



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 81

[EPA-R04-OAR-2010-0255-201116; FRL-9624-2]

**Air Quality Implementation Plans; Kentucky; Attainment Plan for the Kentucky Portion
of the Huntington-Ashland 1997 Annual PM_{2.5} Nonattainment Area**

AGENCY: Environmental Protection Agency (EPA or Agency).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to approve a state implementation plan (SIP) revision submitted by the Commonwealth of Kentucky, through the Kentucky Energy and Environment Cabinet, Division for Air Quality (DAQ), to EPA on December 3, 2008, for the purpose of providing for attainment of the 1997 fine particulate matter (PM_{2.5}) national ambient air quality standards (NAAQS) in the Kentucky portion of the Huntington-Ashland, West Virginia-Kentucky-Ohio PM_{2.5} nonattainment area (hereafter referred to as the “Huntington-Ashland Area” or “Area”). The Huntington-Ashland Area is comprised of Boyd County and a portion of Lawrence County in Kentucky; Cabell and Wayne Counties and a portion of Mason County in West Virginia; and Lawrence and Scioto Counties and portions of Adams and Gallia Counties in Ohio. The Kentucky plan (hereafter referred to as the “attainment plan”) pertains only to the Kentucky portion of the Huntington-Ashland Area. EPA is now proposing to approve Kentucky’s submittal regarding reasonably available control technology (RACT) and reasonably available control measures (RACM); reasonable further progress (RFP); base-year and attainment-year emissions inventories; contingency measures; and, for transportation conformity

purposes, an insignificance determination for PM_{2.5} and nitrogen oxides (NO_x) for the mobile source contribution to ambient PM_{2.5} levels for the Commonwealth's portion of the Huntington-Ashland Area. This action is being taken in accordance with the Clean Air Act (CAA or Act) and the "Clean Air Fine Particle Implementation Rule," hereafter referred to as the "PM_{2.5} Implementation Rule," issued by EPA on April 25, 2007. The States of West Virginia and Ohio have provided separate SIP revisions with attainment plans for their portions for the Huntington-Ashland Area. EPA will act on those SIP revisions in rulemaking separate from today's rulemaking.

DATES: Written comments must be received on or before [Insert date 30 days after publication in the Federal Register].

ADDRESSES: Submit your comments, identified by Docket ID Number EPA-R04-OAR-2010-0255 by one of the following methods:

1. www.regulations.gov: Follow the on-line instructions for submitting comments.
2. E-mail: benjamin.lynorae@epa.gov.
3. Fax: (404) 562-9019.
4. Mail: EPA-R04-OAR-2010-0255, Regulatory Development Section, Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960.
5. Hand Delivery or Courier: Ms. Lynorae Benjamin, Chief, Regulatory Development Section, Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia

30303-8960. Such deliveries are only accepted during the Regional Office's normal hours of operation. The Regional Office's official hours of business are Monday through Friday, 8:30 to 4:30, excluding Federal holidays.

Instructions: Direct your comments to Docket ID No. EPA-R04-OAR-2010-0255. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit through www.regulations.gov or e-mail, information that you consider to be CBI or otherwise protected. The www.regulations.gov website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through www.regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Docket: All documents in the electronic docket are listed in the www.regulations.gov index. Although listed in the index, some information is not publicly available, i.e., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in www.regulations.gov or in hard copy at the Regulatory Development Section, Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. EPA requests that if at all possible, you contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to schedule your inspection. The Regional Office's official hours of business are Monday through Friday, 8:30 to 4:30, excluding Federal holidays.

FOR FURTHER INFORMATION CONTACT: Joel Huey of the Regulatory Development Section, in the Air Planning Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. Joel Huey may be reached by phone at (404) 562-9104, or via electronic mail at huey.joel@epa.gov

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I. What Action is EPA Proposing to Take?

EPA is proposing to approve Kentucky's SIP revision, submitted through the DAQ to EPA on December 3, 2008, for the purpose of demonstrating attainment of the 1997 Annual PM_{2.5} NAAQS for the Kentucky portion of the Huntington-Ashland Area. Kentucky's PM_{2.5}

attainment plan includes an analysis of RACM/RACT, an RFP plan, base-year and attainment-year emissions inventories for the Area, contingency measures, and an insignificance determination for mobile PM_{2.5} and NO_x emissions for transportation conformity purposes.

EPA has determined that Kentucky's PM_{2.5} attainment plan for the 1997 Annual PM_{2.5} NAAQS for its portion of the Huntington-Ashland Area meets applicable requirements of the CAA and the PM_{2.5} Implementation Rule. EPA is proposing to approve Kentucky's attainment plan for the Commonwealth's portion of the Huntington-Ashland Area, including the insignificance determination for PM_{2.5} and NO_x for the mobile source contribution to ambient PM_{2.5} levels for the Commonwealth's portion of the Huntington-Ashland Area. EPA's analysis for this proposed action is discussed in Section IV of this proposed rulemaking.

II. What is the Background for EPA's Proposed Action?

A. Designation History

On July 18, 1997 (62 FR 36852), EPA established the 1997 PM_{2.5} NAAQS as an annual standard of 15.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), based on a 3-year average of annual mean PM_{2.5} concentrations, and a 24-hour (or daily) standard of 65 $\mu\text{g}/\text{m}^3$, based on a 3-year average of the 98th percentile of 24-hour concentrations. EPA established the NAAQS based on significant evidence and numerous health studies demonstrating that serious health effects are associated with exposures to PM_{2.5}.

Following promulgation of a new or revised NAAQS, EPA is required by the CAA to designate areas throughout the United States as attaining or not attaining the NAAQS; this designation process is described in section 107(d)(1) of the CAA. EPA and state air quality agencies initiated the monitoring process for the 1997 PM_{2.5} NAAQS in 1999 and established a

complete set of air quality monitors by January 2001. On January 5, 2005, EPA promulgated initial air quality designations for the 1997 PM_{2.5} NAAQS (70 FR 944), which became effective on April 5, 2005, based on air quality monitoring data for calendar years 2001 - 2003.

On April 14, 2005, EPA promulgated a supplemental rule amending the Agency's initial designations (70 FR 19844) but retaining the original effective date of April 5, 2005. As a result of that supplemental rule, PM_{2.5} nonattainment designations are in effect for 39 areas, comprising 208 counties within 20 states (and the District of Columbia) nationwide, with a combined population of about 88 million. The Kentucky portion of the tri-state WV-KY-OH Huntington-Ashland Area, which is the subject of this proposed rulemaking, is included in the list of areas designated nonattainment for the 1997 PM_{2.5} NAAQS. As mentioned above, the Kentucky portion of the Huntington-Ashland Area consists of Boyd County in its entirety and a portion of Lawrence County, Kentucky.

On October 17, 2006, EPA strengthened the 24-hour PM_{2.5} NAAQS to 35 µg/m³ and retained the level of the Annual PM_{2.5} NAAQS at 15.0 µg/m³. *See* 71 FR 61144. On November 13, 2009, EPA designated areas as either attainment/unclassifiable, unclassifiable or nonattainment with respect to the revised 24-Hour PM_{2.5} NAAQS. *See* 74 FR 58688. Of relevance to the proposed rulemaking herein, EPA's November 2009 designation action clarified the designations for the 1997 PM_{2.5} NAAQS by relabeling the existing designation tables to specifically identify designations made for the 1997 Annual PM_{2.5} NAAQS and those made for the 1997 24-hour PM_{2.5} NAAQS (i.e., 65 µg/m³).

B. Clean Air Fine Particle Implementation Rule

As noted above, on April 25, 2007, EPA issued the PM_{2.5} Implementation Rule for the 1997 PM_{2.5} NAAQS (72 FR 20586). This rule describes the CAA framework and requirements for developing SIPs to achieve attainment in areas designated nonattainment for the 1997 PM_{2.5} NAAQS. Such attainment plans must include a demonstration that a nonattainment area will meet the applicable NAAQS within the timeframe provided in the statute. This demonstration must include modeling that is performed in accordance with 40 CFR 51.112 (Demonstration of adequacy) and Appendix W to part 51 (Guideline on Air Quality Models) and that is consistent with EPA modeling guidance. *See* 40 CFR 51.1007. The modeling demonstration should include supporting technical analyses and descriptions of all relevant adopted Federal, state, and local regulations and control measures that have been adopted in order to provide for attainment of the 1997 PM_{2.5} NAAQS by the proposed attainment date.

For the 1997 PM_{2.5} NAAQS, an attainment demonstration must show that a nonattainment area will attain the standards as expeditiously as practicable, but within five years of designation (i.e., by an attainment date of no later than April 5, 2010, based on air quality data for 2007 through 2009). If the area is not expected to meet the NAAQS by April 5, 2010, a state may request to extend the attainment date by one to five years based upon the severity of the nonattainment problem or the feasibility of implementing control measures in the specific area. CAA section 172(a)(2). For EPA to approve an extension of the attainment date beyond 2010, the state must provide an analysis that is consistent with the statutory criteria for an extension and that demonstrates that the attainment date is as expeditious as practicable for the area, given the existing facts and circumstances.

For each nonattainment area, the state (or each state of a multi-state area) must demonstrate that it has adopted all RACM, including all RACT, as needed to provide for attainment of the PM_{2.5} NAAQS in the area “as expeditiously as practicable.” The PM_{2.5} Implementation Rule provides guidance for making these RACM/RACT determinations. *See* discussion in section IV.A.4. below. Any measures that are necessary to meet these requirements that are not already federally promulgated or in an EPA-approved part of the SIP must be submitted as part of a state’s attainment plan. Any state measures in the control strategy must meet the applicable statutory and regulatory requirements, and, in particular, must be enforceable.

The PM_{2.5} Implementation Rule also includes guidance on pollutants that states must address in their attainment plans. Section 302(g) of the CAA authorizes EPA to regulate criteria pollutants and their precursors. The main chemical precursors associated with fine particle formation are SO₂, NO_x, volatile organic compounds (VOCs), and ammonia. The effect of reducing emissions of precursor pollutants that contribute to PM_{2.5} concentrations varies by area, however, depending upon local PM_{2.5} composition, emission levels, and other area-specific factors. For this reason, the PM_{2.5} Implementation Rule recommends that states control the direct PM_{2.5} emissions and the precursor emissions that would be most effective for attaining the NAAQS within the specific area, based upon an appropriate technical demonstration.

The PM_{2.5} Implementation Rule defines direct PM_{2.5} emissions as “solid particles emitted directly from an air emissions source or activity, or gaseous emissions or liquid droplets from an air emissions source or activity which condense to form particulate matter at ambient temperatures. Direct PM_{2.5} emissions include elemental carbon, directly emitted organic carbon,

directly emitted sulfate, directly emitted nitrate, and other inorganic particles (including but not limited to crustal material, metals, and sea salt).” 40 CFR 51.1000.

The PM_{2.5} Implementation Rule requires states to identify and evaluate sources of PM_{2.5} direct emissions and PM_{2.5} attainment plan precursors. 40 CFR 51.1002(c). The rule requires states to address SO₂ as a PM_{2.5} attainment plan precursor and to evaluate SO₂ for possible control measures in all PM_{2.5} nonattainment areas. States are also required to address and evaluate reasonable controls for NO_x as a PM_{2.5} attainment plan precursor unless the state and EPA make a finding that NO_x emissions from sources in the state do not significantly contribute to PM_{2.5} concentrations in the relevant nonattainment area.

Although current scientific information shows that certain VOC emissions are precursors to the formation of secondary organic aerosol, and significant progress has been made in understanding the role of gaseous organic material in the formation of organic PM, this relationship remains complex. Further research and technical tools are needed to better characterize emissions inventories for specific VOCs and to determine the extent of the contribution of specific VOCs to organic PM mass. Because of these factors, the PM_{2.5} Implementation Rule does not require states to address or evaluate controls for VOCs as PM_{2.5} attainment plan precursors unless the state or EPA makes a finding that VOC emissions from sources in the state significantly contribute to PM_{2.5} concentrations in the relevant nonattainment area.

The PM_{2.5} Implementation Rule describes the formation of particles related to ammonia emissions, which is a complex, nonlinear process. Though recent studies have improved our understanding of the role of ammonia in aerosol formation, further research is needed to better describe the relationship between ammonia emissions and particulate matter concentrations and

the related impacts. Also, area-specific data is needed to evaluate the effectiveness of reducing ammonia emissions in reducing PM_{2.5} concentrations in different areas and to determine where ammonia decreases may increase the acidity of particles and precipitation. For these reasons, the PM_{2.5} Implementation Rule does not require states to address or evaluate controls for ammonia as PM_{2.5} attainment plan precursors unless the state or EPA makes a finding that ammonia emissions from sources in the state significantly contribute to PM_{2.5} concentrations in the relevant nonattainment area.

The presumptive inclusion of NO_x and the presumptive exclusion of VOCs and ammonia as attainment plan precursors can be reversed based on an acceptable technical demonstration for a particular nonattainment area by the state or EPA. The state must demonstrate that, based on the sum of available technical and scientific information, it would be appropriate for a nonattainment area to reverse the presumptive approach for a particular precursor. Such a demonstration should include information from multiple sources, such as results of speciation data analyses, air-quality modeling studies, chemical-tracer studies, emissions inventories, or special intensive measurement studies to evaluate specific atmospheric chemistry in an area. *See* PM_{2.5} Implementation Rule, 72 FR 20596.

The PM_{2.5} Implementation Rule also provides guidance for the other elements of a state's attainment plan, including, but not limited to, emissions inventories, contingency measures, and motor-vehicle emissions budgets used for transportation conformity purposes. There are, however, three aspects of the preamble to the PM_{2.5} Implementation Rule for which EPA received petitions requesting reconsideration. The specific guidance elements identified by petitioners pertain to the presumption or advance determination that compliance with the requirements of the Clean Air Interstate Rule (CAIR) automatically satisfies the requirements for

RACT or RACM for NO_x or SO₂ emissions from electric generating unit (EGU) sources participating in regional cap and trade programs (*See* PM_{2.5} Implementation Rule, section II.F.7.); the suggestion that the economic feasibility element of a RACT determination should include consideration of whether the cost of a measure is reasonable in light of the benefits (*See* PM_{2.5} Implementation Rule, section II.F.5.); and the policy of allowing certain emissions reductions from outside the nonattainment area to be credited as meeting the RFP requirement (*See* PM_{2.5} Implementation Rule, section II.G.5.). EPA has granted these petitions and intends to propose rulemaking to change these aspects of the PM_{2.5} Implementation Rule. However, EPA's evaluation of the attainment plan for the Huntington-Ashland Area is not impacted by its reconsideration of any of these aspects of the PM_{2.5} Implementation Rule because the plan does not rely upon them.

C. Attaining Data Determination and Finding of Attainment

On September 7, 2011, EPA determined that the Huntington-Ashland Area had attaining data for the 1997 Annual PM_{2.5} NAAQS. 76 FR 55542. That determination was based on quality-assured, quality controlled and certified ambient air monitoring data that shows the area met the 1997 Annual PM_{2.5} NAAQS. Furthermore, in accordance with CAA 179(c), EPA determined in the same notice that the Huntington-Ashland Area attained the 1997 Annual PM_{2.5} NAAQS by its applicable attainment date of April 5, 2010. This information is mentioned here in support of EPA's determination that Kentucky's attainment plan was sufficient to bring the Huntington-Ashland Area into attainment no later than the required attainment date of April 5, 2010.

III. What Is Included in Kentucky's Attainment Plan Submittal?

Kentucky's PM_{2.5} attainment plan submittal covers the Kentucky portion of the Huntington-Ashland Annual PM_{2.5} nonattainment area, which is the only portion for which the Commonwealth has jurisdiction. Today's action regards only the Kentucky portion of the Huntington-Ashland Area. However, the modeling analysis provided with Kentucky's attainment plan documentation includes modeling results for the entire tri-state Area and the results of Ohio and West Virginia's demonstrations for their portions of the Area, for which the conclusions of attainment are consistent with that of Kentucky's.

In accordance with section 172(c) of the CAA and the PM_{2.5} Implementation Rule, the attainment plan submitted by the DAQ for the Kentucky portion of the Huntington-Ashland Area includes (1) emissions inventories for the plan's base year (2002) and attainment year (2009); (2) an attainment demonstration; and (3) an insignificance finding for the mobile source contribution of PM_{2.5} and NO_x. The attainment demonstration includes: (a) technical analyses that locate, identify, and quantify sources of emissions contributing to violations of the 1997 Annual PM_{2.5} NAAQS; (b) analyses of future-year emissions reductions and air quality improvements expected to result from national and local programs; adopted emission reduction measures with schedules for implementation; and contingency measures required under section 172(c)(9) of the CAA.

See 72 FR 20605.

To analyze future-year emission reductions and air quality improvements, Kentucky used regional modeling analyses developed through the Association for Southeastern Integrated Planning (ASIP). The ASIP was a collaborative modeling and technical analysis effort among the states of Kentucky, Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia to develop a regional assessment of the controls needed

to achieve attainment of the 1997 PM_{2.5} NAAQS and the 2006 8-hour ozone NAAQS. This regional modeling was performed in accordance with EPA's "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze" (EPA-454/B-07-002, April 2007) (hereafter referred to as "EPA's Modeling Guidance").

IV. What is EPA's Analysis of Kentucky's Attainment Plan Submittal?

A. Attainment Demonstration

Consistent with CAA requirements (*see, e.g.*, section 172), and 40 CFR 51.1007, an attainment demonstration for a PM_{2.5} nonattainment area must include a showing that the area will attain the annual and 24-hour standards as expeditiously as practicable. The demonstration must also meet the requirements of 40 CFR 51.112 and Part 51, Appendix W, and include inventory data, modeling results, and emissions reduction analyses on which the state has based its projected attainment. In the case of the Huntington-Ashland Area, the Area has already attained the standard. Thus, EPA is now proposing to determine that the attainment demonstration submitted by the Commonwealth was sufficient, and EPA is taking action to approve individual components that are necessary for the continued attainment and maintenance of the Area.

1. Pollutants Addressed

As discussed in section II.B. above, the PM_{2.5} Implementation Rule requires states to identify and evaluate sources of PM_{2.5} direct emissions and PM_{2.5} attainment plan precursors. The rule provides that SO₂ is a PM_{2.5} attainment plan precursor in all areas. The rule also sets forth the rebuttable presumptions that NO_x is a PM_{2.5} attainment plan precursor in all areas and

that ammonia and VOCs are not PM_{2.5} attainment plan precursors. Neither Kentucky nor the EPA has found reason to reverse these presumptions for the Huntington-Ashland Area.

Accordingly, Kentucky's PM_{2.5} attainment plan evaluates emissions of direct PM_{2.5}, SO₂, and NO_x in the Kentucky portion of the Huntington-Ashland Area.

2. Emissions Inventory Requirements

States are required under section 172(c)(3) of the CAA to develop comprehensive, accurate and current emissions inventories of all sources of the relevant pollutant or pollutants in the area. These inventories provide a detailed accounting of all emissions and emissions sources by precursor or pollutant. In addition, inventories are used in air quality modeling to demonstrate that attainment of the 1997 PM_{2.5} NAAQS is as expeditious as practicable and, if an attainment date extension beyond 2010 is needed, to support the need for such an extension. Emissions inventory guidance was provided in the April 1999 document, "Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations," (EPA-454/R-99-006), which was updated in November 2005 (EPA-454/R-05-001) (hereafter referred to as "EPA's Emissions Inventory Guidance"). Emissions reporting requirements were provided in the 2002 Consolidated Emissions Reporting Rule (CERR) (67 FR 39602). On December 17, 2008 (73 FR 76539), EPA promulgated the Air Emissions Reporting Requirements (AERR) to update emissions reporting requirements in the CERR and to harmonize, consolidate and simplify data reporting by states.

In accordance with the CERR and EPA's Emissions Inventory Guidance, the PM_{2.5} Implementation Rule requires states to submit inventory information on directly emitted PM_{2.5}

and PM_{2.5} precursors and any additional inventory information needed to support an attainment demonstration and (where applicable) an RFP plan.

PM_{2.5} is comprised of filterable and condensable emissions. Condensable particulate matter (CPM) can comprise a significant percentage of direct PM_{2.5} emissions from certain sources and are required to be included in national emissions inventories based on emission factors. Test Methods 201A and 202 are available for source-specific measurement of condensable emissions. However, the PM_{2.5} Implementation Rule notes that there were issues raised by commenters related to availability and implementation of these test methods as well as uncertainties in existing data for condensable PM_{2.5}. EPA established a transition period during which EPA could assess possible revisions to available test methods and to allow time for states to update emissions inventories as needed to address direct PM_{2.5}, including condensable emissions. Because of the time required for this assessment, EPA recognized that states would be limited in how to effectively address CPM emissions and established a period of transition, up to January 1, 2011, during which state submissions for PM_{2.5} were not required to address CPM emissions. Amendments to these test methods were proposed on March 25, 2009 (74 FR 12969), and finalized on December 21, 2010 (75 FR 80118). The amendments to Method 201A added a particle-sizing device for PM_{2.5} sampling, and the amendments to Method 202 revised the sample collection and recovery procedures of the method to reduce the formation of reaction artifacts that could lead to inaccurate measurements of CPM emissions.

The period of transition for establishing emissions limits for condensable direct PM_{2.5} ended on January 1, 2011. PM_{2.5} submissions made during the transition period are not required to address CPM emissions, however, states must address the control of direct PM_{2.5} emissions, including condensable emissions, with any new action taken after January 1, 2011. Kentucky

submitted the Huntington-Ashland Area attainment plan prior to January 1, 2011, and did not consider CPM in addressing the control of PM_{2.5} emissions.

In July 2008, EarthJustice filed a petition requesting reconsideration of EPA's transition period for CPM emissions provided in the PM_{2.5} Implementation Rule. In January 2009, EPA decided to allow states that have not previously addressed CPM to continue to exclude CPM for PSD permitting during the transition period. Today's action reflects a review of Kentucky's submittal based on current EPA guidance as described in the PM_{2.5} Implementation Rule.

The 172(c)(3) emissions inventory is developed by the incorporation of data from multiple sources. States were required to develop and submit to EPA a triennial emissions inventory according to the CERR for all source categories (i.e., point, area, nonroad mobile and on-road mobile). This inventory often forms the basis of data that are updated with more recent information and data that also is used in their attainment demonstration modeling inventory. Such was the case in the development of the 2002 emissions inventory that was submitted in the Commonwealth's attainment SIP for this Area. The 2002 emissions inventory was based on data developed with Visibility Improvement State and Tribal Association of the Southeast (VISTAS) contractors for the same ten states of the ASIP effort and submitted by the states to the 2002 National Emissions Inventory. Several iterations of the 2002 inventories were developed for the different emissions source categories resulting from revisions and updates to the data. This resulted in the use of version G2 of the updated data to represent the point sources' emissions. Data from many databases, studies and models (e.g., vehicle miles traveled, fuel programs, the NONROAD 2002 model data for commercial marine vessels, locomotives and Clean Air Market Division, etc.) resulted in the inventory submitted in this SIP. The data were developed according to EPA's Emissions Inventory Guidance and a quality assurance project plan that was

developed through VISTAS and approved by EPA. EPA agrees that the process used to develop this inventory was adequate to meet the requirements of the CAA, *e.g.*, CAA section 172(c)(3), and the implementing regulations.

Tables 1-5 below show the level of emissions in the Kentucky portion of the Huntington-Ashland Area for 2002 by pollutant, county, and emissions source category. The point, area, and nonroad values for Lawrence County in the December 8, 2008, submittal were for the entire county, not just the census block that EPA designated as nonattainment. On May 26, 2011, at the request of EPA, the Commonwealth submitted updated tables to include information on point source emissions from the designated census block and population based apportionment of the area and nonroad sectors to support the mobile source insignificance finding discussed further in Section IV.B. below. A copy of the May 26, 2011, clarification letter and updated tables can be found in the docket for this proposed action (EPA-R02-OAR-2010-0255) on the www.regulations.gov website. EPA is proposing to approve the emissions inventory for the Kentucky portion of the Huntington-Ashland Area as meeting the requirements of Section 172(c)(3) of the CAA.

Table 1. Base and Attainment Year VOC Inventory for the Kentucky Portion of the Huntington-Ashland Area

VOC (tpy)	Boyd County		Lawrence County		KY Portion Total	
	2002	2009	2002	2009	2002	2009
Point	3083	3259	98	119	3181	3378
Area	780	775	374	357	1154	1132
Mobile	991	613	409	269	1400	882
Nonroad	312	256	223	271	535	527
Total	5166	4903	1104	1016	6270	5919

Table 2. Base and Attainment Year NO_x Inventory for the Kentucky Portion of the Huntington-Ashland Area

NO _x (tpy)	Boyd County		Lawrence County		KY Portion Total	
	2002	2009	2002	2009	2002	2009
Point	7046	7281	17129	5730	24175	13011
Area	40	46	87	93	127	139
Mobile	1213	774	785	528	1998	1302
Nonroad	3319	3107	726	664	4045	3771
Total	11618	11208	18727	7015	30345	18223

Table 3. Base and Attainment Year SO₂ Inventory for the Kentucky Portion of the Huntington-Ashland Area

SO ₂ (tpy)	Boyd County		Lawrence County		KY Portion Total	
	2002	2009	2002	2009	2002	2009
Point	9711	10432	48874	47739	58585	58171
Area	542	578	96	102	638	680
Mobile	54	6	30	4	84	10
Nonroad	482	380	85	52	567	432
Total	10789	11396	49085	47897	59874	59293

Table 4. Base and Attainment Year PM_{2.5} Inventory for the Kentucky Portion of the Huntington-Ashland Area

PM _{2.5} (tpy)	Boyd County		Lawrence County		KY Portion Total	
	2002	2009	2002	2009	2002	2009
Point	1256	1255	335	413	1591	1668
Area	712	748	216	219	928	967
Mobile	21	15	14	10	35	25
Nonroad	131	121	30	28	161	149
Total	2120	2139	595	670	2715	2809

Table 5. Base and Attainment Year ammonia Inventory for the Kentucky Portion of the Huntington-Ashland Area

ammonia (tpy)	Boyd County		Lawrence County		KY Portion Total	
	2002	2009	2002	2009	2002	2009
Point	336	378	31	44	367	422
Area	38	38	28	28	66	66
Mobile	44	53	20	26	64	79
Nonroad	0	0	0	0	0	0
Total	418	469	79	98	497	567

EPA has reviewed Kentucky's emissions inventory and finds that it is adequate for the purposes of meeting section 172(c)(3) emissions inventory requirement. The emissions inventory is approvable because the emissions were developed consistent with the CAA, implementing regulations and EPA guidance for emissions inventories. Additional emissions inventory information, including summary tables for the Ohio and West Virginia portions of the Huntington-Ashland Area, are included in Appendix E of Kentucky's attainment SIP and are located in the docket for this proposed action (EPA-R02-OAR-2010-0255) on the www.regulations.gov website.

3. Modeling

The PM_{2.5} attainment demonstrations must include modeling that should be developed in accordance with EPA's Modeling Guidance. A brief description of the modeling used to support Kentucky's attainment demonstration follows. More detailed information can be found in Kentucky's December 3, 2010, SIP revision in the docket for this proposed action (EPA-R02-OAR-2010-0255) on the www.regulations.gov website.

Ambient PM_{2.5} typically includes both primary (directly emitted) PM_{2.5} and secondary PM_{2.5} (e.g., sulfates and nitrates formed by chemical reactions in the atmosphere). Some of the physicochemical processes leading to the formation of secondary PM_{2.5} may take hours or days, as may some of the removal processes. Thus, some sources of secondary PM_{2.5} may be sources outside of the nonattainment area. To model a sufficient geographic area to take these processes into account, Kentucky's regional modeling domain covered an area slightly greater than the geographical area of the VISTAS/ASIP states in this attainment demonstration.

Kentucky, through the ASIP and VISTAS, conducted an analysis of the major contributing components of PM_{2.5} in the Kentucky portion of the Huntington-Ashland Area. Specifically, organic carbon (OC) and sulfuric acid (SO₄) account for the largest contributions. The majority of OC can be attributed to biogenic emissions and SO₄ to emissions of SO₂. SO₂ emissions are primarily associated with the point source sector, accounting for approximately 98 percent of the SO₂ emission in the Huntington-Ashland Area. Emissions sensitivity modeling for the Huntington-Ashland Area indicated that SO₂ emissions reductions from EGUs in Kentucky, Tennessee, and West Virginia would have the greatest benefits for the Area. The VISTAS modeling also projects limited benefits to total PM_{2.5} emissions from reductions of NO_x. The modeling performed by VISTAS showed that reductions of primary carbon from the mobile sector were more effective than reductions of either VOCs or NO_x from mobile sources. EPA agrees with Kentucky's assertion that controlling SO₂ from point sources is the most effective means of addressing attainment of the 1997 Annual PM_{2.5} NAAQS in the Huntington-Ashland Area.

Model Selection and Inputs

The ASIP performed modeling for ozone and PM_{2.5} for the 10 collaborating southeastern states, including Kentucky. The modeling analysis is a complex technical evaluation that began with selection of the modeling system. The ASIP and/or VISTAS used the following modeling system:

- *Meteorological Model:* The Pennsylvania State University/National Center for Atmospheric Research Mesoscale Meteorological Model is a nonhydrostatic, prognostic meteorological model routinely used for urban- and regional-scale photochemical, ozone, PM_{2.5}, and regional haze regulatory modeling studies.
- *Emissions Model:* The Sparse Matrix Operator Kernel Emissions modeling system is an emissions modeling system that generates hourly gridded speciated emission inputs of mobile, non-road mobile, area, point, fire and biogenic emission sources for photochemical grid models.
- *Air Quality Model:* The EPA's Models-3/Community Multiscale Air Quality (CMAQ) modeling system is a photochemical grid model capable of addressing ozone, PM, visibility and acid deposition at a regional scale. The photochemical model selected for this study was CMAQ version 4.5. It was modified through VISTAS with a module for Secondary Organics Aerosols in an open and transparent manner that was also subjected to outside peer review.

CMAQ modeling of regional haze in the VISTAS region for 2002 and 2009 was carried out on a grid of 12x12 kilometer cells that covers the ten VISTAS states and states adjacent to them. This grid is nested within a larger national CMAQ modeling grid of 36x36 kilometer grid

cells that covers the continental United States, portions of Canada and Mexico, and portions of the Atlantic and Pacific Oceans along the east and west coasts. Selection of a representative period of meteorology is crucial for evaluating baseline air quality conditions and projecting future changes in air quality due to changes in emissions of visibility-impairing pollutants. VISTAS conducted an in-depth analysis which resulted in the selection of the entire calendar year of 2002 as the best period of meteorology available for conducting the CMAQ modeling. As noted above, the VISTAS and ASIP states modeling was developed consistent with EPA's Emissions Inventory Guidance and EPA's Modeling Guidance.

VISTAS examined the model performance of the regional modeling for the areas of interest before determining whether the CMAQ model results were suitable for use in the assessment of an attainment of the PM_{2.5} NAAQS and for use in the modeling assessment. The modeling assessment predicts future levels of emissions and visibility impairment used to support the 2009 PM_{2.5} control strategy. In keeping with the objective of the CMAQ modeling platform, the air quality model performance was evaluated using graphical and statistical assessments based on measured ozone, fine particles, and acid deposition from various monitoring networks and databases for the 2002 base year. A diverse set of statistical parameters from the EPA's Modeling Guidance was used to stress and examine the model and modeling inputs. Once the model performance of the 2002 base year was determined to be acceptable, the EPA model attainment test was used to assess whether attainment of the PM_{2.5} NAAQS would be achieved in 2009. The DAQ provided the appropriate supporting documentation for all required analyses used to determine Kentucky's control strategy. The technical analyses and modeling used to assess attainment in 2009 for the Area is consistent with the CAA, EPA's PM_{2.5} Implementation Rule and EPA's Modeling Guidance. EPA accepts the VISTAS and ASIP

technical modeling to support the attainment SIP for the Area because the modeling system was chosen and simulated according to EPA's Modeling Guidance. For purposes of the Huntington-Ashland attainment demonstration, EPA agrees with the VISTAS model performance procedures and results, and that the CMAQ is an appropriate tool for the assessment of PM_{2.5} for the Kentucky attainment demonstration for this Area. Additional details on the ASIP and VISTAS modeling is included in the Kentucky SIP.

Modeling Results

The modeling results were used in a relative sense in concert with observed PM_{2.5} air quality data (i.e., taking the ratio of future to present model predicted air quality and multiplying it times an "ambient design value"). The ambient design value is an average of the three current design values (i.e., 2001, 2002, and 2003) that straddle the modeling base year (i.e., 2002). EPA recommends using the average of the three design value periods which include the baseline inventory year. This average design value best represents the baseline concentrations, while taking into account the variability of meteorology and emissions (over a five-year period). This EPA attainment test approach should reduce some of the uncertainty involved with using absolute model predictions alone. Using the model in a relative sense also reduces the effects of uneven model performance and possible major biases in predicting absolute concentrations of one or more components. The ratio of future to present model predicted air quality resulted in relative reduction factors (RRF). The multiplication of the RRF by an ambient design value from the base year (i.e., 2002) provided estimates of future design values to determine if monitors and areas with monitors in the nonattainment area will comply with the annual PM_{2.5} NAAQS.

EPA provided guidance to states and tribes for projecting PM_{2.5} concentrations using a “speciated modeled attainment test” (SMAT) (EPA-454/B-07-002, April 2007). Once modeling for a projection year and a base year are complete, RRFs are computed for each component of PM_{2.5} in the modeling domain. Modeling by Kentucky to assess attainment in the entire Huntington-Ashland Area used the following components of PM_{2.5}: SO₄, NO₃, directly emitted organic particles, and directly emitted inorganic particles. Ammonia is treated as part of SO₄ and NO₃ molecules, and water is assumed to be present at a constant mass in both the base year and projection year. For each monitoring location, the RRF for a component is computed as the ratio of the projection year divided by the base year modeled concentration for a three-by-three array of modeled grid cells centered on the monitoring location.

Projection year component concentrations are estimated by multiplying the RRFs times a monitoring based base year component concentration, determined by applying measured speciation data to the monitored total PM_{2.5} design concentration. The sum of these estimated projection year component concentrations is the estimated projection year PM_{2.5} concentration. If future estimates of PM_{2.5} concentrations are less than the 1997 PM_{2.5} NAAQS, then the modeling indicates attainment of the standard.

PM_{2.5} includes a mixture of components that can behave independently from one another (e.g., primary vs. secondary particles) or that are related to one another in a complex way (e.g., different secondary particles). Thus, it is appropriate to consider the predicted future concentration of PM_{2.5} to be the sum of the predicted component concentrations. *See* 72 FR 20608. As recommended in EPA’s Modeling Guidance, Kentucky divided PM_{2.5} into its major components and noted the future effects of already implemented strategies on each. The effect on PM_{2.5} was estimated as a sum of the effects on individual components. Future PM_{2.5} design

values at specified monitoring sites were estimated by adding the future-year values of seven PM_{2.5} components. All future site-specific PM_{2.5} design values were below the concentration specified in the NAAQS; therefore, the Huntington-Ashland Area passed the SMAT evaluation.

EPA has also developed a software package called Modeled Attainment Test Software (MATS) which will spatially interpolate data, adjust the spatial fields based on model output gradients and multiply the fields by model calculated RRFs. EPA recommended that the Commonwealth provide MATS attainment test values for 2009 since the tool became available soon after Kentucky had drafted its attainment demonstration. The 2009 MATS values for the entire Huntington-Ashland Area also indicate attainment of the annual PM_{2.5} NAAQS in 2009. Table 7 illustrates the current (2002 DVC) and future (2009 DVF) annual design values for 2009 for the monitors in the nonattainment area.

Table 7. 2002 Current and 2009 Predicted Annual PM_{2.5} Design Values (µg/m³)

Site Number	State	County	2002 Annual DVC	2009 Annual DVF
21-019-0017	KY	Boyd	14.9	12.6
39-087-0010	OH	Lawrence	15.7	13.7
39-145-0013	OH	Scioto	17.1	14.7
54-011-0006	WV	Cabell	16.5	14.4

Additional Analysis

Kentucky provided supplemental analysis to further support results from the modeled attainment tests. As a first step, Kentucky noted that the modeled attainment tests supported a conclusion that the proposed strategy will meet the air quality goals by the attainment year. As noted in section 7 of EPA's Modeling Guidance, corroboratory analyses should be used to help assess whether a simulated control strategy is sufficient to meet the NAAQS. One of the metrics identified in the guidance is the calculations of the percent change in the number of grid cells greater than or equal to $15.0 \mu\text{g}/\text{m}^3$ in the nonattainment area. For Kentucky's analysis, cell counts of modeling data were tallied for both the 2002 baseline and 2009 attainment year modeling runs for a subset of the highest days from the base year and which coincide with the 29 days used in the model performance evaluation and modeling results discussed previously. The analysis indicates a 10 percent increase in the number of cells representing days with concentrations below $15.0 \mu\text{g}/\text{m}^3$.

Kentucky conducted an additional unmonitored area analysis to ensure that a control strategy leads to reductions in $\text{PM}_{2.5}$ at other locations which could have baseline (and future) design values exceeding the NAAQS were a monitor deployed there. Consistent with EPA's Modeling Guidance, the ASIP determined the 2002 current year and 2009 projected $\text{PM}_{2.5}$ design values in the Huntington-Ashland Area using the 2002 typical and 2009 BaseG4 CMAQ 12 km modeling results. Appendix L of the Commonwealth's submittal contains maps which illustrate that the MATS projections for the unmonitored areas in Kentucky and the entire Huntington-Ashland Area will be below the $\text{PM}_{2.5}$ NAAQS by 2009.

EPA Analysis

Kentucky's PM_{2.5} attainment demonstration submittal covers only the portion of the Huntington-Ashland Area for which Commonwealth has jurisdiction (Boyd County and a portion of Lawrence County). However, the modeling results for the West Virginia and Ohio portions of the Area reach conclusions of attainment which are consistent with that of Kentucky. The technical analyses and modeling to assess attainment of the entire nonattainment Area were developed consistent with EPA's Modeling Guidance. The modeling system was chosen and simulated to develop a model performance evaluation of the nonattainment area to provide the necessary assurances and results that an assessment of future controls for attainment is merited. Application of the EPA modeled attainment test and the MATS indicated future design values that are less than 15.0 µg/m³ and consistent with attainment of the 1997 Annual PM_{2.5} NAAQS. The additional analyses based on other regional modeling studies, including EPA and the Midwest RPO, support the modeling results developed by the ASIP and Kentucky. Finally, the area's status as having attained the standard further supports the modeling results.

Current Air Quality Analysis

As noted in section II.C. above, on September 7, 2011, EPA determined that the Huntington-Ashland Area had attaining data for the 1997 Annual PM_{2.5} NAAQS based upon data for the 3-year period 2007-2009, with a design value (i.e., the highest 3-year average of annual mean PM_{2.5} concentrations) of 14.3 µg/m³. In that same notice EPA noted that the Area also had attaining data for the 3-year period 2008-2010, with a design value of 13.1 µg/m³. These data, which have been quality-assured, certified, and recorded in EPA's Air Quality System (AQS), are summarized in Tables 8 and 9 below. In addition, monitoring data thus far

available, but not yet certified, in the AQS database for 2011 show that this Area continues to meet the 1997 Annual PM_{2.5} NAAQS. The continuing decrease in PM_{2.5} concentrations in the Area supports Kentucky's determination that current measures were sufficient to bring the Area into attainment by no later than the required attainment date of April 5, 2010.

Table 8. 2007-2009 Annual Average Concentrations in the Huntington-Ashland Area

Site Name	County	Site Number	Annual Average Concentration (µg/m ³)
Huntington	Cabell, WV	54-011-0006	14.3 ¹
Ashland Primary (FIVCO)	Boyd, KY	21-019-0017	12.4
Lawrence County Hospital	Lawrence, OH	39-087-0010	13.3 ²
Ironton Department of Transportation (DOT) ³	Lawrence, OH	39-087-0012	12.2

Table 9: 2008-2010 Annual Average Concentrations in the Huntington-Ashland Area

Site Name	County	Site Number	Annual Average Concentration (µg/m ³)
Huntington	Campbell	54-011-0006	13.1
Ashland Primary (FIVCO)	Boyd	21-019-0017	11.4
Ironton DOT ⁴	Lawrence	39-087-0012	12.2

¹ West Virginia has a collocated monitor in place at the same site for quality assurance purposes. The primary monitor, and not the collocated monitor, is used to determine compliance with the PM_{2.5} NAAQS. Since the collocated monitor takes fewer readings than the primary monitor, its average annual values may be unrepresentatively high. (See 40 CFR Part 50, Appendix N, 3(d)(1).)

² The LCH Site was shut-down in February 2008. The Ironton DOT site began operation on the same day the LCH Site ceased monitoring.

³ The Ironton DOT site did not begin operation until February 2008.

⁴ The Ironton DOT site began operation in February 2008 and thus did collect 75 percent for the first quarter of 2008. However, this was a new site and monitoring data did meet 75 percent completeness for the remainder of the quarter and for the subsequent quarters. As such, EPA does not consider the first quarter data to be incomplete.

4. Reasonably Available Control Measures/Reasonably Available Control Technology (RACM/RACT)

a. Requirements for RACM/RACT

CAA section 172(c)(1) requires that each attainment plan “provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from the existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology), and shall provide for attainment of the national primary ambient air quality standards.” EPA interprets RACM, including RACT, under section 172 as measures that a state finds are both reasonably available and contribute to attainment as expeditiously as practicable in the nonattainment area. 40 CFR 51.1010; 72 FR 20586, 20612.

States are required to evaluate RACM/RACT for direct PM_{2.5} emissions and all of the area’s attainment plan precursors. 40 CFR 51.1002(c); 72 FR 20586,20589 - 97. The state must address SO₂ as a PM_{2.5} attainment plan precursor and evaluate sources of SO₂ emissions in the state for control measures. The state must address NO_x as a PM_{2.5} attainment plan precursor and evaluate sources of NO_x emissions in the state for control measures, unless the state and EPA provide an appropriate technical demonstration for a specific area showing that NO_x emissions from sources in the state do not significantly contribute to PM_{2.5} concentrations in the nonattainment area. Also, because EPA concluded that VOCs and ammonia are presumptively not regulatory precursors for PM_{2.5}, the state is not required to evaluate RACM/RACT for sources of VOCs or ammonia unless there is a determination supported by an appropriate demonstration that such emissions need to be regulated for expeditious attainment of the NAAQS in the specific area.

For PM_{2.5} attainment plans, the PM_{2.5} Implementation Rule requires a combined approach to RACM and RACT under subpart 1 of Part D of the CAA (“Plan Requirements for Nonattainment Areas/Nonattainment Areas in General”). Subpart 1, unlike subparts 2 and 4, does not identify specific source categories for which EPA must issue control technique documents or guidelines and does not identify specific source categories for state and EPA evaluation during attainment plan development. 72 FR 20586, 20610. Rather, under subpart 1, EPA considers RACT to be part of an area’s overall RACM obligation consistent with the section 172 definition. Because the variable nature of the PM_{2.5} problem in different nonattainment areas may require states to develop attainment plans that address widely disparate circumstances, EPA determined not only that states should have flexibility with respect to RACM/RACT controls but also that in areas needing significant emission reductions, RACM/RACT controls on smaller sources may be necessary to reach attainment as expeditiously as practicable. 72 FR 20586, 20612 and 20615. Thus, under the PM_{2.5} Implementation Rule, RACT and RACM are those reasonably available measures that contribute to attainment as expeditiously as practicable in the specific nonattainment area. 40 CFR 51.1010; 72 FR 20586, 20612.

The PM_{2.5} Implementation Rule requires that attainment plans include the list of measures that a state considered and information sufficient to show that the state met all requirements for the determination of what constitutes RACM/RACT in a specific nonattainment area. 40 CFR 51.1010(a). In addition, the rule requires that the state, in determining whether a particular emissions reduction measure or set of measures must be adopted as RACM/RACT, consider the cumulative impact of implementing the available measures and to adopt as RACM/RACT any potential measures that are reasonably available considering technological

and economic feasibility if, considered collectively, they would advance the attainment date by one year or more. If a measure or measures is not necessary for expeditious attainment of the NAAQS in the area, then by definition that measure is not RACM/RACT for purposes of the 1997 PM_{2.5} NAAQS in that area. Any measures that are necessary to meet these requirements which are not already either federally promulgated, part of the state's SIP, or otherwise creditable in SIPs must be submitted in enforceable form as part of a state's attainment plan for the area. 72 FR 20586, 20614.

Guidance provided in the PM_{2.5} Implementation Rule for evaluating RACM/RACT level controls for an area also indicates that there could be flexibility with respect to those areas that were predicted to attain the 1997 PM_{2.5} NAAQS within five years of designation as a result of existing national or local measures. 72 FR 20586, 20612. In such circumstances, the state may conduct a more limited RACM/RACT analysis that does not involve additional air quality modeling. Moreover, the RACM/RACT analysis for such area would focus on a review of reasonably available measures, the estimation of potential emissions reductions, and the evaluation of the time needed to implement the measures. Thus, the PM_{2.5} Implementation Rule guidance recommends that an analysis for those areas expected to attain within five years of designation as a nonattainment area for the 1997 PM_{2.5} NAAQS may be a less rigorous than for areas expected to attain later.

A more comprehensive discussion of the RACM/RACT requirement for PM_{2.5} attainment plans and EPA's guidance for it can be found in the preamble to the PM_{2.5} Implementation Rule. 72 FR 20586, 20609 – 20633.

b. Kentucky's Analysis of Pollutants and Sources for the Huntington-Ashland Area

Kentucky's analysis, which appears in chapter 7 of the attainment plan submission, evaluates sources of PM_{2.5}, SO₂, and NO_x located in the nonattainment area for potential control as RACM/RACT. The Commonwealth determined that controls of sources of VOCs or ammonia would not be necessary for expeditious attainment of the NAAQS in this area. EPA agrees that Kentucky's determination is supported by its analysis. The Commonwealth's determination with respect to which pollutants the plan should evaluate is discussed in chapter 1 of the submittal.

After evaluating which pollutants should be addressed in the attainment plan, the Commonwealth identified all source categories of those emissions located within the nonattainment area to determine available controls that could advance the attainment date by one year or more. *See* Appendix M of the attainment plan submittal. Based on the emissions inventory and other information, the Commonwealth identified several source categories as sources that should be evaluated for controls. Stationary source measure categories identified include stationary diesel engine retrofit, rebuild or replacements; new or upgraded emission control requirements for direct PM_{2.5} emissions at stationary sources; improved capture of particulate emissions to increase the amount of PM_{2.5} ducted to control devices; new or upgraded emission controls for PM_{2.5} precursors at stationary sources; energy efficiency measures to reduce fuel consumption and associated pollutant emissions; and measures to reduce fugitive dust from industrial sites. Mobile source measure categories identified include on-road diesel engine retrofits for school buses, trucks and transit buses using EPA verified technologies; nonroad diesel engine retrofit, rebuild or replacement; diesel idling programs for trucks, locomotive, and other mobile sources; transportation control measures, including those listed in

section 108(f) of the CAA and other transportation demand management and transportation systems management strategies; programs to reduce emissions or accelerate retirement of high emitting vehicles, boats, and lawn and garden equipment; emissions testing and repair/maintenance programs for on-road vehicles, nonroad heavy-duty vehicles and equipment; programs to expand use of clean burning fuels; low emissions specifications for equipment or fuel used for large construction contracts, industrial facilities, ship yards, airports, and public or private vehicle fleets; and opacity or other emissions standards for “gross-emitting” diesel equipment or vessels. Area source measure categories identified include new open burning regulations and/or measures to improve program effectiveness such as programs to reduce or eliminate burning of land clearing vegetation; programs to reduce emissions from woodstoves and fireplaces including outreach programs, curtailments during days with expected high ambient levels of PM_{2.5}, and programs to encourage replacement of woodstoves when houses are sold; controls on emissions from charbroiling or other commercial cooking operations; and reduced solvent usage or solvent substitution.

In accordance with 40 CFR 51.1010, the attainment demonstration component for a PM_{2.5} nonattainment area SIP is required to demonstrate that all RACM (including RACT for stationary sources) necessary to demonstrate attainment as expeditiously as practicable have been adopted. The cumulative impact of implementing available measures must be considered in determining whether a particular emission reduction measure or set of measures is required to be adopted as RACM. Potential measures that are reasonably available considering technical and economic feasibility must be adopted as RACM if, considered collectively, they would advance the attainment date by one year or more. Therefore, since Kentucky demonstrated attainment of the 1997 PM_{2.5} NAAQS in the Kentucky portion of the Huntington-Ashland Area by the end of

2009, any RACM measures would have needed to be in effect at the beginning of 2008 to have had any potential to advance the attainment date by at least one year.

Through participation in regional planning efforts of the Southeast Regional Planning Organization, VISTAS and the ASIP, Kentucky has evaluated potential control measures to attain the fine particle. For the relevant source categories, the Commonwealth evaluated the potential control measures that would be considered reasonable for the Huntington-Ashland Area, in light of timing and other considerations consistent with EPA's guidance. DAQ determined that there were no additional measures that could be adopted by January 1, 2008. In addition, existing measures and measures planned for implementation by 2009 enabled the Huntington-Ashland Area to attain the 1997 PM_{2.5} NAAQS. Therefore, no further actions on RACM or RACT are warranted.

c. Kentucky's Evaluation of RACM/RACT Control Measures for the Huntington-Ashland Area

In accordance with section 172 of the CAA, the Kentucky portion of the Huntington-Ashland Area has adopted all RACM, including RACT, needed to attain the standards "as expeditiously as practicable." Kentucky's demonstration for attaining the 1997 PM_{2.5} NAAQS in the Kentucky portion of the Huntington-Ashland Area is based on the following enforceable measures, as discussed in Chapter 5 of the plan: tier 2 vehicle standards; heavy-duty gasoline and diesel highway vehicle standards; large nonroad diesel engine standards; nonroad spark-ignition engines and recreational engines standards; combustion turbine MACTs; VOC 2-, 4-, 7-, and 10-year MACT standards; consent agreements; open burning bans; and fugitive emissions standards.

d. Proposed Action on RACM/RACT Demonstration and Control Strategy.

EPA is proposing to approve Kentucky's evaluation of RACM/RACT control measures for the Kentucky portion of the Huntington-Ashland Area. As noted in section C. above, EPA has already determined that the Huntington-Ashland Area has attaining data for the 1997 Annual PM_{2.5} NAAQS and met the standard by its applicable attainment date of April 5, 2010. EPA's guidance for the PM_{2.5} Implementation Rule recommends that if an area was predicted through the attainment plan to attain the standard within five years after designation, then the state could submit a more limited RACM/RACT analysis and the state could elect not to do additional modeling.

In light of the fact that the Kentucky portion of the Huntington-Ashland Area is now attaining the standards, EPA proposes to conclude that the attainment plan meets the RACM/RACT requirements of the PM_{2.5} Implementation Rule and that the level of control in the Commonwealth's attainment plan constitutes RACM/RACT for purposes of the 1997 PM_{2.5} NAAQS. Because the PM_{2.5} Implementation Rule defines RACM/RACT as that level of control that is necessary to bring the area into attainment as expeditiously as practicable, the current level of Federally enforceable controls on sources located within the Area is by definition RACM/RACT for this Area for this purpose, given the Area's status as attaining the standard.

5. Reasonable Further Progress

Section 172(c)(2) of the CAA and the PM_{2.5} Implementation Rule require that attainment plans include a demonstration that reasonable further progress toward meeting air quality standards will be achieved through generally linear incremental improvement in air quality. For the 1997 PM_{2.5} NAAQS, a state is required to submit a separate RFP plan for any area for which

the state seeks an extension of the attainment date beyond 2010. The PM_{2.5} Implementation Rule set forth that an area that demonstrates attainment within five years of the date of designation will be considered to have satisfied the RFP requirement and is not required to submit a separate RFP plan. *See* 40 CFR 51.1009(b). The Kentucky attainment plan submittal meets the RFP requirements for the Huntington-Ashland Area by demonstrating that the Area attained the 1997 PM_{2.5} NAAQS by the 2010 attainment date.

6. Contingency Measures

In accordance with section 172(c)(9) of the CAA, the PM_{2.5} Implementation Rule requires that PM_{2.5} attainment plans include contingency measures. 40 CFR 51.1012 and 72 FR at 20642- 20646. (April 25, 2007). Contingency measures are additional measures to be implemented in the event that an area fails to meet RFP or fails to attain a standard by its attainment date. These measures must be fully adopted rules or control measures that can be implemented quickly and without additional EPA or state action if the area fails to meet RFP or fails to attain by its attainment date and should contain trigger mechanisms and an implementation schedule. In addition, they should be measures not already included in the SIP control strategy for attaining the standard and should provide for emission reductions equivalent to one year of RFP.

The Kentucky attainment plan describes the contingency measures for the Huntington-Ashland Area as being comprised of Federal measures that were already in place and that would take effect automatically, without further action by the Commonwealth or EPA, if the Area were to fail to attain the standard by its attainment date. As noted in section II.C. of this proposed rulemaking, EPA made a determination, based on complete, quality-assured, quality-controlled,

and certified ambient air monitoring data for the 2007-2009 monitoring period, that the Huntington-Ashland Area attained the 1997 Annual PM_{2.5} NAAQS by the applicable attainment date of April 5, 2010. Because EPA has determined, in accordance with CAA 179(c)(1), that the area attained by its required deadline, no contingency measures for failure to attain by this date need to be implemented. Furthermore, as set forth in the PM_{2.5} Implementation Rule, areas that attained the NAAQS by the attainment date are considered to have satisfied the requirement to show RFP, and as such do not need to implement contingency measures to make further progress to attainment. Since EPA has determined that the Area has attained by the attainment date, the contingency measures submitted by Kentucky are no longer necessary for the Huntington-Ashland Area to meet RFP requirements or to attain the annual PM_{2.5} NAAQS by the attainment date.

7. Attainment Date

Kentucky provided a demonstration of attainment of the 1997 PM_{2.5} NAAQS in the Huntington-Ashland Area by no later than five years after the Area was designated nonattainment. In accordance with the PM_{2.5} Implementation Rule, areas such as this, demonstrating that they will attain the standard by April 5, 2010, attainment deadline, are considered to have satisfied the requirement to show RFP toward attainment and need not submit a separate RFP plan. For similar reasons, such areas are also not subject to a requirement for a mid-course review.

B. Insignificance Determination for the Mobile Source Contribution to PM_{2.5} and NO_x Emissions

The CAA requires federal actions in nonattainment and maintenance areas to “conform to” the goals of SIPs. *See, e.g.*, CAA section 176. This means that such actions will not cause or contribute to violations of a NAAQS; worsen the severity of an existing violation; or delay timely attainment of any NAAQS or any interim milestone. Actions involving Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) funding or approval are subject to the transportation conformity rule (40 CFR part 93, subpart A). Under this rule, metropolitan planning organizations (MPOs) in nonattainment and maintenance areas coordinate with state air quality and transportation agencies, EPA, and the FHWA and FTA to demonstrate that their metropolitan transportation plans and transportation improvement programs (TIP) conform to applicable SIPs. This is typically determined by showing that estimated emissions from existing and planned highway and transit systems are less than or equal to the motor vehicle emissions budgets contained in a SIP.

For motor vehicle emissions budgets to be approvable, they must meet, at a minimum, EPA's adequacy criteria found at 40 CFR 93.118(e)(4). In certain instances, the Transportation Conformity Rule allows areas to forgo establishment of a MVEB where it is demonstrated that the regional motor vehicle emissions for a particular pollutant or precursor are an insignificant contributor to the air quality problem in an area. The general criteria for insignificance determinations can be found in 40 CFR 93.109(m). Insignificance determinations are based on a number of factors, including the percentage of motor vehicle emissions in context of the total SIP inventory; the current state of air quality as determined by monitoring data for the relevant NAAQS; the absence of SIP motor vehicle control measures; and the historical trends and future

projections of the growth of motor vehicle emissions. EPA's rationale for providing for insignificance determinations is described in the July 1, 2004, revision to the Transportation Conformity Rule at 69 FR 40004.⁵ Specifically, the rationale is explained on page 40061 under the subsection entitled "XXIII.B. Areas With Insignificant Motor Vehicle Emissions." Any insignificance determination under review of EPA is subject to the adequacy and approval process for EPA's action on the SIP.

EPA made an insignificance finding through the transportation conformity adequacy process for NOx and directly emitted PM_{2.5} for the Kentucky portion of the Huntington-Ashland PM_{2.5} nonattainment area on June 18, 2010 (75 FR 34734). As a result of EPA's insignificance finding, the Kentucky portion of the Huntington-Ashland Area was no longer required to perform regional emissions analyses for either directly emitted PM_{2.5} or NOx as part of future PM_{2.5} conformity determinations for the 1997 Annual PM_{2.5} NAAQS until such time that EPA reviewed and took action on the Huntington-Ashland Area's attainment plan (the subject of today's proposed action). EPA's June 18, 2010, insignificance finding for directly emitted PM_{2.5} and NOx through the adequacy process (effective on July 6, 2010) only relates to the Kentucky portion of the tri-state Huntington-Ashland Area.⁶

When EPA makes an insignificance determination through the adequacy process for transportation conformity, EPA notes that an adequacy determination does not imply that an insignificance determination in the SIP (i.e., in this case the attainment plan) will ultimately be approved. Consistent with EPA's adequacy review of Kentucky's December 3, 2008, attainment

⁵ Since the July 1, 2004, revision, 40 CFR 93.109 was again revised on March 24, 2010 because of the Transportation Conformity Rule PM_{2.5} and PM₁₀ Amendments update. In the 2004 preamble and rule, the insignificance determinations were outlined in 40 CFR 93.109(k). Due to renumbering of this section in the 2010 update, the provisions for insignificance determinations are now located at 40 CFR 93.109(m).

⁶ In a letter dated October 23, 2009, EPA informed the State of Ohio that regional mobile emissions of direct PM_{2.5} and NOx are insignificant for transportation conformity purposes as well. That insignificance determination took effect on December 22, 2009. EPA will review the adequacy of the West Virginia submittal in a separate action.

plan and the Agency's subsequent thorough review of the entire SIP submission, EPA is proposing to approve Kentucky's insignificance determination for the mobile source contribution of NO_x and PM_{2.5} emissions to the overall PM_{2.5} emissions in the Huntington-Ashland Area. As stated previously, the point, area, and nonroad values for Lawrence County in the December 8, 2008 submittal were for the entire county, not just the census block that U.S.EPA designated as nonattainment. The on-road mobile emissions were determined specifically for the designated portion of Lawrence County. On May 26, 2011, at the request of EPA, the Commonwealth submitted updated tables to include information on point source emissions from the designated census block and population based apportionment of the area and non-road sectors to support the mobile source insignificance finding

EPA finds that Kentucky's SIP submittal meets the criteria in the transportation conformity rules for an insignificance finding for both NO_x and PM_{2.5} contribution from motor vehicles in the Kentucky portion of the Huntington-Ashland Area. That is, EPA finds that the SIP submittal demonstrates that, for NO_x and PM_{2.5}, regional motor vehicle emissions are an insignificant contributor to the annual PM_{2.5} concentrations in the Kentucky portion of the Area. This finding is based on the following factors:

- Tables 8.2-3 and 8.2-5 of Kentucky's submittal, as revised on May 26, 2011, demonstrate that the on-road NO_x and PM_{2.5} emissions in 2009 for the Kentucky portion of the Area are only 7.43 percent and 0.97 percent, respectively, of the total emissions for the Kentucky portion of the Area.
- The tables also show that mobile source emissions of NO_x and PM_{2.5} are declining. Specifically, NO_x and PM_{2.5} mobile emissions were projected to decrease by approximately 28 percent and 40 percent, respectively, between the 2002 and 2009. The

decrease in NO_x and PM_{2.5} emissions were expected during a time when the VMT were expected to increase by 16 percent in the Kentucky portion of the Area.

- There have been no SIP requirements for motor vehicles control measures for the Kentucky portion of the Area.
- According to the Ashland Area Metropolitan Planning Organization (Ashland MPO) analysis, the projected mobile source emissions to 2030 indicate that there is no reason to expect highway motor vehicle growth that would cause a violation of the 1997 Annual PM_{2.5} NAAQS.
- As described above, the area has attained the 1997 Annual PM_{2.5} standard and EPA is proposing to approve the attainment plan for the Kentucky portion of the area.

As discussed above, the Area is not currently required to perform a regional emissions analysis for the Kentucky portion of the Huntington-Ashland Area based on the adequacy determination for the finding that on-road emissions of NO_x and direct PM_{2.5} are insignificant contributors to the area's PM_{2.5} air quality problem. Today EPA is proposing to approve that insignificance finding as part of the state's attainment plan for the Area. If finalized, such approval it would serve to confirm that the Kentucky portion of the Area is not required to perform a regional emissions analysis for either directly emitted PM_{2.5} or NO_x as a part of future PM_{2.5} conformity determinations for the 1997 Annual PM_{2.5} standard.⁷ PM_{2.5} hot-spot analysis

⁷ If Kentucky submits a redesignation request and maintenance plan for its portion of the Huntington-Ashland WV-KY-OH PM_{2.5} nonattainment area and believes that on-road emissions of NO_x and direct PM_{2.5} remain insignificant during the maintenance period, the maintenance plan will need to include information to support a finding that on-road emissions of NO_x and direct PM_{2.5} continue to be insignificant during the maintenance period. The insignificance finding for the attainment demonstration does not automatically continue to apply to the maintenance plan.

will continue to apply for required projects under 40 CFR 93.116 and 93.123(b) of the Transportation Conformity Rule.

Weighing all the factors for an insignificance finding, particularly the minor contribution of mobile source NO_x and PM_{2.5}, EPA has determined that the NO_x and PM_{2.5} contribution from motor vehicles emissions to the Annual PM_{2.5} pollution for the Kentucky portion of the Area are insignificant. EPA's insignificance finding should be considered and specifically noted in the transportation conformity documentation that is prepared for this area.

The insignificance determination that Kentucky submitted for the Huntington-Ashland Area was developed with projected mobile source emissions derived using the MOBILE6 motor vehicle emissions model. EPA is proposing to approve the inventory and the insignificance determination because this model was the most current model available at the time Kentucky was performing its analysis. However, EPA has now issued an updated motor vehicle emissions model known as Motor Vehicle Emission Simulator or MOVES. In its announcement of this model, EPA established a two-year grace period for continued use of MOBILE6 (extending to March 2, 2012), after which states (other than California) must use MOVES in conformity determinations for transportation plans and transportation improvement programs.

V. Proposed Action

EPA is proposing to approve Kentucky's annual PM_{2.5} attainment plan for the Kentucky portion of the Huntington-Ashland Area. EPA has determined that the SIP meets applicable requirements of the CAA, as described in the PM_{2.5} Implementation Rule. Specifically, EPA is proposing to approve Kentucky's attainment demonstration, including the RACM/RACT analysis; RFP analysis, base-year and attainment-year emissions inventories; and, for

transportation conformity purposes, an insignificance determination for PM_{2.5} and NO_x for the mobile source contribution to ambient PM_{2.5} levels for the Commonwealth's portion of the Huntington-Ashland Area. The requirement for a RFP plan is satisfied because Kentucky demonstrated attainment of the 1997 PM_{2.5} NAAQS in the Area by April 2010. Also, because EPA has determined that the Area has attained by the attainment date, the contingency measures submitted by Kentucky are no longer necessary for the Huntington-Ashland Area to meet RFP requirements or to attain the annual PM_{2.5} NAAQS by the attainment date.

VI. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this proposed action merely approves state law as meeting federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);

- does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this proposed rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the Commonwealth, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements, and Particulate matter.

40 CFR Part 81

Environmental protection, Air pollution control.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: January 20, 2012.

A. Stanley Meiburg

Acting Regional Administrator,

Region 4

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