

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

MEMORANDUM

October 26, 2012

To: Transportation Planning Board

**From: Jane Posey
Senior Transportation Engineer**

**Subject: Air Quality Conformity Update for the 2012 Constrained Long Range Plan (CLRP)
and the FY2013-2018 Transportation Improvement Program (TIP)**

BACKGROUND

EPA's final rule designating nonattainment areas for the 2008 ozone national ambient air quality standards (NAAQS) was published in the *Federal Register* on May 21, 2012 and was effective July 20, 2012. The Washington, DC-MD-VA region has been designated as a marginal non-attainment area. The attainment date for the 2008 ozone NAAQS for marginal non-attainment areas is December 31, 2015. All non-attainment areas must make a conformity determination within one year of the effective date of the initial non-attainment designation.

The current long range plan for the region is the 2012 CLRP. The Transportation Planning Board (TPB) approved a conformity analysis of the 2012 CLRP in July. Forecast years included: 2007, 2017, 2020, 2030, and 2040. Since there are no input changes to that analysis, it is not necessary to rerun all of the forecast years for the conformity determination required for the 2008 ozone NAAQS. However there is a requirement to complete an analysis of the 2015 attainment year. This report includes the data for all forecast years, including 2015, and represents a complete conformity analysis update of the 2012 CLRP.

INTRODUCTION

This memo documents summary results of the updated air quality conformity assessment of the 2012 CLRP and FY2013-2018 TIP with respect to the following pollutants:

- **Ozone Season Volatile Organic Compounds (VOC) and Nitrogen Oxides (NO_x).** In May, 2007 the Metropolitan Washington Air Quality Committee (MWAQC) adopted the 8-hour Ozone State Implementation Plan (SIP) which included Mobile Budgets. On September 4, 2009, EPA found adequate the 2008 Reasonable Further Progress (RFP) budgets from that SIP. Once a SIP with budgets has been submitted and EPA finds those budgets adequate or approves the SIP, the budgets must be used for all conformity analysis until new budgets are approved, even if new NAAQS are set. 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 2008 MWAQC approved a SIP to achieve the 1997 National Ambient Air Quality Standards (NAAQS) for PM_{2.5} that included mobile budgets. EPA never approved those budgets. On January 12, 2009, EPA determined that the region had attained the 1997 PM_{2.5} NAAQS and issued a clean data determination for the area. In early 2012 Virginia, Maryland, and the District of Columbia withdrew the SIP updates, including the mobile budgets. The withdrawal letters are included as Attachment A. In the absence of approved mobile budgets, EPA allows for an assessment that shows emissions in forecast year 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.

The analysis shows that mobile emissions are well within the mobile budgets for ozone season VOC and NO_x, as well as wintertime CO, and are well below the 2002 base year levels for the PM_{2.5} pollutants.

The results, based upon analyses contained in the technical report, [Air Quality Conformity Update Of The 2012 Constrained Long Range Plan and FY2012-2018 Transportation Improvement Program For The Washington Metropolitan Region](#), will be released for public comment and interagency consultation on November 15, 2012. The public comment period will end on December 15, 2012.

TECHNICAL INPUTS

The Transportation Planning Board (TPB) approved the scope of work for the update to the conformity analysis of the 2012 CLRP and FY2013-2018 TIP on October 17, 2012. It approved the project submissions for this analysis on February 15, 2012.

Key technical inputs to the analysis include:

- Round 8.1 Cooperative Land Activity Forecasts
- The Version 2.3 Travel Demand Model including a 3722 Transportation Analysis Zones (TAZ) area system and updated transit service
- 2012 CLRP and FY2013-2018 TIP Project Submissions
- 2011 Vehicle Registration Data
- EPA's Mobile6.2 Emissions Factor Model.

WORK ACTIVITIES

Staff prepared inventories for each pollutant for six forecast years (2007, 2015, 2017, 2020, 2030 and 2040). Ozone season pollutants (VOC and NO_x) and wintertime CO are inventoried for average weekday conditions, and precursor NO_x and direct PM_{2.5} are inventoried to reflect emissions on a yearly total basis. 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 do not exceed the approved budgets.

Land Activity Forecasts

The COG Board approved the draft Round 8.1 Cooperative Forecasts for use in the air quality conformity analysis of the 2012 CLRP and FY2013-2018 TIP in February, 2012. 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. Attachment B shows a summary of the Round 8.1 data.

Travel Modeling Process

Staff prepared travel demand forecasts for each of the analysis years using the Version 2.3 travel demand model. Exhibit 1 presents the geographic areas for travel modeling and for emissions reporting for each pollutant. 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 emissions factors using EPA's MOBILE6.2 emissions model. This year's rates include 2011 VIN data. Emissions rates for each pollutant – shown illustratively for Fairfax County 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_{2.5} 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.

Mobile Emissions Inventories

Ozone Season and Wintertime CO – Daily Emissions

The average annual weekday travel forecasts (AAWDT) generated by the travel demand model were adjusted, using a 1.03 ozone season factor or a 0.96 winter season factor, to develop seasonally appropriate VMT estimates. 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 and 7 and indicate total VOC and NO_x 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_x emissions represent about 14 percent and 9 percent, respectively, of their 1990 levels. The results reflect the impact of the cleaner fuel / fleet and related programs.

PM_{2.5} – Yearly Emissions

To develop the yearly total PM_{2.5} emissions, travel and emissions were estimated 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 8 and 9. The emissions reductions through time are largely attributable to Tier II vehicle standards, cleaner fuels, and the heavy duty engine rule.

2012 CLRP Emissions Inventories vs. Budgets

Exhibits 6-9 display net emissions for each forecast year. The charts show that emissions are within the mobile budgets for ozone season pollutants, and are not greater than 2002 levels for fine particles pollutants, for all forecast years. Wintertime CO emissions (contained in a full technical report but not summarized here) are also within the CO emissions budget.

Net Emissions Analysis

The emissions inventory data contained in Exhibits 6-9 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_{2.5} pollutants. The result of these measures, shown as the bottom line for each section of the table, amounts to additional reductions available for each of the pollutants. The benefits of these projects are not included at this time in the conformity analysis summary tables, but are available, if needed, to offset future emissions. Combining the emissions results in Exhibits 6-9 with the additional reductions from TERMS would further improve the emissions margins for each pollutant.

COMMENTS / RESPONSE TO COMMENTS

None at this time.

SUMMARY

The analytical results described in this air quality assessment provide a basis for a determination by the TPB of conformity of the 2012 CLRP and FY2013-2018 TIP.

Following: Exhibits 1- 9
Attachments A - C

EXHIBIT 1

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

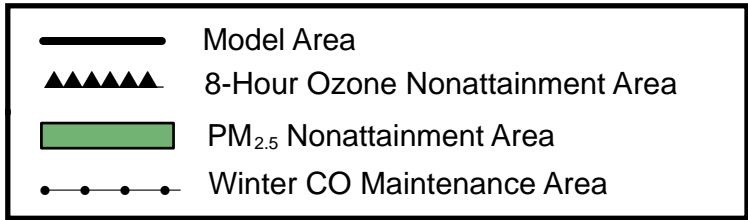
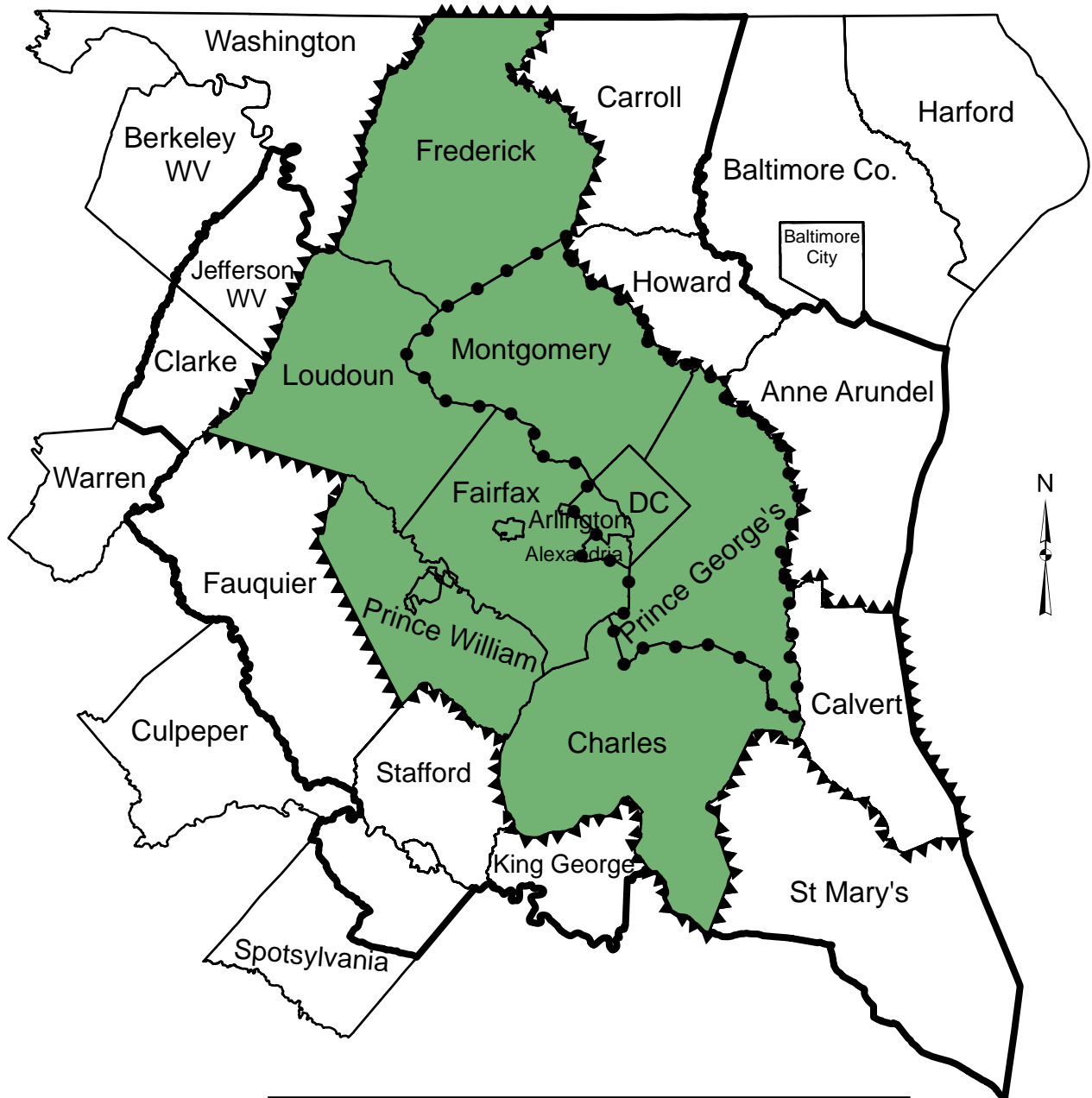


EXHIBIT 2
AIR QUALITY CONFORMITY UPDATE
Travel Demand Summary
Modeled Area Trips and Vehicle Miles Traveled (000's)
Average Weekday Traffic (AWDT)

	<u>2002</u>	<u>2007</u>	<u>2015</u>	<u>2017</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>
Transit Trips	1,092.5	1,158.5	1,295.1	1,361.8	1,425.7	1,542.0	1,628.4
Vehicle Trips	14,822.9	15,867.8	17,225.6	17,539.8	18,087.9	19,830.0	21,116.6
VMT	149,388.9	159,299.0	171,523.1	174,806.1	180,153.7	200,136.4	212,923.6

Adjustment Factors to Convert AAWDT to Appropriate Season:

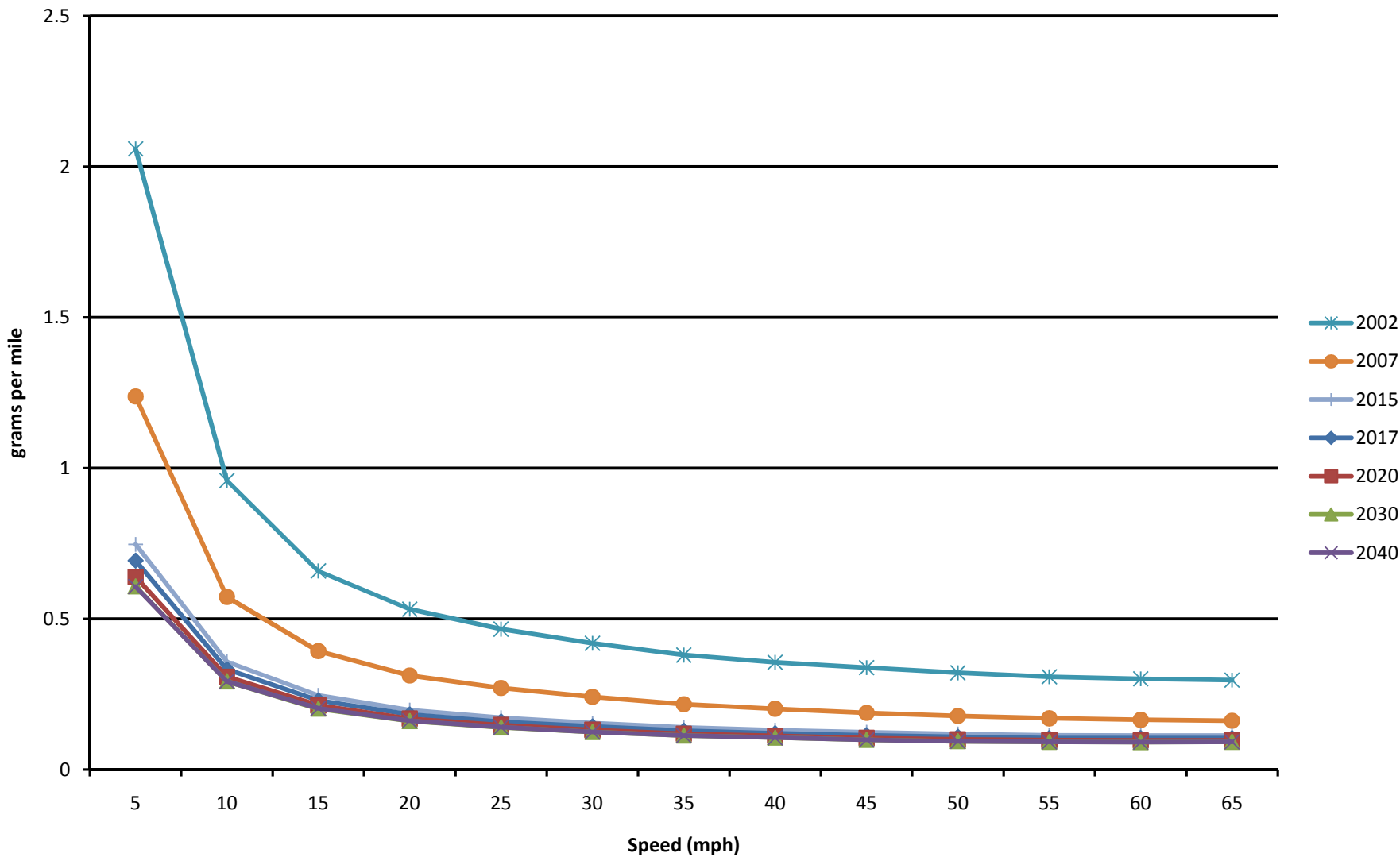
Ozone Season AWDT: 1.03

Winter Season AWDT: 0.96

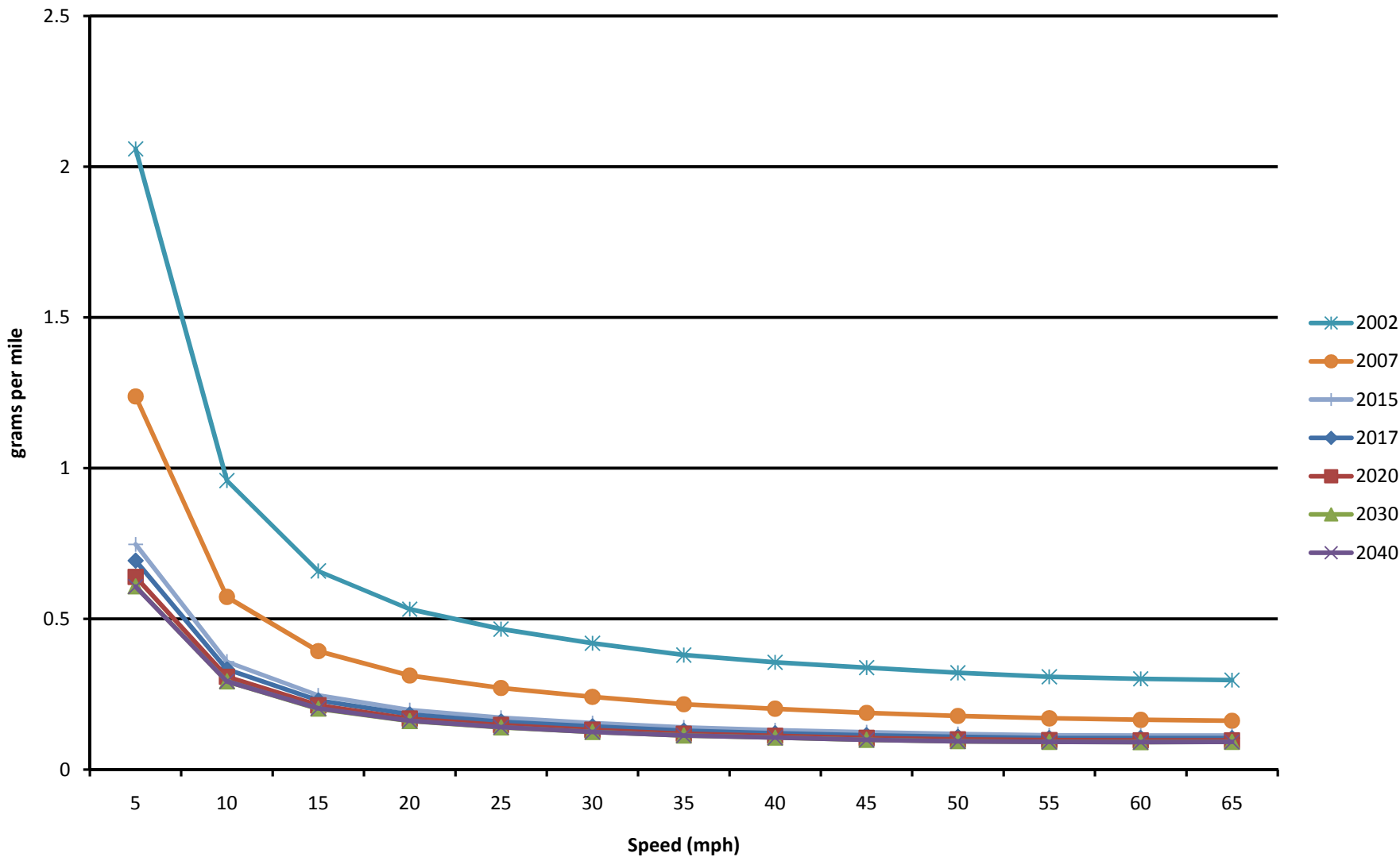
PM2.5 Annual:

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

AIR QUALITY CONFORMITY UPDATE
VOC COMPOSITE MOBILE6.2 FREEWAY RUNNING EMISSION RATES FOR
FAIRFAX COUNTY (2012 CLRP)



AIR QUALITY CONFORMITY **UPDATE** VOC COMPOSITE MOBILE6.2 FREEWAY RUNNING EMISSION RATES FOR FAIRFAX COUNTY (2012 CLRP)



AIR QUALITY CONFORMITY UPDATE

NO_x COMPOSITE MOBILE6.2 FREEWAY RUNNING EMISSION RATES FOR FAIRFAX COUNTY (2012 CLRP)

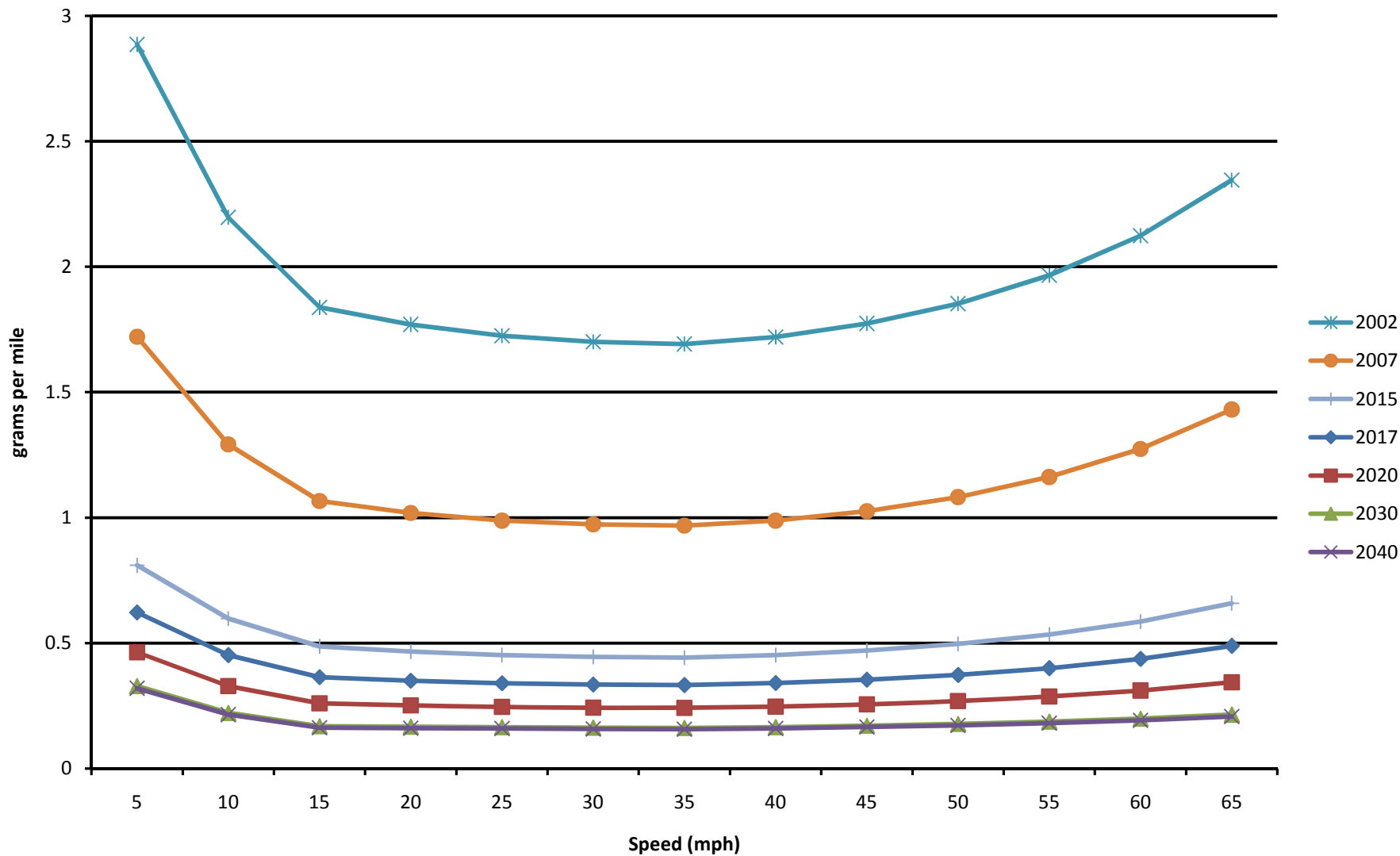


Exhibit 5 AIR QUALITY CONFORMITY **UPDATE** DIRECT PM_{2.5} EMISSION RATES FOR FAIRFAX COUNTY (MAJOR ROADS NETWORK)

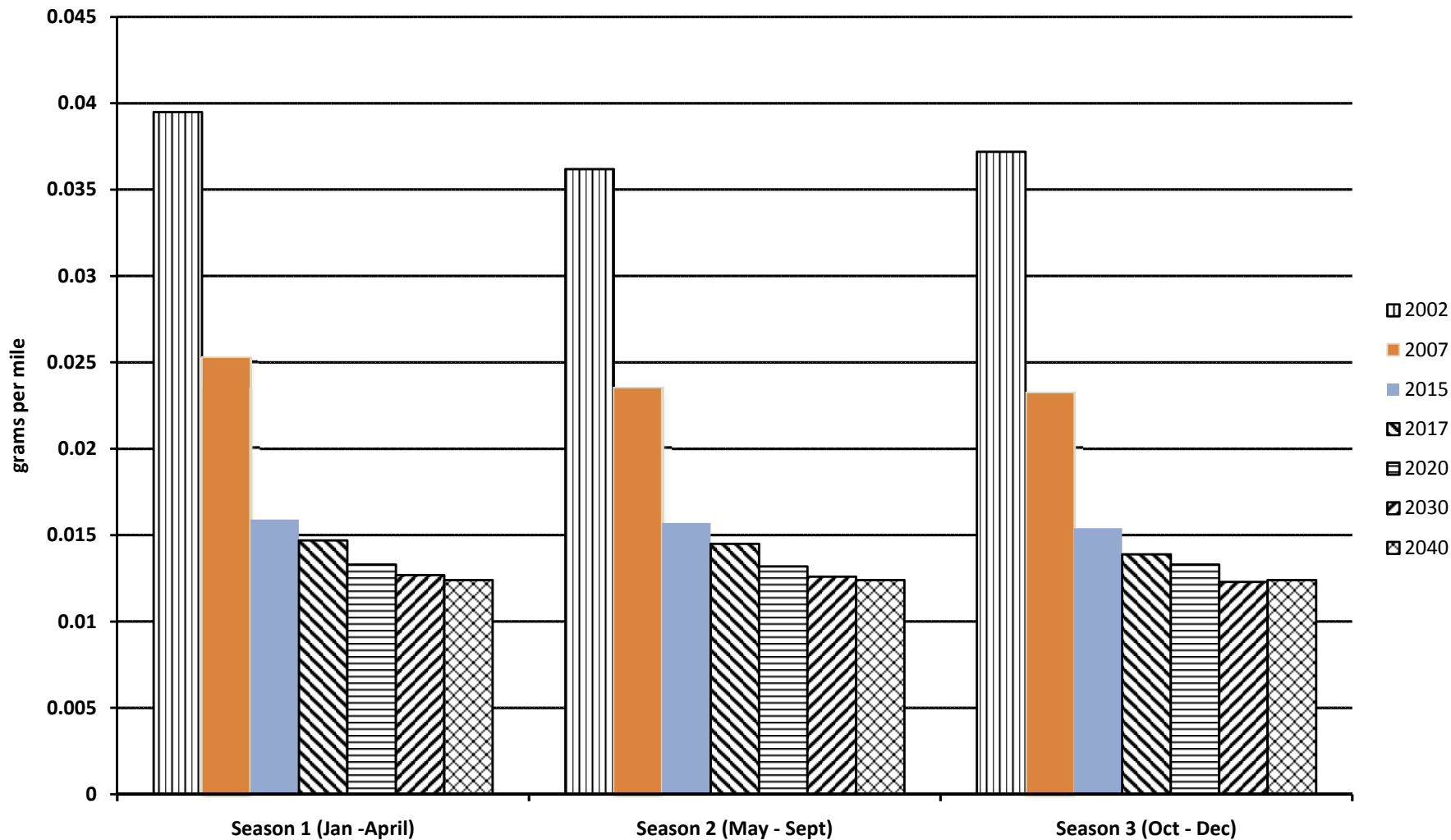


EXHIBIT 6

AIR QUALITY CONFORMITY **UPDATE**

Mobile Source VOC Emissions for the 8-Hour Ozone Nonattainment Area 2012 CLRP & FY 2013-2018 TIP

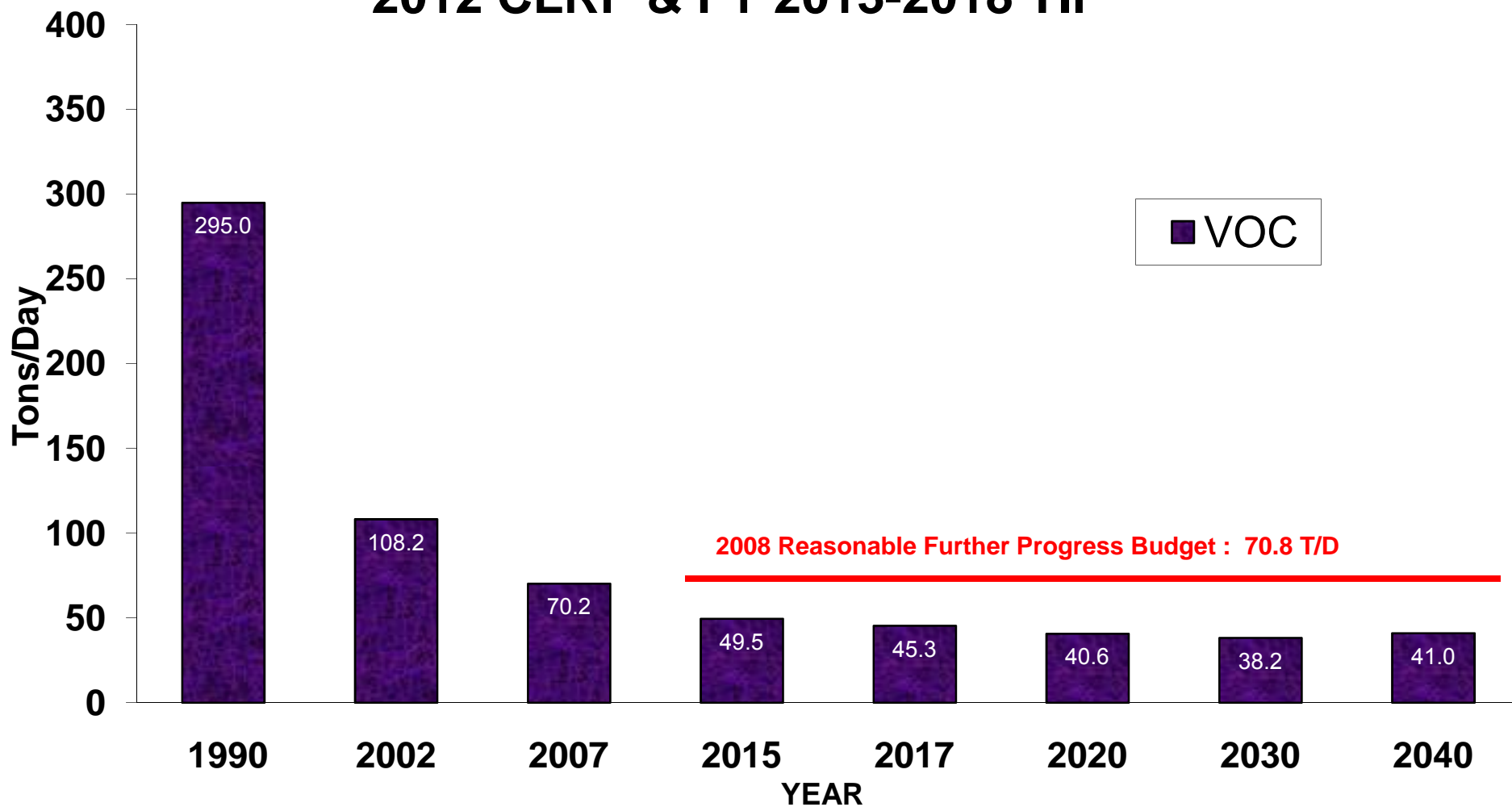


EXHIBIT 7

AIR QUALITY CONFORMITY **UPDATE**

Mobile Source NOx Emissions for the 8-Hour Ozone Nonattainment Area 2012 CLRP & FY2013-2018 TIP

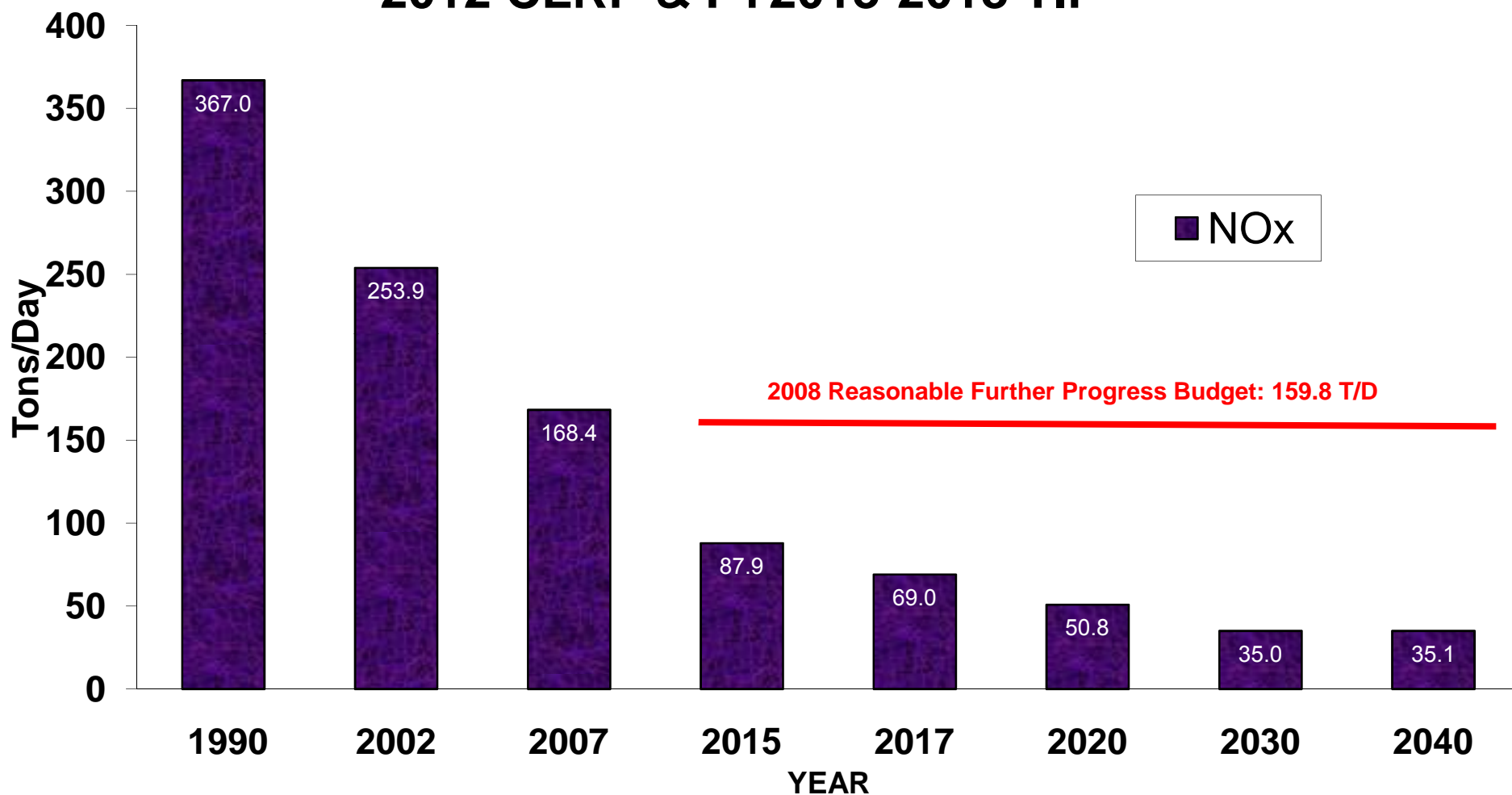


EXHIBIT 8

AIR QUALITY CONFORMITY **UPDATE**

Mobile Source Emissions

PM_{2.5} Precursor: NOx

(tons/year in thousands)

2012 CLRP & FY2013-2018 TIP

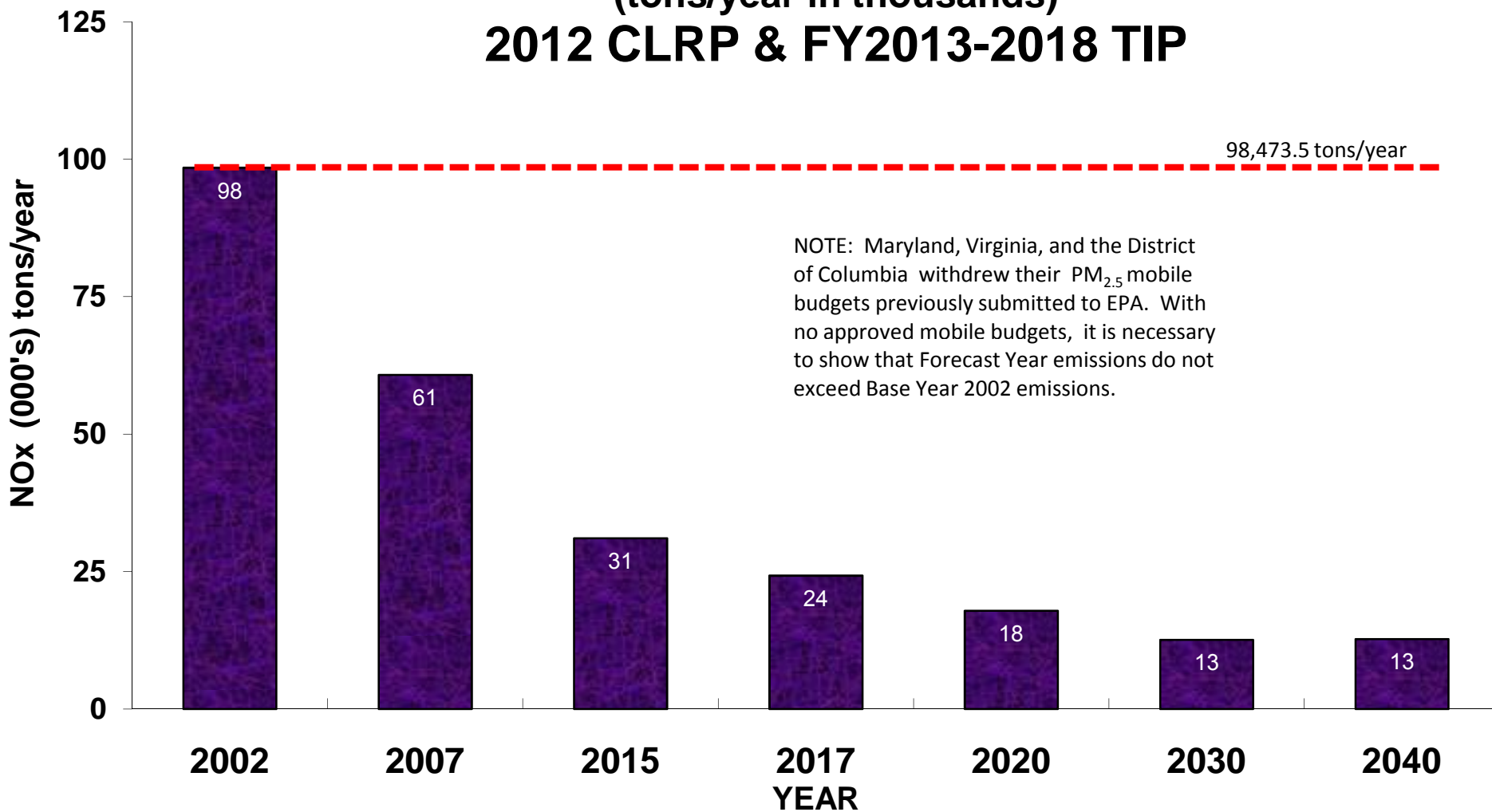
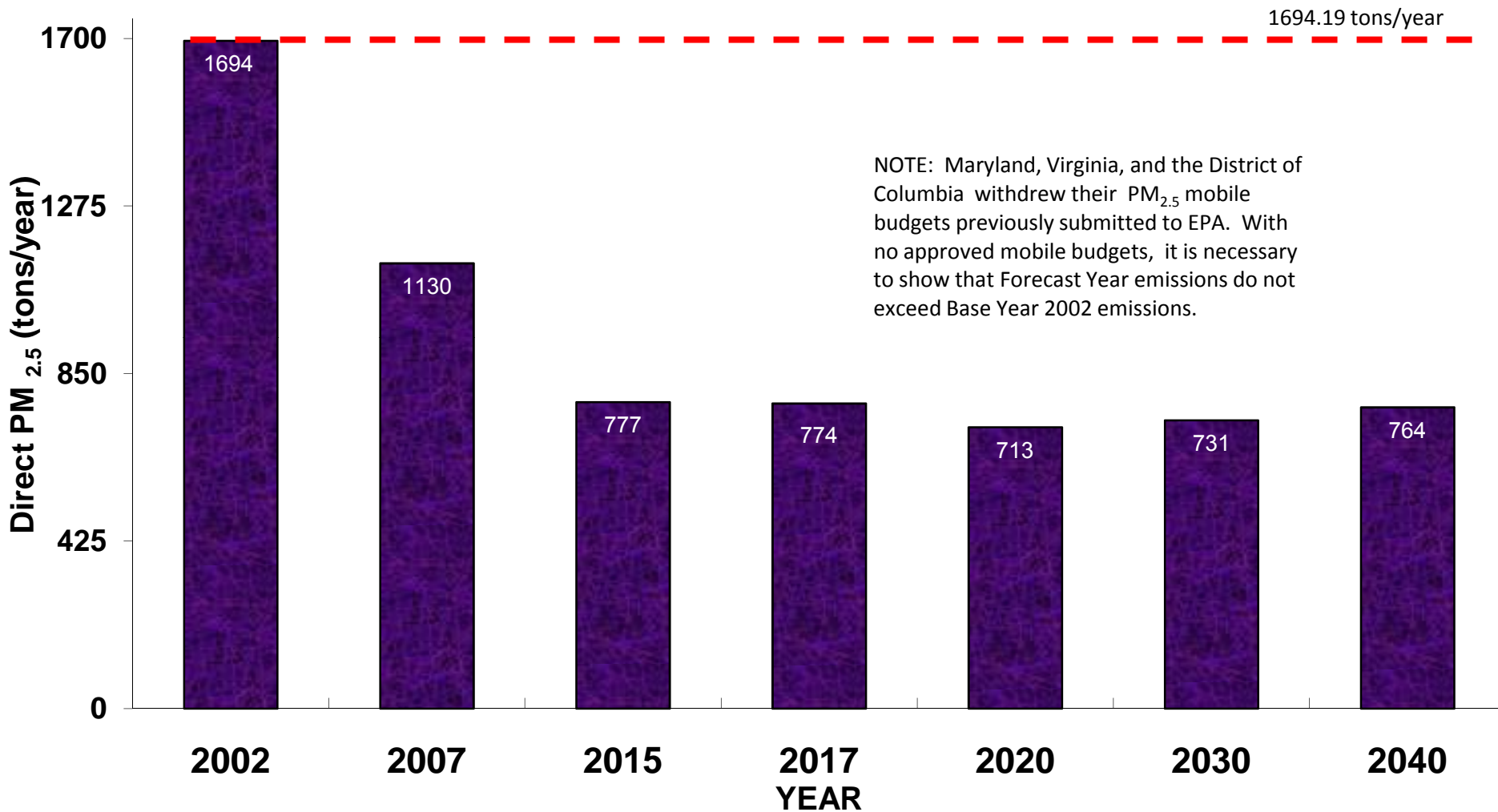


EXHIBIT 9
AIR QUALITY CONFORMITY UPDATE
Mobile Source Emissions
Direct PM_{2.5}
(tons/year)
2012 CLRP & FY2013-2018 TIP



ATTACHMENT A



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

JAN 23 2012

Ms. Diana Esher, Director
Air Protection Division (3AP00)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Reference: Withdrawal of the
Virginia Portion of 1997 PM_{2.5}
NAAQS Attainment SIP Revision
for the Washington DC-MD-VA
Nonattainment Area

Dear Ms. Esher:

On April 4, 2008, Virginia officially requested approval of a revision to the Commonwealth of Virginia State Implementation Plan (SIP). The revision demonstrated the improvements made to the air quality in the Washington DC-MD-VA Nonattainment Area and the efforts taken to achieve the 1997 national ambient air quality standards (NAAQS) for PM_{2.5} by 2009. This SIP revision for the Washington DC-MD-VA area included (i) the attainment plan, (ii) analysis of reasonably available control measures, (iii) attainment demonstration, (iv) contingency plans for failure to attain the air quality standard, (v) mobile source budgets, and (vi) the base year 2002 air pollutant emissions inventory.

Air quality has significantly improved in the Washington DC-MD-VA area. On January 12, 2009 (74 FR 1146), EPA determined that the area had attained the NAAQS and issued a clean data determination for the area. This determination suspended the requirements for the Commonwealth to submit attainment demonstrations and associated reasonably available control measures, reasonable further progress plans, contingency measures, and other planning SIPs related to attainment of the NAAQS in the area. The purpose of this letter is to withdraw these portions of the April 4, 2008 submittal. Specifically, the Commonwealth hereby withdraws the (i) attainment plan, (ii) analysis of reasonably available control measures, (iii) attainment

Ms. Diana Esher

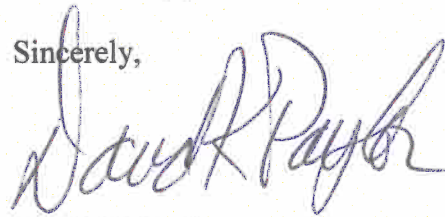
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demonstration, (iv) contingency plans for failure to attain the air quality standard, and (v) mobile source budgets, all of which were submitted on April 4, 2008. To ensure that Virginia has met the requirements of § 172(c)(3) regarding inventory submittals, the Commonwealth is not requesting the withdrawal of the base year 2002 air pollutant emissions inventory, which comprised Chapter 3 and Appendix B of the April 4, 2008 document

As a related matter, Virginia, in cooperation with the District of Columbia, Maryland, and the Metropolitan Washington Council of Governments, is developing a redesignation request and maintenance plan for the Washington DC-MD-VA area with respect to the 1997 PM_{2.5} NAAQS. This request and plan, which will contain mobile vehicle emissions budgets developed using MOVES2010, is expected to be ready for final submittal to EPA in 2012.

If you have any questions or need additional information, please let us know.

Sincerely,

A handwritten signature in blue ink that reads "David K. Paylor". The signature is written in a cursive style with a large initial "D".

David K. Paylor

DKP\kgs

TEMPLATES\SIP-REG\REG00w
SIP\NONATTN PLANS\2012\NVAPMw-SIP.DOC



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Robert M. Summers, Ph.D.
Secretary

Anthony G. Brown
Lieutenant Governor

FEB 29 2012

Mr. Shawn M. Garvin
Regional Administrator
U.S. Environmental Protection Agency, Region III
1650 Arch Street (3RA00)
Philadelphia, PA 19103-2029

Dear Mr. Garvin:

On April 3, 2008, Maryland officially requested EPA approval of the following state implementation plan (SIP) revision:

Maryland State Implementation Plan (SIP) for Fine Particle (PM_{2.5}) Standard and 2002 Base Year Inventory for the Washington DC-MD-VA Nonattainment Area

The plan revision demonstrated the improvements made to the air quality in the Washington DC-MD-VA Nonattainment Area ("the Area") and the efforts taken to achieve the 1997 national ambient air quality standard (NAAQS) for PM_{2.5} by 2009. This SIP revision for the Washington DC-MD-VA area included: (i) the attainment plan; (ii) an analysis of reasonably available control measures; (iii) an attainment demonstration; (iv) contingency plans for failure to attain the air quality standard; (v) mobile source budgets; and (vi) the base year 2002 air pollutant emissions inventory.

Air quality has significantly improved in the Washington DC-MD-VA area. On January 12, 2009 (74 FR 1146), EPA determined that the Area had attained the NAAQS and issued a clean data determination for the Area. This determination suspended the requirements for Maryland to submit attainment demonstrations and associated reasonably available control measures, reasonable further progress plans, contingency measures, and other planning SIPs related to attainment of the NAAQS in the Area. The purpose of this letter is to withdraw these portions of the April 3, 2008 submittal.

Specifically, the State of Maryland hereby withdraws: (i) the attainment plan; (ii) the analysis of reasonably available control measures; (iii) the attainment demonstration; (iv) the contingency plans for failure to attain the air quality standard; and (v) the mobile source budgets, all of which were submitted on April 3, 2008. To ensure that Maryland has met the requirements of Section 172(c)(3) of the Clean Air Act regarding inventory submittals, the State is not requesting the withdrawal of the base year 2002 air pollutant emissions inventory, which comprises Chapter 3 and Appendix B of the original April 3, 2008 SIP submission.

Mr. Shawn M. Garvin
Page 2

On a related matter, Maryland, in cooperation with the District of Columbia, Virginia, and the Metropolitan Washington Council of Governments, is developing a redesignation request and maintenance plan for the Washington DC-MD-VA area with respect to the 1997 PM_{2.5} NAAQS. This request and plan, which will contain mobile vehicle emissions budgets developed using MOVES2010, is expected to be ready for final submittal to EPA in 2012.

If you have any questions regarding these matters or require additional information, please contact Mr. George (Tad) S. Aburn, Jr., Director of the Air and Radiation Management Administration at 410-537-3255, or by email, at gaburn@mde.state.md.us.

Sincerely,



Secretary

cc: Diana Esher, Director, Air Protection Division, EPA Region III
George (Tad) S. Aburn, Jr., Director, Air and Radiation Management Administration



GOVERNMENT OF THE DISTRICT OF COLUMBIA

District Department of the Environment



Office of the Director

February 6, 2012

Shawn M. Garvin
Regional Administrator
U.S. Environmental Protection Agency
Region III (Mail Code: 3RA00)
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Subject: Withdrawal of the District of Columbia Portion of 1997 PM_{2.5} NAAQS
Attainment SIP Revision for the Washington DC-MD-VA Nonattainment Area

Dear Mr. Garvin:

A handwritten signature in black ink that reads "Shawn" followed by a horizontal line.

On April 2, 2008, the District of Columbia submitted a revision to its State Implementation Plan (SIP) for attaining the 1997 national ambient air quality standards (NAAQS) for PM_{2.5} and requested U.S. Environmental Protection Agency's (EPA) approval. The revision demonstrated the anticipated improvements to the air quality in the Washington DC-MD-VA Nonattainment Area and the efforts being taken to achieve the 1997 PM_{2.5} NAAQS by 2009. The April 2, 2008, SIP revision for the Washington DC-MD-VA area included (i) the attainment plan, (ii) analysis of reasonably available control measures, (iii) attainment demonstration, (iv) contingency plans for failure to attain the air quality standard, (v) mobile source budgets, and (vi) the base year 2002 air pollutant emissions inventory.

Air quality has significantly improved in the Washington DC-MD-VA area. On January 12, 2009, EPA issued a clean data determination for the area (74 FR 1146). The clean data determination suspended the requirements for the District of Columbia to submit attainment demonstrations and associated reasonably available control measures, reasonable further progress plans, contingency measures, and other SIPs related to attainment of the 1997 PM_{2.5} NAAQS in the area. The purpose of this letter is to withdraw those portions of the April 2, 2008, submittal. Specifically, the District of Columbia hereby withdraws the (i) attainment plan, (ii) analysis of reasonably available control measures, (iii) attainment demonstration, (iv) contingency plans for failure to attain the air quality standard, and (v) mobile source budgets, all of which were submitted on April 2, 2008. To ensure that the District of Columbia has met the requirements of § 172(c)(3) of the Clean Air Act regarding emissions inventory submittals, the District of Columbia is not requesting the withdrawal of the base year 2002 air pollutant emissions inventory, which comprised Chapter 3 and Appendix B of the SIP revision documents submitted on April 2, 2008.

DISTRICT
DEPARTMENT
OF THE
ENVIRONMENT



green forward



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As a related matter, the District of Columbia, in partnership with Virginia, Maryland, and the Metropolitan Washington Air Quality Committee, is developing a redesignation request and a maintenance plan for the Washington DC-MD-VA area with respect to the 1997 PM_{2.5} NAAQS. This request and plan, which will contain mobile vehicle emissions budgets developed using MOVES2010, is expected to be ready for final submittal to EPA in 2012.

Should you have any questions or require additional information, please contact me at (202) 535-2615, or Ms. Cecily Beall, Associate Director for the Air Quality Division, at (202) 535-2626.

Sincerely,

A handwritten signature in black ink, appearing to read "Christophe A.G. Tulous", written over a horizontal line.

Christophe A.G. Tulous
Director

cc: Diana Esher, Director, Air Protection Division, EPA Region 3
Cecily Beall, Associate Director, Air Quality Division, DDOE

ATTACHMENT B

AIR QUALITY CONFORMITY **UPDATE** HOUSEHOLD DATA

MSA:	2007	2015	2017	2020	2030	2040	2040/2007
D.C.	258726	287617	291838	298115	318252	339889	1.31
MONTGOMERY	352913	376536	384816	397237	436202	461469	1.31
PR.GEORGES	301540	323364	328583	336404	359878	379317	1.26
ARLINGTON	94543	105611	107838	111190	116788	119761	1.27
ALEXANDRIA	67041	71520	73485	76426	83831	92155	1.37
FAIRFAX	393784	417325	426728	440826	478759	500832	1.27
LOUDOUN	94321	117839	123843	132843	154159	162971	1.73
PR. WILLIAM	140727	166083	172975	183321	210450	229944	1.63
FREDERICK	81614	87487	89590	92740	107686	119564	1.46
CHARLES	48845	57528	60235	64299	75847	85901	1.76
STAFFORD	37504	49584	52701	57388	73383	87679	2.34
CALVERT	30760	34298	34991	36027	38348	40301	1.31
SUBTOTAL	1,902,318	2,094,792	2,147,623	2,226,816	2,453,583	2,619,783	1.38
ADDITIONAL COUNTIES:							
HOWARD	103132	117700	120864	125600	135486	137773	1.34
ANNE ARUNDEL	196402	210888	213647	217782	229371	234332	1.19
CARROLL	60279	65691	67260	69614	76111	81464	1.35
FREDERICKSBURG (VA) &N. SPOTSYLVANIA	40347	49994	52447	56137	68763	79050	1.96
CLARKE&JEFFERSON	24873	29615	30840	32679	40562	49835	2.00
FAUQUIER	24731	30982	32882	35730	47502	63154	2.55
K. GEORGE	7912	9800	10371	11228	14358	17125	2.16
ST. MARY'S	36573	44443	46408	49352	58143	66509	1.82
SUBTOTAL	494,249	559,113	574,719	598,122	670,296	729,242	1.48
TOTAL	2,396,567	2,653,905	2,722,342	2,824,938	3,123,879	3,349,025	1.40

SOURCE:

MWCOG Round 8.1 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

AIR QUALITY CONFORMITY **UPDATE** EMPLOYMENT DATA

MSA:	2007	2015	2017	2020	2030	2040	2040/2007
D.C.	763530	812947	834060	865726	929641	982647	1.29
MONTGOMERY	504045	541995	559355	585363	684284	737364	1.46
PR. GEORGES	345777	356958	365324	377879	427514	497652	1.44
ARLINGTON	206400	247135	258626	275862	302588	308376	1.49
ALEXANDRIA	105870	116274	118783	122551	142738	155012	1.46
FAIRFAX	655611	722244	747569	785619	875216	935411	1.43
LOUDOUN	132849	167565	183113	206465	257212	285449	2.15
PR. WILLIAM	141076	163423	172538	186215	230047	278151	1.97
FREDERICK	86542	99386	101182	103862	109755	114907	1.33
CHARLES	60039	68439	69758	71731	77537	83138	1.38
STAFFORD	40114	52220	54328	57505	70172	84144	2.10
CALVERT	33512	41059	42422	44457	47159	48955	1.46
SUBTOTAL	3,075,365	3,389,645	3,507,058	3,683,235	4,153,863	4,511,206	1.47
ADDITIONAL COUNTIES:							
HOWARD	155565	181143	186679	194977	221168	231902	1.49
ANNE ARUNDEL	278707	309853	317528	329042	358320	370904	1.33
CARROLL	63773	69619	70099	70813	72456	74090	1.16
FREDERICKSBURG (VA) & N. SPOTSYLVANIA	61620	81897	84827	89210	103673	119691	1.94
CLARKE & JEFFERSON	26062	30827	32017	33800	39225	45298	1.74
FAUQUIER	25422	30501	32604	35762	43360	52578	2.07
K. GEORGE	10519	17805	18431	19370	22501	25740	2.45
ST. MARY'S	56173	64083	65350	67268	71969	75862	1.35
SUBTOTAL	677,841	785,728	807,535	840,242	932,672	996,065	1.47
TOTAL	3,753,206	4,175,373	4,314,593	4,523,477	5,086,535	5,507,271	1.47

SOURCE:

MWCOG Round 8.1 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

ATTACHMENT C

TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES (TIP Projects)
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 ACTUAL		TONS/DAY REDUCTION CREDITED								Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.0004	0.0008	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			-
20	X	1994-99	ALEX	King St. Metrorail access improvements	X					2006	0.0008	0.0008	0.0007	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	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	0.0004	0.0008	0.0003	0.0005	0.0003	0.0005	0.0003	0.0005	C (TCM)
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0038	0.0072	0.0029	0.0051	0.0026	0.0042	0.0026	0.0042	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	0.0003	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	0.0029	0.0062	0.0023	0.0044	0.0020	0.0036	0.0020	0.0036	C (TCM)
58	X	1995-00	WMATA	Bus Replacement (172 buses)	X				1998	1998	0.0488	0.1383					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		0.0013	0.0005	0.0010	0.0004	0.0009	0.0003	0.0009	0.0003	C
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail				X			0.0021	0.0021	0.0016	0.0015	0.0015	0.0012	0.0015	0.0012	C
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0017	0.0031	0.0013	0.0022	0.0012	0.0018	0.0012	0.0018	C
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0133	0.0269	0.0104	0.0189	0.0094	0.0157	0.0093	0.0157	C (TCM)
66	X	1995-00	VDOT	Commuter Lots - District Wide	X				varies	1995, 2001	0.0046	0.0085	0.0036	0.0060	0.0032	0.0050	0.0032	0.0050	C
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	2000 end	0.0042	0.0052	0.0033	0.0036	0.0029	0.0030	0.0029	0.0030	C
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X					1999/2000	0.0000	0.0026	0.0000	0.0018	0.0000	0.0015	0.0000	0.0015	C
69	X	1995-00	VDOT	Bicycle Trails and Facilities (Arlington & Fairfax Co - 7 locations)				X	varies	2010-12	0.0008	0.0044	0.0007	0.0031	0.0006	0.0026	0.0006	0.0026	C
70	X	1995-00	VDOT	Improved Access to Metrorail Stations (VRE 2 Stn)				X	varies	2000-2012	0.0002	0.0003	0.0002	0.0002	0.0001	0.0002	0.0001	0.0002	C
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X					1997	0.0021	0.0026	0.0033	0.0036	0.0029	0.0030	0.0029	0.0030	C
72	X	1995-00	DC	Bicycle Facilities	X						0.0100	0.0052	0.0078	0.0036	0.0070	0.0030	0.0070	0.0030	C
73	X	1995-00	REGION	COG Regional Ridesharing Support	X					on-going	0.0315	0.0436	0.0249	0.0309	0.0227	0.0257	0.0225	0.0257	C
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.0089	0.0124	0.0071	0.0088	0.0064	0.0074	0.0064	0.0073	C
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	0.0472	0.0600	0.0371	0.0424	0.0334	0.0352	0.0332	0.0351	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	0.0008	0.0008	0.0007	0.0005	0.0006	0.0005	0.0006	0.0005	C
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X				1997	1997 Onwards	0.0008	0.0008	0.0007	0.0005	0.0006	0.0005	0.0006	0.0005	C
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail				X	2000	2010-11	0.0004	0.0003	0.0003	0.0002	0.0003	0.0002	0.0003	0.0002	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	0.0004	0.0003	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	0.3666	0.4640	0.2878	0.3274	0.2594	0.2721	0.2578	0.2714	C
91	X	1996-01	REGION	M-70a Bicycle Parking				X	1999		0.0029	0.0018	0.0023	0.0013	0.0020	0.0011	0.0020	0.0011	C
92	X	STADIUM ANALYSIS		M-92 Telecommuting Support ¹	Combined with item #75						0.0000	0.0000							C
95	X	1997-02	MCG	Germantown Transit Center	X				2005		0.0021	0.0049	0.0016	0.0035	0.0015	0.0029	0.0015	0.0029	C (TCM)
102	X	1997-02	PG	Prince George's County Bus Replacement	X				1998	1998	0.0021	0.0049							SP (TCM)

TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES (TIP Projects)
Part A - Daily Ozone Precursor Emissions

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NOS	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL ACTUAL		TONS/DAY REDUCTION CREDITED								Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
106	X	1997-02	VDOT	PRTC Employer Commuting Outreach Program	X					1977 on-going	0.0008	0.0001	0.0007	0.0001	0.0006	0.0001	0.0006	0.0001	C
107	X	1997-02	VDOT	PRTC Multimodal Strategic Marketing Implementation Plan	X					1977 on-going	0.0000	0.0001	0.0000	0.0001	0.0000	0.0001	0.0000	0.0001	C
108	X	1997-02	MDOT	M-103 Taxicab Replacement in Maryland ²	X				2005	Stopped	0.0564	0.1468	0.1340	0.1827	0.3120	0.4810			SP
109	X	1997-02	REGION	M-70b Employer Outreach for Bicycles	X				1998	on going	0.0004	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002	0.0002	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	0.0318	0.0887							SP
112	X	1998-03	MCG	Montgomery County Bus Replacement	X					Ongoing	0.0057	0.0148							SP
113	X	1998-03	PG	Prince George's County Bus Replacement	X				1998	Ongoing	0.0007	0.0011							SP
114	X	1998-03	FDC	Frederick County Bus Replacement	X						0.0007	0.0000							SP
117	X	1998-03	VDOT	Arlington County Four Mile Run Bike Trail	X				1999	2009	0.0004	0.0003	0.0003	0.0002	0.0003	0.0002	0.0003	0.0002	C
118	X	1998-03	VDOT	Northern Virginia Turn Bays	X				2000	1998	0.0004	0.0005	0.0003	0.0003	0.0003	0.0002	0.0003	0.0002	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	0.0750	0.2118							SP
122	X	97 & 98 TIP	REGION	M-101a Mass Marketing Campaign (Consumer)			X			2005	0.0187	0.0205	0.0145	0.0144	0.0129	0.0119	0.0128	0.0118	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	0.0033	0.0093	0.0026	0.0066	0.0023	0.0054	0.0023	0.0054	C
124	X	1999-04	MDOT	Signal Systems (197/MD-198, MD-382 TO US-301,US301)	X				2000	2002	0.0052	-0.0010	0.0041	-0.0005	0.0037	-0.0004	0.0037	-0.0003	TR
125	X	1999-04	VDOT	Transit Center at 7 Corners	X				2002	2001	0.0004	0.0005	0.0003	0.0004	0.0003	0.0003	0.0003	0.0003	C
126	X	1999-04	VDOT	Falls Church Clean Diesel Bus Service	X				2000	2003	0.0028	0.0027							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	0.0104	0.0142	0.0082	0.0100	0.0073	0.0083	0.0073	0.0083	C
131	X	2000-05	MDOT	Various park and Ride Lots	X				2002	2003	0.0029	0.0084	0.0023	0.0059	0.0020	0.0049	0.0020	0.0049	C
132	X	2000-05	MDOT	Signal Systems	X				Varies	on-going	0.0013	0.0000	0.0016	0.0000	0.0009	0.0000	0.0009	0.0000	TR
133	X	2000-05	VDOT	250 Spaces at Gambrell/Hoopes Rds. Park and Ride	X				2002	2004	0.0029	0.0047	0.0023	0.0033	0.0020	0.0027	0.0020	0.0027	C
134	X	2000-05	VDOT	300 Spaces at Backlick Rd	X				2003	2007	0.0021	0.0034	0.0016	0.0024	0.0015	0.0020	0.0015	0.0020	C
135	X	2000-05	VDOT	Accotink-Gateway Connector Trail	X				2002	2005	0.0029	0.0026	0.0023	0.0018	0.0020	0.0015	0.0020	0.0015	C
136	X	2000-05	VDOT	Columbia Pike Trail	X				2000	2009	0.0025	0.0021	0.0020	0.0015	0.0018	0.0012	0.0017	0.0012	C
137	X	2000-05	VDOT	Lee Highway trail	X				2000	2007	0.0013	0.0010	0.0010	0.0007	0.0009	0.0006	0.0009	0.0006	C
138	X	2000-05	VDOT	Arlington Bus Shelter Improvements	X				2005	2005	0.0004	0.0003	0.0003	0.0002	0.0003	0.0002	0.0003	0.0002	C
139	X	2000-05	VDOT	Pentagon Metrostation Improvements	X					2003	0.0033	0.0044	0.0026	0.0031	0.0023	0.0026	0.0023	0.0026	C
140	X	2000-05	MDOT	East/West Intersection Improvements			X		2005	2005	0.0171	0.0065	0.0134	0.0046	0.0120	0.0038	0.0119	0.0038	C
141	X	2001-06	Feds	Federal Transit/Ridesharing subsidy	X				on-going		0.0425	0.0494	0.0333	0.0348	0.0298	0.0288	0.0296	0.0288	C
142	X	2002-07	WMATA	100 CNG buses	X				2002		0.0000	0.0745							SP (TCM)
143	X	2002-07	WMATA	ULSD with CRT filters	X				2006	Jun-06	0.1485	0.0000	0.4300	0.0000	0.4300	0.0000	0.4271	0.0000	H (TCM)
144		2003-08	DC	Replace 29 12 Taxicabs with CNG cabs				X	2005	2006	0.0063	0.0086							H
145	X	2003-08	DC	D.C. Incident Response & Traffic Management System	X				2005	2004	0.0120	0.0209	0.0094	0.0130	0.0085	0.0089	0.0084	0.0089	TR
146	X	2003-08	DC	Bicycle Lane in D. C. (35 Mile)	X				2005	2008	0.0069	0.0046	0.0054	0.0032	0.0049	0.0027	0.0048	0.0027	C (TCM)
147	X	2003-08	DC	Bicycle Racks in D. C. (500)	X				2005	2004	0.0010	0.0005	0.0008	0.0004	0.0007	0.0003	0.0007	0.0003	C (TCM)
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600)	X				2005	2003	0.0014	0.0017	0.0011	0.0012	0.0010	0.0010	0.0010	0.0010	C (TCM)
149		2003-08	DC	CNG Rental Cars (18)				X	2005		0.0000	0.0001							SP

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					FULL	SCALED-BACK	UNDER-WAY	REM	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
150	X	2003-08	DC	Sidewalks in D.C. (\$ 5 million)	X				2005	2004	0.0261	0.0303	0.0204	0.0213	0.0183	0.0177	0.0182	0.0176	C
151	X	2003-08	DC	CNG Refuse Haulers (2)	X				2005	2004	0.0000	0.0011							H (TCM)
152	X	2003-08	DC	Circulator /Feeder Bus Routes	X				2005	2003	0.0095	0.0109	0.0074	0.0077	0.0067	0.0064	0.0066	0.0064	C
153	X	2003-08	MDOT	Commuter Tax Credit	X				2005	n/a	0.0569	0.0667	0.0445	0.0470	0.0399	0.0390	0.0397	0.0389	C
155		2003-08	MDOT	Employer Vanpool Program (WWB)				X	2005		0.0013	0.0023							C
156	X	2003-08	MDOT	Green Line Link			X		2005	n/a	0.0019	0.0026	0.0015	0.0018	0.0013	0.0015	0.0013	0.0015	C
157	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland			X		2005	2005	0.0036	0.0059	0.0028	0.0042	0.0025	0.0035	0.0025	0.0035	C
158	X	2003-08	MDOT	Prince George's County- Bus Exp			X		2005	n/a	0.0261	0.0358	0.0204	0.0252	0.0183	0.0209	0.0182	0.0209	C
159	X	2003-08	MDOT	MTA - Bus Service Expansion			X		2005	n/a	0.0059	0.0086	0.0046	0.0060	0.0041	0.0050	0.0041	0.0050	C
160	X	2003-08	MDOT	Ride- On - Super Discount			X		2005	n/a	0.0007	0.0008	0.0005	0.0005	0.0005	0.0005	0.0005	0.0004	C
161	X	2003-08	Regional	Regional Traveler Information Systems			X		2005	A:2000 before	0.0750	0.3139	0.0594	0.1701	0.0533	0.1157	0.0530	0.1154	TR
162	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA)			X		2005	n/a	0.0117	0.0136	0.0091	0.0096	0.0082	0.0079	0.0081	0.0079	C
163	X	2003-08	MCG	Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage	X				2004		0.0033	0.0057	0.0026	0.0040	0.0025	0.0036	0.0024	0.0036	C (TCM)
164	X	2003-08	MCG	Bethesda Shuttle Bus Services	X				2004		0.0023	0.0026	0.0018	0.0018	0.0016	0.0015	0.0016	0.0015	C
165	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	X				2004		0.0004	0.0005	0.0003	0.0004	0.0003	0.0003	0.0003	0.0003	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		0.0008	0.0009	0.0006	0.0006	0.0005	0.0005	0.0005	0.0005	C
168	X	2003-08	MCG	Annual Sidewalk Program	X				2004		0.0124	0.0144	0.0097	0.0102	0.0087	0.0084	0.0087	0.0084	C
169		2003-08	MDOT	Bethesda Breeze/International Express Metrobus				X	2005	Removed	0.0027	0.0029	0.0021	0.0020	0.0019	0.0017	0.0019	0.0017	C
170		2003-08	MDOT	Bethesda-8, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot				X	2005	Removed	0.0064	0.0057	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	0.0042	0.0043	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	0.0068	0.0080	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	0.0024	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	0.0021	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	0.0103	0.0176	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	0.0009	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		0.0003	0.0004	0.0002	0.0003	0.0002	0.0002	0.0002	0.0002	C
178	X	2003-08	VDOT	Mobile Commuter Stores	X				2005	2005	0.0016	0.0021	0.0012	0.0015	0.0011	0.0012	0.0011	0.0012	C
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA) ¹	X				2005	Fall 2006	0.0005	0.0007	0.0004	0.0005	0.0004	0.0004	0.0004	0.0004	C
180	X	2003-08	VDOT	Commuter Choice	X				2005		0.0007	0.0008	0.0005	0.0005	0.0005	0.0004	0.0005	0.0004	C
181	X	2003-08	VDOT	Employer Shuttle Services				X	2005		0.0083	0.0091	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	0.0010	0.0014							C
185	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0009	0.0014	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	0.0011	0.0016	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	0.0000	0.0000							C
191	X	2003-08	VDOT	Town of Leesburg P&R Lot	X				2005	2010	0.0014	0.0021	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	0.0082	0.0122	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	0.0106	0.0182	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	0.0015	0.0478							SP (TCM)
197	X	2003-08	WMATA	250 CNG Buses (175 buses by Dec. 2004; 75 buses by mid 2006)	X				2005	Jun-06	0.0058	0.1866							SP

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TRANSPORTATION EMISSION REDUCTION MEASURES (TIP Projects)
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 ACTUAL		TONS/DAY REDUCTION CREDITED								Project Category *		
					FULL	SCALED-BACK	UNDER-WAY	REM	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040				
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX			
198	X	2003-08	WMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004	0.0098	0.0414									SP
199	X	2003-08	WMATA	Car Sharing Program	X				2005	2004	0.0006	0.0010	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	0.0009	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		0.004	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	0.0325	0.0893	0.0459	0.1628							SP
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				X	2005		0.005	0.007	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	0.0019	0.0033	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		0.0096	0.0114	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	0.0068	0.0090	0.0053	0.0064	0.0048	0.0053	0.0047	0.0053			C
208		2003-08	MDOT	CNG Fueling Stations				X	2005		0.0898	0.0642									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	0.0010	0.0012	0.0008	0.0008	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	C (TCM)
212	X	2003-08	MDOT	Bike \ Pedestrian Trail - Anacostia River Walk			X		2005	Ongoing	0.0004	0.0003	0.0003	0.0002	0.0003	0.0001	0.0003	0.0001	0.0003	0.0001	C
213		2003-08	MDOT	Transit Prioritization - Queue Jumps				X	2005		0.002	0.002	0.0018	0.0014	0.0016	0.0012	0.0016	0.0012			C
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion	X				2005	Ongoing	0.0398	0.0469	0.0311	0.0330	0.0279	0.0274	0.0277	0.0273			C
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			X		2005	Ongoing	0.0043	0.0047	0.0034	0.0033	0.0030	0.0028	0.0030	0.0028			C
216	X	2003-08	MDOT	Telecommuting Expansion ¹	X				2005	Ongoing	0.0470	0.0659	0.0367	0.0464	0.0330	0.0385	0.0327	0.0384			C
217		2003-08	MDOT	Replace older Diesel Engine in Public Sector vehicles				X	2005		0.0168	0.0713									H
218	X	2003-08	VDOT	MV-92 Telecommuting Program - Expanded ¹	X				2005	2005	0.0502	0.0704	0.0392	0.0496	0.0352	0.0411	0.0350	0.0410			C
219	X	2003-08	VDOT	MV-123 Employer Outreach for Public Sector Employees ²	X				2005	2003	0.0111	0.0129	0.0087	0.0091	0.0078	0.0076	0.0078	0.0075			C
220	X	2003-08	REGION	Signal System Optimization	X				2005	2005	0.3174	0.0762	0.2509	0.0475	0.2252	0.0324	0.2194	0.0310			TR
221	X	2007-12	MDOT	Two P & R Lots in Frederick County (99 spaces)	X				2007	2008	0.0006	0.0009	0.0005	0.0007	0.0005	0.0005	0.0004	0.0005			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	0.0005	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)			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	0.0006	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	0.0010	0.0015	0.0008	0.0011	0.0007	0.0009	0.0007	0.0009			
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 Langlely Transit Center			X		2012	2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
Available Emissions Credits											1.810	2.707	1.483	1.167	1.335	0.800	1.322	0.796			

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

Project Category: TR - Traffic Stream, C - Commute, H - Engine Technology (Heavy Duty 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			2017		2020		2030		2040			
											VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx		
221	X	1995-00 TIP	REGION	M-24 Speed Limit Adherence	X				2010			-0.0053	0.1501	-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	0.0022	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			0.0014	0.0044	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	0.0022	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	0.0055	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	0.0110	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		0.0035	0.0104	0.0021	0.0072	0.0007	0.0017	0.0007	0.0017	C

CLRP TOTAL											0.0004	0.1792	0.0019	0.1424	0.0022	0.0434	0.0021	0.0432
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CLRP + TIP TOTAL											1.811	2.886	1.485	1.310	1.337	0.843	1.324	0.840
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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 (TIP Projects)
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 ACTUAL		TONS/YEAR REDUCTION								Project Category *
					FULL	SCALED BACK	UNDERWAY	REM	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040		
											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	0.1444	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	0.1444	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 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	0.0095	0.1444	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	1.3479	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	0.0481	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	1.1554	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	0.0963	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	0.3851	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	0.5777	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	5.0066	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	1.5886	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	0.9628	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	0.4814	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	0.8184	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	0.0481	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	0.9628	0.0636	0.6666	0.0636	0.5532	0.0636	0.4591	C
72	X	1995-00	DC	Bicycle Facilities	X						0.0636	0.9628	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	8.0999	1.7913	5.6245	1.7913	4.6985	1.7913	3.8994	C
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.6199	2.3115	0.6199	1.6052	0.6199	1.3412	0.6199	1.1131	C
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	1.2883	11.1658	1.2883	7.7400	1.2883	6.4410	1.2883	5.3456	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	0.1444	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	0.1444	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	0.0481	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									SP
85	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #79)	X				1999	2001	0.0032	0.0481	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	86.3012	3.7262	59.8168	3.7262	49.7675	3.7262	41.3035	C
91	X	1996-01	REGION	M-70a Bicycle Parking			X		1999		0.0223	0.3370	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	0.9147	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 (TIP Projects)
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 ACTUAL		TONS/YEAR REDUCTION								Project Category *
					FULL	SCALED BACK	UNDERWAY	REMOVED	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040		
											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	0.0241	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	0.0241	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	0.0591	0.0035	0.0406	0.0035	0.0331	0.0035	0.0274	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	0.0481	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	0.0847	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	3.8259	0.2157	2.6432	0.2157	2.1831	0.2157	1.8119	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	1.7331	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	-0.1695	-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	0.0963	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	2.6477	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	1.5651	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	0.8665	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	0.6258	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	0.4814	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	0.3851	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	0.1926	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	0.0481	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	0.8184	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	1.2035	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	9.1949	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 & TrafficManagement System	X				2005	2004	0.2761	4.1774	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	0.8824	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	0.1004	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	0.3135	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
TRANSPORTATION EMISSION REDUCTION MEASURES (TIP Projects)
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 ACTUAL		TONS/YEAR REDUCTION								Project Category *
					FULL	SCALED BACK	UNDERWAY	REM	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040		
											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	5.6474	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	2.0370	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	12.4326	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	0.4735	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	0.9732	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	6.6401	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	1.5837	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	0.1437	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	54.4758	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	2.5321	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	1.0500	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	0.4855	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	0.0978	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	0.1682	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	2.6892	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	0.5435	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	1.0708	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	0.7982	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	1.4944	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	0.1800	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	0.1575	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	3.2465	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	0.1899	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	0.0717	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	0.3966	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	0.1212	0.0080	0.0839	0.0080	0.0696	0.0080	0.0578	c
180	X	2003-08	VDOT	Commuter Choice	X				2005		0.0091	0.1426	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	1.6924	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	0.2595	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	0.2948	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	0.3948	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	2.2560	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	3.3488	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 (TIP Projects)
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 ACTUAL		TONS/YEAR REDUCTION								Project Category *		
					FULL	BACK	UNDER-WAY	REM	COMPLETION DATE	COMPLETION DATE	2017		2020		2030		2040				
											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	0.1821	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	0.1949	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	0.7446	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	9.1145	0.6024	6.3103						SP	
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				X	2005		0.0824	1.2393	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	0.5993	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	2.1210	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	1.6752	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	0.2247	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	0.0487	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	0.3827	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	8.7314	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	0.8868	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	12.2123	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	13.0421	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	2.4102	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	15.2268	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	0.1720	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	0.1321	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	0.1738	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	0.2850	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
Available Emissions Credits											17.655	314.694	15.744	198.753	15.141	159.918	15.141	132.721			

**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 Duty Vehicles), SP- Specific Vehicle Type

NOS	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				PROJECTED COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/YEAR REDUCTION								Project Category
					FULL	SCALED-BACK	UNDERWAY	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	27.9451	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	0.4086	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	0.8172	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	0.4086	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	1.0215	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	2.0430	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	0.1022	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	0.1022	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	1.9409	0.1261	1.3204	0.0350	0.3039	0.0350	0.2522	C

CLRP TOTAL											0.3579	33.3591	0.3804	26.0561	0.1196	7.9425	0.1196	6.5917	
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CLRP + TIP TOTAL											18.013	348.053	16.124	224.809	15.261	167.861	15.261	139.313	
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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