

## **National Capital Region Transportation Planning Board**

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### MEMORANDUM

October 20, 2010

To: Transportation Planning Board

From: Jane Posey  
Senior Transportation Engineer

Subject: Air Quality Conformity Assessment for the 2010 Update of the Constrained Long Range Plan (CLRP) and FY2011-2016 Transportation Improvement Program (TIP)

### INTRODUCTION

This memo documents summary results of the air quality conformity assessment of the 2010 CLRP and the FY2011-2016 TIP with respect to ozone season and fine particle (PM<sub>2.5</sub>) pollutants, and wintertime carbon monoxide (CO). The results have been endorsed by the TPB Technical Committee. A public comment period for the Plan, TIP, and conformity assessment began at the October 14, 2010 TPB Citizens Advisory Committee meeting and is scheduled to end on November 14, 2010.

Conformity assessment criteria vary by pollutant. Tests include adherence to mobile source emissions budgets in the case of ozone season pollutants (VOC and NO<sub>x</sub>) and CO, and a demonstration that forecast year PM<sub>2.5</sub> (including both directly emitted PM<sub>2.5</sub> and precursor NO<sub>x</sub>) emissions are not greater than base year 2002 emissions. One hour ozone precursor mobile emissions budgets are taken from the Metropolitan Washington Air Quality Committee (MWAQC)'s Severe Area State Implementation Plan (SIP) (1-hour ozone non-attainment area) document, Plan to Improve Air Quality in the Washington, DC-MD-VA Region, February 19, 2004. In addition, in 2007 MWAQC completed the development of the 8-hour ozone SIP with new mobile emissions budgets, which also correspond to a different geographic area (relevant planning areas are shown in Exhibit 1). Similarly, in March 2008 MWAQC approved, and the state air agencies subsequently submitted to EPA, the region's PM<sub>2.5</sub> Attainment Plan. Adherence to both the 8-hour ozone and PM<sub>2.5</sub> budgets is also documented in this report, even though to date EPA has not yet acted upon them.

### BACKGROUND

On May 19, 2010 the TPB approved the scope of work and the project submissions for inclusion in the conformity analysis for the year 2010 update of the CLRP and FY2011-2016 TIP. Key technical inputs to the analysis included: Round 8.0 Cooperative Forecasts; the Version 2.2 Travel Demand Model utilizing the new project submissions and reflecting updated transit service; and EPA's Mobile6.2 Emissions Factor Model.

Staff proceeded with the technical analyses described below to ascertain whether the draft plan and program would meet the specific conformity criteria.

## **WORK ACTIVITIES**

Technical work activities for the conformity assessment of the 2010 CLRP and FY2011-2016 TIP included the preparation of volatile organic compound (VOC), nitrogen oxide (NO<sub>x</sub>), PM<sub>2.5</sub>, and wintertime carbon monoxide (CO) emissions inventories for specified forecast years associated with the plan and program (forecast years: 2011, 2020, 2030 and 2040). While ozone season pollutants (VOC and NO<sub>x</sub>) and wintertime CO are inventoried for average weekday conditions, precursor NO<sub>x</sub> and direct PM<sub>2.5</sub> are inventoried to reflect emissions on a yearly total basis. Accordingly, staff applied seasonal adjustment factors to convert daily travel (annual average weekday traffic or AAWDT) to annual values.

These inventories address a primary conformity assessment criterion to demonstrate that emissions associated with the plan and program adhere to the established mobile source emissions levels. In anticipation of possible emissions increases associated with implementation of the plan and program, staff (in conjunction with the TPB Technical Committee and its Travel Management Subcommittee) conducted parallel analyses of committed and potential new transportation emissions reduction measures (TERM)s, and documented emissions benefits for each analysis year.

## **Plan Amendments and Program Elements**

There have been some new projects and changes advanced for the CLRP / TIP in this year's approval cycle. Attachment A presents an excerpt from the May 19, 2010 TPB item listing the major changes to the conformity project inputs since the Fall amendments to the 2009 CLRP and the FY2010-2015 TIP. It should be noted that many projects in the previous CLRP were removed this year due to budget constraints.

## **Land Activity Forecasts**

On January 21, 2010 COG's Metropolitan Development Policy Committee approved Round 8.0 Cooperative Forecast totals to be used for testing purposes in analysis of the CLRP and TIP. The Round 8.0 data, summarized in Attachment B, reflect not only the forecast small area land use distributions throughout the Washington area, but also the latest planning assumptions for areas outside the Washington region. For example, the Baltimore land use input to Round 8.0 reflects the Baltimore Metropolitan Council's 'Round 7-B' adopted figures, whereas their previous input to the COG Round 7.2A forecasts was their 'Round 7-A' figures.

The Round 8.0 Cooperative Forecasts are based on new national and regional econometric forecasts. When compared to the previous Round 7.2A Forecasts, the Round 8.0 Forecasts have fewer jobs and households in all forecast years. Job forecasts are 1.7 to 2.4 percent lower regionally in Round 8.0 than in Round 7.2A. Household forecasts are 1.3 to 2.0 percent lower regionally in Round 8.0 than in Round 7.2A. Decreases for some specific jurisdictions are dramatically higher. Summaries of

percent change between Round 8.0 and Round 7.2A are included in Attachment B. Even with this change, however, the projected regional growth from 2005 to 2040 includes a 47 percent increase in jobs and a 43 percent increase in households.

## **Transit Fares**

WMATA has made two policy changes that affect transit fares. For Metrorail there is a price differential for those who use SmarTrip vs. those who use paper fare cards. There is also the addition of a surcharge for those who travel in the peak-of-the-peak. Metrobus users also pay a different fare for SmarTrip vs. cash. Most other transit providers in the region implemented fare increases this year also. These fare increases were incorporated in the travel demand inputs and had a significant affect on transit trips. Compared to the 2009 CLRP, the 2010 CLRP has 10 percent fewer transit trips in 2020, and 9 percent fewer transit trips in 2030.

## **Travel Modeling Process**

For this conformity analysis staff used TPB's travel demand model, Version 2.2. Using the Version 2.2 model, COG/TPB staff prepared travel demand forecasts for each of the required forecast years. Exhibit 1 presents the geographic areas for travel modeling and for emissions reporting for each non-attainment area. Exhibit 2 presents the resulting average weekday transit trips, vehicle trips, and vehicle miles traveled (VMT) results through time for each conformity analysis year, for the full modeled area.

## **Emissions Factors**

Staff developed motor vehicle emissions factors through execution of EPA's MOBILE6.2 emissions factor model. These rates for each pollutant, shown using Fairfax County data as an illustration in Exhibits 3 and 4, were developed following execution of the model in one mph speed increments, by jurisdiction, for each analysis year. The chart shows significantly reduced rates through time, primarily due to the impacts of having cleaner fuel and vehicles in the fleet. Exhibit 5 presents direct PM<sub>2.5</sub> emissions rates through time for each of the three seasons; data are arrayed in a bar chart since these emissions rates do not vary by vehicle speed.

## **Emissions Analyses**

### Mobile Emissions Inventories

#### *Ozone Season and Wintertime CO – Daily Emissions*

Prior to calculation of daily mobile source emissions, the above (AAWDT) travel forecasts produced through the travel demand modeling process were first factored by seasonal adjustments (a 1.05 ozone season factor or a 0.97 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. These emissions results for ozone season pollutants are summarized in Exhibits 6 - 9 and indicate total VOC and NOx

emissions for each analysis year. The charts show dramatic reductions throughout the period. Historical emissions reductions from the clean air act amendments 1990 base have been well documented in the past. 2040 VOC and NO<sub>x</sub> emissions represent about 13 percent and less than 10 percent, respectively, of their 1990 levels. The results reflect the impact of the cleaner fuel / fleet and related programs, in conjunction with slowing VMT growth rates through time.

The forecast year emissions estimates are somewhat lower than in recent analyses. This decrease in emissions reflects the effect of a decrease in vehicle miles traveled (VMT). This VMT decrease is associated with lower households and job forecasts in the Round 8.0 Cooperative Forecasts, as compared to Round 7.2A, and the removal of some highway projects from the 2010 CLRP.

### *PM<sub>2.5</sub> – Yearly Emissions*

To develop the yearly total PM<sub>2.5</sub> 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<sub>2.5</sub> and precursor NO<sub>x</sub> emissions, shown in the Exhibits 10 and 11 bar charts, exhibit similar dramatic reductions through time despite increases in vehicle trips and VMT in the forecast years. These reductions are also largely attributable to Tier II vehicle standards, cleaner fuels, and the heavy duty engine rule, and continue to generate additional emissions reductions through time as fleet turnover replaces older vehicles / truck engines with much cleaner ones.

### *Plan and Program Emissions Versus Emissions Budgets*

Reference to Exhibits 6-11 provides a comparison of emissions levels associated with the CLRP and TIP to the maximum allowable for each pollutant. Net emissions for each forecast year are shown in comparison to emissions budgets, and are seen to be within the mobile budgets for all forecast years (including 8-hour ozone and PM<sub>2.5</sub> budgets not yet approved by EPA). Wintertime CO emissions (contained in a full technical report but not summarized here) follow these same general trends and are easily within the CO emissions budget level.

Exhibits 10 and 11 show that both direct PM<sub>2.5</sub> and precursor NO<sub>x</sub> emissions are much lower than base year 2002 conditions and are within the proposed mobile budgets, for all forecast years, satisfying this additional conformity assessment criterion for PM<sub>2.5</sub>. In view of the fact that estimated emissions are within the required mobile source emission levels for each pollutant, no additional transportation emissions reduction measures are required to demonstrate conformity.

### Net Emissions Analysis

The emissions inventory data contained in Exhibits 6-11 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. Attachment C 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<sub>2.5</sub> 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<sub>x</sub>, and approximately 18 and 898 tons per year of direct PM<sub>2.5</sub> and precursor NO<sub>x</sub>, 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. Combining the emissions results in Exhibits 6-11 with the additional reductions from TERMS would further improve the emissions margins for each pollutant.

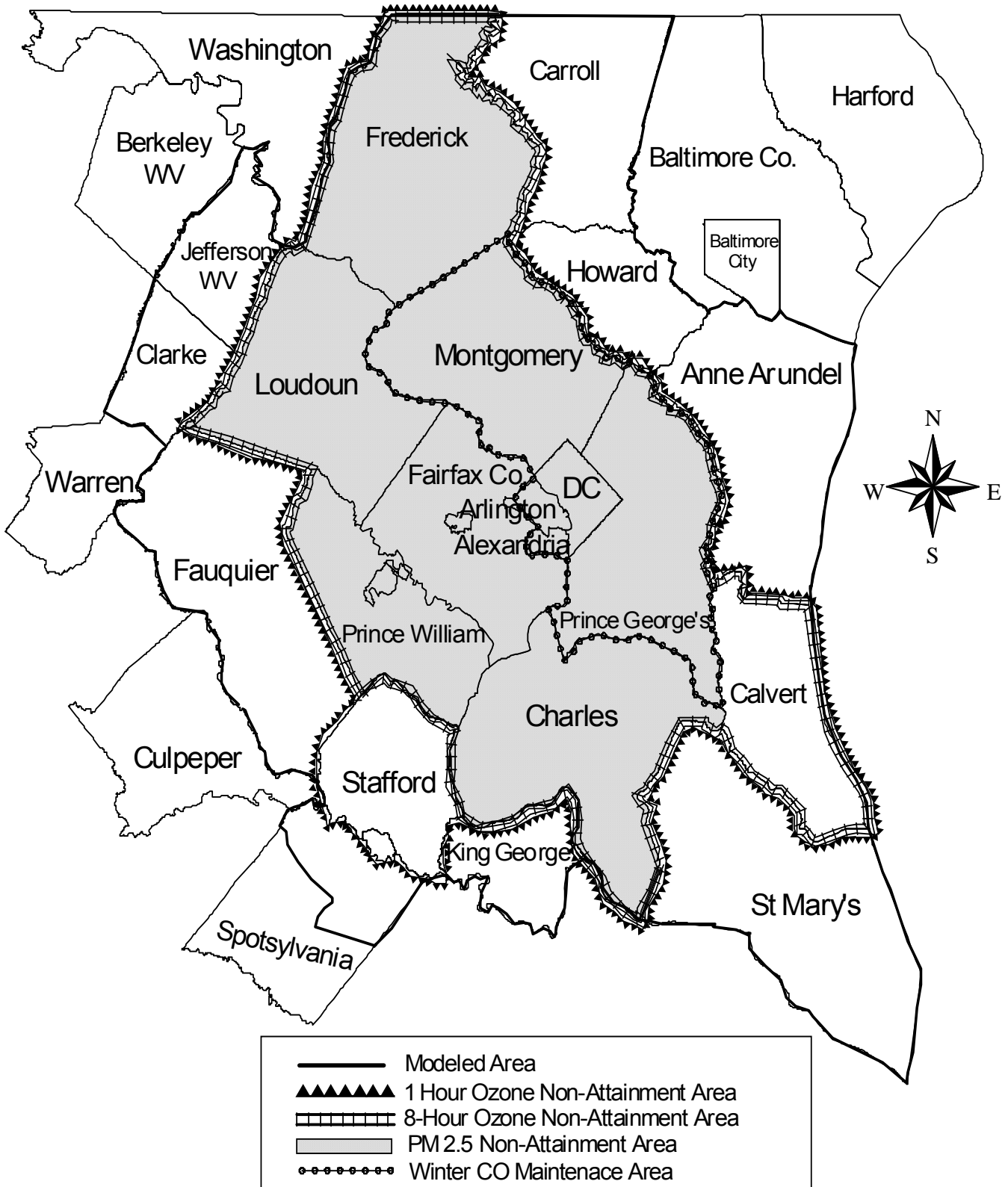
## **SUMMARY**

The analytical results described in this air quality assessment provide a basis for a determination by the TPB of conformity of the 2010 CLRP and the FY2011-2016 TIP.

Following: Exhibits 1-11  
Attachments A - C

# EXHIBIT 1

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



**Exhibit 2**  
**Travel Demand Summary**  
**Modeled Area Trips and Vehicle Miles Traveled (000's)**  
**Average Weekday Traffic (AWDT)**

	<u>2002</u>	<u>2011</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>
<b>Transit Trips</b>	1,055.7	1,096.7	1,378.2	1,517.0	1,632.4
<b>Vehicle Trips</b>	19,535.7	22,236.8	24,560.9	26,887.4	28,777.3
<b>VMT</b>	145,504.9	160,327.0	177,817.0	190,672.5	199,813.8

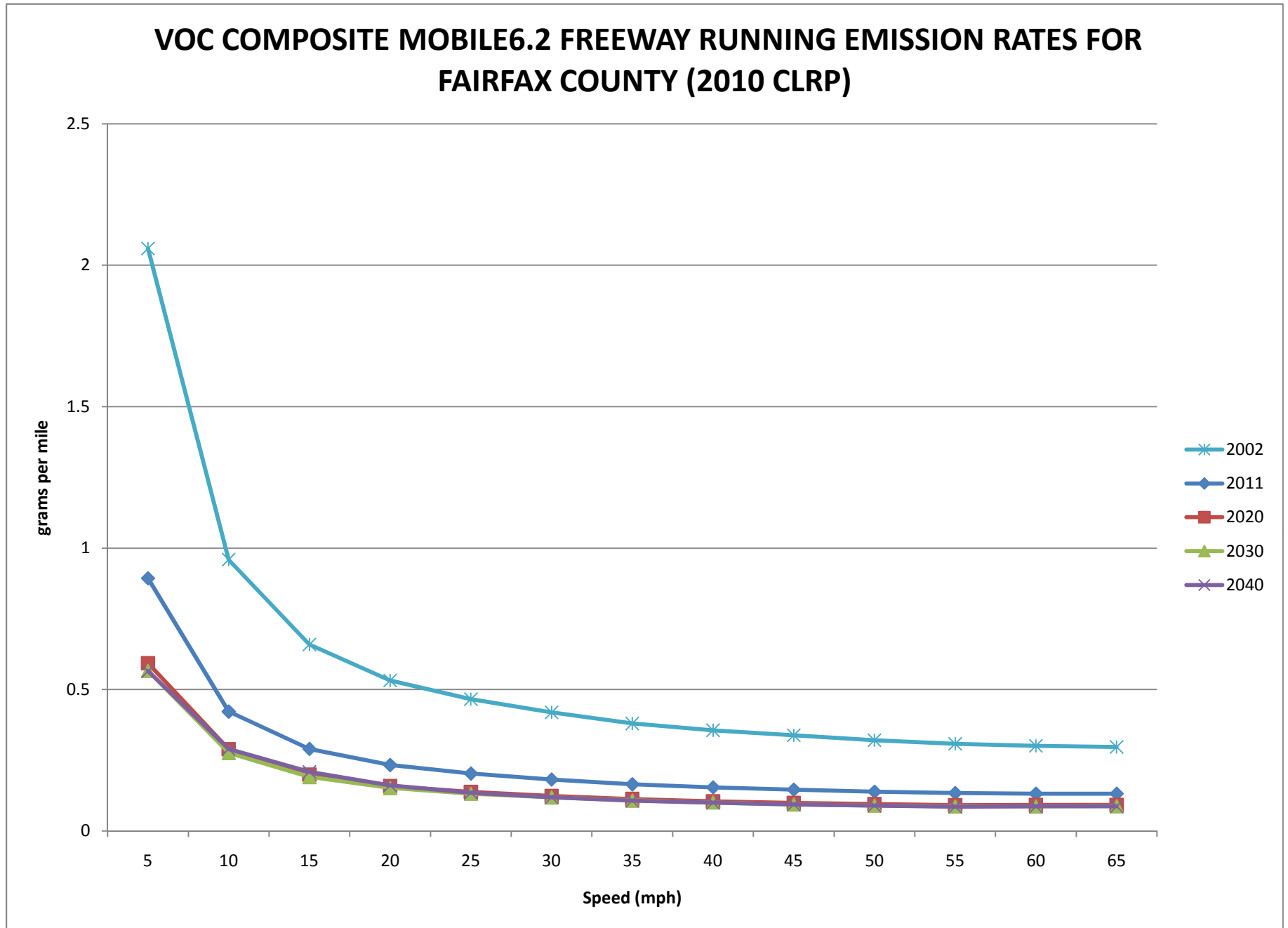
**Adjustment Factors to Convert AWDT to Appropriate Season:**

**Ozone Season AWDT: 1.05**

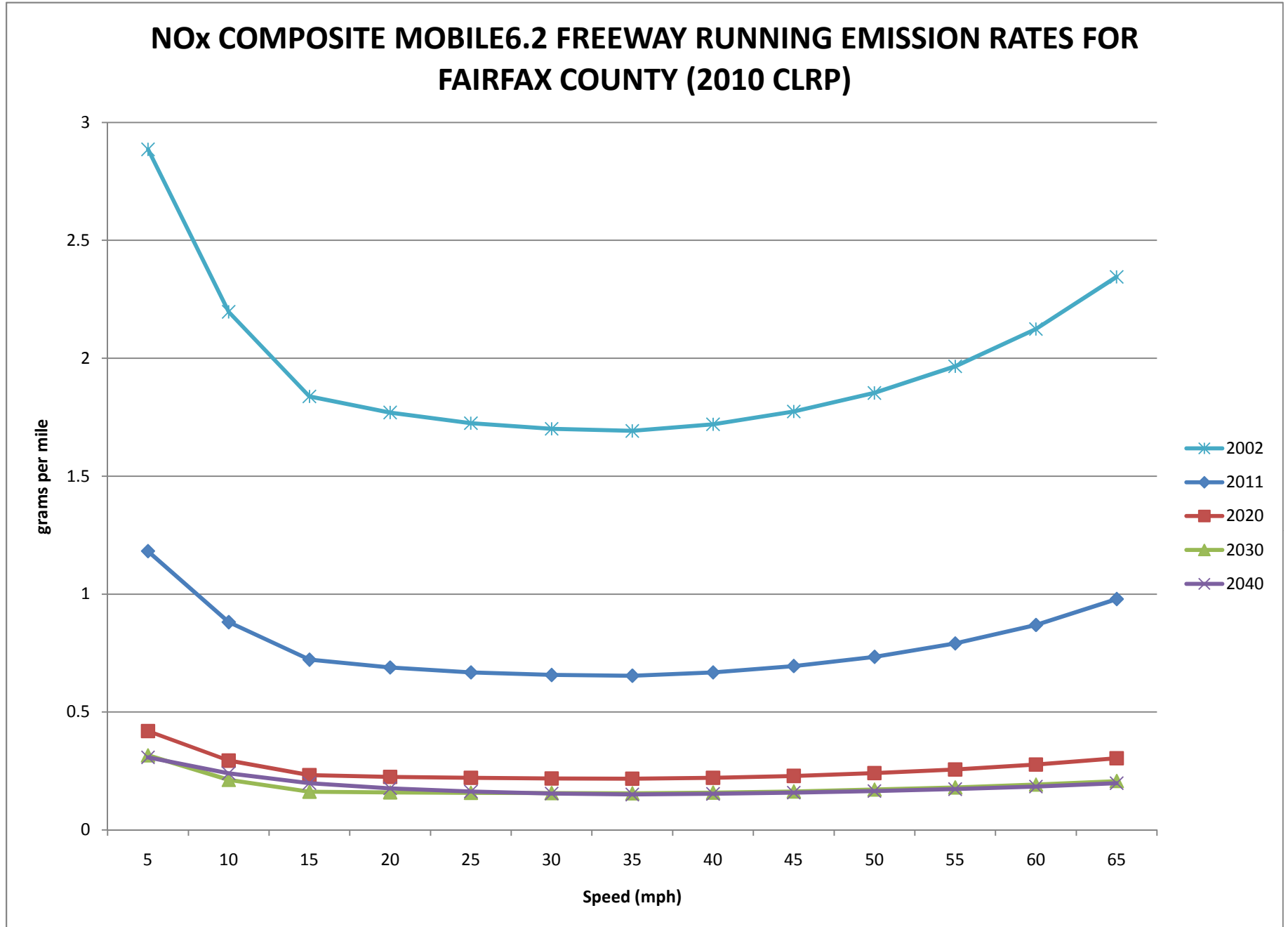
**Winter Season AWDT: 0.97**

**PM2.5 Annual:**

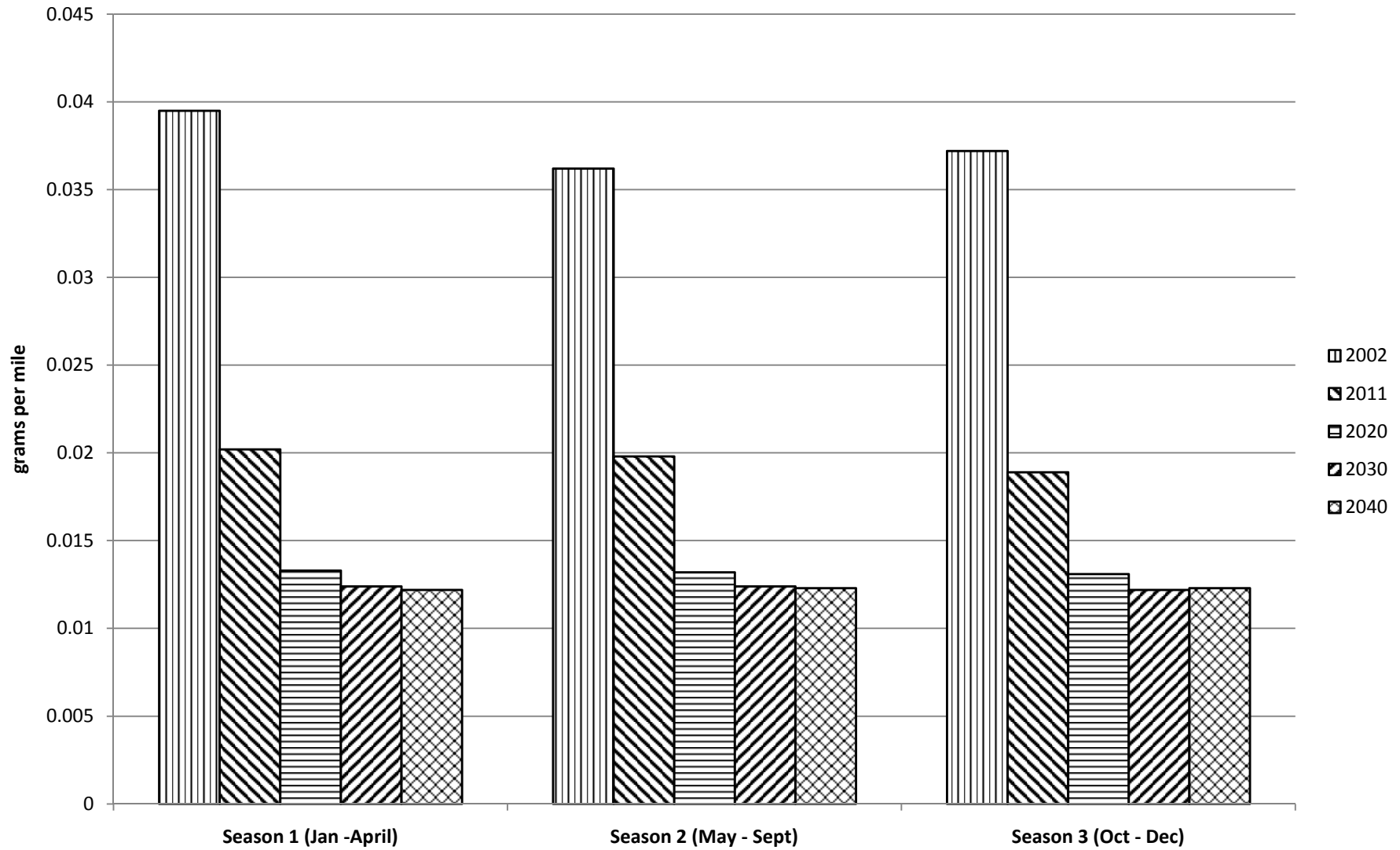
<b>Season (ADT)</b>	<b>Factor</b>
Season 1 (Jan- Apr)	0.9216
Season 2 (May- Sept)	0.9873
Season 3 (Oct- Dec)	0.9282





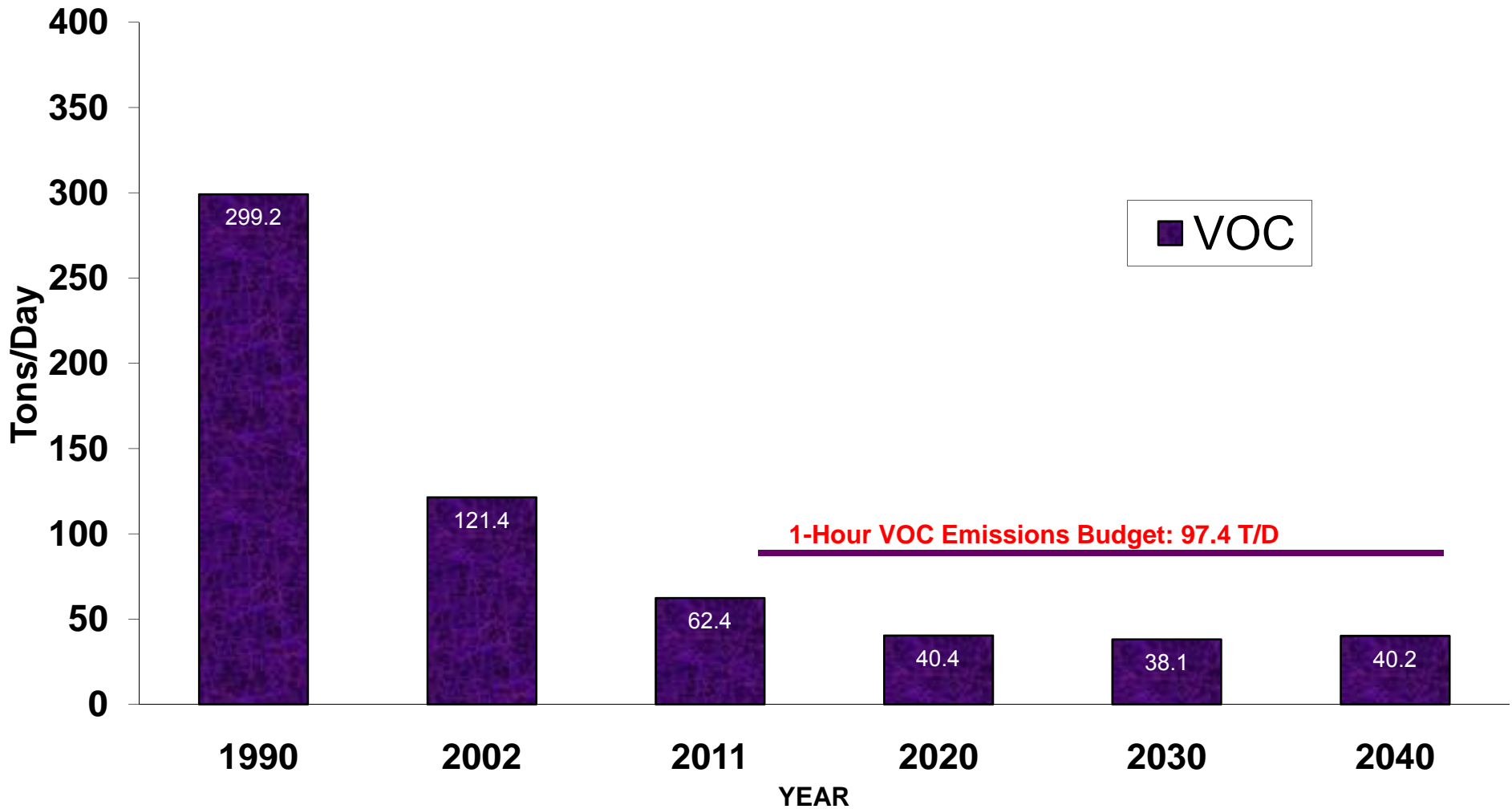


### Exhibit 5 DIRECT PM<sub>2.5</sub> EMISSION RATES FOR FAIRFAX COUNTY (MAJOR ROADS NETWORK)



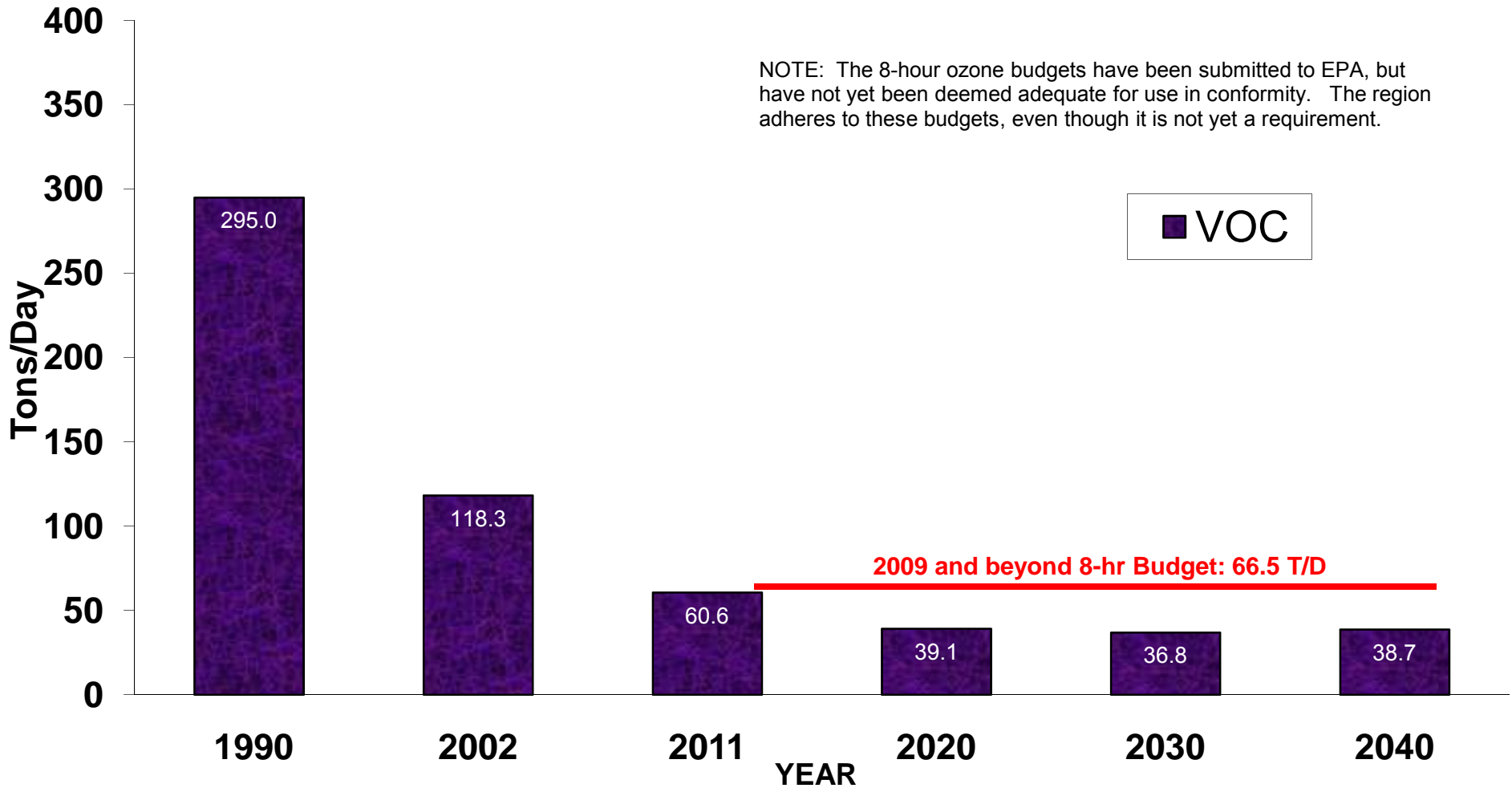
# EXHIBIT 6

## Mobile Source VOC Emissions for the 1-Hour Ozone Nonattainment Area 2010 CLRP and FY 2011-2016 TIP



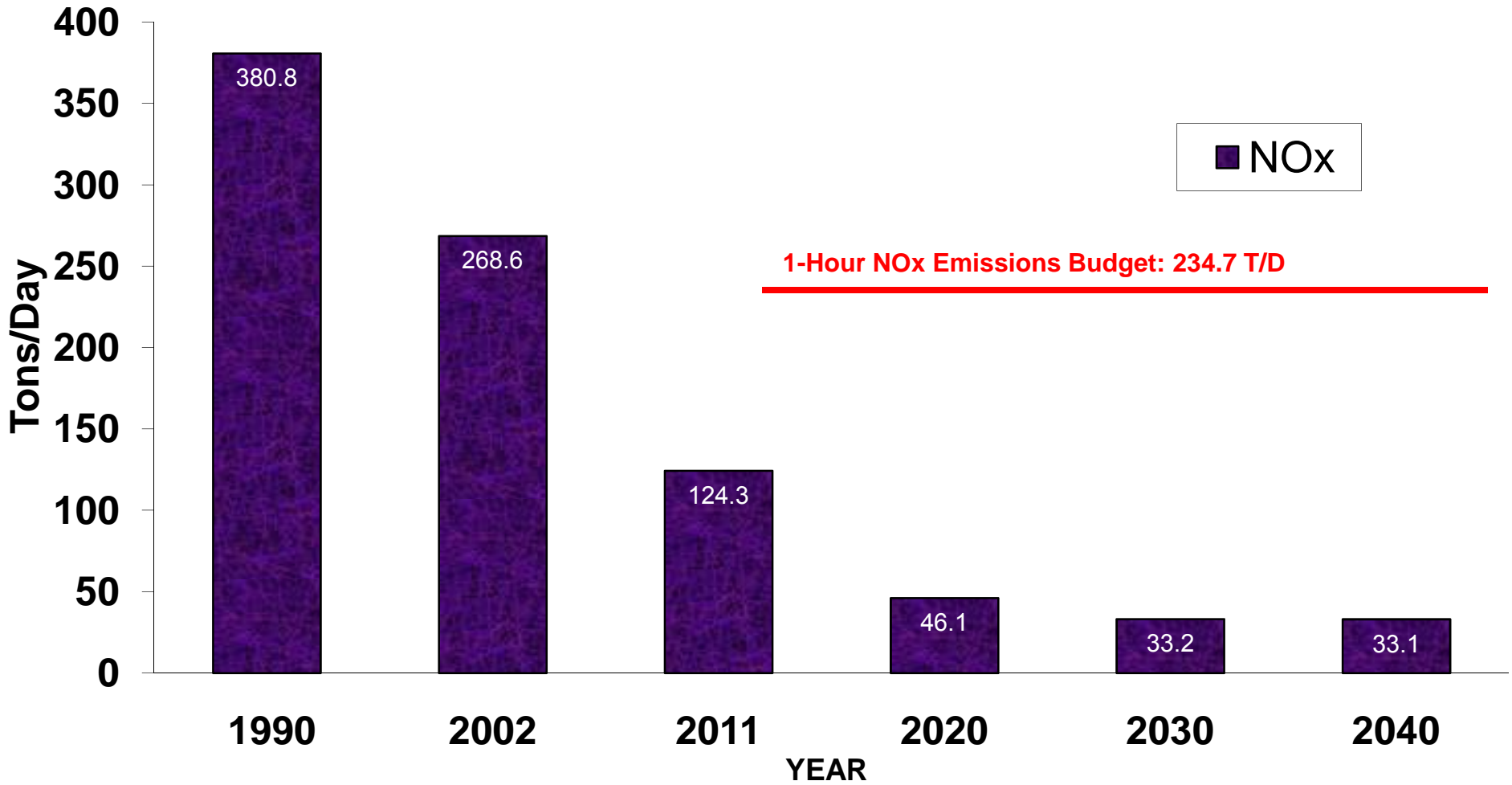
# EXHIBIT 7

## Mobile Source VOC Emissions for the 8-Hour Ozone Nonattainment Area 2010 CLRP and FY 2011-2016 TIP



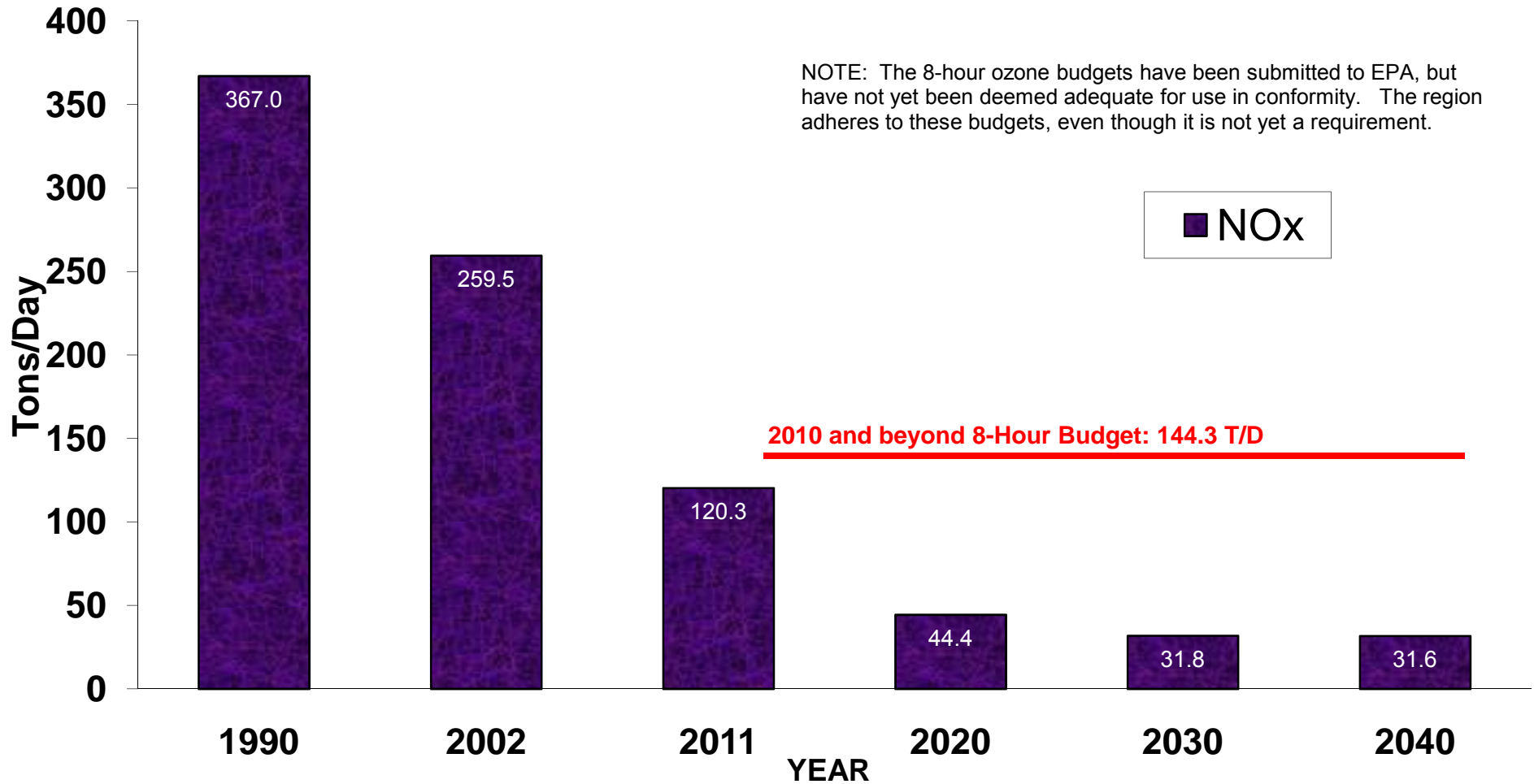
# EXHIBIT 8

## Mobile Source NOx Emissions for the 1-Hour Ozone Nonattainment Area 2010 CLRP and FY 2011-2016 TIP



# EXHIBIT 9

## Mobile Source NOx Emissions for the 8-Hour Ozone Nonattainment Area 2010 CLRP and FY 2011-2016 TIP

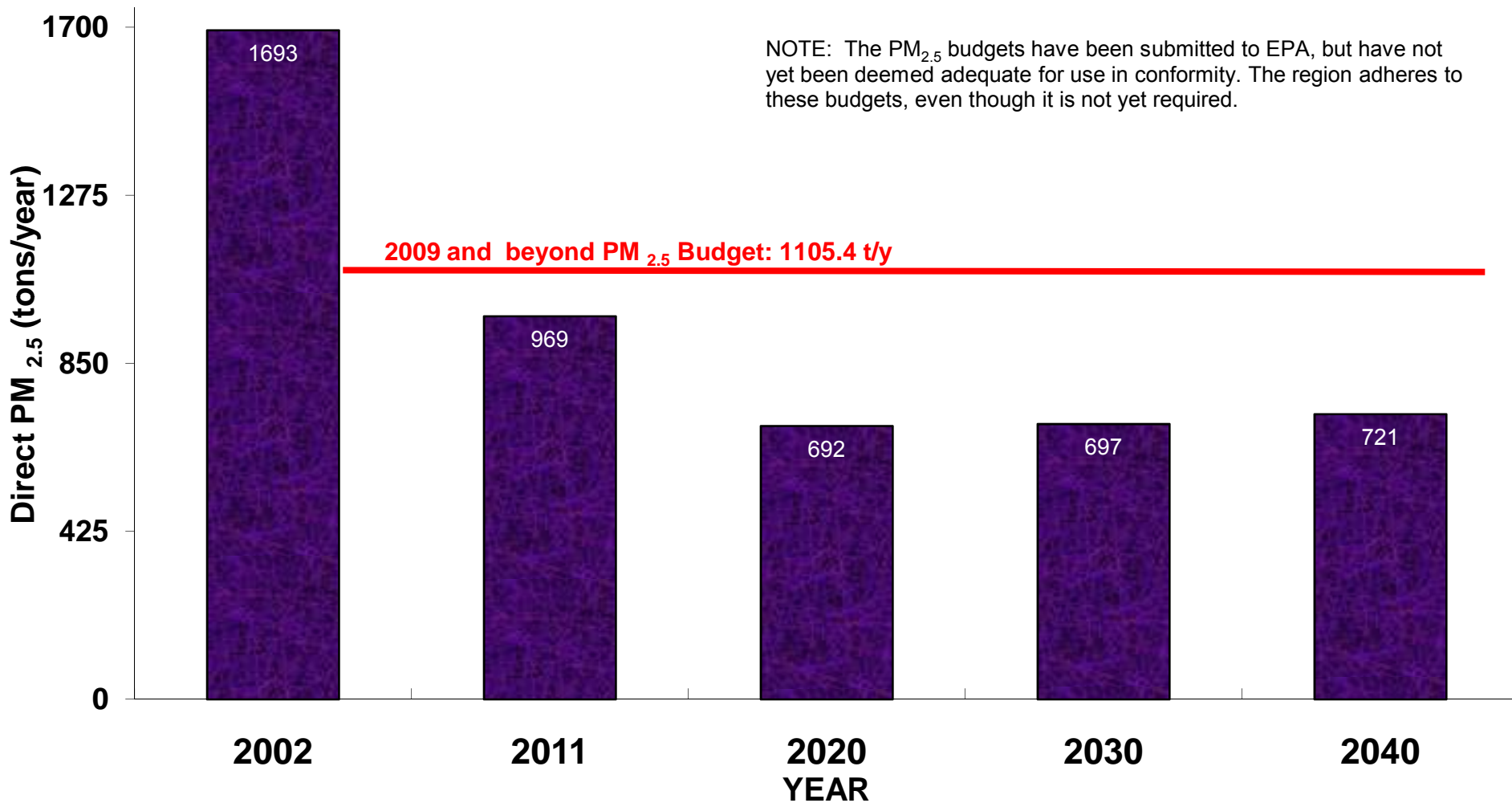


# EXHIBIT 10

## Mobile Source Emissions

### 2010 CLRP and FY 2011-2016 TIP

#### Direct PM<sub>2.5</sub>



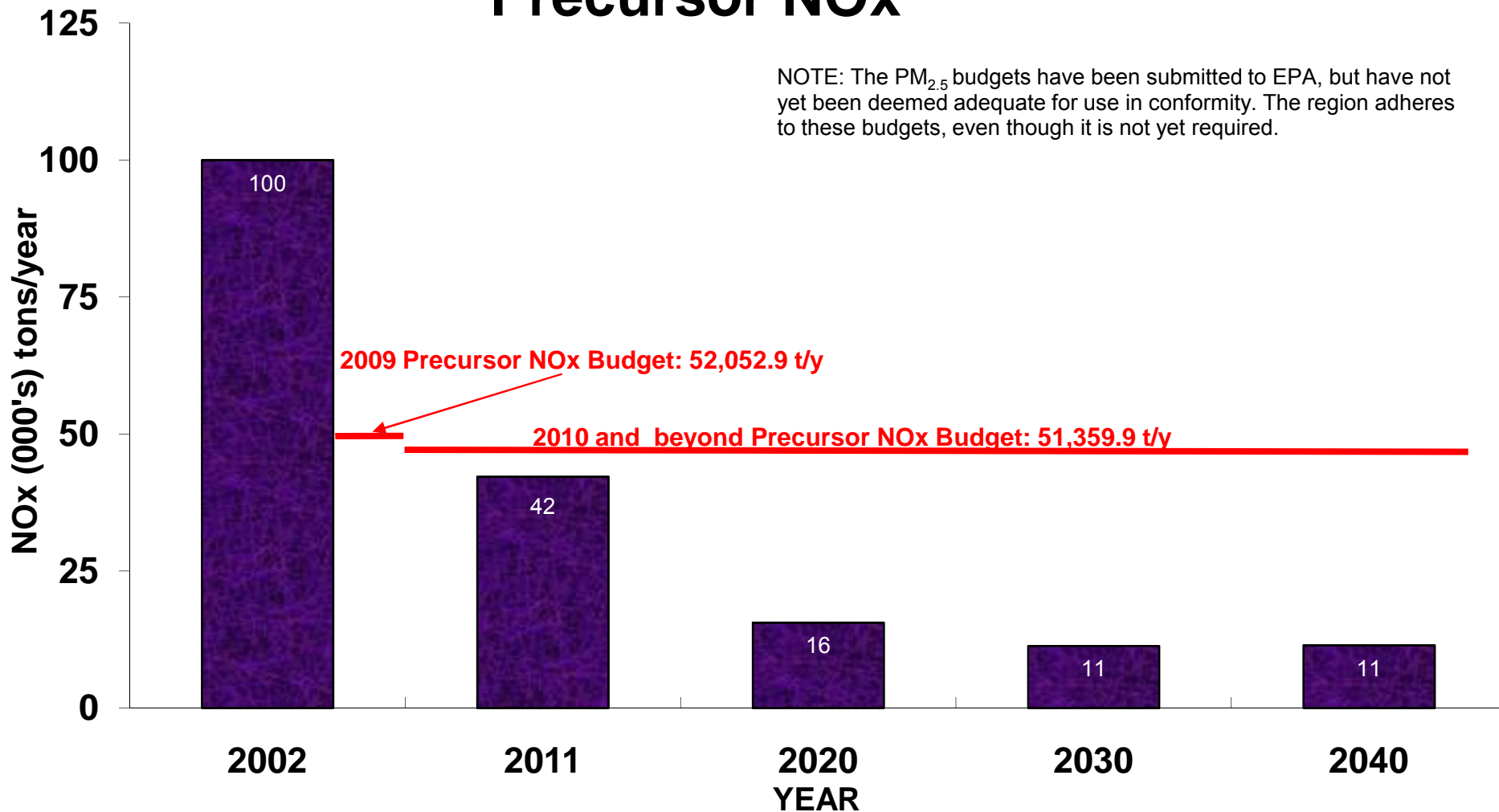
# EXHIBIT 11

## Mobile Source Emissions

### 2010 CLRP and FY 2011-2016 TIP

### Precursor NOx

NOTE: The PM<sub>2.5</sub> 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.





# **ATTACHMENT A**

# Significant Additions and Changes to The 2010 Update to the Financially Constrained Long-Range Transportation Plan



## Significant Additions to the 2010 CLRP

### DISTRICT OF COLUMBIA

#### 1. DC Streetcar Project

This project will build three new segments of a larger streetcar network that is currently being planned by the District Department of Transportation. These new segments will complement the initial Anacostia segment which was added to the CLRP in 2006 and is currently under construction. The streetcars will share a lane with automobile traffic and will run every 10 minutes during peak and off-peak periods. The three proposed segments are:



- a) Continuation of the Anacostia Line along Martin Luther King, Jr. Avenue SE from Howard Road SE to Good Hope Road SE (0.5 miles, Complete 2012)
- b) H Street/Benning Road NE from Union Station to Oklahoma Avenue (2 miles, Complete 2012)
- c) Benning Road NE from Oklahoma Avenue NE to 45<sup>th</sup> Street NE/Benning Road Metro Station (1.8 miles, Complete 2015)

Two more segments will be added to the CLRP as studies:

- d) Union Station to Mt. Vernon Square along H Street NW, New Jersey Avenue NW and K Street NW
- e) K Street NW from Mt. Vernon Square to Wisconsin Avenue NW

Length: 4.5 miles  
Cost: \$183.8 million (Capital)  
\$4.8 million per year (Operating)  
Source: General obligation bonds, FTA/Urban Circulator Program Capital Grant

See the CLRP project description and DDOT letter dated April 13, 2010 in Attachment A for more information.

## 2. Bike Lane Pilot Project

This pilot project\* will add barrier-protected bike lanes on five streets in downtown DC. The bike lanes will be protected from automobile traffic by either a lane of parking or buffer zone. To accommodate the bike lanes, one lane of automobile traffic will be removed from 9<sup>th</sup>, 15<sup>th</sup>, L and M Streets. Two lanes will be removed from Pennsylvania Avenue and the bike lanes will travel down the center median.

- a) 9<sup>th</sup> Street NW from Constitution Avenue NW to K Street NW (0.7 mile)
- b) 15<sup>th</sup> Street NW from Constitution Avenue NW to W Street NW (2 miles)
- c) L Street from 11<sup>th</sup> Street NW to 25<sup>th</sup> Street NW (1.3 miles)
- d) M Street from 15<sup>th</sup> Street NW to 29<sup>th</sup> Street NW (1 mile)
- e) Pennsylvania Avenue NW from 3<sup>rd</sup> Street NW to 14<sup>th</sup> Street NW (1 mile)

Length: 6 miles  
Complete: 2010  
Cost: \$1.2 million  
Source: Local



\* Because this is a “pilot project”, it will not be considered permanent until the District Department of Transportation (DDOT) has evaluated the effectiveness and impacts of the proposed changes. If DDOT decides to make them permanent, they will be required to submit them again for air quality conformity testing in the future.

See the CLRP project description in Attachment A for more information.

### 3. St. Elizabeth's Access Improvements

The following improvements are proposed to address the increased traffic expected when the Department of Homeland Security moves to the St. Elizabeth's campus.

- a) Reconfigure the I-295/Malcolm X Avenue SE Interchange
- b) Construct a new 3-lane access road to the West Campus, parallel to I-295 from Firth Sterling Avenue SE to Malcolm X Avenue SE
- c) Reconstruct Martin Luther King, Jr. Avenue SE from Pomoroy Road SE to Milwaukee Place SE to add a 5<sup>th</sup> lane
- d) Construct a 2-lane extension of 13<sup>th</sup> Street SE from Congress Heights Metro Station to Pecan Street SE
- e) Reconstruct and reconfigure Pecan and Sycamore Streets to accommodate bus/transit

Complete: 2016  
Cost: \$158.2 million  
Source: Federal funding



See the CLRP project description in Attachment A for more information.

### 4. Glover Park Streetscaping/Wisconsin Avenue Reconfiguration Wisconsin Avenue NW from 34<sup>th</sup> Street NW to Garfield Street NW

Within the limits cited, Wisconsin Avenue NW will be reconfigured from six lanes down to four lanes with a center left-turn lane. The purpose of this project is to improve the attractiveness of the Glover Park commercial district and to address pedestrian and vehicular safety.

Complete: 2011  
Cost: \$4.7 million  
Source: General obligation bonds and federal funding

See the CLRP project description in Attachment A for more information.



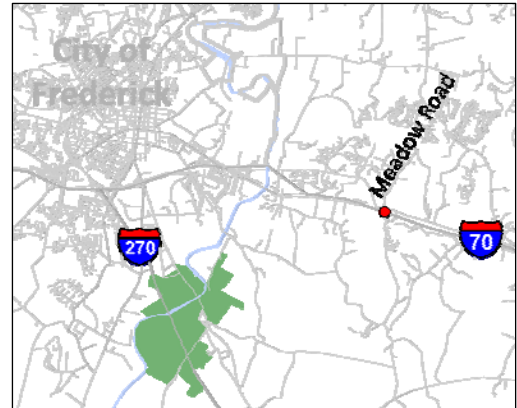
## MARYLAND

### 5. I-70 Interchange at Meadow Road

Reconstruct the interchange of I-70 and Meadow Road to provide missing ramp movements.

Complete: 2016  
Cost: \$27 million  
Source: Federal and State funding

See the CLRP project description in Attachment A for more information.

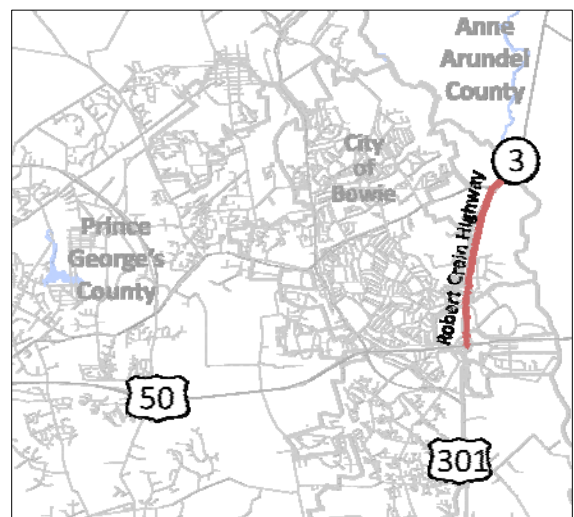


### 6. MD 3, Robert Crain Highway from US 50 to the Anne Arundel County Line

This project was originally included in the 2009 CLRP, but was removed to shift funding for the implementation of the Purple Line. Funding has been shifted from other projects to include this project in the CLRP once again. MD 3 will be upgraded to a four to six lane roadway with improved access control.

Length: 2.5 miles  
Complete: 2030  
Cost: \$399 million  
Source: Federal and State funding

See the CLRP project description in Attachment A for more information.

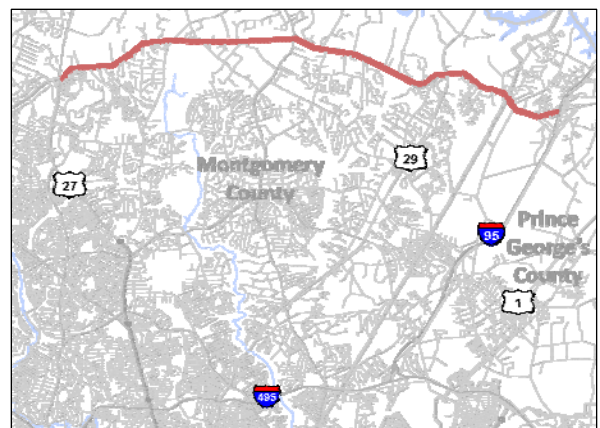


### 7. MD 28, Norbeck Road/MD 198, Spencerville Road from MD 97 to I-95

This project was originally included in the 2009 CLRP, but was removed to shift funding for the implementation of the Purple Line. Funding has been shifted to include this project in the CLRP once again. This project will upgrade the facility to a 4-lane divided highway from MD 97 to Old Gunpowder Road, and to a 6-lane divided highway from Old Gunpowder Road to I-95.

Length: 11 miles  
Complete: 2025  
Cost: \$352 million  
Source: Federal and State funding

See the CLRP project description in Attachment A for more information.



## SIGNIFICANT CHANGES, DELAYS AND DELETIONS

The following is a list of regionally significant projects that have either changed in scope, have been delayed by ten years or more, or have been removed from the CLRP (or reduced to “study” status). The numbers shown in the third column reference the project locations on the map on page 10, except for those transit projects marked with a † which are shown on page 11.

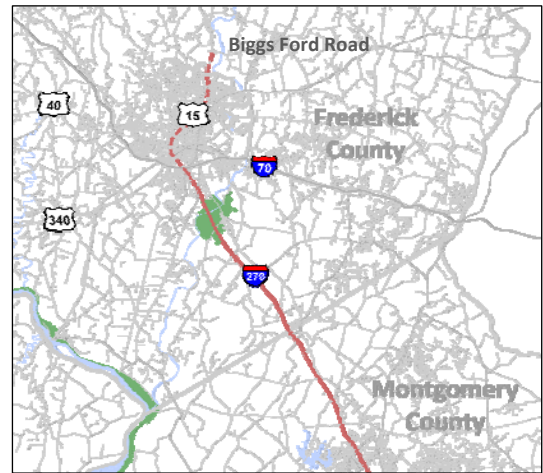
### Maryland

#### *Changes to Existing Projects*

- I-270/US 15 from Shady Grove Metro Station to Biggs Ford Rd.

The limits of this project were previously defined from the Shady Grove Metro Station to I-70. MDOT is proposing to extend the project from I-70 to Biggs Ford Road. This project will implement highway improvements along the corridor.

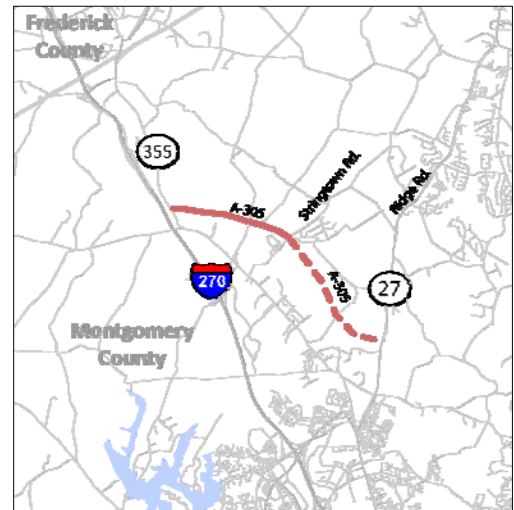
Length:	7 miles (28 miles total)
Complete:	2030
Cost:	\$3.4 billion
Source:	Federal and State



- A-305, Mid-County Highway Extended from MD 355 to MD 27

The limits of this project were previously defined from MD 355 to Stringtown Road. MDOT is proposing to extend the project from Stringtown Road to MD 27. This will construct a new 2 lane roadway from MD 355 to Stringtown Road and a new 4 lane roadway from Stringtown Road to MD 27. This segment of the project was in the 2008 CLRP but had subsequently been removed.

Complete:	2012
Cost:	\$12 million
Source:	Private



## Maryland (continued)

### *Projects delayed 10 years or more*

	<b>Old Date</b>	<b>New Date</b>	<b>Map # (page 9)</b>
• MD 2/4, construct 3 lanes from MD 765 to MD 2/4 at Lusby (Calvert County)	2020	2040	not mapped
• MD 4, construct interchange at Westphalia Road	2010	2020	30

### *Projects removed from the Plan\**

• I-95/495 interchange at Greenbelt Metro	2016		14
• US 29 Columbia Pike, upgrade from Sligo Creek Pkwy to Howard Co line	2020		44
• US 201 Kenilworth Ave from Rittenhouse Rd to Pontiac St	2020		22
• US 301, upgrade and widen from north of Mount Oak Road to US 50	2020		45

\* The widening of Middlebrook Road and the Construction of M-83, Mid-County Highway were previously shown as being removed from the CLRP. They are no longer being removed and will remain in the Plan as originally scheduled.

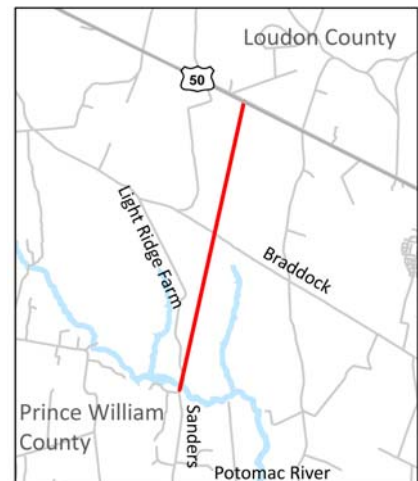
## Virginia

### *Changes to Existing Projects*

- VA 411, Tri-County Parkway, construct 4 lanes from VA 234 at I-66 to US 50

The limits of this project were previously defined from VA 234 to the Loudoun County line. VDOT is proposing to extend the project from the Loudoun County line to US 50.

Length: 4 miles  
Complete: 2035



Virginia (continued)

	<u>Old Date</u>	<u>New Date</u>	<u>Map # (page 9)</u>
<i>Projects delayed 10 years or more</i>			
• US 1, bus right turn lanes from VA 235 N to I-95	2025	2035	20 <sup>†</sup>
• VA 7/US 15 Bypass, widen to 6 lanes from VA 7 W to US 15 S	2025	2035	107
• US 15 (James Madison Highway), widen to 4 lanes from US 29 to I-66	2030	2040	71
• Tri-County Parkway, construct 4 lanes from I-66 to US 50	2025	2035	102
• VA 7 Bypass, widen/upgrade to 6 lanes from US 15 S to VA 7/US 15 E	2020	2035	107
<i>Projects removed from the Plan</i>			
• I-95, construct interchange at VA 7900 (Franconia-Springfield Pkwy)	2015		63
• US 1, widen to 6 lanes from Stafford Co line to Joplin Rd	2016		70
• VA 7, widen to 6 lanes from Rt 9 to Market St	2025		105
• US 15 (James Madison Hwy), widen to 4 lanes from VA 234 to Loudoun Co line	2030		71
• VA 28 (Centreville Road), widen to 6 lanes from NCL Manassas Park to Old Centreville Rd	2025		99
• US 50, widen to 8 lanes from I-66 to WCL Fairfax City	2020		81
• GeVA 7100 (Fairfax Co Pkwy), widen to 6 lanes from VA 636 to VA 640	2015		111
• VA 7100 (Fairfax Co Pkwy HOV), construct 2 lanes from VA 640 to VA 7900	2015		51
• VA 234 (Manassas Bypass), widen/upgrade to 6 lanes from VA 234 (South of Manassas) to I-66	2030		89
• VA 28, widen/upgrade to 6 lanes from VA 619 to VA 234 Bypass	2020		98
• US 29, widen to 6 lanes from US 50 to I-66	2010		79
• VA 123, widen to 6 lanes from Horner Rd. to Devil's Reach Rd.	2015		87



# MAJOR HIGHWAY IMPROVEMENTS IN THE 2009 CLRP

As approved October 21, 2009



# MAJOR TRANSIT AND HOV/HOT IMPROVEMENTS IN THE 2009 CLRP

As approved October 21, 2009



# **ATTACHMENT B**

## HOUSEHOLD DATA

MSA:	2002	2011	2020	2030	2040	2040/2002
<b>D.C.</b>	250354	269615	296765	317236	338980	1.35
<b>MONTGOMERY</b>	334301	365175	399682	439791	464802	1.39
<b>PR.GEORGES</b>	294712	307231	329385	347016	358310	1.22
<b>ARLINGTON</b>	89027	101996	114382	121341	124207	1.40
<b>ALEXANDRIA</b>	63670	67007	73678	82884	90555	1.42
<b>FAIRFAX</b>	373414	403885	442273	479839	502041	1.34
<b>LOUDOUN</b>	70935	104404	127412	150212	158303	2.23
<b>PR. WILLIAM</b>	120194	156444	188801	214454	231495	1.93
<b>FREDERICK</b>	73833	89351	104140	123126	147529	2.00
<b>CHARLES</b>	43981	52264	64300	75848	85902	1.95
<b>STAFFORD</b>	30404	45109	59037	72712	86205	2.84
<b>CALVERT</b>	27229	32498	36028	38348	40301	1.48
<b>SUBTOTAL</b>	1,772,054	1,994,979	2,235,883	2,462,807	2,628,630	1.48
<b>ADDITIONAL COUNTIES:</b>						
<b>HOWARD</b>	94673	110530	125045	132996	135065	1.43
<b>ANNE ARUNDEL</b>	184180	204032	217782	229368	234335	1.27
<b>CARROLL</b>	55263	62404	69642	76145	81453	1.47
<b>FREDERICKSBURG (VA)</b>	8191	10525	12462	13971	15469	1.89
<b>JEFFERSON</b>	17016	20980	25957	33075	41527	2.44
<b>N. SPOTSYLVANIA</b>	25357	37781	48536	58796	68631	2.71
<b>FAUQUIER</b>	21448	27693	35730	47502	63154	2.94
<b>CLARKE</b>	5182	6140	6722	7487	8308	1.60
<b>K. GEORGE</b>	6329	9101	11411	14030	16659	2.63
<b>ST. MARY'S</b>	32406	39985	49352	58143	66509	2.05
<b>SUBTOTAL</b>	450,045	529,171	602,639	671,513	731,110	1.62
<b>TOTAL</b>	2,222,099	2,524,150	2,838,522	3,134,320	3,359,740	1.51

**SOURCE:**

MWCOG Round 8.0 Cooperative Forecasts

BMC Round 7-B 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

## EMPLOYMENT DATA

<b>MSA:</b>	<b>2002</b>	<b>2011</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2040/2002</b>
<b>D.C.</b>	746265	793350	868257	923988	977162	1.31
<b>MONTGOMERY</b>	484992	513109	585409	673515	723707	1.49
<b>PR.GEORGES</b>	341706	360418	383232	419127	473940	1.39
<b>ARLINGTON</b>	187501	207971	243988	268795	281308	1.50
<b>ALEXANDRIA</b>	95891	110651	124115	142257	160447	1.67
<b>FAIRFAX</b>	624194	689123	788508	863803	917484	1.47
<b>LOUDOUN</b>	106435	148499	206460	257196	285415	2.68
<b>PR. WILLIAM</b>	127881	148961	188769	232597	280697	2.19
<b>FREDERICK</b>	106647	144200	158254	167233	175084	1.64
<b>CHARLES</b>	48569	63485	71743	77549	83152	1.71
<b>STAFFORD</b>	33200	43859	55167	65741	74956	2.26
<b>CALVERT</b>	26639	36332	44441	47142	48936	1.84
<b>SUBTOTAL</b>	<b>2,929,920</b>	<b>3,259,958</b>	<b>3,718,343</b>	<b>4,138,943</b>	<b>4,482,288</b>	<b>1.53</b>
<b>ADDITIONAL COUNTIES:</b>						
<b>HOWARD</b>	140774	168941	195196	219748	227002	1.61
<b>ANNE ARUNDEL</b>	260717	293170	328008	357305	369880	1.42
<b>CARROLL</b>	57372	68004	70825	72455	74080	1.29
<b>FREDERICKSBURG (VA)</b>	24171	29491	35483	41786	47207	1.95
<b>JEFFERSON</b>	17008	21564	26112	30674	35782	2.10
<b>N. SPOTSYLVANIA</b>	29614	36806	46698	55689	63484	2.14
<b>FAUQUIER</b>	22320	27961	35765	43365	52576	2.36
<b>CLARKE</b>	6079	6882	7685	8550	9517	1.57
<b>K. GEORGE</b>	9334	9506	13150	16390	19339	2.07
<b>ST. MARY'S</b>	49629	60165	67273	71964	75849	1.53
<b>SUBTOTAL</b>	<b>617,018</b>	<b>722,490</b>	<b>826,195</b>	<b>917,926</b>	<b>974,716</b>	<b>1.58</b>
<b>TOTAL</b>	<b>3,546,938</b>	<b>3,982,448</b>	<b>4,544,538</b>	<b>5,056,869</b>	<b>5,457,004</b>	<b>1.54</b>

**SOURCE:**

MWCOG Round 8.0 Cooperative Forecasts

BMC Round 7-B 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

**Summary of Percent Change between Household Forecasts  
Draft Round 8.0 and Draft Round 7.2A Cooperative Forecast**

JURISDICTION	2005	2010	2015	2020	2025	2030	2035	2040
District of Columbia	0.0%	-3.9%	-2.7%	-5.2%	-4.6%	-5.4%	-6.0%	-5.8%
Arlington County	0.0%	0.6%	-0.8%	-1.4%	-0.9%	0.4%	1.3%	1.5%
City of Alexandria	0.0%	-5.4%	-6.3%	-4.6%	-3.9%	-3.7%	-3.1%	-2.6%
<b>Central Jurisdictions</b>	<b>0.0%</b>	<b>-3.1%</b>	<b>-2.8%</b>	<b>-4.3%</b>	<b>-3.7%</b>	<b>-3.8%</b>	<b>-4.0%</b>	<b>-3.8%</b>
Montgomery County (1)	0.1%	-0.4%	-2.3%	-2.5%	-1.9%	-0.5%	0.4%	0.7%
Rockville (2)	2.2%	2.7%	2.8%	3.8%	2.5%	2.3%	2.2%	2.1%
Gaithersburg (2)	0.0%	-0.7%	-3.0%	-5.0%	-9.5%	-10.4%	-12.2%	-14.9%
Prince George's County	-2.0%	-3.7%	-3.7%	-4.0%	-4.6%	-5.2%	-5.4%	-5.3%
Fairfax County	0.2%	-0.5%	-1.6%	-0.9%	-0.4%	-0.2%	0.2%	-0.6%
City of Fairfax (3)	2.9%	6.6%	12.1%	14.4%	14.0%	11.8%	11.6%	11.4%
City of Falls Church	0.0%	-9.1%	-4.9%	0.0%	6.2%	6.0%	5.8%	4.2%
<b>Inner Suburbs</b>	<b>-0.4%</b>	<b>-1.4%</b>	<b>-2.4%</b>	<b>-2.2%</b>	<b>-2.0%</b>	<b>-1.6%</b>	<b>-1.2%</b>	<b>-1.4%</b>
Loudoun County	0.0%	0.7%	-1.3%	-4.8%	-4.6%	-3.7%	-3.8%	-3.9%
Prince William County	0.0%	-3.8%	-1.3%	-0.5%	-0.1%	0.1%	0.2%	0.1%
City of Manassas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
City of Manassas Park	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Calvert County (4)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Charles County (4)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Frederick County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stafford County (5)	13.0%	4.8%	0.0%	0.1%	0.0%	0.1%	0.0%	-0.7%
<b>Outer Suburbs</b>	<b>1.0%</b>	<b>-0.5%</b>	<b>-0.6%</b>	<b>-1.2%</b>	<b>-1.1%</b>	<b>-0.8%</b>	<b>-0.8%</b>	<b>-0.9%</b>
Anne Arundel County(6)	0.0%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%	0.0%
Carroll County (6)	0.0%	-3.0%	-2.4%	-2.2%	-1.7%	-1.6%	-1.3%	-1.0%
Howard County (6)	-0.1%	-0.8%	-0.6%	-0.4%	-0.1%	0.0%	0.4%	0.4%
<b>Modeled Region - Baltimore Area Jurisdictions</b>	<b>0.0%</b>	<b>-0.8%</b>	<b>-0.6%</b>	<b>-0.5%</b>	<b>-0.4%</b>	<b>-0.3%</b>	<b>-0.1%</b>	<b>-0.1%</b>
King George County (5)	13.8%	5.5%	0.0%	0.1%	0.0%	0.2%	0.0%	-0.6%
Spotsylvania County (5)	13.1%	5.0%	0.0%	0.1%	0.0%	0.1%	0.0%	-0.6%
<b>Modeled Portion Only</b>	<b>13.2%</b>	<b>5.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>-0.5%</b>
City of Fredericksburg (5)	5.4%	2.3%	0.0%	0.1%	0.0%	0.1%	0.0%	-0.2%
<b>Modeled Region - Fredericksburg Area Jurisdictions</b>	<b>1.4%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>-0.1%</b>
St. Mary's County (4)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Clarke County	-0.8%	-1.2%	-1.2%	-2.0%	-2.8%	-3.6%	-4.4%	-5.2%
Fauquier County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Jefferson County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Modeled Region - Other Jurisdictions</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>-0.2%</b>	<b>-0.2%</b>	<b>-0.2%</b>	<b>-0.2%</b>
<b>Northern Virginia</b>	<b>-0.6%</b>	<b>0.9%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.0%</b>	<b>0.7%</b>	<b>0.4%</b>	<b>0.7%</b>
<b>Suburban Maryland</b>	<b>-0.7%</b>	<b>-1.6%</b>	<b>-2.3%</b>	<b>-2.5%</b>	<b>-2.5%</b>	<b>-2.0%</b>	<b>-1.7%</b>	<b>-1.5%</b>
<b>MSA (1983) REGIONAL TOTAL</b>	<b>-0.7%</b>	<b>-1.6%</b>	<b>-2.3%</b>	<b>-2.5%</b>	<b>-2.5%</b>	<b>-2.0%</b>	<b>-1.7%</b>	<b>-1.5%</b>
<b>TPB Model Region Total</b>	<b>0.2%</b>	<b>-1.3%</b>	<b>-1.7%</b>	<b>-2.0%</b>	<b>-1.7%</b>	<b>-1.5%</b>	<b>-1.4%</b>	<b>-1.4%</b>

(1) Forecasts for years 2005 to 2040 include all of Takoma Park.

(2) Included in Montgomery County total.

(3) Forecasts for all years do not include Fairfax County households (+/- 500 households) in TAZ 1609

(4)Tri-County Council for Southern Maryland develops ten-year incremental population, housing unit and employment forecasts for Calvert County, Charles County and St. Mary's County.

(5) Source: GWRC/FAMPO Regional Demographic Control Forecasts for 2035 CLRP Socioeconomic Data, June 2008.

(6) Comparison is between the BMC Round 7-B and 7-A.

**Summary of Percent Change between Employment Forecasts  
Draft Round 8.0 and Draft Round 7.2A Cooperative Forecasts**

JURISDICTION	2005	2010	2015	2020	2025	2030	2035	2040
District of Columbia	0.0%	-0.3%	1.0%	0.9%	0.3%	0.2%	2.0%	1.9%
Arlington County	0.2%	-4.3%	-7.8%	-6.0%	-1.7%	-1.1%	0.1%	0.2%
City of Alexandria	-0.1%	-0.2%	-5.0%	-8.8%	-8.1%	-9.3%	-3.9%	-2.7%
<b>Central Jurisdictions</b>	<b>0.0%</b>	<b>-1.1%</b>	<b>-1.4%</b>	<b>-1.6%</b>	<b>-1.0%</b>	<b>-1.2%</b>	<b>0.9%</b>	<b>1.0%</b>
Montgomery County (1)	0.0%	-0.8%	-1.3%	-0.8%	-0.6%	0.0%	0.0%	0.0%
Rockville (2)	0.0%	-5.7%	-1.8%	-0.5%	-1.6%	-1.4%	-1.3%	-1.3%
Gaithersburg (2)	0.0%	-1.3%	-4.0%	-7.2%	-13.8%	-13.7%	-12.3%	-15.8%
Prince George's County	0.0%	-1.2%	-2.4%	-3.9%	-5.8%	-7.8%	-9.2%	-9.5%
Fairfax County (3)	0.0%	-3.1%	-4.1%	-1.4%	-1.3%	-0.9%	-1.0%	-1.1%
City of Fairfax (4)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
City of Falls Church	19.0%	-3.4%	-14.3%	-7.7%	-1.8%	4.1%	4.1%	4.0%
<b>Inner Suburbs</b>	<b>0.1%</b>	<b>-1.9%</b>	<b>-2.8%</b>	<b>-1.8%</b>	<b>-2.0%</b>	<b>-2.1%</b>	<b>-2.5%</b>	<b>-2.7%</b>
Loudoun County	-3.6%	-9.5%	-11.5%	-9.2%	-7.6%	-6.5%	-6.7%	-6.4%
Prince William County	-0.4%	-6.3%	-5.8%	-5.4%	-5.9%	-5.4%	-2.2%	-1.8%
City of Manassas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
City of Manassas Park	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Calvert County (5)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Charles County (5)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Frederick County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stafford County (6)	-3.6%	-1.5%	0.0%	0.2%	0.0%	0.2%	0.0%	-0.3%
<b>Outer Suburbs</b>	<b>-1.2%</b>	<b>-4.0%</b>	<b>-4.5%</b>	<b>-4.0%</b>	<b>-3.7%</b>	<b>-3.3%</b>	<b>-2.7%</b>	<b>-2.5%</b>
Anne Arundel County (7)	0.0%	-0.8%	-2.6%	-4.2%	-5.0%	-5.8%	-5.9%	-5.9%
Carroll County (7)	0.0%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Howard County (7)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Modeled Region - Baltimore Area Jurisdictions</i>	<b>0.0%</b>	<b>-0.5%</b>	<b>-1.4%</b>	<b>-2.4%</b>	<b>-2.8%</b>	<b>-3.2%</b>	<b>-3.3%</b>	<b>-3.3%</b>
King George County (6)	0.3%	0.1%	0.0%	0.2%	0.0%	0.3%	0.0%	-0.5%
Spotsylvania County (6)	1.4%	0.8%	0.0%	0.2%	0.0%	0.2%	0.0%	-0.3%
<i>Modeled Portion Only</i>	1.4%	0.7%	0.1%	0.2%	0.1%	0.2%	0.1%	-0.2%
City of Fredericksburg (6)	-3.9%	-1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.3%
<i>Modeled Region - Fredericksburg Area Jurisdictions</i>	<b>-1.1%</b>	<b>-0.4%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.2%</b>	<b>0.1%</b>	<b>-0.3%</b>
St. Mary's County (5)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Clarke County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fauquier County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Jefferson County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Modeled Region - Other Jurisdictions</i>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Northern Virginia</b>	<b>-0.4%</b>	<b>-3.9%</b>	<b>-5.7%</b>	<b>-4.1%</b>	<b>-3.2%</b>	<b>-2.8%</b>	<b>-1.9%</b>	<b>-1.8%</b>
<b>Suburban Maryland</b>	<b>0.0%</b>	<b>-0.8%</b>	<b>-1.4%</b>	<b>-1.6%</b>	<b>-2.1%</b>	<b>-2.5%</b>	<b>-3.0%</b>	<b>-3.2%</b>
<b>MSA (1983) REGIONAL TOTAL</b>	<b>-0.1%</b>	<b>-2.0%</b>	<b>-2.7%</b>	<b>-2.2%</b>	<b>-2.0%</b>	<b>-2.1%</b>	<b>-1.5%</b>	<b>-1.5%</b>
<b>TPB Model Region Total</b>	<b>-0.1%</b>	<b>-1.7%</b>	<b>-2.4%</b>	<b>-2.1%</b>	<b>-2.1%</b>	<b>-2.1%</b>	<b>-1.7%</b>	<b>-1.7%</b>

(1) Forecasts for years 2005 to 2040 include all of Takoma Park.

(2) Included in Montgomery County total.

(3) Forecasts for all years include Fairfax County Government employees working in the Massey Complex.

(4) Forecasts for all years do not include Fairfax County Government employees (+/- 2,000 jobs) working in the Massey Complex.

(5) Tri-County Council for Southern Maryland develops ten-year incremental population, housing unit and employment forecasts for Calvert County, Charles County and St. Mary's County.

(6) Source: GWRC/FAMPO Regional Demographic Control Forecasts for 2035 CLRP Socioeconomic Data, June 2008.

(7) Comparison is between the BMC Round 7-B and 7-A.

# **ATTACHMENT C**



### TERM TRACKING SHEET TRANSPORTATION EMISSION REDUCTION MEASURES Part A - Daily Ozone Precursor 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 AC COMPLETION DATE	TUAL COMPLETION DATE	2011		2020		2030		2040		Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.0006	0.0013	0.0003	0.0005	0.0003	0.0005	0.0003	0.0003	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	0.0011	0.0013	0.0007	0.0005	0.0006	0.0005	0.0005	0.0003	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	0.0006	0.0013	0.0003	0.0005	0.0003	0.0005	0.0003	0.0003	C (TCM)
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0051	0.0122	0.0029	0.0051	0.0026	0.0042	0.0024	0.0029	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	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	C
54	X	1995-00	VDOT	City of Fairfax Bus Shelters	X				1999	2004	0.0000	0.0004	0.0000	0.0002	0.0000	0.0002	0.0000	0.0001	C (TCM)
56	X	1995-00	VDOT	Cherry Hill VRE Access			X			Jul-08	0.0040	0.0104	0.0023	0.0044	0.0020	0.0036	0.0018	0.0025	C (TCM)
58	X	1995-00	WMATA	Bus Replacement (172 buses)	X				1998	1998	0.0661	0.2326					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	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		0.0017	0.0009	0.0010	0.0004	0.0009	0.0003	0.0008	0.0002	C
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail			X				0.0028	0.0035	0.0016	0.0015	0.0015	0.0012	0.0013	0.0008	C
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0023	0.0052	0.0013	0.0022	0.0012	0.0018	0.0011	0.0012	C
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0181	0.0452	0.0104	0.0189	0.0094	0.0157	0.0084	0.0107	C (TCM)
66	X	1995-00	VDOT	Commuter Lots - District Wide	X				varies	1995, 2001	0.0062	0.0144	0.0036	0.0060	0.0032	0.0050	0.0029	0.0034	C
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	2000 end	0.0056	0.0087	0.0033	0.0036	0.0029	0.0030	0.0026	0.0020	C
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X					1999/2000	0.0000	0.0044	0.0000	0.0018	0.0000	0.0015	0.0000	0.0010	C
69	X	1995-00	VDOT	Bicycle Trails and Facilities (Arlington & Fairfax Co - 7 locations)			X		varies	2010-12	0.0011	0.0074	0.0007	0.0031	0.0006	0.0026	0.0005	0.0017	C
70	X	1995-00	VDOT	Improved Access to Metrorail Stations (VRE 2 Stn)			X		varies	2000-2012	0.0003	0.0004	0.0002	0.0002	0.0001	0.0002	0.0001	0.0001	C
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X					1997	0.0028	0.0044	0.0033	0.0036	0.0029	0.0030	0.0026	0.0020	C
72	X	1995-00	DC	Bicycle Facilities	X						0.0136	0.0087	0.0078	0.0036	0.0070	0.0030	0.0063	0.0020	C
73	X	1995-00	REGION	COG Regional Ridesharing Support	X					on-going	0.1323	0.2340	0.0778	0.0980	0.0710	0.0818	0.0638	0.0555	C
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.0477	0.0816	0.0279	0.0342	0.0254	0.0285	0.0228	0.0193	C
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	0.1099	0.1734	0.0639	0.0726	0.0576	0.0603	0.0518	0.0409	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 200	0.0011	0.0013	0.0007	0.0005	0.0006	0.0005	0.0005	0.0003	C
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X				1997	1997 Onwards	0.0011	0.0013	0.0007	0.0005	0.0006	0.0005	0.0005	0.0003	C
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail			X		2000	2010-11	0.0006	0.0004	0.0003	0.0002	0.0003	0.0002	0.0003	0.0001	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	0.0006	0.0004	0.0003	0.0002	0.0003	0.0002	0.0003	0.0001	C

### TERM TRACKING SHEET TRANSPORTATION EMISSION REDUCTION MEASURES Part A - Daily Ozone Precursor 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 AC COMPLETION DATE	TUAL COMPLETION DATE	2011		2020		2030		2040		Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
90	X	1996-01	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X					on-going	0.3256	0.5041	0.1887	0.2111	0.1698	0.1753	0.1527	0.1189	C
91	X	1996-01	REGION	M-70a Bicycle Parking			X		1999		0.0040	0.0030	0.0023	0.0013	0.0020	0.0011	0.0018	0.0007	C
92	X			M-92 Telecommuting Support <sup>1</sup>	Combined with item #75						0.0000	0.0000							C
95	X	1997-02	MCG	Germantown Transit Center	X				2005		0.0028	0.0083	0.0016	0.0035	0.0015	0.0029	0.0013	0.0019	C (TCM)
102	X	1997-02	PG	Prince George's County Bus Replacement	X				1998	1998	0.0029	0.0083							SP (TCM)
106	X	1997-02	VDOT	PRTC Employer Commuting Outreach Program	X					1977 on-going	0.0011	0.0002	0.0007	0.0001	0.0006	0.0001	0.0005	0.0001	C
107	X	1997-02	VDOT	PRTC Multimodal Strategic Marketing Implementation Plan	X					1977 on-going	0.0000	0.0002	0.0000	0.0001	0.0000	0.0001	0.0000	0.0001	C
108	X	1997-02	MDOT	M-103 Taxicab Replacement in Maryland <sup>2</sup>	X				2005	Stopped	0.0764	0.2469	0.1340	0.1827	0.3120	0.4810			SP
109	X	1997-02	REGION	M-70b Employer Outreach for Bicycles	X				1998	on going	0.0005	0.0005	0.0030	0.0090	0.0003	0.0002	0.0002	0.0001	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	0.0431	0.1493							SP
112	X	1998-03	MCG	Montgomery County Bus Replacement	X					Ongoing	0.0077	0.0249							SP
113	X	1998-03	PG	Prince George's County Bus Replacement	X				1998	Ongoing	0.0010	0.0018							SP
114	X	1998-03	FDC	Frederick County Bus Replacement	X						0.0010	0.0000							SP
117	X	1998-03	VDOT	Arlington County Four Mile Run Bike Trail	X				1999	2009	0.0006	0.0004	0.0003	0.0002	0.0003	0.0002	0.0003	0.0001	C
118	X	1998-03	VDOT	Northern Virginia Turn Bays	X				2000	1998	0.0006	0.0008	0.0003	0.0003	0.0003	0.0002	0.0003	0.0001	TR
119	X	1998-03	VDOT	Fairfax City Bus Replacement	X				2001	2003	n/a	n/a							SP
121	X	1998-03	WMATA	WMATA Bus Replacement (252 buses)	X				2001	2001	0.1016	0.3563							SP
122	X	97 & 98 TIP	REGION	M-101a Mass Marketing Campagin (Consumer)				X		2005	0.0166	0.0284	0.0097	0.0119	0.0088	0.0099	0.0080	0.0067	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	0.0045	0.0157	0.0026	0.0066	0.0023	0.0054	0.0021	0.0037	C
124	X	1999-04	MDOT	Signal Systems (197/MD-198, MD-382 TO US-301,US301)	X				2000	2002	0.0070	-0.0016	0.0041	-0.0005	0.0037	-0.0004	0.0033	-0.0002	TR
125	X	1999-04	VDOT	Transit Center at 7 Corners	X				2002	2001	0.0006	0.0009	0.0003	0.0004	0.0003	0.0003	0.0003	0.0002	C
126	X	1999-04	VDOT	Falls Church Clean Diesel Bus Service	X				2000	2003	0.0038	0.0046							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	0.0141	0.0239	0.0082	0.0100	0.0073	0.0083	0.0066	0.0056	C
131	X	2000-05	MDOT	Various park and Ride Lots	x				2002	2003	0.0039	0.0141	0.0023	0.0059	0.0020	0.0049	0.0018	0.0033	C
132	X	2000-05	MDOT	Signal Systems	X				Varies	on-going	0.0018	0.0000	0.0016	0.0000	0.0009	0.0000	0.0008	0.0000	TR
133	X	2000-05	VDOT	250 Spaces at Gambrell/Hooes Rds. Park and Ride	X				2002	2004	0.0040	0.0078	0.0023	0.0033	0.0020	0.0027	0.0018	0.0018	C
134	X	2000-05	VDOT	300 Spaces at Backlick Rd	X				2003	2007	0.0028	0.0057	0.0016	0.0024	0.0015	0.0020	0.0013	0.0013	C
135	X	2000-05	VDOT	Accotink-Gateway Connector Trail	X				2002	2005	0.0040	0.0044	0.0023	0.0018	0.0020	0.0015	0.0018	0.0010	C
136	X	2000-05	VDOT	Columbia Pike Trail	X				2000	2009	0.0034	0.0035	0.0020	0.0015	0.0018	0.0012	0.0016	0.0008	C
137	X	2000-05	VDOT	Lee Highway trail	X				2000	2007	0.0017	0.0017	0.0010	0.0007	0.0009	0.0006	0.0008	0.0004	C
138	X	2000-05	VDOT	Arlington Bus Shelter Improvements	X				2005	2005	0.0006	0.0004	0.0003	0.0002	0.0003	0.0002	0.0003	0.0001	C
139	X	2000-05	VDOT	Pentagon Metrostation Improvements	X					2003	0.0045	0.0074	0.0026	0.0031	0.0023	0.0026	0.0021	0.0017	C

**TERM TRACKING SHEET**  
**TRANSPORTATION EMISSION REDUCTION MEASURES**  
**Part A - Daily Ozone Precursor 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 AC COMPLETION DATE	TUAL COMPLETION DATE	2011		2020		2030		2040		Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
140	X	2000-05	MDOT	East/West Intersection Improvements			X		2005	2005	0.0232	0.0109	0.0134	0.0046	0.0120	0.0038	0.0108	0.0026	C
141	X	2001-06	Feds	Federal Transit/Ridesharing subsidy	X				on-going		0.0576	0.0831	0.0333	0.0348	0.0298	0.0288	0.0268	0.0196	C
142	X	2002-07	WMATA	100 CNG buses	X				2002		0.0000	0.1254							SP (TCM)
143	X	2002-07	WMATA	ULSD with CRT filters	X				2006	Jun-06	0.2012	0.0000	0.4300	0.0000	0.4300	0.0000	0.3867	0.0000	H (TCM)
144		2003-08	DC	Replace 23 12 Taxicabs with CNG cabs				X	2005	2006	0.0085	0.0145							H
145	X	2003-08	DC	D.C. Incident Response & Traffic Management System	X				2005	2004	0.0162	0.0405	0.0094	0.0130	0.0100	0.0168	0.0090	0.0114	TR
146	X	2003-08	DC	Bicycle Lane in D. C. (35 Mile)	X				2005	2008	0.0094	0.0078	0.0054	0.0032	0.0049	0.0027	0.0044	0.0018	C (TCM)
147	X	2003-08	DC	Bicycle Racks in D. C. (500)	X				2005	2004	0.0013	0.0009	0.0008	0.0004	0.0007	0.0003	0.0006	0.0002	C (TCM)
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600)	X				2005	2003	0.0019	0.0028	0.0011	0.0012	0.0010	0.0010	0.0009	0.0007	C (TCM)
149		2003-08	DC	CNG Rental Cars (18)				X	2005		0.0000	0.0002							SP
150	X	2003-08	DC	Sidewalks in D.C. (\$ 5 million)	X				2005	2004	0.0353	0.0510	0.0204	0.0213	0.0183	0.0177	0.0165	0.0120	C
151	X	2003-08	DC	CNG Refuse Haulers (2)	X				2005	2004	0.0000	0.0018							H (TCM)
152	X	2003-08	DC	Circulator /Feeder Bus Routes	X				2005	2003	0.0129	0.0184	0.0074	0.0077	0.0067	0.0064	0.0060	0.0043	C
153	X	2003-08	MDOT	Commuter Tax Credit	X				2005	n/a	0.0771	0.1123	0.0445	0.0470	0.0399	0.0390	0.0359	0.0264	C
155		2003-08	MDOT	Employer Vanpool Program (WWB)				X	2005		0.0018	0.0038							C
156	X	2003-08	MDOT	Green Line Link			X		2005	n/a	0.0025	0.0043	0.0015	0.0018	0.0013	0.0015	0.0012	0.0010	C
157	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland			X		2005	2005	0.0049	0.0100	0.0028	0.0042	0.0025	0.0035	0.0023	0.0023	C
158	X	2003-08	MDOT	Prince George's County- Bus Exp			X		2005	n/a	0.0354	0.0603	0.0204	0.0252	0.0183	0.0209	0.0165	0.0142	C
159	X	2003-08	MDOT	MTA - Bus Service Expansion			X		2005	n/a	0.0080	0.0144	0.0046	0.0060	0.0041	0.0050	0.0037	0.0034	C
160	X	2003-08	MDOT	Ride- On - Super Discount			X		2005	n/a	0.0009	0.0013	0.0005	0.0005	0.0005	0.0005	0.0004	0.0003	C
161	X	2003-08	Regional	Regional Traveler Information Systems			X		2005		0.1016	0.5282	0.0594	0.1701	0.0533	0.1157	0.0480	0.0785	TR
162	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA) Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage	X				2005	n/a	0.0158	0.0229	0.0091	0.0096	0.0082	0.0079	0.0074	0.0054	C
163	X	2003-08	MCG	Bethesda Shuttle Bus Services	X				2004		0.0045	0.0096	0.0026	0.0040	0.0025	0.0036	0.0022	0.0025	C (TCM)
164	X	2003-08	MCG	Bethesda Shuttle Bus Services	X				2004		0.0031	0.0044	0.0018	0.0018	0.0016	0.0015	0.0014	0.0010	C
165	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	X				2004		0.0006	0.0009	0.0003	0.0004	0.0003	0.0003	0.0003	0.0002	C
166	X	2003-08	MCG	New CNG Powered Light Duty Vehicle fleet in the County	X				2004		0.0000	0.0001							SP
167	X	2003-08	MCG	Free Bus Service on Selected Routes on I-270	X				2004		0.0011	0.0015	0.0006	0.0006	0.0005	0.0005	0.0005	0.0004	C
168	X	2003-08	MCG	Annual Sidewalk Program	X				2004		0.0168	0.0243	0.0097	0.0102	0.0087	0.0084	0.0078	0.0057	C
169		2003-08	MDOT	Bethesda Breeze/International Express Metrobus				X	2005	Removed	0.0037	0.0049	0.0021	0.0020	0.0019	0.0017	0.0017	0.0012	C
170		2003-08	MDOT	Bethesda-8, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot				X	2005	Removed	0.0087	0.0096	0.0050	0.0040	0.0045	0.0033	0.0040	0.0023	C
171		2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)				X	2005	Removed	0.0057	0.0072	0.0033	0.0030	0.0029	0.0025	0.0026	0.0017	C
172	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	X				2005	2002	0.0092	0.0135	0.0053	0.0057	0.0048	0.0047	0.0043	0.0032	C
173	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bike/Pedestrian)	X				2005	2004	0.0032	0.0015	0.0018	0.0006	0.0017	0.0005	0.0015	0.0004	C
174	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	Ongoing	0.0028	0.0013	0.0016	0.0006	0.0015	0.0005	0.0013	0.0003	C
175	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.0139	0.0296	0.0080	0.0124	0.0072	0.0103	0.0065	0.0070	C

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					FULL	SCALED-BACK	UNDER-WAY	REM			VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
176	X	2003-08	VDOT	Universal Transportation Access Program	X				2005	2005-07	0.0012	0.0017	0.0007	0.0007	0.0006	0.0006	0.0005	0.0004	C
177	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative			X		2008 onward		0.0004	0.0007	0.0002	0.0003	0.0002	0.0002	0.0002	0.0002	C
178	X	2003-08	VDOT	Mobile Commuter Stores	X				2005	2005	0.0021	0.0036	0.0012	0.0015	0.0011	0.0012	0.0010	0.0008	C
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA) <sup>1</sup>	X				2005	Fall 2006	0.0007	0.0011	0.0004	0.0005	0.0004	0.0004	0.0003	0.0003	C
180	X	2003-08	VDOT	Commuter Choice	X				2005		0.0009	0.0013	0.0005	0.0005	0.0005	0.0004	0.0004	0.0003	C
181	X	2003-08	VDOT	Employer Shuttle Services				X	2005		0.0112	0.0152	0.0065	0.0064	0.0058	0.0053	0.0052	0.0036	C
184	X	2003-08	VDOT	Van Start / Van Save	X				2005	till 2006	0.0014	0.0024							C
185	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0012	0.0024	0.0007	0.0010	0.0006	0.0008	0.0005	0.0006	C
187	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0016	0.0027	0.0009	0.0011	0.0008	0.0009	0.0007	0.0006	C
190	X	2003-08	VDOT	Employer Vanpool Program (Bridge deck)	X				2005	2004 - 2008	0.0000	0.0000							C
191	X	2003-08	VDOT	Town of Leesburg P&R Lot	X				2005	2010	0.0019	0.0036	0.0011	0.0015	0.0010	0.0012	0.0009	0.0008	C
192	X	2003-08	VDOT	District-wide P&R Lots	X				2005	2001-2005	0.0111	0.0205	0.0064	0.0086	0.0058	0.0071	0.0052	0.0048	C
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations	X				2005	2005	0.0143	0.0306	0.0083	0.0128	0.0074	0.0106	0.0067	0.0072	C
196	X	2003-08	WMATA	64 CNG Buses (Purchased in 2001)	X				2005	2004	0.0020	0.0804							SP (TCM)
197	X	2003-08	WMATA	250 CNG Buses (175 buses by Dec. 2004; 75 buses by mid 2006)	X				2005	Jun-06	0.0079	0.3139							SP
198	X	2003-08	WMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004	0.0132	0.0697							SP
199	X	2003-08	WMATA	Car Sharing Program	X				2005	2004	0.0008	0.0017	0.0005	0.0007	0.0004	0.0006	0.0004	0.0004	C
200	X	2003-08	WMATA	Bikes Racks on WMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0012	0.0018	0.0007	0.0007	0.0006	0.0007	0.0006	0.0004	C (TCM)
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)				X	2005		0.005	0.012	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	0.0440	0.1503	0.0459	0.1628					SP
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				X	2005		0.007	0.011	0.0043	0.0047	0.0038	0.0039	0.0034	0.0026	C
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			X		2005	2005	0.0026	0.0055	0.0015	0.0023	0.0013	0.0019	0.0012	0.0013	C
206		2003-08	MDOT	Additional Bike Lockers at Metro-Stations				X	2005		0.0130	0.0192	0.0075	0.0080	0.0067	0.0067	0.0061	0.0045	C
207	X	2003-08	MDOT	Bike Facilities at PnR Lots or other similar location			X		2005	2005	0.0092	0.0152	0.0053	0.0064	0.0048	0.0053	0.0043	0.0036	C
208		2003-08	MDOT	CNG Fueling Stations				X	2005		0.1217	0.1080							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	0.0014	0.0020	0.0008	0.0008	0.0007	0.0007	0.0006	0.0005	C (TCM)
212	X	2003-08	MDOT	Bike \ Pedestrian Trail - Anacostia River Walk			X		2005	Ongoing	0.0006	0.0004	0.0003	0.0002	0.0003	0.0001	0.0003	0.0001	C
213		2003-08	MDOT	Transit Prioritization - Queue Jumps				X	2005		0.003	0.003	0.0018	0.0014	0.0016	0.0012	0.0014	0.0008	C
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion	X				2005	Ongoing	0.0539	0.0789	0.0311	0.0330	0.0279	0.0274	0.0251	0.0186	C
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			X		2005	Ongoing	0.0059	0.0080	0.0034	0.0033	0.0030	0.0028	0.0027	0.0019	C
216	X	2003-08	MDOT	Telecommuting Expansion <sup>1</sup>	X				2005	Ongoing	0.0636	0.1109	0.0367	0.0464	0.0330	0.0385	0.0296	0.0261	C
217		2003-08	MDOT	Replace older Diesel Engine in Public Sector vehicles				X	2005		0.0227	0.1200							H
218	X	2003-08	VDOT	MV-92 Telecommuting Program - Expanded <sup>1</sup>	X				2005	2005	0.0680	0.1184	0.0392	0.0496	0.0352	0.0411	0.0316	0.0279	C

**TERM TRACKING SHEET**  
**TRANSPORTATION EMISSION REDUCTION MEASURES**  
**Part A - Daily Ozone Precursor 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 AC COMPLETION DATE	TUAL COMPLETION DATE	Emissions (Credits)								Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			2011		2020		2030		2040		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
219	X	2003-08	VDOT	MV-123 Employer Outreach for Public Sector Employees <sup>2</sup>	X				2005	2003	0.0151	0.0218	0.0087	0.0091	0.0078	0.0076	0.0070	0.0051	C
220	X	2003-08	REGION	Signal System Optimization	X				2005	2005	0.4291	0.1476	0.2509	0.0475	0.2252	0.0324	0.2025	0.0219	TR
221	X	2007-12	MDOT	Two P & R Lots in Frederick County (99 spaces)	X				2007	2008	0.0008	0.0016	0.0005	0.0007	0.0005	0.0005	0.0004	0.0004	C
222	X	2007-12	MDOT	MDOT P & R Lots at US 340 ( 66-99 spaces, Frederick Co.)	X				2007	2007	Credits shown in TS 221 (for 99 spaces)								
223	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. (37 spaces)	X				2008	2008	0.0006	0.0012	0.0004	0.0005	0.0003	0.0004	0.0003	0.0003	
224	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. - expansion (39 spaces)			X		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	0.0008	0.0016	0.0005	0.0007	0.0005	0.0006	0.0004	0.0004	
226	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 270 & MD 80 (164 spaces)	X				2009	2009	0.0014	0.0026	0.0008	0.0011	0.0007	0.0009	0.0007	0.0006	
227	X	2008-13	MDOT	MDOT Syglal 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	
<b>Available Emissions Credits</b>											<b>2.353</b>	<b>4.429</b>	<b>1.430</b>	<b>1.113</b>	<b>1.286</b>	<b>0.755</b>	<b>1.156</b>	<b>0.512</b>	

**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			2011		2020		2030		2040		
											VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx	
221	X	1995-00 TIP	REGION	M-24 Speed Limit Adherence	X				2010		-0.0071	0.2525	-0.0021	0.1206	0.0005	0.0377	0.0005	0.0256	TR
222		1996-01 TIP	MGC	Rock Spring Park Pedestrian Amenities							0.0010	0.0037	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		0.0019	0.0074	0.0009	0.0030	0.0003	0.0007	0.0003	0.0005	C
224	X	1996-01 TIP	MGC	Damascus Park and Ride						2003	0.0010	0.0037	0.0004	0.0015	0.0001	0.0003	0.0001	0.0002	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	0.3138	0.4070	H
226	X	STADIUM ANALYSIS		M-103 Taxicab Replacement (MD)				X	2008		0.0000	0.0000	0.1560	0.2400	0.1560	0.2400	0.1403	0.1628	H
227	X	1997-02 TIP	MDOT	Shady Grove West Transit Center Park and Ride				X			0.0000	0.0092	0.0000	0.0038	0.0000	0.0009	0.0000	0.0006	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	0.0005	C
229	X	1997-02 TIP	MGC	White Oak Park and Ride					2008		0.0000	0.0185	0.0000	0.0076	0.0000	0.0017	0.0000	0.0012	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	0.0002	C
231	X	1997-02 TIP	MGC	Four Corners Transit Center					2015		0.0000	0.0009	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	0.0009	0.0000	0.0003	0.0000	0.0002	0.0000	0.0001	C
234	X	1997-02 TIP	MGC	Shady Grove Parking Construction						2003	0.0048	0.0175	0.0021	0.0072	0.0007	0.0017	0.0007	0.0011	C

PLAN TOTAL	0.0005	0.3015	0.1764	0.4424	0.3512	0.6434	0.3158	0.4364
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GRAND TOTAL (Current Measures + CLRP plan)	2.354	4.730	1.606	1.555	1.637	1.398	1.472	0.949
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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<sub>2.5</sub> 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	2011		2020		2030		2040		Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.0094	0.3912	0.0095	0.1000	0.0095	0.0830	0.0092	0.0669	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	0.0094	0.3912	0.0095	0.1000	0.0095	0.0830	0.0092	0.0669	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 J-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	0.0094	0.3912	0.0095	0.1000	0.0095	0.0830	0.0092	0.0669	C (TCM)
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0874	3.6515	0.0891	0.9332	0.0891	0.7745	0.0857	0.6247	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	0.0031	0.1304	0.0032	0.0333	0.0032	0.0277	0.0031	0.0223	C (TCM)
56	X	1995-00	VDOT	Cherry Hill VRE Access			X			Jul-08	0.0749	3.1299	0.0764	0.7999	0.0764	0.6639	0.0734	0.5354	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		0.0062	0.2608	0.0064	0.0667	0.0064	0.0553	0.0061	0.0446	C
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail			X				0.0250	1.0433	0.0255	0.2666	0.0255	0.2213	0.0245	0.1785	C
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0375	1.5649	0.0382	0.4000	0.0382	0.3319	0.0367	0.2677	C
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.3246	13.5628	0.3309	3.4663	0.3309	2.8768	0.3182	2.3202	C (TCM)
66	X	1995-00	VDOT	Commuter Lots - District Wide			X		varies	1995, 2001	0.1030	4.3036	0.1050	1.0999	0.1050	0.9128	0.1010	0.7362	C
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	2000 end	0.0624	2.6082	0.0636	0.6666	0.0636	0.5532	0.0612	0.4462	C
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X					1999/2000	0.0312	1.3041	0.0318	0.3333	0.0318	0.2766	0.0306	0.2231	C
69	X	1995-00	VDOT	Bicycle Trails and Facilities (Arlington & Fairfax Co - 7 locations)			X		varies	2010-12	0.0531	2.2170	0.0541	0.5666	0.0541	0.4702	0.0520	0.3793	C
70	X	1995-00	VDOT	Improved Access to Metrorail Stations (VRE 2 Stn)			X		varies	2000-2012	0.0031	0.1304	0.0032	0.0333	0.0032	0.0277	0.0031	0.0223	C
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X					1997	0.0624	2.6082	0.0636	0.6666	0.0636	0.5532	0.0612	0.4462	C
72	X	1995-00	DC	Bicycle Facilities	X						0.0624	2.6082	0.0636	0.6666	0.0636	0.5532	0.0612	0.4462	C
73	X	1995-00	REGION	COG Regional Ridesharing Support	X					on-going	1.7573	69.8906	1.7913	17.8484	1.7913	14.9204	1.7226	12.0338	C
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.6082	24.3995	0.6199	6.2319	0.6199	5.2028	0.5961	4.1962	C
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	1.2638	51.9120	1.2883	13.2638	1.2883	11.0351	1.2388	8.9002	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	0.0094	0.3912	0.0095	0.1000	0.0095	0.0830	0.0092	0.0669	C

### TERM TRACKING SHEET TRANSPORTATION EMISSION REDUCTION MEASURES Part B - Yearly PM<sub>2.5</sub> 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	2011		2020		2030		2040		Project Category *				
					FULL	SCALED-BACK	UNDER-WAY	REM			PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx					
																				Credit taken in line 58, above			
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X				1997	1997 Onwards	0.0094	0.3912	0.0095	0.1000	0.0095	0.0830	0.0092	0.0669	C				
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail			X		2000	2010-11	0.0031	0.1304	0.0032	0.0333	0.0032	0.0277	0.0031	0.0223	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	0.0031	0.1304	0.0032	0.0333	0.0032	0.0277	0.0031	0.0223	C				
90	X	1996-01	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X					on-going	3.6555	150.9969	3.7262	38.5840	3.7262	32.0744	3.5832	25.8692	C				
91	X	1996-01	REGION	M-70a Bicycle Parking			X		1999		0.0219	0.9129	0.0223	0.2333	0.0223	0.1936	0.0214	0.1562	C				
92	X			M-92 Telecommuting Support <sup>1</sup>	Combined with item #75														C				
95	X	1997-02	MCG	Germantown Transit Center	X				2005		0.0593	2.4778	0.0605	0.6333	0.0605	0.5256	0.0581	0.4239	C (TCM)				
102	X	1997-02	PG	Prince George's County Bus Replacement	X				1998	1998									SP (TCM)				
106	X	1997-02	VDOT	PRTC Employer Commuting Outreach Program	X					1977 on-going	0.0016	0.0652	0.0016	0.0167	0.0016	0.0138	0.0015	0.0112	C				
107	X	1997-02	VDOT	PRTC Multimodal Strategic Marketing Implementation Plan	X					1977 on-going	0.0016	0.0652	0.0016	0.0167	0.0016	0.0138	0.0015	0.0112	C				
108	X	1997-02	MDOT	M-103 Taxicab Replacement in Maryland <sup>2</sup>	X				2005	Stopped									SP				
109	X	1997-02	REGION	M-70b Employer Outreach for Bicycles	X				1998	on going	0.0034	0.1650	0.0035	0.0423	0.0035	0.0344	0.0034	0.0278	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	0.0031	0.1304	0.0032	0.0333	0.0032	0.0277	0.0031	0.0223	C				
118	X	1998-03	VDOT	Northern Virginia Turn Bays	X				2000	1998	0.0055	0.2295	0.0056	0.0587	0.0056	0.0487	0.0054	0.0393	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	0.211624493	8.4931	0.2157	2.1692	0.2157	1.8109	0.2074	1.4606	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	0.1124	4.6948	0.1146	1.1999	0.1146	0.9958	0.1102	0.8032	C				
124	X	1999-04	MDOT	Signal Systems (197/MD-198, MD-382 TO US-301,US301)	X				2000	2002	-0.0110	-0.4591	-0.0112	-0.1173	-0.0112	-0.0974	-0.0108	-0.0785	TR				
125	X	1999-04	VDOT	Transit Center at 7 Corners	X				2002	2001	0.0062	0.2608	0.0064	0.0667	0.0064	0.0553	0.0061	0.0446	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	0.1717	7.1726	0.1750	1.8331	0.1750	1.5214	0.1683	1.2270	C				
131	X	2000-05	MDOT	Various park and Ride Lots	X				2002	2003	0.1015	4.2398	0.1035	1.0836	0.1035	0.8993	0.0995	0.7253	C				



### TERM TRACKING SHEET TRANSPORTATION EMISSION REDUCTION MEASURES Part B - Yearly PM<sub>2.5</sub> 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	2011		2020		2030		2040		Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	
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 Gambrill/Hoopes Rds. Park and Ride	X				2002	2004	0.0562	2.3474	0.0573	0.5999	0.0573	0.4979	0.0551	0.4016	C
134	X	2000-05	VDOT	300 Spaces at Backlick Rd	X				2003	2007	0.0406	1.6954	0.0414	0.4333	0.0414	0.3596	0.0398	0.2900	C
135	X	2000-05	VDOT	Accotink-Gateway Connector Trail	X				2002	2005	0.0312	1.3041	0.0318	0.3333	0.0318	0.2766	0.0306	0.2231	C
136	X	2000-05	VDOT	Columbia Pike Trail			X		2000	2009	0.0250	1.0433	0.0255	0.2666	0.0255	0.2213	0.0245	0.1785	C
137	X	2000-05	VDOT	Lee Highway trail	X				2000	2007	0.0125	0.5216	0.0127	0.1333	0.0127	0.1106	0.0122	0.0892	C
138	X	2000-05	VDOT	Arlington Bus Shelter Improvements	X				2005	2005	0.0031	0.1304	0.0032	0.0333	0.0032	0.0277	0.0031	0.0223	C
139	X	2000-05	VDOT	Pentagon Metrostation Improvements	X					2003	0.0531	2.2170	0.0541	0.5666	0.0541	0.4702	0.0520	0.3793	C
140	X	2000-05	MDOT	East/West Intersection Improvements			X		2005	2005	0.0780	3.2603	0.0795	0.8332	0.0795	0.6915	0.0765	0.5577	C
141	X	2001-06	Feds	Federal Transit/Ridesharing subsidy	X				on-going		0.5962	24.9086	0.6078	6.3660	0.6078	5.2833	0.5844	4.2612	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 29 12 Taxicabs with CNG cabs				X	2005	2006									H
145	X	2003-08	DC	D.C.Incident Response & TrafficManagement System	X				2005	2004	0.2709	11.3165	0.2761	2.8922	0.2761	2.4003	0.2655	1.9359	TR
146	X	2003-08	DC	Bicycle Lane in D. C. (35 Mile)	X				2005	2008	0.0420	2.3903	0.0428	0.6134	0.0428	0.4896	0.0411	0.3949	C (TCM)
147	X	2003-08	DC	Bicycle Racks in D. C. (500)	X				2005	2004	0.0039	0.2720	0.0040	0.0699	0.0040	0.0547	0.0038	0.0441	C (TCM)
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600)	X				2005	2003	0.0202	0.8493	0.0206	0.2171	0.0206	0.1800	0.0198	0.1452	C (TCM)
149		2003-08	DC	CNG Rental Cars (18)				X	2005										SP
150	X	2003-08	DC	Sidewalks in D.C. (\$ 5 million)	X				2005	2004	0.3618	15.2986	0.3688	3.9106	0.3688	3.2400	0.3547	2.6131	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	0.1300	5.5181	0.1325	1.4106	0.1325	1.1681	0.1275	0.9421	C
153	X	2003-08	MDOT	Commuter Tax Credit	X				2005	n/a	0.7990	33.6796	0.8145	8.6087	0.8145	7.1356	0.7832	5.7551	C
155		2003-08	MDOT	Employer Vanpool Program (WWB)				X	2005										C
156	X	2003-08	MDOT	Green Line Link			X		2005	n/a	0.0320	1.2827	0.0326	0.3276	0.0326	0.2735	0.0314	0.2206	C
157	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland			X		2005	2005	0.0690	2.6365	0.0704	0.6728	0.0704	0.5660	0.0677	0.4565	C
158	X	2003-08	MDOT	Prince George's County- Bus Exp			X		2005	n/a	0.4487	17.9877	0.4574	4.5942	0.4574	3.8360	0.4398	3.0939	C
159	X	2003-08	MDOT	MTA - Bus Service Expansion			X		2005	n/a	0.1087	4.2903	0.1108	1.0955	0.1108	0.9168	0.1065	0.7394	C
160	X	2003-08	MDOT	Ride- On - Super Discount			X		2005	n/a	0.0092	0.3892	0.0094	0.0995	0.0094	0.0824	0.0090	0.0665	C
161	X	2003-08	Regional	Regional Traveler Information Systems			X		2005		3.5324	147.5732	3.6007	37.7158	3.6007	31.3014	3.4626	25.2457	TR
162	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA)			X		2005	n/a	0.1622	6.8595	0.1654	1.7534	0.1654	1.4527	0.1590	1.1717	C
163	X	2003-08	MCG	Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage	X				2004		0.0751	2.8445	0.0765	0.7258	0.0765	0.6113	0.0736	0.4930	C (TCM)

**TERM TRACKING SHEET**  
**TRANSPORTATION EMISSION REDUCTION MEASURES**  
**Part B - Yearly PM<sub>2.5</sub> 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	2011		2020		2030		2040		Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	
164	X	2003-08	MCG	Bethesda Shuttle Bus Services	X				2004		0.0310	1.3151	0.0316	0.3362	0.0316	0.2784	0.0304	0.2245	C
165	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	X				2004		0.0063	0.2649	0.0064	0.0677	0.0064	0.0561	0.0062	0.0453	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		0.0108	0.4555	0.0110	0.1164	0.0110	0.0965	0.0106	0.0778	C
168	X	2003-08	MCG	Annual Sidewalk Program	X				2004		0.1723	7.2850	0.1756	1.8622	0.1756	1.5428	0.1689	1.2444	C
169		2003-08	MDOT	Bethesda Breeze/International Express Metrobus				X	2005	Removed	0.0338	1.4723	0.0345	0.3765	0.0345	0.3107	0.0332	0.2506	C
170		2003-08	MDOT	Bethesda-B, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot				X	2005	Removed	0.0611	2.9008	0.0623	0.7427	0.0623	0.6058	0.0599	0.4886	C
171		2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)				X	2005	Removed	0.0486	2.1622	0.0496	0.5531	0.0496	0.4550	0.0476	0.3670	C
172	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	X				2005	2002	0.0964	4.0484	0.0983	1.0347	0.0983	0.8581	0.0945	0.6921	C
173	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bike/Pedestrian)	X				2005	2004	0.0037	0.4876	0.0038	0.1259	0.0038	0.0944	0.0036	0.0761	C
174	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	Ongoing	0.0033	0.4266	0.0033	0.1102	0.0033	0.0826	0.0032	0.0666	C
175	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.2321	8.7946	0.2366	2.2442	0.2366	1.8900	0.2275	1.5243	C
176	X	2003-08	VDOT	Universal Transportation Access Program	X				2005	2005-07	0.0122	0.5144	0.0124	0.1315	0.0124	0.1090	0.0120	0.0879	C
177	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative			X		2008 onward		0.0048	0.1943	0.0049	0.0496	0.0049	0.0414	0.0048	0.0334	C
178	X	2003-08	VDOT	Mobile Commuter Stores	X				2005	2005	0.0268	1.0743	0.0273	0.2744	0.0273	0.2291	0.0263	0.1848	C
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA) <sup>1</sup>	X				2005	Fall 2006	0.0079	0.3283	0.0080	0.0839	0.0080	0.0696	0.0077	0.0562	C
180	X	2003-08	VDOT	Commuter Choice	X				2005		0.0089	0.3862	0.0091	0.0988	0.0091	0.0816	0.0088	0.0658	C
181	X	2003-08	VDOT	Employer Shuttle Services				X	2005		0.1060	4.5846	0.1081	1.1723	0.1081	0.9682	0.1039	0.7809	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	0.0184	0.7031	0.0188	0.1794	0.0188	0.1509	0.0180	0.1217	C
187	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0200	0.7986	0.0204	0.2040	0.0204	0.1704	0.0196	0.1374	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	0.0274	1.0695	0.0280	0.2730	0.0280	0.2289	0.0269	0.1847	C
192	X	2003-08	VDOT	District-wide P&R Lots	X				2005	2001-2005	0.1558	6.1114	0.1589	1.5604	0.1589	1.3072	0.1528	1.0543	C
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations	X				2005	2005	0.2394	9.0718	0.2440	2.3149	0.2440	1.9495	0.2347	1.5724	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
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	0.0130	0.4933	0.0133	0.1259	0.0133	0.1060	0.0128	0.0855	C
200	X	2003-08	WMATA	Bikes Racks on WMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0126	0.5280	0.0128	0.1350	0.0128	0.1119	0.0123	0.0903	C (TCM)
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)				X	2005		0.0483	2.0171	0.0492	0.5155					SP

### TERM TRACKING SHEET TRANSPORTATION EMISSION REDUCTION MEASURES Part B - Yearly PM<sub>2.5</sub> 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	2011		2020		2030		2040		Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	
203	X	2003-08	MDOT	Replace 55 Montgomery County 10 yr. old buses w/ new CNG buses			X		2005	Ongoing	0.5910	24.6908	0.6024	6.3103					SP
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				X	2005		0.0808	3.3573	0.0824	0.8580	0.0824	0.7126	0.0792	0.5747	C
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			X		2005	2005	0.0428	1.6235	0.0436	0.4143	0.0436	0.3488	0.0419	0.2813	C
206		2003-08	MDOT	Additional Bike Lockers at Metro-Stations				X	2005		0.1368	5.7456	0.1395	1.4685	0.1395	1.2179	0.1341	0.9823	C
207	X	2003-08	MDOT	Bike Facilities at PnR Lots or other similar location			X		2005	2005	0.1122	4.5381	0.1144	1.1592	0.1144	0.9667	0.1100	0.7797	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	0.0145	0.6087	0.0148	0.1556	0.0148	0.1290	0.0142	0.1041	C (TCM)
212	X	2003-08	MDOT	Bike \ Pedestrian Trail - Anacostia River Walk			X		2005	Ongoing	0.0021	0.1320	0.0022	0.0339	0.0022	0.0268	0.0021	0.0216	C
213		2003-08	MDOT	Transit Prioritization - Queue Jumps				X	2005		0.0221	1.0366	0.0225	0.2654	0.0225	0.2168	0.0217	0.1748	C
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion	X				2005	Ongoing	0.5623	23.6531	0.5732	6.0457	0.5732	5.0126	0.5512	4.0428	C
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			X		2005	Ongoing	0.0556	2.4022	0.0567	0.6142	0.0567	0.5074	0.0545	0.4092	C
216	X	2003-08	MDOT	Telecommuting Expansion <sup>1</sup>	X				2005	Ongoing	0.8305	33.0827	0.8466	8.4488	0.8466	7.0611	0.8141	5.6950	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 <sup>1</sup>	X				2005	2005	0.8869	35.3306	0.9041	9.0228	0.9041	7.5408	0.8694	6.0819	C
219	X	2003-08	VDOT	MV-123 Employer Outreach for Public Sector Employees <sup>2</sup>	X				2005	2003	0.1544	6.5292	0.1574	1.6690	0.1574	1.3828	0.1514	1.1152	C
220	X	2003-08	REGION	Signal System Optimization	X				2005	2005	0.9874	41.2489	1.0065	10.5421	1.0065	8.7492	0.9678	7.0565	TR
221	X	2007-12	MDOT	Two P & R Lots in Frederick County (99 spaces)	X				2007	2008	0.0119	0.4660	0.0086	0.0831	0.0086	0.0709	0.0083	0.0572	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	0.0091	0.3577	0.0093	0.0913	0.0093	0.0765	0.0090	0.0617	
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	0.0120	0.4707	0.0123	0.1202	0.0123	0.1007	0.0118	0.0812	
226	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 270 & MD 80 (164 spaces)	X				2009	2009	0.0197	0.7720	0.0201	0.1971	0.0201	0.1652	0.0193	0.1332	
227	X	2008-13	MDOT	MDOT Syglal 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	
<b>Available Emissions Credits</b>											<b>17.320</b>	<b>807.642</b>	<b>15.744</b>	<b>187.199</b>	<b>15.141</b>	<b>150.310</b>	<b>14.560</b>	<b>121.230</b>	

**TRANSPORTATION EMISSION REDUCTION MEASURES (CLRP Projects Only)**  
**Part B - Yearly PM<sub>2.5</sub> 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	REM			2011		2020		2030		2040		
											PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	PM <sub>2.5</sub>	Precursor NOx	
221	X	1995-00 TIP	REGION	M-24 Speed Limit Adherence					2010		1.8120	75.7023	2.1072	22.0719	0.7941	6.9030	0.7636	5.5675	TR
222		1996-01 TIP	MGC	Rock Spring Park Pedestrian Amenities				X			0.0265	1.1069	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		0.0530	2.2138	0.0531	0.5559	0.0147	0.1279	0.0142	0.1032	C
224	X	1996-01 TIP	MGC	Damascus Park and Ride						2003	0.0265	1.1069	0.0265	0.2780	0.0074	0.0640	0.0071	0.0516	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	12.1565	88.6330	H
226	X	STADIUM ANALYSIS		M-103 Taxicab Replacement (MD)				X	2008		0.0000	0.0000	4.1929	43.9187	5.0566	43.9574	4.8626	35.4532	H
227	X	1997-02 TIP	MDOT	Shady Grove West Transit Center Park and Ride				X			0.0662	2.7673	0.0663	0.6949	0.0184	0.1599	0.0177	0.1290	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	0.0142	0.1032	C
229	X	1997-02 TIP	MGC	White Oak Park and Ride					2008		0.1325	5.5345	0.1327	1.3898	0.0368	0.3199	0.0354	0.2580	C
230	X	1997-02 TIP	MGC	Damascus Park and Ride						2003	0.0000	0.0000	0.0082	0.0855	0.0055	0.0480	0.0053	0.0387	C
231	X	1997-02 TIP	MGC	Four Corners Transit Center					2015		0.0066	0.2767	0.0066	0.0695	0.0018	0.0160	0.0018	0.0129	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							0.0066	0.2767	0.0054	0.0570	0.0037	0.0320	0.0035	0.0258	C
234	X	1997-02 TIP	MGC	Shady Grove Parking Construction						2003	0.1259	5.2578	0.1261	1.3204	0.0350	0.3039	0.0336	0.2451	C
<b>PLAN TOTAL</b>											0.3511	90.3688	5.6215	80.9544	12.7611	117.8361	12.2715	95.0389	
<b>GRAND TOTAL (Current Measures + CLRP plan)</b>											17.671	898.011	21.365	268.153	27.902	268.146	26.832	216.269	

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