

---

*Washington DC-MD-VA 1997 PM<sub>2.5</sub> Redesignation  
Request*

*DRAFT 01-04-13*

---

## Table of Contents

1.	Introduction.....	1
2.	Background.....	1
2.1	Health Effects.....	1
2.2	Washington DC-MD-VA Nonattainment Designation.....	1
3.	USEPA Requirements for Redesignation.....	4
3.1	NAAQS Compliance.....	4
3.1.1	USEPA Requirements.....	4
3.1.2	Washington DC-MD-VA Approach.....	4
3.2	Permanent and Enforceable Emission Reductions.....	9
3.2.1	USEPA Requirements.....	9
3.2.2	Washington DC-MD-VA Approach.....	10
3.3	SIP Completeness.....	13
3.3.1	USEPA Requirements.....	13
3.3.2	Washington DC-MD-VA Approach.....	14
3.4	Maintenance Plan.....	15
3.4.1	USEPA Requirements.....	15
3.4.2	Washington DC-MD-VA Approach.....	15

## List of Figures

Figure 2-1:	Washington DC-MD-VA 1997 PM <sub>2.5</sub> NAAQS Nonattainment Area.....	3
Figure 3-1:	Washington DC-MD-VA PM <sub>2.5</sub> Monitoring Sites.....	6
Figure 3-2:	Washington DC-MD-VA 24-Hour PM <sub>2.5</sub> Data Trends.....	8
Figure 3-3:	Washington DC-MD-VA Annual PM <sub>2.5</sub> Data Trends.....	9

## List of Tables

Table 2-1:	Washington DC-MD-VA Nonattainment Area Jurisdictions With FIPS Codes.....	2
Table 3-1:	Washington DC-MD-VA 24-Hour PM <sub>2.5</sub> Design Values.....	7
Table 3-2:	Washington DC-MD-VA Annual PM <sub>2.5</sub> Design Values.....	7
Table 3-3:	On-Road Emission Reductions for the Washington DC-MD-VA Area, 2002-2007.....	11
Table 3-4:	Possum Point Power Station Reductions, 2002-2007.....	12
Table 3-5:	Washington DC-MD-VA Mirant System 2002-2007 NO <sub>x</sub> Reductions.....	13

## List of Appendices

Appendix C1: Technical support document for the development of onroad mobile emissions inventories for 2002, 2007, 2017, and 2025 (Washington, DC-MD-VA PM<sub>2.5</sub> Nonattainment Area)

Appendix C2: MOVES Input / Output Files (Available on a CD on request)

## **1. Introduction**

The District of Columbia, the State of Maryland, and the Commonwealth of Virginia request that the United States Environmental Protection Agency (USEPA) redesignate the Washington DC-MD-VA 1997 fine particulate (PM<sub>2.5</sub>) nonattainment area to attainment for this standard pursuant to the provisions under § 107 of the federal Clean Air Act (CAA). Since the designations for the National Ambient Air Quality Standards (NAAQS) for this pollutant were published (70 FR 944, 1/5/2005), the area's PM<sub>2.5</sub> air quality has improved due to permanent and enforceable emission reductions. Air quality in the area is significantly better than required by this standard. Due to the improvement in PM<sub>2.5</sub> air quality, the Washington DC-MD-VA nonattainment area is currently operating under a clean data determination (74 FR 1146, 1/12/2009). The District of Columbia, the State of Maryland, and the Commonwealth of Virginia are also requesting that USEPA concurrently approve, as a revision to the state implementation plan (SIP) for each state, the related § 175A maintenance plan. This plan ensures that good PM<sub>2.5</sub> air quality will be maintained through 2025.

## **2. Background**

### **2.1 Health Effects**

PM<sub>2.5</sub>, also known as fine particulate matter or fine particles, is defined as any airborne particle of solid or liquid matter that is less than or equal to 2.5 micrometers in diameter. PM<sub>2.5</sub> is not a single pollutant but a sum of all pollutants that have diameters less than 2.5 micrometers, which is 1/30<sup>th</sup> the diameter of a human hair.

Sources of PM<sub>2.5</sub> and PM<sub>2.5</sub> precursors include, most significantly, coal-fired power plants and other combustion sources, fires, emissions from motor vehicles, windblown dust, and natural emissions from trees and the oceans. These sources can be divided up into two types of sources, primary and secondary. Primary sources directly emit fine particulate matter into the atmosphere without any chemical change occurring to the pollutant. Secondary sources are sources from which precursor chemical species are released into the atmosphere and then react with other chemical species in the atmosphere to create fine particulate matter. Some species which comprise fine particulate matter are sulfates, ammonium nitrate, soot, sea salt, organic carbon, and metals (crustal metals, transitional metals, and potassium).

Exposure to high levels of PM<sub>2.5</sub> adversely affects human health. The main impacts of PM<sub>2.5</sub> on human health are on the respiratory system and the cardiovascular system. Children, the elderly, and individuals with pre-existing pulmonary or cardiac disease are the most susceptible to PM<sub>2.5</sub> pollution. Complications that can arise from exposure to PM<sub>2.5</sub> include decreased lung function, chronic bronchitis, respiratory symptoms such as asthma attacks and difficulty breathing, nonfatal heart attacks, irregular heartbeat, and premature death in individuals with pulmonary or cardiac disease.

### **2.2 Washington DC-MD-VA Nonattainment Designation**

The CAA requires each state with areas failing to meet the 1997 PM<sub>2.5</sub> NAAQS to develop SIPs to expeditiously attain and maintain the standards. The USEPA revised the NAAQS for

particulate matter in July 1997 and established primary (health-based) annual and 24-hour standards for PM<sub>2.5</sub> (62 FR 38652, 7/18/1997). The annual standard was set at 15.0 micrograms per cubic meter (µg/m<sup>3</sup>), based on the 3-year average of annual mean PM<sub>2.5</sub> concentrations and the 24-hour standard was set at 65 µg/m<sup>3</sup>, based on the 3-year average of the 98<sup>th</sup> percentile of 24-hour concentrations.

On December 17, 2004, the USEPA administrator signed the final rule regarding the initial PM<sub>2.5</sub> nonattainment areas designations for the PM<sub>2.5</sub> standards across the country. The final rule became effective on April 5, 2005 (70 FR 944, 1/5/2005). The Washington DC-MD-VA area was originally designated nonattainment for the 1997 PM<sub>2.5</sub> NAAQS based on air quality data showing that the area did not meet the 15.0 µg/m<sup>3</sup> annual standard. Unlike Subpart 2 of the CAA that defined five ozone nonattainment classifications for the areas that exceed the NAAQS based on the severity of the ozone levels, PM<sub>2.5</sub> nonattainment designations are simply labeled “nonattainment.” Within three years of the effective date of the designations (April 5, 2008), the CAA required states with PM<sub>2.5</sub> nonattainment areas to submit an attainment plan detailing how the PM<sub>2.5</sub> standards will be attained by April 5, 2010. States within the Washington DC-MD-VA area submitted these attainment plans in a timely manner.

The area designated nonattainment for the 1997 PM<sub>2.5</sub> NAAQS is defined in Table 2-1 and depicted in Figure 2-1.

**Table 2-1: Washington DC-MD-VA Nonattainment Area Jurisdictions With FIPS Codes<sup>1</sup>**

**Maryland Jurisdictions**

Charles County (24-017)  
 Frederick County (24-021)  
 Montgomery County (24-031)  
 Prince Georges County (24-033)

**Washington D.C. (11-001)**

**Virginia Jurisdictions**

Fairfax County (51-059)  
 Prince William County (51-153)  
 Arlington County (51-013)  
 Loudon County (51-107)  
 City of Fairfax (51-600)  
 City of Falls Church (51-610)  
 City of Manassas (51-683)  
 City of Manassas Park (51-685)  
 City of Alexandria (51-510)

---

<sup>1</sup> FIPS Code - Federal Information Processing Standard Code

Figure 2-1: Washington DC-MD-VA 1997 PM<sub>2.5</sub> NAAQS Nonattainment Area



### **3. USEPA Requirements for Redesignation**

The CAA provides a process whereby a state may petition USEPA to redesignate a nonattainment area as attainment. The criteria for redesignating a nonattainment area to attainment are as follows:

- The request must contain a determination that the NAAQS has been attained.
- The request must contain a showing that the improvement in air quality is due to permanent and enforceable reductions in emissions.
- The applicable implementation plan must be fully approved by USEPA under § 110(k) of the CAA, and the redesignation request must contain a determination that the state meets all applicable requirements for the area under § 110 and Part D.
- A maintenance plan, including contingency measures, for the area under § 175A of the Act must be fully approved.

This document addresses each of these requirements and provides additional information to support continued compliance with the 1997 PM<sub>2.5</sub> NAAQS. USEPA has published detailed guidance in a memorandum from John Calcagni, Director, Air Quality Management Division, entitled *Procedures for Processing Requests to Redesignate Areas to Attainment* (redesignation guidance), issued September 4, 1992, to Regional Air Directors. 40 CFR Part 51, Subpart Z, entitled *Provisions for Implementation of PM<sub>2.5</sub> National Ambient Air Quality Standards* (implementation rule) provides additional information. The District of Columbia, the State of Maryland, and the Commonwealth of Virginia have based this redesignation request and its associated maintenance plan on the redesignation guidance and the implementation rule, supplemented with additional guidance received from staff of USEPA Region III.

#### **3.1 NAAQS Compliance**

##### **3.1.1 USEPA Requirements**

The NAAQS compliance demonstration should rely upon on ambient air quality data. The data that are used to demonstrate attainment should be the product of ambient monitoring that is representative of the area of highest concentration. Additionally, the data should be collected and quality-assured in accordance with 40 CFR Part 58 and recorded in the Air Quality System (AQS) in order for it to be available to the public for review.

##### **3.1.2 Washington DC-MD-VA Approach**

To determine whether or not a site is in compliance with the 1997 annual PM<sub>2.5</sub> NAAQS, the three-year average of annual average PM<sub>2.5</sub> concentrations must be calculated and compared to the standard of 15.0 µg/m<sup>3</sup>. Compliance with the 1997 24-hour NAAQS for PM<sub>2.5</sub>, which is set at 65 µg/m<sup>3</sup>, is determined by the three year average of the 98<sup>th</sup> percentile of each individual year's 24-hour concentrations. For an area to be in compliance with the 1997 PM<sub>2.5</sub> NAAQS, all sites within that area must be in compliance with the annual and 24-hour NAAQS. Even if there is only one station that is not in compliance, that one station makes the entire area a nonattainment area for that standard.

The Washington DC-MD-VA region's federal reference monitors have demonstrated compliance with the  $65 \mu\text{g}/\text{m}^3$  daily standard since the inception of the  $\text{PM}_{2.5}$  monitoring programs within each state. The federal reference monitors have demonstrated compliance with the  $15.0 \mu\text{g}/\text{m}^3$  annual standard since 2005. The most recent design value for the 24-hour standard, based on 2009-2011 data, is  $26 \mu\text{g}/\text{m}^3$ , and the most recent design value for the annual standard, based on 2009-2011 data, is  $10.8 \mu\text{g}/\text{m}^3$ .

Figure 3-1 shows the locations of the area's  $\text{PM}_{2.5}$  monitors. Three  $\text{PM}_{2.5}$  speciation monitors also operate in this area. Two are located in the District of Columbia at the McMillan Reservoir and the Hains Point sites. One is located in Maryland at the Howard University-Beltsville site.

All  $\text{PM}_{2.5}$  ambient monitoring data through 2011 have been quality assured in accordance with 40 CFR 58.10, recorded in USEPA's AQS, and made available for public review. The 2005-2007 design value has been chosen as the attainment year for this area, and therefore the attainment year inventory used within this redesignation request and the § 175A maintenance plan is based on year 2007.

The states commit to continuing the operation of an appropriate  $\text{PM}_{2.5}$  air quality monitoring network to verify the maintenance of the attainment status.

Table 3-1 and Table 3-2 show the design values for monitoring sites in the Washington DC-MD-VA area.

Figure 3-1: Washington DC-MD-VA PM<sub>2.5</sub> Monitoring Sites





**Table 3-1: Washington DC-MD-VA 24-Hour PM<sub>2.5</sub> Design Values**

Site	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
11-001-0041 River Terrace, DC	41	45	44	42	38	37	35	32	29	27	*
11-001-0042 Hains Point, DC	39	38	37	37	37	35	33	31	28	26	*
11-001-0043 McMillan Reservoir, DC	40	41	40	37	35	34	34	32	29	26	*
24-031-3001 Rockville, MD	*	37	35	33	32	31	30	28	26	26	26
24-033-0025 Bladensburg, MD <sup>#</sup>	*	*	*	*	*	*	*	*	28	25	23
24-033-0030 HU-Beltsville, MD	*	*	*	*	*	*	32	30	25	25	24
24-033-8003 Equestrian Center, MD	*	*	*	39	*	35	32	31	26	22	20
51-013-0020 Aurora Hills, VA	36	37	38	37	36	34	32	30	27	*	*
51-059-0030 Franconia, VA	*	36	*	35	35	35	34	31	28	25	24
51-107-1005 Ashburn, VA	36	35	34	34	36	35	33	28	24	21	20
51-510-0009 Alexandria, VA	*	*	*	*	*	*	*	*	*	*	*

\*Monitor not operating or design value labeled incomplete. # Bladensburg monitor stopped operating on December 30, 2011.

**Table 3-2: Washington DC-MD-VA Annual PM<sub>2.5</sub> Design Values**

Site	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
11-001-0041 River Terrace, DC	16.5	16.4	15.8	15.1	14.8	14.4	14.0	13.0	12.0	11.2	10.6
11-001-0042 Hains Point, DC	*	15.3	14.7	14.5	14.5	14.5	14.2	13.1	12.1	11.2	10.5
11-001-0043 McMillan Reservoir, DC	15.7	15.6	15.2	14.7	14.4	14.0	13.5	12.5	11.6	10.8	10.3
24-031-3001 Rockville, MD	*	13.4	12.6	12.5	12.7	12.5	12.2	11.4	10.7	10.3	10.2
24-033-0025 Bladensburg, MD <sup>#</sup>	*	*	*	*	*	*	*	*	12.4	11.5	10.8
24-033-0030 HU-Beltsville, MD	*	*	*	*	*	*	12.2	11.4	10.5	10.0	9.9
24-033-8003 Equestrian Center, MD	*	*	*	*	13.2	13.1	12.8	11.9	10.8	9.9	9.1
51-013-0020 Aurora Hills, VA	*	14.8	14.6	14.5	14.6	14.2	14.0	12.9	11.9	*	*
51-059-0030 Franconia, VA	*	*	*	13.4	13.6	13.4	13.0	12.1	11.1	10.3	9.6
51-107-1005 Ashburn, VA	*	13.8	13.6	13.5	13.9	13.6	13.2	12.2	11.2	10.3	9.5
51-510-0009 Alexandria, VA	*	*	*	*	*	*	*	*	*	*	*

\*Monitor not operating or design value labeled incomplete. # Bladensburg monitor stopped operating on December 30, 2011.

Figure 3-2 illustrates the steady decrease in the 24-hour PM<sub>2.5</sub> design value. Since 2006, the PM<sub>2.5</sub> design value for the Washington DC-MD-VA nonattainment area has decreased an average of 2.2 µg/m<sup>3</sup> per year. This equates to a 30 percent drop in the 24-hour PM<sub>2.5</sub> design value over the last five years. Looking at the interval from 2001 to 2011, the 24-hour PM<sub>2.5</sub> design value decreased 15 µg/m<sup>3</sup> over the ten year period, which is a 37 percent decrease in the PM<sub>2.5</sub> design value since 2001.

Figure 3-3 shows a decreasing trend in the annual PM<sub>2.5</sub> design value as well. For each year from 2001 to 2011, the annual PM<sub>2.5</sub> design value decreased for the Washington DC-MD-VA 1997 PM<sub>2.5</sub> NAAQS nonattainment area. Over this time period, the annual PM<sub>2.5</sub> design value has improved 5.7 µg/m<sup>3</sup>, a decrease of 35 percent since 2001. Since 2006, the annual PM<sub>2.5</sub> design value has decreased 3.7 µg/m<sup>3</sup> over five years, an average decrease of 0.7 µg/m<sup>3</sup> per year.

Figure 3-2: Washington DC-MD-VA 24-Hour PM<sub>2.5</sub> Data Trends

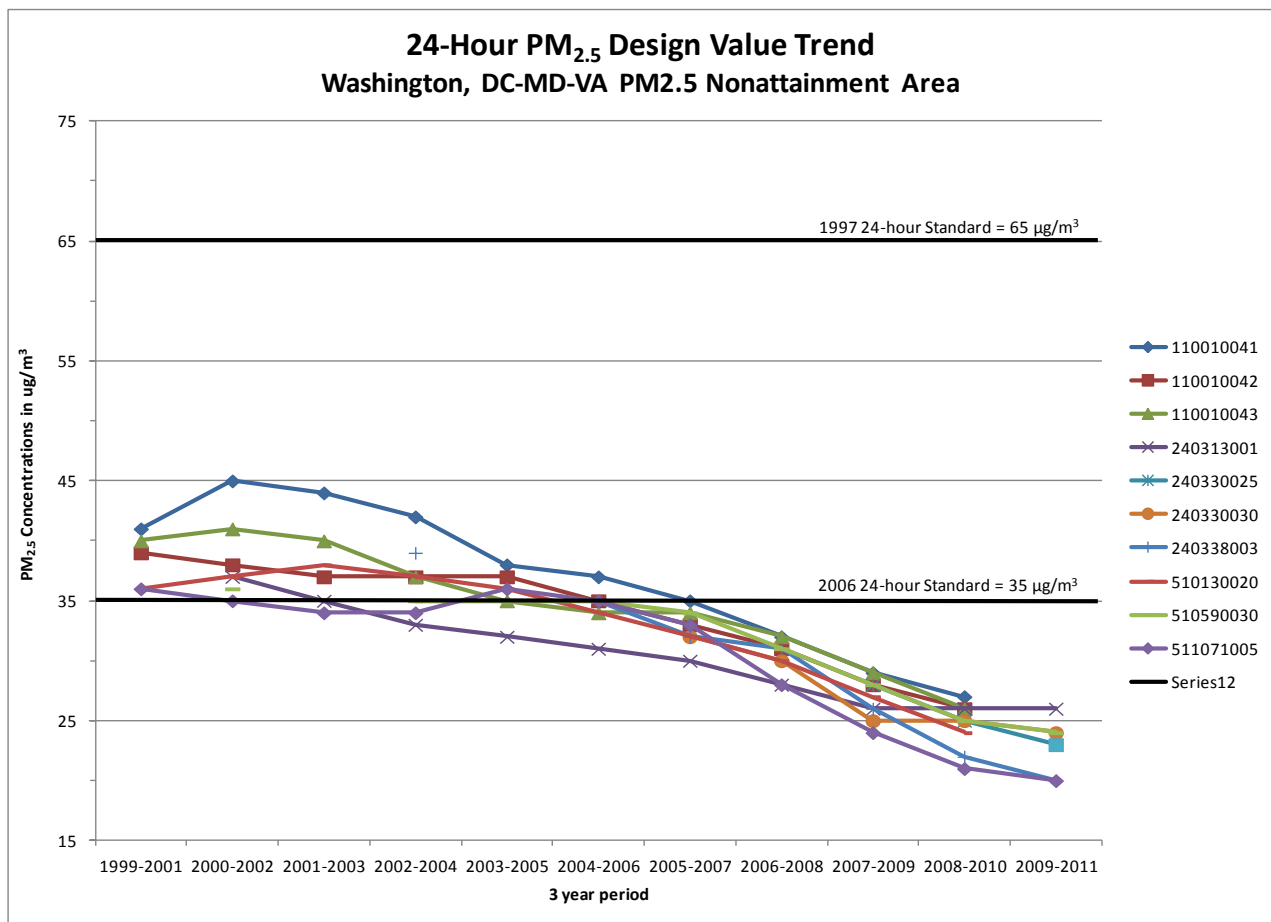
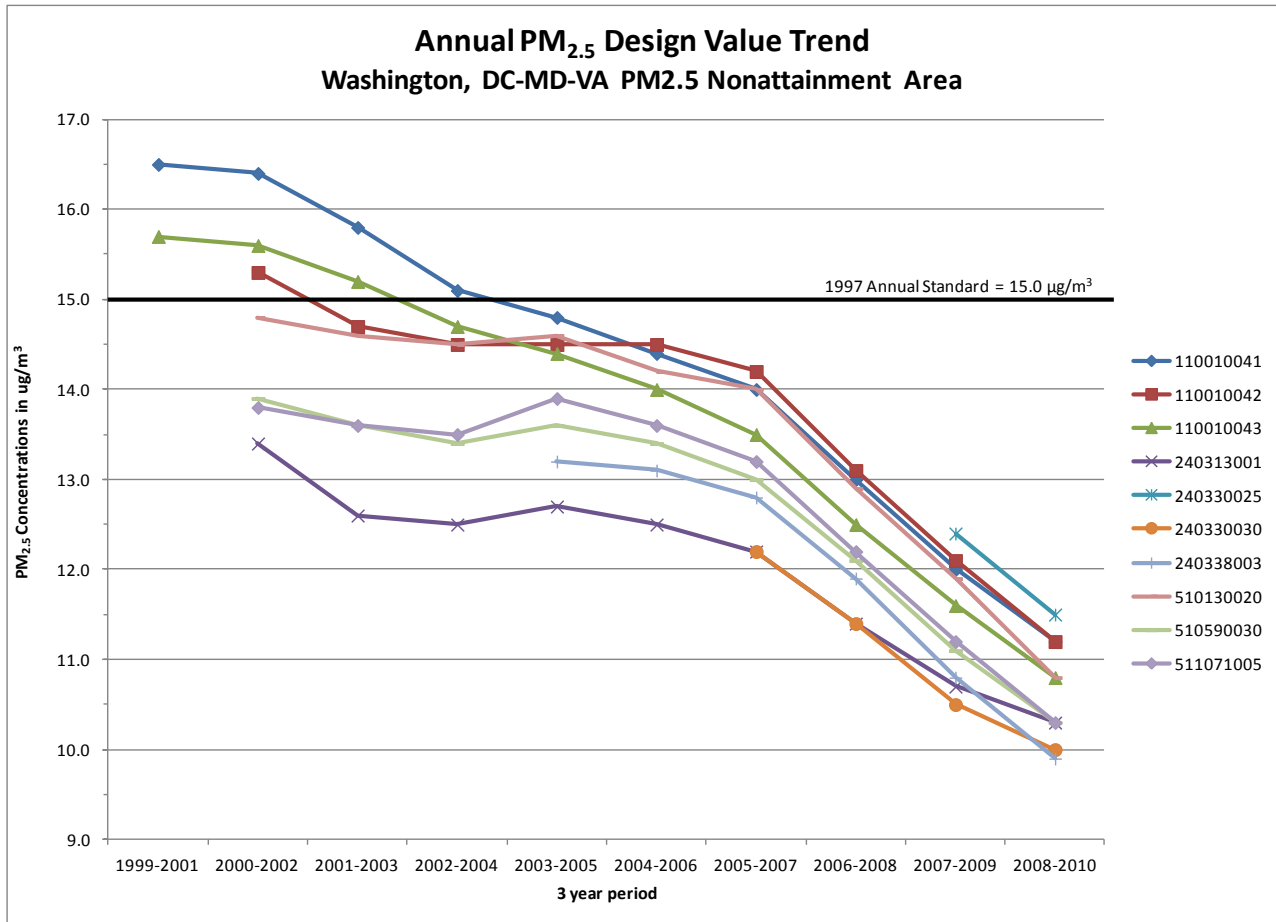


Figure 3-3: Washington DC-MD-VA Annual PM<sub>2.5</sub> Data Trends



### 3.2 Permanent and Enforceable Emission Reductions

#### 3.2.1 USEPA Requirements

As noted in § 107(d)(3)(E)(iii) and in the redesignation guidance, states must be able to reasonably attribute air quality improvements to emission reductions of precursors or direct PM<sub>2.5</sub> that are permanent and enforceable. Attainment resulting from temporary reductions in emission rates (such as reduced production or shutdown due to temporary adverse economic conditions) or unusually favorable meteorological conditions does not qualify.

In making this showing, the state should estimate the percent reduction (from the year that was used to determine the design value for designation and classification) achieved from federal and state measures. Estimates should consider factors such as emission rates and production capacities in order to show that the improvements are the result of implemented controls. The analysis should assume that sources are operating at permitted levels (or historic peak levels), unless evidence is presented that such an assumption is unrealistic.

For this redesignation request and the associated maintenance plan, ammonia and volatile organic compounds (VOC) are precursors, however, they are not considered significant overall

contributors to PM<sub>2.5</sub> air quality issues, as noted in the PM<sub>2.5</sub> implementation rule at 40 CFR 51.1002(c)(3). Therefore, the redesignation request and maintenance demonstration focus on SO<sub>2</sub>, PM<sub>2.5</sub>, and NO<sub>x</sub>.

### 3.2.2 Washington DC-MD-VA Approach

Permanent and enforceable reductions of PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>2</sub> from a variety of state and federal measures have contributed to the attainment of the standard for fine particles. Measures that have contributed to fine particulate air quality improvement include, but are not limited to, a variety of on-road emissions control programs and federal consent decrees for specific power plants within the Washington DC-MD-VA area.

#### 3.2.2.1 On-Road Emission Reduction Requirements

A variety of federal vehicle control programs have contributed to reduced on-road emissions of PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>2</sub> in the Washington DC-MD-VA area between 2002 and 2007.<sup>2</sup> These programs include:

- Federal Tier 1 New Vehicle Emission and New Federal Evaporative Emission Standards: Under § 202, USEPA established federal motor vehicle emission standards (Tier I standards), which were phased in beginning with model year 1994 (40 CFR 86 Subpart A). The benefits of this program are reflected in the 2002 base year inventory and the 2007 attainment year inventory. This federally implemented program affects light duty vehicles and light duty trucks. The regulations require more stringent exhaust emission standards as well as a uniform level of evaporative emission controls.
- National Low Emission Vehicle Program: Under the National Low Emission Vehicle program, automobile manufacturers agreed to comply with tailpipe standards that were more stringent than USEPA could mandate prior to model year 2004 (40 CFR 86 Subpart R). Once manufacturers committed to the program, the standards became enforceable in the same manner in which other federal motor vehicle emission control requirements were enforceable. The program was in place nationwide for model year 2001, and the benefits of this program are reflected in the 2002 base year inventory and the 2007 attainment year inventory.
- Tier 2 Motor Vehicle Emission Regulations: On February 10, 2000 (65 FR 6698), USEPA promulgated a rule requiring more stringent tailpipe emissions standards for all passenger vehicles, including sport utility vehicles, minivans, vans, and pick-up trucks. These regulations also required lower levels of sulfur in gasoline, which ensured the effectiveness of low emission control technologies in vehicles and reduced harmful air pollution. The tailpipe standards required passenger vehicles to be 77 to 95 percent cleaner than those built before the rule was promulgated and the sulfur standards reduced the sulfur content of gasoline up to 90 percent by 2006. The benefits of this program are reflected in the 2007 attainment year on-road mobile inventory.

---

<sup>2</sup> Details of onroad engine and fuel rules are available at - <http://www.epa.gov/otaq/standards/index.htm>

- **Heavy Duty Diesel Engine Rules:** These federal rules required truck manufacturers to comply with more stringent tailpipe standards by 2004 (65 FR 59896, 10/6/2000) and 2007 (66 FR 5002, 1/18/2001). The 2007 rule also mandated use of ultra-low sulfur diesel fuel to enable modern pollution control technology on trucks and buses. Refiners began producing the cleaner-burning diesel fuel for use in highway vehicles beginning June 1, 2006. The benefits of this program are reflected in the 2007 attainment year inventory for on-road mobile sources.
- **Enhanced Vehicle Inspection and Maintenance Programs:** Enhanced vehicle emissions inspection and maintenance (enhanced I/M) requirements have been instituted by the District of Columbia (64 FR 31498, 06/11/1999), the State of Maryland (64 FR 58340, 10/29/1999), and the Commonwealth of Virginia (64 FR 47670, 09/01/99). The requirements involve mandating regional vehicle emission I/M programs that are stricter than basic programs, as required under §§182 and 202 of the CAA. Before 1994, basic automobile emissions testing checked only tailpipe emissions while idling and sometimes at 2,500 rpm. Enhanced I/M procedures include the use of On Board Diagnostic (OBD) system evaluations, a wider range of vehicles tested, and may include a dynamometer (treadmill) test that checks the car's emissions under driving conditions. The OBD evaluations provide a more complete inspection, checking for excess evaporative emissions and other issues that might affect emissions from the vehicle. The benefits of this program are reflected in the 2002 base year inventory and the 2007 attainment year inventory for on-road mobile sources.

The reductions in emissions from the on-road sector between 2002 and 2007 are presented in Table 3-3. These emissions estimates are derived using the Motor Vehicle Emissions Simulator (MOVES2010a), Travel Demand Model Version 2.3, and the most recent planning assumptions as updated in the Metropolitan Washington Council of Governments Cooperative Forecast. To calculate incremental benefits from the implementation of the individual control measures listed above is very difficult. Therefore, the information presented summarizes the combined benefits of these rules. More information on the development of these emissions estimates may be found in the Technical Support Document (Appendix C1).

*Table 3-3: On-Road Emission Reductions for the Washington DC-MD-VA Area, 2002-2007*

2002 On-Road Emissions				2007 On-Road Emissions				2002-2007 % On-Road Reduction, Metro Wide
DC	MD	VA	Metro Total	DC	MD	VA	Metro Total	
<b>SO<sub>2</sub> On-Road Emissions, tpy</b>								
281	1,706	1,622	3,609	68	319	220	607	83%
<b>NO<sub>x</sub> On-Road Emissions, tpy</b>								
9,963	63,392	53,598	126,953	7,512	47,279	36,848	91,639	28%
<b>PM<sub>2.5</sub> On-Road Emissions, tpy</b>								
302	2,057	1,600	3,959	272	1,757	1,422	3,452	13%

### 3.2.2.2 Federal Consent Orders and Permitting Actions

Two federal settlements reduced emissions of NO<sub>x</sub> and SO<sub>2</sub> significantly at electric generating units (EGUs) located within the Washington DC-MD-VA nonattainment area. In the first of these consent decrees, which was signed April 17, 2003, and involved Virginia Electric and Power Company (VEPCO), the Possum Point Power Station (ORIS<sup>3</sup> 3804) was required to switch two coal-fired boilers to natural gas (United States v. Virginia Electric and Power Co., Civil Action No. 03-CV-517A, entered 10/10/2003). Since the power station is located in Fairfax, Virginia, this consent decree resulted in significant reductions of emissions for both SO<sub>2</sub> and NO<sub>x</sub>. Table 3-4 provides the percentage reduction of SO<sub>2</sub> and NO<sub>x</sub> resulting from this consent decree.

*Table 3-4: Possum Point Power Station Reductions, 2002-2007*

Unit ID	2002		2007		Percent Reduction, SO <sub>2</sub>	Percent Reduction, NO <sub>x</sub>
	SO <sub>2</sub> Tpy	NO <sub>x</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy		
3	6,228	1,582	0	39	99+%	97.5%
4	10,975	2,349	1	111	99+%	95.3%
5	3,804	2,096	1,949	562	48.8%	73.2%
Total:	21,006	5,026	1,950	712	90.7%	63.5%

*Data taken from USEPA's CAMD database.*

In a joint federal-state settlement, Mirant Mid-Atlantic agreed to eliminate nearly 29,000 tons annually of harmful pollution generated by four plants located in the Washington DC-MD-VA nonattainment area (United States and State of Maryland v. Mirant Mid-Atlantic, LLC and Mirant Potomac River, LLC, Civil Action No. 1:04CV1136). Under the terms of the settlement, Mirant capped NO<sub>x</sub> emissions on a system-wide basis from its Chalk Point Generating Plant (ORIS 1571), in Prince George's County, Maryland; Dickerson Generating Plant (ORIS 1572), in Montgomery County, Maryland; Morgantown Generating Plant (ORIS 1573), in Charles County, Maryland; and Potomac River Generating Station (ORIS 3788), in Alexandria, Virginia.

These consent decrees remain enforceable, and these facilities must continue to meet the pertinent applicable requirements. Tables 3-4 and 3-5 enumerate emission reductions achieved from these consent decrees by 2007. Additional reductions are required by each consent decree in future years so that regional air quality will continue to benefit from these decrees. These requirements will not change due to the redesignation of the Washington DC-MD-VA area to attainment.

---

<sup>3</sup> EGUs are assigned a 4-digit ORIS (Office of the Regulatory Information System) identifier by the Energy Information Agency (EIA) of the US Department of Energy.

*Table 3-5: Washington DC-MD-VA Mirant System 2002-2007 NO<sub>x</sub> Reductions*

Facility	Unit ID	2002 NO <sub>x</sub> Emissions		2007 NO <sub>x</sub> Emissions		% Reduction
		lbs/mmbtu	Tpy	lbs/mmbtu	tpy	
Chalk Point	1	0.562	6,337	0.446	4,885	22.9%
Chalk Point	2	0.560	6,755	0.450	4,835	28.4%
Chalk Point	3	0.156	846	0.136	538	36.4%
Chalk Point	4	0.169	1,169	0.128	426	63.6%
Dickerson	1	0.466	2,121	0.343	1,645	22.5%
Dickerson	2	0.498	2,444	0.334	1,644	32.7%
Dickerson	3	0.471	2,661	0.338	1,658	37.7%
Morgantown	1	0.504	10,014	0.191	3,097	69%
Morgantown	2	0.501	8,605	0.360	6,321	26.5%
Potomac River	1	0.379	759	0.326	483	36.3%
Potomac River	2	0.416	789	0.287	444	43.7%
Potomac River	3	0.418	1,545	0.254	412	73.4%
Potomac River	4	0.415	1,443	0.234	481	66.6%
Potomac River	5	0.398	1,474	0.245	516	65.0%
<b>Washington DC-MD-VA Mirant System:</b>			<b>46,962</b>	<b>--</b>	<b>27,386</b>	<b>42.7%</b>

Source: USEPA's CAMD database.

### 3.3 SIP Completeness

#### 3.3.1 USEPA Requirements

States must provide assurances that the applicable implementation plan has been fully approved by USEPA under § 110(k) and must satisfy all requirements that apply to the area. Approval action on SIP elements and the redesignation request may occur simultaneously. An area cannot be redesignated if a required element of its plan is the subject of a disapproval; a finding of failure to submit or to implement the SIP; or partial, conditional, or limited approval.

For purposes of redesignation, states must meet all requirements of § 110 and Part D of the CAA that were applicable prior to submittal of the complete redesignation request. Subpart 1 of Part D consists of general requirements applicable to all areas that are designated nonattainment based on a violation of the NAAQS. Subpart 4 of Part D consists of more specific requirements applicable to particulate matter (specifically to address PM<sub>10</sub>). However, for the purpose of implementing the 1997 PM<sub>2.5</sub> standard, the USEPA's implementation rule stated Subpart 1, rather than Subpart 4, is appropriate (72 FR 20598, 4/25/2007).

### 3.3.2 Washington DC-MD-VA Approach

The Washington DC-MD-VA area has had few SIP submittal requirements in the past since the area has not been a persistent nonattainment area for PM<sub>2.5</sub>. Since the area's air quality improved so that the area met the 1997 PM<sub>2.5</sub> NAAQS well prior to the 2010 compliance date, most requirements, other than those associated with major new source review permitting and conformity, were limited.

Section 110(a) of the CAA contains the general requirements for a SIP. As USEPA has stated in previous rulemaking<sup>4</sup>, only the § 110 and Part D requirements that are linked with a particular area's designation are the relevant measures that should be considered in evaluating a redesignation request. The other § 110 elements that are not connected with nonattainment plan submissions and not linked with an area's attainment status are also not applicable requirements for purposes of redesignation. A state remains subject to these requirements after an area is redesignated to attainment.

The requirements of § 110(a)(2) are statewide requirements that are not linked to the PM<sub>2.5</sub> nonattainment status of the Washington, DC-MD-VA area. Therefore these SIP elements are not applicable requirements for purposes of review of the state's PM<sub>2.5</sub> redesignation request.

In accordance with the applicable PM<sub>2.5</sub> implementation rule, USEPA's determination that the Washington DC-MD-VA area attained the 1997 PM<sub>2.5</sub> NAAQS (74 FR 1146) suspends a number of requirements contained in § 172(c) of the CAA so long as the area continues to attain the standard. These requirements include (1) attainment plan submission, (2) reasonably available control measures/reasonably available control technology determinations, (3) reasonable further progress determinations, and (4) contingency measures. Therefore, USEPA does not consider these mandates under § 172(c) to be SIP requirements for the purposes of redesignation.

The requirement for a base year inventory under § 172(c)(3) of the CAA is not suspended by USEPA's determination of attainment. The base year inventory for the Washington DC-MD-VA area was contained in Chapter 3 and Appendix B of the Plan to Improve Air Quality in the Washington, DC-MD-VA Region. This documentation was submitted to USEPA in final form by the District of Columbia on April 2, 2008 (77 FR 61513); by the State of Maryland on March 8, 2008 (77 FR 65630); and by the Commonwealth of Virginia on April 4, 2008 (77 FR 60626).

The SIPs for the District of Columbia, the State of Maryland, and the Commonwealth of Virginia contain provisions that are consistent with the § 176(c)(4) conformity requirements. In the District of Columbia's SIP, transportation and general conformity requirements are contained in 20 DCMR Chapter 15. In the State of Maryland's SIP, both general conformity requirements and transportation conformity requirements are contained in COMAR 26.11.26. In the Commonwealth of Virginia's SIP, general conformity requirements are contained in 9VAC5

---

<sup>4</sup> See USEPA's proposed approval of Ohio's redesignation request for the Ohio portion of the Huntington-Ashland nonattainment area for the 1997 PM<sub>2.5</sub> NAAQS. (76 FR 79593)



Chapter 160 (Regulation for General Conformity) and transportation conformity requirements are contained in 9VAC5 Chapter 151 (Regulation for Transportation Conformity).

### **3.4 Maintenance Plan**

#### **3.4.1 USEPA Requirements**

Section 107(d)(3)(E) of the CAA stipulates that for an area to be redesignated, USEPA must fully approve a maintenance plan that meets the requirements of § 175(A). States may submit both the redesignation request and the maintenance plan at the same time, and rulemaking on both may proceed on a parallel track. All applicable nonattainment area requirements remain in place. The maintenance plan will constitute a SIP revision and must provide for maintenance of the relevant NAAQS in the area for at least 10 years after redesignation. § 175(A) further states that the plan shall contain such additional measures, if any, as may be necessary to ensure such maintenance. States must also submit a SIP revision eight years after the original redesignation request is approved to provide for maintenance of the NAAQS for an additional 10 years following the first 10-year period.

USEPA requires the following provisions to ensure maintenance of the NAAQS:

- The state must develop an attainment emissions inventory to identify the level of emissions in the area that is sufficient to attain the NAAQS.
- A state may generally demonstrate maintenance by showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory over the 10-year period following redesignation.
- Once an area has been redesignated, the state must continue to operate an appropriate air quality monitoring network in order to verify the area's attainment status.
- The state must ensure that it has the legal authority to implement and enforce all measures necessary to attain and maintain the NAAQS. Continued attainment must be verified by the state by indicating how maintenance plan progress will be tracked.
- Contingency measures must be available to promptly correct any NAAQS violation. At a minimum, the contingency measures must include a requirement that the state will implement all measures contained in the nonattainment SIP prior to redesignation.

#### **3.4.2 Washington DC-MD-VA Approach**

An appropriate maintenance plan for the area meeting all federal requirements is being submitted along with this redesignation request for each state in the Washington DC-MD-VA area. This maintenance plan relies upon a variety of programs, which demonstrate that air quality will be maintained at least 10 years into the future. The plan contains contingency measures to be implemented in case of worsening air quality and mobile vehicle emission budgets for transportation conformity purposes.