	0.0007	
ROLLING VALLEY	0	628	0	628	745	0	7.5	4710	5,584	57	43	3,183	2,401	0.0011	0.0008	0.0006	0.0014	0.0006	0.0031	
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	1725	2,045	57	43	1,166	879	0.0004	0.0003	0.0002	0.0005	0.0002	0.0011	
FAIRLANES BOWL	0	35	0	35	41	0	7.5	262.5	311	57	43	177	134	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002	
NOTTOWAY PARK	0	14	0	14	17	0	7.5	105	124	57	43	71	54	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	
HORNER RD	0	2397	0	2397	2842	0	7.5	17977.5	21,315	57	43	12,149	9,165	0.0041	0.0032	0.0022	0.0054	0.0024	0.0119	

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 (1-HOUR OZONE AREA)
 2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016 INSIDE Growth Rate 1.19	2016 OUTSIDE Growth Rate 1.19	AVERAGE TRIP LENGTH	2002 VMT	2016 VMT	E M I S S I O N S						HOT SOAK Rate (gm/mile)	TOTAL (tons/day)		
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total						ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	Arterial Rate (gm/mile)			Freeway Rate (gm/mile)	Total Running
COMMUTER RAIL LOTS																		0.38221667	
St Paul Chung Catholic Ch	50	50	50	100	59	59	7.5	750	889	57	43	507	382	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
Stringfellow Rd	50	181	181	361	214	214	7.5	2707.5	3,210	57	43	1,830	1,380	0.0005	0.0005	0.0003	0.0008	0.0003	0.0015
Sully Station	50	70	70	140	83	83	7.5	1,050	1,245	57	43	710	535	0.0002	0.0002	0.0001	0.0003	0.0001	0.0006
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,252.5	1,485	57	43	846	639	0.0002	0.0002	0.0002	0.0004	0.0001	0.0007
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	375	445	57	43	253	191	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
PARK-AND-RIDE LOTS - VIRGINIA																			
LOUDOUN COUNTY																			
Ashburn Farm	50	10	10	20	12	12	7.5	150	178	57	43	101	76	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
Ashburn Village	50	20	20	40	24	24	7.5	300	356	57	43	203	153	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Cascades	50	28	28	55	33	33	7.5	412.5	489	57	43	279	210	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Dulles North Transit	50	375	375	750	445	445	7.5	5,625	6,669	57	43	3,801	2,868	0.0010	0.0010	0.0007	0.0017	0.0006	0.0032
Hamilton	50	25	25	50	30	30	7.5	375	445	57	43	253	191	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Innovation Avenue	50	38	38	75	44	44	7.5	562.5	667	57	43	380	287	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Leesburg	50	25	25	50	30	30	7.5	375	445	57	43	253	191	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Leesburg Kohls	50	600	600	1200	711	711	7.5	9000	10,671	57	43	6,082	4,588	0.0015	0.0016	0.0011	0.0027	0.0009	0.0051
Purcellville	50	18	18	35	21	21	7.5	262.5	311	57	43	177	134	0.0000	0.0000	0.0000	0.0001	0.0000	0.0002
Sterling Park SC	50	23	23	45	27	27	7.5	337.5	400	57	43	228	172	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Sterling Shaw Rd	50	24	24	48	28	28	7.5	360	427	57	43	243	184	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
PARK-AND-RIDE LOTS - VIRGINIA																			
PRINCE WILLIAM COUNTY																			
Brittany	50	48	48	95	56	56	7.5	712.5	845	57	43	482	363	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
Dale City	50	294	294	587	348	348	7.5	4,402.5	5,220	57	43	2,975	2,244	0.0008	0.0008	0.0005	0.0013	0.0004	0.0025
Harbor Drive	50	100	100	200	119	119	7.5	1,500	1,778	57	43	1,014	765	0.0003	0.0003	0.0002	0.0005	0.0001	0.0009
Lindendale	50	108	108	216	128	128	7.5	1,620	1,921	57	43	1,095	826	0.0003	0.0003	0.0002	0.0005	0.0002	0.0009
Montclair	50	25	25	50	30	30	7.5	375	445	57	43	253	191	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
PRTC Transit Center	50	93	93	185	110	110	7.5	1,387.5	1,645	57	43	938	707	0.0002	0.0003	0.0002	0.0004	0.0001	0.0008
Tackett's Mill	50	85	85	169	100	100	7.5	1,267.5	1,503	57	43	857	646	0.0002	0.0002	0.0002	0.0004	0.0001	0.0007
Triangle	50	15	15	29	17	17	7.5	217.5	258	57	43	147	111	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
I-95 / Rt 123	50	282	282	563	334	334	7.5	4,222.5	5,006	57	43	2,854	2,153	0.0007	0.0008	0.0005	0.0013	0.0004	0.0024
US 1 / VA 234	50	137	137	274	162	162	7.5	2,055	2,436	57	43	1,389	1,048	0.0004	0.0004	0.0002	0.0006	0.0002	0.0012
MARC TRAIN COMMUTER LOTS																			
College Park	25	431	144	574	510	170	7.5	4,305	5,104	57	43	2,909	2,195	0.0009	0.0008	0.0005	0.0013	0.0005	0.0027
Frederick	0	0	0	0	0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Greenbelt	60	1346	2018	3364	1595	2393	7.5	25,230	29,913	57	43	17,051	12,863	0.0040	0.0045	0.0031	0.0076	0.0024	0.0140
Harpers Ferry		98	0	98	116	0	7.5	735	871	57	43	497	375	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
Muirkirk	60	260	390	650	308	462	7.5	4,875	5,780	57	43	3,295	2,485	0.0008	0.0009	0.0006	0.0015	0.0005	0.0027
Seabrook	0	264	0	264	313	0	4.5	1,188	1,409	57	43	803	606	0.0005	0.0002	0.0001	0.0004	0.0003	0.0011
Silver Spring	0	0	0	0	0	0	4.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Union Station	0	781	0	781	926	0	7.5	5,857.5	6,945	57	43	3,959	2,986	0.0013	0.0011	0.0007	0.0018	0.0008	0.0039
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS																			
Backlick Road	50	110	110	220	130	130	7.5	1,650	1,956	57	43	1,115	841	0.0003	0.0003	0.0002	0.0005	0.0002	0.0009
Broad Run	50	198	198	396	235	235	7.5	2,970	3,521	57	43	2,007	1,514	0.0005	0.0005	0.0004	0.0009	0.0003	0.0017
Burke Center	50	275	275	550	326	326	7.5	4,125	4,891	57	43	2,788	2,103	0.0007	0.0007	0.0005	0.0012	0.0004	0.0024
Franconia/Springfield (open)	50	1900	1900	3800	2253	2253	7.5	28,500	33,790	57	43	19,261	14,530	0.0049	0.0051	0.0034	0.0086	0.0028	0.0163
Lorton	50	100	100	200	119	119	7.5	1,500	1,778	57	43	1,014	765	0.0003	0.0003	0.0002	0.0005	0.0001	0.0009
Manassas	50	187	187	374	222	222	7.5	2,805	3,326	57	43	1,896	1,430	0.0005	0.0005	0.0003	0.0008	0.0003	0.0016
Manassas Park	50	150	150	300	178	178	7.5	2,250	2,668	57	43	1,521	1,147	0.0004	0.0004	0.0003	0.0007	0.0002	0.0013
Quantico	50	109	109	217	129	129	7.5	1,627.5	1,930	57	43	1,100	830	0.0003	0.0003	0.0002	0.0005	0.0002	0.0009
Rippon	50	150	150	300	178	178	7.5	2,250	2,668	57	43	1,521	1,147	0.0004	0.0004	0.0003	0.0007	0.0002	0.0013
Rolling Road	50	185	185	370	219	219	7.5	2,775	3,290	57	43	1,875	1,415	0.0005	0.0005	0.0003	0.0008	0.0003	0.0016
Woodbridge	50	294	294	588	349	349	7.5	4,410	5,229	57	43	2,980	2,248	0.0008	0.0008	0.0005	0.0013	0.0004	0.0025
METRO RAIL PARKING LOTS																			
Anacostia	25	861	287	1148	1021	340	7.5	8,610	10,208	57	43	5,819	4,390	0.0017	0.0016	0.0010	0.0026	0.0010	0.0053
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	24,165	28,651	57	43	16,331	12,320	0.0041	0.0044	0.0029	0.0073	0.0024	0.0138
Capitol Heights	50	194	194	387	229	229	7.5	2,902.5	3,441	57	43	1,962	1,480	0.0005	0.0005	0.0004	0.0009	0.0003	0.0017
College Park	25	465	155	620	551	184	7.5	4,650	5,513	57	43	3,143	2,371	0.0009	0.0008	0.0006	0.0014	0.0005	0.0029
Congress Heights	0	66	0	66	78	0	4.5	297	352	57	43	201	151	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
Deanwood	0	194	0	194	230	0	7.5	1,455	1,725	57	43	983	742	0.0003	0.0003	0.0002	0.0004	0.0002	0.0010
East Falls Church	50	221	221	442	262	262	7.5	3,315	3,930	57	43	2,240	1,690	0.0006	0.0006	0.0004	0.0010	0.0003	0.0019
Forest Glen	50	329	329	658	390	390	7.5	4,935	5,851	57	43	3,335	2,516	0.0008	0.0009	0.0006	0.0015	0.0005	0.0028
Franconia - Springfield	50	1987	1987	3973	2355	2355	4.5	17,878.5	21,197	57	43	12,082	9,115	0.0051	0.0032	0.0022	0.0054	0.0030	0.0135
Glenmont	50	925	925	1850	1097	1097	4.5	8,325	9,870	57	43	5,626	4,244	0.0024	0.0015	0.0010	0.0025	0.0014	0.0063
Greenbelt	50	1783	1783	3565	2113	2113	7.5	26,737.5	31,701	57	43	18,069	13,631	0.0046	0.0048	0.0032	0.0081	0.0027	0.0153

Table
 2016 VOC AIR QUALITY EMISSIONS INVENTORY
 AUTO ACCESS TO TRANSIT
 (1-HOUR OZONE AREA)
 2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016 INSIDE Growth Rate	2016 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	2002 VMT	2016 VMT	E M I S S I O N S								HOT SOAK Rate (gm/mile)	TOTAL (tons/day)		
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total						ARTERIAL %	FREEWAY	ARTERIAL VMT	FREEWAY VMT	COLD START			RUNNING				
														Rate (gm/mile)	Rate (gm/mile)	Rate (gm/mile)	Arterial Rate (gm/mile)			Freeway Rate (gm/mile)	Total Running
COMMUTER RAIL LOTS					1.19	1.19								0.6537	0.1210	0.1077		0.38221667			
Naylor Road	50	216	216	431	256	256	7.5	3232.5	3,833	57	43	2,185	1,648	0.0006	0.0006	0.0004	0.0010	0.0003	0.0018		
Prince George's Plaza	25	927	309	1236	1099	366	7.5	9270	10,991	57	43	6,265	4,726	0.0018	0.0017	0.0011	0.0028	0.0011	0.0057		
Southern Avenue	50	1090	1090	2180	1292	1292	4.5	9810	11,631	57	43	6,630	5,001	0.0028	0.0018	0.0012	0.0030	0.0016	0.0074		
Suitland	50	1033	1033	2065	1224	1224	4.5	9292.5	11,017	57	43	6,280	4,738	0.0026	0.0017	0.0011	0.0028	0.0015	0.0070		
Van Dorn Street	50	204	204	407	241	241	4.5	1831.5	2,171	57	43	1,238	934	0.0005	0.0003	0.0002	0.0006	0.0003	0.0014		
West Hyattsville	25	453	151	604	537	179	7.5	4530	5,371	57	43	3,061	2,309	0.0009	0.0008	0.0005	0.0014	0.0005	0.0028		
Wheaton	25	759	253	1012	900	300	7.5	7590	8,999	57	43	5,129	3,870	0.0015	0.0014	0.0009	0.0023	0.0009	0.0047		
		78629	29681	108,310	93224	35191		711714	843,828					0.1597	0.1283	0.0861	0.2144	0.0934	0.4675		

Bold figures: New numbers taken from P & R directory
 Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
transit trips 2016	1295286
transit trips 2002	1,092,489
Annual growth rate	0.013259172
Growth factor (2002-2016)	1.185628414

Table
 2016 NOx AIR QUALITY EMISSIONS INVENTORY
 AUTO ACCESS TO TRANSIT
 (8-HOUR OZONE AREA)
 2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY

10-26-2011

LOCATION	2002				2016		AVERAGE TRIP LENGTH	VMT	ARTERIAL	FREEWAY	ARTERIAL	FREEWAY	COLD START Rate (gm/mile)	E M I S S I O N S			TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate			%	VMT	VMT	RUNNING					
					1.19	1.19						Arterial Rate (gm/mile)		Freeway Rate (gm/mile)	Total Running Emission		
COMMUTER RAIL LOTS													0.3226	0.1953	0.2036		
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3,619	57	43	2,063	1,556	0.0003	0.0009	0.0007	0.0016	0.0019
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2,419	57	43	1,379	1,040	0.0002	0.0006	0.0005	0.0011	0.0013
DICKERSON	0	15	0	15	18	0	7.5	133	57	43	76	57	0.0000	0.0000	0.0000	0.0001	0.0001
BARNESVILLE	0	46	0	46	55	0	7.5	409	57	43	233	176	0.0000	0.0001	0.0001	0.0002	0.0002
GERMANTOWN	0	386	0	386	458	0	7.5	3,432	57	43	1,956	1,476	0.0003	0.0008	0.0007	0.0015	0.0018
MET GROVE	0	352	0	352	417	0	7.5	3,130	57	43	1,784	1,346	0.0003	0.0008	0.0006	0.0014	0.0017
WAS GROVE	0	15	0	15	18	0	7.5	133	57	43	76	57	0.0000	0.0000	0.0000	0.0001	0.0001
GARRETT PARK	0	22	0	22	26	0	7.5	196	57	43	112	84	0.0000	0.0000	0.0000	0.0001	0.0001
BOWIE 50%	50	188	188	375	222	222	7.5	3,335	57	43	1,901	1,434	0.0002	0.0008	0.0006	0.0015	0.0017
SEABROOK 15%	15	224	40	264	266	47	7.5	2,348	57	43	1,338	1,009	0.0002	0.0006	0.0005	0.0010	0.0012
KENSINGTON	0	45	0	45	53	0	7.5	400	57	43	228	172	0.0000	0.0001	0.0001	0.0002	0.0002
LAUREL 30%	30	209	90	299	248	106	7.5	2,659	57	43	1,515	1,143	0.0002	0.0007	0.0005	0.0012	0.0014
GAITHESBURG	0	280	0	280	332	0	7.5	2,490	57	43	1,419	1,071	0.0002	0.0006	0.0005	0.0011	0.0013
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	160	57	43	91	69	0.0000	0.0000	0.0000	0.0001	0.0001
RIVERDALE	0	65	0	65	77	0	4.5	347	57	43	198	149	0.0001	0.0001	0.0001	0.0002	0.0002
								0									
METRO RAIL LOTS								0									
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	11,720	57	43	6,680	5,040	0.0009	0.0029	0.0023	0.0051	0.0060
ARCHIVES	0	12	0	12	14	0	4.5	64	57	43	36	28	0.0000	0.0000	0.0000	0.0000	0.0000
ARLING	0	10	0	10	12	0	4.5	53	57	43	30	23	0.0000	0.0000	0.0000	0.0000	0.0000
BALLSTON	0	1175	0	1175	1393	0	4.5	6,269	57	43	3,573	2,696	0.0010	0.0015	0.0012	0.0027	0.0037
BENN.RD	0	520	0	520	617	0	4.5	2,774	57	43	1,581	1,193	0.0004	0.0007	0.0005	0.0012	0.0017
BETH	0	395	0	395	468	0	4.5	2,107	57	43	1,201	906	0.0003	0.0005	0.0004	0.0009	0.0013
BRADD RD	0	10	0	10	12	0	4.5	53	57	43	30	23	0.0000	0.0000	0.0000	0.0000	0.0000
BROOKLAND	0	27	0	27	32	0	4.5	144	57	43	82	62	0.0000	0.0000	0.0000	0.0001	0.0001
CHEVERLY	0	557	0	557	660	0	4.5	2,972	57	43	1,694	1,278	0.0005	0.0007	0.0006	0.0013	0.0018
CLARENDON	0	554	0	554	657	0	4.5	2,956	57	43	1,685	1,271	0.0005	0.0007	0.0006	0.0013	0.0018
CLEVELAND PK	0	366	0	366	434	0	4.5	1,953	57	43	1,113	840	0.0003	0.0005	0.0004	0.0009	0.0012
COURT HOUSE	0	256	0	256	304	0	4.5	1,366	57	43	779	587	0.0002	0.0003	0.0003	0.0006	0.0008
CRYSTAL CITY	0	347	0	347	411	0	4.5	1,851	57	43	1,055	796	0.0003	0.0005	0.0004	0.0008	0.0011
DEANWOOD	0	194	0	194	230	0	4.5	1,035	57	43	590	445	0.0002	0.0003	0.0002	0.0005	0.0006
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	7,229	57	43	4,121	3,109	0.0011	0.0018	0.0014	0.0032	0.0043
DUPONT CIRCLE	0	165	0	165	196	0	4.5	880	57	43	502	379	0.0001	0.0002	0.0002	0.0004	0.0005
EASTERN MKT	0	178	0	178	211	0	4.5	950	57	43	541	408	0.0002	0.0002	0.0002	0.0004	0.0006
EAST FALLS CH	0	442	0	442	524	0	4.5	2,358	57	43	1,344	1,014	0.0004	0.0006	0.0005	0.0010	0.0014
EIS	0	352	0	352	417	0	4.5	1,878	57	43	1,070	808	0.0003	0.0005	0.0004	0.0008	0.0011
FARRAGUT NORTH	0	102	0	102	121	0	4.5	544	57	43	310	234	0.0001	0.0001	0.0001	0.0002	0.0003
FARRAGUT WEST	0	221	0	221	262	0	4.5	1,179	57	43	672	507	0.0002	0.0003	0.0002	0.0005	0.0007
FEDERAL CENTER	0	75	0	75	89	0	4.5	400	57	43	228	172	0.0001	0.0001	0.0001	0.0002	0.0002
FEDERAL TRI	0	54	0	54	64	0	4.5	288	57	43	164	124	0.0000	0.0001	0.0001	0.0001	0.0002
FOGGY	0	102	0	102	121	0	4.5	544	57	43	310	234	0.0001	0.0001	0.0001	0.0002	0.0003
FORT TROTTEEN	0	445	0	445	528	0	4.5	2,374	57	43	1,353	1,021	0.0004	0.0006	0.0005	0.0010	0.0014
FRH.HEIGHTS	0	679	0	679	805	0	4.5	3,623	57	43	2,065	1,558	0.0006	0.0009	0.0007	0.0016	0.0022
GALLERY PLACE	0	124	0	124	147	0	4.5	662	57	43	377	284	0.0001	0.0002	0.0001	0.0003	0.0004
GROSVENOR	0	716	0	716	849	0	4.5	3,820	57	43	2,177	1,643	0.0006	0.0009	0.0007	0.0017	0.0023
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	27,761	57	43	15,824	11,937	0.0021	0.0068	0.0054	0.0122	0.0143
JUD SQUARE	0	110	0	110	130	0	4.5	587	57	43	335	252	0.0001	0.0001	0.0001	0.0003	0.0004
KING ST	0	30	0	30	36	0	4.5	160	57	43	91	69	0.0000	0.0000	0.0000	0.0001	0.0001
								0									
								0									
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	16,717	57	43	9,529	7,188	0.0014	0.0041	0.0032	0.0073	0.0087
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1,579	57	43	900	679	0.0002	0.0004	0.0003	0.0007	0.0009
MCPHERSON SQ	0	52	0	52	62	0	4.5	277	57	43	158	119	0.0000	0.0001	0.0001	0.0001	0.0002
MEDICAL CENTER	0	14	0	14	17	0	4.5	75	57	43	43	32	0.0000	0.0000	0.0000	0.0000	0.0000
METRO CENTER	0	177	0	177	210	0	4.5	944	57	43	538	406	0.0001	0.0002	0.0002	0.0004	0.0006
MINNES	0	353	0	353	419	0	4.5	1,883	57	43	1,074	810	0.0003	0.0005	0.0004	0.0008	0.0011
NAT AIR	0	87	0	87	103	0	4.5	464	57	43	265	200	0.0001	0.0001	0.0001	0.0002	0.0003
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	18,647	57	43	10,629	8,018	0.0013	0.0046	0.0036	0.0082	0.0095
PRNTAGON	0	561	0	561	665	0	4.5	2,993	57	43	1,706	1,287	0.0005	0.0007	0.0006	0.0013	0.0018

Table
2016 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY

10-26-2011

LOCATION	2002				2016		AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	FREEWAY VMT	E M I S S I O N S				
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate							COLD START		RUNNING		TOTAL (tons/day)
					1.19	1.19							Rate (gm/mile)	Rate (gm/mile)	Freeway Rate (gm/mile)	Total Running Emission	
													0.3226	0.1953	0.2036		
COMMUTER RAIL LOTS																	
PENTAGON CITY	0	381	0	381	452	0	4.5	2,033	57	43	1,159	874	0.0003	0.0005	0.0004	0.0009	0.0012
POTOMAC AVE	0	533	0	533	632	0	4.5	2,844	57	43	1,621	1,223	0.0004	0.0007	0.0005	0.0012	0.0017
ROCKVILLE	0	667	0	667	791	0	4.5	3,559	57	43	2,028	1,530	0.0006	0.0009	0.0007	0.0016	0.0021
ROSSLYN	0	356	0	356	422	0	4.5	1,899	57	43	1,083	817	0.0003	0.0005	0.0004	0.0008	0.0011
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	38,566	57	43	21,982	16,583	0.0035	0.0095	0.0074	0.0169	0.0204
SILVER SPRING	0	44	0	44	52	0	4.5	235	57	43	134	101	0.0000	0.0001	0.0000	0.0001	0.0001
SMITH MALL	0	120	0	120	142	0	4.5	640	57	43	365	275	0.0001	0.0002	0.0001	0.0003	0.0004
STADIUM ARM	0	976	0	976	1157	0	4.5	5,207	57	43	2,968	2,239	0.0008	0.0013	0.0010	0.0023	0.0031
TAKOMA PK	0	146	0	146	173	0	4.5	779	57	43	444	335	0.0001	0.0002	0.0002	0.0003	0.0005
TENLEYTON	0	17	0	17	20	0	4.5	91	57	43	52	39	0.0000	0.0000	0.0000	0.0000	0.0001
TWINBROOK	0	1136	0	1136	1347	0	4.5	6,061	57	43	3,455	2,606	0.0010	0.0015	0.0012	0.0027	0.0036
UNION STAT	0	378	0	378	448	0	4.5	2,017	57	43	1,150	867	0.0003	0.0005	0.0004	0.0009	0.0012
VAN NESS	0	343	0	343	407	0	4.5	1,830	57	43	1,043	787	0.0003	0.0004	0.0004	0.0008	0.0011
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	33,177	57	43	18,911	14,266	0.0028	0.0081	0.0064	0.0145	0.0173
VA SQUARE	0	642	0	642	761	0	4.5	3,425	57	43	1,952	1,473	0.0005	0.0008	0.0007	0.0015	0.0020
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	11,647	57	43	6,639	5,008	0.0018	0.0029	0.0022	0.0051	0.0069
WHITE FLINT	0	1633	0	1633	1936	0	4.5	8,713	57	43	4,966	3,746	0.0014	0.0021	0.0017	0.0038	0.0052
WOODLEY	0	68	0	68	81	0	4.5	363	57	43	207	156	0.0001	0.0001	0.0001	0.0002	0.0002
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	3,379	57	43	1,926	1,453	0.0003	0.0008	0.0007	0.0015	0.0018
								0									
BUS & CAR POOL LOTS								0									
								0									
CARTER BARRON	0	798	0	798	946	0	4.5	4,258	57	43	2,427	1,831	0.0007	0.0010	0.0008	0.0019	0.0025
PG PLAZA	0	47	0	47	56	0	4.5	251	57	43	143	108	0.0000	0.0001	0.0000	0.0001	0.0001
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	534	57	43	304	229	0.0001	0.0001	0.0001	0.0002	0.0003
CAP PLAZA	0	100	0	100	119	0	4.5	534	57	43	304	229	0.0001	0.0001	0.0001	0.0002	0.0003
EASTOVER	0	100	0	100	119	0	4.5	534	57	43	304	229	0.0001	0.0001	0.0001	0.0002	0.0003
FOUR MILE RUN	0	28	0	28	33	0	4.5	149	57	43	85	64	0.0000	0.0000	0.0000	0.0001	0.0001
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	3,094	57	43	1,764	1,331	0.0005	0.0008	0.0006	0.0014	0.0018
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	256	57	43	146	110	0.0000	0.0001	0.0000	0.0001	0.0002
FRED ARMORY	0	33	0	33	39	0	7.5	293	57	43	167	126	0.0000	0.0001	0.0001	0.0001	0.0002
MYERSVILLE	0	65	0	65	77	0	7.5	578	57	43	329	249	0.0001	0.0001	0.0001	0.0003	0.0003
ROSEMONT	0	45	0	45	53	0	7.5	400	57	43	228	172	0.0000	0.0001	0.0001	0.0002	0.0002
URBANA	0	193	0	193	229	0	7.5	1,716	57	43	978	738	0.0002	0.0004	0.0003	0.0008	0.0009
JEFFERSON	0	40	0	40	47	0	7.5	356	57	43	203	153	0.0000	0.0001	0.0001	0.0002	0.0002
NORBECK RD	0	248	0	248	294	0	7.5	2,205	57	43	1,257	948	0.0002	0.0005	0.0004	0.0010	0.0012
MONTROSE RD	0	650	0	650	771	0	7.5	5,780	57	43	3,295	2,485	0.0005	0.0014	0.0011	0.0025	0.0031
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3,824	57	43	2,179	1,644	0.0003	0.0009	0.0007	0.0017	0.0019
COMUS ROAD	0	30	0	30	36	0	7.5	267	57	43	152	115	0.0000	0.0001	0.0001	0.0001	0.0001
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2,668	57	43	1,521	1,147	0.0003	0.0007	0.0005	0.0012	0.0014
BURTONSVILLE	0	500	0	500	593	0	7.5	4,446	57	43	2,534	1,912	0.0004	0.0011	0.0009	0.0019	0.0024
FORCEY MEM.	0	200	0	200	237	0	7.5	1,778	57	43	1,014	765	0.0002	0.0004	0.0003	0.0008	0.0009
TECH ROAD	0	155	0	155	184	0	7.5	1,378	57	43	786	593	0.0001	0.0003	0.0003	0.0006	0.0007
BELTWAY	0	265	0	265	314	0	7.5	2,356	57	43	1,343	1,013	0.0002	0.0006	0.0005	0.0010	0.0013
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	551	57	43	314	237	0.0001	0.0001	0.0001	0.0002	0.0003
ACCOKEEK	0	450	0	450	534	0	7.5	4,001	57	43	2,281	1,721	0.0004	0.0010	0.0008	0.0018	0.0021
ABC DRIVE IN	0	100	0	100	119	0	7.5	889	57	43	507	382	0.0001	0.0002	0.0002	0.0004	0.0005
BOWIE 20%	20	526	131	657	623	156	7.5	5,842	57	43	3,330	2,512	0.0005	0.0014	0.0011	0.0026	0.0031
CLINTON 50%	50	212	212	424	251	251	7.5	3,770	57	43	2,149	1,621	0.0003	0.0009	0.0007	0.0017	0.0019
OXON HILL 20%	20	519	130	649	616	154	7.5	5,771	57	43	3,289	2,482	0.0005	0.0014	0.0011	0.0025	0.0030
EQUESTRIAN CENTER 50%	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,147	0.0002	0.0007	0.0005	0.0012	0.0014
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
FT WASHINGTON	0	412	0	412	488	0	7.5	3,664	57	43	2,088	1,575	0.0003	0.0009	0.0007	0.0016	0.0020
MONTPELIER REC PARK	0	70	0	70	83	0	7.5	622	57	43	355	268	0.0001	0.0002	0.0001	0.0003	0.0003
RESTON	0	1547	0	1547	1834	0	7.5	13,756	57	43	7,841	5,915	0.0013	0.0034	0.0027	0.0060	0.0073
GREENBRIAR	0	55	0	55	65	0	7.5	489	57	43	279	210	0.0000	0.0001	0.0001	0.0002	0.0003
FAIR OAKS	0	150	0	150	178	0	7.5	1,334	57	43	760	574	0.0001	0.0003	0.0003	0.0006	0.0007
ROLLING VALLEY	0	628	0	628	745	0	7.5	5,584	57	43	3,183	2,401	0.0005	0.0014	0.0011	0.0024	0.0030
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	2,045	57	43	1,166	879	0.0002	0.0005	0.0004	0.0009	0.0011
FAIRLANES BOWL	0	35	0	35	41	0	7.5	311	57	43	177	134	0.0000	0.0001	0.0001	0.0001	0.0002
NOTTOWAY PARK	0	14	0	14	17	0	7.5	124	57	43	71	54	0.0000	0.0000	0.0000	0.0001	0.0001

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(8-HOUR OZONE AREA)
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10-26-2011

LOCATION	2002				2016		AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	FREEWAY VMT	E M I S S I O N S				TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate							COLD START Rate (gm/mile)	RUNNING			
														Arterial Rate (gm/mile)	Freeway Rate (gm/mile)	Total Running Emission	
						0.3226	0.1953	0.2036									
COMMUTER RAIL LOTS																	
HORNER RD	0	2397	0	2397	2842	0	7.5	21,315	57	43	12,149	9,165	0.0020	0.0052	0.0041	0.0093	0.0114
LAKE RIDGE	0	555	0	555	658	0	7.5	4,935	57	43	2,813	2,122	0.0005	0.0012	0.0010	0.0022	0.0026
MINNIEVILLE RD 40%	40	336	224	560	398	266	7.5	4,980	57	43	2,838	2,141	0.0004	0.0012	0.0010	0.0022	0.0026
GORDON BLVD	0	156	0	156	185	0	7.5	1,387	57	43	791	596	0.0001	0.0003	0.0003	0.0006	0.0007
HILLENDALE	0	248	0	248	294	0	7.5	2,205	57	43	1,257	948	0.0002	0.0005	0.0004	0.0010	0.0012
POTOMAC MILLS	0	946	0	946	1122	0	7.5	8,412	57	43	4,795	3,617	0.0008	0.0021	0.0016	0.0037	0.0045
PARK-AND-RIDE LOTS - MARYLAND																	
CALVERT COUNTY																	
Dunkirk	25	32	11	42	37	12	7.5	373	57	43	213	161	0.0000	0.0001	0.0001	0.0002	0.0002
Huntingtown	25	26	9	35	31	10	7.5	311	57	43	177	134	0.0000	0.0001	0.0001	0.0001	0.0002
Lord Calvert Bowling Alley	25	83	28	110	98	33	7.5	978	57	43	558	421	0.0001	0.0002	0.0002	0.0004	0.0005
Lusby	25	23	8	30	27	9	7.5	267	57	43	152	115	0.0000	0.0001	0.0001	0.0001	0.0001
North Beach VFD	25	53	18	70	62	21	7.5	622	57	43	355	268	0.0001	0.0002	0.0001	0.0003	0.0003
Prince Frederick	25	53	18	70	62	21	7.5	622	57	43	355	268	0.0001	0.0002	0.0001	0.0003	0.0003
St. Leonard	25	38	13	50	44	15	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
Sunderland	25	80	27	106	94	31	7.5	943	57	43	537	405	0.0001	0.0002	0.0002	0.0004	0.0005
PARK-AND-RIDE LOTS - MARYLAND																	
CHARLES COUNTY																	
301 Park & Ride	25	287	96	383	341	114	7.5	3,406	57	43	1,941	1,464	0.0003	0.0008	0.0007	0.0015	0.0018
Charles County Government	25	26	9	35	31	10	7.5	311	57	43	177	134	0.0000	0.0001	0.0001	0.0001	0.0002
Food Lion Shopping Center	25	38	13	50	44	15	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
La Plata Armory	25	15	5	20	18	6	7.5	178	57	43	101	76	0.0000	0.0000	0.0000	0.0001	0.0001
Laurel Springs Regional Park	25	38	13	50	44	15	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
Life Wesleyan Church	25	38	13	50	44	15	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
Mattawoman-Beantown Rd	25	435	145	580	516	172	7.5	5,157	57	43	2,940	2,218	0.0004	0.0013	0.0010	0.0023	0.0027
Smallwood Village	25	75	25	100	89	30	7.5	889	57	43	507	382	0.0001	0.0002	0.0002	0.0004	0.0005
St. Charles Towne	25	263	88	350	311	104	7.5	3,112	57	43	1,774	1,338	0.0003	0.0008	0.0006	0.0014	0.0016
PARK-AND-RIDE LOTS - MARYLAND																	
FREDERICK COUNTY																	
Frederick (north)	25	123	41	164	146	49	7.5	1,458	57	43	831	627	0.0001	0.0004	0.0003	0.0006	0.0008
Frederick (south)	25	173	58	230	205	68	7.5	2,045	57	43	1,166	879	0.0002	0.0005	0.0004	0.0009	0.0011
Monacacy Marcst	25	600	200	800	711	237	7.5	7,114	57	43	4,055	3,059	0.0006	0.0017	0.0014	0.0031	0.0037
PARK-AND-RIDE LOTS - MARYLAND																	
MONTGOMERY COUNTY																	
Colesville	0	190	0	190	225	0	7.5	1,690	57	43	963	726	0.0002	0.0004	0.0003	0.0007	0.0009
Damascus	50	0	0	0	0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Gaithersburg	50	259	259	517	306	306	7.5	4,597	57	43	2,620	1,977	0.0003	0.0011	0.0009	0.0020	0.0023
Gaithersburg	50	175	175	350	207	207	7.5	3,112	57	43	1,774	1,338	0.0002	0.0008	0.0006	0.0014	0.0016
Germantown Town	50	0	0	0	0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greencastle	50	75	75	150	89	89	7.5	1,334	57	43	760	574	0.0001	0.0003	0.0003	0.0006	0.0007
Milestone Shopping	50	88	88	175	104	104	7.5	1,556	57	43	887	669	0.0001	0.0004	0.0003	0.0007	0.0008
PARK-AND-RIDE LOTS - MARYLAND																	
PRINCE GEORGE'S COUNTY																	
Hampton Mall	0	100	0	100	119	0	4.5	534	57	43	304	229	0.0001	0.0001	0.0001	0.0002	0.0003
Laurel (south)	25	513	171	684	608	203	7.5	6,082	57	43	3,467	2,615	0.0005	0.0015	0.0012	0.0027	0.0032
PARK-AND-RIDE LOTS - VIRGINIA																	
ARLINGTON COUNTY																	
Ballston Public Parking Garag	25	375	125	500	445	148	7.5	4,446	57	43	2,534	1,912	0.0004	0.0011	0.0009	0.0019	0.0023
Washington-Lee	50	178	178	356	211	211	7.5	3,166	57	43	1,804	1,361	0.0002	0.0008	0.0006	0.0014	0.0016
PARK-AND-RIDE LOTS - VIRGINIA																	
FAIRFAX COUNTY																	
American Legion	50	50	50	100	59	59	7.5	889	57	43	507	382	0.0001	0.0002	0.0002	0.0004	0.0005
Canterbury Woods Pk	50	17	17	34	20	20	7.5	302	57	43	172	130	0.0000	0.0001	0.0001	0.0001	0.0002
Centreville	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,415	0.0002	0.0008	0.0006	0.0014	0.0017
Centreville United Methodist C	50	74	74	147	87	87	7.5	1,307	57	43	745	562	0.0001	0.0003	0.0003	0.0006	0.0007
Fairfax County Government C	50	85	85	170	101	101	7.5	1,512	57	43	862	650	0.0001	0.0004	0.0003	0.0007	0.0008
Greenbriar Park	50	28	28	55	33	33	7.5	489	57	43	279	210	0.0000	0.0001	0.0001	0.0002	0.0002
Herndon-Monroe	50	873	873	1,745	1034	1034	7.5	15,517	57	43	8,845	6,672	0.0011	0.0038	0.0030	0.0068	0.0079
Michael's	50	100	100	200	119	119	7.5	1,778	57	43	1,014	765	0.0001	0.0004	0.0003	0.0008	0.0009

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate							COLD START Rate (gm/mile)	RUNNING			TOTAL (tons/day)
														Arterial Rate (gm/mile)	Freeway Rate (gm/mile)	Total Running Emission	
COMMUTER RAIL LOTS																	
Parkwood Baptist	50	9	9	18	11	11	7.5	160	57	43	91	69	0.0000	0.0000	0.0000	0.0001	0.0001
South Run District Pk	50	170	170	340	202	202	7.5	3,023	57	43	1,723	1,300	0.0002	0.0007	0.0006	0.0013	0.0015
St Paul Chung Catholic Church	50	50	50	100	59	59	7.5	889	57	43	507	382	0.0001	0.0002	0.0002	0.0004	0.0005
Stringfellow Rd	50	181	181	361	214	214	7.5	3,210	57	43	1,830	1,380	0.0002	0.0008	0.0006	0.0014	0.0016
Sully Station	50	70	70	140	83	83	7.5	1,245	57	43	710	535	0.0001	0.0003	0.0002	0.0005	0.0006
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,485	57	43	846	639	0.0001	0.0004	0.0003	0.0007	0.0008
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
PARK-AND-RIDE LOTS - VIRGINIA																	
LOUDOUN COUNTY																	
Ashburn Farm	50	10	10	20	12	12	7.5	178	57	43	101	76	0.0000	0.0000	0.0000	0.0001	0.0001
Ashburn Village	50	20	20	40	24	24	7.5	356	57	43	203	153	0.0000	0.0001	0.0001	0.0002	0.0002
Cascades	50	28	28	55	33	33	7.5	489	57	43	279	210	0.0000	0.0001	0.0001	0.0002	0.0002
Dulles North Transit	50	375	375	750	445	445	7.5	6,669	57	43	3,801	2,868	0.0005	0.0016	0.0013	0.0029	0.0034
Hamilton	50	25	25	50	30	30	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
Innovation Avenue	50	38	38	75	44	44	7.5	667	57	43	380	287	0.0000	0.0002	0.0001	0.0003	0.0003
Leesburg	50	25	25	50	30	30	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
Leesburg Kohls	50	600	600	1200	711	711	7.5	10,671	57	43	6,082	4,588	0.0008	0.0026	0.0021	0.0047	0.0054
Purcellville	50	18	18	35	21	21	7.5	311	57	43	177	134	0.0000	0.0001	0.0001	0.0001	0.0002
Sterling Park SC	50	23	23	45	27	27	7.5	400	57	43	228	172	0.0000	0.0001	0.0001	0.0002	0.0002
Sterling Shaw Rd	50	24	24	48	28	28	7.5	427	57	43	243	184	0.0000	0.0001	0.0001	0.0002	0.0002
PARK-AND-RIDE LOTS - VIRGINIA																	
PRINCE WILLIAM COUNTY																	
Brittany	50	48	48	95	56	56	7.5	845	57	43	482	363	0.0001	0.0002	0.0002	0.0004	0.0004
Dale City	50	294	294	587	348	348	7.5	5,220	57	43	2,975	2,244	0.0004	0.0013	0.0010	0.0023	0.0027
Harbor Drive	50	100	100	200	119	119	7.5	1,778	57	43	1,014	765	0.0001	0.0004	0.0003	0.0008	0.0009
Lindendale	50	108	108	216	128	128	7.5	1,921	57	43	1,095	826	0.0001	0.0005	0.0004	0.0008	0.0010
Montclair	50	25	25	50	30	30	7.5	445	57	43	253	191	0.0000	0.0001	0.0001	0.0002	0.0002
PRTC Transit Center	50	93	93	185	110	110	7.5	1,645	57	43	938	707	0.0001	0.0004	0.0003	0.0007	0.0008
Tackett's Mill	50	85	85	169	100	100	7.5	1,503	57	43	857	646	0.0001	0.0004	0.0003	0.0007	0.0008
Triangle	50	15	15	29	17	17	7.5	258	57	43	147	111	0.0000	0.0001	0.0000	0.0001	0.0001
I-95 / Rt 123	50	282	282	563	334	334	7.5	5,006	57	43	2,854	2,153	0.0004	0.0012	0.0010	0.0022	0.0026
US 1 / VA 234	50	137	137	274	162	162	7.5	2,436	57	43	1,389	1,048	0.0002	0.0006	0.0005	0.0011	0.0012
MARC TRAIN COMMUTER LOTS																	
College Park	25	431	144	574	510	170	7.5	5,104	57	43	2,909	2,195	0.0004	0.0013	0.0010	0.0022	0.0027
Frederick	0	0	0	0	0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greenbelt	60	1346	2018	3364	1595	2393	7.5	29,913	57	43	17,051	12,863	0.0020	0.0073	0.0058	0.0131	0.0151
Harpers Ferry	0	98	0	98	116	0	7.5	871	57	43	497	375	0.0001	0.0002	0.0002	0.0004	0.0005
Muirkirk	60	260	390	650	308	462	7.5	5,780	57	43	3,295	2,485	0.0004	0.0014	0.0011	0.0025	0.0029
Seabrook	0	264	0	264	313	0	4.5	1,409	57	43	803	606	0.0002	0.0003	0.0003	0.0006	0.0008
Silver Spring	0	0	0	0	0	0	4.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Union Station	0	781	0	781	926	0	7.5	6,945	57	43	3,959	2,986	0.0007	0.0017	0.0013	0.0030	0.0037
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS																	
Backlick Road	50	110	110	220	130	130	7.5	1,956	57	43	1,115	841	0.0001	0.0005	0.0004	0.0009	0.0010
Broad Run	50	198	198	396	235	235	7.5	3,521	57	43	2,007	1,514	0.0003	0.0009	0.0007	0.0015	0.0018
Burke Center	50	275	275	550	326	326	7.5	4,891	57	43	2,788	2,103	0.0003	0.0012	0.0009	0.0021	0.0025
Franconia/Springfield (operat	50	1900	1900	3800	2253	2253	7.5	33,790	57	43	19,261	14,530	0.0024	0.0083	0.0065	0.0148	0.0172
Lorton	50	100	100	200	119	119	7.5	1,778	57	43	1,014	765	0.0001	0.0004	0.0003	0.0008	0.0009
Manassas	50	187	187	374	222	222	7.5	3,326	57	43	1,896	1,430	0.0002	0.0008	0.0006	0.0015	0.0017
Manassas Park	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,147	0.0002	0.0007	0.0005	0.0012	0.0014
Quantico	50	109	109	217	129	129	7.5	1,930	57	43	1,100	830	0.0001	0.0005	0.0004	0.0008	0.0010
Rippon	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,147	0.0002	0.0007	0.0005	0.0012	0.0014
Rolling Road	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,415	0.0002	0.0008	0.0006	0.0014	0.0017
Woodbridge	50	294	294	588	349	349	7.5	5,229	57	43	2,980	2,248	0.0004	0.0013	0.0010	0.0023	0.0027
METRO RAIL PARKING LOTS																	
Anacostia	25	861	287	1148	1021	340	7.5	10,208	57	43	5,819	4,390	0.0008	0.0025	0.0020	0.0045	0.0053
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	28,651	57	43	16,331	12,320	0.0020	0.0070	0.0055	0.0126	0.0146
Capitol Heights	50	194	194	387	229	229	7.5	3,441	57	43	1,962	1,480	0.0002	0.0008	0.0007	0.0015	0.0018
College Park	25	465	155	620	551	184	7.5	5,513	57	43	3,143	2,371	0.0005	0.0014	0.0011	0.0024	0.0029
Congress Heights	0	66	0	66	78	0	4.5	352	57	43	201	151	0.0001	0.0001	0.0001	0.0002	0.0002
Deanwood	0	194	0	194	230	0	7.5	1,725	57	43	983	742	0.0002	0.0004	0.0003	0.0008	0.0009
East Falls Church	50	221	221	442	262	262	7.5	3,930	57	43	2,240	1,690	0.0003	0.0010	0.0008	0.0017	0.0020

Table
 2016 NOx AIR QUALITY EMISSIONS INVENTORY
 AUTO ACCESS TO TRANSIT
 (8-HOUR OZONE AREA)
 2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY

10-26-2011

LOCATION	2002				2016		AVERAGE TRIP LENGTH	VMT	ARTERIAL	FREEWAY	ARTERIAL	FREEWAY	COLD START Rate (gm/mile)	E M I S S I O N S RUNNING			TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate			%	VMT	VMT	Arterial Rate (gm/mile)		Freeway Rate (gm/mile)	Total Running Emission		
					1.19	1.19											
																0.3226	
COMMUTER RAIL LOTS																	
Forest Glen	50	329	329	658	390	390	7.5	5,851	57	43	3,335	2,516	0.0004	0.0014	0.0011	0.0026	0.0030
Franconia - Springfield	50	1987	1987	3973	2355	2355	4.5	21,197	57	43	12,082	9,115	0.0025	0.0052	0.0041	0.0093	0.0118
Glenmont	50	925	925	1850	1097	1097	4.5	9,870	57	43	5,626	4,244	0.0012	0.0024	0.0019	0.0043	0.0055
Greenbelt	50	1783	1783	3565	2113	2113	7.5	31,701	57	43	18,069	13,631	0.0023	0.0078	0.0061	0.0139	0.0162
Naylor Road	50	216	216	431	256	256	7.5	3,833	57	43	2,185	1,648	0.0003	0.0009	0.0007	0.0017	0.0020
Prince George's Plaza	25	927	309	1236	1099	366	7.5	10,991	57	43	6,265	4,726	0.0009	0.0027	0.0021	0.0048	0.0057
Southern Avenue	50	1090	1090	2180	1292	1292	4.5	11,631	57	43	6,630	5,001	0.0014	0.0029	0.0022	0.0051	0.0065
Suitland	50	1033	1033	2065	1224	1224	4.5	11,017	57	43	6,280	4,738	0.0013	0.0027	0.0021	0.0048	0.0061
Van Dorn Street	50	204	204	407	241	241	4.5	2,171	57	43	1,238	934	0.0003	0.0005	0.0004	0.0010	0.0012
West Hyattsville	25	453	151	604	537	179	7.5	5,371	57	43	3,061	2,309	0.0004	0.0013	0.0010	0.0024	0.0028
Wheaton	25	759	253	1012	900	300	7.5	8,999	57	43	5,129	3,870	0.0007	0.0022	0.0017	0.0039	0.0047
				108,310				843,828					0.0788	0.2071	0.1629	0.3700	0.4488

Bold figures: New numbers taken from P & R directory
 Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
transit trips 2016	1295286
transit trips 2000	1092489
Annual growth rate	0.013259172
Growth factor (2002-2016)	1.185628414

SEASON 1 (Jan-Apr)
2016 Precursor NOx
AUTO ACCESS TO TRANSIT
2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	Adj.Art VMT	FREEWAY VMT	Adj.Fwy VMT	COLD START Rate (gm/mile)	E M I S S I O N S			TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate										RUNNING		Total Running Emission (tones/day)	
																Arterial Rate (gm/mile)	Freeway Rate (gm/mile)		
COMMUTER RAIL LOTS					1.19	1.19								0.2985	0.1642	0.1726			
												Wk Days = 83							
												Seasonal adj = 0.9216							
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3,619	57	43	2,063	1,901	1,556	1,434	0.0002	0.0007	0.0005	0.0012	0.0015
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2,419	57	43	1,379	1,271	1,040	958	0.0002	0.0005	0.0004	0.0008	0.0010
DICKERSON	0	15	0	15	18	0	7.5	133	57	43	76	70	57	53	0.0000	0.0000	0.0000	0.0000	0.0001
BARNESVILLE	0	46	0	46	55	0	7.5	409	57	43	233	215	176	162	0.0000	0.0001	0.0001	0.0001	0.0002
GERMANTOWN	0	386	0	386	458	0	7.5	3,432	57	43	1,956	1,803	1,476	1,360	0.0003	0.0007	0.0005	0.0012	0.0014
MET GROVE	0	352	0	352	417	0	7.5	3,130	57	43	1,784	1,644	1,346	1,240	0.0002	0.0006	0.0005	0.0011	0.0013
WAS GROVE	0	15	0	15	18	0	7.5	133	57	43	76	70	57	53	0.0000	0.0000	0.0000	0.0000	0.0001
GARRETT PARK	0	22	0	22	26	0	7.5	196	57	43	112	103	84	78	0.0000	0.0000	0.0000	0.0001	0.0001
BOWIE 50%	50	188	188	375	222	222	7.5	3,335	57	43	1,901	1,752	1,434	1,321	0.0002	0.0006	0.0005	0.0011	0.0013
SEABROOK 15%	15	224	40	264	266	47	7.5	2,348	57	43	1,338	1,233	1,009	930	0.0002	0.0004	0.0004	0.0008	0.0010
KENSINGTON	0	45	0	45	53	0	7.5	400	57	43	228	210	172	159	0.0000	0.0001	0.0001	0.0001	0.0002
LAUREL 30%	30	209	90	299	248	106	7.5	2,659	57	43	1,515	1,397	1,143	1,054	0.0002	0.0005	0.0004	0.0009	0.0011
GAITHESBURG	0	280	0	280	332	0	7.5	2,490	57	43	1,419	1,308	1,071	987	0.0002	0.0005	0.0004	0.0008	0.0010
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	160	57	43	91	84	69	63	0.0000	0.0000	0.0000	0.0001	0.0001
RIVERDALE	0	65	0	65	77	0	4.5	347	57	43	198	182	149	137	0.0000	0.0001	0.0001	0.0001	0.0002
METRO RAIL LOTS																			
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	11,720	57	43	6,680	6,157	5,040	4,644	0.0007	0.0022	0.0018	0.0040	0.0047
ARCHIVES	0	12	0	12	14	0	4.5	64	57	43	36	34	28	25	0.0000	0.0000	0.0000	0.0000	0.0000
ARLING	0	10	0	10	12	0	4.5	53	57	43	30	28	23	21	0.0000	0.0000	0.0000	0.0000	0.0000
BALLSTON	0	1175	0	1175	1393	0	4.5	6,269	57	43	3,573	3,293	2,696	2,484	0.0008	0.0012	0.0009	0.0021	0.0029
BENN.RD	0	520	0	520	617	0	4.5	2,774	57	43	1,581	1,457	1,193	1,099	0.0003	0.0005	0.0004	0.0009	0.0013
BETH	0	395	0	395	468	0	4.5	2,107	57	43	1,201	1,107	906	835	0.0003	0.0004	0.0003	0.0007	0.0010
BRADD RD	0	10	0	10	12	0	4.5	53	57	43	30	28	23	21	0.0000	0.0000	0.0000	0.0000	0.0000
BROOKLAND	0	27	0	27	32	0	4.5	144	57	43	82	76	62	57	0.0000	0.0000	0.0000	0.0000	0.0001
CHEVERLY	0	557	0	557	660	0	4.5	2,972	57	43	1,694	1,561	1,278	1,178	0.0004	0.0006	0.0004	0.0010	0.0014
CLARENDON	0	554	0	554	657	0	4.5	2,956	57	43	1,685	1,553	1,271	1,171	0.0004	0.0006	0.0004	0.0010	0.0014
CLEVELAND PK	0	366	0	366	434	0	4.5	1,953	57	43	1,113	1,026	840	774	0.0002	0.0004	0.0003	0.0007	0.0009
COURT HOUSE	0	256	0	256	304	0	4.5	1,366	57	43	779	717	587	541	0.0002	0.0003	0.0002	0.0005	0.0006
CRYSTAL CITY	0	347	0	347	411	0	4.5	1,851	57	43	1,055	973	796	734	0.0002	0.0004	0.0003	0.0006	0.0009
DEANWOOD	0	194	0	194	230	0	4.5	1,035	57	43	590	544	445	410	0.0001	0.0002	0.0002	0.0004	0.0005
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	7,229	57	43	4,121	3,798	3,109	2,865	0.0008	0.0014	0.0011	0.0025	0.0033
DUPONT CIRCLE	0	165	0	165	196	0	4.5	880	57	43	502	462	379	349	0.0001	0.0002	0.0001	0.0003	0.0004
EASTERN MKT	0	178	0	178	211	0	4.5	950	57	43	541	499	408	376	0.0001	0.0002	0.0001	0.0003	0.0004
EAST FALLS CH	0	442	0	442	524	0	4.5	2,358	57	43	1,344	1,239	1,014	935	0.0003	0.0004	0.0004	0.0008	0.0011
EIS	0	352	0	352	417	0	4.5	1,878	57	43	1,070	987	808	744	0.0002	0.0004	0.0003	0.0006	0.0009
FARRAGUT NORTH	0	102	0	102	121	0	4.5	544	57	43	310	286	234	216	0.0001	0.0001	0.0001	0.0002	0.0003
FARRAGUT WEST	0	221	0	221	262	0	4.5	1,179	57	43	672	619	507	467	0.0001	0.0002	0.0002	0.0004	0.0005
FEDERAL CENTER	0	75	0	75	89	0	4.5	400	57	43	228	210	172	159	0.0000	0.0001	0.0001	0.0001	0.0002
FEDERAL TRI	0	54	0	54	64	0	4.5	288	57	43	164	151	124	114	0.0000	0.0001	0.0000	0.0001	0.0001
FOGGY	0	102	0	102	121	0	4.5	544	57	43	310	286	234	216	0.0001	0.0001	0.0001	0.0002	0.0003
FORT TROTTON	0	445	0	445	528	0	4.5	2,374	57	43	1,353	1,247	1,021	941	0.0003	0.0005	0.0004	0.0008	0.0011
FRH.HEIGHTS	0	679	0	679	805	0	4.5	3,623	57	43	2,065	1,903	1,558	1,436	0.0004	0.0007	0.0005	0.0012	0.0017
GALLERY PLACE	0	124	0	124	147	0	4.5	662	57	43	377	348	284	262	0.0001	0.0001	0.0001	0.0002	0.0003
GROSVENOR	0	716	0	716	849	0	4.5	3,820	57	43	2,177	2,007	1,643	1,514	0.0005	0.0007	0.0006	0.0013	0.0018
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	27,761	57	43	15,824	14,583	11,937	11,002	0.0016	0.0053	0.0042	0.0095	0.0111
JUD SQUARE	0	110	0	110	130	0	4.5	587	57	43	335	308	252	233	0.0001	0.0001	0.0001	0.0002	0.0003
KING ST	0	30	0	30	36	0	4.5	160	57	43	91	84	69	63	0.0000	0.0000	0.0000	0.0001	0.0001
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	16,717	57	43	9,529	8,782	7,188	6,625	0.0011	0.0032	0.0025	0.0057	0.0068
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1,579	57	43	900	830	679	626	0.0002	0.0003	0.0002	0.0005	0.0007
MCPHERSON SQ	0	52	0	52	62	0	4.5	277	57	43	158	146	119	110	0.0000	0.0001	0.0000	0.0001	0.0001
MEDICAL CENTER	0	14	0	14	17	0	4.5	75	57	43	43	39	32	30	0.0000	0.0000	0.0000	0.0000	0.0000
METRO CENTER	0	177	0	177	210	0	4.5	944	57	43	538	496	406	374	0.0001	0.0002	0.0001	0.0003	0.0004
MINNES	0	353	0	353	419	0	4.5	1,883	57	43	1,074	989	810	746	0.0002	0.0004	0.0003	0.0006	0.0009
NAT AIR	0	87	0	87	103	0	4.5	464	57	43	265	244	200	184	0.0001	0.0001	0.0001	0.0002	0.0002
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	18,647	57	43	10,629	9,795	8,018	7,390	0.0010	0.0035	0.0028	0.0064	0.0074
PRNTAGON	0	561	0	561	665	0	4.5	2,993	57	43	1,706	1,572	1,287	1,186	0.0004	0.0006	0.0005	0.0010	0.0014

SEASON 1 (Jan-Apr)
2016 Precursor NOx
AUTO ACCESS TO TRANSIT
2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	EMISSIONS																						
	2002				2016		AVERAGE	2016	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy	COLD START	RUNNING			TOTAL				
	OUTSIDE	INSIDE	OUTSIDE	Total	INSIDE	OUTSIDE	TRIP LENGTH	VMT	%	VMT	VMT	VMT	VMT	Rate (gm/mile)		Arterial	Freeway	Total Running					
	MSA (%)	MSA	MSA		Growth Rate	Growth Rate										Rate (gm/mile)	Rate (gm/mile)	Rate (gm/mile)		Emission			
						1.19	1.19											0.2985	0.1642	0.1726	(tons/day)		
												Wk Days =	83										
COMMUTER RAIL LOTS												Seasonal adj =		0.9216									
PENTAGON CITY	0	381	0	381	452	0	4.5	2,033	57	43	1,159	1,068	874	806	0.0003	0.0004	0.0003	0.0007	0.0009				
POTOMAC AVE	0	533	0	533	632	0	4.5	2,844	57	43	1,621	1,494	1,223	1,127	0.0004	0.0005	0.0004	0.0010	0.0013				
ROCKVILLE	0	667	0	667	791	0	4.5	3,559	57	43	2,028	1,869	1,530	1,410	0.0004	0.0007	0.0005	0.0012	0.0017				
ROSSLYN	0	356	0	356	422	0	4.5	1,899	57	43	1,083	998	817	753	0.0002	0.0004	0.0003	0.0006	0.0009				
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	38,566	57	43	21,982	20,259	16,583	15,283	0.0027	0.0073	0.0058	0.0131	0.0159				
SILVER SPRING	0	44	0	44	52	0	4.5	235	57	43	134	123	101	93	0.0000	0.0000	0.0000	0.0001	0.0001				
SMITH MALL	0	120	0	120	142	0	4.5	640	57	43	365	336	275	254	0.0001	0.0001	0.0001	0.0002	0.0003				
STADIUM ARM	0	976	0	976	1157	0	4.5	5,207	57	43	2,968	2,735	2,239	2,064	0.0006	0.0010	0.0008	0.0018	0.0024				
TAKOMA PK	0	146	0	146	173	0	4.5	779	57	43	444	409	335	309	0.0001	0.0001	0.0001	0.0003	0.0004				
TENLEYTON	0	17	0	17	20	0	4.5	91	57	43	52	48	39	36	0.0000	0.0000	0.0000	0.0000	0.0000				
TWINBROOK	0	1136	0	1136	1347	0	4.5	6,061	57	43	3,455	3,184	2,606	2,402	0.0007	0.0012	0.0009	0.0021	0.0028				
UNION STAT	0	378	0	378	448	0	4.5	2,017	57	43	1,150	1,059	867	799	0.0002	0.0004	0.0003	0.0007	0.0009				
VAN NESS	0	343	0	343	407	0	4.5	1,830	57	43	1,043	961	787	725	0.0002	0.0003	0.0003	0.0006	0.0008				
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	33,177	57	43	18,911	17,428	14,266	13,148	0.0021	0.0063	0.0050	0.0113	0.0135				
VA SQUARE	0	642	0	642	761	0	4.5	3,425	57	43	1,952	1,799	1,473	1,357	0.0004	0.0007	0.0005	0.0012	0.0016				
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	11,647	57	43	6,639	6,118	5,008	4,616	0.0014	0.0022	0.0018	0.0040	0.0054				
WHITE FLINT	0	1633	0	1633	1936	0	4.5	8,713	57	43	4,966	4,577	3,746	3,453	0.0011	0.0017	0.0013	0.0030	0.0040				
WOODLEY	0	68	0	68	81	0	4.5	363	57	43	207	191	156	144	0.0000	0.0001	0.0001	0.0001	0.0002				
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	3,379	57	43	1,926	1,775	1,453	1,339	0.0002	0.0006	0.0005	0.0012	0.0014				
BUS & CAR POOL LOTS																							
CARTER BARRON	0	798	0	798	946	0	4.5	4,258	57	43	2,427	2,237	1,831	1,687	0.0005	0.0008	0.0006	0.0015	0.0020				
PG PLAZA	0	47	0	47	56	0	4.5	251	57	43	143	132	108	99	0.0000	0.0000	0.0000	0.0001	0.0001				
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	534	57	43	304	280	229	211	0.0001	0.0001	0.0001	0.0002	0.0002				
CAP PLAZA	0	100	0	100	119	0	4.5	534	57	43	304	280	229	211	0.0001	0.0001	0.0001	0.0002	0.0002				
EASTOVER	0	100	0	100	119	0	4.5	534	57	43	304	280	229	211	0.0001	0.0001	0.0001	0.0002	0.0002				
FOUR MILE RUN	0	28	0	28	33	0	4.5	149	57	43	85	78	64	59	0.0000	0.0000	0.0000	0.0001	0.0001				
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	3,094	57	43	1,764	1,626	1,331	1,226	0.0004	0.0006	0.0005	0.0011	0.0014				
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	256	57	43	146	135	110	101	0.0000	0.0000	0.0000	0.0001	0.0001				
FRED ARMORY	0	33	0	33	39	0	7.5	293	57	43	167	154	126	116	0.0000	0.0001	0.0000	0.0001	0.0001				
MYERSVILLE	0	65	0	65	77	0	7.5	578	57	43	329	304	249	229	0.0000	0.0001	0.0001	0.0002	0.0002				
ROSEMONT	0	45	0	45	53	0	7.5	400	57	43	228	210	172	159	0.0000	0.0001	0.0001	0.0001	0.0002				
URBANA	0	193	0	193	229	0	7.5	1,716	57	43	978	902	738	680	0.0001	0.0003	0.0003	0.0006	0.0007				
JEFFERSON	0	40	0	40	47	0	7.5	356	57	43	203	187	153	141	0.0000	0.0001	0.0001	0.0001	0.0001				
NORBECK RD	0	248	0	248	294	0	7.5	2,205	57	43	1,257	1,158	948	874	0.0002	0.0004	0.0003	0.0008	0.0009				
MONTROSE RD	0	650	0	650	771	0	7.5	5,780	57	43	3,295	3,036	2,485	2,291	0.0004	0.0011	0.0009	0.0020	0.0024				
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3,824	57	43	2,179	2,009	1,644	1,515	0.0002	0.0007	0.0006	0.0013	0.0015				
COMUS ROAD	0	30	0	30	36	0	7.5	267	57	43	152	140	115	106	0.0000	0.0001	0.0000	0.0001	0.0001				
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2,668	57	43	1,521	1,401	1,147	1,057	0.0002	0.0005	0.0004	0.0009	0.0011				
BURTONSVILLE	0	500	0	500	593	0	7.5	4,446	57	43	2,534	2,336	1,912	1,762	0.0003	0.0008	0.0007	0.0015	0.0018				
FORCEY MEM.	0	200	0	200	237	0	7.5	1,778	57	43	1,014	934	765	705	0.0001	0.0003	0.0003	0.0006	0.0007				
TECH ROAD	0	155	0	155	184	0	7.5	1,378	57	43	786	724	593	546	0.0001	0.0003	0.0002	0.0005	0.0006				
BELTWAY	0	265	0	265	314	0	7.5	2,356	57	43	1,343	1,238	1,013	934	0.0002	0.0004	0.0004	0.0008	0.0010				
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	551	57	43	314	290	237	218	0.0000	0.0001	0.0001	0.0002	0.0002				
ACCOKEEK	0	450	0	450	534	0	7.5	4,001	57	43	2,281	2,102	1,721	1,586	0.0003	0.0008	0.0006	0.0014	0.0017				
ABC DRIVE IN	0	100	0	100	119	0	7.5	889	57	43	507	467	382	352	0.0001	0.0002	0.0001	0.0003	0.0004				
BOWIE 20%	20	526	131	657	623	156	7.5	5,842	57	43	3,330	3,069	2,512	2,315	0.0004	0.0011	0.0009	0.0020	0.0024				
CLINTON 50%	50	212	212	424	251	251	7.5	3,770	57	43	2,149	1,981	1,621	1,494	0.0002	0.0007	0.0006	0.0013	0.0015				
OXON HILL 20%	20	519	130	649	616	154	7.5	5,771	57	43	3,289	3,032	2,482	2,287	0.0004	0.0011	0.0009	0.0020	0.0024				
EQUESTRIAN CENTER 50	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,401	1,147	1,057	0.0001	0.0005	0.0004	0.0009	0.0011				
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002				
FT. WASHINGTON	0	412	0	412	488	0	7.5	3,664	57	43	2,088	1,925	1,575	1,452	0.0003	0.0007	0.0006	0.0012	0.0015				
MONTPELIER REC PARK	0	70	0	70	83	0	7.5	622	57	43	355	327	268	247	0.0000	0.0001	0.0001	0.0002	0.0003				
RESTON	0	1547	0	1547	1834	0	7.5	13,756	57	43	7,841	7,226	5,915	5,451	0.0010	0.0026	0.0021	0.0047	0.0057				
GREENBRIAR	0	55	0	55	65	0	7.5	489	57	43	279	257	210	194	0.0000	0.0001	0.0001	0.0002	0.0002				
FAIR OAKS	0	150	0	150	178	0	7.5	1,334	57	43	760	701	574	529	0.0001	0.0003	0.0002	0.0005	0.0006				
ROLLING VALLEY	0	628	0	628	745	0	7.5	5,584	57	43	3,183	2,934	2,401	2,213	0.0004	0.0011	0.0008	0.0019	0.0023				
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	2,045	57	43	1,166	1,074	879	810	0.0002	0.0004	0.0003	0.0007	0.0008				
FAIRLANES BOWL	0	35	0	35	41	0	7.5	311	57	43	177	163	134	123	0.0000	0.0001	0.0000	0.0001	0.0001				

SEASON 1 (Jan-Apr)
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LOCATION	E M I S S I O N S																				
	2002				2016				AVERAGE	2016	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy	COLD START	RUNNING			TOTAL
	OUTSIDE	INSIDE	OUTSIDE	Total	INSIDE	OUTSIDE	TRIP LENGTH	VMT	%	VMT	VMT	VMT	VMT	VMT	Rate (gm/mile)	Arterial		Freeway	Total Running		
	MSA (%)	MSA	MSA		Growth Rate	Growth Rate										0.2985	0.1642	0.1726	Emission		
				1.19	1.19								Wk Days = 83					(tons/day)			
COMMUTER RAIL LOTS													Seasonal adj = 0.9216								
NOTTOWAY PARK	0	14	0	14	17	0	7.5	124	57	43	71	65	54	49	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	
HORNER RD	0	2397	0	2397	2842	0	7.5	21,315	57	43	12,149	11,197	9,165	8,447	0.0016	0.0041	0.0032	0.0073	0.0088	0.0088	
LAKE RIDGE	0	555	0	555	658	0	7.5	4,935	57	43	2,813	2,593	2,122	1,956	0.0004	0.0009	0.0007	0.0017	0.0020	0.0020	
MINNIEVILLE RD 40%	40	336	224	560	398	266	7.5	4,980	57	43	2,838	2,616	2,141	1,973	0.0003	0.0009	0.0008	0.0017	0.0020	0.0020	
GORDON BLVD	0	156	0	156	185	0	7.5	1,387	57	43	791	729	596	550	0.0001	0.0003	0.0002	0.0005	0.0006	0.0006	
HILLEDALE	0	248	0	248	294	0	7.5	2,205	57	43	1,257	1,158	948	874	0.0002	0.0004	0.0003	0.0008	0.0009	0.0009	
POTOMAC MILLS	0	946	0	946	1122	0	7.5	8,412	57	43	4,795	4,419	3,617	3,334	0.0006	0.0016	0.0013	0.0029	0.0035	0.0035	
List of new lots to be added in Conformity Document list																					
PARK-AND-RIDE LOTS - MARYLAND																					
PARK-AND-RIDE LOTS - MARYLAND																					
CHARLES COUNTY																					
301 Park & Ride	25	287	96	383	341	114	7.5	3,406	57	43	1,941	1,789	1,464	1,350	0.0002	0.0006	0.0005	0.0012	0.0014	0.0014	
Charles County Government	25	26	9	35	31	10	7.5	311	57	43	177	163	134	123	0.0000	0.0001	0.0000	0.0001	0.0001	0.0001	
Food Lion Shopping Center	25	38	13	50	44	15	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002	0.0002	
La Plata Armory	25	15	5	20	18	6	7.5	178	57	43	101	93	76	70	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	
Laurel Springs Regional Park	25	38	13	50	44	15	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002	0.0002	
Life Wesleyan Church	25	38	13	50	44	15	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002	0.0002	
Mattawoman-Beantown Rd	25	435	145	580	516	172	7.5	5,157	57	43	2,940	2,709	2,218	2,044	0.0003	0.0010	0.0008	0.0018	0.0021	0.0021	
Smallwood Village	25	75	25	100	89	30	7.5	889	57	43	507	467	382	352	0.0001	0.0002	0.0001	0.0003	0.0004	0.0004	
St. Charles Towne	25	263	88	350	311	104	7.5	3,112	57	43	1,774	1,635	1,338	1,233	0.0002	0.0006	0.0005	0.0011	0.0013	0.0013	
PARK-AND-RIDE LOTS - MARYLAND																					
FREDERICK COUNTY																					
Frederick (north)	25	123	41	164	146	49	7.5	1,458	57	43	831	766	627	578	0.0001	0.0003	0.0002	0.0005	0.0006	0.0006	
Frederick (south)	25	173	58	230	205	68	7.5	2,045	57	43	1,166	1,074	879	810	0.0001	0.0004	0.0003	0.0007	0.0008	0.0008	
Monacacy Marst	25	600	200	800	711	237	7.5	7,114	57	43	4,055	3,737	3,059	2,819	0.0005	0.0014	0.0011	0.0024	0.0029	0.0029	
PARK-AND-RIDE LOTS - MARYLAND																					
MONTGOMERY COUNTY																					
Colesville	0	190	0	190	225	0	7.5	1,690	57	43	963	888	726	670	0.0001	0.0003	0.0003	0.0006	0.0007	0.0007	
Damascus	50	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Gaithersburg	50	259	259	517	306	306	7.5	4,597	57	43	2,620	2,415	1,977	1,822	0.0003	0.0009	0.0007	0.0016	0.0018	0.0018	
Gaithersburg	50	175	175	350	207	207	7.5	3,112	57	43	1,774	1,635	1,338	1,233	0.0002	0.0006	0.0005	0.0011	0.0012	0.0012	
Germantown Town	50	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Greencastle	50	75	75	150	89	89	7.5	1,334	57	43	760	701	574	529	0.0001	0.0003	0.0002	0.0005	0.0005	0.0005	
Milestone Shopping	50	88	88	175	104	104	7.5	1,556	57	43	887	817	669	617	0.0001	0.0003	0.0002	0.0005	0.0006	0.0006	
PARK-AND-RIDE LOTS - MAYLAND																					
PRINCE GEORGE'S COUNTY																					
Hampton Mall	0	100	0	100	119	0	4.5	534	57	43	304	280	229	211	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	
Laurel (south)	25	513	171	684	608	203	7.5	6,082	57	43	3,467	3,195	2,615	2,410	0.0004	0.0012	0.0009	0.0021	0.0025	0.0025	
PARK-AND-RIDE LOTS - VIRGINIA																					
ARLINGTON COUNTY																					
Ballston Public Parking Gara	25	375	125	500	445	148	7.5	4,446	57	43	2,534	2,336	1,912	1,762	0.0003	0.0008	0.0007	0.0015	0.0018	0.0018	
Washington-Lee	50	178	178	356	211	211	7.5	3,166	57	43	1,804	1,663	1,361	1,255	0.0002	0.0006	0.0005	0.0011	0.0013	0.0013	
PARK-AND-RIDE LOTS - VIRGINIA																					
FAIRFAX COUNTY																					
American Legion	50	50	50	100	59	59	7.5	889	57	43	507	467	382	352	0.0000	0.0002	0.0001	0.0003	0.0004	0.0004	
Canterbury Woods Pk	50	17	17	34	20	20	7.5	302	57	43	172	159	130	120	0.0000	0.0001	0.0000	0.0001	0.0001	0.0001	
Centreville	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,728	1,415	1,304	0.0002	0.0006	0.0005	0.0011	0.0013	0.0013	
Centreville United Methodist	50	74	74	147	87	87	7.5	1,307	57	43	745	687	562	518	0.0001	0.0002	0.0002	0.0004	0.0005	0.0005	
Fairfax County Government	50	85	85	170	101	101	7.5	1,512	57	43	862	794	650	599	0.0001	0.0003	0.0002	0.0005	0.0006	0.0006	
Greenbriar Park	50	28	28	55	33	33	7.5	489	57	43	279	257	210	194	0.0000	0.0001	0.0001	0.0002	0.0002	0.0002	
Herndon-Monroe	50	873	873	1,745	1034	1034	7.5	15,517	57	43	8,845	8,151	6,672	6,149	0.0009	0.0030	0.0023	0.0053	0.0062	0.0062	
Michael's	50	100	100	200	119	119	7.5	1,778	57	43	1,014	934	765	705	0.0001	0.0003	0.0003	0.0006	0.0007	0.0007	
Parkwood Baptist	50	9	9	18	11	11	7.5	160	57	43	91	84	69	63	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	
South Run District Pk	50	170	170	340	202	202	7.5	3,023	57	43	1,723	1,588	1,300	1,198	0.0002	0.0006	0.0005	0.0010	0.0012	0.0012	
St Paul Chung Catholic Chur	50	50	50	100	59	59	7.5	889	57	43	507	467	382	352	0.0000	0.0002	0.0001	0.0003	0.0004	0.0004	
Stringfellow Rd	50	181	181	361	214	214	7.5	3,210	57	43	1,830	1,686	1,380	1,272	0.0002	0.0006	0.0005	0.0011	0.0013	0.0013	
Sully Station	50	70	70	140	83	83	7.5	1,245	57	43	710	654	535	493	0.0001	0.0002	0.0002	0.0004	0.0005	0.0005	

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LOCATION	E M I S S I O N S																				
	2002				2016				AVERAGE	2016	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy	COLD START	RUNNING			TOTAL
	OUTSIDE	INSIDE	OUTSIDE	Total	INSIDE	OUTSIDE	TRIP LENGTH	VMT	%	VMT	VMT	VMT	VMT	VMT	VMT	Rate (gm/mile)		Arterial	Freeway	Total Running	
	MSA (%)	MSA	MSA		Growth Rate	Growth Rate											(gm/mile)	(gm/mile)	(gm/mile)	Emission	
					1.19	1.19							Wk Days = 83	Seasonal adj = 0.9216	0.2985	0.1642	0.1726	(tons/day)	(tons/day)		
COMMUTER RAIL LOTS																					
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,485	57	43	846	780	639	588	0.0001	0.0003	0.0002	0.0005	0.0006		
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002		
PARK-AND-RIDE LOTS - VIRGINIA																					
LOUDOUN COUNTY																					
Ashburn Farm	50	10	10	20	12	12	7.5	178	57	43	101	93	76	70	0.0000	0.0000	0.0000	0.0001	0.0001		
Ashburn Village	50	20	20	40	24	24	7.5	356	57	43	203	187	153	141	0.0000	0.0001	0.0001	0.0001	0.0001		
Cascades	50	28	28	55	33	33	7.5	489	57	43	279	257	210	194	0.0000	0.0001	0.0001	0.0002	0.0002		
Dulles North Transit	50	375	375	750	445	445	7.5	6,669	57	43	3,801	3,503	2,868	2,643	0.0004	0.0013	0.0010	0.0023	0.0026		
Hamilton	50	25	25	50	30	30	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002		
Innovation Avenue	50	38	38	75	44	44	7.5	667	57	43	380	350	287	264	0.0000	0.0001	0.0001	0.0002	0.0003		
Leesburg	50	25	25	50	30	30	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002		
Leesburg Kohls	50	600	600	1200	711	711	7.5	10,671	57	43	6,082	5,605	4,588	4,229	0.0006	0.0020	0.0016	0.0036	0.0042		
Purcellville	50	18	18	35	21	21	7.5	311	57	43	177	163	134	123	0.0000	0.0001	0.0000	0.0001	0.0001		
Sterling Park SC	50	23	23	45	27	27	7.5	400	57	43	228	210	172	159	0.0000	0.0001	0.0001	0.0001	0.0002		
Sterling Shaw Rd	50	24	24	48	28	28	7.5	427	57	43	243	224	184	169	0.0000	0.0001	0.0001	0.0001	0.0002		
PARK-AND-RIDE LOTS - VIRGINIA																					
PRINCE WILLIAM COUNTY																					
Brittany	50	48	48	95	56	56	7.5	845	57	43	482	444	363	335	0.0000	0.0002	0.0001	0.0003	0.0003		
Dale City	50	294	294	587	348	348	7.5	5,220	57	43	2,975	2,742	2,244	2,069	0.0003	0.0010	0.0008	0.0018	0.0021		
Harbor Drive	50	100	100	200	119	119	7.5	1,778	57	43	1,014	934	765	705	0.0001	0.0003	0.0003	0.0006	0.0007		
Lindendale	50	108	108	216	128	128	7.5	1,921	57	43	1,095	1,009	826	761	0.0001	0.0004	0.0003	0.0007	0.0008		
Montclair	50	25	25	50	30	30	7.5	445	57	43	253	234	191	176	0.0000	0.0001	0.0001	0.0002	0.0002		
PRTC Transit Center	50	93	93	185	110	110	7.5	1,645	57	43	938	864	707	652	0.0001	0.0003	0.0002	0.0006	0.0007		
Tackett's Mill	50	85	85	169	100	100	7.5	1,503	57	43	857	789	646	596	0.0001	0.0003	0.0002	0.0005	0.0006		
Triangle	50	15	15	29	17	17	7.5	258	57	43	147	135	111	102	0.0000	0.0000	0.0000	0.0001	0.0001		
I-95 / Rt 123	50	282	282	563	334	334	7.5	5,006	57	43	2,854	2,630	2,153	1,984	0.0003	0.0010	0.0008	0.0017	0.0020		
US 1 / VA 234	50	137	137	274	162	162	7.5	2,436	57	43	1,389	1,280	1,048	966	0.0001	0.0005	0.0004	0.0008	0.0010		
MARC TRAIN COMMUTER LOTS																					
College Park	25	431	144	574	510	170	7.5	5,104	57	43	2,909	2,681	2,195	2,023	0.0003	0.0010	0.0008	0.0017	0.0021		
Frederick	0	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000		
Greenbelt	60	1346	2018	3364	1595	2393	7.5	29,913	57	43	17,051	15,714	12,863	11,854	0.0015	0.0057	0.0045	0.0102	0.0117		
Harpers Ferry		98	0	98	116	0	7.5	871	57	43	497	458	375	345	0.0001	0.0002	0.0001	0.0003	0.0004		
Muirkirk	60	260	390	650	308	462	7.5	5,780	57	43	3,295	3,036	2,485	2,291	0.0003	0.0011	0.0009	0.0020	0.0023		
Seabrook	0	264	0	264	313	0	4.5	1,409	57	43	803	740	606	558	0.0002	0.0003	0.0002	0.0005	0.0007		
Silver Spring	0	0	0	0	0	0	4.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000		
Union Station	0	781	0	781	926	0	7.5	6,945	57	43	3,959	3,648	2,986	2,752	0.0005	0.0013	0.0010	0.0024	0.0029		
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS																					
Backlick Road	50	110	110	220	130	130	7.5	1,956	57	43	1,115	1,028	841	775	0.0001	0.0004	0.0003	0.0007	0.0008		
Broad Run	50	198	198	396	235	235	7.5	3,521	57	43	2,007	1,850	1,514	1,395	0.0002	0.0007	0.0005	0.0012	0.0014		
Brooke	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,401	1,147	1,057	0.0001	0.0005	0.0004	0.0009	0.0011		
Burke Center	50	275	275	550	326	326	7.5	4,891	57	43	2,788	2,569	2,103	1,938	0.0003	0.0009	0.0007	0.0017	0.0019		
Franconia/Springfield (opera	50	1900	1900	3800	2253	2253	7.5	33,790	57	43	19,261	17,751	14,530	13,391	0.0019	0.0064	0.0051	0.0115	0.0134		
Leeland Road	50	326	326	652	387	387	7.5	5,798	57	43	3,305	3,046	2,493	2,298	0.0003	0.0011	0.0009	0.0020	0.0023		
Lorton	50	100	100	200	119	119	7.5	1,778	57	43	1,014	934	765	705	0.0001	0.0003	0.0003	0.0006	0.0007		
Manassas	50	187	187	374	222	222	7.5	3,326	57	43	1,896	1,747	1,430	1,318	0.0002	0.0006	0.0005	0.0011	0.0013		
Manassas Park	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,401	1,147	1,057	0.0001	0.0005	0.0004	0.0009	0.0011		
Quantico	50	109	109	217	129	129	7.5	1,930	57	43	1,100	1,014	830	765	0.0001	0.0004	0.0003	0.0007	0.0008		
Rippon	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,401	1,147	1,057	0.0001	0.0005	0.0004	0.0009	0.0011		
Rolling Road	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,728	1,415	1,304	0.0002	0.0006	0.0005	0.0011	0.0013		
Woodbridge	50	294	294	588	349	349	7.5	5,229	57	43	2,980	2,747	2,248	2,072	0.0003	0.0010	0.0008	0.0018	0.0021		
METRORAIL PARKING LOTS																					
Anacostia	25	861	287	1148	1021	340	7.5	10,208	57	43	5,819	5,363	4,390	4,045	0.0007	0.0019	0.0015	0.0035	0.0041		
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	28,651	57	43	16,331	15,051	12,320	11,354	0.0016	0.0054	0.0043	0.0098	0.0114		
Capitol Heights	50	194	194	387	229	229	7.5	3,441	57	43	1,962	1,808	1,480	1,364	0.0002	0.0007	0.0005	0.0012	0.0014		
College Park	25	465	155	620	551	184	7.5	5,513	57	43	3,143	2,896	2,371	2,185	0.0004	0.0010	0.0008	0.0019	0.0022		
Congress Heights	0	66	0	66	78	0	4.5	352	57	43	201	185	151	140	0.0000	0.0001	0.0001	0.0001	0.0002		
Deanwood	0	194	0	194	230	0	7.5	1,725	57	43	983	906	742	684	0.0001	0.0003	0.0003	0.0006	0.0007		
East Falls Church	50	221	221	442	262	262	7.5	3,930	57	43	2,240	2,065	1,690	1,558	0.0002	0.0007	0.0006	0.0013	0.0016		
Forest Glen	50	329	329	658	390	390	7.5	5,851	57	43	3,335	3,074	2,516	2,319	0.0003	0.0011	0.0009	0.0020	0.0023		
Franconia - Springfield	50	1987	1987	3973																	

SEASON 2 (May-Sep)
2016 Precursor NOx
AUTO ACCESS TO TRANSIT
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LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	Adj.Art VMT	FREEWAY VMT	Adj.Fwy VMT	E M I S S I O N S					TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate									COLD START Rate (gm/mile)	RUNNING		Total Running Emission (tones/day)		
							Arterial Rate (gm/mile)	Freeway Rate (gm/mile)												
																Wk Days =	107			
															Seasonal adj =	0.9873				
COMMUTER RAIL LOTS																				
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3,619	57	43	2,063	2,037	1,556	1,536	0.0002	0.0005	0.0004	0.0010	0.0011	
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2,419	57	43	1,379	1,361	1,040	1,027	0.0001	0.0004	0.0003	0.0007	0.0008	
DICKERSON	0	15	0	15	18	0	7.5	133	57	43	76	75	57	57	0.0000	0.0000	0.0000	0.0000	0.0000	
BARNESVILLE	0	46	0	46	55	0	7.5	409	57	43	233	230	176	174	0.0000	0.0001	0.0000	0.0001	0.0001	
GERMANTOWN	0	386	0	386	458	0	7.5	3,432	57	43	1,956	1,932	1,476	1,457	0.0002	0.0005	0.0004	0.0009	0.0011	
MET GROVE	0	352	0	352	417	0	7.5	3,130	57	43	1,784	1,761	1,346	1,329	0.0002	0.0005	0.0004	0.0008	0.0010	
WAS GROVE	0	15	0	15	18	0	7.5	133	57	43	76	75	57	57	0.0000	0.0000	0.0000	0.0000	0.0000	
GARRETT PARK	0	22	0	22	26	0	7.5	196	57	43	112	110	84	83	0.0000	0.0000	0.0000	0.0001	0.0001	
BOWIE 50%	50	188	188	375	222	222	7.5	3,335	57	43	1,901	1,877	1,434	1,416	0.0001	0.0005	0.0004	0.0009	0.0010	
SEABROOK 15%	15	224	40	264	266	47	7.5	2,348	57	43	1,338	1,321	1,009	997	0.0001	0.0004	0.0003	0.0006	0.0007	
KENSINGTON	0	45	0	45	53	0	7.5	400	57	43	228	225	172	170	0.0000	0.0001	0.0000	0.0001	0.0001	
LAUREL 30%	30	209	90	299	248	106	7.5	2,659	57	43	1,515	1,496	1,143	1,129	0.0001	0.0004	0.0003	0.0007	0.0008	
GAITHESBURG	0	280	0	280	332	0	7.5	2,490	57	43	1,419	1,401	1,071	1,057	0.0001	0.0004	0.0003	0.0007	0.0008	
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	160	57	43	91	90	69	68	0.0000	0.0000	0.0000	0.0000	0.0001	
RIVERDALE	0	65	0	65	77	0	4.5	347	57	43	198	195	149	147	0.0000	0.0001	0.0000	0.0001	0.0001	
METRO RAIL LOTS																				
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	11,720	57	43	6,680	6,596	5,040	4,976	0.0005	0.0018	0.0014	0.0032	0.0037	
ARCHIVES	0	12	0	12	14	0	4.5	64	57	43	36	36	28	27	0.0000	0.0000	0.0000	0.0000	0.0000	
ARLING	0	10	0	10	12	0	4.5	53	57	43	30	30	23	23	0.0000	0.0000	0.0000	0.0000	0.0000	
BALLSTON	0	1175	0	1175	1393	0	4.5	6,269	57	43	3,573	3,528	2,696	2,661	0.0006	0.0009	0.0007	0.0017	0.0022	
BENN.RD	0	520	0	520	617	0	4.5	2,774	57	43	1,581	1,561	1,193	1,178	0.0002	0.0004	0.0003	0.0007	0.0010	
BETH	0	395	0	395	468	0	4.5	2,107	57	43	1,201	1,186	906	895	0.0002	0.0003	0.0003	0.0006	0.0008	
BRADD RD	0	10	0	10	12	0	4.5	53	57	43	30	30	23	23	0.0000	0.0000	0.0000	0.0000	0.0000	
BROOKLAND	0	27	0	27	32	0	4.5	144	57	43	82	81	62	61	0.0000	0.0000	0.0000	0.0000	0.0001	
CHEVERLY	0	557	0	557	660	0	4.5	2,972	57	43	1,694	1,672	1,278	1,262	0.0003	0.0004	0.0004	0.0008	0.0011	
CLARENDON	0	554	0	554	657	0	4.5	2,956	57	43	1,685	1,663	1,271	1,255	0.0003	0.0004	0.0004	0.0008	0.0011	
CLEVELAND PK	0	366	0	366	434	0	4.5	1,953	57	43	1,113	1,099	840	829	0.0002	0.0003	0.0002	0.0005	0.0007	
COURT HOUSE	0	256	0	256	304	0	4.5	1,366	57	43	779	769	587	580	0.0001	0.0002	0.0002	0.0004	0.0005	
CRYSTAL CITY	0	347	0	347	411	0	4.5	1,851	57	43	1,055	1,042	796	786	0.0002	0.0003	0.0002	0.0005	0.0007	
DEANWOOD	0	194	0	194	230	0	4.5	1,035	57	43	590	582	445	439	0.0001	0.0002	0.0001	0.0003	0.0004	
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	7,229	57	43	4,121	4,068	3,109	3,069	0.0006	0.0011	0.0009	0.0019	0.0026	
DUPONT CIRCLE	0	165	0	165	196	0	4.5	880	57	43	502	495	379	374	0.0001	0.0001	0.0001	0.0002	0.0003	
EASTERN MKT	0	178	0	178	211	0	4.5	950	57	43	541	534	408	403	0.0001	0.0001	0.0001	0.0003	0.0003	
EAST FALLS CH	0	442	0	442	524	0	4.5	2,358	57	43	1,344	1,327	1,014	1,001	0.0002	0.0004	0.0003	0.0006	0.0008	
EIS	0	352	0	352	417	0	4.5	1,878	57	43	1,070	1,057	808	797	0.0002	0.0003	0.0002	0.0005	0.0007	
FARRAGUT NORTH	0	102	0	102	121	0	4.5	544	57	43	310	306	234	231	0.0000	0.0001	0.0001	0.0001	0.0002	
FARRAGUT WEST	0	221	0	221	262	0	4.5	1,179	57	43	672	664	507	501	0.0001	0.0002	0.0001	0.0003	0.0004	
FEDERAL CENTER	0	75	0	75	89	0	4.5	400	57	43	228	225	172	170	0.0000	0.0001	0.0000	0.0001	0.0001	
FEDERAL TRI	0	54	0	54	64	0	4.5	288	57	43	164	162	124	122	0.0000	0.0000	0.0000	0.0001	0.0001	
FOGGY	0	102	0	102	121	0	4.5	544	57	43	310	306	234	231	0.0000	0.0001	0.0001	0.0001	0.0002	
FORT TROTTEEN	0	445	0	445	528	0	4.5	2,374	57	43	1,353	1,336	1,021	1,008	0.0002	0.0004	0.0003	0.0006	0.0008	
FRH.HEIGHTS	0	679	0	679	805	0	4.5	3,623	57	43	2,065	2,039	1,558	1,538	0.0003	0.0005	0.0004	0.0010	0.0013	
GALLERY PLACE	0	124	0	124	147	0	4.5	662	57	43	377	372	284	281	0.0001	0.0001	0.0001	0.0002	0.0002	
GROSVENOR	0	716	0	716	849	0	4.5	3,820	57	43	2,177	2,150	1,643	1,622	0.0003	0.0006	0.0005	0.0010	0.0014	
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	27,761	57	43	15,824	15,623	11,937	11,786	0.0012	0.0042	0.0033	0.0075	0.0087	
JUD SQUARE	0	110	0	110	130	0	4.5	587	57	43	335	330	252	249	0.0001	0.0001	0.0001	0.0002	0.0002	
KING ST	0	30	0	30	36	0	4.5	160	57	43	91	90	69	68	0.0000	0.0000	0.0000	0.0000	0.0001	
LANDOVER 25%																				
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	16,717	57	43	9,529	9,408	7,188	7,097	0.0008	0.0025	0.0020	0.0045	0.0053	
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1,579	57	43	900	889	679	670	0.0001	0.0002	0.0002	0.0004	0.0006	
MCPHERSON SQ	0	52	0	52	62	0	4.5	277	57	43	158	156	119	118	0.0000	0.0000	0.0000	0.0001	0.0001	
MEDICAL CENTER	0	14	0	14	17	0	4.5	75	57	43	43	42	32	32	0.0000	0.0000	0.0000	0.0000	0.0000	
METRO CENTER	0	177	0	177	210	0	4.5	944	57	43	538	531	406	401	0.0001	0.0001	0.0001	0.0003	0.0003	
MINNES	0	353	0	353	419	0	4.5	1,883	57	43	1,074	1,060	810	800	0.0002	0.0003	0.0002	0.0005	0.0007	
NAT AIR	0	87	0	87	103	0	4.5	464	57	43	265	261	200	197	0.0000	0.0001	0.0001	0.0001	0.0002	
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	18,647	57	43	10,629	10,494	8,018	7,916	0.0007	0.0028	0.0022	0.0050	0.0058	
PRNTAGON	0	561	0	561	665	0	4.5	2,993	57	43	1,706	1,684	1,287	1,271	0.0003	0.0004	0.0004	0.0008	0.0011	

SEASON 2 (May-Sep)
2016 Precursor NOx

10-26-2011

AUTO ACCESS TO TRANSIT
2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016		AVERAGE	2016	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy	E M I S S I O N S				TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate	TRIP LENGTH	VMT	%	VMT	VMT	VMT	VMT	COLD START Rate (gm/mile)	RUNNING		Total Running Emission (tons/day)		
															Arterial	Freeway			
															Rate (gm/mile)	Rate (gm/mile)			
														Rate (gm/mile)	Rate (gm/mile)	Rate (gm/mile)			
														0.2137	0.1211	0.1272			
														Wk Days = 107	Seasonal adj = 0.9873				
COMMUTER RAIL LOTS					1.19	1.19													
PENTAGON CITY	0	381	0	381	452	0	4.5	2,033	57	43	1,159	1,144	874	863	0.0002	0.0003	0.0002	0.0005	0.0007
POTOMAC AVE	0	533	0	533	632	0	4.5	2,844	57	43	1,621	1,600	1,223	1,207	0.0003	0.0004	0.0003	0.0008	0.0010
ROCKVILLE	0	667	0	667	791	0	4.5	3,559	57	43	2,028	2,003	1,530	1,511	0.0003	0.0005	0.0004	0.0010	0.0013
ROSSLYN	0	356	0	356	422	0	4.5	1,899	57	43	1,083	1,069	817	806	0.0002	0.0003	0.0002	0.0005	0.0007
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	38,566	57	43	21,982	21,703	16,583	16,373	0.0019	0.0058	0.0046	0.0104	0.0123
SILVER SPRING	0	44	0	44	52	0	4.5	235	57	43	134	132	101	100	0.0000	0.0000	0.0000	0.0001	0.0001
SMITH MALL	0	120	0	120	142	0	4.5	640	57	43	365	360	275	272	0.0001	0.0001	0.0001	0.0002	0.0002
STADIUM ARM	0	976	0	976	1157	0	4.5	5,207	57	43	2,968	2,930	2,239	2,211	0.0005	0.0008	0.0006	0.0014	0.0019
TAKOMA PK	0	146	0	146	173	0	4.5	779	57	43	444	438	335	331	0.0001	0.0001	0.0001	0.0002	0.0003
TENLEYTON	0	17	0	17	20	0	4.5	91	57	43	52	51	39	39	0.0000	0.0000	0.0000	0.0000	0.0000
TWINBROOK	0	1136	0	1136	1347	0	4.5	6,061	57	43	3,455	3,411	2,606	2,573	0.0005	0.0009	0.0007	0.0016	0.0022
UNION STAT	0	378	0	378	448	0	4.5	2,017	57	43	1,150	1,135	867	856	0.0002	0.0003	0.0002	0.0005	0.0007
VAN NESS	0	343	0	343	407	0	4.5	1,830	57	43	1,043	1,030	787	777	0.0002	0.0003	0.0002	0.0005	0.0007
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	33,177	57	43	18,911	18,671	14,266	14,085	0.0015	0.0050	0.0039	0.0089	0.0105
VA SQUARE	0	642	0	642	761	0	4.5	3,425	57	43	1,952	1,928	1,473	1,454	0.0003	0.0005	0.0004	0.0009	0.0012
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	11,647	57	43	6,639	6,554	5,008	4,945	0.0010	0.0018	0.0014	0.0031	0.0042
WHITE FLINT	0	1633	0	1633	1936	0	4.5	8,713	57	43	4,966	4,903	3,746	3,699	0.0008	0.0013	0.0010	0.0023	0.0031
WOODLEY	0	68	0	68	81	0	4.5	363	57	43	207	204	156	154	0.0000	0.0001	0.0000	0.0001	0.0001
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	3,379	57	43	1,926	1,902	1,453	1,435	0.0002	0.0005	0.0004	0.0009	0.0011
BUS & CAR POOL LOTS																			
CARTER BARRON	0	798	0	798	946	0	4.5	4,258	57	43	2,427	2,396	1,831	1,808	0.0004	0.0006	0.0005	0.0011	0.0015
PG PLAZA	0	47	0	47	56	0	4.5	251	57	43	143	141	108	106	0.0000	0.0000	0.0000	0.0001	0.0001
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	534	57	43	304	300	229	227	0.0000	0.0001	0.0001	0.0001	0.0002
CAP PLAZA	0	100	0	100	119	0	4.5	534	57	43	304	300	229	227	0.0000	0.0001	0.0001	0.0001	0.0002
EASTOVER	0	100	0	100	119	0	4.5	534	57	43	304	300	229	227	0.0000	0.0001	0.0001	0.0001	0.0002
FOUR MILE RUN	0	28	0	28	33	0	4.5	149	57	43	85	84	64	63	0.0000	0.0000	0.0000	0.0000	0.0001
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	3,094	57	43	1,764	1,741	1,331	1,314	0.0003	0.0005	0.0004	0.0008	0.0011
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	256	57	43	146	144	110	109	0.0000	0.0000	0.0000	0.0001	0.0001
FRED ARMORY	0	33	0	33	39	0	7.5	293	57	43	167	165	126	125	0.0000	0.0000	0.0000	0.0001	0.0001
MYERSVILLE	0	65	0	65	77	0	7.5	578	57	43	329	325	249	245	0.0000	0.0001	0.0001	0.0002	0.0002
ROSEMONT	0	45	0	45	53	0	7.5	400	57	43	228	225	172	170	0.0000	0.0001	0.0000	0.0001	0.0001
URBANA	0	193	0	193	229	0	7.5	1,716	57	43	978	966	738	729	0.0001	0.0003	0.0002	0.0005	0.0006
JEFFERSON	0	40	0	40	47	0	7.5	356	57	43	203	200	153	151	0.0000	0.0001	0.0000	0.0001	0.0001
NORBECK RD	0	248	0	248	294	0	7.5	2,205	57	43	1,257	1,241	948	936	0.0001	0.0003	0.0003	0.0006	0.0007
MONROSE RD	0	650	0	650	771	0	7.5	5,780	57	43	3,295	3,253	2,485	2,454	0.0003	0.0009	0.0007	0.0016	0.0019
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3,824	57	43	2,179	2,152	1,644	1,623	0.0002	0.0006	0.0005	0.0010	0.0012
COMUS ROAD	0	30	0	30	36	0	7.5	267	57	43	152	150	115	113	0.0000	0.0000	0.0000	0.0001	0.0001
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2,668	57	43	1,521	1,501	1,147	1,133	0.0001	0.0004	0.0003	0.0007	0.0009
BURTONSVILLE	0	500	0	500	593	0	7.5	4,446	57	43	2,534	2,502	1,912	1,888	0.0002	0.0007	0.0005	0.0012	0.0014
FORCEY MEM.	0	200	0	200	237	0	7.5	1,778	57	43	1,014	1,001	765	755	0.0001	0.0003	0.0002	0.0005	0.0006
TECH ROAD	0	155	0	155	184	0	7.5	1,378	57	43	786	776	593	585	0.0001	0.0002	0.0002	0.0004	0.0004
BELTWAY	0	265	0	265	314	0	7.5	2,356	57	43	1,343	1,326	1,013	1,000	0.0001	0.0004	0.0003	0.0006	0.0008
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	551	57	43	314	310	237	234	0.0000	0.0001	0.0001	0.0001	0.0002
ACCOKEEK	0	450	0	450	534	0	7.5	4,001	57	43	2,281	2,252	1,721	1,699	0.0002	0.0006	0.0005	0.0011	0.0013
ABC DRIVE IN	0	100	0	100	119	0	7.5	889	57	43	507	500	382	378	0.0000	0.0001	0.0001	0.0002	0.0003
BOWIE 20%	20	526	131	657	623	156	7.5	5,842	57	43	3,330	3,288	2,512	2,480	0.0003	0.0009	0.0007	0.0016	0.0019
CLINTON 50%	50	212	212	424	251	251	7.5	3,770	57	43	2,149	2,122	1,621	1,601	0.0001	0.0006	0.0004	0.0010	0.0012
OXON HILL 20%	20	519	130	649	616	154	7.5	5,771	57	43	3,289	3,248	2,482	2,450	0.0003	0.0009	0.0007	0.0016	0.0018
EQUESTRIAN CENTER 50	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,501	1,147	1,133	0.0001	0.0004	0.0003	0.0007	0.0008
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001
FT. WASHINGTON	0	412	0	412	488	0	7.5	3,664	57	43	2,088	2,062	1,575	1,555	0.0002	0.0006	0.0004	0.0010	0.0012
MONTPELIER REC PARK	0	70	0	70	83	0	7.5	622	57	43	355	350	268	264	0.0000	0.0001	0.0001	0.0002	0.0002
RESTON	0	1547	0	1547	1834	0	7.5	13,756	57	43	7,841	7,741	5,915	5,840	0.0007	0.0021	0.0016	0.0037	0.0044
GREENBRIAR	0	55	0	55	65	0	7.5	489	57	43	279	275	210	208	0.0000	0.0001	0.0001	0.0001	0.0002
FAIR OAKS	0	150	0	150	178	0	7.5	1,334	57	43	760	751	574	566	0.0001	0.0002	0.0002	0.0004	0.0004
ROLLING VALLEY	0	628	0	628	745	0	7.5	5,584	57	43	3,183	3,143	2,401	2,371	0.0003	0.0008	0.0007	0.0015	0.0018
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	2,045	57	43	1,166	1,151	879	868	0.0001	0.0003	0.0002	0.0006	0.0007
FAIRLANES BOWL	0	35	0	35	41	0	7.5	311	57	43	177	175	134	132	0.0000	0.0000	0.0000	0.0001	0.0001

SEASON 2 (May-Sep)
2016 Precursor NOx

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AUTO ACCESS TO TRANSIT

2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	Adj.Art VMT	FREEWAY VMT	Adj.Fwy VMT	E M I S S I O N S				TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate									COLD START Rate (gm/mile)	RUNNING		Total Running Emission (tons/day)	
																Arterial Rate (gm/mile)	Freeway Rate (gm/mile)		
COMMUTER RAIL LOTS																			
											Wk Days =	107							
											Seasonal adj =	0.9873							
																0.2137	0.1211	0.1272	
NOTTOWAY PARK	0	14	0	14	17	0	7.5	124	57	43	71	70	54	53	0.0000	0.0000	0.0000	0.0000	0.0000
HORNER RD	0	2397	0	2397	2842	0	7.5	21,315	57	43	12,149	11,995	9,165	9,049	0.0011	0.0032	0.0025	0.0057	0.0069
LAKE RIDGE	0	555	0	555	658	0	7.5	4,935	57	43	2,813	2,777	2,122	2,095	0.0003	0.0007	0.0006	0.0013	0.0016
MINNIEVILLE RD 40%	40	336	224	560	398	266	7.5	4,980	57	43	2,838	2,802	2,141	2,114	0.0002	0.0007	0.0006	0.0013	0.0016
GORDON BLVD	0	156	0	156	185	0	7.5	1,387	57	43	791	781	596	589	0.0001	0.0002	0.0002	0.0004	0.0004
HILLEDALE	0	248	0	248	294	0	7.5	2,205	57	43	1,257	1,241	948	936	0.0001	0.0003	0.0003	0.0006	0.0007
POTOMAC MILLS	0	946	0	946	1122	0	7.5	8,412	57	43	4,795	4,734	3,617	3,571	0.0004	0.0013	0.0010	0.0023	0.0027
List of new lots to be added in Conformity Document list																			
PARK-AND-RIDE LOTS - MARYLAND																			
PARK-AND-RIDE LOTS - MARYLAND																			
CHARLES COUNTY																			
301 Park & Ride	25	287	96	383	341	114	7.5	3,406	57	43	1,941	1,917	1,464	1,446	0.0002	0.0005	0.0004	0.0009	0.0011
Charles County Government	25	26	9	35	31	10	7.5	311	57	43	177	175	134	132	0.0000	0.0000	0.0000	0.0001	0.0001
Food Lion Shopping Center	25	38	13	50	44	15	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001
La Plata Armory	25	15	5	20	18	6	7.5	178	57	43	101	100	76	76	0.0000	0.0000	0.0000	0.0000	0.0001
Laurel Springs Regional Park	25	38	13	50	44	15	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001
Life Wesleyan Church	25	38	13	50	44	15	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001
Mattawoman-Beantown Rd	25	435	145	580	516	172	7.5	5,157	57	43	2,940	2,902	2,218	2,190	0.0002	0.0008	0.0006	0.0014	0.0016
Smallwood Village	25	75	25	100	89	30	7.5	889	57	43	507	500	382	378	0.0000	0.0001	0.0001	0.0002	0.0003
St. Charles Towne	25	263	88	350	311	104	7.5	3,112	57	43	1,774	1,751	1,338	1,321	0.0001	0.0005	0.0004	0.0008	0.0010
PARK-AND-RIDE LOTS - MARYLAND																			
FREDERICK COUNTY																			
Frederick (north)	25	123	41	164	146	49	7.5	1,458	57	43	831	821	627	619	0.0001	0.0002	0.0002	0.0004	0.0005
Frederick (south)	25	173	58	230	205	68	7.5	2,045	57	43	1,166	1,151	879	868	0.0001	0.0003	0.0002	0.0006	0.0006
Monacacy Marost	25	600	200	800	711	237	7.5	7,114	57	43	4,055	4,003	3,059	3,020	0.0003	0.0011	0.0008	0.0019	0.0022
PARK-AND-RIDE LOTS - MARYLAND																			
MONTGOMERY COUNTY																			
Colesville	0	190	0	190	225	0	7.5	1,690	57	43	963	951	726	717	0.0001	0.0003	0.0002	0.0005	0.0005
Damascus	50	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Gaithersburg	50	259	259	517	306	306	7.5	4,597	57	43	2,620	2,587	1,977	1,952	0.0002	0.0007	0.0005	0.0012	0.0014
Gaithersburg	50	175	175	350	207	207	7.5	3,112	57	43	1,774	1,751	1,338	1,321	0.0001	0.0005	0.0004	0.0008	0.0010
Germantown Town	50	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greencastle	50	75	75	150	89	89	7.5	1,334	57	43	760	751	574	566	0.0001	0.0002	0.0002	0.0004	0.0004
Milestone Shopping	50	88	88	175	104	104	7.5	1,556	57	43	887	876	669	661	0.0001	0.0002	0.0002	0.0004	0.0005
PARK-AND-RIDE LOTS - MAYLAND																			
PRINCE GEORGE'S COUNTY																			
Hampton Mall	0	100	0	100	119	0	4.5	534	57	43	304	300	229	227	0.0000	0.0001	0.0001	0.0001	0.0002
Laurel (south)	25	513	171	684	608	203	7.5	6,082	57	43	3,467	3,423	2,615	2,582	0.0003	0.0009	0.0007	0.0016	0.0019
PARK-AND-RIDE LOTS - VIRGINIA																			
ARLINGTON COUNTY																			
Ballston Public Parking Garag	25	375	125	500	445	148	7.5	4,446	57	43	2,534	2,502	1,912	1,888	0.0002	0.0007	0.0005	0.0012	0.0014
Washington-Lee	50	178	178	356	211	211	7.5	3,166	57	43	1,804	1,781	1,361	1,344	0.0001	0.0005	0.0004	0.0009	0.0010
PARK-AND-RIDE LOTS - VIRGINIA																			
FAIRFAX COUNTY																			
American Legion	50	50	50	100	59	59	7.5	889	57	43	507	500	382	378	0.0000	0.0001	0.0001	0.0002	0.0003
Canterbury Woods Pk	50	17	17	34	20	20	7.5	302	57	43	172	170	130	128	0.0000	0.0000	0.0000	0.0001	0.0001
Centreville	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,852	1,415	1,397	0.0001	0.0005	0.0004	0.0009	0.0010
Centreville United Methodist	50	74	74	147	87	87	7.5	1,307	57	43	745	736	562	555	0.0001	0.0002	0.0002	0.0004	0.0004
Fairfax County Government C	50	85	85	170	101	101	7.5	1,512	57	43	862	851	650	642	0.0001	0.0002	0.0002	0.0004	0.0005
Greenbriar Park	50	28	28	55	33	33	7.5	489	57	43	279	275	210	208	0.0000	0.0001	0.0001	0.0001	0.0002
Herndon-Monroe	50	873	873	1,745	1034	1034	7.5	15,517	57	43	8,845	8,732	6,672	6,588	0.0006	0.0023	0.0018	0.0042	0.0048
Michael's	50	100	100	200	119	119	7.5	1,778	57	43	1,014	1,001	765	755	0.0001	0.0003	0.0002	0.0005	0.0005
Parkwood Baptist	50	9	9	18	11	11	7.5	160	57	43	91	90	69	68	0.0000	0.0000	0.0000	0.0000	0.0000
South Run District Pk	50	170	170	340	202	202	7.5	3,023	57	43	1,723	1,701	1,300	1,284	0.0001	0.0005	0.0004	0.0008	0.0009
St Paul Chung Catholic Chur	50	50	50	100	59	59	7.5	889	57	43	507	500	382	378	0.0000	0.0001	0.0001	0.0002	0.0003
Stringfellow Rd	50	181	181	361	214	214	7.5	3,210	57	43	1,830	1,807	1,380	1,363	0.0001	0.0005	0.0004	0.0009	0.0010
Sully Station	50	70	70	140	83	83	7.5	1,245	57	43	710	701	535	529	0.0000	0.0002	0.0001	0.0003	0.0004

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LOCATION	2002				2016		AVERAGE	2016	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy	E M I S S I O N S				TOTAL (tons/day)		
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE	OUTSIDE	TRIP LENGTH	VMT	%	VMT	VMT	VMT	VMT	COLD START Rate (gm/mile)	RUNNING		Total Running Emission (tones/day)				
					Growth Rate	Growth Rate							Arterial		Freeway	Total Running					
					1.19	1.19					Wk Days = 107				Rate (gm/mile)	Rate (gm/mile)	Rate (gm/mile)				
COMMUTER RAIL LOTS														Seasonal adj = 0.9873							
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,485	57	43	846	836	639	630	0.0001	0.0002	0.0002	0.0004	0.0005		
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001		
PARK-AND-RIDE LOTS - VIRGINIA																					
LOUDOUN COUNTY																					
Ashburn Farm	50	10	10	20	12	12	7.5	178	57	43	101	100	76	76	0.0000	0.0000	0.0000	0.0000	0.0001		
Ashburn Village	50	20	20	40	24	24	7.5	356	57	43	203	200	153	151	0.0000	0.0001	0.0000	0.0001	0.0001		
Cascades	50	28	28	55	33	33	7.5	489	57	43	279	275	210	208	0.0000	0.0001	0.0001	0.0001	0.0002		
Dulles North Transit	50	375	375	750	445	445	7.5	6,669	57	43	3,801	3,753	2,868	2,831	0.0003	0.0010	0.0008	0.0018	0.0021		
Hamilton	50	25	25	50	30	30	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001		
Innovation Avenue	50	38	38	75	44	44	7.5	667	57	43	380	375	287	283	0.0000	0.0001	0.0001	0.0002	0.0002		
Leesburg	50	25	25	50	30	30	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001		
Leesburg Kohls	50	600	600	1200	711	711	7.5	10,671	57	43	6,082	6,005	4,588	4,530	0.0004	0.0016	0.0013	0.0029	0.0033		
Purcellville	50	18	18	35	21	21	7.5	311	57	43	177	175	134	132	0.0000	0.0000	0.0000	0.0001	0.0001		
Sterling Park SC	50	23	23	45	27	27	7.5	400	57	43	228	225	172	170	0.0000	0.0001	0.0000	0.0001	0.0001		
Sterling Shaw Rd	50	24	24	48	28	28	7.5	427	57	43	243	240	184	181	0.0000	0.0001	0.0001	0.0001	0.0001		
PARK-AND-RIDE LOTS - VIRGINIA																					
PRINCE WILLIAM COUNTY																					
Brittany	50	48	48	95	56	56	7.5	845	57	43	482	475	363	359	0.0000	0.0001	0.0001	0.0002	0.0003		
Dale City	50	294	294	587	348	348	7.5	5,220	57	43	2,975	2,937	2,244	2,216	0.0002	0.0008	0.0006	0.0014	0.0016		
Harbor Drive	50	100	100	200	119	119	7.5	1,778	57	43	1,014	1,001	765	755	0.0001	0.0003	0.0002	0.0005	0.0005		
Lindendale	50	108	108	216	128	128	7.5	1,921	57	43	1,095	1,081	826	815	0.0001	0.0003	0.0002	0.0005	0.0006		
Montclair	50	25	25	50	30	30	7.5	445	57	43	253	250	191	189	0.0000	0.0001	0.0001	0.0001	0.0001		
PRTC Transit Center	50	93	93	185	110	110	7.5	1,645	57	43	938	926	707	698	0.0001	0.0002	0.0002	0.0004	0.0005		
Tackett's Mill	50	85	85	169	100	100	7.5	1,503	57	43	857	846	646	638	0.0001	0.0002	0.0002	0.0004	0.0005		
Triangle	50	15	15	29	17	17	7.5	258	57	43	147	145	111	109	0.0000	0.0000	0.0000	0.0001	0.0001		
I-95 / Rt 123	50	282	282	563	334	334	7.5	5,006	57	43	2,854	2,817	2,153	2,125	0.0002	0.0008	0.0006	0.0013	0.0015		
US 1 / VA 234	50	137	137	274	162	162	7.5	2,436	57	43	1,389	1,371	1,048	1,034	0.0001	0.0004	0.0003	0.0007	0.0008		
MARC TRAIN COMMUTER LOTS																					
College Park	25	431	144	574	510	170	7.5	5,104	57	43	2,909	2,872	2,195	2,167	0.0002	0.0008	0.0006	0.0014	0.0016		
Frederick	0	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000		
Greenbelt	60	1346	2018	3364	1595	2393	7.5	29,913	57	43	17,051	16,834	12,863	12,699	0.0011	0.0045	0.0036	0.0081	0.0092		
Harpers Ferry	0	98	0	98	116	0	7.5	871	57	43	497	490	375	370	0.0000	0.0001	0.0001	0.0002	0.0003		
Muirkirk	60	260	390	650	308	462	7.5	5,780	57	43	3,295	3,253	2,485	2,454	0.0002	0.0009	0.0007	0.0016	0.0018		
Seabrook	0	264	0	264	313	0	4.5	1,409	57	43	803	793	606	598	0.0001	0.0002	0.0002	0.0004	0.0005		
Silver Spring	0	0	0	0	0	0	4.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000		
Union Station	0	781	0	781	926	0	7.5	6,945	57	43	3,959	3,908	2,986	2,948	0.0004	0.0010	0.0008	0.0019	0.0022		
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS																					
Backlick Road	50	110	110	220	130	130	7.5	1,956	57	43	1,115	1,101	841	831	0.0001	0.0003	0.0002	0.0005	0.0006		
Broad Run	50	198	198	396	235	235	7.5	3,521	57	43	2,007	1,982	1,514	1,495	0.0001	0.0005	0.0004	0.0009	0.0011		
Brooke	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,501	1,147	1,133	0.0001	0.0004	0.0003	0.0007	0.0008		
Burke Center	50	275	275	550	326	326	7.5	4,891	57	43	2,788	2,752	2,103	2,076	0.0002	0.0007	0.0006	0.0013	0.0015		
Franconia/Springfield (operat	50	1900	1900	3800	2253	2253	7.5	33,790	57	43	19,261	19,016	14,530	14,345	0.0013	0.0051	0.0040	0.0091	0.0104		
Leeland Road	50	326	326	652	387	387	7.5	5,798	57	43	3,305	3,263	2,493	2,461	0.0002	0.0009	0.0007	0.0016	0.0018		
Lorton	50	100	100	200	119	119	7.5	1,778	57	43	1,014	1,001	765	755	0.0001	0.0003	0.0002	0.0005	0.0005		
Manassas	50	187	187	374	222	222	7.5	3,326	57	43	1,896	1,872	1,430	1,412	0.0001	0.0005	0.0004	0.0009	0.0010		
Manassas Park	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,501	1,147	1,133	0.0001	0.0004	0.0003	0.0007	0.0008		
Quantico	50	109	109	217	129	129	7.5	1,930	57	43	1,100	1,086	830	819	0.0001	0.0003	0.0002	0.0005	0.0006		
Rippon	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,501	1,147	1,133	0.0001	0.0004	0.0003	0.0007	0.0008		
Rolling Road	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,852	1,415	1,397	0.0001	0.0005	0.0004	0.0009	0.0010		
Woodbridge	50	294	294	588	349	349	7.5	5,229	57	43	2,980	2,942	2,248	2,220	0.0002	0.0008	0.0006	0.0014	0.0016		
METRO RAIL PARKING LOTS																					
Anacostia	25	861	287	1148	1021	340	7.5	10,208	57	43	5,819	5,745	4,390	4,334	0.0005	0.0015	0.0012	0.0027	0.0032		
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	28,651	57	43	16,331	16,124	12,320	12,163	0.0011	0.0043	0.0034	0.0077	0.0089		
Capitol Heights	50	194	194	387	229	229	7.5	3,441	57	43	1,962	1,937	1,480	1,461	0.0001	0.0005	0.0004	0.0009	0.0011		
College Park	25	465	155	620	551	184	7.5	5,513	57	43	3,143	3,103	2,371	2,341	0.0003	0.0008	0.0007	0.0015	0.0017		
Congress Heights	0	66	0	66	78	0	4.5	352	57	43	201	198	151	149	0.0000	0.0001	0.0000	0.0001	0.0001		
Deanwood	0	194	0	194	230	0	7.5	1,725	57	43	983	971	742	732	0.0001	0.0003	0.0002	0.0005	0.0006		
East Falls Church	50	221	221	442	262	262	7.5	3,930	57	43	2,240	2,212	1,690	1,669	0.0002	0.0006	0.0005	0.0011	0.0012		
Forest Glen	50	329	329	658	390	390	7.5	5,851	57	43	3,335	3,293	2,516	2,484	0.0002	0.0009	0.0007	0.0016	0.0018		
Franconia - Springfield	50	1987	1987	3973	2355	2355	4.5	21,197	57	43	12,082	11,929	9,115	8,999	0.0014	0.0032	0.0025	0.0057	0.0071		

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LOCATION	2002				2016		AVERAGE	2016	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy	E M I S S I O N S			TOTAL (tons/day)	
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE	OUTSIDE	TRIP LENGTH	VMT			VMT	VMT	VMT	COLD START Rate (gm/mile)	RUNNING		Total Running Emission (tones/day)		
					Growth Rate	Growth Rate			%						Arterial Rate (gm/mile)	Freeway Rate (gm/mile)			
					1.19	1.19						Wk Days =	107	0.2137	0.1211	0.1272			
COMMUTER RAIL LOTS											Seasonal adj =	0.9873							
Glenmont	50	925	925	1850	1097	1097	4.5	9,870	57	43	5,626	5,555	4,244	4,190	0.0007	0.0015	0.0012	0.0027	0.0033
Greenbelt	50	1783	1783	3565	2113	2113	7.5	31,701	57	43	18,069	17,840	13,631	13,458	0.0013	0.0048	0.0038	0.0085	0.0098
Naylor Road	50	216	216	431	256	256	7.5	3,833	57	43	2,185	2,157	1,648	1,627	0.0002	0.0006	0.0005	0.0010	0.0012
Prince George's Plaza	25	927	309	1236	1099	366	7.5	10,991	57	43	6,265	6,185	4,726	4,666	0.0005	0.0017	0.0013	0.0030	0.0035
Southern Avenue	50	1090	1090	2180	1292	1292	4.5	11,631	57	43	6,630	6,545	5,001	4,938	0.0008	0.0017	0.0014	0.0031	0.0039
Suitland	50	1033	1033	2065	1224	1224	4.5	11,017	57	43	6,280	6,200	4,738	4,677	0.0007	0.0017	0.0013	0.0030	0.0037
Van Dorn Street	50	204	204	407	241	241	4.5	2,171	57	43	1,238	1,222	934	922	0.0001	0.0003	0.0003	0.0006	0.0007
West Hyattsville	25	453	151	604	537	179	7.5	5,371	57	43	3,061	3,023	2,309	2,280	0.0002	0.0008	0.0006	0.0014	0.0017
Wheaton	25	759	253	1012	900	300	7.5	8,999	57	43	5,129	5,064	3,870	3,820	0.0004	0.0014	0.0011	0.0024	0.0028
				108,749				847,732							0.0442	0.1274	0.1009	0.2283	0.2725

Seasonal Total (tons/season) = 29.15

Bold figures: New numbers taken from P & R directory
Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
Transit trips 2016	1295286
Transit trips 2002	1092489
Annual growth rate	0.013259
Growth factor (2002-2011)	1.185628

SEASON 3 (Oct-Dec)
2016 Precursor NOx
AUTO ACCESS TO TRANSIT
2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY

10-26-2011

LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	Adj.Art VMT	FREEWAY VMT	Adj.Fwy VMT	COLD START Rate (gm/mile)	E M I S S I O N S			TOTAL (tons/day)	
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate										RUNNING				Total Running Emission (tons/day)
																Arterial Rate (gm/mile)	Freeway Rate (gm/mile)	Total Running Emission (tons/day)		
					1.19	1.19									0.2604	0.1429	0.1505			
											Wk Days = 61									
											Seasonal adj = 0.9282									
COMMUTER RAIL LOTS																				
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3,619	57	43	2,063	1,915	1,556	1,444	0.0002	0.0006	0.0005	0.0011	0.0013	
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2,419	57	43	1,379	1,280	1,040	965	0.0001	0.0004	0.0003	0.0007	0.0009	
DICKERSON	0	15	0	15	18	0	7.5	133	57	43	76	71	57	53	0.0000	0.0000	0.0000	0.0000	0.0000	
BARNESVILLE	0	46	0	46	55	0	7.5	409	57	43	233	216	176	163	0.0000	0.0001	0.0001	0.0001	0.0001	
GERMANTOWN	0	386	0	386	458	0	7.5	3,432	57	43	1,956	1,816	1,476	1,370	0.0002	0.0006	0.0005	0.0010	0.0012	
MET GROVE	0	352	0	352	417	0	7.5	3,130	57	43	1,784	1,656	1,346	1,249	0.0002	0.0005	0.0004	0.0009	0.0011	
WAS GROVE	0	15	0	15	18	0	7.5	133	57	43	76	71	57	53	0.0000	0.0000	0.0000	0.0000	0.0000	
GARRETT PARK	0	22	0	22	26	0	7.5	196	57	43	112	104	84	78	0.0000	0.0000	0.0000	0.0001	0.0001	
BOWIE 50%	50	188	188	375	222	222	7.5	3,335	57	43	1,901	1,764	1,434	1,331	0.0002	0.0006	0.0004	0.0010	0.0012	
SEABROOK 15%	15	224	40	264	266	47	7.5	2,348	57	43	1,338	1,242	1,009	937	0.0001	0.0004	0.0003	0.0007	0.0008	
KENSINGTON	0	45	0	45	53	0	7.5	400	57	43	228	212	172	160	0.0000	0.0001	0.0001	0.0001	0.0001	
LAUREL 30%	30	209	90	299	248	106	7.5	2,659	57	43	1,515	1,407	1,143	1,061	0.0001	0.0004	0.0004	0.0008	0.0009	
GAITHESBURG	0	280	0	280	332	0	7.5	2,490	57	43	1,419	1,317	1,071	994	0.0002	0.0004	0.0003	0.0007	0.0009	
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	160	57	43	91	85	69	64	0.0000	0.0000	0.0000	0.0000	0.0001	
RIVERDALE	0	65	0	65	77	0	4.5	347	57	43	198	183	149	138	0.0000	0.0001	0.0000	0.0001	0.0001	
METRO RAIL LOTS																				
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	11,720	57	43	6,680	6,201	5,040	4,678	0.0006	0.0020	0.0016	0.0035	0.0041	
ARCHIVES	0	12	0	12	14	0	4.5	64	57	43	36	34	28	26	0.0000	0.0000	0.0000	0.0000	0.0000	
ARLING	0	10	0	10	12	0	4.5	53	57	43	30	28	23	21	0.0000	0.0000	0.0000	0.0000	0.0000	
BALLSTON	0	1175	0	1175	1393	0	4.5	6,269	57	43	3,573	3,317	2,696	2,502	0.0007	0.0010	0.0008	0.0019	0.0025	
BENN.RD	0	520	0	520	617	0	4.5	2,774	57	43	1,581	1,468	1,193	1,107	0.0003	0.0005	0.0004	0.0008	0.0011	
BETH	0	395	0	395	468	0	4.5	2,107	57	43	1,201	1,115	906	841	0.0002	0.0004	0.0003	0.0006	0.0009	
BRADD RD	0	10	0	10	12	0	4.5	53	57	43	30	28	23	21	0.0000	0.0000	0.0000	0.0000	0.0000	
BROOKLAND	0	27	0	27	32	0	4.5	144	57	43	82	76	62	57	0.0000	0.0000	0.0000	0.0000	0.0001	
CHEVERLY	0	557	0	557	660	0	4.5	2,972	57	43	1,694	1,572	1,278	1,186	0.0003	0.0005	0.0004	0.0009	0.0012	
CLARENDON	0	554	0	554	657	0	4.5	2,956	57	43	1,685	1,564	1,271	1,180	0.0003	0.0005	0.0004	0.0009	0.0012	
CLEVELAND PK	0	366	0	366	434	0	4.5	1,953	57	43	1,113	1,033	840	779	0.0002	0.0003	0.0003	0.0006	0.0008	
COURT HOUSE	0	256	0	256	304	0	4.5	1,366	57	43	779	723	587	545	0.0001	0.0002	0.0002	0.0004	0.0006	
CRYSTAL CITY	0	347	0	347	411	0	4.5	1,851	57	43	1,055	980	796	739	0.0002	0.0003	0.0002	0.0006	0.0008	
DEANWOOD	0	194	0	194	230	0	4.5	1,035	57	43	590	548	445	413	0.0001	0.0002	0.0001	0.0003	0.0004	
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	7,229	57	43	4,121	3,825	3,109	2,885	0.0007	0.0012	0.0010	0.0022	0.0029	
DUPONT CIRCLE	0	165	0	165	196	0	4.5	880	57	43	502	466	379	351	0.0001	0.0001	0.0001	0.0003	0.0004	
EASTERN MKT	0	178	0	178	211	0	4.5	950	57	43	541	502	408	379	0.0001	0.0002	0.0001	0.0003	0.0004	
EAST FALLS CH	0	442	0	442	524	0	4.5	2,358	57	43	1,344	1,248	1,014	941	0.0003	0.0004	0.0003	0.0007	0.0010	
EIS	0	352	0	352	417	0	4.5	1,878	57	43	1,070	994	808	750	0.0002	0.0003	0.0002	0.0006	0.0008	
FARRAGUT NORTH	0	102	0	102	121	0	4.5	544	57	43	310	288	234	217	0.0001	0.0001	0.0001	0.0002	0.0002	
FARRAGUT WEST	0	221	0	221	262	0	4.5	1,179	57	43	672	624	507	471	0.0001	0.0002	0.0002	0.0004	0.0005	
FEDERAL CENTER	0	75	0	75	89	0	4.5	400	57	43	228	212	172	160	0.0000	0.0001	0.0001	0.0001	0.0002	
FEDERAL TRI	0	54	0	54	64	0	4.5	288	57	43	164	152	124	115	0.0000	0.0000	0.0000	0.0001	0.0001	
FOGGY	0	102	0	102	121	0	4.5	544	57	43	310	288	234	217	0.0001	0.0001	0.0001	0.0002	0.0002	
FORT TROTTEEN	0	445	0	445	528	0	4.5	2,374	57	43	1,353	1,256	1,021	948	0.0003	0.0004	0.0003	0.0007	0.0010	
FRH.HEIGHTS	0	679	0	679	805	0	4.5	3,623	57	43	2,065	1,917	1,558	1,446	0.0004	0.0006	0.0005	0.0011	0.0015	
GALLERY PLACE	0	124	0	124	147	0	4.5	662	57	43	377	350	284	264	0.0001	0.0001	0.0001	0.0002	0.0003	
GROSVENOR	0	716	0	716	849	0	4.5	3,820	57	43	2,177	2,021	1,643	1,525	0.0004	0.0006	0.0005	0.0011	0.0016	
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	27,761	57	43	15,824	14,688	11,937	11,080	0.0014	0.0046	0.0037	0.0083	0.0097	
JUD SQUARE	0	110	0	110	130	0	4.5	587	57	43	335	311	252	234	0.0001	0.0001	0.0001	0.0002	0.0002	
KING ST	0	30	0	30	36	0	4.5	160	57	43	91	85	69	64	0.0000	0.0000	0.0000	0.0000	0.0001	
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	16,717	57	43	9,529	8,845	7,188	6,672	0.0009	0.0028	0.0022	0.0050	0.0059	
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1,579	57	43	900	836	679	630	0.0002	0.0003	0.0002	0.0005	0.0006	
MCPHERSON SQ	0	52	0	52	62	0	4.5	277	57	43	158	147	119	111	0.0000	0.0000	0.0000	0.0001	0.0001	
MEDICAL CENTER	0	14	0	14	17	0	4.5	75	57	43	43	40	32	30	0.0000	0.0000	0.0000	0.0000	0.0000	
METRO CENTER	0	177	0	177	210	0	4.5	944	57	43	538	500	406	377	0.0001	0.0002	0.0001	0.0003	0.0004	
MINNES	0	353	0	353	419	0	4.5	1,883	57	43	1,074	996	810	752	0.0002	0.0003	0.0002	0.0006	0.0008	
NAT AIR	0	87	0	87	103	0	4.5	464	57	43	265	246	200	185	0.0000	0.0001	0.0001	0.0001	0.0002	
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	18,647	57	43	10,629	9,866	8,018	7,442	0.0009	0.0031	0.0025	0.0056	0.0065	
PRNTAGON	0	561	0	561	665	0	4.5	2,993	57	43	1,706	1,584	1,287	1,195	0.0003	0.0005	0.0004	0.0009	0.0012	

SEASON 3 (Oct-Dec)
2016 Precursor NOx
AUTO ACCESS TO TRANSIT
2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY

10-26-2011

LOCATION														E M I S S I O N S					TOTAL (tons/day)	
	OUTSIDE MSA (%)	2002			2016		AVERAGE	2016 VMT	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy	COLD START Rate (gm/mile)	RUNNING				Total Running Emission (tons/day)
		INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate	TRIP LENGTH		%	VMT	VMT	VMT	VMT	VMT		Arterial Rate (gm/mile)	Freeway Rate (gm/mile)	Total Running Emission (tons/day)		
					1.19	1.19										0.2604	0.1429			
COMMUTER RAIL LOTS												Wk Days = 61 Seasonal adj = 0.9282								
PENTAGON CITY	0	381	0	381	452	0	4.5	2,033	57	43	1,159	1,075	874	811	0.0002	0.0003	0.0003	0.0006	0.0008	
POTOMAC AVE	0	533	0	533	632	0	4.5	2,844	57	43	1,621	1,505	1,223	1,135	0.0003	0.0005	0.0004	0.0009	0.0012	
ROCKVILLE	0	667	0	667	791	0	4.5	3,559	57	43	2,028	1,883	1,530	1,420	0.0004	0.0006	0.0005	0.0011	0.0014	
ROSSLYN	0	356	0	356	422	0	4.5	1,899	57	43	1,083	1,005	817	758	0.0002	0.0003	0.0003	0.0006	0.0008	
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	38,566	57	43	21,982	20,404	16,583	15,393	0.0024	0.0064	0.0051	0.0115	0.0139	
SILVER SPRING	0	44	0	44	52	0	4.5	235	57	43	134	124	101	94	0.0000	0.0000	0.0000	0.0001	0.0001	
SMITH MALL	0	120	0	120	142	0	4.5	640	57	43	365	339	275	256	0.0001	0.0001	0.0001	0.0002	0.0003	
STADIUM ARM	0	976	0	976	1157	0	4.5	5,207	57	43	2,968	2,755	2,239	2,078	0.0006	0.0009	0.0007	0.0016	0.0021	
TAKOMA PK	0	146	0	146	173	0	4.5	779	57	43	444	412	335	311	0.0001	0.0001	0.0001	0.0002	0.0003	
TENLEYTON	0	17	0	17	20	0	4.5	91	57	43	52	48	39	36	0.0000	0.0000	0.0000	0.0000	0.0000	
TWINBROOK	0	1136	0	1136	1347	0	4.5	6,061	57	43	3,455	3,207	2,606	2,419	0.0007	0.0010	0.0008	0.0018	0.0025	
UNION STAT	0	378	0	378	448	0	4.5	2,017	57	43	1,150	1,067	867	805	0.0002	0.0003	0.0003	0.0006	0.0008	
VAN NESS	0	343	0	343	407	0	4.5	1,830	57	43	1,043	968	787	730	0.0002	0.0003	0.0002	0.0005	0.0007	
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	33,177	57	43	18,911	17,553	14,266	13,242	0.0019	0.0055	0.0044	0.0099	0.0118	
VA SQUARE	0	642	0	642	761	0	4.5	3,425	57	43	1,952	1,812	1,473	1,367	0.0004	0.0006	0.0005	0.0010	0.0014	
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	11,647	57	43	6,639	6,162	5,008	4,649	0.0013	0.0019	0.0015	0.0035	0.0047	
WHITE FLINT	0	1633	0	1633	1936	0	4.5	8,713	57	43	4,966	4,610	3,746	3,477	0.0009	0.0015	0.0012	0.0026	0.0035	
WOODLEY	0	68	0	68	81	0	4.5	363	57	43	207	192	156	145	0.0000	0.0001	0.0000	0.0001	0.0001	
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	3,379	57	43	1,926	1,788	1,453	1,349	0.0002	0.0006	0.0004	0.0010	0.0012	
BUS & CAR POOL LOTS																				
CARTER BARRON	0	798	0	798	946	0	4.5	4,258	57	43	2,427	2,253	1,831	1,699	0.0005	0.0007	0.0006	0.0013	0.0017	
PG PLAZA	0	47	0	47	56	0	4.5	251	57	43	143	133	108	100	0.0000	0.0000	0.0000	0.0001	0.0001	
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	534	57	43	304	282	229	213	0.0001	0.0001	0.0001	0.0002	0.0002	
CAP PLAZA	0	100	0	100	119	0	4.5	534	57	43	304	282	229	213	0.0001	0.0001	0.0001	0.0002	0.0002	
EASTOVER	0	100	0	100	119	0	4.5	534	57	43	304	282	229	213	0.0001	0.0001	0.0001	0.0002	0.0002	
FOUR MILE RUN	0	28	0	28	33	0	4.5	149	57	43	85	79	64	60	0.0000	0.0000	0.0000	0.0000	0.0001	
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	3,094	57	43	1,764	1,637	1,331	1,235	0.0003	0.0005	0.0004	0.0009	0.0013	
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	256	57	43	146	135	110	102	0.0000	0.0000	0.0000	0.0001	0.0001	
FRED ARMORY	0	33	0	33	39	0	7.5	293	57	43	167	155	126	117	0.0000	0.0000	0.0000	0.0001	0.0001	
MYERSVILLE	0	65	0	65	77	0	7.5	578	57	43	329	306	249	231	0.0000	0.0001	0.0001	0.0002	0.0002	
ROSEMONT	0	45	0	45	53	0	7.5	400	57	43	228	212	172	160	0.0000	0.0001	0.0001	0.0001	0.0001	
URBANA	0	193	0	193	229	0	7.5	1,716	57	43	978	908	738	685	0.0001	0.0003	0.0002	0.0005	0.0006	
JEFFERSON	0	40	0	40	47	0	7.5	356	57	43	203	188	153	142	0.0000	0.0001	0.0000	0.0001	0.0001	
NORBECK RD	0	248	0	248	294	0	7.5	2,205	57	43	1,257	1,167	948	880	0.0001	0.0004	0.0003	0.0007	0.0008	
MONTROSE RD	0	650	0	650	771	0	7.5	5,780	57	43	3,295	3,058	2,485	2,307	0.0004	0.0010	0.0008	0.0017	0.0021	
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3,824	57	43	2,179	2,023	1,644	1,526	0.0002	0.0006	0.0005	0.0011	0.0013	
COMUS ROAD	0	30	0	30	36	0	7.5	267	57	43	152	141	115	106	0.0000	0.0000	0.0000	0.0001	0.0001	
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2,668	57	43	1,521	1,411	1,147	1,065	0.0002	0.0004	0.0004	0.0008	0.0010	
BURTONSVILLE	0	500	0	500	593	0	7.5	4,446	57	43	2,534	2,352	1,912	1,775	0.0003	0.0007	0.0006	0.0013	0.0016	
FORCEY MEM.	0	200	0	200	237	0	7.5	1,778	57	43	1,014	941	765	710	0.0001	0.0003	0.0002	0.0005	0.0006	
TECH ROAD	0	155	0	155	184	0	7.5	1,378	57	43	786	729	593	550	0.0001	0.0002	0.0002	0.0004	0.0005	
BELTWAY	0	265	0	265	314	0	7.5	2,356	57	43	1,343	1,247	1,013	941	0.0002	0.0004	0.0003	0.0007	0.0009	
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	551	57	43	314	292	237	220	0.0000	0.0001	0.0001	0.0002	0.0002	
ACCOKEEK	0	450	0	450	534	0	7.5	4,001	57	43	2,281	2,117	1,721	1,597	0.0003	0.0007	0.0005	0.0012	0.0015	
ABC DRIVE IN	0	100	0	100	119	0	7.5	889	57	43	507	470	382	355	0.0001	0.0001	0.0001	0.0003	0.0003	
BOWIE 20%	20	526	131	657	623	156	7.5	5,842	57	43	3,330	3,091	2,512	2,332	0.0003	0.0010	0.0008	0.0017	0.0021	
CLINTON 50%	50	212	212	424	251	251	7.5	3,770	57	43	2,149	1,995	1,621	1,505	0.0002	0.0006	0.0005	0.0011	0.0013	
OXON HILL 20%	20	519	130	649	616	154	7.5	5,771	57	43	3,289	3,053	2,482	2,303	0.0003	0.0010	0.0008	0.0017	0.0021	
EQUESTRIAN CENTER 50	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,411	1,147	1,065	0.0001	0.0004	0.0004	0.0008	0.0009	
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002	
FT WASHINGTON	0	412	0	412	488	0	7.5	3,664	57	43	2,088	1,938	1,575	1,462	0.0002	0.0006	0.0005	0.0011	0.0013	
MONTPELIER REC PARK	0	70	0	70	83	0	7.5	622	57	43	355	329	268	248	0.0000	0.0001	0.0001	0.0002	0.0002	
RESTON	0	1547	0	1547	1834	0	7.5	13,756	57	43	7,841	7,278	5,915	5,490	0.0009	0.0023	0.0018	0.0041	0.0050	
GREENBRIAR	0	55	0	55	65	0	7.5	489	57	43	279	259	210	195	0.0000	0.0001	0.0001	0.0001	0.0002	
FAIR OAKS	0	150	0	150	178	0	7.5	1,334	57	43	760	706	574	532	0.0001	0.0002	0.0002	0.0004	0.0005	
ROLLING VALLEY	0	628	0	628	745	0	7.5	5,584	57	43	3,183	2,955	2,401	2,229	0.0004	0.0009	0.0007	0.0017	0.0020	
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	2,045	57	43	1,166	1,082	879	816	0.0001	0.0003	0.0003	0.0006	0.0007	
FAIRLANES BOWL	0	35	0	35	41	0	7.5	311	57	43	177	165	134	124	0.0000	0.0001	0.0000	0.0001	0.0001	

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LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	Adj.Art VMT	FREEWAY VMT	Adj.Fwy VMT	COLD START Rate (gm/mile)	E M I S S I O N S			TOTAL (tons/day)	
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate										RUNNING				Total Running Emission (tons/day)
																Arterial Rate (gm/mile)	Freeway Rate (gm/mile)	Rate (gm/mile)		
					1.19	1.19									0.2604	0.1429	0.1505			
COMMUTER RAIL LOTS																				
											Wk Days = 61									
											Seasonal adj = 0.9282									
NOTTOWAY PARK	0	14	0	14	17	0	7.5	124	57	43	71	66	54	50	0.0000	0.0000	0.0000	0.0000	0.0000	
HORNER RD	0	2397	0	2397	2842	0	7.5	21,315	57	43	12,149	11,277	9,165	8,507	0.0014	0.0036	0.0028	0.0064	0.0078	
LAKE RIDGE	0	555	0	555	658	0	7.5	4,935	57	43	2,813	2,611	2,122	1,970	0.0003	0.0008	0.0007	0.0015	0.0018	
MINNIEVILLE RD 40%	40	336	224	560	398	266	7.5	4,980	57	43	2,838	2,635	2,141	1,988	0.0003	0.0008	0.0007	0.0015	0.0017	
GORDON BLVD	0	156	0	156	185	0	7.5	1,387	57	43	791	734	596	554	0.0001	0.0002	0.0002	0.0004	0.0005	
HILLENDALE	0	248	0	248	294	0	7.5	2,205	57	43	1,257	1,167	948	880	0.0001	0.0004	0.0003	0.0007	0.0008	
POTOMAC MILLS	0	946	0	946	1122	0	7.5	8,412	57	43	4,795	4,451	3,617	3,357	0.0005	0.0014	0.0011	0.0025	0.0031	
List of new lots to be added in Conformity Document list																				
PARK-AND-RIDE LOTS - MARYLAND																				
PARK-AND-RIDE LOTS - MARYLAND																				
CHARLES COUNTY																				
301 Park & Ride	25	287	96	383	341	114	7.5	3,406	57	43	1,941	1,802	1,464	1,359	0.0002	0.0006	0.0005	0.0010	0.0012	
Charles County Government	25	26	9	35	31	10	7.5	311	57	43	177	165	134	124	0.0000	0.0001	0.0000	0.0001	0.0001	
Food Lion Shopping Center	25	38	13	50	44	15	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002	
La Plata Armory	25	15	5	20	18	6	7.5	178	57	43	101	94	76	71	0.0000	0.0000	0.0000	0.0001	0.0001	
Laurel Springs Regional Park	25	38	13	50	44	15	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002	
Life Wesleyan Church	25	38	13	50	44	15	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002	
Mattawoman-Beantown Rd	25	435	145	580	516	172	7.5	5,157	57	43	2,940	2,729	2,218	2,058	0.0003	0.0009	0.0007	0.0015	0.0018	
Smallwood Village	25	75	25	100	89	30	7.5	889	57	43	507	470	382	355	0.0001	0.0001	0.0001	0.0003	0.0003	
St. Charles Towne	25	263	88	350	311	104	7.5	3,112	57	43	1,774	1,647	1,338	1,242	0.0002	0.0005	0.0004	0.0009	0.0011	
PARK-AND-RIDE LOTS - MARYLAND					0	0		0												
FREDERICK COUNTY					0	0		0												
Frederick (north)	25	123	41	164	146	49	7.5	1,458	57	43	831	772	627	582	0.0001	0.0002	0.0002	0.0004	0.0005	
Frederick (south)	25	173	58	230	205	68	7.5	2,045	57	43	1,166	1,082	879	816	0.0001	0.0003	0.0003	0.0006	0.0007	
Monacacy Marcst	25	600	200	800	711	237	7.5	7,114	57	43	4,055	3,764	3,059	2,839	0.0004	0.0012	0.0009	0.0021	0.0025	
PARK-AND-RIDE LOTS - MARYLAND					0	0		0												
MONTGOMERY COUNTY					0	0		0												
Colesville	0	190	0	190	225	0	7.5	1,690	57	43	963	894	726	674	0.0001	0.0003	0.0002	0.0005	0.0006	
Damascus	50	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	
Gaithersburg	50	259	259	517	306	306	7.5	4,597	57	43	2,620	2,432	1,977	1,835	0.0002	0.0008	0.0006	0.0014	0.0016	
Gaithersburg	50	175	175	350	207	207	7.5	3,112	57	43	1,774	1,647	1,338	1,242	0.0002	0.0005	0.0004	0.0009	0.0011	
Germantown Town	50	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	
Greencastle	50	75	75	150	89	89	7.5	1,334	57	43	760	706	574	532	0.0001	0.0002	0.0002	0.0004	0.0005	
Milestone Shopping	50	88	88	175	104	104	7.5	1,556	57	43	887	823	669	621	0.0001	0.0003	0.0002	0.0005	0.0005	
PARK-AND-RIDE LOTS - MARYLAND					0	0		0												
PRINCE GEORGE'S COUNTY					0	0		0												
Hampton Mall	0	100	0	100	119	0	4.5	534	57	43	304	282	229	213	0.0001	0.0001	0.0001	0.0002	0.0002	
Laurel (south)	25	513	171	684	608	203	7.5	6,082	57	43	3,467	3,218	2,615	2,428	0.0003	0.0010	0.0008	0.0018	0.0022	
PARK-AND-RIDE LOTS - VIRGINIA					0	0		0												
ARLINGTON COUNTY					0	0		0												
Ballston Public Parking Gara	25	375	125	500	445	148	7.5	4,446	57	43	2,534	2,352	1,912	1,775	0.0003	0.0007	0.0006	0.0013	0.0016	
Washington-Lee	50	178	178	356	211	211	7.5	3,166	57	43	1,804	1,675	1,361	1,263	0.0002	0.0005	0.0004	0.0009	0.0011	
PARK-AND-RIDE LOTS - VIRGINIA					0	0		0												
FAIRFAX COUNTY					0	0		0												
American Legion	50	50	50	100	59	59	7.5	889	57	43	507	470	382	355	0.0000	0.0001	0.0001	0.0003	0.0003	
Canterbury Woods Pk	50	17	17	34	20	20	7.5	302	57	43	172	160	130	121	0.0000	0.0001	0.0000	0.0001	0.0001	
Centreville	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,741	1,415	1,313	0.0002	0.0005	0.0004	0.0010	0.0011	
Centreville United Methodist	50	74	74	147	87	87	7.5	1,307	57	43	745	692	562	522	0.0001	0.0002	0.0002	0.0004	0.0005	
Fairfax County Government	50	85	85	170	101	101	7.5	1,512	57	43	862	800	650	603	0.0001	0.0003	0.0002	0.0005	0.0005	
Greenbriar Park	50	28	28	55	33	33	7.5	489	57	43	279	259	210	195	0.0000	0.0001	0.0001	0.0001	0.0002	
Herndon-Monroe	50	873	873	1,745	1034	1034	7.5	15,517	57	43	8,845	8,210	6,672	6,193	0.0008	0.0026	0.0021	0.0046	0.0054	
Michael's	50	100	100	200	119	119	7.5	1,778	57	43	1,014	941	765	710	0.0001	0.0003	0.0002	0.0005	0.0006	
Parkwood Baptist	50	9	9	18	11	11	7.5	160	57	43	91	85	69	64	0.0000	0.0000	0.0000	0.0000	0.0001	
South Run District Pk	50	170	170	340	202	202	7.5	3,023	57	43	1,723	1,600	1,300	1,207	0.0001	0.0005	0.0004	0.0009	0.0011	
St Paul Chung Catholic Chur	50	50	50	100	59	59	7.5	889	57	43	507	470	382	355	0.0000	0.0001	0.0001	0.0003	0.0003	
Stringfellow Rd	50	181	181	361	214	214	7.5	3,210	57	43	1,830	1,698	1,380	1,281	0.0002	0.0005	0.0004	0.0010	0.0011	
Sully Station	50	70	70	140	83	83	7.5	1,245	57	43	710	659	535	497	0.0001	0.0002	0.0002	0.0004	0.0004	

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LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ARTERIAL %	FREEWAY VMT	ARTERIAL VMT	Adj.Art VMT	FREEWAY VMT	Adj.Fwy VMT	COLD START Rate (gm/mile)	E M I S S I O N S			TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate										RUNNING		Total Running Emission (tons/day)	
																Arterial Rate (gm/mile)	Freeway Rate (gm/mile)		
					1.19	1.19									0.2604	0.1429	0.1505		
COMMUTER RAIL LOTS																			
											Wk Days = 61								
											Seasonal adj = 0.9282								
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,485	57	43	846	786	639	593	0.0001	0.0002	0.0002	0.0004	0.0005
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002
PARK-AND-RIDE LOTS - VIRGINIA																			
LOUDOUN COUNTY																			
Ashburn Farm	50	10	10	20	12	12	7.5	178	57	43	101	94	76	71	0.0000	0.0000	0.0000	0.0001	0.0001
Ashburn Village	50	20	20	40	24	24	7.5	356	57	43	203	188	153	142	0.0000	0.0001	0.0000	0.0001	0.0001
Cascades	50	28	28	55	33	33	7.5	489	57	43	279	259	210	195	0.0000	0.0001	0.0001	0.0001	0.0002
Dulles North Transit	50	375	375	750	445	445	7.5	6,669	57	43	3,801	3,528	2,868	2,662	0.0003	0.0011	0.0009	0.0020	0.0023
Hamilton	50	25	25	50	30	30	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002
Innovation Avenue	50	38	38	75	44	44	7.5	667	57	43	380	353	287	266	0.0000	0.0001	0.0001	0.0002	0.0002
Leesburg	50	25	25	50	30	30	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002
Leesburg Kohls	50	600	600	1200	711	711	7.5	10,671	57	43	6,082	5,646	4,588	4,259	0.0005	0.0018	0.0014	0.0032	0.0037
Purcellville	50	18	18	35	21	21	7.5	311	57	43	177	165	134	124	0.0000	0.0001	0.0000	0.0001	0.0001
Sterling Park SC	50	23	23	45	27	27	7.5	400	57	43	228	212	172	160	0.0000	0.0001	0.0001	0.0001	0.0001
Sterling Shaw Rd	50	24	24	48	28	28	7.5	427	57	43	243	226	184	170	0.0000	0.0001	0.0001	0.0001	0.0001
PARK-AND-RIDE LOTS - VIRGINIA																			
PRINCE WILLIAM COUNTY																			
Brittany	50	48	48	95	56	56	7.5	845	57	43	482	447	363	337	0.0000	0.0001	0.0001	0.0003	0.0003
Dale City	50	294	294	587	348	348	7.5	5,220	57	43	2,975	2,762	2,244	2,083	0.0003	0.0009	0.0007	0.0016	0.0018
Harbor Drive	50	100	100	200	119	119	7.5	1,778	57	43	1,014	941	765	710	0.0001	0.0003	0.0002	0.0005	0.0006
Lindendale	50	108	108	216	128	128	7.5	1,921	57	43	1,095	1,016	826	767	0.0001	0.0003	0.0003	0.0006	0.0007
Montclair	50	25	25	50	30	30	7.5	445	57	43	253	235	191	177	0.0000	0.0001	0.0001	0.0001	0.0002
PRTC Transit Center	50	93	93	185	110	110	7.5	1,645	57	43	938	870	707	657	0.0001	0.0003	0.0002	0.0005	0.0006
Tackett's Mill	50	85	85	169	100	100	7.5	1,503	57	43	857	795	646	600	0.0001	0.0003	0.0002	0.0004	0.0005
Triangle	50	15	15	29	17	17	7.5	258	57	43	147	136	111	103	0.0000	0.0000	0.0000	0.0001	0.0001
I-95 / Rt 123	50	282	282	563	334	334	7.5	5,006	57	43	2,854	2,649	2,153	1,998	0.0002	0.0008	0.0007	0.0015	0.0017
US 1 / VA 234	50	137	137	274	162	162	7.5	2,436	57	43	1,389	1,289	1,048	972	0.0001	0.0004	0.0003	0.0007	0.0008
MARC TRAIN COMMUTER LOTS																			
College Park	25	431	144	574	510	170	7.5	5,104	57	43	2,909	2,700	2,195	2,037	0.0003	0.0009	0.0007	0.0015	0.0018
Frederick	0	0	0	0	0	0	7.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greenbelt	60	1346	2018	3364	1595	2393	7.5	29,913	57	43	17,051	15,826	12,863	11,939	0.0014	0.0050	0.0040	0.0089	0.0103
Harpers Ferry		98	0	98	116	0	7.5	871	57	43	497	461	375	348	0.0001	0.0001	0.0001	0.0003	0.0003
Muirkirk	60	260	390	650	308	462	7.5	5,780	57	43	3,295	3,058	2,485	2,307	0.0003	0.0010	0.0008	0.0017	0.0020
Seabrook	0	264	0	264	313	0	4.5	1,409	57	43	803	745	606	562	0.0002	0.0002	0.0002	0.0004	0.0006
Silver Spring	0	0	0	0	0	0	4.5	0	57	43	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Union Station	0	781	0	781	926	0	7.5	6,945	57	43	3,959	3,674	2,986	2,772	0.0004	0.0012	0.0009	0.0021	0.0025
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS																			
Backlick Road	50	110	110	220	130	130	7.5	1,956	57	43	1,115	1,035	841	781	0.0001	0.0003	0.0003	0.0006	0.0007
Broad Run	50	198	198	396	235	235	7.5	3,521	57	43	2,007	1,863	1,514	1,405	0.0002	0.0006	0.0005	0.0011	0.0012
Brooke	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,411	1,147	1,065	0.0001	0.0004	0.0004	0.0008	0.0009
Burke Center	50	275	275	550	326	326	7.5	4,891	57	43	2,788	2,588	2,103	1,952	0.0002	0.0008	0.0006	0.0015	0.0017
Franconia/Springfield (operat	50	1900	1900	3800	2253	2253	7.5	33,790	57	43	19,261	17,878	14,530	13,487	0.0016	0.0056	0.0045	0.0101	0.0117
Leeland Road	50	326	326	652	387	387	7.5	5,798	57	43	3,305	3,067	2,493	2,314	0.0003	0.0010	0.0008	0.0017	0.0020
Lorton	50	100	100	200	119	119	7.5	1,778	57	43	1,014	941	765	710	0.0001	0.0003	0.0002	0.0005	0.0006
Manassas	50	187	187	374	222	222	7.5	3,326	57	43	1,896	1,760	1,430	1,327	0.0002	0.0006	0.0004	0.0010	0.0012
Manassas Park	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,411	1,147	1,065	0.0001	0.0004	0.0004	0.0008	0.0009
Quantico	50	109	109	217	129	129	7.5	1,930	57	43	1,100	1,021	830	770	0.0001	0.0003	0.0003	0.0006	0.0007
Rippon	50	150	150	300	178	178	7.5	2,668	57	43	1,521	1,411	1,147	1,065	0.0001	0.0004	0.0004	0.0008	0.0009
Rolling Road	50	185	185	370	219	219	7.5	3,290	57	43	1,875	1,741	1,415	1,313	0.0002	0.0005	0.0004	0.0010	0.0011
Woodbridge	50	294	294	588	349	349	7.5	5,229	57	43	2,980	2,766	2,248	2,087	0.0003	0.0009	0.0007	0.0016	0.0018
METRORAIL PARKING LOTS																			
Anacostia	25	861	287	1148	1021	340	7.5	10,208	57	43	5,819	5,401	4,390	4,074	0.0006	0.0017	0.0014	0.0031	0.0036
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	28,651	57	43	16,331	15,158	12,320	11,435	0.0014	0.0048	0.0038	0.0086	0.0100
Capitol Heights	50	194	194	387	229	229	7.5	3,441	57	43	1,962	1,821	1,480	1,374	0.0002	0.0006	0.0005	0.0010	0.0012
College Park	25	465	155	620	551	184	7.5	5,513	57	43	3,143	2,917	2,371	2,200	0.0003	0.0009	0.0007	0.0016	0.0020
Congress Heights	0	66	0	66	78	0	4.5	352	57	43	201	186	151	141	0.0000	0.0001	0.0000	0.0001	0.0001
Deanwood	0	194	0	194	230	0	7.5	1,725	57	43	983	913	742	689	0.0001	0.0003	0.0002	0.0005	0.0006
East Falls Church	50	221	221	442	262	262	7.5	3,930	57	43	2,240	2,079	1,690	1,569	0.0002	0.0007	0.0005	0.0012	0.0014
Forest Glen	50	329	329	658	390	390	7.5	5,851	57	43	3,335	3,096	2,516	2,335	0.0003	0.0010			

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LOCATION	E M I S S I O N S														TOTAL (tons/day)					
	OUTSIDE MSA (%)	2002			2016		AVERAGE	2016	ARTERIAL	FREEWAY	ARTERIAL	Adj.Art	FREEWAY	Adj.Fwy		COLD START Rate (gm/mile)	RUNNING			TOTAL Running Emission (tons/day)
		INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate	TRIP LENGTH	VMT	%	VMT	VMT	VMT	VMT	Arterial Rate (gm/mile)			Freeway Rate (gm/mile)	Total Running Emission (tons/day)		
					1.19	1.19					Wk Days =	61	0.2604	0.1429			0.1505			
COMMUTER RAIL LOTS																				
												Seasonal adj =	0.9282							
Glenmont	50	925	925	1850	1097	1097	4.5	9,870	57	43	5,626	5,222	4,244	3,940	0.0008	0.0016	0.0013	0.0030	0.0037	
Greenbelt	50	1783	1783	3565	2113	2113	7.5	31,701	57	43	18,069	16,772	13,631	12,653	0.0015	0.0053	0.0042	0.0095	0.0110	
Naylor Road	50	216	216	431	256	256	7.5	3,833	57	43	2,185	2,028	1,648	1,530	0.0002	0.0006	0.0005	0.0011	0.0013	
Prince George's Plaza	25	927	309	1236	1099	366	7.5	10,991	57	43	6,265	5,815	4,726	4,387	0.0006	0.0018	0.0015	0.0033	0.0039	
Southern Avenue	50	1090	1090	2180	1292	1292	4.5	11,631	57	43	6,630	6,154	5,001	4,642	0.0009	0.0019	0.0015	0.0035	0.0044	
Suitland	50	1033	1033	2065	1224	1224	4.5	11,017	57	43	6,280	5,829	4,738	4,397	0.0009	0.0018	0.0015	0.0033	0.0042	
Van Dorn Street	50	204	204	407	241	241	4.5	2,171	57	43	1,238	1,149	934	867	0.0002	0.0004	0.0003	0.0006	0.0008	
West Hyattsville	25	453	151	604	537	179	7.5	5,371	57	43	3,061	2,842	2,309	2,144	0.0003	0.0009	0.0007	0.0016	0.0019	
Wheaton	25	759	253	1012	900	300	7.5	8,999	57	43	5,129	4,761	3,870	3,592	0.0005	0.0015	0.0012	0.0027	0.0032	
				108,749											0.0538	0.1413	0.1123	0.2535	0.3073	
																		Seasonal Total (tons/season)	18.75	

Bold figures: New numbers taken from P & R directory
Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
transit trips 2016	1295286
transit trips 2002	1092489
Annual growth rate	0.013259
Growth factor (2002-2016)	1.185628

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LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ADJ WINTER VMT	RUNNING Rate (gm/mile)	TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate					
	1.19 1.19 Wk Days = 83 Seasonal adj = 0.9216										
COMMUTER RAIL LOTS									0.0113		
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3,619	3,335	38	0.0000
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2,419	2,229	25	0.0000
DICKERSON	0	15	0	15	18	0	7.5	133	123	1	0.0000
BARNESVILLE	0	46	0	46	55	0	7.5	409	377	4	0.0000
GERMANTOWN	0	386	0	386	458	0	7.5	3,432	3,163	36	0.0000
MET GROVE	0	352	0	352	417	0	7.5	3,130	2,885	33	0.0000
WAS GROVE	0	15	0	15	18	0	7.5	133	123	1	0.0000
GARRETT PARK	0	22	0	22	26	0	7.5	196	180	2	0.0000
BOWIE 50%	50	188	188	375	222	222	7.5	3,335	3,073	35	0.0000
SEABROOK 15%	15	224	40	264	266	47	7.5	2,348	2,163	24	0.0000
KENSINGTON	0	45	0	45	53	0	7.5	400	369	4	0.0000
LAUREL 30%	30	209	90	299	248	106	7.5	2,659	2,450	28	0.0000
GAITHESBURG	0	280	0	280	332	0	7.5	2,490	2,295	26	0.0000
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	160	148	2	0.0000
RIVERDALE	0	65	0	65	77	0	4.5	347	320	4	0.0000
METRO RAIL LOTS											
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	11,720	10,801	122	0.0001
ARCHIVES	0	12	0	12	14	0	4.5	64	59	1	0.0000
ARLING	0	10	0	10	12	0	4.5	53	49	1	0.0000
BALLSTON	0	1175	0	1175	1393	0	4.5	6,269	5,778	65	0.0001
BENN.RD	0	520	0	520	617	0	4.5	2,774	2,557	29	0.0000
BETH	0	395	0	395	468	0	4.5	2,107	1,942	22	0.0000
BRADD RD	0	10	0	10	12	0	4.5	53	49	1	0.0000
BROOKLAND	0	27	0	27	32	0	4.5	144	133	2	0.0000
CHEVERLY	0	557	0	557	660	0	4.5	2,972	2,739	31	0.0000
CLARENDON	0	554	0	554	657	0	4.5	2,956	2,724	31	0.0000
CLEVELAND PK	0	366	0	366	434	0	4.5	1,953	1,800	20	0.0000
COURT HOUSE	0	256	0	256	304	0	4.5	1,366	1,259	14	0.0000
CRYSTAL CITY	0	347	0	347	411	0	4.5	1,851	1,706	19	0.0000
DEANWOOD	0	194	0	194	230	0	4.5	1,035	954	11	0.0000
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	7,229	6,663	75	0.0001
DUPONT CIRCLE	0	165	0	165	196	0	4.5	880	811	9	0.0000
EASTERN MKT	0	178	0	178	211	0	4.5	950	875	10	0.0000
EAST FALLS CH	0	442	0	442	524	0	4.5	2,358	2,173	25	0.0000
EIS	0	352	0	352	417	0	4.5	1,878	1,731	20	0.0000
FARRAGUT NORTH	0	102	0	102	121	0	4.5	544	502	6	0.0000
FARRAGUT WEST	0	221	0	221	262	0	4.5	1,179	1,087	12	0.0000
FEDERAL CENTER	0	75	0	75	89	0	4.5	400	369	4	0.0000
FEDERAL TRI	0	54	0	54	64	0	4.5	288	266	3	0.0000
FOGGY	0	102	0	102	121	0	4.5	544	502	6	0.0000
FORT TROTTEEN	0	445	0	445	528	0	4.5	2,374	2,188	25	0.0000
FRH HEIGHTS	0	679	0	679	805	0	4.5	3,623	3,339	38	0.0000
GALLERY PLACE	0	124	0	124	147	0	4.5	662	610	7	0.0000
GROSVENOR	0	716	0	716	849	0	4.5	3,820	3,521	40	0.0000
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	27,761	25,585	289	0.0003
JUD SQUARE	0	110	0	110	130	0	4.5	587	541	6	0.0000
KING ST	0	30	0	30	36	0	4.5	160	148	2	0.0000

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate					
COMMUTER RAIL LOTS					1.19	1.19		83	0.0113		
								0.9216			
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	16,717	15,407	174	0.0002
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1,579	1,455	16	0.0000
MCPHERSON SQ	0	52	0	52	62	0	4.5	277	256	3	0.0000
MEDICAL CENTER	0	14	0	14	17	0	4.5	75	69	1	0.0000
METRO CENTER	0	177	0	177	210	0	4.5	944	870	10	0.0000
MINNES	0	353	0	353	419	0	4.5	1,883	1,736	20	0.0000
NAT AIR	0	87	0	87	103	0	4.5	464	428	5	0.0000
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	18,647	17,185	194	0.0002
PRNTAGON	0	561	0	561	665	0	4.5	2,993	2,758	31	0.0000
PENTAGON CITY	0	381	0	381	452	0	4.5	2,033	1,873	21	0.0000
POTOMAC AVE	0	533	0	533	632	0	4.5	2,844	2,621	30	0.0000
ROCKVILLE	0	667	0	667	791	0	4.5	3,559	3,280	37	0.0000
ROSSLYN	0	356	0	356	422	0	4.5	1,899	1,750	20	0.0000
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	38,566	35,542	402	0.0004
SILVER SPRING	0	44	0	44	52	0	4.5	235	216	2	0.0000
SMITH MALL	0	120	0	120	142	0	4.5	640	590	7	0.0000
STADIUM ARM	0	976	0	976	1157	0	4.5	5,207	4,799	54	0.0001
TAKOMA PK	0	146	0	146	173	0	4.5	779	718	8	0.0000
TENLEYTON	0	17	0	17	20	0	4.5	91	84	1	0.0000
TWINBROOK	0	1136	0	1136	1347	0	4.5	6,061	5,586	63	0.0001
UNION STAT	0	378	0	378	448	0	4.5	2,017	1,859	21	0.0000
VAN NESS	0	343	0	343	407	0	4.5	1,830	1,687	19	0.0000
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	33,177	30,576	346	0.0004
VA SQUARE	0	642	0	642	761	0	4.5	3,425	3,157	36	0.0000
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	11,647	10,734	121	0.0001
WHITE FLINT	0	1633	0	1633	1936	0	4.5	8,713	8,030	91	0.0001
WOODLEY	0	68	0	68	81	0	4.5	363	334	4	0.0000
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	3,379	3,114	35	0.0000
BUS & CAR POOL LOTS											
CARTER BARRON	0	798	0	798	946	0	4.5	4,258	3,924	44	0.0000
PG PLAZA	0	47	0	47	56	0	4.5	251	231	3	0.0000
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	534	492	6	0.0000
CAP PLAZA	0	100	0	100	119	0	4.5	534	492	6	0.0000
EASTOVER	0	100	0	100	119	0	4.5	534	492	6	0.0000
FOUR MILE RUN	0	28	0	28	33	0	4.5	149	138	2	0.0000
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	3,094	2,852	32	0.0000
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	256	236	3	0.0000
FRED ARMORY	0	33	0	33	39	0	7.5	293	270	3	0.0000
MYERSVILLE	0	65	0	65	77	0	7.5	578	533	6	0.0000
ROSEMONT	0	45	0	45	53	0	7.5	400	369	4	0.0000
URBANA	0	193	0	193	229	0	7.5	1,716	1,582	18	0.0000
JEFFERSON	0	40	0	40	47	0	7.5	356	328	4	0.0000
NORBECK RD	0	248	0	248	294	0	7.5	2,205	2,032	23	0.0000
MONTROSE RD	0	650	0	650	771	0	7.5	5,780	5,327	60	0.0001
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3,824	3,524	40	0.0000
COMUS ROAD	0	30	0	30	36	0	7.5	267	246	3	0.0000
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2,668	2,459	28	0.0000

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COMMUTER RAIL LOTS					1.19	1.19		Seasonal adj = 0.9216			
BURTONSVILLE	0	500	0	500	593	0	7.5	4,446	4,098	46	0.0001
FORCEY MEM.	0	200	0	200	237	0	7.5	1,778	1,639	19	0.0000
TECH ROAD	0	155	0	155	184	0	7.5	1,378	1,270	14	0.0000
BELTWAY	0	265	0	265	314	0	7.5	2,356	2,172	25	0.0000
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	551	508	6	0.0000
ACCOKEEK	0	450	0	450	534	0	7.5	4,001	3,688	42	0.0000
ABC DRIVE IN	0	100	0	100	119	0	7.5	889	820	9	0.0000
BOWIE 20%	20	526	131	657	623	156	7.5	5,842	5,384	61	0.0001
CLINTON 50%	50	212	212	424	251	251	7.5	3,770	3,475	39	0.0000
OXON HILL 20%	20	519	130	649	616	154	7.5	5,771	5,319	60	0.0001
EQUESTRIAN CENTER	50	150	150	300	178	178	7.5	2,668	2,459	28	0.0000
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	445	410	5	0.0000
FT. WASHINGTON	0	412	0	412	488	0	7.5	3,664	3,376	38	0.0000
MONTPELIER REC PARK	0	70	0	70	83	0	7.5	622	574	6	0.0000
RESTON	0	1547	0	1547	1834	0	7.5	13,756	12,678	143	0.0002
GREENBRIAR	0	55	0	55	65	0	7.5	489	451	5	0.0000
FAIR OAKS	0	150	0	150	178	0	7.5	1,334	1,229	14	0.0000
ROLLING VALLEY	0	628	0	628	745	0	7.5	5,584	5,146	58	0.0001
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	2,045	1,885	21	0.0000
FAIRLANES BOWL	0	35	0	35	41	0	7.5	311	287	3	0.0000
NOTTOWAY PARK	0	14	0	14	17	0	7.5	124	115	1	0.0000
HORNER RD	0	2397	0	2397	2842	0	7.5	21,315	19,644	222	0.0002
LAKE RIDGE	0	555	0	555	658	0	7.5	4,935	4,548	51	0.0001
MINNIEVILLE RD 40%	40	336	224	560	398	266	7.5	4,980	4,589	52	0.0001
GORDON BLVD	0	156	0	156	185	0	7.5	1,387	1,278	14	0.0000
HILLENDALE	0	248	0	248	294	0	7.5	2,205	2,032	23	0.0000
POTOMAC MILLS	0	946	0	946	1122	0	7.5	8,412	7,753	88	0.0001
List of new lots to be added in Conformity Document list											
PARK-AND-RIDE LOTS - MARYLAND											
PARK-AND-RIDE LOTS - MARYLAND											
CHARLES COUNTY											
301 Park & Ride	25	287	96	383	341	114	7.5	3,406	3,139	35	0.0000
Charles County Governme	25	26	9	35	31	10	7.5	311	287	3	0.0000
Food Lion Shopping Center	25	38	13	50	44	15	7.5	445	410	5	0.0000
La Plata Armory	25	15	5	20	18	6	7.5	178	164	2	0.0000
Laurel Springs Regional Pa	25	38	13	50	44	15	7.5	445	410	5	0.0000
Life Wesleyan Church	25	38	13	50	44	15	7.5	445	410	5	0.0000
Mattawoman-Beantown Rc	25	435	145	580	516	172	7.5	5,157	4,753	54	0.0001
Smallwood Village	25	75	25	100	89	30	7.5	889	820	9	0.0000
St. Charles Towne	25	263	88	350	311	104	7.5	3,112	2,868	32	0.0000
PARK-AND-RIDE LOTS - MARYLAND											
FREDERICK COUNTY											
Frederick (north)	25	123	41	164	146	49	7.5	1,458	1,344	15	0.0000
Frederick (south)	25	173	58	230	205	68	7.5	2,045	1,885	21	0.0000
Monacacy Marcst	25	600	200	800	711	237	7.5	7,114	6,556	74	0.0001
PARK-AND-RIDE LOTS - MARYLAND											
MONTGOMERY COUNTY											
Colesville	0	190	0	190	225	0	7.5	1,690	1,557	18	0.0000
Damascus	50	0	0	0	0	0	7.5	0	0	0	0.0000
Gaithersburg	50	259	259	517	306	306	7.5	4,597	4,237	48	0.0001
Gaithersburg	50	175	175	350	207	207	7.5	3,112	2,868	32	0.0000
Germantown Town	50	0	0	0	0	0	7.5	0	0	0	0.0000

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	1.19										
COMMUTER RAIL LOTS								Seasonal adj = 0.9216			
Greencastle	50	75	75	150	89	89	7.5	1,334	1,229	14	0.0000
Milestone Shopping	50	88	88	175	104	104	7.5	1,556	1,434	16	0.0000
PARK-AND-RIDE LOTS - MAYLAND PRINCE GEORGE'S COUNTY											
Hampton Mall	0	100	0	100	119	0	4.5	534	492	6	0.0000
Laurel (south)	25	513	171	684	608	203	7.5	6,082	5,605	63	0.0001
PARK-AND-RIDE LOTS - VIRGINIA ARLINGTON COUNTY					0	0		0	0	0	0.0000
Ballston Public Parking Garag	25	375	125	500	445	148	7.5	4,446	4,098	46	0.0001
Washington-Lee	50	178	178	356	211	211	7.5	3,166	2,917	33	0.0000
PARK-AND-RIDE LOTS - VIRGINIA FAIRFAX COUNTY											
American Legion	50	50	50	100	59	59	7.5	889	820	9	0.0000
Canterbury Woods Pk	50	17	17	34	20	20	7.5	302	279	3	0.0000
Centreville	50	185	185	370	219	219	7.5	3,290	3,032	34	0.0000
Centreville United Methodis	50	74	74	147	87	87	7.5	1,307	1,205	14	0.0000
Fairfax County Governmen	50	85	85	170	101	101	7.5	1,512	1,393	16	0.0000
Greenbriar Park	50	28	28	55	33	33	7.5	489	451	5	0.0000
Herndon-Monroe	50	873	873	1,745	1034	1034	7.5	15,517	14,300	162	0.0002
Michael's	50	100	100	200	119	119	7.5	1,778	1,639	19	0.0000
Parkwood Baptist	50	9	9	18	11	11	7.5	160	148	2	0.0000
South Run District Pk	50	170	170	340	202	202	7.5	3,023	2,786	31	0.0000
St Paul Chung Catholic Ch	50	50	50	100	59	59	7.5	889	820	9	0.0000
Stringfellow Rd	50	181	181	361	214	214	7.5	3,210	2,958	33	0.0000
Sully Station	50	70	70	140	83	83	7.5	1,245	1,147	13	0.0000
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,485	1,369	15	0.0000
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	445	410	5	0.0000
PARK-AND-RIDE LOTS - VIRGINIA LOUDOUN COUNTY											
Ashburn Farm	50	10	10	20	12	12	7.5	178	164	2	0.0000
Ashburn Village	50	20	20	40	24	24	7.5	356	328	4	0.0000
Cascades	50	28	28	55	33	33	7.5	489	451	5	0.0000
Dulles North Transit	50	375	375	750	445	445	7.5	6,669	6,146	69	0.0001
Hamilton	50	25	25	50	30	30	7.5	445	410	5	0.0000
Innovation Avenue	50	38	38	75	44	44	7.5	667	615	7	0.0000
Leesburg	50	25	25	50	30	30	7.5	445	410	5	0.0000
Leesburg Kohls	50	600	600	1200	711	711	7.5	10,671	9,834	111	0.0001
Purcellville	50	18	18	35	21	21	7.5	311	287	3	0.0000
Sterling Park SC	50	23	23	45	27	27	7.5	400	369	4	0.0000
Sterling Shaw Rd	50	24	24	48	28	28	7.5	427	393	4	0.0000
PARK-AND-RIDE LOTS - VIRGINIA PRINCE WILLIAM COUNTY											
Brittany	50	48	48	95	56	56	7.5	845	779	9	0.0000
Dale City	50	294	294	587	348	348	7.5	5,220	4,811	54	0.0001
Harbor Drive	50	100	100	200	119	119	7.5	1,778	1,639	19	0.0000
Lindendale	50	108	108	216	128	128	7.5	1,921	1,770	20	0.0000
Montclair	50	25	25	50	30	30	7.5	445	410	5	0.0000
PRTC Transit Center	50	93	93	185	110	110	7.5	1,645	1,516	17	0.0000
Tackett's Mill	50	85	85	169	100	100	7.5	1,503	1,385	16	0.0000
Triangle	50	15	15	29	17	17	7.5	258	238	3	0.0000
I-95 / Rt 123	50	282	282	563	334	334	7.5	5,006	4,614	52	0.0001
US 1 / VA 234	50	137	137	274	162	162	7.5	2,436	2,245	25	0.0000
MARC TRAIN COMMUTER LOTS					0	0		0			
College Park	25	431	144	574	510	170	7.5	5,104	4,704	53	0.0001

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COMMUTER RAIL LOTS											
					1.19	1.19		83	0.0113		
								0.9216			
Frederick	0	0	0	0	0	0	7.5	0	0	0.0000	
Greenbelt	60	1346	2018	3364	1595	2393	7.5	29,913	27,568	312 0.0003	
Harpers Ferry		98	0	98	116	0	7.5	871	803	9 0.0000	
Muirkirk	60	260	390	650	308	462	7.5	5,780	5,327	60 0.0001	
Seabrook	0	264	0	264	313	0	4.5	1,409	1,298	15 0.0000	
Silver Spring	0	0	0	0	0	0	4.5	0	0	0 0.0000	
Union Station	0	781	0	781	926	0	7.5	6,945	6,400	72 0.0001	
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS											
Backlick Road	50	110	110	220	130	130	7.5	1,956	1,803	20 0.0000	
Broad Run	50	198	198	396	235	235	7.5	3,521	3,245	37 0.0000	
Brooke	50	150	150	300	178	178	7.5	2,668	2,459	28 0.0000	
Burke Center	50	275	275	550	326	326	7.5	4,891	4,507	51 0.0001	
Franconia/Springfield (oper	50	1900	1900	3800	2253	2253	7.5	33,790	31,141	352 0.0004	
Leeland Road	50	326	326	652	387	387	7.5	5,798	5,343	60 0.0001	
Lorton	50	100	100	200	119	119	7.5	1,778	1,639	19 0.0000	
Manassas	50	187	187	374	222	222	7.5	3,326	3,065	35 0.0000	
Manassas Park	50	150	150	300	178	178	7.5	2,668	2,459	28 0.0000	
Quantico	50	109	109	217	129	129	7.5	1,930	1,778	20 0.0000	
Rippon	50	150	150	300	178	178	7.5	2,668	2,459	28 0.0000	
Rolling Road	50	185	185	370	219	219	7.5	3,290	3,032	34 0.0000	
Woodbridge	50	294	294	588	349	349	7.5	5,229	4,819	54 0.0001	
METRORAIL PARKING LOTS											
Anacostia	25	861	287	1148	1021	340	7.5	10,208	9,408	106 0.0001	
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	28,651	26,404	298 0.0003	
Capitol Heights	50	194	194	387	229	229	7.5	3,441	3,171	36 0.0000	
College Park	25	465	155	620	551	184	7.5	5,513	5,081	57 0.0001	
Congress Heights	0	66	0	66	78	0	4.5	352	325	4 0.0000	
Deanwood	0	194	0	194	230	0	7.5	1,725	1,590	18 0.0000	
East Falls Church	50	221	221	442	262	262	7.5	3,930	3,622	41 0.0000	
Forest Glen	50	329	329	658	390	390	7.5	5,851	5,392	61 0.0001	
Franconia - Springfield	50	1987	1987	3973	2355	2355	4.5	21,197	19,535	221 0.0002	
Glenmont	50	925	925	1850	1097	1097	4.5	9,870	9,097	103 0.0001	
Greenbelt	50	1783	1783	3565	2113	2113	7.5	31,701	29,215	330 0.0004	
Naylor Road	50	216	216	431	256	256	7.5	3,833	3,532	40 0.0000	
Prince George's Plaza	25	927	309	1236	1099	366	7.5	10,991	10,129	114 0.0001	
Southern Avenue	50	1090	1090	2180	1292	1292	4.5	11,631	10,719	121 0.0001	
Suitland	50	1033	1033	2065	1224	1224	4.5	11,017	10,154	115 0.0001	
Van Dom Street	50	204	204	407	241	241	4.5	2,171	2,001	23 0.0000	
West Hyattsville	25	453	151	604	537	179	7.5	5,371	4,950	56 0.0001	
Wheaton	25	759	253	1012	900	300	7.5	8,999	8,293	94 0.0001	
							108,749	847,732	8,828.3491	0.0097	
Seasonal Total (tons/season) =										0.8077	

Bold figures: New numbers taken from P & R directory
 Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
Transit trips 2016	1295286
Transit trips 2002	1092489
Annual growth rate	0.013259
Growth factor (2002-2011)	1.185628

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE	OUTSIDE					
					Growth Rate	Growth Rate					
					1.19	1.19		Wk Days = 107	0.0113		
COMMUTER RAIL LOTS								Seasonal adj = 0.9873			
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3,619	3,573	40 0.0000	
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2,419	2,388	27 0.0000	
DICKERSON	0	15	0	15	18	0	7.5	133	132	1 0.0000	
BARNESVILLE	0	46	0	46	55	0	7.5	409	404	5 0.0000	
GERMANTOWN	0	386	0	386	458	0	7.5	3,432	3,389	38 0.0000	
MET GROVE	0	352	0	352	417	0	7.5	3,130	3,090	35 0.0000	
WAS GROVE	0	15	0	15	18	0	7.5	133	132	1 0.0000	
GARRETT PARK	0	22	0	22	26	0	7.5	196	193	2 0.0000	
BOWIE 50%	50	188	188	375	222	222	7.5	3,335	3,292	37 0.0000	
SEABROOK 15%	15	224	40	264	266	47	7.5	2,348	2,318	26 0.0000	
KENSINGTON	0	45	0	45	53	0	7.5	400	395	4 0.0000	
LAUREL 30%	30	209	90	299	248	106	7.5	2,659	2,625	30 0.0000	
GAITHESBURG	0	280	0	280	332	0	7.5	2,490	2,458	28 0.0000	
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	160	158	2 0.0000	
RIVERDALE	0	65	0	65	77	0	4.5	347	342	4 0.0000	
METRO RAIL LOTS											
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	11,720	11,571	131 0.0001	
ARCHIVES	0	12	0	12	14	0	4.5	64	63	1 0.0000	
ARLING	0	10	0	10	12	0	4.5	53	53	1 0.0000	
BALLSTON	0	1175	0	1175	1393	0	4.5	6,269	6,189	70 0.0001	
BENN.RD	0	520	0	520	617	0	4.5	2,774	2,739	31 0.0000	
BETH	0	395	0	395	468	0	4.5	2,107	2,081	24 0.0000	
BRADD RD	0	10	0	10	12	0	4.5	53	53	1 0.0000	
BROOKLAND	0	27	0	27	32	0	4.5	144	142	2 0.0000	
CHEVERLY	0	557	0	557	660	0	4.5	2,972	2,934	33 0.0000	
CLARENDON	0	554	0	554	657	0	4.5	2,956	2,918	33 0.0000	
CLEVELAND PK	0	366	0	366	434	0	4.5	1,953	1,928	22 0.0000	
COURT HOUSE	0	256	0	256	304	0	4.5	1,366	1,348	15 0.0000	
CRYSTAL CITY	0	347	0	347	411	0	4.5	1,851	1,828	21 0.0000	
DEANWOOD	0	194	0	194	230	0	4.5	1,035	1,022	12 0.0000	
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	7,229	7,138	81 0.0001	
DUPONT CIRCLE	0	165	0	165	196	0	4.5	880	869	10 0.0000	
EASTERN MKT	0	178	0	178	211	0	4.5	950	938	11 0.0000	
EAST FALLS CH	0	442	0	442	524	0	4.5	2,358	2,328	26 0.0000	
EIS	0	352	0	352	417	0	4.5	1,878	1,854	21 0.0000	
FARRAGUT NORTH	0	102	0	102	121	0	4.5	544	537	6 0.0000	
FARRAGUT WEST	0	221	0	221	262	0	4.5	1,179	1,164	13 0.0000	
FEDERAL CENTER	0	75	0	75	89	0	4.5	400	395	4 0.0000	
FEDERAL TRI	0	54	0	54	64	0	4.5	288	284	3 0.0000	
FOGGY	0	102	0	102	121	0	4.5	544	537	6 0.0000	
FORT TROTTEEN	0	445	0	445	528	0	4.5	2,374	2,344	26 0.0000	
FRH.HEIGHTS	0	679	0	679	805	0	4.5	3,623	3,577	40 0.0000	
GALLERY PLACE	0	124	0	124	147	0	4.5	662	653	7 0.0000	
GROSVENOR	0	716	0	716	849	0	4.5	3,820	3,772	43 0.0000	
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	27,761	27,409	310 0.0003	
JUD SQUARE	0	110	0	110	130	0	4.5	587	579	7 0.0000	
KING ST	0	30	0	30	36	0	4.5	160	158	2 0.0000	

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE	OUTSIDE					
					Growth Rate	Growth Rate					
					1.19	1.19		Wk Days = 107	0.0113		
COMMUTER RAIL LOTS								Seasonal adj = 0.9873			
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	16,717	16,505	187	0.0002
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1,579	1,559	18	0.0000
MCPHERSON SQ	0	52	0	52	62	0	4.5	277	274	3	0.0000
MEDICAL CENTER	0	14	0	14	17	0	4.5	75	74	1	0.0000
METRO CENTER	0	177	0	177	210	0	4.5	944	932	11	0.0000
MINNES	0	353	0	353	419	0	4.5	1,883	1,859	21	0.0000
NAT AIR	0	87	0	87	103	0	4.5	464	458	5	0.0000
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	18,647	18,410	208	0.0002
PRNTAGON	0	561	0	561	665	0	4.5	2,993	2,955	33	0.0000
PENTAGON CITY	0	381	0	381	452	0	4.5	2,033	2,007	23	0.0000
POTOMAC AVE	0	533	0	533	632	0	4.5	2,844	2,808	32	0.0000
ROCKVILLE	0	667	0	667	791	0	4.5	3,559	3,513	40	0.0000
ROSSLYN	0	356	0	356	422	0	4.5	1,899	1,875	21	0.0000
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	38,566	38,076	430	0.0005
SILVER SPRING	0	44	0	44	52	0	4.5	235	232	3	0.0000
SMITH MALL	0	120	0	120	142	0	4.5	640	632	7	0.0000
STADIUM ARM	0	976	0	976	1157	0	4.5	5,207	5,141	58	0.0001
TAKOMA PK	0	146	0	146	173	0	4.5	779	769	9	0.0000
TENLEYTON	0	17	0	17	20	0	4.5	91	90	1	0.0000
TWINBROOK	0	1136	0	1136	1347	0	4.5	6,061	5,984	68	0.0001
UNION STAT	0	378	0	378	448	0	4.5	2,017	1,991	22	0.0000
VAN NESS	0	343	0	343	407	0	4.5	1,830	1,807	20	0.0000
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	33,177	32,756	370	0.0004
VA SQUARE	0	642	0	642	761	0	4.5	3,425	3,382	38	0.0000
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	11,647	11,499	130	0.0001
WHITE FLINT	0	1633	0	1633	1936	0	4.5	8,713	8,602	97	0.0001
WOODLEY	0	68	0	68	81	0	4.5	363	358	4	0.0000
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	3,379	3,336	38	0.0000
BUS & CAR POOL LOTS											
CARTER BARRON	0	798	0	798	946	0	4.5	4,258	4,204	47	0.0001
PG PLAZA	0	47	0	47	56	0	4.5	251	248	3	0.0000
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	534	527	6	0.0000
CAP PLAZA	0	100	0	100	119	0	4.5	534	527	6	0.0000
EASTOVER	0	100	0	100	119	0	4.5	534	527	6	0.0000
FOUR MILE RUN	0	28	0	28	33	0	4.5	149	147	2	0.0000
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	3,094	3,055	35	0.0000
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	256	253	3	0.0000
FRED ARMORY	0	33	0	33	39	0	7.5	293	290	3	0.0000
MYERSVILLE	0	65	0	65	77	0	7.5	578	571	6	0.0000
ROSEMONT	0	45	0	45	53	0	7.5	400	395	4	0.0000
URBANA	0	193	0	193	229	0	7.5	1,716	1,694	19	0.0000
JEFFERSON	0	40	0	40	47	0	7.5	356	351	4	0.0000
NORBECK RD	0	248	0	248	294	0	7.5	2,205	2,177	25	0.0000
MONTROSE RD	0	650	0	650	771	0	7.5	5,780	5,707	64	0.0001
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3,824	3,775	43	0.0000
COMUS ROAD	0	30	0	30	36	0	7.5	267	263	3	0.0000
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2,668	2,634	30	0.0000

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE	OUTSIDE					
					Growth Rate	Growth Rate					
					1.19	1.19		Wk Days = 107	0.0113		
								Seasonal adj = 0.9873			
COMMUTER RAIL LOTS											
BURTONSVILLE	0	500	0	500	593	0	7.5	4,446	4,390	50	0.0001
FORCEY MEM.	0	200	0	200	237	0	7.5	1,778	1,756	20	0.0000
TECH ROAD	0	155	0	155	184	0	7.5	1,378	1,361	15	0.0000
BELTWAY	0	265	0	265	314	0	7.5	2,356	2,327	26	0.0000
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	551	544	6	0.0000
ACCOKEEK	0	450	0	450	534	0	7.5	4,001	3,951	45	0.0000
ABC DRIVE IN	0	100	0	100	119	0	7.5	889	878	10	0.0000
BOWIE 20%	20	526	131	657	623	156	7.5	5,842	5,768	65	0.0001
CLINTON 50%	50	212	212	424	251	251	7.5	3,770	3,722	42	0.0000
OXON HILL 20%	20	519	130	649	616	154	7.5	5,771	5,698	64	0.0001
EQUESTRIAN CENTER	50	150	150	300	178	178	7.5	2,668	2,634	30	0.0000
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	445	439	5	0.0000
FT. WASHINGTON	0	412	0	412	488	0	7.5	3,664	3,617	41	0.0000
MONTPELIER REC PARK	0	70	0	70	83	0	7.5	622	615	7	0.0000
RESTON	0	1547	0	1547	1834	0	7.5	13,756	13,582	153	0.0002
GREENBRIAR	0	55	0	55	65	0	7.5	489	483	5	0.0000
FAIR OAKS	0	150	0	150	178	0	7.5	1,334	1,317	15	0.0000
ROLLING VALLEY	0	628	0	628	745	0	7.5	5,584	5,513	62	0.0001
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	2,045	2,019	23	0.0000
FAIRLANES BOWL	0	35	0	35	41	0	7.5	311	307	3	0.0000
NOTTOWAY PARK	0	14	0	14	17	0	7.5	124	123	1	0.0000
HORNER RD	0	2397	0	2397	2842	0	7.5	21,315	21,044	238	0.0003
LAKE RIDGE	0	555	0	555	658	0	7.5	4,935	4,873	55	0.0001
MINNIEVILLE RD 40%	40	336	224	560	398	266	7.5	4,980	4,916	56	0.0001
GORDON BLVD	0	156	0	156	185	0	7.5	1,387	1,370	15	0.0000
HILLENDALE	0	248	0	248	294	0	7.5	2,205	2,177	25	0.0000
POTOMAC MILLS	0	946	0	946	1122	0	7.5	8,412	8,305	94	0.0001
List of new lots to be added in Conformity Document list											
PARK-AND-RIDE LOTS - MARYLAND											
PARK-AND-RIDE LOTS - MARYLAND											
CHARLES COUNTY											
301 Park & Ride	25	287	96	383	341	114	7.5	3,406	3,362	38	0.0000
Charles County Governme	25	26	9	35	31	10	7.5	311	307	3	0.0000
Food Lion Shopping Cente	25	38	13	50	44	15	7.5	445	439	5	0.0000
La Plata Armory	25	15	5	20	18	6	7.5	178	176	2	0.0000
Laurel Springs Regional Pa	25	38	13	50	44	15	7.5	445	439	5	0.0000
Life Wesleyan Church	25	38	13	50	44	15	7.5	445	439	5	0.0000
Mattawoman-Beantown Rd	25	435	145	580	516	172	7.5	5,157	5,092	58	0.0001
Smallwood Village	25	75	25	100	89	30	7.5	889	878	10	0.0000
St. Charles Towne	25	263	88	350	311	104	7.5	3,112	3,073	35	0.0000
PARK-AND-RIDE LOTS - MARYLAND											
FREDERICK COUNTY											
Frederick (north)	25	123	41	164	146	49	7.5	1,458	1,440	16	0.0000
Frederick (south)	25	173	58	230	205	68	7.5	2,045	2,019	23	0.0000
Monacacy Marcst	25	600	200	800	711	237	7.5	7,114	7,023	79	0.0001
PARK-AND-RIDE LOTS - MARYLAND											
MONTGOMERY COUNTY											
Colesville	0	190	0	190	225	0	7.5	1,690	1,668	19	0.0000
Damascus	50	0	0	0	0	0	7.5	0	0	0	0.0000
Gaithersburg	50	259	259	517	306	306	7.5	4,597	4,539	51	0.0001
Gaithersburg	50	175	175	350	207	207	7.5	3,112	3,073	35	0.0000
Germantown Town	50	0	0	0	0	0	7.5	0	0	0	0.0000

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					Growth Rate	Growth Rate					
					1.19	1.19		Wk Days = 107	0.0113		
COMMUTER RAIL LOTS								Seasonal adj = 0.9873			
Greencastle	50	75	75	150	89	89	7.5	1,334	1,317	15 0.0000	
Milestone Shopping	50	88	88	175	104	104	7.5	1,556	1,536	17 0.0000	
PARK-AND-RIDE LOTS - MAYLAND PRINCE GEORGE'S COUNTY											
Hampton Mall	0	100	0	100	119	0	4.5	534	527	6 0.0000	
Laurel (south)	25	513	171	684	608	203	7.5	6,082	6,005	68 0.0001	
PARK-AND-RIDE LOTS - VIRGINIA ARLINGTON COUNTY					0	0		0	0	0 0.0000	
Ballston Public Parking Ga	25	375	125	500	445	148	7.5	4,446	4,390	50 0.0001	
Washington-Lee	50	178	178	356	211	211	7.5	3,166	3,125	35 0.0000	
PARK-AND-RIDE LOTS - VIRGINIA FAIRFAX COUNTY											
American Legion	50	50	50	100	59	59	7.5	889	878	10 0.0000	
Canterbury Woods Pk	50	17	17	34	20	20	7.5	302	298	3 0.0000	
Centreville	50	185	185	370	219	219	7.5	3,290	3,248	37 0.0000	
Centreville United Methodis	50	74	74	147	87	87	7.5	1,307	1,291	15 0.0000	
Fairfax County Governmen	50	85	85	170	101	101	7.5	1,512	1,492	17 0.0000	
Greenbriar Park	50	28	28	55	33	33	7.5	489	483	5 0.0000	
Herndon-Monroe	50	873	873	1,745	1034	1034	7.5	15,517	15,320	173 0.0002	
Michael's	50	100	100	200	119	119	7.5	1,778	1,756	20 0.0000	
Parkwood Baptist	50	9	9	18	11	11	7.5	160	158	2 0.0000	
South Run District Pk	50	170	170	340	202	202	7.5	3,023	2,985	34 0.0000	
St Paul Chung Catholic Ch	50	50	50	100	59	59	7.5	889	878	10 0.0000	
Stringfellow Rd	50	181	181	361	214	214	7.5	3,210	3,169	36 0.0000	
Sully Station	50	70	70	140	83	83	7.5	1,245	1,229	14 0.0000	
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,485	1,466	17 0.0000	
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	445	439	5 0.0000	
PARK-AND-RIDE LOTS - VIRGINIA LOUDOUN COUNTY											
Ashburn Farm	50	10	10	20	12	12	7.5	178	176	2 0.0000	
Ashburn Village	50	20	20	40	24	24	7.5	356	351	4 0.0000	
Cascades	50	28	28	55	33	33	7.5	489	483	5 0.0000	
Dulles North Transit	50	375	375	750	445	445	7.5	6,669	6,584	74 0.0001	
Hamilton	50	25	25	50	30	30	7.5	445	439	5 0.0000	
Innovation Avenue	50	38	38	75	44	44	7.5	667	658	7 0.0000	
Leesburg	50	25	25	50	30	30	7.5	445	439	5 0.0000	
Leesburg Kohls	50	600	600	1200	711	711	7.5	10,671	10,535	119 0.0001	
Purcellville	50	18	18	35	21	21	7.5	311	307	3 0.0000	
Sterling Park SC	50	23	23	45	27	27	7.5	400	395	4 0.0000	
Sterling Shaw Rd	50	24	24	48	28	28	7.5	427	421	5 0.0000	
PARK-AND-RIDE LOTS - VIRGINIA PRINCE WILLIAM COUNTY											
Brittany	50	48	48	95	56	56	7.5	845	834	9 0.0000	
Dale City	50	294	294	587	348	348	7.5	5,220	5,153	58 0.0001	
Harbor Drive	50	100	100	200	119	119	7.5	1,778	1,756	20 0.0000	
Lindendale	50	108	108	216	128	128	7.5	1,921	1,896	21 0.0000	
Montclair	50	25	25	50	30	30	7.5	445	439	5 0.0000	
PRTC Transit Center	50	93	93	185	110	110	7.5	1,645	1,624	18 0.0000	
Tackett's Mill	50	85	85	169	100	100	7.5	1,503	1,484	17 0.0000	
Triangle	50	15	15	29	17	17	7.5	258	255	3 0.0000	
I-95 / Rt 123	50	282	282	563	334	334	7.5	5,006	4,943	56 0.0001	
US 1 / VA 234	50	137	137	274	162	162	7.5	2,436	2,406	27 0.0000	
MARC TRAIN COMMUTER LOTS					0	0		0			
College Park	25	431	144	574	510	170	7.5	5,104	5,039	57 0.0001	

SEASON 2 (May-Sep)
2016 PM AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
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LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ADJ WINTER VMT	RUNNING Rate (gm/mile)	TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE	OUTSIDE					
					Growth Rate	Growth Rate					
					1.19	1.19		Wk Days = 107	0.0113		
								Seasonal adj = 0.9873			
COMMUTER RAIL LOTS											
Frederick	0	0	0	0	0	0	7.5	0	0	0	0.0000
Greenbelt	60	1346	2018	3364	1595	2393	7.5	29,913	29,534	334	0.0004
Harpers Ferry		98	0	98	116	0	7.5	871	860	10	0.0000
Muirkirk	60	260	390	650	308	462	7.5	5,780	5,707	64	0.0001
Seabrook	0	264	0	264	313	0	4.5	1,409	1,391	16	0.0000
Silver Spring	0	0	0	0	0	0	4.5	0	0	0	0.0000
Union Station	0	781	0	781	926	0	7.5	6,945	6,857	77	0.0001
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS											
Backlick Road	50	110	110	220	130	130	7.5	1,956	1,931	22	0.0000
Broad Run	50	198	198	396	235	235	7.5	3,521	3,477	39	0.0000
Brooke	50	150	150	300	178	178	7.5	2,668	2,634	30	0.0000
Burke Center	50	275	275	550	326	326	7.5	4,891	4,829	55	0.0001
Franconia/Springfield (oper	50	1900	1900	3800	2253	2253	7.5	33,790	33,361	377	0.0004
Leeland Road	50	326	326	652	387	387	7.5	5,798	5,724	65	0.0001
Lorton	50	100	100	200	119	119	7.5	1,778	1,756	20	0.0000
Manassas	50	187	187	374	222	222	7.5	3,326	3,283	37	0.0000
Manassas Park	50	150	150	300	178	178	7.5	2,668	2,634	30	0.0000
Quantico	50	109	109	217	129	129	7.5	1,930	1,905	22	0.0000
Rippon	50	150	150	300	178	178	7.5	2,668	2,634	30	0.0000
Rolling Road	50	185	185	370	219	219	7.5	3,290	3,248	37	0.0000
Woodbridge	50	294	294	588	349	349	7.5	5,229	5,162	58	0.0001
METRORAIL PARKING LOTS											
Anacostia	25	861	287	1148	1021	340	7.5	10,208	10,079	114	0.0001
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	28,651	28,287	320	0.0004
Capitol Heights	50	194	194	387	229	229	7.5	3,441	3,398	38	0.0000
College Park	25	465	155	620	551	184	7.5	5,513	5,443	62	0.0001
Congress Heights	0	66	0	66	78	0	4.5	352	348	4	0.0000
Deanwood	0	194	0	194	230	0	7.5	1,725	1,703	19	0.0000
East Falls Church	50	221	221	442	262	262	7.5	3,930	3,880	44	0.0000
Forest Glen	50	329	329	658	390	390	7.5	5,851	5,777	65	0.0001
Franconia - Springfield	50	1987	1987	3973	2355	2355	4.5	21,197	20,928	236	0.0003
Glenmont	50	925	925	1850	1097	1097	4.5	9,870	9,745	110	0.0001
Greenbelt	50	1783	1783	3565	2113	2113	7.5	31,701	31,298	354	0.0004
Naylor Road	50	216	216	431	256	256	7.5	3,833	3,784	43	0.0000
Prince George's Plaza	25	927	309	1236	1099	366	7.5	10,991	10,851	123	0.0001
Southern Avenue	50	1090	1090	2180	1292	1292	4.5	11,631	11,483	130	0.0001
Suitland	50	1033	1033	2065	1224	1224	4.5	11,017	10,878	123	0.0001
Van Dorn Street	50	204	204	407	241	241	4.5	2,171	2,144	24	0.0000
West Hyattsville	25	453	151	604	537	179	7.5	5,371	5,303	60	0.0001
Wheaton	25	759	253	1012	900	300	7.5	8,999	8,885	100	0.0001
				108,749				847,732	9,457,7138		0.0104
									Seasonal Total (tons/season) =		1.1155

Bold figures: New numbers taken from P & R directory
 Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
Transit trips 2016	1295286
Transit trips 2002	1092489
Annual growth rate	0.013259
Growth factor (2002-2011)	1.185628

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LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ADJ WINTER VMT	RUNNING Rate (gm/mile)	TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate					
					1.19	1.19					
Wk Days = 61 Seasonal adj = 0.9282 0.0113											
COMMUTER RAIL LOTS											
BRUNSWICK 25%	25	305	102	407	362	121	7.5	3,619	3,359	38	0.0000
PT OF ROCKS 25%	25	204	68	272	242	81	7.5	2,419	2,245	25	0.0000
DICKERSON	0	15	0	15	18	0	7.5	133	124	1	0.0000
BARNESVILLE	0	46	0	46	55	0	7.5	409	380	4	0.0000
GERMANTOWN	0	386	0	386	458	0	7.5	3,432	3,186	36	0.0000
MET GROVE	0	352	0	352	417	0	7.5	3,130	2,905	33	0.0000
WAS GROVE	0	15	0	15	18	0	7.5	133	124	1	0.0000
GARRETT PARK	0	22	0	22	26	0	7.5	196	182	2	0.0000
BOWIE 50%	50	188	188	375	222	222	7.5	3,335	3,095	35	0.0000
SEABROOK 15%	15	224	40	264	266	47	7.5	2,348	2,179	25	0.0000
KENSINGTON	0	45	0	45	53	0	7.5	400	371	4	0.0000
LAUREL 30%	30	209	90	299	248	106	7.5	2,659	2,468	28	0.0000
GAITHESBURG	0	280	0	280	332	0	7.5	2,490	2,311	26	0.0000
BERWYN HEIGHTS	0	30	0	30	36	0	4.5	160	149	2	0.0000
RIVERDALE	0	65	0	65	77	0	4.5	347	322	4	0.0000
METRO RAIL LOTS											
ADDISON ROAD 40%	40	791	527	1318	938	625	7.5	11,720	10,878	123	0.0001
ARCHIVES	0	12	0	12	14	0	4.5	64	59	1	0.0000
ARLING	0	10	0	10	12	0	4.5	53	50	1	0.0000
BALLSTON	0	1175	0	1175	1393	0	4.5	6,269	5,819	66	0.0001
BENN.RD	0	520	0	520	617	0	4.5	2,774	2,575	29	0.0000
BETH	0	395	0	395	468	0	4.5	2,107	1,956	22	0.0000
BRADD RD	0	10	0	10	12	0	4.5	53	50	1	0.0000
BROOKLAND	0	27	0	27	32	0	4.5	144	134	2	0.0000
CHEVERLY	0	557	0	557	660	0	4.5	2,972	2,758	31	0.0000
CLARENDON	0	554	0	554	657	0	4.5	2,956	2,744	31	0.0000
CLEVELAND PK	0	366	0	366	434	0	4.5	1,953	1,813	20	0.0000
COURT HOUSE	0	256	0	256	304	0	4.5	1,366	1,268	14	0.0000
CRYSTAL CITY	0	347	0	347	411	0	4.5	1,851	1,718	19	0.0000
DEANWOOD	0	194	0	194	230	0	4.5	1,035	961	11	0.0000
DUN LORING 10%	10	1220	136	1355	1446	161	4.5	7,229	6,710	76	0.0001
DUPONT CIRCLE	0	165	0	165	196	0	4.5	880	817	9	0.0000
EASTERN MKT	0	178	0	178	211	0	4.5	950	882	10	0.0000
EAST FALLS CH	0	442	0	442	524	0	4.5	2,358	2,189	25	0.0000
EIS	0	352	0	352	417	0	4.5	1,878	1,743	20	0.0000
FARRAGUT NORTH	0	102	0	102	121	0	4.5	544	505	6	0.0000
FARRAGUT WEST	0	221	0	221	262	0	4.5	1,179	1,094	12	0.0000
FEDERAL CENTER	0	75	0	75	89	0	4.5	400	371	4	0.0000
FEDERAL TRI	0	54	0	54	64	0	4.5	288	267	3	0.0000
FOGGY	0	102	0	102	121	0	4.5	544	505	6	0.0000
FORT TROTTON	0	445	0	445	528	0	4.5	2,374	2,204	25	0.0000
FRH.HEIGHTS	0	679	0	679	805	0	4.5	3,623	3,363	38	0.0000
GALLERY PLACE	0	124	0	124	147	0	4.5	662	614	7	0.0000
GROSVENOR	0	716	0	716	849	0	4.5	3,820	3,546	40	0.0000
HUNT NORTH 40%	40	1873	1249	3122	2221	1481	7.5	27,761	25,768	291	0.0003
JUD SQUARE	0	110	0	110	130	0	4.5	587	545	6	0.0000
KING ST	0	30	0	30	36	0	4.5	160	149	2	0.0000

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate					
					1.19	1.19					
COMMUTER RAIL LOTS								Wk Days = 61	0.0113		
								Seasonal adj = 0.9282			
LANDOVER 25%	25	1410	470	1880	1672	557	7.5	16,717	15,517	175	0.0002
L'ENFANT PLAZA	0	296	0	296	351	0	4.5	1,579	1,466	17	0.0000
MCPHERSON SQ	0	52	0	52	62	0	4.5	277	258	3	0.0000
MEDICAL CENTER	0	14	0	14	17	0	4.5	75	69	1	0.0000
METRO CENTER	0	177	0	177	210	0	4.5	944	877	10	0.0000
MINNES	0	353	0	353	419	0	4.5	1,883	1,748	20	0.0000
NAT AIR	0	87	0	87	103	0	4.5	464	431	5	0.0000
NEW CARROL 50%	50	1049	1049	2097	1243	1243	7.5	18,647	17,308	196	0.0002
PRNTAGON	0	561	0	561	665	0	4.5	2,993	2,778	31	0.0000
PENTAGON CITY	0	381	0	381	452	0	4.5	2,033	1,887	21	0.0000
POTOMAC AVE	0	533	0	533	632	0	4.5	2,844	2,640	30	0.0000
ROCKVILLE	0	667	0	667	791	0	4.5	3,559	3,303	37	0.0000
ROSSLYN	0	356	0	356	422	0	4.5	1,899	1,763	20	0.0000
SHADY GROVE 10%	10	3903	434	4337	4628	514	7.5	38,566	35,797	405	0.0004
SILVER SPRING	0	44	0	44	52	0	4.5	235	218	2	0.0000
SMITH MALL	0	120	0	120	142	0	4.5	640	594	7	0.0000
STADIUM ARM	0	976	0	976	1157	0	4.5	5,207	4,833	55	0.0001
TAKOMA PK	0	146	0	146	173	0	4.5	779	723	8	0.0000
TENLEYTON	0	17	0	17	20	0	4.5	91	84	1	0.0000
TWINBROOK	0	1136	0	1136	1347	0	4.5	6,061	5,626	64	0.0001
UNION STAT	0	378	0	378	448	0	4.5	2,017	1,872	21	0.0000
VAN NESS	0	343	0	343	407	0	4.5	1,830	1,699	19	0.0000
VIENNA 25%	25	2798	933	3731	3318	1106	7.5	33,177	30,795	348	0.0004
VA SQUARE	0	642	0	642	761	0	4.5	3,425	3,179	36	0.0000
WEST FALLS CHURCH	0	2183	0	2183	2588	0	4.5	11,647	10,811	122	0.0001
WHITE FLINT	0	1633	0	1633	1936	0	4.5	8,713	8,087	91	0.0001
WOODLEY	0	68	0	68	81	0	4.5	363	337	4	0.0000
RHODE ISLAND 30%	30	266	114	380	315	135	7.5	3,379	3,136	35	0.0000
BUS & CAR POOL LOTS											
CARTER BARRON	0	798	0	798	946	0	4.5	4,258	3,952	45	0.0000
PG PLAZA	0	47	0	47	56	0	4.5	251	233	3	0.0000
PENN MAR SHOPP.	0	100	0	100	119	0	4.5	534	495	6	0.0000
CAP PLAZA	0	100	0	100	119	0	4.5	534	495	6	0.0000
EASTOVER	0	100	0	100	119	0	4.5	534	495	6	0.0000
FOUR MILE RUN	0	28	0	28	33	0	4.5	149	139	2	0.0000
SPRINGFIELD MALL	0	580	0	580	688	0	4.5	3,094	2,872	32	0.0000
SPRINGFIELD METH CH	0	48	0	48	57	0	4.5	256	238	3	0.0000
FRED ARMORY	0	33	0	33	39	0	7.5	293	272	3	0.0000
MYERSVILLE	0	65	0	65	77	0	7.5	578	536	6	0.0000
ROSEMONT	0	45	0	45	53	0	7.5	400	371	4	0.0000
URBANA	0	193	0	193	229	0	7.5	1,716	1,593	18	0.0000
JEFFERSON	0	40	0	40	47	0	7.5	356	330	4	0.0000
NORBECK RD	0	248	0	248	294	0	7.5	2,205	2,047	23	0.0000
MONTROSE RD	0	650	0	650	771	0	7.5	5,780	5,365	61	0.0001
BRIGG CHENNY 50%	50	215	215	430	255	255	7.5	3,824	3,549	40	0.0000
COMUS ROAD	0	30	0	30	36	0	7.5	267	248	3	0.0000
LAKEFOREST MALL	0	300	0	300	356	0	7.5	2,668	2,476	28	0.0000

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate					
	1.19 1.19 Wk Days = 61 Seasonal adj = 0.9282										
COMMUTER RAIL LOTS											
BURTONSVILLE	0	500	0	500	593	0	7.5	4,446	4,127	47	0.0001
FORCEY MEM.	0	200	0	200	237	0	7.5	1,778	1,651	19	0.0000
TECH ROAD	0	155	0	155	184	0	7.5	1,378	1,279	14	0.0000
BELTWAY	0	265	0	265	314	0	7.5	2,356	2,187	25	0.0000
LAUREL VAN DUSEN	0	62	0	62	74	0	7.5	551	512	6	0.0000
ACCOKEEK	0	450	0	450	534	0	7.5	4,001	3,714	42	0.0000
ABC DRIVE IN	0	100	0	100	119	0	7.5	889	825	9	0.0000
BOWIE 20%	20	526	131	657	623	156	7.5	5,842	5,423	61	0.0001
CLINTON 50%	50	212	212	424	251	251	7.5	3,770	3,500	40	0.0000
OXON HILL 20%	20	519	130	649	616	154	7.5	5,771	5,357	61	0.0001
EQUESTRIAN CENTER 50%	50	150	150	300	178	178	7.5	2,668	2,476	28	0.0000
BOWIE MARKET PLACE	0	50	0	50	59	0	7.5	445	413	5	0.0000
FT. WASHINGTON	0	412	0	412	488	0	7.5	3,664	3,401	38	0.0000
MONTPELIER REC PARK	0	70	0	70	83	0	7.5	622	578	7	0.0000
RESTON	0	1547	0	1547	1834	0	7.5	13,756	12,769	144	0.0002
GREENBRIAR	0	55	0	55	65	0	7.5	489	454	5	0.0000
FAIR OAKS	0	150	0	150	178	0	7.5	1,334	1,238	14	0.0000
ROLLING VALLEY	0	628	0	628	745	0	7.5	5,584	5,183	59	0.0001
SPRINGFIELD PLAZA	0	230	0	230	273	0	7.5	2,045	1,898	21	0.0000
FAIRLANES BOWL	0	35	0	35	41	0	7.5	311	289	3	0.0000
NOTTOWAY PARK	0	14	0	14	17	0	7.5	124	116	1	0.0000
HORNER RD	0	2397	0	2397	2842	0	7.5	21,315	19,784	224	0.0002
LAKE RIDGE	0	555	0	555	658	0	7.5	4,935	4,581	52	0.0001
MINNIEVILLE RD 40%	40	336	224	560	398	266	7.5	4,980	4,622	52	0.0001
GORDON BLVD	0	156	0	156	185	0	7.5	1,387	1,288	15	0.0000
HILLENDALE	0	248	0	248	294	0	7.5	2,205	2,047	23	0.0000
POTOMAC MILLS	0	946	0	946	1122	0	7.5	8,412	7,808	88	0.0001
List of new lots to be added in Conformity Document list											
PARK-AND-RIDE LOTS - MARYLAND											
PARK-AND-RIDE LOTS - MARYLAND											
CHARLES COUNTY											
301 Park & Ride	25	287	96	383	341	114	7.5	3,406	3,161	36	0.0000
Charles County Government B	25	26	9	35	31	10	7.5	311	289	3	0.0000
Food Lion Shopping Center	25	38	13	50	44	15	7.5	445	413	5	0.0000
La Plata Armory	25	15	5	20	18	6	7.5	178	165	2	0.0000
Laurel Springs Regional Park	25	38	13	50	44	15	7.5	445	413	5	0.0000
Life Wesleyan Church	25	38	13	50	44	15	7.5	445	413	5	0.0000
Mattawoman-Beantown Rd	25	435	145	580	516	172	7.5	5,157	4,787	54	0.0001
Smallwood Village	25	75	25	100	89	30	7.5	889	825	9	0.0000
St. Charles Towne	25	263	88	350	311	104	7.5	3,112	2,889	33	0.0000
PARK-AND-RIDE LOTS - MARYLAND											
FREDERICK COUNTY											
Frederick (north)	25	123	41	164	146	49	7.5	1,458	1,354	15	0.0000
Frederick (south)	25	173	58	230	205	68	7.5	2,045	1,898	21	0.0000
Monacacy Marcst	25	600	200	800	711	237	7.5	7,114	6,603	75	0.0001
PARK-AND-RIDE LOTS - MARYLAND											
MONTGOMERY COUNTY											
Colesville	0	190	0	190	225	0	7.5	1,690	1,568	18	0.0000
Damascus	50	0	0	0	0	0	7.5	0	0	0	0.0000
Gaithersburg	50	259	259	517	306	306	7.5	4,597	4,267	48	0.0001
Gaithersburg	50	175	175	350	207	207	7.5	3,112	2,889	33	0.0000
Germantown Town	50	0	0	0	0	0	7.5	0	0	0	0.0000

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	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate					
COMMUTER RAIL LOTS											
Seasonal adj = 0.9282											
Greencastle	50	75	75	150	89	89	7.5	1,334	1,238	14	0.0000
Milestone Shopping	50	88	88	175	104	104	7.5	1,556	1,444	16	0.0000
PARK-AND-RIDE LOTS - MAYLAND											
PRINCE GEORGE'S COUNTY											
Hampton Mall	0	100	0	100	119	0	4.5	534	495	6	0.0000
Laurel (south)	25	513	171	684	608	203	7.5	6,082	5,646	64	0.0001
PARK-AND-RIDE LOTS - VIRGINIA											
ARLINGTON COUNTY											
Ballston Public Parking Garage	25	375	125	500	445	148	7.5	4,446	4,127	47	0.0001
Washington-Lee	50	178	178	356	211	211	7.5	3,166	2,938	33	0.0000
PARK-AND-RIDE LOTS - VIRGINIA											
FAIRFAX COUNTY											
American Legion	50	50	50	100	59	59	7.5	889	825	9	0.0000
Canterbury Woods Pk	50	17	17	34	20	20	7.5	302	281	3	0.0000
Centreville	50	185	185	370	219	219	7.5	3,290	3,054	35	0.0000
Centreville United Methodist C	50	74	74	147	87	87	7.5	1,307	1,213	14	0.0000
Fairfax County Government C	50	85	85	170	101	101	7.5	1,512	1,403	16	0.0000
Greenbriar Park	50	28	28	55	33	33	7.5	489	454	5	0.0000
Herndon-Monroe	50	873	873	1,745	1034	1034	7.5	15,517	14,403	163	0.0002
Michael's	50	100	100	200	119	119	7.5	1,778	1,651	19	0.0000
Parkwood Baptist	50	9	9	18	11	11	7.5	160	149	2	0.0000
South Run District Pk	50	170	170	340	202	202	7.5	3,023	2,806	32	0.0000
St Paul Chung Catholic Church	50	50	50	100	59	59	7.5	889	825	9	0.0000
Stringfellow Rd	50	181	181	361	214	214	7.5	3,210	2,980	34	0.0000
Sully Station	50	70	70	140	83	83	7.5	1,245	1,156	13	0.0000
Sydenstricker Rd	50	84	84	167	99	99	7.5	1,485	1,378	16	0.0000
Wakefield Chapel Pk	50	25	25	50	30	30	7.5	445	413	5	0.0000
PARK-AND-RIDE LOTS - VIRGINIA											
LOUDOUN COUNTY											
Ashburn Farm	50	10	10	20	12	12	7.5	178	165	2	0.0000
Ashburn Village	50	20	20	40	24	24	7.5	356	330	4	0.0000
Cascades	50	28	28	55	33	33	7.5	489	454	5	0.0000
Dulles North Transit	50	375	375	750	445	445	7.5	6,669	6,190	70	0.0001
Hamilton	50	25	25	50	30	30	7.5	445	413	5	0.0000
Innovation Avenue	50	38	38	75	44	44	7.5	667	619	7	0.0000
Leesburg	50	25	25	50	30	30	7.5	445	413	5	0.0000
Leesburg Kohls	50	600	600	1200	711	711	7.5	10,671	9,905	112	0.0001
Purcellville	50	18	18	35	21	21	7.5	311	289	3	0.0000
Sterling Park SC	50	23	23	45	27	27	7.5	400	371	4	0.0000
Sterling Shaw Rd	50	24	24	48	28	28	7.5	427	396	4	0.0000
PARK-AND-RIDE LOTS - VIRGINIA											
PRINCE WILLIAM COUNTY											
Brittany	50	48	48	95	56	56	7.5	845	784	9	0.0000
Dale City	50	294	294	587	348	348	7.5	5,220	4,845	55	0.0001
Harbor Drive	50	100	100	200	119	119	7.5	1,778	1,651	19	0.0000
Lindendale	50	108	108	216	128	128	7.5	1,921	1,783	20	0.0000
Montclair	50	25	25	50	30	30	7.5	445	413	5	0.0000
PRTC Transit Center	50	93	93	185	110	110	7.5	1,645	1,527	17	0.0000
Tackett's Mill	50	85	85	169	100	100	7.5	1,503	1,395	16	0.0000
Triangle	50	15	15	29	17	17	7.5	258	239	3	0.0000
I-95 / Rt 123	50	282	282	563	334	334	7.5	5,006	4,647	53	0.0001
US 1 / VA 234	50	137	137	274	162	162	7.5	2,436	2,262	26	0.0000
MARC TRAIN COMMUTER LOTS											
College Park	25	431	144	574	510	170	7.5	5,104	4,738	54	0.0001

SEASON 3 (Oct-Dec)
2016 PM AIR QUALITY EMISSIONS INVENTORY
 AUTO ACCESS TO TRANSIT
 2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY

LOCATION	2002				2016		AVERAGE TRIP LENGTH	2016 VMT	ADJ WINTER VMT	RUNNING Rate (gm/mile)	TOTAL (tons/day)
	OUTSIDE MSA (%)	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate					
					1.19	1.19					
COMMUTER RAIL LOTS											
								Wk Days = 61	0.0113		
								Seasonal adj = 0.9282			
Frederick	0	0	0	0	0	0	7.5	0	0	0	0.0000
Greenbelt	60	1346	2018	3364	1595	2393	7.5	29,913	27,766	314	0.0003
Harpers Ferry		98	0	98	116	0	7.5	871	809	9	0.0000
Muirkirk	60	260	390	650	308	462	7.5	5,780	5,365	61	0.0001
Seabrook	0	264	0	264	313	0	4.5	1,409	1,307	15	0.0000
Silver Spring	0	0	0	0	0	0	4.5	0	0	0	0.0000
Union Station	0	781	0	781	926	0	7.5	6,945	6,446	73	0.0001
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS											
Backlick Road	50	110	110	220	130	130	7.5	1,956	1,816	21	0.0000
Broad Run	50	198	198	396	235	235	7.5	3,521	3,268	37	0.0000
Brooke	50	150	150	300	178	178	7.5	2,668	2,476	28	0.0000
Burke Center	50	275	275	550	326	326	7.5	4,891	4,540	51	0.0001
Franconia/Springfield (operate	50	1900	1900	3800	2253	2253	7.5	33,790	31,364	354	0.0004
Leeland Road	50	326	326	652	387	387	7.5	5,798	5,381	61	0.0001
Lorton	50	100	100	200	119	119	7.5	1,778	1,651	19	0.0000
Manassas	50	187	187	374	222	222	7.5	3,326	3,087	35	0.0000
Manassas Park	50	150	150	300	178	178	7.5	2,668	2,476	28	0.0000
Quantico	50	109	109	217	129	129	7.5	1,930	1,791	20	0.0000
Rippon	50	150	150	300	178	178	7.5	2,668	2,476	28	0.0000
Rolling Road	50	185	185	370	219	219	7.5	3,290	3,054	35	0.0000
Woodbridge	50	294	294	588	349	349	7.5	5,229	4,853	55	0.0001
METRORAIL PARKING LOTS											
Anacostia	25	861	287	1148	1021	340	7.5	10,208	9,475	107	0.0001
Branch Avenue	50	1611	1611	3222	1910	1910	7.5	28,651	26,594	301	0.0003
Capitol Heights	50	194	194	387	229	229	7.5	3,441	3,194	36	0.0000
College Park	25	465	155	620	551	184	7.5	5,513	5,117	58	0.0001
Congress Heights	0	66	0	66	78	0	4.5	352	327	4	0.0000
Deanwood	0	194	0	194	230	0	7.5	1,725	1,601	18	0.0000
East Falls Church	50	221	221	442	262	262	7.5	3,930	3,648	41	0.0000
Forest Glen	50	329	329	658	390	390	7.5	5,851	5,431	61	0.0001
Franconia - Springfield	50	1987	1987	3973	2355	2355	4.5	21,197	19,675	222	0.0002
Glenmont	50	925	925	1850	1097	1097	4.5	9,870	9,162	104	0.0001
Greenbelt	50	1783	1783	3565	2113	2113	7.5	31,701	29,425	332	0.0004
Naylor Road	50	216	216	431	256	256	7.5	3,833	3,557	40	0.0000
Prince George's Plaza	25	927	309	1236	1099	366	7.5	10,991	10,202	115	0.0001
Southern Avenue	50	1090	1090	2180	1292	1292	4.5	11,631	10,796	122	0.0001
Suitland	50	1033	1033	2065	1224	1224	4.5	11,017	10,226	116	0.0001
Van Dorn Street	50	204	204	407	241	241	4.5	2,171	2,016	23	0.0000
West Hyattsville	25	453	151	604	537	179	7.5	5,371	4,985	56	0.0001
Wheaton	25	759	253	1012	900	300	7.5	8,999	8,353	94	0.0001
				108,749				847,732		8,891.5730	0.0098
										Seasonal Total (tons/season) =	0.5979

Bold figures: New numbers taken from P & R directory
 Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
Transit trips 2016	1295286
Transit trips 2002	1092489
Annual growth rate	0.013259
Growth factor (2002-2011)	1.185628

APPENDIX H

Bus Emissions Estimation

MEMORANDUM

October 11, 2011

To: Files

From: Anant Choudhary, MWCOG/DTP

Subject: Transit and School Bus Emissions

This memo discusses the collection of information from regional transit providers and the development of ozone season NO_x and VOC, winter CO, and PM_{2.5} precursor NO_x and direct PM_{2.5} emissions estimates for transit and school buses for various analysis years.

Approach

Data Collection

In order to obtain current regional transit data, staff developed a questionnaire for transit providers and school bus operators in the region. The technique of emailing and then conducting follow-up phone calls produced a high response rate. Staff used response data to complete a table showing daily VMT with average operating speed (Table 1).

Fleet Age Distribution

Using 2008 VIN data, staff developed regional school bus and transit bus age distributions (shown in Tables 2A and 2B respectively) and diesel sales fractions which were used in the Mobile6.2 model to develop emissions rates. A detailed description of this process can be found in a June 9, 2009 memo from Daivamani Sivasailam in the VIN Decoder Project Files. Emissions for buses that are not diesel (e.g. CNG buses) are accounted for using TERM analysis.

VMT Estimates

The annual VMT from the survey was divided by the number of service days for each provider to calculate a daily VMT. To account for bus VMT for providers in the region for which no survey data was received, staff estimated VMT by using data from providers with similar service type. In many cases where VMT data was not provided, total number of buses was provided, making the estimate process more accurate. In Table 1 estimated VMT values are shown in italics. Daily school bus VMT represents a school day in May.

The resulting daily 2001 VMT from the survey, including estimation values from providers for which no data was received is 277,000 for transit buses (compared to 180,000 in the FY03-08 TIP), and 480,000 for school buses (Table 5A).

For estimating bus VMT for the future, staff used the HDBS (school bus) and HDBT (transit bus) values in the "National Average Vehicle Miles Traveled Fractions by Vehicle Class" table from EPA's *Technical Guidance on the use of Mobile 6 for Emission Inventory Preparation* to modify current data. This is shown as Table 3.

Emission Estimates

Using the survey data staff created transit bus and school bus emission tables. In the tables the daily VMT was adjusted from the base (survey) year (2001) using the method described above. Factors for PM_{2.5} pollutants were prepared for each of 3 seasons (Season 1: January-April, Season 2: May-September, Season 3: October-December) Using the appropriate emission factor based on the average operating speed for each provider, staff calculated each pollutant's emissions for

transit buses and school buses for each analysis year. Table 4 shows a one-year sample of bus emission factors. Tables 5A-5D show a one-year sample of transit and school bus emissions for each of the pollutants analyzed.

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TABLE 1
2001 Bus
Operating Statistics

Service	Contact	Average Speed	Daily VMT
	Name		
Metrobus	Lora Byala	10	123,299
Fairfax Connector	Andy Szakos	15	18,036
PRTC Omnalink	Tim Roseboom	15	4038
Alexandria DASH	Cindy Modell	13	3,454
City of Fairfax CUE	Alex Verzosa	15	1,483
Arlington Co. ART	Jim Maslanka	16	794
Loudoun Transportation Assc.	Mark McGregor	15	4,532
Mont. Co. Ride-On	Phil McLaughlin	14.5	35,616
PG Co. The Bus	Frank Bell	15-20	9,723
Fredrick Co. TransiT	Sherry Burford	11.78	3,082
Corridor Transit (CTC)	Joe Gann	17.8	1,265
Crystal City Express		15	96
Skyline Crystal Express		15	144
PRTC OmniRide	Tim Roseboom	26.62	5,700
Loudoun Commuter Service	Sharon Affinito	25	1,866
MTA Commuter buses	Larry Dougherty	45	10,453
Lee Coaches	Joe Ann Foweler	45	70
Brooks Transit		45	750
Quicks Commuter Service	Robbie Quick	45	1,320
Eyre buses (under MTA)	Teri Lee Cosker	45	(under MTA)
Dillon buses (under MTA)	Ron Dillon Sr.	45	(under MTA)
Keller buses (under MTA)	Charles D. Keller	45	(under MTA)
National Coach Works	Jeff Bodnar	45	1,650
Greyhound / Trailways (VA)	David Cohen	55	5000
Peter Pan / Trailways	Christ Crean	55	2000
Carolina Trailways		55	500
Capitol Trailways	Ms.Gale Ellsworth	55	500
Martz / Grey Line sightseeing	Robert Lynch	55-68	5000
New World	Arnold Brown	20	299
Washington Flyer Coach Service	Nicholas Marshall	65	1,370
ShuttleUM (U. of MD)	Cynthia Trombly	11.1	1,864

TABLE 1
2001 Bus
Operating Statistics

Service	Contact	Average Speed	Daily VMT
	Name		
Georgetown U. shuttle	Diann Nock Smith	15	100
American U. shuttle	Thomas Leathers	20-25	83
George Washington U shuttle	John Kane	15	100
CIA Shuttle		15	200
EPA Shuttle		15	200
USDOT Shuttle	Franklin Weaver	15	200
Gallaudet Shuttle	Darnese Nicholson	15	100
Tourmobile	Richard Lewis	15	(Gas powered)
Old Town "trolley" buses		20	300
Metro Access - paratransit	Avon Mackel	15	5000
Fairfax Co. Fastran- paratransit	Steve Yaffe	14.53	11,427
Alexandria DOT-paratransit	Lakeshia Lewis	15	924
Arlington STAR-paratransit	Eric Smith	15	3,245
City of Ffx, City Wheels-paratransit.	Alex Verzosa	15	100
City of Falls Ch. Fare Wheels-paratransit	Letha Flippin	15	100
Loudoun Transit (LCTA)-paratransit	Mark McGregor	15	100
P.G. Co. paratransit	Frank Bell	15	3000
All buses excluding school			277,361
School buses - DC	Alfred Winder	14	10000
School buses- Mont. Co.	Qiyu C. Wu	30	27,000
School buses- P.G. Co.	Mark Dreszer	30	28,896
School buses- Fred. Co.	Richard Wandres	30	10,747
School buses- Alexandria	Velma Tsongos	25	3520
School buses- Arl. Co.	Daniel Roseboro	25	4800
School buses- Ffx. Co.	Tim Parker	30-35	24,112
School buses- Loud. Co.	J Michael Lunsfurg	30	11,906
School buses- P.W. Co.	Eward Bishop	30	8,144

Total for School Buses

129,126

Table 2A
2008 Regional Age Fractions
Vehicle Type=HDBS
Number of Decoded Vins=6484

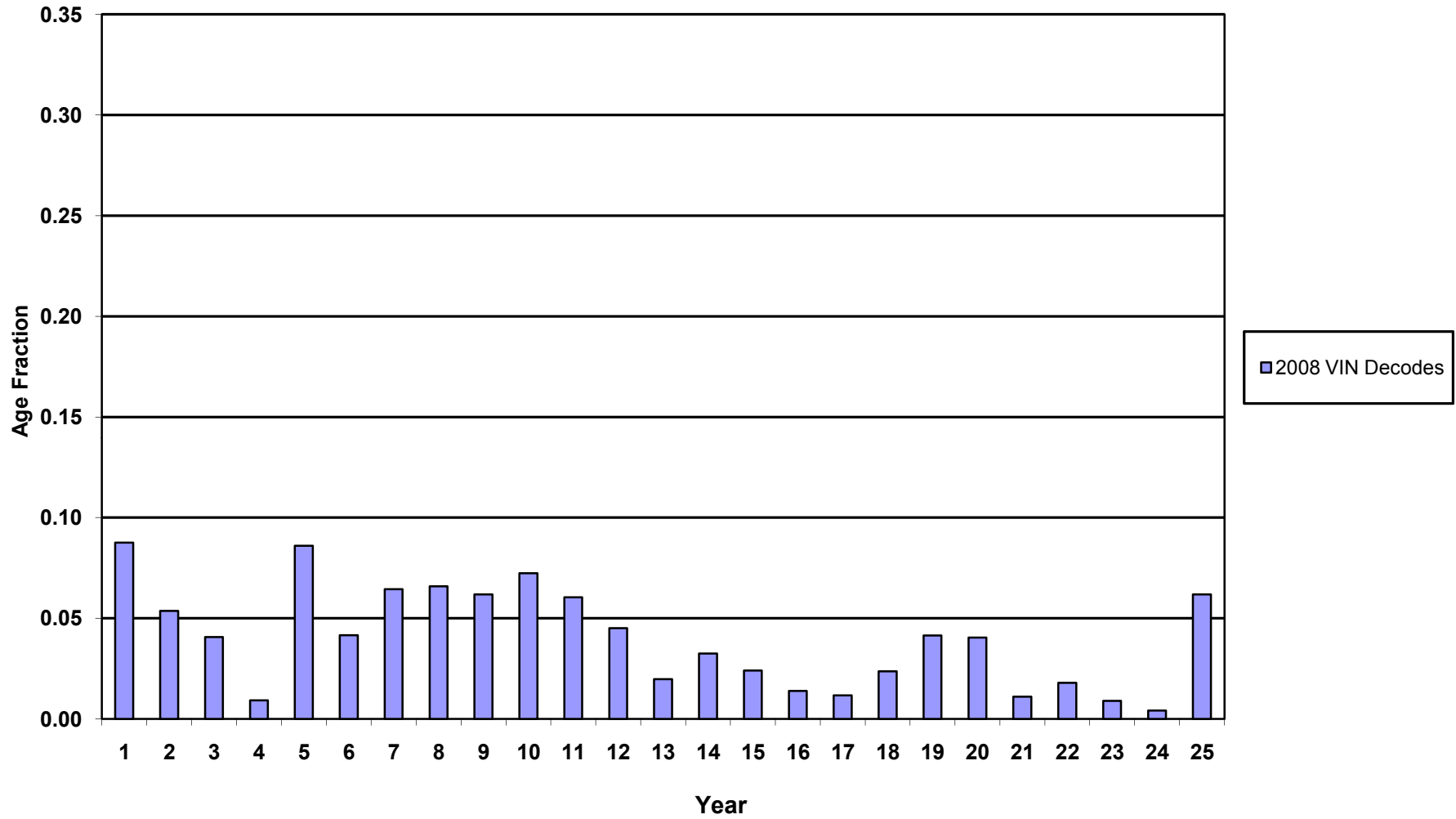


Table 2B
2008 Regional Age Fractions
Vehicle Type=HDBT
Number of Decoded Vins=6148

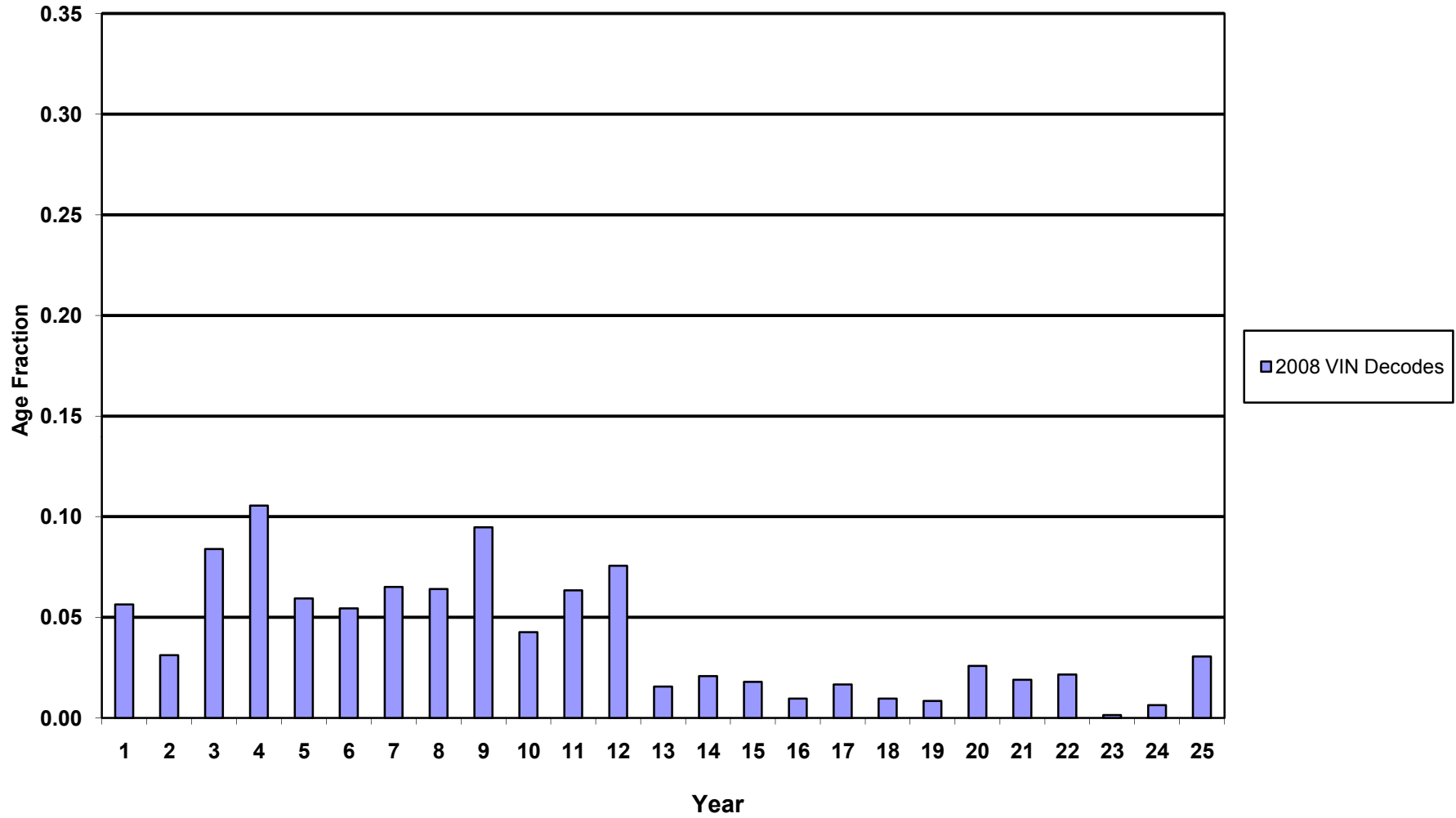


TABLE 3

National Average Vehicle Miles Traveled Fractions By Vehicle Class
Using MOBILE 6

Calendar Year	LDV 1	LDT1 2	LDT2 3	LDT3 4	LDT4 5	HDV2B 6	HDV3 7	HDV4 8	HDV5 9	HDV6 10	HDV7 11	HDV8A 12	HDV8B 13	HOBS 14	HDBT 15	MC 16
1990	0.6284	0.0420	0.1397	0.0566	0.0260	0.0332	0.0034	0.0020	0.0016	0.0064	0.0079	0.0094	0.0337	0.0017	0.0008	0.0073
1991	0.6212	0.0435	0.1448	0.0560	0.0267	0.0336	0.0035	0.0021	0.0017	0.0066	0.0081	0.0095	0.0341	0.0017	0.0008	0.0072
1992	0.6109	0.0456	0.1518	0.0565	0.0255	0.0342	0.0036	0.0022	0.0017	0.0068	0.0083	0.0097	0.0346	0.0017	0.0008	0.0071
1993	0.6009	0.0477	0.1587	0.0551	0.0253	0.0348	0.0036	0.0023	0.0018	0.0070	0.0085	0.0098	0.0350	0.0017	0.0008	0.0070
1994	0.5910	0.0497	0.1655	0.0546	0.0261	0.0354	0.0037	0.0024	0.0018	0.0072	0.0087	0.0100	0.0355	0.0018	0.0008	0.0070
1995	0.5816	0.0517	0.1721	0.0542	0.0249	0.0358	0.0037	0.0025	0.0019	0.0073	0.0089	0.0101	0.0360	0.0018	0.0009	0.0069
1996	0.5721	0.0534	0.1776	0.0547	0.0252	0.0362	0.0037	0.0025	0.0019	0.0075	0.0090	0.0102	0.0364	0.0018	0.0009	0.0068
1997	0.5629	0.0557	0.1833	0.0571	0.0263	0.0367	0.0037	0.0026	0.0020	0.0077	0.0092	0.0104	0.0370	0.0018	0.0009	0.0067
1998	0.5390	0.0590	0.1963	0.0605	0.0278	0.0372	0.0038	0.0027	0.0021	0.0079	0.0095	0.0106	0.0375	0.0019	0.0009	0.0065
1999	0.5153	0.0622	0.2071	0.0638	0.0294	0.0377	0.0038	0.0028	0.0021	0.0081	0.0097	0.0107	0.0382	0.0019	0.0009	0.0064
2000	0.4953	0.0655	0.2179	0.0672	0.0309	0.0380	0.0038	0.0029	0.0022	0.0082	0.0098	0.0108	0.0386	0.0019	0.0009	0.0062
2001	0.4765	0.0683	0.2273	0.0700	0.0322	0.0381	0.0038	0.0029	0.0022	0.0083	0.0099	0.0109	0.0388	0.0019	0.0009	0.0061
2002	0.4646	0.0706	0.2349	0.0724	0.0333	0.0382	0.0038	0.0030	0.0022	0.0084	0.0100	0.0109	0.0390	0.0019	0.0009	0.0060
2003	0.4507	0.0729	0.2425	0.0748	0.0344	0.0384	0.0038	0.0030	0.0023	0.0085	0.0100	0.0110	0.0392	0.0019	0.0009	0.0059
2004	0.4365	0.0752	0.2503	0.0771	0.0355	0.0386	0.0038	0.0030	0.0023	0.0085	0.0101	0.0111	0.0394	0.0019	0.0009	0.0058
2005	0.4231	0.0774	0.2577	0.0794	0.0365	0.0387	0.0038	0.0031	0.0023	0.0086	0.0102	0.0111	0.0395	0.0020	0.0009	0.0057
2006	0.4098	0.0797	0.2654	0.0818	0.0376	0.0387	0.0038	0.0031	0.0023	0.0086	0.0102	0.0111	0.0396	0.0020	0.0009	0.0056
2007	0.3952	0.0822	0.2735	0.0843	0.0388	0.0387	0.0038	0.0031	0.0023	0.0086	0.0102	0.0111	0.0396	0.0020	0.0009	0.0055
2008	0.3807	0.0846	0.2817	0.0868	0.0399	0.0388	0.0038	0.0031	0.0024	0.0087	0.0102	0.0111	0.0397	0.0020	0.0009	0.0054
2009	0.3669	0.0869	0.2894	0.0892	0.0410	0.0389	0.0038	0.0032	0.0024	0.0087	0.0103	0.0112	0.0398	0.0020	0.0010	0.0054
2010	0.3544	0.0891	0.2965	0.0914	0.0420	0.0390	0.0038	0.0032	0.0024	0.0087	0.0103	0.0112	0.0398	0.0020	0.0010	0.0054
2011	0.3428	0.0911	0.3031	0.0934	0.0430	0.0390	0.0038	0.0032	0.0024	0.0087	0.0103	0.0112	0.0398	0.0020	0.0010	0.0053
2012	0.3325	0.0928	0.3090	0.0952	0.0438	0.0390	0.0038	0.0032	0.0024	0.0087	0.0103	0.0112	0.0399	0.0020	0.0010	0.0053
2013	0.3231	0.0944	0.3143	0.0969	0.0445	0.0390	0.0038	0.0032	0.0024	0.0087	0.0103	0.0112	0.0399	0.0020	0.0010	0.0053
2014	0.3145	0.0959	0.3191	0.0983	0.0452	0.0391	0.0038	0.0032	0.0024	0.0088	0.0103	0.0112	0.0400	0.0020	0.0010	0.0052
2015	0.3071	0.0971	0.3233	0.0996	0.0458	0.0391	0.0038	0.0032	0.0024	0.0088	0.0104	0.0112	0.0400	0.0020	0.0010	0.0052
2016	0.3004	0.0982	0.3270	0.1008	0.0463	0.0392	0.0039	0.0033	0.0024	0.0088	0.0104	0.0112	0.0400	0.0020	0.0010	0.0052
2017	0.2944	0.0992	0.3304	0.1018	0.0468	0.0392	0.0039	0.0033	0.0024	0.0088	0.0104	0.0113	0.0401	0.0020	0.0010	0.0051
2018	0.2892	0.1001	0.3332	0.1027	0.0472	0.0393	0.0039	0.0033	0.0024	0.0088	0.0104	0.0113	0.0402	0.0020	0.0010	0.0051
2019	0.2846	0.1008	0.3357	0.1035	0.0476	0.0394	0.0039	0.0033	0.0025	0.0088	0.0104	0.0113	0.0403	0.0020	0.0010	0.0051
2020 - 2050	0.2793	0.1017	0.3384	0.1043	0.0480	0.0396	0.0039	0.0033	0.0025	0.0089	0.0105	0.0114	0.0405	0.0020	0.0010	0.0051

Source: Technical Guidance on the use of Mobile 6 for Emission Inventory Preparation, U.S. EPA, January 2002.

Table 4
MWCOG Regional 2016 Ozone Season Bus Emission Factors

Road Type	Speed (mph)	Diesel Bus Emission Factors (grams/mile)			
		School Bus		Transit Bus	
		VOC	NOx	VOC	NOx
Arterial/Freeway	1.00	1.309	9.084	0.82	8.611
Arterial/Freeway	2.00	1.309	9.084	0.82	8.611
Arterial/Freeway	3.00	1.256	8.774	0.787	8.318
Arterial/Freeway	4.00	1.19	8.387	0.745	7.952
Arterial/Freeway	5.00	1.15	8.155	0.721	7.732
Arterial/Freeway	6.00	1.068	7.686	0.669	7.289
Arterial/Freeway	7.00	1.009	7.351	0.632	6.972
Arterial/Freeway	8.00	0.965	7.1	0.604	6.735
Arterial/Freeway	9.00	0.93	6.905	0.583	6.55
Arterial/Freeway	10.0	0.903	6.749	0.566	6.403
Arterial/Freeway	11.0	0.854	6.487	0.535	6.155
Arterial/Freeway	12.0	0.814	6.268	0.51	5.948
Arterial/Freeway	13.0	0.78	6.083	0.488	5.773
Arterial/Freeway	14.0	0.75	5.925	0.47	5.624
Arterial/Freeway	15.0	0.725	5.788	0.454	5.494
Arterial/Freeway	16.0	0.692	5.627	0.434	5.342
Arterial/Freeway	17.0	0.663	5.485	0.416	5.207
Arterial/Freeway	18.0	0.638	5.359	0.4	5.088
Arterial/Freeway	19.0	0.615	5.246	0.385	4.981
Arterial/Freeway	20.0	0.594	5.144	0.372	4.885
Arterial/Freeway	21.0	0.572	5.048	0.358	4.794
Arterial/Freeway	22.0	0.551	4.961	0.345	4.712
Arterial/Freeway	23.0	0.532	4.881	0.333	4.636
Arterial/Freeway	24.0	0.515	4.807	0.322	4.567
Arterial/Freeway	25.0	0.499	4.74	0.312	4.503
Arterial/Freeway	26.0	0.482	4.691	0.302	4.457
Arterial/Freeway	27.0	0.467	4.646	0.293	4.414
Arterial/Freeway	28.0	0.453	4.604	0.284	4.374
Arterial/Freeway	29.0	0.44	4.565	0.275	4.337
Arterial/Freeway	30.0	0.427	4.528	0.268	4.303
Arterial/Freeway	31.0	0.415	4.519	0.26	4.294
Arterial/Freeway	32.0	0.404	4.51	0.253	4.285
Arterial/Freeway	33.0	0.394	4.501	0.247	4.277
Arterial/Freeway	34.0	0.384	4.493	0.24	4.27
Arterial/Freeway	35.0	0.375	4.486	0.235	4.262
Arterial/Freeway	36.0	0.366	4.513	0.229	4.288
Arterial/Freeway	37.0	0.358	4.538	0.224	4.312
Arterial/Freeway	38.0	0.35	4.563	0.219	4.335
Arterial/Freeway	39.0	0.343	4.586	0.215	4.357
Arterial/Freeway	40.0	0.336	4.608	0.21	4.378
Arterial/Freeway	41.0	0.329	4.673	0.206	4.44
Arterial/Freeway	42.0	0.323	4.736	0.203	4.499
Arterial/Freeway	43.0	0.318	4.796	0.199	4.556
Arterial/Freeway	44.0	0.312	4.853	0.196	4.61
Arterial/Freeway	45.0	0.307	4.907	0.192	4.661

Table 4
MWCOG Regional 2016 Ozone Season Bus Emission Factors

Road Type	Speed (mph)	Diesel Bus Emission Factors (grams/mile)			
		School Bus		Transit Bus	
		VOC	NOx	VOC	NOx
Arterial/Freeway	46.0	0.303	5.018	0.19	4.766
Arterial/Freeway	47.0	0.299	5.125	0.187	4.867
Arterial/Freeway	48.0	0.295	5.227	0.185	4.963
Arterial/Freeway	49.0	0.291	5.325	0.182	5.056
Arterial/Freeway	50.0	0.288	5.419	0.18	5.145
Arterial/Freeway	51.0	0.285	5.588	0.179	5.304
Arterial/Freeway	52.0	0.282	5.75	0.177	5.458
Arterial/Freeway	53.0	0.28	5.906	0.175	5.606
Arterial/Freeway	54.0	0.278	6.057	0.174	5.748
Arterial/Freeway	55.0	0.275	6.202	0.172	5.885
Arterial/Freeway	56.0	0.274	6.449	0.172	6.119
Arterial/Freeway	57.0	0.273	6.688	0.171	6.345
Arterial/Freeway	58.0	0.272	6.918	0.17	6.563
Arterial/Freeway	59.0	0.27	7.141	0.169	6.774
Arterial/Freeway	60.0	0.269	7.356	0.169	6.977
Arterial/Freeway	61.0	0.269	7.715	0.169	7.317
Arterial/Freeway	62.0	0.269	8.063	0.169	7.645
Arterial/Freeway	63.0	0.269	8.399	0.169	7.963
Arterial/Freeway	64.0	0.269	8.725	0.169	8.272
Arterial/Freeway	65.0	0.269	9.041	0.169	8.57
Fwy Ramp	34.6	0.378	4.582	0.237	4.333
Local	12.9	0.793	6.147	0.497	5.833

TABLE 5A
2011 CLRP AIR QUALITY CONFORMITY ANALYSIS
2016 SCHOOL BUS CHARACTERISTICS / EMISSIONS
(8-HOUR OZONE AREA*)

Jurisdiction	2002 Daily VMT	2016 Daily VMT	Average Speed	VOC			NOx		
				factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia	12,696	13,331	14	0.750	9998.1000	0.0110	5.925	78984.9900	0.0871
Montgomery	100,000	105,000	30	0.427	44835.0000	0.0494	4.528	475440.0000	0.5241
Prince George's	129,967	136,465	30	0.427	58270.7045	0.0642	4.528	617915.1048	0.6811
Frederick	25,589	26,868	30	0.427	11472.8282	0.0126	4.528	121660.3416	0.1341
Charles	20,801	21,841	30	0.427	9326.1284	0.0103	4.528	98896.2744	0.1090
Calvert	25,653	26,936	30	0.427	11501.5226	0.0127	4.528	121964.6232	0.1344
Alexandria	2,028	2,129	25	0.499	1062.5706	0.0012	4.74	10093.3560	0.0111
Arlington	2,600	2,730	25	0.499	1362.2700	0.0015	4.74	12940.2000	0.0143
Fairfax	96,524	101,350	30	0.427	43276.5354	0.0477	4.528	458913.7056	0.5059
Prince William	36,114	37,920	30	0.427	16191.7119	0.0178	4.528	171700.4016	0.1893
Loudoun	28,347	29,764	30	0.427	12709.3775	0.0140	4.528	134772.9768	0.1486
TOTAL	480,319				220006.7489	0.2425		2303281.9740	2.5389

* MSA excluding Stafford County

TABLE 5B
2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY ANALYSIS
2016 TRANSIT BUS CHARACTERISTICS / EMISSIONS
(8-HOUR OZONE AREA*)

10/18/2011

Jurisdiction	Operator	2002 Daily VMT	2016 VMT w/o Stafford	Average Speed	VOC			NOx		
					factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia	Metrobus	50,552	56,113	10	0.5660	31759.7995	0.0350	6.4030	359289.7462	0.3960
District of Columbia	MTA Commuter buses	2,510	2,786	45	0.1920	534.9312	0.0006	4.6610	12986.0121	0.0143
District of Columbia	Peter Pan / Trailways	200	222	55	0.1720	38.1840	0.0000	5.8850	1306.4700	0.0014
District of Columbia	Carolina Trailways	20	22	55	0.1720	3.8184	0.0000	5.8850	130.6470	0.0001
District of Columbia	Capitol Trailways	100	111	55	0.1720	19.0920	0.0000	5.8850	653.2350	0.0007
District of Columbia	Martz / Grey Line sightseeing	500	555	55	0.1720	95.4600	0.0001	5.8850	3266.1750	0.0036
District of Columbia	New World Tours	100	111	20	0.3720	41.2920	0.0000	4.8850	542.2350	0.0006
District of Columbia	Georgetown U. shuttle	100	111	15	0.4540	50.3940	0.0001	5.4940	609.8340	0.0007
District of Columbia	American U. shuttle	83	92	20	0.3720	34.2724	0.0000	4.8850	450.0551	0.0005
District of Columbia	George Washington U shuttle	100	111	15	0.4540	50.3940	0.0001	5.4940	609.8340	0.0007
District of Columbia	EPA Shuttle	200	222	15	0.4540	100.7880	0.0001	5.4940	1219.6680	0.0013
District of Columbia	USDOT Shuttle	200	222	15	0.4540	100.7880	0.0001	5.4940	1219.6680	0.0013
District of Columbia	Gallaudet Shuttle	100	111	15	0.4540	50.3940	0.0001	5.4940	609.8340	0.0007
District of Columbia	Metro Access - paratransit	5,000	5,550	15	0.4540	2519.7000	0.0028	5.4940	30491.7000	0.0336
Maryland	Corridor Transit (CTC)	1,265	1,404	18	0.4000	561.6600	0.0006	5.0880	7144.3152	0.0079
Maryland	Peter Pan / Trailways	1,800	1,998	55	0.1720	343.6560	0.0004	5.8850	11758.2300	0.0130
Maryland	Carolina Trailways	225	250	55	0.1720	42.9570	0.0000	5.8850	1469.7788	0.0016
Maryland	Capitol Trailways	400	444	55	0.1720	76.3680	0.0001	5.8850	2612.9400	0.0029
Maryland	Martz / Grey Line sightseeing	2,250	2,498	55	0.1720	429.5700	0.0005	5.8850	14697.7875	0.0162
Maryland	New World Tours	100	111	20	0.3720	41.2920	0.0000	4.8850	542.2350	0.0006
Montgomery	Metrobus	17,262	19,161	15	0.4540	8699.0123	0.0096	5.4940	105269.5451	0.1160
Montgomery	MTA Commuter buses	2,180	2,420	45	0.1920	464.6016	0.0005	4.6610	11278.6878	0.0124
Montgomery	Mont. Co. Ride-On	35,616	39,534	15	0.4540	17948.3270	0.0198	5.4940	217198.4774	0.2394
Prince George's	Metrobus	24,660	27,373	15	0.4540	12427.1604	0.0137	5.4940	150385.0644	0.1658

TABLE 5B
2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY ANALYSIS
2016 TRANSIT BUS CHARACTERISTICS / EMISSIONS
(8-HOUR OZONE AREA*)

10/18/2011

Jurisdiction	Operator	2002 Daily VMT	2016 VMT w/o Stafford	Average Speed	VOC			NOx		
					factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
Prince George's	MTA Commuter buses	6,840	7,592	45	0.1920	1457.7408	0.0016	4.6610	35388.1764	0.0390
Prince George's	PG Co. The Bus	9,723	10,793	15	0.4540	4899.8086	0.0054	5.4940	59294.1598	0.0654
Prince George's	ShuttleUM (U. of MD)	1,864	2,069	11	0.5350	1106.9364	0.0012	6.1550	12734.9412	0.0140
Prince George's	P.G. Co. paratransit	3,000	3,330	15	0.4540	1511.8200	0.0017	5.4940	18295.0200	0.0202
Frederick	MTA Commuter buses	370	411	45	0.1920	78.8544	0.0001	4.6610	1914.2727	0.0021
Frederick	Fredrick Co. TransiT	3,082	3,421	12	0.5100	1744.7202	0.0019	5.9480	20348.2270	0.0224
Charles	MTA Commuter buses	2,290	2,542	45	0.1920	488.0448	0.0005	4.6610	11847.7959	0.0131
Calvert	MTA Commuter buses	1,080	1,199	45	0.1920	230.1696	0.0003	4.6610	5587.6068	0.0062
Virginia	Metrobus	30,825	34,216	15	0.4540	15533.9505	0.0171	5.4940	187981.3305	0.2072
Virginia	Lee Coaches	70	54	45	0.1920	10.4429	0.0000	4.6610	253.5118	0.0003
Virginia	Brooks Transit	750	583	45	0.1920	111.8880	0.0001	4.6610	2716.1978	0.0030
Virginia	Quicks Commuter Service	1,320	1,026	45	0.1920	196.9229	0.0002	4.6610	4780.5080	0.0053
Virginia	National Coach Works	1,650	1,282	45	0.1920	246.1536	0.0003	4.6610	5975.6351	0.0066
Virginia	Greyhound / Trailways (VA)	5,000	3,885	55	0.1720	668.2200	0.0007	5.8850	22863.2250	0.0252
Virginia	Carolina Trailways	225	175	55	0.1720	30.0699	0.0000	5.8850	1028.8451	0.0011
Virginia	Martz / Grey Line sightseeing	2,250	1,748	55	0.1720	300.6990	0.0003	5.8850	10288.4513	0.0113
Virginia	New World Tours	100	78	20	0.3720	28.9044	0.0000	4.8850	379.5645	0.0004
Alexandria	Alexandria DASH	3,454	3,834	13	0.4880	1870.9627	0.0021	5.7730	22133.3356	0.0244
Alexandria	Old Town "trolley" buses	300	333	20	0.3720	123.8760	0.0001	4.8850	1626.7050	0.0018
Alexandria	Alexandria DOT-paratransit	924	1,026	15	0.4540	465.6406	0.0005	5.4940	5634.8662	0.0062
Arlington	Arlington Co. ART	794	881	16	0.4340	382.5016	0.0004	5.3420	4708.1183	0.0052
Arlington	Crystal City Express	96	107	15	0.4540	48.3782	0.0001	5.4940	585.4406	0.0006
Arlington	Skyline Crystal Express	144	160	15	0.4540	72.5674	0.0001	5.4940	878.1610	0.0010
Arlington	Arlington STAR-paratransit	3,245	3,602	15	0.4540	1635.2853	0.0018	5.4940	19789.1133	0.0218

TABLE 5B
2011 CLRP/FY2012-2017 TIP AIR QUALITY CONFORMITY ANALYSIS
2016 TRANSIT BUS CHARACTERISTICS / EMISSIONS
(8-HOUR OZONE AREA*)

Jurisdiction	Operator	2002 Daily VMT	2016 VMT w/o Stafford	Average Speed	VOC			NOx		
					factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
Fairfax	Fairfax Connector	18,036	20,020	15	0.4540	9089.0618	0.0100	5.4940	109989.6602	0.1212
Fairfax	Washington Flyer Coach Service	1,370	1,521	65	0.1690	256.9983	0.0003	8.5700	13032.3990	0.0144
Fairfax	Fairfax Co. Fastran- paratransit	11,427	12,684	15	0.4540	5758.5224	0.0063	5.4940	69685.7312	0.0768
Fairfax	City of Fairfax CUE	1,483	1,646	15	0.4540	747.3430	0.0008	5.4940	9043.8382	0.0100
Fairfax	City of Ffx, City Wheels- paratransit.	100	111	15	0.4540	50.3940	0.0001	5.4940	609.8340	0.0007
Fairfax	City of Falls Ch. Fare Wheels- paratransit	100	111	15	0.4540	50.3940	0.0001	5.4940	609.8340	0.0007
Prince William	PRTC Omnalink	4,038	4,482	15	0.4540	2034.9097	0.0022	5.4940	24625.0969	0.0271
Prince William	PRTC OmniRide	5,700	6,327	27	0.2930	1853.8110	0.0020	4.4140	27927.3780	0.0308
Loudoun	Loudoun Transportation Assc.	4,532	5,031	15	0.4540	2283.8561	0.0025	5.4940	27637.6769	0.0305
Loudoun	Loudoun Commuter Service	1,866	2,071	25	0.3120	646.2331	0.0007	4.5030	9326.8838	0.0103
Loudoun	Loudoun Transit (LCTA)- paratransit	100	111	15	0.4540	50.3940	0.0001	5.4940	609.8340	0.0007
TOTAL		273,671	299,990			132500.3870	0.1461		1685873.5494	1.8584

* MSA excluding Stafford County

Notes:

- 1) Used WMATA percent VMT by jurisdiction from FY03-08 AQC, Appendix I (page I-3)
- 2) Assumed average freeway speed of 55 mph where higher than 55 speed limit is available, and 45 mph where speed limit is 55

2011 CLRP / FY2012-2017 TIP AIR QUALITY CONFORMITY ANALYSIS
2016 SCHOOL BUS CHARACTERISTICS / EMISSIONS
(PM_{2.5})

Jurisdiction	2001 Annual VMT	2002 Daily VMT	2016 Daily VMT	Average Speed	WINTER (January - April)					
					PM _{2.5}			precursor NOx		
					factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia	2,800,000	12,670	13,303	14	0.2117	2816.2805	0.0031	6.4330	85579.2760	0.0943
Montgomery	19,000,000	85,973	90,271	30	0.2117	19110.4751	0.0211	4.9160	443774.6606	0.4892
Prince George's	21,000,000	95,023	99,774	30	0.2117	21122.1041	0.0233	4.9160	490487.7828	0.5407
Frederick	6,400,000	28,959	30,407	30	0.2117	6437.2127	0.0071	4.9160	149481.9910	0.1648
Charles	3,950,000	17,873	18,767	30	0.2117	3972.9672	0.0044	4.9160	92258.4163	0.1017
Alexandria	446,264	2,019	2,120	25	0.2117	448.8588	0.0005	5.1460	10910.8519	0.0120
Arlington	571,986	2,588	2,718	25	0.2117	575.3118	0.0006	5.1460	13984.6695	0.0154
Fairfax	18,200,000	82,353	86,471	30	0.2117	18305.8235	0.0202	4.9160	425089.4118	0.4686
Prince William	6,900,000	31,222	32,783	30	0.2117	6940.1199	0.0077	4.9160	161160.2715	0.1776
Loudoun	6,100,000	27,602	28,982	30	0.2117	6135.4683	0.0068	4.9160	142475.0226	0.1571
TOTAL	85,368,250	386,282	405,596			85864.6220	0.0946		2015202.3540	2.2214

Jurisdiction	2001 Annual VMT	2002 Daily VMT	2016 Daily VMT	Average Speed	SUMMER (May - September)					
					PM _{2.5}			precursor NOx		
					factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia	2,800,000	12,670	13,303	14	0.1957	2603.4299	0.0029	5.9250	78821.2670	0.0869
Montgomery	19,000,000	85,973	90,271	30	0.1957	17666.1312	0.0195	4.5280	408749.3213	0.4506
Prince George's	21,000,000	95,023	99,774	30	0.1957	19525.7240	0.0215	4.5280	451775.5656	0.4980
Frederick	6,400,000	28,959	30,407	30	0.1957	5950.6968	0.0066	4.5280	137683.9819	0.1518
Charles	3,950,000	17,873	18,767	30	0.1957	3672.6957	0.0040	4.5280	84976.8326	0.0937
Alexandria	446,264	2,019	2,120	25	0.1957	414.9347	0.0005	4.7400	10050.0268	0.0111
Arlington	571,986	2,588	2,718	25	0.1957	531.8305	0.0006	4.7400	12881.3318	0.0142
Fairfax	18,200,000	82,353	86,471	30	0.1957	16922.2941	0.0187	4.5280	391538.8235	0.4316
Prince William	6,900,000	31,222	32,783	30	0.1957	6415.5950	0.0071	4.5280	148440.5430	0.1636
Loudoun	6,100,000	27,602	28,982	30	0.1957	5671.7579	0.0063	4.5280	131230.0452	0.1447
TOTAL	85,368,250	386,282	405,596			79375.0898	0.0875		1856147.7387	2.0461

Jurisdiction	2001 Annual VMT	2002 Daily VMT	2016 Daily VMT	Average Speed	FALL (October - December)					
					PM _{2.5}			precursor NOx		
					factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia	2,800,000	12,670	13,303	14	0.1324	1761.3394	0.0019	5.7010	75841.3575	0.0836
Montgomery	19,000,000	85,973	90,271	30	0.1324	11951.9457	0.0132	4.3610	393673.9819	0.4340
Prince George's	21,000,000	95,023	99,774	30	0.1324	13210.0452	0.0146	4.3610	435113.3484	0.4796
Frederick	6,400,000	28,959	30,407	30	0.1324	4025.9186	0.0044	4.3610	132605.9729	0.1462
Charles	3,950,000	17,873	18,767	30	0.1324	2484.7466	0.0027	4.3610	81842.7489	0.0902
Alexandria	446,264	2,019	2,120	25	0.1324	280.7223	0.0003	4.5640	9676.8613	0.0107
Arlington	571,986	2,588	2,718	25	0.1324	359.8077	0.0004	4.5640	12403.0376	0.0137
Fairfax	18,200,000	82,353	86,471	30	0.1324	11448.7059	0.0126	4.3610	377098.2353	0.4157
Prince William	6,900,000	31,222	32,783	30	0.1324	4340.4434	0.0048	4.3610	142965.8145	0.1576
Loudoun	6,100,000	27,602	28,982	30	0.1324	3837.2036	0.0042	4.3610	126390.0679	0.1393
TOTAL	85,368,250	386,282	405,596			53700.8783	0.0592		1787611.4260	1.9705

Table 5D
2011 CLRP AIR QUALITY CONFORMITY ANALYSIS
2016 SCHOOL BUS CHARACTERISTICS / EMISSIONS
Wintertime CO

Jurisdiction	Daily VMT	Average Speed	Wintertime CO		
			factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia *	13,331	14	2.214	29514	0.0325
Montgomery *	105,000	30	1.0360	108780	0.1199
Prince George's *	136,465	30	1.0360	141378	0.1558
Frederick	26,868	30	1.0360	27836	0.0307
Charles	21,841	30	1.0360	22627	0.0249
Calvert	26,936	30	1.0360	27905	0.0308
Alexandria *	2,129	25	1.2530	2668	0.0029
Arlington *	2,730	25	1.2530	3421	0.0038
Fairfax	101,350	30	1.0360	104999	0.1157
Prince William	37,920	30	1.0360	39285	0.0433
Loudoun	29,764	30	1.0360	30836	0.0340
Stafford	10,091	30	1.0360	10454	0.0115
TOTAL	514,425			549702.9384	0.6059
TOTAL FOR CO NON-ATTAINMENT AREA*:					0.3150

* The non-attainment area for wintertime CO includes: DC, ARL, ALEX, MONT, PG

APPENDIX I

TERMs Implementation Reports

From: Hodgson, Fred R [mailto:Randy.Hodgson@VDOT.Virginia.gov]
Sent: Wednesday, September 29, 2010 1:44 PM
To: Anant Choudhary
Cc: Srikanth, Kanathur N.; Allahdoust, Fatemeh; McDonald, Robert, P.E.
Subject: TERMS Status Report

Sir: Attached is the updated TERMS Status Report for the NoVa District. The changes are shown in purple. Please let me know if you have any questions. Thank you. Randy Hodgson

<<TERM Status Report FY11 TIP.xls>>

Randy Hodgson, AICP

Regional Transportation Planning Engineer

Virginia Department of Transportation

Ph. 703-383-2216

Fx. 703-383-2230

Randy.Hodgson@VDOT.Virginia.gov

**Transportation Emission Reduction Measures - Status Report For Post Year 2000 TERMS
FROM VDOT FOR FY 2010- 2015 TIP AND 2009 CLRP Changes made during this review are in bold font.**

TERM No.	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				STATUS REPORT	Project Category *
					FULL	SCALED BACK	UNDER-WAY	REMOVED		
56	X	1995-00	VDOT	Cherry Hill VRE Access				X	Complete construction -July 2008 Developer defaulted on project, so no timetable to providing access.	C (TCM)
69	X	1995-00	ARLG / FFX CO.	Bicycle Trails and Facilities (Arlington & Fairfax Co. - 7 locations)	X		X		Projects 4 & 6 incomplete due to incomplete funding. Project #6 projected to be complete in 2008, and Project # 4 projected to be completed in mid 2009. Project 3 revised to sidewalks & wide-curb lanes only, not bike lanes. All others complete. #4 - Phase I of project under construction. Phase 2 in final design. Possible construction in 2010 depending upon funding. #6 - Project design complete but underfunded. Negotiating with National Park Service which could result in reduced costs.	C
70	X	1995-00	VDOT		X		X		Burke station completed 2001. Phase 2 completed in 2007, improved geometry on Rte. 630 between Brooke High School and Rte. 629. Phase 3 replacing Rte. 630 bridge over railroad crossing expected to be completed after Six Year Plan Only change is possibility of securing ARRA Stimulus funds to advance bridge replacement to a Jan.2010 Ad. Otherwise, bridge replacement set for July 2012.	C
82	X	1996-01	ARLG / FF	Old Dominion Drive Bike Trail			X		Arlington completing design review and permitting. Construction anticipated in early 2008. Contract to construct Phase I of bike lanes& sidewalks awarded. Construction in summer '09. Construction of Phase 2 expected to occur in 2010.	C
117	X	1998-03	ARLG	Arlington County Four Mile Run Bike Trail	X				Construction commenced September, 2007, to be completed March, 2009. Project now complete.	C
127	X	1999-04	VDOT	VA 234 Bike Trail	X				Completion by 2008. PWC reports that trail should be finished by 12/30/09.	C
136	X	2000-05	VDOT	Columbia Pike Trail - Now named Cross County Trail	X				Construction of Phase 2 (Cross County Trail - Accotink Stream Valley-Lake Accotink dam to Hunter Village Drive) includes three bridge crossings and an underpass of Old Keen mill Rd began in spring 2008 and scheduled to be complete summer 2009. Project completed in March 2009.	C
137	X	2000-05	VDOT	Lee Highway trail	X				Project complete & open to public.	C
177	X	2003-08	VDRPT	Interactive Rideshare & Kiosk Initiative	X				Phase I of project to be complete in January, 2008 and then Phase II will start. DRPT states that Phase I of TDM software System complete.Phase II mostly complete, & Phase III began in July.	C
190	X	2003-08	VDOT	Employer Vanpool Program (Bridge Bucks)	X				Pilot program started in 2004. Funded till 2008. Program completed with opening of bridge.	C
191	X	2003-08	LOU CO.	Town of Leesburg P&R Lot (150 spaces)	X				Project scheduled for completion in late 2008 or early 2009. County reports that P&R lot under construction, planned completion,Jan 2010.	C
221	X	1995-00	REGION	M-24 Sped Limit Adherence	X				This program has been underway since about 2000 and is anticipated to continue at least thru 2013.	TR

1. These TERM projects were a one-time, limited term (two years) infusion of funding from NoVa to support extra activities.

2010 UPDATES :

#69 - Bicycle Trail Facilities. #4 - Phase 1 was completed. Phase 2 is in final design and \$250,000 short on construction.

Want to build in 2011 provided that County bond money becomes available. Revenue Sharing request was denied. #6

Project is still in design and need of supplemental; funding. Hope for construction in late 2011 or 2012 providing get grant.

#82 Old Dominion Drive. Phase 1 completed in 2010. Phase 2 in final design and right of way acquisition. Funds for construction largely secured and construction expected in 2011.

#70 - Fredericksburg District Projects . Fredericksburg officials indicate that the Rte. 630 Bridge over Railroad is now under Construction.

-----Original Message-----

From: Lyn Erickson [mailto:lerickson@mdot.state.md.us]
Sent: Monday, September 13, 2010 12:05 PM
To: Reena Mathews; Daivamani Sivasailam; Vaughn Lewis; Eric Beckett
Cc: Howard Simons
Subject: FW: TERMS Tracking - review, comment and add by Sept 10

Hi Siva-

Here are our comments on the TERMS tracking sheet. If you have trouble reading them, please let us know and we'll get you something cleaner. I haven't gotten anything yet from MTA so there still is the potential for more comments, but there won't be many. Thanks!

Lyn

Lyn Erickson, AICP
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, MD 21076
W410-865-1279
C703-587-7935

From: Reena Mathews
Sent: Friday, September 10, 2010 3:35 PM
To: Lyn Erickson
Cc: Howard Simons; Vaughn Lewis; Eric Beckett; Roy Gothie; L'Kiesha Markley
Subject: RE: TERMS Tracking - review, comment and add by Sept 10

Hi Lyn,

Let me know if you have a problem reading our comments.

Reena Mathews

410-545-5668

EXHIBIT 25
TERM TRACKING SHEET
 TRANSPORTATION EMISSION REDUCTION MEASURES
 Part A - Daily Ozone Precursor Emissions

0909

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SF - Specific Vehicle Type, TCM - Transportation Control Measures


NO.	CREDIT TAKER	CREDITED	TP	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	2010		2010		2010		Project Category*	
						FULL	SCALED- BACK	UNDER- WAY	REM			VOC	NOX	VOC	NOX	VOC	NOX		
218	X	2003-08		VDOT	MV-121 Employer Outreach for Public Sector Employees ²	X				2005	2003	0.0147	0.0210	0.0085	0.0090	0.0077	0.0076	C	
220	X	2003-08		REGION	Signal System Optimization	X				2005	2005	0.4155	0.1488	0.2445	0.0463	0.2204	0.0323	TR	
221		2007-12		MDOT	Two P & R Lots in Frederick County (78 spaces)	X				2007	2008	0.0006	0.0011	0.0003	0.0005	0.0003	0.0004	C	
Available Emissions Credits												2.325	4.497	1.406	1.085	1.270	0.756		

222				MDOT	Park and Ride Lot US 340 (Frederick CO) expanded 66-97 spaces	X				2009	2007							
223				MDOT	" US 340 Mt Zion Rd. new lot 37 spaces	X				2008	2008							
224				MDOT	Park/Ride I-70 @ 355 (Frederick County) new lot 100 spaces			X		2010	2010							
225				MDOT	US 340 Mt Zion Rd Expansion 39 New Spaces					2011	2011							
226				MDOT	I-270 @ MD20 North Lot Expansion 164 New Spaces					2009	2009							
227				MDOT	Signal Systems Review					2010	ongoing							

MDOT reviews the signal systems every 3 years (400 signals a year) They estimate that they save between 600,000-1M hours of delay, hundreds of thousands of fuel saved, and reduced emissions. The Annual User Cost Savings is between \$20 and \$30 million. This is statewide.

228				MDOT	Takoma Lanyer Transit Center ↳ Check with MTA					2012	2012							
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MEMORANDUM

DATE: July 8, 2009
TO: FY2010-2015 TIP Air Quality Conformity File
FROM: Nicholas W. Ramfos, Director 
 Alternative Commute Programs
SUBJECT: Implementation of Commuter Connections Regional Transportation Emission Reduction Measure (TERMs)

The Commuter Connections regional TERM projects programmed and implemented for the FY95, FY96, FY97 and FY98 Transportation Improvement Programs (TIP) for the Washington metropolitan region for the purpose of reducing Nitrogen Oxides and Volatile Organic Compound emissions and achieving air quality conformity for the TIP include Employer Outreach, Guaranteed Ride Home, Telework Resource Center, Integrated Rideshare programs, and the Mass Marketing TERM (M-101a) adopted in the FY 97-02 TIP and advanced for implementation in the FY 98-03 TIP. In addition to the above pollutants the programs reduce PM 2.5, and Pre-cursor NOx which the region needs to mitigate.

Impact results for each of these TERMS were produced through a vigorous evaluation methodology implemented by Commuter Connections staff and several consulting firms.

An analysis report was completed in 2008 and the emissions benefit in 2008 is as shown below.

TERM Number	TERM Name	VOC (T/Day)	NOx (T/Day)	PM 2.5 Annual Tons	Precursor NOx Annual Tons
M-92	Telework Resource Center	0.126	0.211	1.3	50
M-47C	Guaranteed Ride Home	0.056	0.106	0.7	25.2
M-47C	Employer Outreach	0.102	0.178	2.9	109.7
M-70B	Employer Outreach – Bicycle	0.001	0.001	0.0	0.2
M-47*	Integrated Rideshare	0.016	0.027	0.2	6.4
M-101A	Mass Marketing	0.017	0.032	0.2	7.6

*Virginia discontinued the kiosk project portion of the TERM on December 31, 2006.

Jane Posey

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Sent: Monday, September 25, 2006 9:32 AM

To: Daivamani Sivasailam

Cc: Nat Bottigheimer; Tomika Hughey; Thomas Harrington; Wendy Jia

Subject: WMATA projects on the TERM Tracking Sheet

Two projects that WMATA had underway on the TERM Tracking sheet have been fully implemented. They are:

Item 143: Ultra Low Sulfur Diesel Fuel with CRT filters * completed installation, June 2006

Item 197: 250 CNG buses * completed purchase and in service, June 2006.

With this status report all the WMATA projects have been fully implemented.

Kristin Haldeman

Office of Business Planning & Project Development

Washington Metropolitan Area Transit Authority

600 Fifth Street, NW

Washington, DC 20001

202-962-1848

202-962-1409 (fax)

From: Casey, Austina (DDOT) [mailto:austina.casey@dc.gov]
Sent: Tuesday, September 28, 2010 10:17 AM
To: Daivamani Sivasailam; Keys, Maurice (DDOT)
Cc: Jane Posey; Anant Choudhary
Subject: RE: TERMS

Hello Siva,

Thanks for sending me the information. Here is the update for the DC projects:

#	Project	Current Status	Updated Status
72	Bicycle Facility	Scaled back	Full
146	Bicycle Lane in D.C. (35 miles)	Underway	Full
225	M-103 Taxicab Replacement (DC)	None	Remove

Currently, I do not have any new projects to add to the list. Maurice and other DDOT Executives have to meet and decide on which ones need to be added to the TERMS tracking. I don't know when that meeting would occur but I will update you as soon as the decision is made.

Please let me know if you have any questions.

Thanks
-Tina

From: Daivamani Sivasailam [mailto:siva@mwcog.org]
Sent: Monday, September 27, 2010 2:41 PM
To: Casey, Austina (DDOT); Keys, Maurice (DDOT)
Cc: Jane Posey; Anant Choudhary
Subject: TERMS

Tina:

Find attached a copy of the tracking sheet with projects 221 through 224. Please send an email to remove project number "225" from the list. You need to report only on projects that are underway which is two or three in DC. Also if you can add new projects that have already been funded to the list it will be good since we have not added projects since FY 2003 TIP. The reported will be presented to the TPB Tech this Friday and the full report will be released for public comment next Thursday. We need comments by Wednesday so we can incorporate them for Friday's release.

Siva

Daivamani Sivasailam
Principal Transportation Engineer
MwCOG
202 962-3226
siva@mwcog.org