west virginia department of environmental protection

REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE WEST VIRGINIA PORTION OF THE WHEELING, WV-OH 1997 $PM_{2.5}$ NONATTAINMENT AREA

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REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE WEST VIRGINIA PORTION OF THE WHEELING, WV-OH 1997 $PM_{2.5}$ NONATTAINMENT AREA

I. INTRODUCTION

The Wheeling, WV-OH $PM_{2.5}$ nonattainment area (Wheeling area) is a multi-state nonattainment area, comprising Marshall and Ohio Counties in West Virginia, and Belmont County in Ohio. The area monitored attainment of the 1997 $PM_{2.5}$ standard with a design value for 2006-2008 of 14.2 $\mu g/m^3$, 2007-2009 of 13.4 $\mu g/m^3$, 2008-2010 of 13.1 $\mu g/m^3$ and 2009-2011 of 13.0 $\mu g/m^3$. The State of West Virginia herein requests redesignation by the United States Environmental Protection Agency of Marshall and Ohio Counties to attainment relative to the 1997 $PM_{2.5}$ National Ambient Air Quality Standard. The State of Ohio also plans to request redesignation of Belmont County, Ohio to attainment relative to the 1997 $PM_{2.5}$ National Ambient Air Quality Standard.

A. Request

The State of West Virginia is requesting that the United States Environmental Protection Agency (EPA) redesignate the West Virginia Portion of the Wheeling (WV-OH) 1997 $PM_{2.5}$ Nonattainment Area to attainment pursuant to the provisions of the Clean Air Act, section 107. The State is also requesting that EPA concurrently approve the associated maintenance plan as a revision to the State Implementation Plan (SIP), meeting the requirements of Clean Air Act, section 175A, which demonstrates that the area will continue to meet the current $PM_{2.5}$ air quality standards for at least ten more years.

B. Background

The Clean Air Act (CAA) requires areas failing to meet a National Ambient Air Quality Standard (NAAQS) to develop State Implementation Plans (SIPs) to expeditiously attain and maintain the standard. The EPA revised the NAAQS for particulate matter in July 1997. It replaced the existing PM_{10} standard with a health based $PM_{2.5}$ standard and retained the PM_{10} standard as a "coarse" standard protecting welfare. The 1997 $PM_{2.5}$ 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 98th percentile of 24-hour concentrations.

The revised NAAQS were legally challenged in the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit). On May 14, 1999, the D.C. Circuit remanded, without vacatur, the standard back to EPA. The remand did not question the level at which EPA set the standards but rather the constitutionality of the CAA provision that authorizes EPA to set national air quality standards. EPA requested a rehearing which the D.C. Circuit denied. Therefore, in December 1999, EPA appealed the D.C. Circuit decision to the U.S. Supreme Court. The U.S. Supreme Court issued a decision on February 27, 2001 that unanimously affirmed the constitutionality of the CAA provision but did remand several other issues back to the D.C. Circuit, including the issue of whether EPA acted arbitrarily and capriciously in establishing the specific levels of the standards.

The D.C. Circuit heard arguments in this remanded case in December 2001, and issued its decision on March 26, 2002. The D.C. Circuit rejected the claims that the EPA had acted arbitrarily and capriciously in setting the levels of the standards.

On December 17, 2004, EPA promulgated the initial $PM_{2.5}$ nonattainment areas designations for the $PM_{2.5}$ standards across the country. Modifications to those designations were made and an effective date was set at April 5, 2005. Unlike Subpart 2 of the CAA Amendments of 1990 which 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 Amendments require states with $PM_{2.5}$ nonattainment areas to submit a plan within three years of the effective date of the designations (April 5, 2008) detailing how the $PM_{2.5}$ standards would be attained by April 5, 2010.

On November 20, 2009 [74 FR 60199] EPA determined that three areas in West Virginia designated nonattainment for the 1997 fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) had attained the 1997 $PM_{2.5}$ NAAQS [Clean Data Determination]. These were the Martinsburg-Hagerstown, WV-MD nonattainment area; the Parkersburg-Marietta, WV-OH nonattainment area; and the Wheeling, WV-OH nonattainment area. These determinations were based upon complete, quality assured, quality controlled, and certified ambient air monitoring data that show that these areas monitored attainment of the 1997 $PM_{2.5}$ NAAQS during the 2006-2008 monitoring period. Available monitoring data for 2009, 2010 and 2011 are consistent with continued attainment of the standard. The intended effect of this action was to finalize the attainment determinations for these areas. With these final determinations, the requirements for the state to submit an attainment demonstration for these areas, associated reasonably available control measures, a reasonable further progress plan, contingency measures, and other planning State Implementation Plans (SIPs) related to attainment of the standard are suspended for so long as the areas continue to meet the 1997 $PM_{2.5}$ NAAQS.

On December 2, 2011 [76FR75464] EPA determined that the Parkersburg-Marietta, WV-OH area and the Wheeling, WV-OH area had attained the 1997 annual $PM_{2.5}$ NAAQS by their applicable attainment date of April 5, 2010. These determinations were based on complete, quality-assured, and certified ambient air monitoring data for the 2007-2009 monitoring period.

C. Geographic Description

The Wheeling, WV-OH $PM_{2.5}$ nonattainment area (Wheeling area) is a multi-state nonattainment area, comprising Marshall and Ohio Counties in West Virginia, and Belmont County in Ohio. This area is shown in Figure 1 under Section II.A. The Wheeling area has not previously been subject to nonattainment area rulemakings for fine particles.

Although EPA designated the Wheeling area nonattainment for the 15.0 $\mu g/m^3$ annual standard as a result of the Clean Data Determination West Virginia DEP was not required to develop a plan to reduce oxides of nitrogen (NO_x), sulfur dioxide (SO_2) and direct $PM_{2.5}$ emissions and demonstrate that the area would meet the federal annual air quality standard by April 5, 2010.

This document is intended to support West Virginia's request that the West Virginia portions of the Wheeling area be redesignated from nonattainment to attainment for the 1997 $PM_{2.5}$ standard. In addition, the State of Ohio also plans to submit a request for their portion of the Wheeling area.

II. REDESIGNATION CRITERIA

Pursuant to Section 107(d)(3)(E) of the CAA states must sufficiently address five issues to obtain redesignation of a nonattainment area to attainment:

A. determinate that the area has attained the applicable NAAQS;
B. have a fully approved implementation plan under CAA section 110(k);
C. show that the improvement in air quality is due to permanent and enforceable emission reductions;
D. submit an EPA approvable maintenance plan which ensures attainment of the NAAQS for at least ten years beyond redesignation; and
E. show that the area has met the applicable requirements of CAA section 110 and part D.

The State of West Virginia herein affirmatively completes all five of the required elements as detailed below.

A. The Wheeling Area has attained the 1997 $PM_{2.5}$ Standard

[See Appedix A]

The following information is taken from EPA's "Guideline on Data Handling Conventions for the PM NAAQS," U.S. EPA-454/R-99-008, April 1999.

In accordance with the CAA Amendments, three complete years of monitoring data are required to demonstrate attainment at a monitoring site. The annual $PM_{2.5}$ primary and secondary ambient air quality standards are met at an ambient air quality monitoring site when the three-year average of the annual average is less than 15.0 $\mu g/m^3$. While calculating design values, three significant digits must be carried in the computations, with final values rounded to the nearest 0.1 $\mu g/m^3$. Decimals 0.05 or greater are rounded up, and those less than 0.05 are rounded down, so that 15.049 $\mu g/m^3$ is the largest concentration that is less than, or equal to 15.0 $\mu g/m^3$. Values at or below 15.0 $\mu g/m^3$ meet the standard; values equal to or greater than 15.1 $\mu g/m^3$ exceed the standard. An area is in compliance with the annual $PM_{2.5}$ NAAQS only if every monitoring site in the area meets the NAAQS. An individual site's 3-year average of the annual average concentrations is also called the site's design value. The air quality design value for the area is the highest design value among all sites in the area.

There are two monitors measuring $PM_{2.5}$ concentrations in the Wheeling, WV-OH nonattainment area. The monitors are located in West Virginia and operated by the West Virginia Division of Air Quality (DAQ). The location of the monitoring sites for this nonattainment area are shown in Figure 1. A listing of the design values based on the three-year average if the annual mean concentrations from 2001-2003 through 2009-2011 is shown in Table 1.

The DAQ has quality assured all data shown in Appendix A, up through 2010 in accordance with 40 CFR 58.10 and all other federal requirements. DAQ has recorded the data in the AQS database and, therefore, the data are available to the public. Table1 shows the monitoring data for 2001-2010 that were retrieved from the EPA AQS, and preliminary 2011 data that will be certified and recorded in the AQS database in accordance with 40 CFR 58.10.

Figure 1: Map of the Wheeling, WV-OH nonattainment area and monitor locations

Table 1. Monitoring Data for the Wheeling, WV-OH area for 2000 - 2011

Table 1: Wheeling Nonattainment Area Design Values for the 1997 Annual and 24-hr $PM_{2.5}$ NAAQS																		
	1997 NAAQS 24 hr 3 yr 98% = 65									1997 Annual NAAQS = 15								
FRM Site	01-03	02-04	03-05	04-06	05-07	06-08	07-09	08-10	09-11	01-03	02-04	03-05	04-06	05-07	06-08	07-09	08-10	09-11
051-1002	37	36	33	34	35	34	31	29	29	15.7	15.1	15.3	15.0	15.2	14.2	13.4	13.1	13.0
069-0010	36	35	32	31	32	31	29	26	26	15.2	14.7	14.9	14.2	14.6	13.7	13.2	12.4	11.9

Source: EPA Air Quality System (AQS); http://www.epa.gov/ttn/airs/airsaqs/index.htm
Notes: Green shading indicates meeting the standard, all monitors in the area monitor attainment.
2011 data is preliminary, and has not yet been certified.

The design values calculated for the Wheeling area demonstrate that the 1997 $PM_{2.5}$ NAAQS has been attained. The area's design values have trended downward as emissions have declined due to such factors as cleaner automobiles and fuels, and controls for EGUs, at the national, regional and local level.

National monitoring for $PM_{2.5}$ began in 1999. There has been a clear downward trend in design values for all monitors in West Virginia and Ohio, as shown in Figures 2 and 3. Design values have also trended downward nationally, as shown in Figure 4.

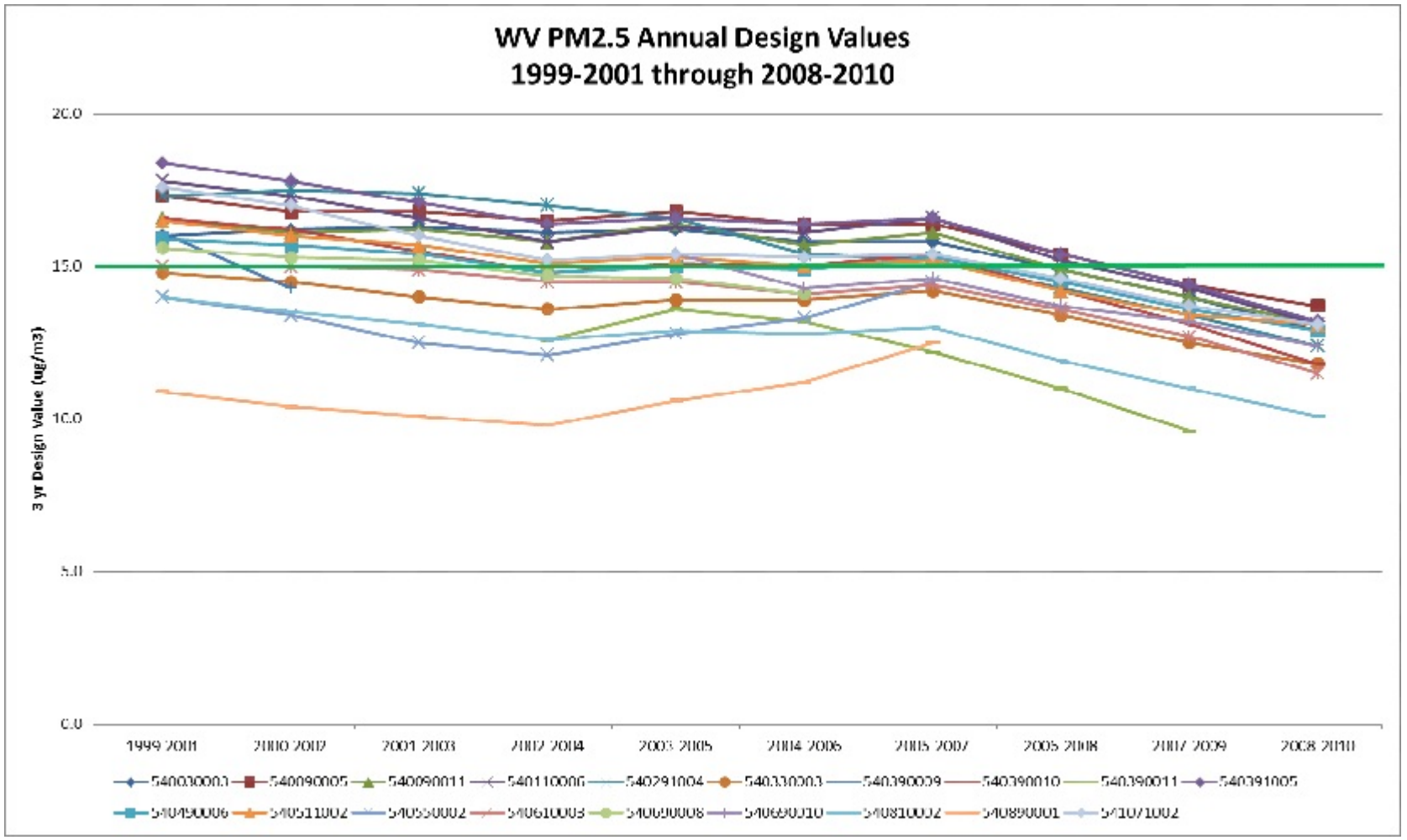
On November 20, 2009 [74 FR 60199] EPA determined that the Wheeling, WV-OH area had attained the 1997 $PM_{2.5}$ NAAQS [Clean Data Determination]. This determination was based upon complete, quality assured, quality controlled, and certified ambient air monitoring data that showed that the area monitored attainment of the 1997 $PM_{2.5}$ NAAQS during the 2006-2008 monitoring period.

On December 2, 2011 [76FR75464] EPA determined that the Wheeling, WV-OH area had attained the 1997 annual $PM_{2.5}$ NAAQS by the applicable attainment date of April 5, 2010. This determination was based on complete, quality-assured, and certified ambient air monitoring data for the 2007-2009 monitoring period.

Complete quality-assured $PM_{2.5}$ ambient air quality monitoring data for the recent three (3) year period 2008 through 2010, and preliminary data for the 2009 through 2011 period, demonstrate that the air quality continues to meet the NAAQS for annual $PM_{2.5}$ in this nonattainment area. The NAAQS attainment, accompanied by decreases in emission levels discussed in Chapter Four, support a redesignation to attainment for the Wheeling area based on the requirements in Section 107(d)(3)(E) of the CAA.

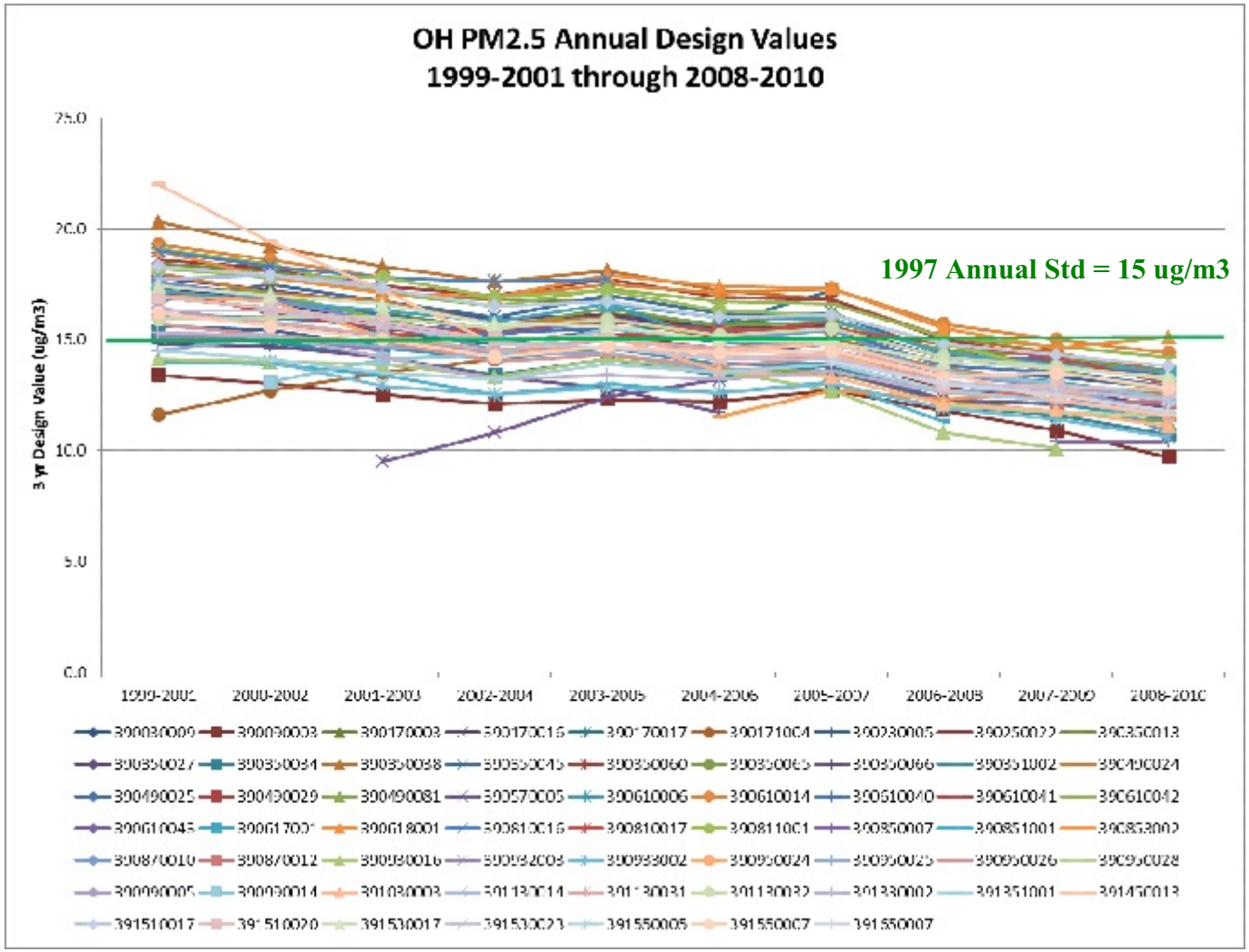
DAQ commits to continue monitoring $PM_{2.5}$ levels at the West Virginia sites indicated in Figure 1 and Table 1. DAQ will consult with EPA Region III prior to making changes to the existing monitoring network, should changes become necessary in the future. DAQ will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58 and all other federal requirements. Connection to a central station and updates to the DAQ web site will provide real time availability of the data and knowledge of any exceedances. DAQ will enter all data into AQS on a timely basis in accordance with federal guidelines.

Figure 2: West Virginia $PM_{2.5}$ Annual Design Values, 1999-2001 through 2008-2010.



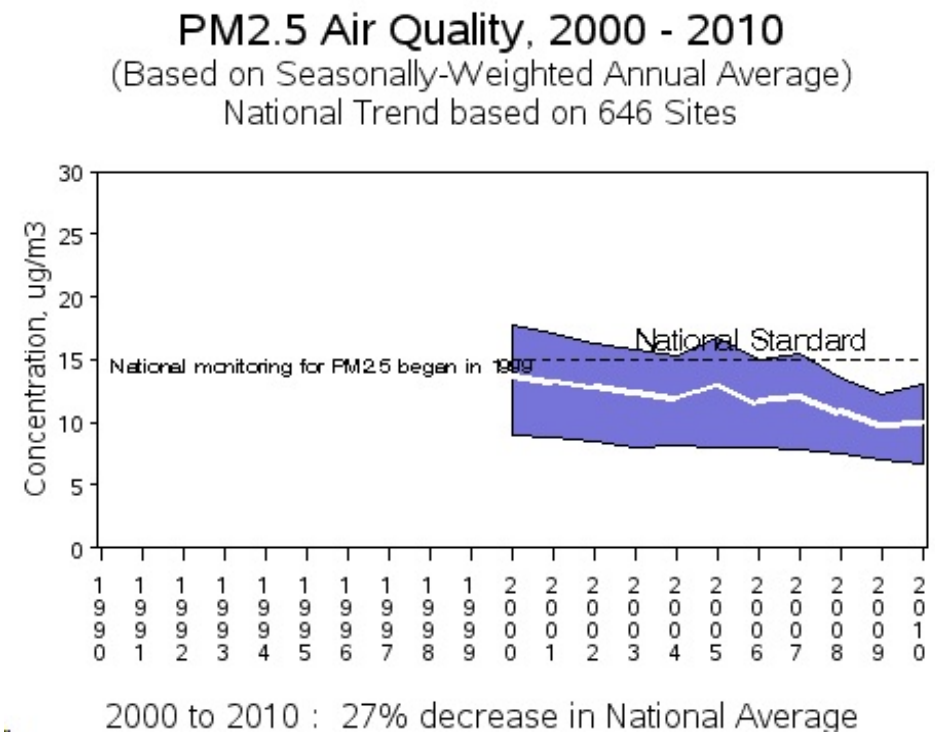
Data Source: http://www.epa.gov/airtrends/values.html, from Excel spreadsheet: PM25dv20082010Final.xls

Figure 3: Ohio $PM_{2.5}$ Annual Design Values, 1999-2001 through 2007-2009.



Data Source: http://www.epa.gov/airtrends/values.html, from Excel spreadsheet: PM25dv20082010Final.xls

Figure 4: $PM_{2.5}$ Annual Mean National Trends



Source: http://www.epa.gov/airtrends/pm.html

B. The Wheeling Area has a Fully Approved SIP Under Section 110(k) of the CAA

On December 17, 2004, EPA promulgated the initial $PM_{2.5}$ nonattainment areas designations for the $PM_{2.5}$ standards across the country, including the Wheeling, WV-OH area. Modifications to those designations were made and an effective date was set at April 5, 2005. Unlike Subpart 2 of the CAA Amendments of 1990 which 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 Amendments require states with $PM_{2.5}$ nonattainment areas to submit a plan within three years of the effective date of the designations (April 5, 2008) detailing how the $PM_{2.5}$ standards would be attained by April 5, 2010. On November 20, 2009 determined that the Wheeling area had monitored attainment of the 1997 PM2.5 NAAQS during the 2006-2008 time period. This determination suspended the requirement for the state to submit an attainment demonstration, associated reasonably available control measures, a reasonable further progress plan, contingency measures, and other planning SIPs related to attainment of the standard for as long as the area continues to meet the 1997 $PM_{2.5}$ NAAQS. On December 2, 2011, in accordance with Section 179(c)(1) of the CAA, EPA determined that the Wheeling, WV-OH $PM_{2.5}$ nonattainment area had attained the 1997 annual $PM_{2.5}$ NAAQS by the applicable attainment date of April 5, 2010 [76FR75465]. The DEP believes that all applicable requirements under CAA section 110(k) have been met.

C. The Wheeling Area's Air Quality Improvement is Due to Permanent and Enforceable Emissions Reductions

Several federally enforceable control measures have been implemented during the past decade which contribute to the air quality improvement, and will continue to reduce emissions in the future. These are discussed in detail in Section V - Control Measures and Regulations.

D. The State has Developed a Maintenance Plan for the Wheeling Area Which Ensures Attainment of the 1997 $PM_{2.5}$ Standard for at least 10 Years

Section 107(d)(3)(E) of the CAAA stipulates that for an area to be redesignated to attainment EPA must approve a maintenance plan that meets the requirements of Section 175A. A state may submit both the redesignation request and maintenance plan at the same time, and the plan adoption process, including rule-making or public hearing proceedings, may proceed on a parallel track. West Virginia is herein submitting a request to redesignate the Wheeling area to attainment and is also requesting that EPA concurrently process this request and the accompanying maintenance plan.

E. The Wheeling Area Has Met All Relevant Requirements under CAA Section 110 and Part D

For purposes of redesignation, a state must meet all requirements of Section 110 and Part D 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, EPA's Implementation Rule stated Subpart 1, rather than Subpart 4, is appropriate for the purpose of implementing $PM_{2.5}$.[72 FR 20589]

1. Section 110(a) requirements

Section 110(a) of Title I 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 provides for public and local agency participation in planning and emission control rule development. In West Virginia's December 11, 2007, and October 1, 2009 infrastructure SIP submissions and March 18, 2010 certification, West Virginia verified that the State fulfills the requirements of Section 110(a)(2) of the Act.

Section 110(a)(2)(D) also requires State plans to prohibit emissions from within the State which 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). In order to assist States in addressing their obligations regarding regionally transported pollution, EPA finalized CAIR to reduce SO_2 and NO_x emissions from large electric generating units (EGU). West Virginia has met the requirements of the federal CAIR to reduce NO_x and SO_2 emissions contributing to downwind states. On August 4, 2009, EPA approved West Virginia's CAIR program [74FR38536] , which were found in West Virginia's Code of State Rules at 45 CSR39, 45CSR40, and 45CSR41. On July 6, 2010, EPA proposed a replacement to the CAIR program, the Transport Rule [75 FR 45210]. The Transport Rule, or the Cross-State Air Pollution Rule (CSAPR) as it is now called, was finalized on July 6, 2011, and published in the Federal Register on August 8, 2011 [76FR48208]. Under the CSAPR, EPA adopted Federal Implementation Plans (FIPs) for each state covered by the rule, including West Virginia. The CSAPR further assists states in addressing their obligations regarding regionally transported pollution by providing reductions in NO_x and SO_2 emissions in 2012 and 2014. On December 30, 2011 the United States Court of Appeals for the District of Columbia stayed the implementation of CSAPR, indefinitely reinstating CAIR.

2. Section 172(c) requirements

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 will not apply for redesignations because they only have meaning for areas not attaining the standard. The requirements for an emission inventory will be satisfied by the inventory requirements of the maintenance plan. Sections III and V discuss these requirements in more detail.

3. Conformity

The state must work with EPA to show that its SIP provisions are consistent with the Section 176(c)(4) conformity requirements. The redesignation request should include conformity procedures, if the state already has these procedures in place. If a state does not have conformity procedures in place at the time that it submits a redesignation request, the state must commit to follow EPA's conformity regulation upon issuance, as applicable. Section IV discusses this requirement in more detail.

III. MAINTENANCE PLAN
(CAA Section 107(d)(3)(E)(iv))

Section 107(d)(3)(E) stipulates that for an area to be redesignated, EPA must fully approve a maintenance plan that meets the requirements of Section 175(A). 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.

In addition, the maintenance plan shall contain such contingency measures as the Administrator deems necessary to ensure prompt correction of any violation of the NAAQS. 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.

In consultation with EPA and Ohio EPA, West Virginia DAQ selected the year 2022 as the end year of the maintenance plan for this redesignation request. This document contains projected emissions inventories for 2015 and 2022. Thus, the pertinent inventory years are: 2005 (nonattainment year), 2008 (attainment year and maintenance plan base year), 2015 (interim year) and 2022 (maintenance plan end year). Three specific emissions inventory demonstrations should be made:

1. The attainment year (2008) emissions of $PM_{2.5}$, NO_x and SO_2 must each be less than the corresponding emissions in the nonattainment year (2005). The reductions must be attributable to federally enforceable emission reductions (as discussed in Section III.E and Section V).

2. The interim year (2015) emissions of each of the three pollutants should be less than the maintenance plan base year (2008).

3. The end year (2022) emissions of each of the three pollutants should be less than the maintenance plan base year (2008).

As can be seen in Table 2 below, West Virginia has seen a significant state-wide decline of the 467,081 tons of SO_2 and 159,481 tons of NO_x emitted by EGUs in 2005. In 2008 and 2009 facilities began preparing for and implementing control programs to address CAIR and consent orders. Significant reductions occurred regionally and nationally. Data available for 2010, show the SO_2 and NO_x reductions which were implemented under CAIR.

Table 2: Reductions in SO_2 and NO_x EGU Emissions Between 2008 and 2010						
	SO_2			NO_x		
	2008	**2010**	**% Change**	**2008**	**2010**	**% Change**
West Virginia	301,574	106,088	-65%	97,331	51,393	-47%
Ohio	709,444	570,045	-20%	235,018	104,574	-56%
National	7,616,449	5,119743	-33%	2,996,594	2,061,062	-31%

Source: Clean Air Markets, Data and Maps, Quick Reports, State Level Emissions Quick Report and Program Level Emissions Quick Report, Acid Rain Program

Further, Tables 3- 18 clearly show total emissions from all sectors decreased in the period from 2005 to 2008 in the West Virginia and Ohio portions of the nonattainment area. As outlined below, the reductions are enforceable and should continue in the future.

On March 10, 2004, EPA promulgated the CAIR. Beginning in 2009, EPA's CAIR rule required EGUs in 28 eastern states and the District of Columbia to significantly reduce emissions of NO_x and SO_2. CAIR replaced the NO_x SIP Call for EGUs. The intent of the CAIR program was for national NO_x emissions to be cut from 4.5 million tons in 2004, to a cap of 1.5 million tons by 2009, and 1.3 million tons in 2018 in 28 states. States were required to submit a CAIR SIP as part of this effort. West Virginia DEP submitted a CAIR SIP to EPA on June 1, 2006. Revisions to the CAIR SIP were submitted on April 22, 2008. The revised CAIR SIP was approved on August 4, 2009 (74 FR 38536). As a result of CAIR, EPA projected that in 2009 emissions of NO_x would decrease from a baseline of 179,000 tons per year to 63,000 tons per year while in 2010 emissions of SO_2 would decrease from a baseline of 582,000 tons per year to 250,000 tons per year, within West Virginia. And by 2015 EPA projected emissions of NO_x would decrease to 44,000 tons per year while emissions of SO_2 would decrease to 118,000 tons per year, within West Virginia.

On December 23, 2008, EPA's CAIR program was remanded without vacatur by the D.C. Circuit Court.

The following was reported by EPA's Clean Markets Division:

> "Based on emissions monitoring data, EPA has observed substantial reductions in emissions from 2005 to 2010 as companies installed more controls, electric demand declined, and low natural gas prices made combined-cycle gas-fired units more competitive in several parts of the country. Thus, even after CAIR's vacatur and subsequent remand in late 2008, the controls in place generally have continued to operate, helping to drive continued progress in reducing emissions. However, allowance prices of SO_2 have been relatively low since 2008, raising concerns that coal-fired units could burn dirtier fuels, operate scrubbers at reduced efficiency, or even bypass scrubbers altogether, instead relying on banked allowances (because there is not an existing large bank of NO_x allowances, NO_x allowance prices have not been affected as significantly). For these reasons, EPA is tracking SO_2 and NO_x emissions closely each

quarter to evaluate further progress and assess whether backsliding may be occurring and, if so, where it may be taking place." [http://www.epa.gov/airmarkets/background.htm]

On July 6, 2010, EPA proposed a replacement to the CAIR program, the Transport Rule [75 FR 45210]. On July 6, 2011, EPA finalized the Transport Rule, now commonly referred to as the Cross-State Air Pollution Rule (CSAPR) [76FR48208, 08AUG2011] in time for reductions to begin in 2012. As finalized, the CSAPR will preserve the initial reductions achieved under CAIR and provide more reductions in NO_x and SO_2 emissions in 2012 and 2014, ahead of the 2015 CAIR Phase 2.

West Virginia DAQ is in agreement with the analysis by U.S.EPA that the CAIR program provided real reductions. We believe these reductions have assisted with $PM_{2.5}$ attainment in this nonattainment area and throughout West Virginia. It is also the DAQ's belief that the CSAPR will continue to provide the necessary reductions, and likely even greater reductions, that will be necessary for maintenance of the annual $PM_{2.5}$ standard to continue. As stated by EPA regarding the final Transport Rule or CSAPR:

> This rule will prohibit all significant contribution to nonattainment and interference with respect to the annual and 24-hour $PM_{2.5}$. In addition, it will resolve air quality issues at most nonattainment and maintenance receptors identified by EPA. EPA projects that unresolved nonattainment and maintenance issues will remain in only a few downwind states after promulgation and implementation of the Transport Rule. For the annual $PM_{2.5}$ standard, EPA projects that this rule will help assure that all areas in the east fully resolve their nonattainment and maintenance concerns. This rule will also help a number of areas achieve the standard earlier than they may have otherwise. [76 FR 48247]

However, on December 30, 2011 the United States Court of Appeals for the District of Columbia stayed the implementation of CSAPR, indefinitely reinstating CAIR.

DAQ has considered the Integrated Planning Model (IPM) emission projections for the EGUs (Kammer and Mitchell Power Stations) in the Wheeling area under CAIR and CSAPR. On their website [http://www.epa.gov/airmarkets/progsregs/epa-ipm/index.html] EPA states:

> EPA uses the Integrated Planning Model (IPM) to analyze the projected impact of environmental policies on the electric power sector in the 48 contiguous states and the District of Columbia. Developed by ICF Consulting, Inc. and used to support public and private sector clients, IPM is a multi-regional, dynamic, deterministic linear programming model of the U.S. electric power sector. It provides forecasts of least-cost capacity expansion, electricity dispatch, and emission control strategies for meeting energy demand and environmental, transmission, dispatch, and reliability constraints. IPM can be used to evaluate the cost and emissions impacts of proposed policies to limit emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon dioxide (CO_2), and mercury (Hg) from the electric power sector. The IPM was a key analytical tool in developing the proposed Transport Rule.

Under CAIR for 2020 EPA projected 5,597 tons of NO_x and 16,085 tons of SO_2. Under CSAPR, for the same facilities in 2020, IPM projected 6,215 tons of NO_x and 13,645 tons of SO_2 [http://www.epa.gov/airmarkets/progsregs/epa-ipm/cair/index.html, see IPM Parsed File EPA Final

CAIR parsed for year 2020 (Final CAIR modeling)]. While the projections do not match exactly, they are consistent and the DAQ believes that CAIR or any likely replacement for CAIR, will constrain NO_x and SO_2 emissions sufficiently to ensure that maintenance level emissions are not exceeded during the maintenance period.

Furthermore, as shown in Section VI - Supplemental Modeling Analyses, recent modeling -- CAIR, proposed Transport Rule, CSAPR (Final Transport Rule), including base cases where CAIR and CSAPR were not considered to be applicable requirements, and the VISTAS/ASIP modeling (which includes CAIR) -- all show that the Wheeling area will continue to maintain the 1997 $PM_{2.5}$ NAAQS.

Therefore, it is West Virginia DAQ's belief it is most appropriate to evaluate West Virginia's demonstration that the projected level of emissions is sufficient to maintain the annual $PM_{2.5}$ standard by assessing future year emissions that include the CSAPR program. Furthermore, modeling conducted as part of the Transport Rule development (both the proposed Transport Rule and the Final Transport Rule, or CSAPR) projects the counties within this area will not have maintenance issues in 2014 even without the Transport Rule (proposed or final) or CAIR.

Therefore, West Virginia DAQ is identifying emissions projections for 2015 and 2022 for EGUs with implementation of the CSAPR program.

Emission projections for the Wheeling area were performed using the following approaches:

- Emissions inventories are required to be projected to future dates to assess the influence of future growth and controls.

- NonEGU Point, Area, and Locomotive/Marine Source inventories for 2015 and 2022 were developed by DAQ based on the 2008 inventory using Workforce West Virginia economic forecasts (http://www.workforcewv.org/LMI/indproj/longterm/WV.htm). The Workforce WV projections were in terms of North American Industrial Classification System (NAICS) codes while the WV 2008 v1.5 data is in terms of SCCs. A list of SCCs contained in the 2008 WV inventory was compiled and the associated with each NAICS code for which there was a Workforce WV growth factor. Then directly proportional growth factors were calculated and applied to Workforce WV's 2018 growth factor to calculate 2015 and 2022 emissions. The final estimates reflect both positive and negative growth. The 2008 NEI data were downloaded from EPA's CHIEF webpage at http://www.epa.gov/ttn/chief/net/2008inventory.html.

- Nonroad mobile source inventories for those categories calculated by the model were developed by DAQ personnel using monthly NONROAD Model runs for 2015 and 2022, and summing the monthly data to obtain annual data.

- Ohio provided the emission estimates for the Ohio portion of the area, based on LADCO developed growth and control files for Point, Area, and Nonroad categories. Appendix D contains LADCO's technical support document detailing the analysis used to project emissions (Base M) [www.ladco.org/tech/emis/current/index.php].

- As performed by ODOT, Onroad mobile source emission projections are based on the EPA MOVES model. The analysis is described in more detail in Appendix C. All projections were made using federally approved interagency consultation procedures. As discussed in Section IV, DAQ determined that the mobile emission contribution as a percent of the total emission inventory from the area is not significant.

The detailed inventory information for the West Virginia portion of the Wheeling area for 2005 is contained in Appendix B. Emission trends are an important gauge for continued compliance with the $PM_{2.5}$ standard. Therefore, West Virginia DAQ performed an initial comparison of the inventories for the base year and maintenance years.

Sectors included for West Virginia in the following tables are: Electrical Generating Unit (EGU); Non-Electrical Generating Units including Airports (Non-EGU); Non-road Mobile (Nonroad); Other Area (Area); Locomotive and Marine (LM); and Onroad Mobile (Onroad).

Sectors included for Ohio in the following tables are: Electrical Generating Unit (EGU); Non-Electrical Generating Unit (Non-EGU); Non-road Mobile (Nonroad); Other Area (Area); Marine; Aircraft; Rail (MAR); and Onroad Mobile (Onroad).

Maintenance is demonstrated when the future-year (2022) projected emission totals of each of the relevant pollutants are below the 2008 attainment year totals.

The West Virginia emissions data in the tables below are based on the following data sources:

- All On-Road data developed by ODOT for Belomar.
- 2005 and 2008 EGU and non-EGU Point Source from certified data submitted by industry to West Virginia DAQ's 2005 and 2008 annual emissions inventory database and subsequently submitted to EPA.
- 2015 EGU data from IPM runs prepared for EPA for CSAPR.
- 2022 EGU data interpolated from 2020 and 2030 IPM runs prepared for EPA for CSAPR.
- WV Nonroad data developed by DAQ using EPA's Nonroad Model v2008.1.0.
- All other West Virginia data developed by DAQ based on Workforce WV economic projections.
- All Ohio data provided by OEPA.

A. $PM_{2.5}$ Emissions Demonstrations

The 2005 and 2008 actual $PM_{2.5}$ EGU and NonEGU emissions data below reflects $PM_{2.5}$-primary emissions. Although some facilities reported both $PM_{2.5}$-pri and the PM fraction emissions, not all facilities reported $PM_{2.5}$-pri emissions. When $PM_{2.5}$-pri was not reported by sources, WV DAQ applied PM augmentation procedures in accordance with EPA procedures as documented in EPA's CSAPR technical support document (TSD), "*Emissions Inventory Final Rule TSD*, June 28, 2011" and discussed in more detail in Appendix B and with further technical support provided by EPA's Emission Inventory and Analysis Group (EIAG).

Table 3: Marshall County, WV $PM_{2.5}$ Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)

Sector	2005 (Base)	2008 Attainment	2015 Interim	2015 Safety Margin	2022 Maintenance	2022 Safety Margin
EGU	3,826	4,440	2,121	**2,319**	2,271	**2,169**
NonEGU	525	410	316	**94**	272	**137**
Area	316	263	258	**5**	259	**4**
LM	25	8	8	**0**	9	**0**
Nonroad	12	11	7	**3**	5	**5**
Onroad	26	20	10	**10**	7	**13**
TOTAL	**4,731**	**5,152**	**2,721**	**2,432**	**2,824**	**2,329**

Table 4: Ohio County, WV $PM_{2.5}$ Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	0	0	0	**0**	0	**0**
NonEGU	11	4	4	**0**	4	**0**
Area	263	293	290	**3**	289	**4**
LM	38	0	0	**0**	0	**0**
Nonroad	21	19	15	**4**	11	**9**
Onroad	40	36	18	**17**	13	**23**
TOTAL	**372**	**352**	**328**	**25**	**317**	**36**

Table 5: Belmont County, OH $PM_{2.5}$ Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	94	70	21	**49**	0	**70**
NonEGU	3	3	4	**-1**	4	**-1**
Area	308	305	297	**8**	289	**16**
MAR	6	6	3	**2**	1	**4**
Nonroad	27	24	17	**7**	11	**14**
Onroad	106	89	45	**44**	26	**62**
TOTAL	**5,648**	**6,001**	**3,436**	**2,565**	**3,472**	**2,529**

Table 6: Wheeling Nonattainment Area $PM_{2.5}$ Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
County	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
Marshall, WV	4,731	5,152	2,721	2,432	2,824	2,329
Ohio, WV	372	352	328	25	317	36
WV $PM_{2.5}$ Total	**5,103**	**5,505**	**3,048**	**2,456**	**3,141**	**2,364**
Belmont, OH	545	497	388	109	332	165
Combined $PM_{2.5}$ Total	**5,648**	**6,001**	**3,436**	**2,565**	**3,472**	**2,529**

B. NO_x Emissions Demonstrations

Table 7: Marshall County, WV NO_x Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	31,541	23,269	6,067	**17,202**	6,366	**16,903**
NonEGU	3,131	2,759	2,341	**418**	2,166	**593**
Area	184	81	84	**-2**	86	**-5**
LM	671	249	250	**-2**	252	**-3**
Nonroad	113	108	86	**22**	69	**38**
Onroad	735	574	249	**325**	131	**443**
TOTAL	**36,375**	**27,040**	**9,077**	**17,692**	**9,070**	**17,969**

Table 8: Ohio County, WV NO_x Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	0	0	0	**0**	0	**0**
NonEGU	6	6	6	**0**	6	**0**
Area	613	151	152	**-1**	152	**-2**
LM	972	0	0	**0**	0	**0**
Nonroad	170	158	113	**45**	87	**71**
Onroad	1,230	1,104	486	**617**	271	**833**
TOTAL	**2,991**	**1,418**	**757**	**661**	**516**	**901**

Table 9: Belmont County, OH NO_x Emission Inventory Totals for 2005, 2008, and 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	4,150	4,168	4,478	**-310**	4,738	**-570**
NonEGU	23	21	20	**0**	19	**2**
Area	285	287	287	**0**	287	**0**
MAR	262	247	161	**87**	79	**168**
Nonroad	222	197	146	**51**	93	**103**
Onroad	3,180	2,594	1,279	**1,314**	588	**2,006**
TOTAL	**8,121**	**7,513**	**6,370**	**1,143**	**5,804**	**1,709**

Table 10: Wheeling Nonattainment Area NO_x Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
County	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
Marshall, WV	36,375	27,040	9,077	17,962	9,070	17,969
Ohio, WV	2,991	1,418	757	661	516	901
WV NO_x Total	**39,366**	**28,457**	**9,834**	**18,623**	**9,587**	**18,871**
Belmont, OH	8,121	7,513	6,370	1,143	5,804	1,709
Combined NO_x Total	**47,487**	**35,971**	**16,204**	**19,767**	**15,390**	**20,580**

C. SO_2 Emissions Demonstrations

Table 11: Marshall County, WV SO_2 Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	96,378	35,074	14,008	**21,066**	12,797	**22,276**
NonEGU	19,110	16,503	13,692	**2,811**	12,285	**4,218**
Area	102	64	62	**2**	60	**4**
LM	31	13	13	**0**	13	**0**
Nonroad	10	2	0	**2**	0	**2**
Onroad	9	3	2	**1**	2	**1**
TOTAL	**115,641**	**51,658**	**27,777**	**23,881**	**25,158**	**26,500**

Table 12: Ohio County, WV SO_2 Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	0	0	0	**0**	0	**0**
NonEGU	1	1	1	**0**	1	**0**
Area	232	183	175	**9**	166	**17**
LM	44	0	0	**0**	0	**0**
Nonroad	15	3	0	**2**	0	**2**
Onroad	16	6	4	**1**	4	**2**
TOTAL	**308**	**193**	**180**	**12**	**172**	**21**

Table 13: Belmont County, OH SO_2 Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
Sector	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
EGU	37,330	15,126	8,783	**6,343**	6,065	**9,061**
NonEGU	0	0	0	**0**	0	**0**
Area	93	92	87	**5**	82	**10**
MAR	23	16	7	**9**	3	**13**
Nonroad	22	8	1	**7**	0	**8**
Onroad	31	9	7	**3**	6	**3**
TOTAL	**37,499**	**15,252**	**8,886**	**6,367**	**6,157**	**9,095**

Table 14: Wheeling Nonattainment Area SO_2 Emission Inventory Totals for 2005, 2008, 2015 and 2022 (tpy)						
County	**2005 (Base)**	**2008 Attainment**	**2015 Interim**	**2015 Safety Margin**	**2022 Maintenance**	**2022 Safety Margin**
Marshall, WV	115,641	51,658	27,777	**23,881**	25,158	**26,500**
Ohio, WV	308	193	180	**12**	172	**21**
WV SO_2 Total	**115,949**	**51,851**	**27,958**	**23,893**	**25,329**	**26,522**
Belmont, OH	37,499	15,252	8,886	**6,367**	6,157	**9,095**
Combined SO_2 Total	**153,448**	**67,103**	**36,843**	**30,260**	**31,487**	**35,617**

D. Summary of $PM_{2.5}$, NO_x, and SO_2 Emission Reductions

Table 15: West Virginia Portion of the Wheeling Area Comparison of 2008 attainment year and 2015 and 2022 projected emission estimates (tpy)					
	2008 Attainment	**2015 Interim**	**2015 Projected Decrease**	**2022 Maintenance**	**2022 Projected Decrease**
$PM_{2.5}$	5,505	3,048	2,457	3,141	2,364
NO_x	28,457	9,834	18,623	9,587	18,870
SO_2	51,851	27,958	23,893	25,329	26,522

Table 16: Ohio Portion of the Wheeling Area Comparison of 2008 attainment year and 2015 and 2022 projected emission estimates (tpy)					
	2008 Attainment	**2015 Interim**	**2015 Projected Decrease**	**2022 Maintenance**	**2022 Projected Decrease**
$PM_{2.5}$	497	388	109	332	165
NO_x	7,513	6,370	1,143	5,804	1,709
SO_2	15,252	8,886	6,366	6,157	9,095

Table 17: Wheeling Area Comparison of 2008 attainment year and 2015 and 2022 projected emission estimates (tpy)					
	2008 Attainment	**2015 Interim**	**2015 Projected Decrease**	**2022 Maintenance**	**2022 Projected Decrease**
$PM_{2.5}$	6,001	3,436	2,565	3,472	2,529
NO_x	35,971	16,204	19,767	15,390	20,581
SO_2	67,103	36,843	30,260	31,487	35,616

As shown in the table above (Table 17), $PM_{2.5}$ emissions in the nonattainment area are projected to decrease by 2,565tons in 2015 and 2,529 tons in 2022. NO_x emissions in the nonattainment area are projected to decrease by 19,767 tons in 2015 and 20,581 tons in 2022. SO_2 emissions in the nonattainment area are projected to decline by 30,260 tons in 2015 and 35,616 tons in 2022.

The Wheeling area shows a net reduction in $PM_{2.5}$, NO_x and SO_2 emissions, cleaner vehicles and fuels are expected to be in place in 2015 and 2022, and the CAIR Replacement Rule should be implemented by 2015 and these programs should cause an overall drop in all three pollutants emissions. Decreases from EPA rules covering Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements [65FR6698,10FEB2000], Highway Heavy-Duty Engine Rule [62FR54694, 21OCT1997], and the Non-Road Diesel Engine Rule [63FR56968, 23OCT1998] are factored into the changes.

In addition, the Mitchell Power Station (AEP) in Marshall County, WV implemented changes in 2007 and 2008. Mitchell, which has two 800 megawatt (MW) units, was required by a federal consent decree (see Appendix E) to operate their FGD continuously to reduce SO_2 emissions beginning December 31, 2007 and to operate their SCR continuously to reduce NO_x emissions beginning January 1, 2009.

E. Air Quality Improvement is Based on Permanent and Enforceable Emission Reductions

A demonstration that improvement in air quality between the year violations occurred and the year attainment was achieved is based on permanent and enforceable emission reductions and not on temporary adverse economic conditions or unusually favorable meteorology.

Ambient air quality data from all monitoring sites indicate that air quality met the NAAQS for $PM_{2.5}$ in 2007-2009 and in 2008-2010. EPA's redesignation guidance (Policy Memo from John Calcagni, Director, Air Quality Management Division to Regional Air Directors: *Air Procedures for Processing Requests to Redesignate Areas to Attainment*), dated September 4, 1992 (p. 9) states: "A state may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emissions rates will not cause a violation of the NAAQS."

Permanent and enforceable reductions of $PM_{2.5}$, NO_x, and SO_2 emissions have contributed to the attainment of the annual $PM_{2.5}$ standard. Some of these reductions were realized due to the application of tighter federal standards on highway heavy-duty engines (Control of Emissions of Air Pollution from Highway Heavy Duty Engines) and Nonroad diesel engines (Control of Emissions of Air Pollution from Nonroad Diesel Engines), the application of tighter federal standards on new vehicles (Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emission Standards and Gasoline Sulfur Control Requirements), Title IV of the CAA, the NO_x SIP Call, CAIR, CSAPR, and federal consent decrees requiring reductions of SO_2 and NO_x emissions from utility sources. Reductions achieved are discussed in greater detail under Section V.

Table 18: Wheeling Area Comparison of 2005 Base Year and 2008 Attainment Year Reductions by Sector

	2005	2008	Decrease
EGU NO_x	35,691	27,437	8,254
EGU $PM_{2.5}$	3,920	4,510	(590)
EGU SO_2	133,708	50,200	83,508
Onroad NO_x	5,145	4,272	873
Onroad $PM_{2.5}$	172	145	27
Onroad SO_2	56	18	38
Nonroad NO_x	505	463	42
Nonroad $PM_{2.5}$	60	54	6
Nonroad SO_2	47	13	34

F. Emissions Tracking

Provisions for future annual updates of the inventory to enable tracking of the emission levels, including an annual emission statement from major sources.

In West Virginia, major point sources in all counties are required to submit air emissions information annually. West Virginia DAQ prepares a new periodic inventory for all $PM_{2.5}$ precursor emission sectors every three years in accordance with EPA's Air Emissions Reporting Requirements (AERR). These $PM_{2.5}$ precursor inventories will be prepared for future years as necessary to comply with the inventory reporting requirements established in the CFR. Emissions information will be compared to the 2005 base year and the 2022 projected maintenance year inventories to assess emission trends, as necessary, and to assure continued compliance with the annual $PM_{2.5}$ standard.

IV. TRANSPORTATION ANALYSIS

A. Onroad Emission Estimations

The air quality analyses and underlying planning assumptions were developed by the Ohio Department of Transportation (ODOT), Division of Transportation System Development - Modeling and Forecasting Section and the Belomar Regional Council, in coordination with the Ohio Environmental Protection Agency (OEPA) and West Virginia Department of Environmental Protection (WVDEP). This evaluation represents the latest population and land use data available, which calibrated the modeling process used to calculate the vehicle emissions for the mobile emissions budgets as well as obtain the input values for U.S. EPA's most recent emissions software (MOVES). The Belomar Region is comprised of the counties of Ohio and Marshall in the north panhandle of West Virginia and Belmont in east-central Ohio. Figure 5 displays the geographic extent of the Belomar region non-attainment area.

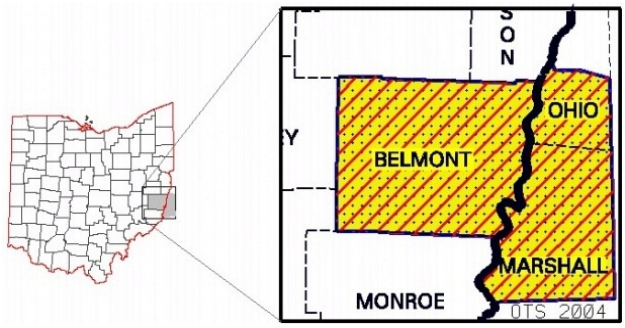


Figure 5. Belomar Region

B. Onroad Mobile Emissions Summary

A travel demand model (TDM) is the traditional tool used to examine potential changes in future travel patterns. It generates travel characteristics which are then input into the emissions estimation model. Ultimately, that output is further input into a post processor to make the final emissions estimates. The road networks within the TDM include all planned federal-aid projects as well as any regionally significant projects found in the Transportation Improvement Plan (TIP) and the Long Range Transportation Plan (LRTP) expected to be open for traffic by the end of each respective analysis year. All projects identified in the LRTP having an impact on travel time and/or vehicle carrying capacity regardless of funding source were included in the air quality analysis. Trip generation figures by zone, with some exceptions, are assumed to change linearly with time between 2000 and the Plan Horizon year of 2035.

The Wheeling area travel demand model network covers about 1500 miles of streets and highways in the 3-county area including all collector and arterial streets, and has been validated to observed traffic for year 2000. Land use data comes from the Census, ES202 employment reporting, and local vehicle registrations. A trip generation model was borrowed from another urban area and adjusted as needed for local land use data. The hourly distribution of trips by trip purpose and direction are constrained to match the hourly distribution of traffic counts. Trip distribution also begins with a

trip-length distribution by purpose borrowed from another urban area and adjusted to ensure modeled VMT matched HPMS estimates of VMT within 1% in the model base year of 2000. (Home-based work trips were separately constrained to a target average value based on the 2000 Census.)

The 3-county major street network used in the modeling was developed from the local planning agency's digital street network (originating from the U.S. Geological Survey). The modeling software program utilizes hourly saturation flow rates that are calculated based on road inventory data, roadway type, and the 2000 version of the Highway Capacity Manual (HCM). Coded speeds by street segment are a function of road type and posted speed limits and are based on the Ohio statewide travel time study conducted in 2000 using the "run time" version of speeds without intersection delays. (available on the web at: http://www.dot.state.oh.us/urban/data/statewid/report.doc) The model software program internally estimates additional travel times for vehicles that stop for traffic control (stop signs and red lights) based on HCM methods and modeled traffic patterns. The traffic assignment RMS (root mean square) error meets FHWA/ODOT standards for all specified volume groups. Overall modeled VMT for 2000 was less than 1% different than HPMS estimated VMT. Freeways (federal functional class codes 1, 11, and 12) were within 2% of estimated VMT.

The interagency consultation process, as previously discussed, established the following model years for Ohio and Marshall counties, WV and Belmont County, OH that reflected the most recent correspondence from the U.S. EPA:

Analysis Year 2005 - Baseline Emissions
Analysis Year 2008 - Attainment Year
Analysis Year 2015 - Interim Year
Analysis Year 2022 - Maintenance Year

Travel analysis zones (269 in the 3-county area) and external roadway “stations” (31) are the basic geographic units for estimating travel patterns. Socioeconomic data used to forecast these patterns include household population, school enrollment, vehicle registrations, labor force participation, and employment by category and location. Sources for year 2000 data include the 2000 Census (primarily SF1 block data), state vehicle registration files, and QCEW/ES202 employment data. All data sources were geocoded to the zone level. Future year data for each variable were projected through various methods. More detailed explanation of base year and future year data generation for each of the above-mentioned categories of planning data is outlined in Appendix C.

C. Emissions Model

MOVES (Motor Vehicle Emissions Simulator) is a computer program designed by the EPA to estimate air pollution emissions from highway mobile sources. EPA published a Federal Register notice of availability [75 FR 9411] on March 2, 2010, to approve MOVES2010, hereafter referred to as MOVES. Upon publication of the Federal Register notice, MOVES became EPA’s approved motor vehicle emission factor model for use by state and local agencies to estimate VOCs, NO_x, CO, PM_{10} and $PM_{2.5}$ and other pollutants and precursors from cars, trucks, motorcycles, and buses. MOVES replaces EPA’s previous emissions model, MOBILE6.2. MOVES can be used to estimate exhaust and evaporative emissions as well as brake and tire wear emissions from all types of on-road vehicles. An updated version of this software, MOVES2010a, was used for this analysis.

MOVES2010a is a minor update to MOVES2010. MOVES2010a includes general performance improvements to MOVES2010, and also allows users to account for emissions under new car and light truck energy and greenhouse gas standards.

EPA believes that MOVES should be used in ozone, carbon monoxide, PM, and nitrogen dioxide SIP development as expeditiously as possible. The CAA requires that SIP inventories and control measures be based on the most current information and applicable models that are available when a SIP is developed.

The MOVES model generated the emission factor files for base year-2005 and attainment year-2008 representing the transportation improvement programs implemented in the Belomar Region. The model also generated emission factors for two future year scenarios 2015 and 2022. Table 19 summarizes the settings used in the MOVES run specification file and the MOVES County-Data Manager.

D. Temperature and Relative Humidity

Meteorological conditions, especially temperature and humidity, significantly affect on-road vehicle emissions. A series of Inter-Agency Consultation conference calls were held during the winter of 2010/2011 which established two important conclusions, among others. First, this redesignation effort required the use of MOVES software for all mobile source emission analyses. And second, the annual emission estimates would be based upon a single-season temperature/humidity approach. The single season approach for temperature and relative humidity uses an annual average of weather data collected by the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC). The data used in this report, taken from the Wheeling Airport collection center, is representative of all 12 months in 2009.

Table 19: MOVES Inputs

RunSpec Parameter Settings	
MOVES Version	2010/08/26
Scale	Custom Domain
MOVES Modeling Technique	Emission Factor Method Rates per Distance, Rates per Vehicle
Time Span	Time Aggregation: Hour 1 Month representing average annual temperatures All hours of day selected 16 speed bins, Weekdays only
Geographic Bounds	Washington OH, Wood WV, Pleasant WV counties
Vehicles/Equipment	All source types, gasoline and diesel
Road Type	All road types including off-network
Pollutants and Processes	NO_x, All $PM_{2.5}$ categories, SO_2, Total Energy Consumption
Strategies	None
General Output	Units = grams, joules and miles
Output Emissions	Time = hour, Location = custom area, on-road emission rates by road type and source use type.
County Data Manager Sources	
Source Type Population	Combination of local and default data Local data (Ohio and West Virginia) from motor vehicle registration Default data used for source types 51, 52, 53, 61, and 62 Future year growth rate based on MPO model Household growth rate.
Vehicle Type VMT	Combination of local and default data HPMSVTypeYear VMT = daily VMT from travel demand model monthVMTFraction = default dayVMTFraction=default hourVMTFraction=local
I/M Program	None
Fuel Formulation	Default
Fuel Supply	Default
Meteorology Data	Local data obtained from NOAA National Climatic Data Center Data will consist of monthly high and low temperatures and daily relative humidity for 2002.
Ramp Fraction	Using the base year travel demand model for VHT fractions.
Road Type Distribution	Use ODOT and WV Division of Highways county summary VMT categorized by federal functional classes
Age Distribution	Combination of local and default data. Local data (Ohio and West Virginia) from motor vehicle registration Default data used for source types 41, 42, 43, 51, 52, 53, 61, and 62 The same age distribution will be used for all analysis years
Average Speed Distribution	Default
Alternative Fuel Type	Default

E. Onroad Mobile Emission Estimations

Tables 20 through 24 contain the results of the emissions analysis for the appropriate years. All emissions estimations are expressed in tons per year (tpy).

Table 20: Marshall County, WV Emissions Estimations for Onroad Mobile Sources				
	2005	**2008**	**2015**	**2022**
NO_x (tpy)	735.22	574.29	249.11	131.14
$PM_{2.5}$ (tpy)	26.37	19.75	9.75	6.86
SO_2 (tpy)	9.31	2.85	2.08	1.90
Annual VMT	717,730	732,645	761,241	787,271

Table 21: Ohio County, WV Emissions Estimations for Onroad Mobile Sources				
	2005	**2008**	**2015**	**2022**
NO_x (tpy)	1,229.69	1,103.54	486.29	270.94
$PM_{2.5}$ (tpy)	40.46	35.73	18.29	13.03
SO_2 (tpy)	15.55	5.55	4.12	3.94
Annual VMT	1,217,316	1,508,349	1,612,721	1,745,734

Table 22: Summary of West Virginia Emissions Estimations for Onroad Mobile Sources				
	2005	**2008**	**2015**	**2022**
NO_x (tpy)	1,964.90	1,677.83	735.40	402.08
$PM_{2.5}$ (tpy)	66.83	55.48	28.03	19.89
SO_2 (tpy)	24.86	8.40	6.21	5.84
Annual VMT	1,935,046	2,240,994	2,373,962	2,533,005

Table 23: Belmont County, OH Emissions Estimations for Onroad Mobile Sources				
	2005	**2008**	**2015**	**2022**
NO_x (tpy)	3,179.52	2,593.58	1,279.25	587.61
$PM_{2.5}$ (tpy)	105.74	88.66	45.08	26.32
SO_2 (tpy)	30.84	9.38	6.72	6.21
Annual VMT	2,460,632	2,475,401	2,537,302	2,599,818

Table 24: Emissions Estimate Totals for the Onroad Mobile Source Sector for the Wheeling, WV-OH Area				
	2005	**2008**	**2015**	**2022**
NO_x (tpy)	5,144.42	4,271.41	2,014.65	989.70
$PM_{2.5}$ (tpy)	172.57	144.14	73.11	46.21
SO_2 (tpy)	55.70	17.78	12.92	12.05
Annual VMT	4,395,678	4,716,395	4,911,264	5,132,823

The following table shows the emissions totals, by sector, for each county in the nonattainment area. For a more detailed analysis see Appendix C.

Table 25: Percentage of Wheeling, WV-OH Emissions Attributable to Mobile Sources in 2005, 2008, 2015 and 2022

			NOx				PM2.5				SO2			
NAA	County	Sector	2005	2008	2015	2022	2005	2008	2015	2022	2005	2008	2015	2022
Wheeling	Marshall Co., WV	Point - EGU	31,541	23,269	6,067	6,366	3,826	4,440	2,121	2,271	96,378	35,074	14,008	12,797
	Marshall Co., WV	Point - NonEGU	3,131	2,759	2,341	2,166	525	410	316	272	19,110	16,503	13,692	12,285
	Marshall Co., WV	Area	184	81	84	86	316	263	258	259	102	64	62	60
	Marshall Co., WV	LM	671	249	250	252	25	8	8	9	31	13	13	13
	Marshall Co., WV	NonRoad	113	108	86	69	12	11	7	5	10	2	0	0
	Marshall Co., WV	OnRoad	735	574	249	131	26	20	10	7	9	3	2	2
	Marshall Co., WV	**Subtotal**	**36,375**	**27,040**	**9,077**	**9,070**	**4,731**	**5,152**	**2,721**	**2,824**	**115,641**	**51,658**	**27,777**	**25,158**
	Ohio Co., WV	Point - EGU	0	0	0	0	0	0	0	0	0	0	0	0
	Ohio Co., WV	Point - NonEGU	6	6	6	6	11	4	4	4	1	1	1	1
	Ohio Co., WV	Area	613	151	152	152	263	293	290	289	232	183	175	166
	Ohio Co., WV	LM	972	0	0	0	38	0	0	0	44	0	0	0
	Ohio Co., WV	NonRoad	170	158	113	87	21	19	15	11	15	3	0	0
	Ohio Co., WV	OnRoad	1,230	1,104	486	271	40	36	18	13	16	6	4	4
	Ohio Co., WV	**Subtotal**	**2,991**	**1,418**	**757**	**516**	**372**	**352**	**328**	**317**	**308**	**193**	**180**	**172**
WV Portion of NAA		**Total**	**39,366**	**28,457**	**9,834**	**9,587**	**5,103**	**5,505**	**3,048**	**3,141**	**115,949**	**51,851**	**27,958**	**25,329**
WV Onroad Percentage			**4.99%**	**5.90%**	**7.48%**	**4.19%**	**1.31%**	**1.01%**	**0.92%**	**0.63%**	**0.02%**	**0.02%**	**0.02%**	**0.02%**
Belmont Co.	Belmont Co., OH	Point - EGU	4,150	4,168	4,478	4,738	94	70	21	0	37,330	15,126	8,783	6,065
	Belmont Co., OH	Point - NonEGU	23	21	20	19	3	3	4	4	0	0	0	0
	Belmont Co., OH	Area	285	287	287	287	308	305	297	289	93	92	87	82
	Belmont Co., OH	MAR	262	247	161	79	6	6	3	1	23	16	7	3
	Belmont Co., OH	NonRoad	222	197	146	93	27	24	17	11	22	8	1	0
	Belmont Co., OH	OnRoad	3,180	2,594	1,279	588	106	89	45	26	31	9	7	6
	Belmont Co., OH	**Subtotal**	**8,121**	**7,513**	**6,370**	**5,804**	**545**	**497**	**388**	**332**	**37,499**	**15,252**	**8,886**	**6,157**
OH Portion Onraod Percentage			**39.15%**	**34.52%**	**20.08%**	**10.12%**	**19.42%**	**17.85%**	**11.62%**	**7.93%**	**0.08%**	**0.06%**	**0.08%**	**0.10%**
Wheeling, WV-OH NAA		**Onroad Subtotal**	**5,144**	**4,271**	**2,015**	**990**	**173**	**144**	**73**	**46**	**56**	**18**	**13**	**12**
Wheeling, WV-OH NAA		**Total**	**47,487**	**35,971**	**16,204**	**15,390**	**5,648**	**6,001**	**3,436**	**3,472**	**153,448**	**67,103**	**36,843**	**31,487**
Wheeling, WV-OH NAA Onroad Percentage			**10.83%**	**11.87%**	**12.43%**	**6.43%**	**3.06%**	**2.40%**	**2.13%**	**1.33%**	**0.04%**	**0.03%**	**0.04%**	**0.04%**

Onroad mobile source SO_2 constitutes less than one tenth of one percent (<0.1%) of the area's total SO_2 emissions in the 2015 and 2022 horizon years.

Onroad mobile source NO_x constitutes less than twelve and a half percent (<12.5%) of the area's total NO_x emissions in the 2015 and 2022 horizon years.

Onroad mobile source $PM_{2.5}$ constitutes less than two and a half percent (<2.5%) of the area's total $PM_{2.5}$ emissions in the 2015 and 2022 horizon years.

The federal Transportation Conformity rule allows pollutants/precursors to be exempt from conformity analysis under certain circumstances.

> 40CFR93.109(k) *Areas with insignificant motor vehicle emissions.* Notwithstanding the other paragraphs in this section, an area is not required to satisfy a regional emissions analysis for §93.118 and/or §93.119 for a given pollutant/precursor and NAAQS, if EPA finds through the adequacy or approval process that a SIP demonstrates that regional motor vehicle emissions are an insignificant contributor to the air quality problem for that pollutant/precursor and NAAQS. The SIP would have to demonstrate that it would be unreasonable to expect that such an area would experience enough motor vehicle emissions growth in that pollutant/precursor for a NAAQS violation to occur. Such a finding would be based on a number of factors, including the percentage of motor vehicle emissions in the context of the total SIP inventory, the current state of air quality as determined by monitoring data for that NAAQS, the absence of SIP motor vehicle control measures, and historical trends and future projections of the growth of motor vehicle emissions. . . [emphasis added]

For the reasons outlined below, the DEP is herein making a finding that regional highway emissions of $PM_{2.5}$, NO_x and SO_2 are insignificant contributors to the nonattainment problem for the Wheeling area. The finding will become final if EPA concurs and approves this SIP.

First, the regional highway pollutant/precursor emissions constitute a relatively small fraction (<10%) of the overall emissions in most cases, as shown in Table 25, above. The exception is NO_x, which contributes 11.87% in 2008 and 12.43% in 2015. Previous guidance from U.S. EPA regarding $PM_{2.5}$ attainment demonstrations indicated that 10% is a benchmark for precursors and 5% is a benchmark for direct PM. Therefore, DEP believes that the low contribution of both PM and SO_2 to the emissions inventory, in concert with the considerations detailed below, clearly warrants an insignificance finding with respect to transportation conformity The larger NO_x contribution requires more justification with respect to insignificance.

40CFR93.109(k) says that emissions should be reviewed "in the context of the total SIP inventory" which may include emission percentages, emission trends and, implicitly, the effectiveness of the pollutant in forming PM. This last item is the reason that the benchmark for direct PM is considerably less than the benchmark for the precursors. Further, the SEMAP atmospheric modeling for the Wheeling area shows that NO_x reductions are significantly less effective in reducing PM concentrations than are reductions in SO_2 or direct PM. This difference varies by season, such that in summer it takes about 37 tons of NO_x to equal one ton of PM. Annually, about 109 tons of NO_x reductions are equivalent to a one ton reduction in PM. In winter, NO_x reductions may actually cause

a disbenefit because atmospheric chemistry creates more sulfates under reduced NO_x conditions. Therefore, in the context of transportation conformity, NO_x is less important than PM or SO_2 and its percent emission contribution may be higher without adversely affecting air quality.

Another consideration is the significant emission decreases that are projected not only for the highway sector but also for the total emissions inventory. As the charts below clearly demonstrate, all three pollutants decrease over the period of the maintenance plan and the percent contribution of highway emissions decrease as well.

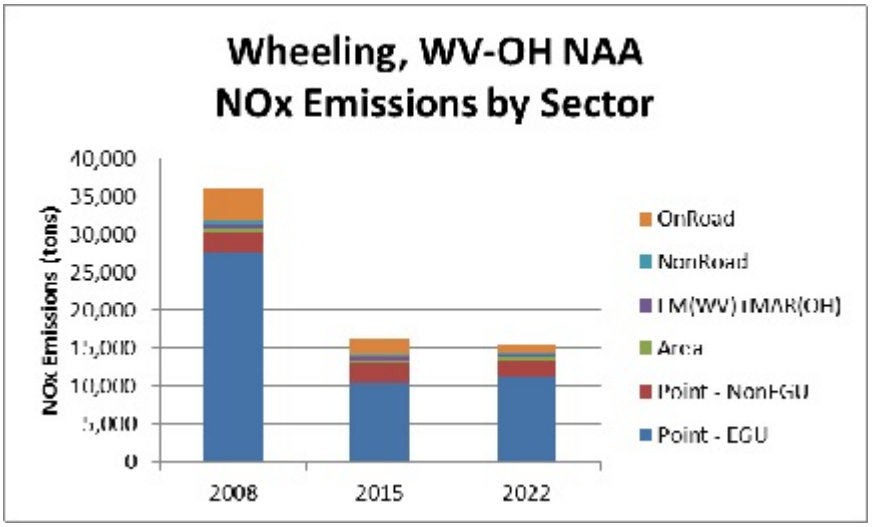


Figure 6: Wheeling, WV-OH NO_x Emissions by Sector

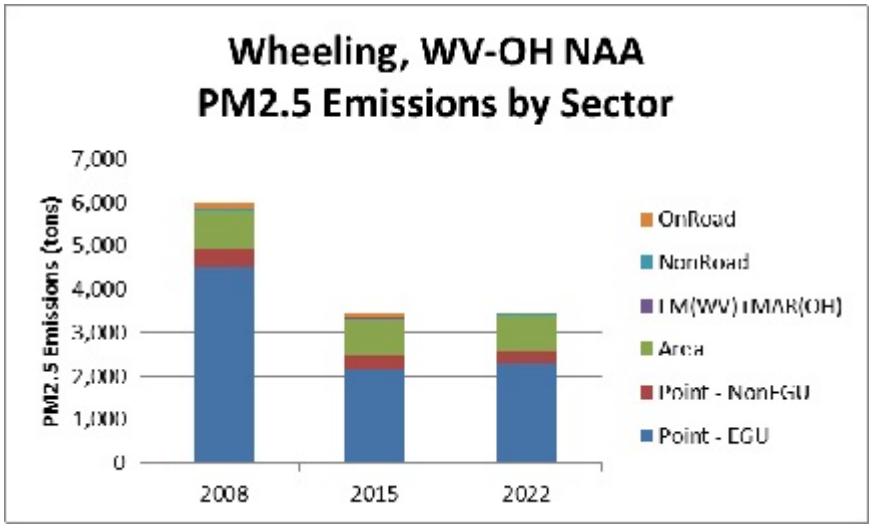


Figure 7: Wheeling, WV-OH NAA $PM_{2.5}$ Emissions by Sector

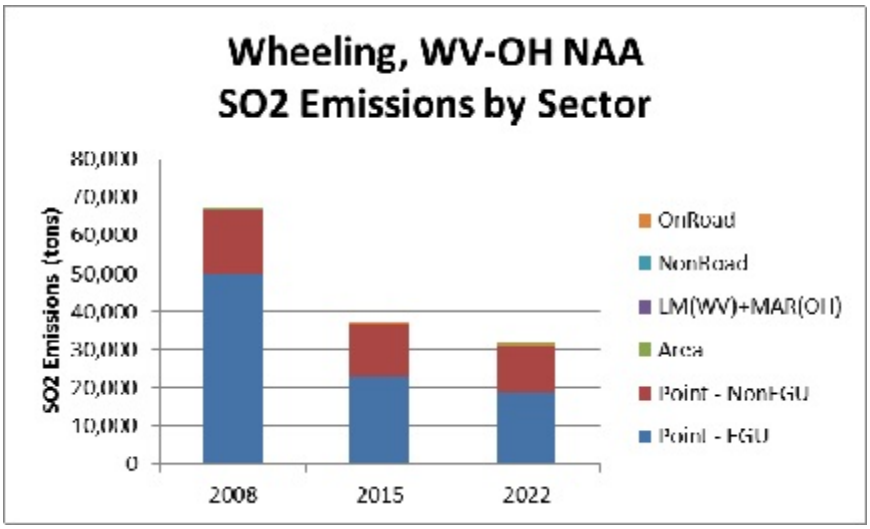


Figure 8: Wheeling, WV-OH NAA SO_2 Emissions by Sector

Second, the current air quality (CY 2011) is represented by a design value of 13.0 ug/m^3. This value is significantly lower than the 15.1 ug/m^3 design value (2002-2004) upon which the nonattainment designation was based. Figure 2 on page 6 shows the general improvement of $PM_{2.5}$ concentrations from the year 2001 to date. The annual values dropped from 16.1 µg/m^3 in 2001 to 15.6 and 15.4, in 2002 and 2003, respectively. This may be attributed to an overall decrease in sulfates from SO_2 reductions mandated by the Acid Rain Program, and preliminary implementation of controls to meet CAIR. The design value then fluctuated from 14.4 to 16.2 during the 2004-2007 period. This fluctuation was due to the year to year variability in $PM_{2.5}$. It is common to many monitoring sites and, in fact, is comparable to the year to year variability exhibited by several other West Virginia sites. The values then dropped to 13.10 mg/m^3 in 2008, 12.19 in 2009, 14.14 and 12.56 in 2010 and 2011, respectively. This may be attributed to SO_2 and NO_x decreases reductions mandated by the NO_x SIP Call, CAIR and the CAIR replacement rule, CSAPR. Overall, the PM concentrations have improved since the beginning of the decade, as shown in Figure 2. On November 20, 2009, in accordance with Section 179(c)(1) of the CAA, EPA determined that the Wheeling, WV-OH $PM_{2.5}$ nonattainment area has attained the 1997 annual $PM_{2.5}$ NAAQS by the applicable attainment date of April 5, 2010 [74 FR 75465] The area is designated as attainment for all other criteria pollutants.

Given the relatively small contribution of the highway emissions to the total SIP inventory, highway emissions are not likely to contribute significantly to the local $PM_{2.5}$ mass concentrations. Among other factors, this is largely due to the dominance of sulfates in the overall PM mass, coupled with the very low contribution of highway sources to those sulfate totals.

Third, historically there have been no West Virginia SIP requirements for motor vehicle control measures. The Wheeling area is subject to Transportation Conformity for the 8-hour ozone standard, with SIP-approved, seasonal budgets for NO_x and Volatile Organic Compounds (VOC). Further, the entire nonattainment area is currently subject to Transportation Conformity for the $PM_{2.5}$ standard.

Emissions analysis has been mandatory for annual highway emissions of direct PM and NO_x. However, upon a positive adequacy review or approval of this SIP submittal, no highway emissions analysis will be required under the annual $PM_{2.5}$ standard. Highway analysis of seasonal ozone precursors would continue to be mandatory. And, $PM_{2.5}$ hot-spot analyses would continue to apply for required projects under 40CFR93.116 and 93.123(b) of the Transportation Conformity Rule.

Fourth, Belomar has extensively researched the area local historical trends and growth patterns to develop the LRTP/TIP and support transportation conformity evaluations. There is no reason to expect highway motor vehicle emissions growth that would lead to a $PM_{2.5}$ NAAQS violation. Belomar and ODOT have estimated emissions out, at least, to the calendar year 2035 confirming this, based on federally approved conformity determinations. The conformity analysis for the Wheeling area took into account all the regional capacity projects, which are scheduled for implementation through the transportation plan horizon year and the four year TIP.

The air quality analysis contained in the report was the basis for the most recent federally approved conformity determination. The PM conformity tests were performed for calendar years 2002, 2009, 2018, 2025 and 2035. For each of those years, vehicle miles traveled (VMT) and Speed were developed by the Federal Functional Class codes, which are derived from the regional traffic model assignments that are made for each of those years. Pursuant to the Transportation Conformity interim tests, NO_x and direct PM were evaluated. The analysis employed the MOVES emissions factor model. Despite monotonically increasing VMT, NOx emissions decrease dramatically from 4505.3 tons/year [2002] to 2691.8 tpy [2009] to 1171.9 tpy [2018] to 810.4 tpy [2025]. The decrease continues to the last value to 665.7 tpy [2030], which is less than one-fourth of the 2009 level. DEP believes this result solidly demonstrates that highway emissions will remain insignificant in the future. Finally, DAQ notes that adequate safety margins (see Table 17) exist to potentially set NO_x motor vehicle emission budgets that are more than double the estimated emissions. Under that scenario, there would never be any potential difficulty in demonstrating conformity but the MPO would still have to devote resources to developing emission estimates in a meaningless effort that would provide no environmental benefit.

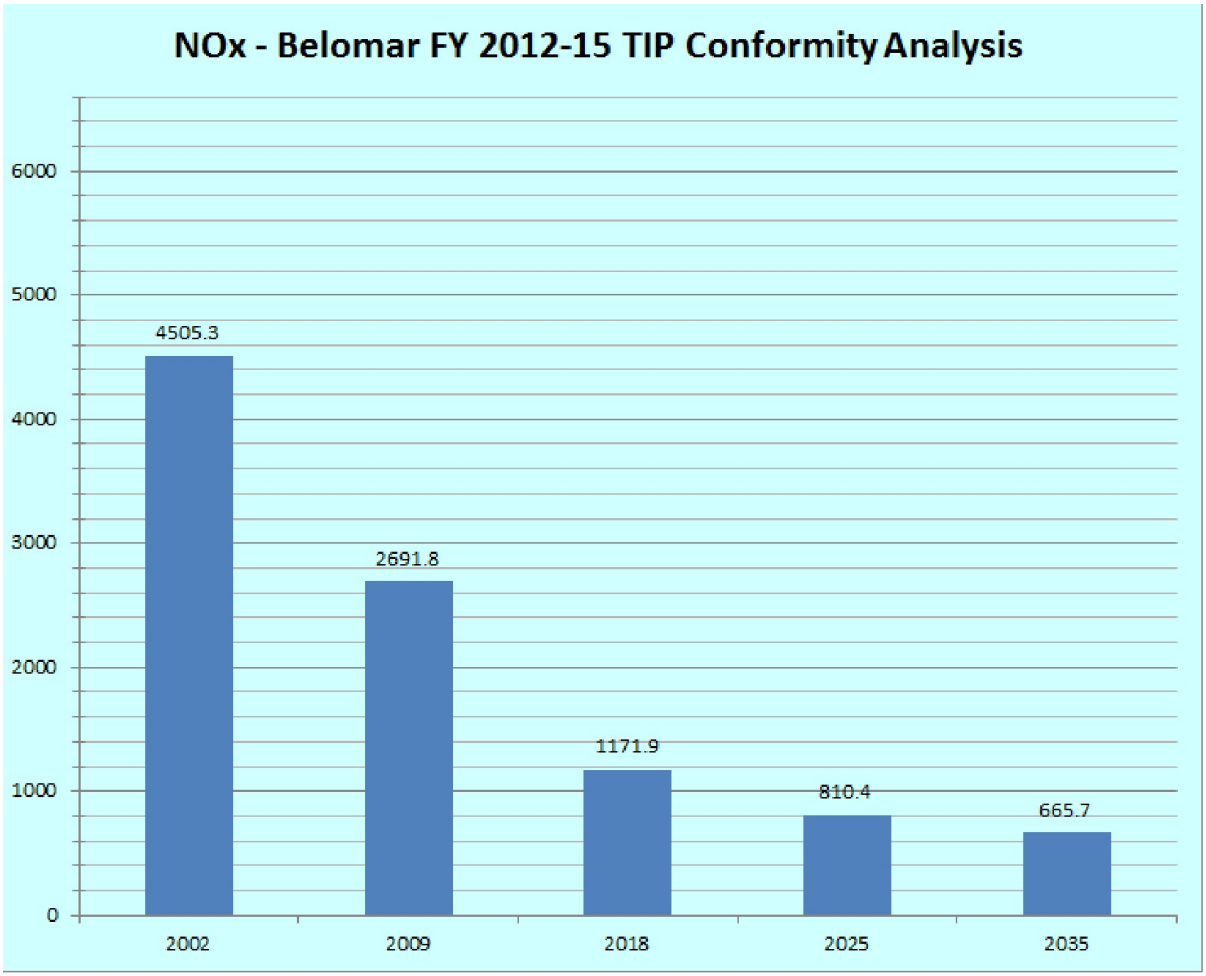


Figure 9: Onroad NO_x Emissions Tons per Year

V. CONTROL MEASURES AND REGULATIONS

CAA Section107 (d)(3)(E)(ii), 107(d)(3)(iv), and 107(d)(3)(E)(v)

A. Reasonably Available Control Measures (RACM) and Reasonably Available Control Technology (RACT)

Section 172(c)(1) of the 1990 Clean Air Act Amendments requires states with nonattainment areas to implement reasonably available control measures (RACM) and reasonably available control technology (RACT).

Section 172(c)(1) of the 1990 Clean Air Act Amendments requires states with nonattainment areas to submit a SIP providing for implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonable available control technology).

EPA's $PM_{2.5}$ Implementation Rule [72FR20586, 29APR2007] interprets this requirement in great detail. Under EPA's approach, RACT is determined as part of the broader RACM analysis and identification of all measures (for stationary, mobile, and Area sources) that are technically and economically feasible, and that would collectively contribute to advancing the attainment date (i.e. by one year or more). States are required to use a combined approach to RACT and RACM, that (1) identifies potential measures that are reasonable, (2) uses modeling to identify the attainment date that is as expeditious as practicable, and (3) selects the appropriate RACT and RACM.

The Implementation Rule also provided a presumption that in States that fulfill their CAIR emission reduction requirements, EGU compliance with CAIR is equivalent to RACM/RACT.

Since EPA made a Clean Data Determination for the Wheeling area the requirement for an attainment demonstration, including the RACM/RACT requirements, were suspended.

Furthermore, the $PM_{2.5}$ Implementation Rule included a presumption that in States that fulfill their CAIR SO_2 emission reduction requirements entirely through EGU emission reductions, compliance by EGU sources with an EPA-approved CAIR SIP or a CAIR FIP would satisfy their SO_2 RACM/RACT requirements. The $PM_{2.5}$ Implementation Rule also included a presumption that in States that were subject to the CAIR annual NO_x emission reduction requirements and fulfilled these requirements entirely through EGU emission reductions, compliance by EGU sources with an EPA-approved CAIR SIP or a CAIR FIP would satisfy their NO_x RACM/RACT requirement for the $PM_{2.5}$ NAAQS, provided that sources with existing selective catalytic reduction (SCR) emission control technology installed on their boilers operate that technology on a year round basis beginning in 2009.

West Virginia is subject to the CAIR and submitted a CAIR SIP to EPA on June 1, 2006. Revisions to the CAIR SIP were submitted on April 22, 2008. EPA approved the revised CAIR SIP on August 4, 2009 (74 FR 38536) The CAIR SIP includes 45CSR39 – Control of Annual Nitrogen Oxide Emissions to Mitigate Interstate Transport of Fine Particulate Matter and Nitrogen Oxides; and 45CSR41 – Control of Annual Sulfur Dioxide Emissions to Mitigate Interstate Transport of Fine

Particulate Matter and Sulfur Dioxide. Both of these rules rely entirely on EGU emission reductions to satisfy the annual NO_x and SO_2 reduction requirements.

West Virginia has three utility companies that have units equipped with existing SCRs:

- Virginia Electric and Power Company - Mt. Storm Power Station
- American Electric Power - John Amos, Mountaineer and Mitchell Power Stations
- Allegheny Energy Supply - Harrison and Pleasants Power Stations.

Virginia Electric and Power Company and American Electric Power are both subject to federal Consent Decrees which require the year round operation of the existing SCRs beginning January 1, 2008. [See Appendix E for copies of the Consent Decrees.]

Allegheny Energy Supply (now First Energy) entered into Consent Orders with the State and agreed to operate the SCRs on the units at Harrison and Pleasants whenever the units are in operation, except for periods of required SCR maintenance, beginning January 1, 2009. [See Appendix E for copies of the Consent Orders.]

Therefore, compliance with the CAIR requirements would satisfy the SO_2 and NO_x RACM/RACT requirements for electric generating units.

Furthermore, as EPA states on their website regarding the Clean Data Policy [www.epa.gov/airquality/urbanair/sipstatus/policy_details.html]:

> Under EPA's Clean Data Policy and the regulations that embody it, 40 CFR 51.918 (1997 8-hour ozone) and 51.1004(c) (PM-2.5), an EPA rulemaking determination that an area is attaining the relevant standard suspends the area's obligations to submit an attainment demonstration, reasonable available control measures (RACM), reasonable further progress, contingency measures and other planning requirements related to attainment for as long as the area continues to attain. EPA's statutory interpretation of the Clean Data Policy is described in the "Final Rule to Implement the 8-hour Ozone National Ambient Air Quality Standard—Phase 2" (Phase 2 Final Rule). 70 FR 71612, 71644-46 (Nov. 29, 2005) (ozone); See also 72 FR 20585, 20665 (Apr. 25, 2007) (PM-2.5). EPA believes that the legal bases set forth in detail in our Phase 2 Final rule, our May 10, 1995 memorandum from John S. Seitz, entitled "Reasonable Further Progress, Attainment Demonstration, and Related Requirements for Ozone Nonattainment Areas Meeting the Ozone National Ambient Air Quality Standard," and our December 14, 2004 memorandum from Stephen D. Page entitled "Clean Data Policy for the Fine Particle National Ambient Air Quality Standards" are equally pertinent to all NAAQS. EPA has codified the Clean Data Policy for 1997 8-hour ozone and PM-2.5, and has also applied it in individual rulemakings for 1-hour ozone and PM-10.
>
> Under the Clean Data Policy, EPA may issue a determination of attainment (known informally as a Clean Data Determination) after notice and comment rulemaking determing that a specific area is attaining the relevant standard. For such areas the requirement to submit to EPA those SIP elements related to attaining the NAAQS is suspended for so long as the area continues to attain the standard. These planning elements include reasonable further progress (RFP) requirements, attainment demonstrations, RACM, contingency measures, and

other state planning requirements related to attainment of the NAAQS. The determination of attainment is not equivalent to a redesignation, and the state must still meet the statutory requirements for redesignation in order to be redesignated to attainment. A determination of attainment for purposes of the Clean Data Policy/regulations is also not linked to any particular attainment deadline, and is not necessarily equivalent to a determination that an area has attained the standard by its applicable attainment deadline, e.g., under section 181(b).

On November 20, 2009 EPA determined that the Wheeling, WV-OH area had attained the 1997 $PM_{2.5}$ NAAQS for the three-year period, 2006-2008. On December 2, 2011, in accordance with Section 179(c)(1) of the CAA, EPA determined that the Wheeling, WV-OH $PM_{2.5}$ nonattainment area has attained the 1997 annual $PM_{2.5}$ NAAQS by the applicable attainment date of April 5, 2010 [74 FR 75465]. The determination was based upon complete, quality assured and certified ambient air monitoring for the 2007-2009 monitoring period and EPA's determination was in accordance with the $PM_{2.5}$ Implementation Rule of April 5, 2007 [72FR20664]. Complete quality-assured $PM_{2.5}$ ambient air quality data for the most recent three (3) years, 2008 through 2010,and preliminary data for 2009 through 2011, demonstrate that the air quality continues to meet the NAAQS for annual $PM_{2.5}$ in this nonattainment area. Therefore, RACM, including RACT, no longer applies.

B. Reasonable Further Progress

Section 172(c)(2) of the 1990 CAA Amendments requires attainment demonstration SIPs for nonattainment areas to show reasonable further progress (RFP).

EPA's Implementation Rule requires RFP only for any area which a State projects an attainment date beyond 2010. The RFP would provide emission reductions showing linear progress between 2002 and 2009. If a State demonstrates attainment will occur by 2010 or earlier, EPA considers the attainment demonstration to demonstrate achievement of RFP.

On November 20, 2009 EPA determined that the Wheeling, WV-OH area had attained the 1997 $PM_{2.5}$ NAAQS for the three-year period, 2006-2008. On December 2, 2011, in accordance with Section 179(c)(1) of the CAA, EPA determined that the Wheeling, WV-OH $PM_{2.5}$ nonattainment area has attained the 1997 annual $PM_{2.5}$ NAAQS by the applicable attainment date of April 5, 2010 [74 FR 75465]. The determination was based upon complete, quality assured and certified ambient air monitoring for the 2007-2009 monitoring period and EPA's determination was in accordance with the $PM_{2.5}$ Implementation Rule of April 5, 2007 [72FR20664]. Complete quality-assured $PM_{2.5}$ ambient air quality data for the most recent three (3) years, 2008 through 2010,and preliminary data for 2009 through 2011, demonstrate that the air quality continues to meet the NAAQS for annual $PM_{2.5}$ in this nonattainment area. Therefore, RACM, including RACT, no longer applies. Therefore, RFP is not required as long as the area continues to monitor attainment of the standard.

C. Inventory of Actual Emissions

Section 172(c)(3) requires states to submit a comprehensive inventory of actual emissions in the area, including the requirement for periodic revisions as determined necessary. 40 CFR 51.1008 requires such inventory to be submitted within three years of designation and requires a baseline emission inventory for calendar year 2002 or other suitable year to be used for attainment planning.

In accordance with the Consolidated Emissions Reporting Rule (CERR), West Virginia 2002 and 2005 statewide comprehensive emissions inventories were submitted to EPA's CDX site on April 29, 2005 and June 1, 2007, respectively. The West Virginia 2008 comprehensive emissions inventory was submitted to the CDX on May 30, 2010 consistent with the requirements of the Air Emissions Reporting Requirements (AERR). We are hereby resubmitting the 2005, and 2008 comprehensive inventories for the Wheeling nonattainment area.

West Virginia will continue to provide updates to future inventories in accordance with EPA's AERR rule. As discussed in Section III.F, West Virginia DAQ submits, and commits to submit, emission inventories every three years.

D. Evidence that control measures required in past $PM_{2.5}$ SIP revisions have been fully implemented.

1. NO_x SIP Call, CAIR and CSAPR

The EPA NO_x SIP Call required 22 states to pass rules that would result in significant emission reductions from large EGUs, industrial boilers, and cement kilns in the eastern United States. West Virginia passed this rule in 2002. NO_x SIP Call requirements are incorporated into permits along with monitoring, recordkeeping, and reporting necessary to ensure ongoing compliance. West Virginia DAQ also has an active enforcement program to address violations discovered by field office staff. Compliance is tracked through the Clean Air Markets data monitoring program. In West Virginia, this rule accounted for a reduction from 2003 levels of approximately 57 percent of NO_x emissions by 2008 from sources subject to the rule. The other 21 states also adopted these rules.

On March 10, 2004, the EPA promulgated the CAIR. Beginning in 2009, EPA's CAIR rule required EGUs in 28 eastern states and the District of Columbia to significantly reduce emissions of NO_x and SO_2. CAIR replaced the NO_x SIP Call for EGUs. National NO_x emissions were expected to be cut from 4.5 million tons in 2004, to a cap of 1.5 million tons by 2009, and 1.3 million tons in 2018 in 28 states. States were required to submit a CAIR SIP as part of this effort. West Virginia submitted an initial CAIR SIP on June 1, 2006. Subsequently, WV submitted an abbreviated CAIR SIP on June 8, 2007, which requested authority to allocate CAIR allowances. Final revisions to the CAIR SIP were submitted on April 22, 2008. The revised CAIR SIP was approved in a direct final action on August 2, 2009 (74FR38536).

On July 6, 2010, EPA proposed a replacement to the CAIR program, the Transport Rule [75 FR 45210]. On July 6, 2011, EPA finalized the Transport Rule, now commonly referred to as the Cross-State Air Pollution Rule (CSAPR) [76FR48208, 08AUG2011] in time for reductions to begin in 2012. As finalized, the CSAPR would have preserved the initial reductions achieved under CAIR and provided more reductions in NO_x and SO_2 emissions in 2012 and 2014, ahead of the 2015 CAIR Phase 2.

EPA states on their Cross-State Air Pollution Rule homepage: "By 2014, power plants in states common to both the Cross-State Air Pollution Rule and CAIR will achieve annual SO_2 emissions around 1.8 million tons lower and annual NO_x emissions around 76,000 tons lower than what would have been achieved at that time under CAIR." (www.epa.gov/airtransport/basic.html)

Controls for EGUs under the NO_x SIP Call formally commenced May 31, 2004. Emissions covered by this program have been generally trending downward since 1998 with larger reductions occurring in 2002 and 2003. Data taken from the EPA Clean Air Markets web site, quantify the gradual NOx reductions that have occurred in West Virginia as a result of Title IV of the 1990 CAA Amendments and the beginning of the NO_x SIP Call Rule. West Virginia developed the NO_x Budget Trading Program rules in 45CSR 1 and 26 in response to the SIP Call. 45CSR1 regulated EGUs and 45CSR26 regulated certain non-EGUs under a cap and trade program based on an 77 percent reduction of NO_x emissions from EGUs and a 60 percent reduction of NO_x emissions from non-EGUs, compared to historical levels. This cap was in place through 2008, at which time the CAIR program superseded it as discussed above. Section III above discussed the reductions West Virginia has seen as a result of CAIR.

On April 21, 2004, EPA published Phase II of the NO_x SIP Call that established a budget for large (greater than 1 ton per day emissions) stationary internal combustion engines. 45CSR1 addresses stationary internal combustion engines, all used in natural gas pipeline transmission. EPA approved this revision to the SIP on November 27, 2006. An 82 percent NO_x reduction from 1995 levels was anticipated. Approval of the compliance plans occurred by August 4, 2006, and March 1, 2007 and the compliance demonstration began May 1, 2007.

2. Tier II Emission Standards for Vehicles and Gasoline Sulfur Standards
   [65FR6698, 10FEB2000]

In February 2000, EPA published a federal rule to significantly reduce emissions from cars and light trucks, including sport utility vehicles (SUVs). Under this proposal, automakers will be required to sell cleaner cars, and refineries will be required to make cleaner, lower sulfur gasoline. This rule applies nationwide. The federal rules phased in between 2004 and 2009. EPA estimated that NO_x emission reductions will be approximately 77 percent for passenger cars, 86 percent for smaller SUVs, light trucks, and minivans, and 65 to 95 percent reductions for larger SUVs, vans, and heavier trucks. The sulfur content of gasoline is estimated to be reduced by up to 90 percent. VOC emission reductions will be approximately 12 percent for passenger cars, 18 percent for smaller SUVs, light trucks, and minivans, and 15 percent for larger SUVs, vans, and heavier trucks.

3. Heavy-Duty Diesel Engines
   [65FR59896, 06OCT2000]

In October 2000, EPA published a final rule for Highway Heavy Duty Engines, a program which includes low-sulfur diesel fuel standards, which were phased in from 2004 through 2007. This rule applies to heavy-duty gasoline and diesel trucks and buses. This rule resulted in a 40 percent reduction in NO_x from diesel trucks and buses, a large sector of the mobile sources NO_x inventory. It also estimated the level of sulfur in highway diesel fuel would be reduced by 97 percent by mid-2006.

4. Clean Air Non-road Diesel Rule
   [69FR38958, 29JUN2004]

In June 2004, EPA published the Clean Air Non-road Diesel Rule. This rule applies to diesel engines used in industries such as construction, agriculture, and mining. It also contains a cleaner

fuel standard similar to the highway diesel program. The new standards will cut emissions from non-road diesel engines by more than 90 percent. Non-road diesel equipment, as described in this rule, currently accounts for 47 percent of diesel particulate matter (PM) and 25 percent of NO_x from mobile sources nationwide. Sulfur levels will be reduced in non-road diesel fuel by 99 percent from 2004 levels, from approximately 3,000 parts per million (ppm) to 15 ppm in 2009. New engine standards took effect, based on engine horsepower, starting in 2008. Together, these rules will substantially reduce local and regional sources of $PM_{2.5}$ precursors.

E. New Source Review

West Virginia has a longstanding and fully implemented New Source Review (NSR) program. 45CSR14 - Permits for the Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration (PSD), was originally approved by EPA as part of the SIP with an effective date of May 12, 1986 [51FR12517]. 45CSR14 has been updated and was last approved by EPA as part of the SIP with an effective date of December 4, 2006 [71FR64470].

Any facility that is not listed in the 2005 emission inventory, or for the closing of which credit was taken in demonstrating attainment, will not be allowed to construct, reopen, modify, or reconstruct without meeting all applicable NSR requirements. Once the area is redesignated, DAQ will implement NSR through the PSD program.

F. Assurance that existing control measures will remain in effect

West Virginia commits to maintaining the aforementioned control measures after redesignation. West Virginia hereby commits that any changes to its rules or emission limits applicable to $PM_{2.5}$, SO_2, and NO_x as required for maintenance of the annual $PM_{2.5}$ standard in the Wheeling Area, will be submitted to EPA for approval as a SIP revision.

West Virginia, through the Division of Environmental Protection, DAQ, has the legal authority and necessary resources to actively enforce any violations of its rules or permit provisions. After redesignation, it intends to continue enforcing all rules that relate to the emission of $PM_{2.5}$ precursors in the Wheeling Area.

VI. SUPPLEMENTAL MODELING ANALYSES

Although EPA's Redesignation Guidance does not require modeling nonattainment areas seeking redesignation, extensive modeling has been performed covering the Wheeling, WV-OH area to determine the effect of national emission control strategies on $PM_{2.5}$ concentrations. These modeling analyses determined that the Wheeling, WV-OH area is significantly impacted by regional transport of $PM_{2.5}$ and its precursors, and that regional SO_2 and NO_x reductions are an effective way to attain the annual standards for $PM_{2.5}$ in this area. Future year modeled annual $PM_{2.5}$ concentrations are expected to be reduced by 8% to 34% from baseline design values. Examples of these modeling analyses are described below.

A. EPA Modeling for the Cross State Air Pollution Rule (Final Transport Rule)

EPA performed modeling to support the emission reductions associated with the Final Transport Rule or the Cross State Air Pollution Rule (CSAPR), as it is currently called. EPA used the Comprehensive Air Quality Model with Extension (CAMx) version 5.3 applied to the 2005 meteorology as processed by the Mesoscale Model (MM5), Version 3.7.4. Emissions input into the CAMx included SO_2, NO_x, VOC, NH_3 and direct $PM_{2.5}$ for 2005. The modeling was based on the annual fine particle design values calculated from 2003 through 2005, 2004 through 2006, and 2005 through 2007. Future year modeling was conducted, and the future year design values for 2012 and 2014 were evaluated for attainment of the annual NAAQS for $PM_{2.5}$ of 15 $\mu g/m^3$, as shown in Table 26. The Marshall County monitor (54-051-1002) and the Ohio County monitor (54-069-0010) represent the Wheeling area.

As indicated in the Air Quality Modeling Technical Support Document (TSD) for the CSAPR, air quality modeling was performed for several emissions cases: a 2005 base year, a 2012 "no CAIR" base case, a 2014 "no CAIR" base case, and the 2014 remedy case.

Modeling results for the Wheeling area (Marshall County monitor) show a 1.94 $\mu g/m^3$ (12.8%) decrease in the average $PM_{2.5}$ concentration for 2012 and a 2.44 $\mu g/m^3$ (16.1%) decrease in the average concentration for 2014, without accounting for CAIR or reductions required by the Transport Rule or CSAPR. A reduction of 5.12 $\mu g/m^3$ (33.7%) from the 2003-2007 baseline is expected for 2014 with the implementation of the CSAPR. It should also be noted that the base year design value used by EPA in their modeling was taken from 2003 through 2007 and is higher than the current 2009 through 2011 design value of 13.0 $\mu g/m^3$ in the area. Furthermore, the monitored design values for 2008-2010 and 2009-2011 of 13.1 and 13.0 $\mu g/m^3$, respectively, are less than the modeled base case design vales for 2012 and 2014. Figures 2 and 3 (in Section II) show the downward trend of the design values from 1999 through 2010 for the $PM_{2.5}$ monitors in West Virginia and Ohio.

Table 26: CSAPR Annual $PM_{2.5}$ Design Values (µg/m3)									
Site ID	**County**	**2003-2007 Average Ambient Value**	**2003-2007 Maximum Ambient Values**	**2012 Base Case Average Values**	**2012 Base Case Maximum Values**	**2014 Base Case Average Values**	**2014 Base Case Maximum Values**	**2014 Remedy Average Values**	**2014 Remedy Maximum Values**
54-003-0003	Berkeley	15.93	16.19	14.09	14.32	13.70	13.92	11.81	11.99
54-009-0005	Brooke	16.52	16.80	14.33	14.58	13.84	14.09	11.34	11.55
54-009-0011	Brooke	16.04	16.37	13.87	14.15	13.39	13.66	10.89	11.13
54-011-0006	Cabell	16.30	16.57	14.71	14.94	14.05	14.28	11.57	11.75
54-029-1004	Hancock	15.76	16.64	13.73	14.51	13.28	14.03	10.81	11.44
54-033-0003	Harrison	13.99	14.19	13.17	13.36	12.71	12.90	9.36	9.49
54-039-0010	Kanawha	15.15	15.38	13.40	13.60	12.78	12.97	10.13	10.28
54-039-0011	Kanawha	13.17	13.17	11.67	11.67	11.13	11.13	8.67	8.67
54-039-1005	Kanawha	16.52	16.59	14.65	14.71	14.01	14.06	11.30	11.35
54-049-0006	Marion	15.03	15.25	14.22	14.43	13.76	13.95	10.16	10.30
54-051-1002	Marshall	15.19	15.33	13.25	13.38	12.75	12.87	10.07	10.17
54-061-0003	Monongalia	14.35	14.47	12.89	13.01	12.41	12.53	9.28	9.40
54-069-0010	Ohio	14.58	14.58	12.53	12.53	12.05	12.05	9.51	9.51
54-081-0002	Raleigh	12.90	13.03	11.22	11.33	10.70	10.80	8.39	8.47
54-107-1002	Wood	15.40	15.44	13.74	13.77	13.16	13.20	10.84	10.87

Source: Air Quality Modeling Final Technical Support Document for the Final Cross-State Air Pollution Rule , pages B-61 - B-62. (www.epa.gov/airtransport/techinfo.html)

B. EPA Modeling for Proposed Transport Rule 2010

EPA performed modeling to support the emission reductions associated with the Proposed Transport Rule. EPA used the Comprehensive Air Quality Model with Extension (CAMx Version 5), applied to the 2005 meteorology as processed by the Mesoscale Model (MM5), Version 3.7.4. Emissions input into the CAMx included SO_2, NO_x, VOC, NH_3 and direct $PM_{2.5}$ for 2005. The modeling was based on the annual fine particle design values calculated from 2003 through 2005, 2004 through 2006, and 2005 through 2007. Future year modeling was conducted, and the future year design values for 2012 and 2014 were evaluated for attainment of the annual NAAQS for $PM_{2.5}$ of 15 $\mu g/m^3$, as shown in Table 27. The Marshall County monitor (54-051-1002) and the Ohio County monitor (54-069-0010) represent the Wheeling area.

Table 27: Proposed Transport Rule Modeling Results from EPA - 2010

Monitor ID	County	Design Value 2003-2007 ($\mu g/m^3$)	Future Design Value 2012 Base ($\mu g/m^3$)	Future Design Value 2014 Base ($\mu g/m^3$)	Future Design Value 2014 Remedy ($\mu g/m^3$)
54-003-0003	Berkeley	15.93	14.95	14.64	12.44
54-009-0005	Brooke	16.52	14.95	14.51	12.02
54-009-0011	Brooke	16.04	14.49	14.05	11.56
54-011-0006	Cabell	16.30	15.25	14.65	12.09
54-029-1004	Hancock	15.76	14.34	13.93	11.48
54-033-0003	Harrison	13.99	13.82	13.30	9.94
54-039-0010	Kanawha	15.15	14.01	13.45	10.77
54-039-0011	Kanawha	13.17	12.23	11.74	9.24
54-039-1005	Kanawha	16.52	15.28	14.69	11.97
54-049-0006	Marion	15.03	14.96	14.41	10.79
54-051-1002	Marshall	15.19	13.96	13.44	10.74
54-061-1003	Monongalia	14.35	13.72	13.14	10.01
54-069-0010	Ohio	14.58	13.18	12.72	10.15
54-081-0002	Raleigh	12.90	11.88	11.40	9.01
54-107-1002	Wood	15.40	14.31	13.77	11.40

Source: Technical Support Document for the Proposed Transport Rule, pages B-52 - B-53. (www.epa.gov/airquality/transport/pdfs/TR_AQModeling_TSD.pdf)

EPA stated in the preamble to the proposed Transport Rule that the "baseline analysis takes into account emissions reductions associated with the implementation of all federal rules promulgated by December 2008 and assumes that CAIR is not in effect." [75FR 45233, 02AUG2010]

Modeling results for the Wheeling area show a 1.23 $\mu g/m^3$ (8.1%) decrease in the $PM_{2.5}$ concentration for 2012 and a 1.75 $\mu g/m^3$ (11.5%) decrease in the concentration for 2014, without accounting for CAIR or reductions required by the Transport Rule. A reduction of 4.45 $\mu g/m^3$ (29.3%) from the 2003-2007 baseline is expected for 2014 with the implementation of the Transport Rule. It should also be noted that the base year design value used by EPA in their modeling was taken from 2003 through 2007 and is higher than the current 2009 through 2011 design value of 13.0 $\mu g/m^3$ in the area. Furthermore, the monitored design values for 2007-2009, 2008-2010 and 2009-2011 of 13.4, 13.1 and 13.0 $\mu g/m^3$, respectively, are less than the modeled base case design vales for 2012 and 2014. Figures 2 and 3 (in Section II) show the downward trend of the design values from 1999 through 2010 for the $PM_{2.5}$ monitors in West Virginia and Ohio.

C. VISTAS/ASIP Emissions and Air Quality Modeling to Support $PM_{2.5}$ and 8-hour Ozone State Implementation Plans

VISTAS/ASIP conducted modeling to determine the impact of CAIR and other control programs in the southeast, including West Virginia. The VISTAS/ASIP modeling used Version 4.51 of the Community Multi-scale Air Quality (CMAQ) modeling system with enhanced secondary organic aerosol (SOA) module (SOAmods) applied to the year 2002 meteorology, as processed by MM5. Emissions input into CMAQ included SO_2, NO_x, VOC, NH_3 and direct $PM_{2.5}$ for 2002. The modeling was based on 2000 through 2004 design values. Future year modeling for 2009, 2012 and 2018 was conducted and the future year design values were determined with the emission reductions associated with CAIR, as shown in Table 28. The Transport Rule is expected to provide reductions above and beyond CAIR. The Marshall County monitor (54-051-1002) and the Ohio County monitor (54-051-0010) represent the Wheeling area.

The VISTAS/ASIP modeling results for the Wheeling area predicted a 2.4 $\mu g/m^3$ (15.4%) decrease in the projected $PM_{2.5}$ concentration for 2009 from the 2002 design value. As shown in Table 1, the actual monitored design value for 2007-2009 was 13.4 $\mu g/m^3$, a 2.2 $\mu g/m^3$ (14.1%) improvement, slightly less than predicted. The modeling results show a continued improvement in the area, with a $PM_{2.5}$ concentration of 12.1 $\mu g/m^3$ by 2018, a 22.4% reduction from the 2002 design value. The current 2009-2011 design value for the area is 13.0 $\mu g/m^3$.

Table 28: VISTAS/ASIP 2009, 2012 and 2018 Modeling Results (with CAIR)					
Monitor ID	**County**	**2002 Annual DVC**	**Annual DVF**		
			2009	**2012**	**2018**
54-003-0003	Berkeley	16.2	13.5	12.9	12.3
54-009-0005	Brooke	16.7	13.6	13.3	12.6
54-011-0006	Cabell	16.5	14.4	13.7	13.3
54-029-0011	Hancock	16.0	13.0	12.6	11.9
54-026-1004	Hancock	17.3	14.0	13.7	13.0
54-033-0003	Harrison	14.0	11.6	10.7	10.4
54-039-0010	Kanawha	15.4	13.1	12.2	11.7
54-039-1005	Kanawha	17.1	14.7	13.7	13.2
54-049-0006	Marion	15.3	12.9	12.0	11.6
54-051-1002	Marshall	15.6	13.2	12.7	12.1
54-055-0002	Mercer	12.7	10.6	9.7	9.1
54-061-0003	Monongalia	14.8	12.3	11.5	11.0
54-069-0008	Ohio	15.1	12.6	12.1	11.5
54-081-0002	Raleigh	13.1	11.0	10.1	9.5
54-089-0001	Summers	10.1	8.3	7.6	7.1
54-107-1002	Wood	16.1	13.8	13.4	12.6

Source: Technical Support Document for the Association for Southeastern Integrated Planning (ASIP) Emissions and Air Quality Modeling to Support $PM_{2.5}$ and 8-Hour Ozone State Implementation Plans, March 24, 2008.

D. EPA's CAIR Modeling

One air quality modeling exercise that contains results for West Virginia's nonattainment areas is the EPA's modeling for the CAIR. The Technical Support Document for the CAIR, March 2005, provides modeling results with and without the implementation of the CAIR. Differences between the EPA's modeling and VISTAS modeling are:

- The meteorology was for 2001,
- The DVB was the weighted design values for the 1999-2003 period, and
- The modeling results were for 2010.

The DVF was calculated using the CAIR SMAT tool. The CAIR modeling results are listed in Table 29.

Table 29. EPA CAIR Modeling Results

State	County	Average 99-03	2010 Base	2010 CAIR	2015 Base	2015 CAIR
WV	Berkeley	16.18	15.69	13.43	15.32	12.73
WV	Brooke	16.96	16.63	14.42	16.51	14.05
WV	Cabell	17.22	17.03	15.08	16.86	14.64
WV	Hancock	17.40	17.06	14.89	16.97	14.54
WV	Harrison	14.40	14.15	11.90	13.82	11.31
WV	Kanawha	17.75	17.56	15.27	17.17	14.66
WV	Marion	15.58	15.32	12.90	14.98	12.23
WV	Marshall	16.07	15.81	13.46	15.52	12.87
WV	Mercer	12.97	12.52	10.82	12.14	10.16
WV	Monongalia	14.96	14.77	12.31	14.37	11.40
WV	Ohio	15.37	15.14	12.81	14.84	12.22
WV	Raleigh	13.54	13.19	11.33	12.80	10.66
WV	Summers	10.46	10.21	8.63	9.89	8.07
WV	Wood	16.88	16.66	14.14	16.69	13.88

The EPA's results were for the highest monitor in a county where more than one monitor is located. The EPA's modeling results predicted that the Wheeling (Marshall and Ohio Counties) nonattainment area would be below the annual $PM_{2.5}$ standard by 2010. Although this was one year later than the attainment year for the area, the EPA's predicted 2010 CAIR DVF was 0.4 $\mu g/m^3$ higher than the DAQ monitored 3 year design value for 2010 of 13.1 $\mu g/m^3$, but still supports that the area will continue to attain the annual $PM_{2.5}$ standard through 2015 with a projected design value of 12.9 $\mu g/m^3$. The current 2009-2011 design value for the area is 13.0 $\mu g/m^3$.

VII. CONTINGENCY MEASURES

CAA Section 107(d)(3)(E)(v)

A. Maintenance Plan Review

West Virginia hereby commits to review its maintenance plan eight years after redesignation, as required by Section 175(A) of the CAA.

B. Corrective Actions

West Virginia hereby commits to adopt and expeditiously implement necessary corrective actions in the following circumstances:

1. Warning Level Response

A warning level response shall be prompted whenever the $PM_{2.5}$ average of the weighted annual mean of 15.5 $\mu g/m^3$ occurs in a single calendar year within the maintenance area. A warning level response will consist of a study to determine whether the $PM_{2.5}$ value indicates a trend toward higher $PM_{2.5}$ values or whether emissions appear to be increasing. The study will evaluate whether the trend, if any, is likely to continue and, if so, the control measures necessary to reverse the trend taking into consideration ease and timing for implementation as well as economic and social considerations. Implementation of necessary controls in response to a warning level response trigger will take place as expeditiously as possible, but in no event later than 12 months from the conclusion of the most recent calendar year.

Should it be determined through the warning level study that action is necessary to reverse the noted trend, the procedures for control selection and implementation outlined under "action level response" shall be followed.

2. Action Level Response

An action level response shall be prompted whenever a two-year average of the weighted annual means of 15.0 $\mu g/m^3$ or greater occurs within the maintenance area. A violation of the standard (three-year average of the weighted annual means of 15.0 $\mu g/m^3$ or greater) shall also prompt an action level response. In the event that the action level is triggered and is not found to be due to an exceptional event, malfunction, or noncompliance with a permit condition or rule requirement, West Virginia DAQ in conjunction with the metropolitan planning organization or regional council of governments, will determine additional control measures needed to assure future attainment of the 1997 $PM_{2.5}$ NAAQS. In this case, measures that can be implemented in a short time will be selected in order to be in place within 18 months from the close of the calendar year that prompted the action level. West Virginia DAQ will also consider the timing of an action level trigger and determine if additional, significant new regulations not currently included as part of the maintenance provisions will be implemented in a timely manner and will constitute our response.

3. Control Measure Selection and Implementation

Adoption of any additional control measures is subject to the necessary administrative and legal process. This process will include publication of notices, an opportunity for public hearing, and other measures required by West Virginia law for rulemaking.

If a new measure/control is already promulgated and scheduled to be implemented at the federal or State level, and that measure/control is determined to be sufficient to address the upward trend in air quality, additional local measures may be unnecessary. Furthermore, West Virginia DAQ will submit to EPA an analysis to demonstrate the proposed measures are adequate to return the area to attainment.

C. Potential Contingency Measures

Contingency measures to be considered will be selected from a comprehensive list of measures deemed appropriate and effective at the time the selection is made. The selection of measures will be based on cost-effectiveness, emission reduction potential, economic and social considerations or other factors that West Virginia DAQ deems appropriate. West Virginia DAQ will solicit input from all interested and affected persons in the maintenance area prior to selecting appropriate contingency measures. Because it is not possible at this time to determine what control measures will be appropriate at an unspecified time in the future, the list of contingency measures outlined below is not exhaustive.

1) Diesel reduction emission strategies.
2) Alternative fuel (e.g., liquid propane and compressed natural gas) and diesel retrofit programs for fleet vehicle operations.
3) Tighter $PM_{2.5}$, SO_2, and NO_x emissions offsets for new and modified major sources.
4) Concrete manufacturing - upgrade wet suppression.
5) Additional NO_x RACT statewide.

No contingency measure shall be implemented without providing the opportunity for full public participation during which the relative costs and benefits of individual measures, at the time they are under consideration, can be fully evaluated.

D. $PM_{2.5}$, SO_2, and NO_x sources potentially subject to future additional control requirements.

The following is a list of $PM_{2.5}$, SO_2, and NO_x sources potentially subject to future controls.

- ICI Boilers - SO_2 and NO_x controls;
- EGUs;
- process heaters;
- internal combustion engines;
- combustion turbines;
- other sources greater than 100 tons per year;
- Fleet vehicles;
- Concrete manufacturers;
- Aggregate processing plants.

VIII. PUBLIC PARTICIPATION

West Virginia published notification for a public hearing and solicitation for public comment concerning the draft redesignation petition and maintenance plan in the State Register and the Intelligencer, Wheeling News-Register on January 27, 2011.

The public hearing to receive comments on the redesignation request is scheduled for 6:00 p.m. on February 28, 2012, at the West Virginia Division of Environmental Protection Headquarters located at 601 57th Street, SE, Charleston, WV. The public comment period closes on February 28, 2012. Appendix F includes a copy of the public notice.

IX. CONCLUSIONS

The Wheeling $PM_{2.5}$ nonattainment area has attained the 1997 annual and 24-hour NAAQS for $PM_{2.5}$ and complied with the applicable provisions of the 1990 Amendments to the CAA regarding redesignations of $PM_{2.5}$ nonattainment areas. Documentation to that effect is contained herein. West Virginia DAQ has prepared a redesignation request and maintenance plan that meet the requirements of Section 110 (a)(1) of the 1990 CAA.

Based on this presentation, the West Virginia portion of the Wheeling $PM_{2.5}$ nonattainment area meets the requirements for redesignation under the CAA and EPA guidance. West Virginia has performed an analyses showing the air quality improvements are due to permanent and enforceable measures. Furthermore, because this area is subject to significant transport of pollutants, significant regional SO_2 and NO_x reductions will ensure continued compliance (maintenance) with the standard with an increasing margin of safety.

The State of West Virginia hereby requests that the Wheeling 1997 $PM_{2.5}$ nonattainment area be redesignated to attainment simultaneously with EPA approval of the CAA section 175A maintenance plan provisions contained herein.