Washington DC-MD-VA 1997 $PM_{2.5}$ Redesignation Request

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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 ($PM_{2.5}$) 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 (Federal Register, Vol. 70, No. 3, 1/5/2005), the area's $PM_{2.5}$ 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 $PM_{2.5}$ air quality, the Washington DC-MD-VA nonattainment area is currently operating under a clean data determination (Federal Register, Vol. 74, No. 7, 1/12/2009). The Commonwealth of Virginia, the State of Maryland, and the District of Columbia 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 $PM_{2.5}$ air quality will be maintained through 2025.

2. Background

2.1 Health Effects

$PM_{2.5}$, 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. $PM_{2.5}$ is not a single pollutant but a sum of all pollutants that have diameters less than 2.5 micrometers, which is $1/30^{th}$ the diameter of a human hair.

Sources of $PM_{2.5}$ and $PM_{2.5}$ 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 $PM_{2.5}$ adversely affects human health. The main impacts of $PM_{2.5}$ 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 $PM_{2.5}$ pollution. Complications that can arise from exposure to $PM_{2.5}$ 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 $PM_{2.5}$ NAAQS to develop SIPs to expeditiously attain and maintain the standards. The U.S. EPA revised the NAAQS for particulate matter in July 1997 (Federal Register, Vol. 62, No. 138, 7/18/1997). U.S. EPA replaced the existing PM_{10} standard with a health-based $PM_{2.5}$ standard and retained the PM_{10} standard as a particulate standard protecting welfare. The standards include an annual standard set at 15.0 micrograms per cubic meter ($\mu g/m^3$), based on the 3-year average of annual mean $PM_{2.5}$ concentrations, and a 24-hour standard of 65 $\mu g/m^3$, based on the 3-year average of the 98^{th} percentile of 24-hour concentrations.

On December 17, 2004, the USEPA administrator signed the final rule regarding the initial $PM_{2.5}$ nonattainment areas designations for the $PM_{2.5}$ standards across the country. The final rule became effective on April 5, 2005 (Federal Register, Vol. 70, No. 3, 1/5/2005). The Washington DC-MD-VA area was originally designated nonattainment for the 1997 $PM_{2.5}$ NAAQS based on air quality data showing that the area did not meet the 15.0 $\mu g/m^3$ 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, $PM_{2.5}$ nonattainment designations are simply labeled "nonattainment". The CAA required states with $PM_{2.5}$ nonattainment areas to submit an attainment plan within three years of the effective date of the designations (April 5, 2008) detailing how the $PM_{2.5}$ 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 $PM_{2.5}$ NAAQS is defined in Table 2-1 and depicted in Figure 2-1.

Table 2-1: Washington DC-MD-VA Nonattainment Area Jurisdiction Listing With FIPS Codes

Maryland Jurisdictions	**Virginia Jurisdictions**
Charles County (24-017)	Fairfax County (51-059)
Frederick County (24-021)	Prince William County (51-153)
Montgomery County (24-031)	Arlington County (51-013)
Prince Georges County (24-033)	Loudon County (51-107)
	City of Fairfax (51-600)
	City of Falls Church (51-610)
Washington D.C. (11-001)	City of Manassas (51-683)
	City of Manassas Park (51-685)
	City of Alexandria (51-510)

Figure 2-1: Washington DC-MD-VA 1997 $PM_{2.5}$ NAAQS Nonattainment Area

3. U.S. EPA 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 $PM_{2.5}$ 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 $PM_{2.5}$ 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 EPA 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 $PM_{2.5}$ NAAQS, the three-year average of annual average $PM_{2.5}$ concentrations must be calculated and compared to the standard of 15.0 µg/m^3. Compliance with the 1997 24-hour NAAQS for $PM_{2.5}$ is determined by the three year average of the 98th percentile of each individual year's 24-hour concentrations. The 1997 24-hour NAAQS standard is 65 µg/m^3. For an area to be in compliance with the 1997 $PM_{2.5}$ NAAQS, all sites within that area must be in compliance with

Figure 3-1: Washington DC-MD-VA $PM_{2.5}$ Monitoring Sites (As of December 6, 2011)

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 $\mu g/m^3$ daily standard since the inception of the $PM_{2.5}$ monitoring programs within each state. The federal reference monitors have demonstrated compliance with the 15.0 $\mu g/m^3$ annual standard since 2005. The most recent design value for the 24-hour standard, based on 2008-2010 data, is 27 $\mu g/m^3$, and the most recent design value for the annual standard, based on 2008-2010 data, is 11.5 $\mu g/m^3$.

Figure 3-1 shows the location of each of the $PM_{2.5}$ monitoring sites within the Washington DC-MD-VA area. Three $PM_{2.5}$ speciation monitors also operate in this area. Two are located in the District of Columbia at the McMillan Reservoir and the Haines Point sites. One is located in Maryland at the Howard University-Beltsville site.

All $PM_{2.5}$ ambient monitoring data through 2010 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 $PM_{2.5}$ 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 nonattainment area.

Table 3-1: Washington DC-MD-VA 24-Hour $PM_{2.5}$ Design Values

Site	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010
11-001-0041 River Terrace, DC	41	45	44	42	38	37	35	32	29	27
11-001-0042 Haines 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	35	37	35	33	32	31	30	28	26	26
24-033-0025 Bladensburg, MD	*	*	*	*	*	*	32	31	28	25
24-033-0030 HU-Beltsville, MD	*	*	*	38	35	35	32	31	28	25
24-033-8003 Equestrian Center, MD	*	47	39	39	33	35	32	31	26	22
51-013-0020 Aurora Hills, VA	36	37	38	37	36	34	32	30	27	24
51-059-0030 Franconia, VA	34	36	35	35	35	35	34	31	28	25
51-107-1005 Ashburn, VA	36	35	34	34	36	35	33	29	25	22
51-510-0009 Alexandria, VA	*	*	*	*	*	*	*	*	*	24

**Monitor not operating or a complete three year value was not available.*

Table 3-2: Washington DC-MD-VA Annual $PM_{2.5}$ Design Values

Site	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010
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
11-001-0042 Haines Point, DC	15.2	15.3	14.7	14.5	14.5	14.5	14.2	13.1	12.1	11.2
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
24-031-3001 Rockville, MD	13.5	13.4	12.6	12.5	12.7	12.5	12.2	11.3	10.8	10.3
24-033-0025 Bladensburg, MD	*	*	*	*	*	*	14.1	13.3	12.4	11.5
24-033-0030 HU-Beltsville, MD	*	*	*	12.6	13.0	12.5	12.2	11.6	11.1	10.0
24-033-8003 Equestrian Center, MD	*	15.5	14.1	13.8	13.2	13.1	12.8	11.9	10.8	9.9
51-013-0020 Aurora Hills, VA	14.5	14.8	14.6	14.5	14.6	14.2	14.0	12.9	11.9	10.8
51-059-0030 Franconia, VA	14.0	13.9	13.6	13.4	13.6	13.4	13.0	12.1	11.1	10.3
51-107-1005 Ashburn, VA	13.6	13.8	13.6	13.5	13.9	13.6	13.2	12.2	11.2	10.3
51-510-0009 Alexandria, VA	*	*	*	*	*	*	*	*	*	11.3

**Monitor not operating or a complete three year value was not available.*

Figure 3-2 illustrates the steady decrease in the design value for the 24-hour $PM_{2.5}$ design value. Since 2006, the $PM_{2.5}$ design value for the Washington DC-MD-VA nonattainment area has decreased an average of 2.5 µg/m^3 per year. This equates to a 27 percent drop in the 24-hour $PM_{2.5}$ design value over the last four years. Looking at the interval from 2002 to 2010, the 24-hour $PM_{2.5}$ design value decreased 18 µg/m^3 over the eight year period, which is a 40 percent decrease in the $PM_{2.5}$ design value since 2002.

Figure 3-3 shows a decreasing trend in the annual $PM_{2.5}$ design value as well. For each year from 2001 to 2010, the annual $PM_{2.5}$ design value decreased for the Washington DC-MD-VA 1997 $PM_{2.5}$ NAAQS nonattainment area. Over this time period, the annual $PM_{2.5}$ design value has improved 5.8 µg/m^3, a decrease of 33.5 percent since 2001. Since 2007, the annual $PM_{2.5}$ design value has decreased 2.7 µg/m^3 over three years, an average decrease of 0.9 µg/m^3 per year.

Figure 3-2: Washington DC-MD-VA 24-Hour $PM_{2.5}$ Data Trends

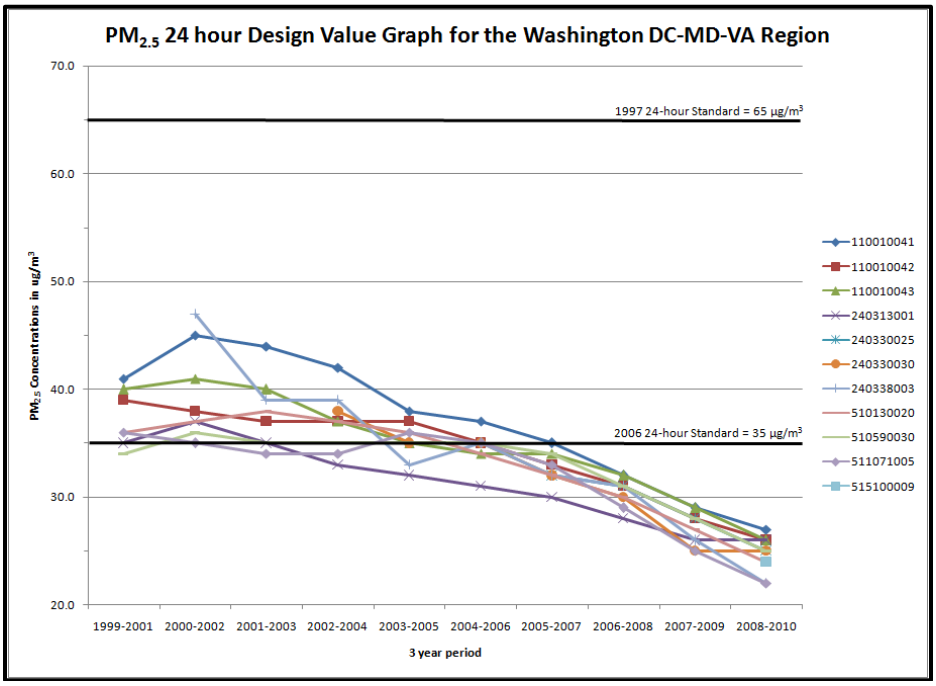
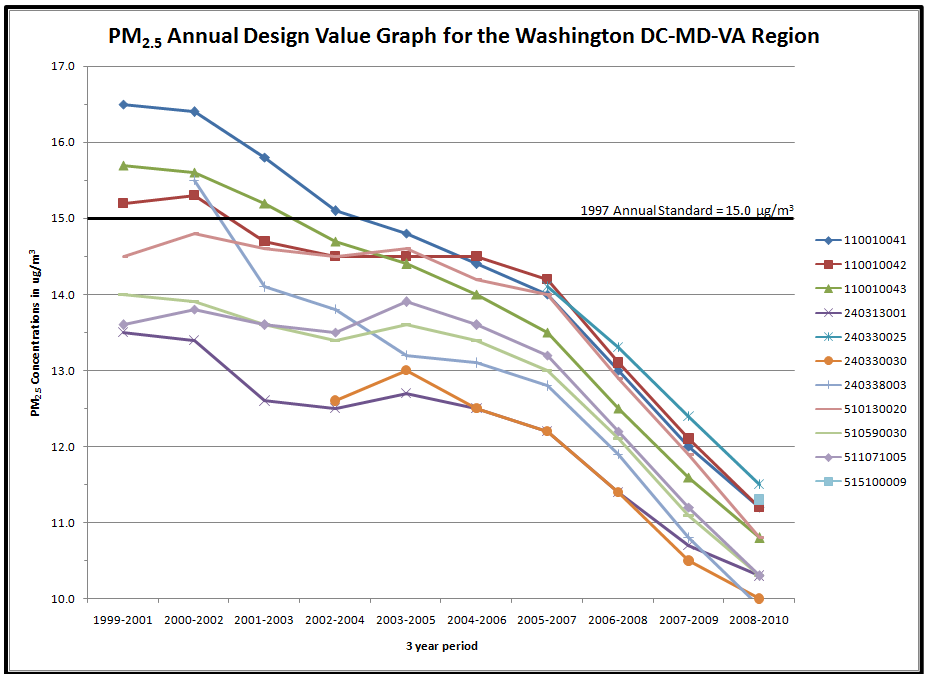


Figure 3-3: Washington DC-MD-VA Annual $PM_{2.5}$ Data Trends



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 its air quality improvements to emission reductions of precursors or direct $PM_{2.5}$ 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 $PM_{2.5}$ air quality issues, as noted in the $PM_{2.5}$ implementation rule at 40 CFR 51.1002(c)(3). Therefore, this maintenance demonstration focuses on SO_2, $PM_{2.5}$, and NO_X.

3.2.2 Washington DC-MD-VA Approach

Permanent and enforceable reductions of $PM_{2.5}$, NO_X, and SO_2 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 $PM_{2.5}$, NO_X, and SO_2 in the Washington DC-MD-VA area between 2002 and 2007. 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. 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. 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 and sulfur standards required passenger vehicles to be 77 to 95 percent cleaner than those built before the rule was promulgated and reduced the sulfur content of gasoline by up to 90 percent by 2006. The benefits of this program are reflected in the 2007 attainment year on-road mobile inventory.

- Heavy Duty Diesel Engine Rule: This federal rule (66 FR 5002) required truck manufacturers to comply with more stringent tailpipe standards by 2004 and 2007. The 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.

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.

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	
SO_2 On-Road Emissions, tpy								
281	1,706	1,622	3,609	68	319	220	607	83%
NO_X On-Road Emissions, tpy								
9,963	63,392	53,598	126,953	7,512	47,279	36,848	91,639	28%
$PM_{2.5}$ On-Road Emissions, tpy								
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_X and SO_2 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 was required to switch two coal-fired boilers to natural gas. Since the power station is located in Fairfax, Virginia, this consent decree resulted in significant reductions of emissions for both SO_2 and NO_X. Table 3-4 provides the percentage reduction of SO_2 and NO_X resulting from this consent decree.

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

Unit ID	2002		2007		Percent Reduction, SO_2	Percent Reduction, NO_X
	SO_2 tpy	NO_X tpy	SO_2 tpy	NOx 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. Under the terms of the settlement, Mirant capped NO_X emissions on a system-wide basis from its Chalk Point Generating Plant, in Prince George's County, Maryland; Dickerson Generating Plant, in Montgomery County, Maryland; Morgantown Generating Plant, in Charles County, Maryland; and Potomac River Generating Station, in Alexandria, Virginia.

Table 3-5: Washington DC-MD-VA Mirant System 2002-2007 NO_X Reductions

Facility	Unit ID	2002 NO_X Emissions		2007 NO_X 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%

Facility	Unit ID	2002 NO_X Emissions		2007 NO_X Emissions		% Reduction
		lbs/mmbtu	Tpy	lbs/mmbtu	tpy	
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%
Washington DC-MD-VA Mirant System:			**46,962**	**--**	**27,386**	**42.7%**

Source: U.S. EPA's CAMD database.

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.

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 which 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_{10}). However, for the purpose of implementing the 1997 $PM_{2.5}$ standard, the USEPA's implementation rule stated Subpart 1, rather than Subpart 4, is appropriate for the purpose of implementing $PM_{2.5}$ (Federal Register, Vol.72, No. 79, 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 $PM_{2.5}$. Since the area's air quality improved so that the area met the 1997 $PM_{2.5}$ 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. Section 110(a)(2) provides that the implementation plan submitted by a state must have been adopted by the state after reasonable public notice and hearing, and that, among other things, it must:

- Include enforceable emission limitations and other control measures, means or techniques necessary to meet the requirements of the CAA;
- Provide for establishment and operation of appropriate devices, methods, systems and procedures necessary to monitor ambient air quality;
- Provide for implementation of a source permit program to regulate the modification and construction of any stationary source within the areas covered by the plan;
- Include provisions for the implementation of Part C, prevention of significant deterioration (PSD) and Part D, NSR permit programs;
- Include criteria for stationary source emission control measures, monitoring, and reporting;
- Include provisions for air quality modeling; and
- Provide for public and local agency participation in planning and emission control rule development.

Section 110(a)(2)(D) also requires state plans to prohibit emissions from within the state that contribute significantly to nonattainment or maintenance areas in any other state, or which interfere with programs under Part C to prevent significant deterioration of air quality or to achieve reasonable progress toward the national visibility goal for federal Class I areas (national parks and wilderness areas).

Table 3-6, Table 3-7, and Table 3-8 provide information on these submittals for the District of Columbia, the State of Maryland, and the Commonwealth of Virginia.

Table 3-6: Infrastructure Submittals for the District of Columbia

SIP Requirement	Latest Action	Date	FR Citation
Section 110(a)(2)(A) Emission limits and other control measures	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(B) Ambient air quality monitoring/data system	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(C) Program for enforcement of control measures	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(D)(i) - I Prong 1: Interstate transport - significant contribution	Approval	06/27/2006	71 FR 25328
Section 110(a)(2)(D)(i) - I Prong 2: Interstate transport - interfere with maintenance	Approval	06/27/2006	71 FR 25328
Section 110(a)(2)(D)(i) - II Prong 3: Interstate transport - prevention of significant deterioration	Completeness	07/11/2008	

SIP Requirement	Latest Action	Date	FR Citation
Section 110(a)(2)(D)(i) - II Prong 4: Interstate transport - protect visibility	Completeness	07/11/2008	
Section 110(a)(2)(E) Adequate resources	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(F) Stationary source monitoring system	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(G) Emergency power	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(H) Future SIP revisions	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(J) Consultation with government officials; Public notification; PSD and visibility protection	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(K) Air quality modeling/data	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(L) Permitting fees	Approval	05/12/2011	76 FR 20237
Section 110(a)(2)(M) Consultation/participation by affected local entities	Approval	05/12/2011	76 FR 20237

Source: http://www.epa.gov/airquality/urbanair/sipstatus/reports/dc_infrabypoll.html

Table 3-7: Infrastructure Submittals for Maryland

SIP Requirement	Latest Action	Date	FR Citation
Section 110(a)(2)(A) Emission limits and other control measures	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(B) Ambient air quality monitoring/data system	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(C) Program for enforcement of control measures	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(D)(i) - I Prong 1: Interstate transport - significant contribution	Final FIP	10/07/2011	76 FR 48208
Section 110(a)(2)(D)(i) - I Prong 2: Interstate transport - interfere with maintenance	Approval	10/30/2009	74 FR 56117
Section 110(a)(2)(D)(i) - II Prong 3: Interstate transport - prevention of significant deterioration	Completeness	10/03/2008	
Section 110(a)(2)(D)(i) - II Prong 4: Interstate transport - protect visibility	Completeness	10/03/2008	
Section 110(a)(2)(E) Adequate resources	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(F) Stationary source monitoring system	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(G) Emergency power	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(H) Future SIP revisions	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(J) Consultation with government officials; Public notification; PSD and visibility protection	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(K) Air quality modeling/data	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(L) Permitting fees	Proposed approval	09/12/2011	76 FR 56130
Section 110(a)(2)(M) Consultation/participation by affected local entities	Proposed approval	09/12/2011	76 FR 56130

Source: http://www.epa.gov/airquality/urbanair/sipstatus/reports/md_infrabypoll.html

Table 3-8: Infrastructure Submittals for Virginia

SIP Requirement	Latest Action	Date	FR Citation
Section 110(a)(2)(A) Emission limits and other control measures	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(B) Ambient air quality monitoring/data system	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(C) Program for enforcement of control measures	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(D)(i) - I Prong 1: Interstate transport - significant contribution	Approval	12/28/2007	72 FR 73602
Section 110(a)(2)(D)(i) - I Prong 2: Interstate transport - interfere with maintenance	Approval	12/28/2007	72 FR 73602
Section 110(a)(2)(D)(i) - II Prong 3: Interstate transport - prevention of significant deterioration	Completeness	05/13/2008	
Section 110(a)(2)(D)(i) - II Prong 4: Interstate transport - protect visibility	Completeness	05/13/2008	
Section 110(a)(2)(E) Adequate resources	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(F) Stationary source monitoring system	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(G) Emergency power	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(H) Future SIP revisions	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(J) Consultation with government officials; Public notification; PSD and visibility protection	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(K) Air quality modeling/data	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(L) Permitting fees	Approval	10/11/2011	76 FR 62635
Section 110(a)(2)(M) Consultation/participation by affected local entities	Approval	10/11/2011	76 FR 62635

Source: http://www.epa.gov/airquality/urbanair/sipstatus/reports/va_infrabypoll.html

Section 172(c) contains general requirements for nonattainment plans. The requirements for reasonable further progress, identification of certain emissions increases, and other measures needed for attainment do not apply for redesignations because they only have meaning for areas not attaining the standard. The requirements for an emissions inventory was satisfied by the information in Chapter 3 and Appendix B of the *Plan to Improve Air Quality in the Washington, DC-MD-VA Region*, which was submitted to USEPA on April 4, 2008, by Virginia; April 2, 2008 by the District of Columbia; and March 8, 2008 by Maryland.

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 Virginia's SIP, general conformity requirements are contained in 9VAC5 Chapter 160 (Regulation for General Conformity) and transportation conformity requirements are contained in 9VAC5 Chapter 151 (Regulation for Transportation Conformity). In the District of Columbia's SIP, transportation and general conformity requirements are contained in 20 DCMR Section 403. In Maryland's SIP, both general conformity requirements and transportation conformity requirements are contained in COMAR 26.11.26.

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. Section 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 which 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 programs such as the Healthy Air Act, New Source Review permitting, Tier II vehicle emission standards, and other on-road and nonroad engine standards, to 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. These contingency measures do not reflect measures contained in the nonattainment SIP since the Washington DC-MD-VA nonattainment area is operating under a clean data determination rather than an approved attainment plan.