



**6560-50-P**

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Parts 52 and 81**

**[EPA-R04-OAR-2017-0085; FRL-9962-26-Region 4]**

**Air Plan Approval and Air Quality Designation; TN; Redesignation of the Knoxville 1997  
Annual PM<sub>2.5</sub> Nonattainment Area to Attainment**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** On December 20, 2016, Tennessee, through the Tennessee Department of Environment and Conservation (TDEC), submitted a request for the Environmental Protection Agency (EPA) to redesignate the Knoxville-Sevierville-La Follette, TN fine particulate matter (PM<sub>2.5</sub>) nonattainment area (hereinafter referred to as the “Knoxville Area” or “Area”) to attainment for the 1997 Annual PM<sub>2.5</sub> national ambient air quality standards (NAAQS) and to approve a state implementation plan (SIP) revision containing a maintenance plan, a reasonably available control measures (RACM) determination, and source-specific requirements for the Area. EPA is proposing to approve Tennessee’s RACM determination for the Knoxville Area and incorporate it into the SIP; to incorporate source-specific requirements for two sources in the Area into the SIP; determine that the Knoxville Area is attaining the 1997 Annual PM<sub>2.5</sub> NAAQS based on 2013-2015 data; approve Tennessee’s plan for maintaining the 1997 Annual PM<sub>2.5</sub> NAAQS for the Knoxville Area (maintenance plan), including the associated motor vehicle emission budgets (MVEBs) for nitrogen oxides (NO<sub>x</sub>) and PM<sub>2.5</sub> for the years 2014 and 2028, and incorporate it into the SIP; and to redesignate the Knoxville Area to attainment for the 1997

Annual PM<sub>2.5</sub> NAAQS.

**DATES:** Comments must be received on or before **[insert date 30 days after date of publication in the Federal Register]**.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-R04-OAR-2017-0085 at <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

**FOR FURTHER INFORMATION CONTACT:** Sean Lakeman of the Air Regulatory Management Section, in the Air Planning and Implementation Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960. Sean Lakeman may be reached by phone at (404) 562-9043, or via electronic mail at [lakeman.sean@epa.gov](mailto:lakeman.sean@epa.gov).

**SUPPLEMENTARY INFORMATION:**

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- I. What are the Actions EPA is Proposing to Take?**

EPA is proposing to take the following separate but related actions: (1) to approve Tennessee's RACM determination for the Knoxville Area pursuant to Clean Air Act (CAA or Act) sections 172(c)(1) and 189(a)(1)(C) and incorporate it into the SIP; (2) to determine that the Knoxville Area is attaining the 1997 Annual PM<sub>2.5</sub> NAAQS based on 2013-2015 data; (3) to approve Tennessee's plan for maintaining the 1997 Annual PM<sub>2.5</sub> NAAQS (maintenance plan) including the associated MVEBs for the Knoxville Area and incorporate it into the SIP; (4) to incorporate source-specific requirements for two sources in the Area into the SIP; and (5) to redesignate the Knoxville Area to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS. EPA has already made its determination on the adequacy of the 2014 and 2028 MVEBs for the Knoxville Area for transportation conformity purposes and notified the public of that determination through publication of the Notice of Adequacy on March 10, 2017. *See* 82 FR 13337. These MVEBs

were effective on March 27, 2017.<sup>1</sup> The Knoxville Area consists of Anderson, Blount, Knox, and Loudon Counties in their entirety and a portion of Roane County (the area described by U.S. Census 2000 block group identifier 47-145-0307-2). These proposed actions are summarized below and described in greater detail throughout this notice of proposed rulemaking.

EPA's 1997 Annual PM<sub>2.5</sub> nonattainment designation for the Area triggered an obligation for Tennessee to develop a nonattainment SIP revision addressing certain CAA requirements under title I, part D, subpart 1 (hereinafter "Subpart 1") and title I, part D, subpart 4 (hereinafter "Subpart 4"). Subpart 1 contains the general requirements for nonattainment areas for criteria pollutants, including requirements to develop a SIP that provides for the implementation of RACM under section 172(c)(1), requires reasonable further progress (RFP), includes base-year and attainment-year emissions inventories, and provides for the implementation of contingency measures. As discussed in greater detail later in this notice, Subpart 4 contains specific planning and scheduling requirements for coarse particulate matter (PM<sub>10</sub>) nonattainment areas, including requirements for new source review, RACM (under section 189(a)(1)(C)), and RFP. In the General Preamble, EPA's longstanding general guidance interpreting the 1990 amendments to the CAA, EPA discussed the relationship of Subpart 1 and Subpart 4 SIP requirements and pointed out that Subpart 1 requirements were to an extent "subsumed by, or integrally related to, the more specific PM-10 requirements." *See* 57 FR 13538 (April 16, 1992). Under the United States Court of Appeals for the District of Columbia Circuit's (D.C. Circuit's) January 4, 2013,

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<sup>1</sup> EPA issued a letter to the State on February 15, 2017, finding the MVEBs adequate for transportation conformity purposes.

decision in *Natural Resources Defense Council v. EPA*, 706 F.3d 428 (D.C. Cir. 2013), Subpart 4 requirements apply to PM<sub>2.5</sub> nonattainment areas.<sup>2</sup>

On June 2, 2014, EPA published a rule entitled “Identification of Nonattainment Classification and Deadlines for Submission of State Implementation Plan (SIP) Provisions for the 1997 Fine Particle (PM<sub>2.5</sub>) National Ambient Air Quality Standard (NAAQS) and 2006 PM<sub>2.5</sub> NAAQS” (“Classification and Deadlines Rule”). See 79 FR 31566. In that rule, the Agency responded to the D.C. Circuit’s January 2013 decision by identifying all PM<sub>2.5</sub> nonattainment areas for the 1997 and 2006 PM<sub>2.5</sub> NAAQS as “moderate” nonattainment areas under Subpart 4, and by establishing a new SIP submission date of December 31, 2014, for moderate area attainment plans and for any additional attainment-related or nonattainment new source review plans necessary for areas to comply with the requirements applicable under subpart 4. *Id.* at 31567-70.

Based on its moderate nonattainment area classification, Tennessee was required to submit a SIP revision addressing RACM pursuant to CAA section 172(c)(1) and section 189(a)(1)(C) for the Area. Although EPA does not believe that section 172(c)(1) and section 189(a)(1)(C) RACM must be approved into a SIP prior to redesignation of an area to attainment once that area is attaining the NAAQS, EPA is proposing to approve Tennessee’s RACM determination and incorporate it into its SIP pursuant to a recent decision by the United States

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<sup>2</sup> In explaining its decision, the Court reasoned that the plain meaning of the CAA requires implementation of the 1997 PM<sub>2.5</sub> NAAQS under Subpart 4 because PM<sub>2.5</sub> particles fall within the statutory definition of PM<sub>10</sub> and are thus subject to the same statutory requirements. EPA finalized its interpretation of Subpart 4 requirements as applied to the PM<sub>2.5</sub> NAAQS in its final rule entitled “Air Quality State Implementation Plans; Approvals and Promulgations: Fine Particulate Matter National Ambient Air Quality Standards” (81 FR 58010, August 24, 2016).

Court of Appeals for the Sixth Circuit (Sixth Circuit) in *Sierra Club v. EPA*, 793 F.3d 656 (6<sup>th</sup> Cir. 2015), as discussed in Section V.A, below.<sup>3</sup>

EPA is proposing to determine that the Knoxville Area is attaining the 1997 Annual PM<sub>2.5</sub> NAAQS based on recent air quality data. EPA also proposes to approve Tennessee's maintenance plan for the Knoxville Area as meeting the requirements of section 175A (such approval being one of the CAA) criteria for redesignation to attainment status) and incorporate it into the SIP. The maintenance plan is designed to help keep the Knoxville Area in attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS through 2028. The maintenance plan includes 2014 and 2028 MVEBs for NO<sub>x</sub> and direct PM<sub>2.5</sub> for the Knoxville Area. EPA is proposing to approve these MVEBs and incorporate them into the Tennessee SIP. EPA is also proposing to incorporate source-specific requirements for two sources located in the Area - the Tennessee Valley Authority (TVA) Bull Run Fossil Plant and TVA Kingston Fossil Plant - into the SIP. The specific requirements proposed for incorporation are discussed in Section V.A, below.

EPA also proposes to determine that the Knoxville Area has met the requirements for redesignation under section 107(d)(3)(E) of the CAA. Accordingly, in this action, EPA is proposing to approve a request to change the legal designation of Anderson, Blount, Knox, and Loudon Counties and a portion of Roane County within the Knoxville Area, as found at 40 CFR part 81, from nonattainment to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS.

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<sup>3</sup> On August 2, 2012, EPA published a final determination that the Area had attained the 1997 Annual PM<sub>2.5</sub> NAAQS based on ambient air monitoring data for the 2009-2011 time period. *See* 77 FR 45954. In that determination and in accordance with EPA's clean data policy, EPA suspended the requirements for the Area to submit a SIP revision addressing RACM, RFP plans, contingency measures, and certain other attainment planning requirements so long as the Area continues to attain the 1997 Annual PM<sub>2.5</sub> NAAQS. EPA notes, however, that in 2013 it issued results of a technical systems audit on the PM<sub>2.5</sub> laboratory in Tennessee that invalidated all 2010-2012 PM<sub>2.5</sub> monitoring data for the Area. After the monitoring audit issues were addressed, Tennessee submitted valid data for all sites, resulting in complete and valid design values using 2013-2015 data.

In summary, this proposed rulemaking is in response to Tennessee's December 20, 2016, redesignation request and associated SIP submission that address the specific issues summarized above and the necessary elements for redesignation described in section 107(d)(3)(E) of the CAA for the redesignation of the Knoxville Area to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS.

## **II. What is the Background for EPA's Proposed Actions?**

Fine particle pollution can be emitted directly or formed secondarily in the atmosphere.<sup>4</sup> The main precursors of secondary PM<sub>2.5</sub> are sulfur dioxide (SO<sub>2</sub>), NO<sub>x</sub>, ammonia, and volatile organic compounds (VOCs). *See* 81 FR 58010, 58014 (August 24, 2016). Sulfates are a type of secondary particle formed from SO<sub>2</sub> emissions from power plants and industrial facilities. Nitrates, another common type of secondary particle, are formed from NO<sub>x</sub> emissions from power plants, automobiles, and other combustion sources.

On July 18, 1997, EPA promulgated the first air quality standards for PM<sub>2.5</sub>. EPA promulgated an annual standard at a level of 15.0 micrograms per cubic meter (µg/m<sup>3</sup>), based on a 3-year average of annual mean PM<sub>2.5</sub> concentrations. In the same rulemaking, EPA promulgated a 24-hour standard of 65 µg/m<sup>3</sup>, based on a 3-year average of the 98<sup>th</sup> percentile of 24-hour concentrations. On October 17, 2006 (71 FR 61144), EPA retained the annual average NAAQS at 15.0 µg/m<sup>3</sup> but revised the 24-hour NAAQS to 35 µg/m<sup>3</sup>, based again on the 3-year

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<sup>4</sup> Fine particulate matter (PM<sub>2.5</sub>) refers to airborne particles less than or equal to 2.5 micrometers in diameter. Although treated as a single pollutant, fine particles come from many different sources and are composed of many different compounds. In the Knoxville Area, one of the sources of PM<sub>2.5</sub> is fuel burning sources (such as coal-burning power plants, motor vehicles and combustion operations). VOC, also precursors for PM, are emitted from a variety of sources, including motor vehicles, chemical plants, refineries, factories, consumer and commercial products, and other industrial sources. VOC are also emitted by natural sources such as vegetation.

average of the 98<sup>th</sup> percentile of 24-hour concentrations.<sup>5</sup> Under EPA regulations at 40 CFR part 50, the primary and secondary 1997 Annual PM<sub>2.5</sub> NAAQS are attained when the annual arithmetic mean concentration, as determined in accordance with 40 CFR part 50, Appendix N, is less than or equal to 15.0 µg/m<sup>3</sup> at all relevant monitoring sites in the subject area averaged over a 3-year period.

On January 5, 2005, at 70 FR 944, and supplemented on April 14, 2005, at 70 FR 19844, EPA designated the Knoxville Area as nonattainment for the 1997 Annual PM<sub>2.5</sub> NAAQS. All 1997 PM<sub>2.5</sub> NAAQS areas were designated under Subpart 1. Subpart 1 contains the general requirements for nonattainment areas for any pollutant governed by a NAAQS and is less prescriptive than the other subparts of title I, part D. On April 25, 2007 (72 FR 20586), EPA promulgated its Clean Air Fine Particle Implementation Rule, codified at 40 CFR part 51, subpart Z, in which the Agency provided guidance for state and tribal plans to implement the 1997 PM<sub>2.5</sub> NAAQS. The D.C. Circuit remanded the Clean Air Fine Particle Implementation Rule and the final rule entitled “Implementation of the New Source Review (NSR) Program for Particulate Matter Less than 2.5 Micrometers (PM<sub>2.5</sub>)” (73 FR 28321, May 16, 2008) (collectively, “1997 PM<sub>2.5</sub> Implementation Rules”) to EPA on January 4, 2013, in *Natural Resources Defense Council v. EPA*, 706 F.3d 428 (D.C. Cir. 2013). The Court found that EPA erred in implementing the 1997 PM<sub>2.5</sub> NAAQS pursuant to the general implementation provisions of Subpart 1, rather than the particulate matter-specific provisions of Subpart 4.

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<sup>5</sup> In response to legal challenges of the annual standard promulgated in 2006, the D.C. Circuit remanded that NAAQS to EPA for further consideration. *See American Farm Bureau Federation and National Pork Producers Council, et al. v. EPA*, 559 F.3d 512 (D.C. Cir. 2009). However, given that the 1997 and 2006 Annual NAAQS are essentially identical, attainment of the 1997 Annual NAAQS would also indicate attainment of the remanded 2006 Annual NAAQS.

On July 29, 2016, EPA issued a rule entitled, “Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements” (PM<sub>2.5</sub> SIP Requirements Rule) that clarifies how states should meet the statutory SIP requirements that apply to areas designated nonattainment for any PM<sub>2.5</sub> NAAQS under Subparts 1 and 4. *See* 81 FR 58010 (August 24, 2016). It does so by establishing regulatory requirements and providing guidance that is applicable to areas that are currently designated nonattainment for existing PM<sub>2.5</sub> NAAQS and areas that are designated nonattainment for any PM<sub>2.5</sub> NAAQS in the future. In addition, the rule responds to the D.C. Circuit’s remand of the 1997 PM<sub>2.5</sub> Implementation Rules. As a result, the requirements of the rule also govern future actions associated with states’ ongoing implementation efforts for the 1997 and 2006 PM<sub>2.5</sub> NAAQS.

In the PM<sub>2.5</sub> SIP Requirements Rule, EPA revoked the 1997 primary Annual PM<sub>2.5</sub> NAAQS in areas that had always been attainment for that NAAQS, and in areas that had been designated as nonattainment but that were redesignated to attainment before October 24, 2016, the rule’s effective date. *See* 81 FR 58010 (August 24, 2016). EPA also finalized a provision that revokes the 1997 primary Annual PM<sub>2.5</sub> NAAQS in areas that are redesignated to attainment for that NAAQS after October 24, 2016, effective on the effective date of the redesignation of the area to attainment for that NAAQS. *See* 40 CFR 50.13(d).

EPA is proposing to redesignate the Knoxville Area to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS and proposing to approve the CAA section 175A maintenance plan for the 1997 Annual PM<sub>2.5</sub> NAAQS for the reasons described elsewhere in this notice.<sup>6</sup> If the proposal is

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<sup>6</sup> CAA section 175A(a) establishes the requirements that must be fulfilled by nonattainment areas in order to be redesignated to attainment. That section only requires that nonattainment areas for the *primary* standard submit a

finalized, the 1997 primary Annual PM<sub>2.5</sub> NAAQS will be revoked in the Area on the effective date of the redesignation. Beginning on that date, the Area will no longer be subject to transportation or general conformity requirements for the 1997 Annual PM<sub>2.5</sub> NAAQS due to the revocation of the primary NAAQS. *See* 81 FR 58125. The Area will be required to implement the CAA section 175A maintenance plan for the 1997 Annual PM<sub>2.5</sub> NAAQS and the prevention of significant deterioration (PSD) program for the 1997 Annual PM<sub>2.5</sub> NAAQS. Once approved, the maintenance plan can only be revised if the revision meets the requirements of CAA section 110(l) and, if applicable, CAA section 193. The Area would not be required to submit a second 10-year maintenance plan for the 1997 Annual PM<sub>2.5</sub> NAAQS. *See* 81 FR 58144.

### **III. What are the Criteria for Redesignation?**

The CAA provides the requirements for redesignating a nonattainment area to attainment. Specifically, section 107(d)(3)(E) of the CAA allows for redesignation provided the following criteria are met: (1) the Administrator determines that the area has attained the applicable NAAQS; (2) the Administrator has fully approved the applicable implementation plan for the area under section 110(k); (3) the Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable SIP and applicable federal air pollutant control regulations, and other permanent and enforceable reductions; (4) the Administrator has fully approved a maintenance plan for the area as meeting the requirements of section 175A; and (5) the state containing such area has met all requirements applicable to the area under section 110 and part D of title I of the CAA.

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plan addressing maintenance of the *primary* NAAQS in order to be redesignated to attainment; it does not require nonattainment areas for secondary NAAQS to submit maintenance plans in order to be redesignated to attainment.

On April 16, 1992, EPA provided guidance on redesignation in the General Preamble for the Implementation of title I of the CAA Amendments of 1990 (57 FR 13498), and the Agency supplemented this guidance on April 28, 1992 (57 FR 18070). EPA has provided further guidance on processing redesignation requests in the following documents:

1. “Procedures for Processing Requests to Redesignate Areas to Attainment,” Memorandum from John Calcagni, Director, Air Quality Management Division, September 4, 1992 (hereinafter referred to as the “Calcagni Memorandum”);
2. “State Implementation Plan (SIP) Actions Submitted in Response to Clean Air Act (CAA) Deadlines,” Memorandum from John Calcagni, Director, Air Quality Management Division, October 28, 1992; and
3. “Part D New Source Review (Part D NSR) Requirements for Areas Requesting Redesignation to Attainment,” Memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation, October 14, 1994 (hereinafter referred to as the “Nichols Memorandum”).

#### **IV. Why is EPA Proposing these Actions?**

On December 20, 2016, Tennessee requested that EPA redesignate the Knoxville Area to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS and submitted an associated SIP revision containing a maintenance plan, a RACM determination, and source-specific requirements for two sources in the Area. EPA’s evaluation indicates that the RACM determination and source-specific requirements meet the relevant requirements of the CAA and that the Knoxville Area meets the requirements for redesignation set forth in section 107(d)(3)(E), including the maintenance plan requirements under section 175A of the CAA. As a result of these proposed

findings, EPA is proposing to take the separate but related actions summarized in section I of this notice.

## **V. What is EPA's Analysis of the Request?**

As stated above, in accordance with the CAA, EPA proposes to: (1) to approve Tennessee's RACM determination for the Knoxville Area and incorporate it into the SIP; (2) to determine that the Area is attaining the 1997 Annual PM<sub>2.5</sub> NAAQS based on 2013-2015 data; (3) to approve Tennessee's plan for maintaining the 1997 Annual PM<sub>2.5</sub> NAAQS (maintenance plan), including the associated MVEBs for the Knoxville Area, and incorporate it into the Tennessee SIP; (4) to incorporate source-specific requirements for two sources in the Area into the SIP; and (5) to redesignate the Knoxville Area to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS.

### **A. RACM Determination**

#### **1. Relationship Between RACM and Redesignation Criteria**

As noted above, there are a number of planning requirements in the CAA that are designed to help areas achieve attainment or demonstrate progress toward attainment. Where those areas are already attaining the NAAQS in question, EPA has long interpreted these requirements as not applicable for purposes of evaluating whether an area has a fully approved SIP pursuant to CAA section 107(d)(3)(E)(ii). *See, e.g.*, 57 FR 13498, 13564 (April 16, 1992); Calcagni Memorandum. Included in this category of suspended or inapplicable planning requirements are the provisions in Subparts 1 and 4 requiring areas to submit plans providing for implementation of RACM, including reasonably available control technology (RACT). However, in *Sierra Club v. EPA*, the Sixth Circuit vacated EPA's redesignation of the Indiana

and Ohio portions of the Cincinnati-Hamilton nonattainment area to attainment for the 1997 PM<sub>2.5</sub> NAAQS because EPA had not yet approved Subpart 1 RACM for the Cincinnati Area into the Indiana and Ohio SIPs. The Court concluded that “a State seeking redesignation ‘shall provide for the implementation’ of RACM/RACT, even if those measures are not strictly necessary to demonstrate attainment with the PM<sub>2.5</sub> NAAQS. . . . If the State has not done so, EPA cannot ‘fully approve’ the area’s SIP, and redesignation to attainment status is improper.” *Sierra Club*, 793 F.3d at 670.

EPA is bound by the Sixth Circuit’s decision in *Sierra Club v. EPA* within the Court’s jurisdiction.<sup>7</sup> Therefore, EPA is proposing to approve Tennessee’s RACM determination into the SIP in conjunction with its proposal to approve the State’s redesignation request for the Area pursuant to the Court’s decision.<sup>8</sup>

## **2. Proposed Approval of Tennessee’s RACM Determination**

Subpart 1 requires that each attainment plan “provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emission 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.” *See* CAA section 172(c)(1). The attainment planning requirements in Subpart 4 that are specific to PM<sub>10</sub> (including PM<sub>2.5</sub>) likewise impose

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<sup>7</sup> The states of Kentucky, Michigan, Ohio, and Tennessee are located within the Sixth Circuit’s jurisdiction.

<sup>8</sup> The EPA Region 4 Regional Administrator signed a memorandum on July 20, 2015, seeking concurrence from the Director of EPA’s Air Quality Policy Division (AQPD) in the Office of Air Quality Planning and Standards to act inconsistent with EPA’s interpretation of CAA sections 107(d)(3)(E) and 172(c)(1) when taking action on pending and future redesignation requests in Kentucky and Tennessee because the Region is bound by the Sixth Circuit’s decision in *Sierra Club v. EPA*. The AQPD Director issued her concurrence on July 22, 2015. This memorandum is not required to satisfy EPA’s regional consistency regulations. *See* 40 CFR 56.5(b)(1); 81 FR 51102 (August 3, 2016).

upon states an obligation to develop attainment plans that require RACM for sources of direct PM<sub>2.5</sub> and PM<sub>2.5</sub> precursors within a moderate nonattainment area. CAA section 189(a)(1)(C) requires that states with a moderate PM<sub>2.5</sub> nonattainment area have attainment plan provisions to assure that RACM is implemented by no later than four years after designation of the area.<sup>9</sup>

EPA reads CAA sections 172(c)(1) and 189(a)(1)(C), and EPA's implementing regulations, together to require that attainment plans for moderate nonattainment areas must provide for the implementation of RACM for existing sources of PM<sub>2.5</sub> and PM<sub>2.5</sub> precursors in the nonattainment area as expeditiously as practicable but no later than four years after designation.<sup>10</sup> As set forth in 40 CFR 51.1009(a)(4), states are required to adopt and implement all technologically and economically feasible control measures for PM and its precursors that are necessary to bring a moderate nonattainment area into attainment by its attainment date or that would advance attainment by one year. If a state demonstrates that a control measure would not be necessary for attaining the standard as expeditiously as practicable or would not advance the attainment date, the state is not required to adopt such measure into its SIP. 40 CFR 51.1009(a)(4)(i)(A) further specifies that those measures that are identified for adoption and implementation constitute RACM for the area. Therefore, any measure that is not necessary for the area to achieve attainment or does not advance attainment by one year does not constitute RACM.<sup>11</sup>

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<sup>9</sup> States with areas later reclassified as "serious" nonattainment areas under Subpart 4 must also develop and submit later plans to meet additional requirements for serious areas. *See* 40 CFR 51.1003(b).

<sup>10</sup> This interpretation is consistent with guidance described in the General Preamble. *See* 57 FR 13498, 13540 (April 16, 1992). For further discussion, see 81 FR 58010, 58035 (August 24, 2016).

<sup>11</sup> Reviewing courts have upheld EPA's interpretation of RACM as encompassing only those measures necessary to advance attainment. *See Sierra Club v. EPA*, 314 F.3d 735, 743-745 (5<sup>th</sup> Cir. 2002); *Sierra Club v. EPA*, 294 F.3d 155, 162-163 (D.C. Cir. 2002); *NRDC v. EPA*, 571 F.3d 1245, 1252 (D.C. Cir. 2009).

In this action, EPA proposes to approve Tennessee's December 20, 2016 RACM submission. In that submission, Tennessee did not identify any measures necessary to bring the Area into attainment, nor any measures that would advance attainment of the Area, because the Area is already attaining the 1997 Annual PM<sub>2.5</sub> NAAQS. Because only those measures that are necessary to attain by the attainment date or would advance attainment by one year constitute RACM under CAA sections 172(c)(1), 189(a)(1), and EPA's implementing regulations, EPA proposes to approve Tennessee's determination that no additional measures are necessary to meet the State's obligations to have fully adopted RACM under the CAA and under the Sixth Circuit's decision in *Sierra Club*.

**B. Redesignation Request and Maintenance Demonstration**

The five redesignation criteria provided under CAA section 107(d)(3)(E) are discussed in greater detail for the Area in the following paragraphs of this section.

***Criteria (1) - The Knoxville Area has attained the 1997 Annual PM<sub>2.5</sub> NAAQS***

For redesignating a nonattainment area to attainment, the CAA requires EPA to determine that the area has attained the applicable NAAQS (CAA section 107(d)(3)(E)(i)). For PM<sub>2.5</sub>, an area may be considered to be attaining the 1997 Annual PM<sub>2.5</sub> NAAQS if it meets the standards, as determined in accordance with 40 CFR 50.13 and Appendix N of part 50, based on three complete, consecutive calendar years of quality-assured air quality monitoring data. To attain the 1997 Annual PM<sub>2.5</sub> NAAQS, the 3-year average of the annual arithmetic mean concentration, as determined in accordance with 40 CFR part 50, Appendix N, must be less than or equal to 15.0 µg/m<sup>3</sup> at all relevant monitoring sites in the subject area over a 3-year period. The relevant data must be collected and quality-assured in accordance with 40 CFR part 58 and

recorded in the EPA Air Quality System (AQS) database. The monitors generally should have remained at the same location for the duration of the monitoring period required for demonstrating attainment.

EPA has evaluated the complete, quality-assured data for the Area from 2013-2015, and as shown in Table 1 below, the monitors in the Knoxville Area all have annual arithmetic mean PM<sub>2.5</sub> concentrations averaged over three years (i.e., design values) that are attaining the 1997 Annual PM<sub>2.5</sub> NAAQS.

**Table 1. Knoxville Area 2013-2015 Design Values for the 1997 Annual PM<sub>2.5</sub> NAAQS**

Monitor Site	Site ID	2013-2015 Design Value (µg/m <sup>3</sup> )
Sequoyah Ave, Maryville	470090011	8.6
Bearden Middle School	470930028	9.2
Davanna Street, Air Lab	470931013	9.9
Rule High School	470931017	9.9
Spring Hill Elementary School	470931020	9.1
Loudon Pope site	471050108	9.4
Harriman High School	471450004	8.7

As shown in Table 1, above, the Knoxville Area has a 2013-2015 design value of 9.9 µg/m<sup>3</sup>, which is below the 1997 Annual PM<sub>2.5</sub> NAAQS. Therefore, EPA has preliminarily concluded that the Knoxville Area meets the 1997 Annual PM<sub>2.5</sub> NAAQS of 15.0 µg/m<sup>3</sup> for the period 2013-2015, the most recent 3-year period of certified data availability. For this proposed action, EPA has also reviewed the preliminary 2014-2016 design values for the Area and proposes to find that the preliminary data does not indicate a violation of the NAAQS.<sup>12</sup> EPA will not take final action to approve the redesignation if the 3-year design value exceeds the

<sup>12</sup> This preliminary data is available at EPA's air data website: [http://aqsdrl.epa.gov/aqsweb/aqstmp/airdata/download\\_files.html#Daily](http://aqsdrl.epa.gov/aqsweb/aqstmp/airdata/download_files.html#Daily)

NAAQS prior to EPA finalizing the redesignation. As discussed in more detail below, Tennessee has committed to continue monitoring in the Knoxville Area in accordance with 40 CFR part 58.

***Criteria (2) – Tennessee has a fully approved SIP under section 110(k) for the Knoxville Area and Criteria (5) – Tennessee has met all Applicable Requirements under Section 110 and Part D of the CAA.***

For redesignating a nonattainment area to attainment, the CAA requires EPA to determine that the state has met all applicable requirements under section 110 and part D of title I of the CAA (CAA section 107(d)(3)(E)(v)) and that the state has a fully approved SIP under section 110(k) for the area (CAA section 107(d)(3)(E)(ii)). EPA proposes to find that Tennessee has met all applicable SIP requirements for the Knoxville Area under section 110 of the CAA (general SIP requirements) for purposes of redesignation. Additionally, EPA proposes to find that Tennessee has met all applicable SIP requirements for purposes of redesignation under part D of title I of the CAA in accordance with section 107(d)(3)(E)(v). Further, EPA proposes to determine that the SIP is fully approved with respect to all requirements applicable for purposes of redesignation in accordance with section 107(d)(3)(E)(ii) if EPA takes final action to incorporate Tennessee's RACM determination into the SIP pursuant to the Sixth Circuit's decision in *Sierra Club v. EPA*. In making these determinations, EPA ascertained which requirements are applicable to the Area and, if applicable, that they are fully approved under section 110(k). SIPs must be fully approved only with respect to requirements that were applicable prior to submittal of the complete redesignation request.

a. *Tennessee has met all applicable requirements under section 110 and part D of the CAA.*

*General SIP requirements.* General SIP elements and requirements are delineated in section 110(a)(2) of title I, part A of the CAA. These requirements include, but are not limited to, the following: submittal of a SIP that has been adopted by the state after reasonable public notice and hearing; provisions for establishment and operation of appropriate procedures needed to monitor ambient air quality; implementation of a source permit program; provisions for the implementation of part C requirements (Prevention of Significant Deterioration (PSD)) and provisions for the implementation of part D requirements (NNSR permit programs); provisions for air pollution modeling; and provisions for public and local agency participation in planning and emission control rule development.

Section 110(a)(2)(D) requires that SIPs contain certain measures to prevent sources in a state from significantly contributing to air quality problems in another state. To implement this provision, EPA has required certain states to establish programs to address the interstate transport of air pollutants. The section 110(a)(2)(D) requirements for a state are not linked with a particular nonattainment area's designation and classification in that state. EPA believes that the requirements linked with a particular nonattainment area's designation and classifications are the relevant measures to evaluate in reviewing a redesignation request. The transport SIP submittal requirements, where applicable, continue to apply to a state regardless of the designation of any one particular area in the state. Thus, EPA does not believe that the CAA's interstate transport requirements should be construed to be applicable requirements for purposes of redesignation.

In addition, EPA believes that other section 110 elements that are neither connected with nonattainment plan submissions nor linked with an area's attainment status are not applicable requirements for purposes of redesignation. The area will still be subject to these requirements after the area is redesignated. The section 110 and part D requirements which are linked with a particular area's designation and classification are the relevant measures to evaluate in reviewing a redesignation request. This approach is consistent with EPA's existing policy on applicability (i.e., for redesignations) of conformity and oxygenated fuels requirements, as well as with section 184 ozone transport requirements. *See* Reading, Pennsylvania, proposed and final rulemakings (61 FR 53174-53176, October 10, 1996), (62 FR 24826, May 7, 1997); Cleveland-Akron-Loraine, Ohio, final rulemaking (61 FR 20458, May 7, 1996); and Tampa, Florida, final rulemaking at (60 FR 62748, December 7, 1995). *See also* the discussion on this issue in the Cincinnati, Ohio, redesignation (65 FR 37879, June 19, 2000), and in the Pittsburgh, Pennsylvania, redesignation (66 FR 53094, October 19, 2001).

EPA has reviewed Tennessee's SIP and has preliminarily concluded that it meets the general SIP requirements under section 110(a)(2) of the CAA to the extent they are applicable for purposes of redesignation. EPA has previously approved provisions of Tennessee's SIP addressing CAA section 110(a)(2) requirements including provisions addressing the 1997 Annual PM<sub>2.5</sub> NAAQS. *See* 77 FR 45958 (August 2, 2012), 78 FR 18241 (March 26, 2013), and 79 FR 26143 (May 7, 2014). These requirements are, however, statewide requirements that are not linked to the PM<sub>2.5</sub> nonattainment status of the Area. Therefore, EPA believes these SIP elements are not applicable for purposes of this redesignation.

*Title I, part D, applicable SIP requirements.* EPA proposes to determine that Tennessee meets the applicable SIP requirements for the Knoxville Area for purposes of redesignation under part D of the CAA. Subpart 1 of part D, comprised of sections 172-179B of the CAA, sets forth the basic nonattainment requirements applicable to all nonattainment areas. For purposes of evaluating this redesignation request, the applicable Subpart 1 SIP requirements are contained in section 172(c) and in section 176. A thorough discussion of the requirements contained in sections 172 and 176 can be found in the General Preamble for Implementation of Title I. *See* 57 FR 13498 (April 16, 1992). Subpart 4, found in section 189, sets forth additional nonattainment requirements for particulate matter nonattainment areas.

*Subpart 1, section 172 Requirements.* Section 172(c) sets out general nonattainment plan requirements. A thorough discussion of these requirements can be found in the General Preamble. EPA's longstanding interpretation of the nonattainment planning requirements of section 172 is that once an area is attaining the NAAQS, those requirements are not "applicable" for purposes of CAA section 107(d)(3)(E)(ii) and therefore need not be approved into the SIP before EPA can redesignate the area. In the General Preamble, EPA set forth its interpretation of applicable requirements for purposes of evaluating redesignation requests when an area is attaining a standard. *See* 57 FR at 13564. EPA noted that the requirements for RFP and other measures designed to provide for an area's attainment do not apply in evaluating redesignation requests because those nonattainment planning requirements "have no meaning" for an area that has already attained the standard. *Id.* This interpretation is also set forth in the Calcagni Memorandum.

EPA's understanding of section 172 also forms the basis of its Clean Data Policy. Under the Clean Data Policy, EPA promulgates a determination of attainment, published in the Federal Register and subject to notice-and-comment rulemaking, and this determination formally suspends a state's obligation to submit most of the attainment planning requirements that would otherwise apply, including an attainment demonstration and planning SIPs to provide for RFP, RACM, and contingency measures under section 172(c)(9). The Clean Data Policy has been codified in regulations regarding the implementation of the ozone and PM<sub>2.5</sub> NAAQS. *See e.g.*, 70 FR 71612 (November 29, 2005) and 72 FR 20586 (April 25, 2007).

EPA's long-standing interpretation regarding the applicability of the section 172(c) attainment planning requirements for an area that is attaining a NAAQS applies in this proposed redesignation of the Area as well, with the exception of the applicability of the requirement to implement RACM under section 172(c)(1). As discussed above, the Sixth Circuit ruled in *Sierra Club* that, in order to meet the requirement of section 107(d)(3)(E)(ii), states are required to submit plans addressing RACM under section 172(c)(1) and EPA is required to approve those plans prior to redesignating an area, regardless of whether the area is attaining the standard. Because Tennessee is within the Sixth Circuit's jurisdiction, EPA is acting in accordance with the *Sierra Club* decision by proposing to approve Tennessee's RACM determination for the Area in parallel with this proposed redesignation action.

Section 172(c)(1) requires the plans for all nonattainment areas to provide for the implementation of RACM as expeditiously as practicable and to provide for attainment of the primary NAAQS. Under this requirement, a state must consider all available control measures, including reductions that are available from adopting reasonably available control technology on

existing sources, for a nonattainment area and adopt and implement such measures as are reasonably available in the area as components of the area's attainment demonstration. As discussed above, EPA is proposing to approve Tennessee's RACM determination and incorporate it into the SIP.

As noted above, the remaining section 172(c) attainment planning requirements are not applicable for purposes of evaluating the State's redesignation request. Specifically, the RFP requirement under section 172(c)(2), which is defined as progress that must be made toward attainment, the requirement to submit section 172(c)(9) contingency measures, which are measures to be taken if the area fails to make reasonable further progress to attainment, and the section 172(c)(6) requirement that the SIP contain control measures necessary to provide for attainment of the standard, are not applicable requirements that Tennessee must meet here because the Area has monitored attainment of the 1997 Annual PM<sub>2.5</sub> NAAQS.

Section 172(c)(3) requires submission and approval of a comprehensive, accurate, and current inventory of actual emissions. On August 21, 2012 (77 FR 50378), EPA approved Tennessee's 2002 base-year emissions inventory for the Knoxville Area.

Section 172(c)(4) requires the identification and quantification of allowable emissions for major new and modified stationary sources to be allowed in an area, and section 172(c)(5) requires source permits for the construction and operation of new and modified major stationary sources anywhere in the nonattainment area. EPA has determined that, since PSD requirements will apply after redesignation, areas being redesignated need not comply with the requirement that a NNSR program be approved prior to redesignation, provided that the area demonstrates maintenance of the NAAQS without NNSR. A more detailed rationale for this view is described

in the Nichols Memorandum. *See also* rulemakings for the Illinois portion of the St. Louis Area (77 FR 34819, 34826, June 12, 2012); Louisville, Kentucky (66 FR 53665, 53669, October 23, 2001); Grand Rapids, Michigan (61 FR 31831, 31834–31837, June 21, 1996); Cleveland-Akron-Lorain, Ohio (61 FR 20458, 20469–20470, May 7, 1996); Detroit, Michigan (60 FR 12459, 12467–12468, March 7, 1995). Tennessee has demonstrated that the Knoxville Area will be able to maintain the NAAQS without NNSR in effect, and therefore Tennessee need not have fully approved NNSR programs prior to approval of the redesignation request. Tennessee’s PSD program will become effective in the Knoxville Area upon redesignation to attainment.

Section 172(c)(7) requires the SIP to meet the applicable provisions of section 110(a)(2). As noted above, EPA believes that the Tennessee SIP meets the requirements of section 110(a)(2) applicable for purposes of redesignation.

*Subpart 1, section 176 Conformity Requirements.* Section 176(c) of the CAA requires states to establish criteria and procedures to ensure that federally-supported or funded projects conform to the air quality planning goals in the applicable SIP. The requirement to determine conformity applies to transportation plans, programs and projects that are developed, funded or approved under title 23 of the United States Code (U.S.C.) and the Federal Transit Act (transportation conformity) as well as to all other federally-supported or funded projects (general conformity). State transportation conformity SIP revisions must be consistent with federal conformity regulations relating to consultation, enforcement and enforceability that EPA promulgated pursuant to its authority under the CAA.

EPA believes that it is reasonable to interpret the conformity SIP requirements<sup>13</sup> as not applying for purposes of evaluating the redesignation request under section 107(d) because state conformity rules are still required after redesignation and federal conformity rules apply where state rules have not been approved. *See Wall v. EPA*, 265 F.3d 426 (6th Cir. 2001) (upholding this interpretation); 60 FR 62748 (December 7, 1995). Nonetheless, Tennessee has an approved conformity SIP. *See* 78 FR 29027 (May 17, 2013).

*Subpart 4 Requirements.* As discussed above, in *NRDC v. EPA*, the D.C. Circuit held that EPA should have implemented the 1997 PM<sub>2.5</sub> NAAQS pursuant to the particulate matter-specific provisions of Subpart 4. On remand, EPA identified all areas designated nonattainment for either the 1997 or the 2006 PM<sub>2.5</sub> NAAQS, including the Knoxville Area, as moderate nonattainment areas for purposes of Subpart 4 in the Classification and Deadlines Rule. Moderate nonattainment areas are subject to the requirements of sections 189(a), (c), and (e), including: (1) an approved permit program for construction of new and modified major stationary sources (section 189(a)(1)(A)); (2) an attainment demonstration (section 189(a)(1)(B)); (3) provisions for RACM (section 189(a)(1)(C)); (4) quantitative milestones demonstrating RFP toward attainment by the applicable attainment date (section 189(c)); and (5) precursor control (section 189(e)).<sup>14</sup>

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<sup>13</sup> CAA section 176(c)(4)(E) requires states to submit revisions to their SIPs to reflect certain Federal criteria and procedures for determining transportation conformity. Transportation conformity SIPs are different from the MVEBs that are established in control strategy SIPs and maintenance plans.

<sup>14</sup> EPA's final implementation rule (81 FR 58010, August 24, 2016) includes, among other things, the Agency's interpretation of these moderate area requirements for purposes of PM<sub>2.5</sub> NAAQS implementation.

With respect to the specific attainment planning requirements under Subpart 4,<sup>15</sup> EPA applies the same interpretation that it applies to attainment planning requirements under Subpart 1 or any of the other pollutant-specific subparts. That is, under its long-standing interpretation of the CAA, where an area is already attaining the standard, EPA does not consider those attainment planning requirements to be applicable for purposes of evaluating a request for redesignation, that is, CAA section 107(d)(3)(E)(ii) or (v), because requirements that are designed to help an area achieve attainment no longer have meaning where an area is already meeting the standard. EPA has proposed to determine that the Area has attained the 1997 Annual PM<sub>2.5</sub> standard. Therefore, under its longstanding interpretation, EPA is proposing to determine that the requirements to submit an attainment demonstration under section 189(a)(1)(B) and a RFP demonstration under section 189(c)(1) are not applicable for purposes of evaluating Tennessee's redesignation request. As discussed in greater detail above, the Sixth Circuit's decision in *Sierra Club* requires EPA to approve RACM under Subpart 1 prior to redesignation, and EPA is bound by the Sixth Circuit's decision within its jurisdiction. EPA therefore proposes to approve Tennessee's RACM submittal for the Knoxville Area. Such approval, if finalized, would also satisfy any similar obligation regarding Subpart 4 RACM.

The permit requirements of Subpart 4, contained in section 189(a)(1)(A), refer to and apply the Subpart 1 permit provisions requirements of sections 172 and 173 to PM<sub>10</sub>, without adding to them. Consequently, EPA believes that section 189(a)(1)(A) does not itself impose for redesignation purposes any additional requirements for moderate areas beyond those contained

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<sup>15</sup> These planning requirements include the attainment demonstration, quantitative milestone requirements, and RACM analysis.

in Subpart 1.<sup>16</sup> As discussed above, EPA has long relied on the interpretation that a fully approved nonattainment new source review program is not considered an applicable requirement for redesignation, provided the area can maintain the standard with a PSD program after redesignation. A detailed rationale for this view is described in the Nichols Memorandum. *See also* rulemakings for the Illinois portion of the St. Louis Area (77 FR 34819, 34826, June 12, 2012); Louisville, Kentucky (66 FR 53665, 53669, October 23, 2001); Grand Rapids, Michigan (61 FR 31831, 31834–31837, June 21, 1996); Cleveland-Akron-Lorain, Ohio (61 FR 20458, 20469–20470, May 7, 1996); Detroit, Michigan (60 FR 12459, 12467–12468, March 7, 1995).

*Subpart 4 and the Control of PM<sub>2.5</sub> Precursors.* CAA section 189(e) provides that control requirements for major stationary sources of direct PM<sub>10</sub> (including PM<sub>2.5</sub>) shall also apply to PM precursors from those sources, except where EPA determines that major stationary sources of such precursors “do not contribute significantly to PM<sub>10</sub> levels which exceed the standard in the area.” The CAA does not explicitly address whether it would be appropriate to include a potential exemption from precursor controls for all source categories under certain circumstances. In implementing Subpart 4 with regard to controlling PM<sub>10</sub>, EPA permitted states to determine that a precursor was “insignificant” where the state could show in its attainment plan that it would expeditiously attain without adoption of emission reduction measures aimed at that precursor. This approach was upheld in *Association of Irrigated Residents v. EPA*, 423 F.3d 989 (9th Cir. 2005) and extended to PM<sub>2.5</sub> implementation in the PM Implementation Rule. A state may develop its attainment plan and adopt reasonably available control measures that target only those precursors that are necessary to control for purposes of timely attainment. *See* 81 FR

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<sup>16</sup> The potential effect of section 189(e) on section 189(a)(1)(A) for purposes of evaluating this redesignation is discussed below.

58020. In the rule, EPA also finalized application of 189(e) to the NNSR permitting program, requiring states to determine whether a new major source of a precursor might have a significant contribution to air quality before allowing exemption of controls of a precursor from a new major stationary source or major modification in the context of that program. *See* 81 FR 58026.

Therefore, because the requirement of section 189(e) is primarily actionable in the context of addressing precursors in an attainment plan and in NNSR permitting, a precursor exemption analysis under section 189(e) and EPA's implementing regulations is not an applicable requirement that needs be fully approved in the context of a redesignation under CAA section 107(d)(3)(E)(ii). As discussed above, for areas that are attaining the standard, EPA does not interpret attainment planning requirements of Subparts 1 and 4 to be applicable requirements for the purposes of redesignating an area to attainment nor does it interpret NNSR to be an applicable requirement if the area can maintain the NAAQS with a PSD program after redesignation. However, to the extent that Tennessee is required to conduct a precursor exemption analysis in order to satisfy 189(e) in the context of its RACM determination for the Knoxville Area, which is required pursuant to the Sixth Circuit's decision in *Sierra Club*, EPA proposes to find that the requirements of section 189(e), as interpreted by EPA's regulations, are met in this case. The Area has expeditiously attained the 1997 Annual PM<sub>2.5</sub> NAAQS, and therefore, no additional controls of any pollutant, including any PM<sub>2.5</sub> precursor, are necessary to bring the Area into attainment.<sup>17</sup>

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<sup>17</sup> EPA also notes that the Knoxville Area contains no major stationary sources of ammonia; existing major stationary sources of VOCs are adequately controlled under other provisions of the CAA regulating the ozone NAAQS; and attainment in the Area is due to permanent and enforceable emissions reductions on all precursors necessary to provide for continued attainment. The Area has reduced VOC emissions through the implementation of various control programs including VOC RACT regulations and various on-road and non-road motor vehicle control

For these reasons, EPA proposes to find that Tennessee has satisfied all applicable requirements for purposes of redesignation of the Knoxville Area under section 110 and part D of the CAA.

*b. Tennessee has a fully-approved applicable SIP under section 110(k) of the CAA.*

EPA has fully approved the applicable Tennessee SIP for the Knoxville Area under section 110(k) of the CAA for all requirements applicable for purposes of redesignation with the exception of the RACM requirements. In today's proposed action, EPA is proposing to approve the RACM determination for the Area and incorporate it into the Kentucky SIP. EPA may rely on prior SIP approvals in approving a redesignation request (*see* Calcagni Memorandum at p. 3; *Southwestern Pennsylvania Growth Alliance v. Browner*, 144 F.3d 984 (6<sup>th</sup> Cir. 1998; *Wall*, 265 F.3d 426) plus any additional measures it may approve in conjunction with a redesignation action. *See* 68 FR 25426 (May 12, 2003) and citations therein. Following passage of the CAA of 1970, Tennessee has adopted and submitted, and EPA has fully approved at various times, provisions addressing the various SIP elements applicable for the 1997 Annual PM<sub>2.5</sub> NAAQS in the Knoxville Area.

As indicated above, EPA believes that the section 110 elements not connected with nonattainment plan submissions and not linked to an area's nonattainment status are not applicable requirements for purposes of redesignation. If EPA finalizes approval of the RACM determination, EPA has approved all part D requirements applicable under the 1997 Annual PM<sub>2.5</sub> NAAQS, as identified above, for purposes of this proposed redesignation pursuant to the Sixth Circuit's decision.

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programs. Table 5, below, shows that future VOC emissions are 12 percent below the attainment year emissions level.

***Criteria (3) - The air quality improvement in the Knoxville Area is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP and applicable federal air pollution control regulations and other permanent and enforceable reductions.***

For redesignating a nonattainment area to attainment, the CAA requires EPA to determine that the air quality improvement in the area is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP and applicable federal air pollution control regulations and other permanent and enforceable reductions (CAA section 107(d)(3)(E)(iii)). EPA has preliminarily determined that Tennessee has demonstrated that the observed air quality improvement in the Knoxville Area is due to permanent and enforceable reductions in emissions resulting from federal measures and a 2011 consent decree between Tennessee and the Tennessee Valley Authority (TVA).<sup>18</sup>

Federal measures enacted in recent years have resulted in permanent emission reductions in particulate matter and its precursors. The federal measures that have been implemented include:

*Tier 2 vehicle standards and low-sulfur gasoline.* On February 10, 2000 (65 FR 6698), EPA promulgated Tier 2 motor vehicle emission standards and gasoline sulfur control requirements.<sup>19</sup> These emission control requirements result in lower VOC and NO<sub>x</sub> emissions from new cars and light duty trucks, including sport utility vehicles. With respect to fuels, this rule required refiners and importers of gasoline to meet lower standards for sulfur in gasoline,

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<sup>18</sup> Consent Decree, *State of Alabama et al. v. TVA* (Civil Action No. 3:11-cv-00170, E.D. Tenn, June 15, 2011) available in the docket at Appendix B to Tennessee's December 20, 2016, SIP submittal.

<sup>19</sup> Tennessee also identified Tier 3 Motor Vehicle Emissions and Fuel Standards a federal measure. EPA issued this rule on April 28, 2014 (79 FR 23414), which applies to light duty passenger cars and trucks. EPA promulgated this rule to reduce air pollution from new passenger cars and trucks beginning in 2017. While the reductions did not aid the Area in attaining the standard, emissions reductions from these standards will occur during the maintenance period.

which were phased in between 2004 and 2006. By 2006, refiners were required to meet a 30 ppm average sulfur level, with a maximum cap of 80 ppm. This reduction in fuel sulfur content ensures the effectiveness of low emission-control technologies. The Tier 2 tailpipe standards established in this rule were phased in for new vehicles between 2004 and 2009. EPA estimates that, when fully implemented, this rule will cut NO<sub>x</sub> and VOC emissions from light-duty vehicles and light-duty trucks by approximately 76 and 28 percent, respectively. NO<sub>x</sub> and VOC reductions from medium-duty passenger vehicles included as part of the Tier 2 vehicle program are estimated to be approximately 37,000 and 9,500 tons per year, respectively, when fully implemented. In addition, EPA estimates that beginning in 2007, a reduction of 30,000 tons per year of NO<sub>x</sub> will result from the benefits of sulfur control on heavy-duty gasoline vehicles. Some of these emission reductions occurred by the attainment years and additional emission reductions will occur throughout the maintenance period, as older vehicles are replaced with newer, compliant model years.

*Heavy-duty gasoline and diesel highway vehicle standards & ultra low-sulfur diesel rule.*

On October 6, 2000 (65 FR 59896), EPA promulgated a rule to reduce NO<sub>x</sub> and VOC emissions from heavy-duty gasoline and diesel highway vehicles that began to take effect in 2004. On January 18, 2001 (66 FR 5002), EPA promulgated a second phase of standards and testing procedures which began in 2007 to reduce particulate matter from heavy-duty highway engines and reduced the maximum highway diesel fuel sulfur content from 500 ppm to 15 ppm. The total program should achieve a 90 percent reduction in PM emissions and a 95 percent reduction in NO<sub>x</sub> emissions for new engines using low-sulfur diesel, compared to existing engines using higher-content sulfur diesel. EPA expects that this rule will reduce NO<sub>x</sub> emissions by 2.6

million tons by 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.

*Non-road, large spark-ignition engines and recreational engines standards.* On November 8, 2002 (67 FR 68242), EPA adopted emission standards for large spark-ignition engines such as those used in forklifts and airport ground-service equipment; recreational vehicles such as off-highway motorcycles, all-terrain vehicles, and snowmobiles; and recreational marine diesel engines. These emission standards were phased in from model year 2004 through 2012. When all of the non-road spark-ignition and recreational engine standards are fully implemented, an overall 72 percent reduction in hydrocarbons, 80 percent reduction in NO<sub>x</sub>, and 56 percent reduction in carbon monoxide emissions are expected by 2020. These controls help reduce ambient concentrations of PM<sub>2.5</sub>.

*Large non-road diesel engine standards.* On June 29, 2004, (69 FR 38958), EPA issued a rule adopting emissions standards for non-road diesel engines and sulfur reductions in non-road diesel fuel. This rule applies to diesel engines used primarily in construction, agricultural, and industrial applications. The rule is being phased in between 2008 through 2015, and when fully implemented, will reduce emissions of NO<sub>x</sub>, VOC, particulate matter, carbon monoxide from these engines. It is estimated that compliance with this rule will cut NO<sub>x</sub> emissions from non-road diesel engines by up to 90 percent nationwide.

*NO<sub>x</sub> SIP Call.* On October 27, 1998 (63 FR 57356), EPA issued the NO<sub>x</sub> SIP Call requiring the District of Columbia and 22 states to reduce emissions of NO<sub>x</sub>, a precursor to ozone and PM<sub>2.5</sub> pollution, and providing a mechanism (the NO<sub>x</sub> Budget Trading Program) that states could use to achieve those reductions. Affected states were required to comply with Phase

I of the SIP Call beginning in 2004 and Phase II beginning in 2007. By the end of 2008, ozone season NO<sub>x</sub> emissions from sources subject to the NO<sub>x</sub> SIP Call dropped by 62 percent from 2000 emissions levels. All NO<sub>x</sub> SIP Call states, including Tennessee, have SIPs that currently satisfy their obligations under the NO<sub>x</sub> SIP Call, and EPA will continue to enforce the requirements of the NO<sub>x</sub> SIP Call.

*Reciprocating internal combustion engine National Emissions Standards for Hazardous Air Pollutants (NESHAP).* In 2010, EPA issued rules regulating emissions of air toxics from existing compression ignition (CI) and spark ignition (SI) stationary reciprocating internal combustion engines (RICE) that meet specific site rating, age, and size criteria. With these RICE standards fully implemented in 2013, EPA estimates that the CI RICE standards reduce PM<sub>2.5</sub> emissions from the covered CI engines by approximately 2,800 tons per year (tpy) and VOC emissions by approximately 27,000 tpy and that the SI RICE standards reduce NO<sub>x</sub> emissions from the covered SI engines by approximately 96,000 tpy.

*Boiler NESHAP.* On March 21, 2011, EPA established emission standards for industrial, commercial, and institutional boilers and process heaters at major sources to meet hazardous air pollutant standards reflecting the application of maximum achievable control technology.<sup>20</sup> See 76 FR 15608. The compliance dates for the rule are January 31, 2016, for existing sources and April 1, 2013, or upon startup, whichever is later, for new sources. New sources are defined as sources that began operation on or after June 4, 2010. EPA estimates that the rule will reduce nationwide emissions of VOC by approximately 2,300 tpy. See 78 FR 7138 (January 31, 2013).

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<sup>20</sup> On January 31, 2013, the EPA promulgated final amendments to this rule. See 78 FR 7138. Following that action, the Administrator received 13 petitions for reconsideration that identified certain issues that petitioners claimed warranted further opportunity for public comment. EPA took final action in response to these petitions on November 20, 2015. See 80 FR 72790.

*Utility Mercury Air Toxics Standards (MATS) and New Source Performance Standards (NSPS).* The MATS for coal and oil-fired electric generation units (EGUs) and the NSPS for fossil-fuel-fired electric utility steam generating units were published on February 16, 2012 (77 FR 9304).<sup>21</sup> The purpose is to reduce mercury and other toxic air pollutant emissions from coal and oil-fired EGUs, 25 megawatts or more, that generate electricity for sale and distribution through the national electric grid to the public. The NSPS has revised emission standards for NO<sub>x</sub>, SO<sub>2</sub>, and PM that apply to new coal and oil-fired power plants. The MATS compliance date for existing sources was April 16, 2015.

*CAIR and CSAPR.* The Clean Air Interstate Rule (CAIR) created regional cap-and-trade programs to reduce SO<sub>2</sub> and NO<sub>x</sub> emissions in 28 eastern states, including Tennessee, that contributed to downwind nonattainment or interfered with maintenance of the 1997 8-hour ozone NAAQS and the 1997 PM<sub>2.5</sub> NAAQS. *See* 70 FR 25162 (May 12, 2005). EPA approved a revision to Tennessee's SIP on August 20, 2007 (72 FR 46388), that addressed the requirements of CAIR for the purpose of reducing SO<sub>2</sub> and NO<sub>x</sub> emissions.

In 2008, the D.C. Circuit initially vacated CAIR, *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008), but ultimately remanded the rule to EPA without vacatur to preserve the environmental benefits provided by CAIR, *North Carolina v. EPA*, 550 F.3d 1176, 1178 (D.C. Cir. 2008). On August 8, 2011 (76 FR 48208), acting on the D.C. Circuit's remand, EPA promulgated the Cross-State Air Pollution Rule (CSAPR) to replace CAIR and thus to address the interstate transport of emissions contributing to nonattainment and interfering with

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<sup>21</sup> For further information, see Regulatory Impact Analysis for Final Mercury and Air Toxics Standards, EPA-452/R-11-011/December 2011, available at <https://www.epa.gov/sties/production/files/2015-11/documents/matsriafinal.pdf>

maintenance of the two air quality standards covered by CAIR as well as the 2006 PM<sub>2.5</sub> NAAQS. CSAPR requires substantial reductions of SO<sub>2</sub> and NO<sub>x</sub> emissions from EGUs in 28 states in the Eastern United States. As a general matter, because CSAPR is CAIR's replacement, emissions reductions associated with CAIR will for most areas be made permanent and enforceable through implementation of CSAPR.

Numerous parties filed petitions for review of CSAPR in the D.C. Circuit, and on August 21, 2012, the Court issued its ruling, vacating and remanding CSAPR to EPA and ordering continued implementation of CAIR. *EME Homer City Generation, L.P. v. EPA*, 696 F.3d 7, 38 (D.C. Cir. 2012). The D.C. Circuit's vacatur of CSAPR was reversed by the United States Supreme Court on April 29, 2014, and the case was remanded to the D.C. Circuit to resolve remaining issues in accordance with the high court's ruling. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584 (2014). On remand, the D.C. Circuit affirmed CSAPR in most respects, but invalidated without vacating some of the Phase 2 SO<sub>2</sub> and NO<sub>x</sub> ozone season CSAPR budgets as to a number of states. *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118 (D.C. Cir. 2015) (*EME Homer City II*). The CSAPR budgets for Tennessee are not affected by the Court's decision. The litigation over CSAPR ultimately delayed implementation of that rule for three years, from January 1, 2012, when CSAPR's cap-and-trade programs were originally scheduled to replace the CAIR cap-and-trade programs, to January 1, 2015. CSAPR's Phase 2 budgets were originally promulgated to begin on January 1, 2014, and are now scheduled to begin on January 1, 2017. CSAPR will continue to operate under the existing

emissions budgets until EPA fully addresses the D.C. Circuit's remand.<sup>22</sup> Therefore, to the extent that these transport rules impact attainment of the 1997 Annual PM<sub>2.5</sub> NAAQS in the Knoxville Area, any emission reductions associated with CAIR that helped the Knoxville Area achieve attainment of the 1997 Annual PM<sub>2.5</sub> NAAQS are permanent and enforceable for purposes of redesignation under section 107(d)(3)(E)(iii) of the CAA because CSAPR requires similar or greater emission reductions starting in 2015 and beyond.<sup>23</sup>

In addition to the above federal measures, Tennessee identified its consent decree with TVA as providing emissions reductions that have contributed to the improvement in air quality in the region. The consent decree covers all of TVA's coal-fired power plants, including two plants located in the Area (Bull Run Fossil Plant and Kingston Fossil Plant), and among other things, requires system-wide annual tonnage limitations for SO<sub>2</sub> (decreasing incrementally from 285,000 tons in 2012 to 110,000 tons in 2019 and beyond); continuous operation of existing NO<sub>x</sub> and SO<sub>2</sub> controls<sup>24</sup> and PM continuous emissions monitoring systems (CEMS) at Bull Run and Kingston; and a maximum PM emissions rate of 0.030 pounds per million British Thermal

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<sup>22</sup> On September 17, 2016, EPA finalized an update to the CSAPR ozone season program. *See* 81 FR 74504 (October 26, 2016). The update addresses summertime transport of ozone pollution in the eastern United States that crosses state lines to help downwind states and communities meet and maintain the 2008 8-hour ozone NAAQS and addresses the remanded Phase 2 ozone season NO<sub>x</sub> budgets. The update withdraws the remanded NO<sub>x</sub> budgets, sets new Phase 2 CSAPR ozone season NO<sub>x</sub> emissions budgets for eight of the eleven states with remanded budgets, and removes the other three states from the CSAPR ozone season NO<sub>x</sub> trading program. On November 10, 2016, EPA proposed to withdraw the federal implementation plan provisions that require affected electricity generating units in Texas to participate in Phase 2 of the CSAPR trading programs for annual emissions of SO<sub>2</sub> and NO<sub>x</sub>. *See* 81 FR 78954. Withdrawal of the FIP requirements is intended to address the remand of the CSAPR Phase 2 SO<sub>2</sub> budget for Texas. As discussed in the November 10, 2016, notice, EPA expects that EGUs in Alabama, Georgia, and South Carolina will continue to participate in CSAPR trading programs for SO<sub>2</sub> and annual NO<sub>x</sub> pursuant to approved SIP revisions (with equally or more stringent emissions budgets).

<sup>23</sup> EPA notes, however, that the Agency's air quality modeling analysis performed as part of the CSAPR rulemaking demonstrates that the Area would be able to maintain the 1997 Annual PM<sub>2.5</sub> NAAQS even in the absence of either CAIR or CSAPR. *See* "Air Quality Modeling Final Rule Technical Support Document," App. B-62-63. This modeling is available in the docket for this proposed redesignation action.

<sup>24</sup> Paragraphs 69 and 85 of the Consent Decree require the installation and continual operation of selective catalytic reduction (SCR) and wet flue gas recirculation (Wet FGD), respectively, for Bull Run Unit 1 and Kingston Units 1-9.

Units (lb/MMBtu) of heat input at Bull Run and Kingston as of June 13, 2011, the consent decree obligation date.<sup>25</sup> Emissions data from EPA's Clean Air Markets Division (CAMD) database show that the combined SO<sub>2</sub> emissions from Bull Run and Kingston have decreased by approximately 97 percent between 2008-2014 and that combined NO<sub>x</sub> emissions have decreased by approximately 82 percent during this time period.<sup>26</sup>

Tennessee incorporated the consent decree requirements most responsible for attaining the standard in the Area (i.e., particulate matter emissions limit, continuous operation of NO<sub>x</sub> and SO<sub>2</sub> control equipment and PM CEMS, and compliance with the system-wide annual NO<sub>x</sub> and SO<sub>2</sub> tonnage limits) into the Title V operating permits for Bull Run and Kingston, and the State submitted those permit conditions to EPA for incorporation into the SIP along with its request for redesignation.<sup>27</sup> In today's action, EPA is proposing to include these permit conditions in the SIP as source-specific requirements.

***Criteria (4) - The Knoxville Area has a fully-approved maintenance plan pursuant to section 175A of the CAA.***

For redesignating a nonattainment area to attainment, the CAA requires EPA to determine that the area has a fully approved maintenance plan pursuant to section 175A of the CAA (CAA section 107(d)(3)(E)(iv)). In conjunction with its request to redesignate the Knoxville Area to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS, Tennessee submitted a SIP

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<sup>25</sup> Tennessee also notes that the consent decree requires the repowering or retirement of units at John Sevier Fossil Plant and Widows Creek Fossil Plant. CAMD data shows that SO<sub>2</sub> emissions at John Sevier, located approximately 65 miles northeast of Knoxville, decreased by approximately 100 percent between 2008-2014 due to the retirement and replacement of the coal-fired units with natural gas combined cycle units. The retirement of Units 1 through 6 at Widows Creek, located approximately 150 miles southwest of Knoxville, resulted in a 49 percent decrease in SO<sub>2</sub> emissions from 2008-2014 as these units were taken offline.

<sup>26</sup> See Section 3.1.1 of the State's submission for additional information.

<sup>27</sup> See Appendix L of the State's submission for the permit conditions proposed for incorporation into the SIP.

revision to provide for the maintenance of the 1997 Annual PM<sub>2.5</sub> NAAQS for at least 10 years after the effective date of redesignation to attainment. EPA believes that this maintenance plan meets the requirements for approval under section 175A of the CAA for the reasons discussed below.

*a. What is required in a maintenance plan?*

Section 175A of the CAA sets forth the elements of a maintenance plan for areas seeking redesignation from nonattainment to attainment. Under section 175A, the plan must demonstrate continued attainment of the applicable NAAQS for at least 10 years after the Administrator approves a redesignation to attainment. Because the 1997 primary Annual PM<sub>2.5</sub> NAAQS will be revoked for the Area if the Area is redesignated to attainment, Tennessee is not required to submit a second 10-year maintenance plan for the 1997 primary Annual PM<sub>2.5</sub> NAAQS. *See* 81 FR 58010, 58144. To address the possibility of future NAAQS violations, the maintenance plan must contain such contingency measures, as EPA deems necessary, to assure prompt correction of any future 1997 Annual PM<sub>2.5</sub> NAAQS violations. The Calcagni Memorandum provides further guidance on the content of a maintenance plan, explaining that a maintenance plan should address five requirements: the attainment emissions inventory, maintenance demonstration, monitoring, verification of continued attainment, and a contingency plan. As is discussed below, EPA finds that Tennessee's maintenance plan includes all the necessary components and is thus proposing to approve it as a revision to the Tennessee SIP.

*b. Attainment Emissions Inventory*

As discussed above, EPA is proposing to determine that the Knoxville Area is attaining the 1997 PM<sub>2.5</sub> NAAQS based on a monitoring data for the 3-year period from 2013-2015. In its maintenance plan, Tennessee selected 2014 as the attainment emission inventory year. The attainment inventory identifies the level of emissions in the Area that is sufficient to attain the 1997 Annual PM<sub>2.5</sub> NAAQS. Tennessee began development of the attainment inventory by first generating a baseline emissions inventory for the Area. As noted above, Tennessee selected 2002 as the base year for developing a comprehensive emissions inventory. The projected inventory included with the maintenance plan estimates emissions from 2014 to 2028, which satisfies the 10-year interval required in section 175(A) of the CAA.

The emissions inventories are composed of four major types of sources: point, area, on-road mobile, and non-road mobile. The attainment and future year emissions inventories were developed/projected as follows:

- Point source emissions were obtained from the 2014 National Emissions Inventory (NEI) and projected inventories were calculated using growth factors derived from the 2015 Annual Energy Outlook (AEO2015) developed by the U.S. Energy Information Administration. Growth factors were developed for point sources based on North American Industry Classification System codes and/or Source Classification Codes.
- Area source emissions were developed using EPA Nonpoint files located on EPA's CHIEF Emission Inventory website for the 2014 NEI and projected inventories by using 2014 emissions and growth factors obtained from Annual

Energy Outlook 2015 energy forecasts for consumption and production, and TranSystems Category Specific Growth Factors.

- On-road mobile emissions were estimated using the latest version of EPA's MOVES2014a model. The input parameters for the model runs were developed, reviewed and agreed to by the transportation partners through interagency consultation.<sup>28</sup> Attainment year (2014) vehicle miles traveled (VMT) data was obtained from the Tennessee Department of Transportation through the HPMS (Highway Performance Monitoring System) system. Future VMT estimates were provided by the Knoxville Regional Transportation Planning Organization based on travel demand modeling performed for the nonattainment counties. For all interim years between the years 2014 and 2028, onroad emissions were interpolated.
- Non-road mobile emissions were obtained from EPA's Nonroad files located on EPA's EIS Gateway for the 2011 NEI and using MOVES2014a. Future nonroad mobile emissions were projected using 2011 emissions and national growth factors. Growth factors were multiplied by the 2014 emission values to calculate emissions for future years.

The 2014 SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>, VOC, and ammonia missions for the Knoxville Area are summarized in Tables 2 through 6.

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<sup>28</sup> The interagency consultation partners consist of the following entities: EPA, the United States Department of Transportation (Federal Highway Administration and Federal Transit Administration), the Knoxville Regional Transportation Planning Organization, Knox County Department of Air Quality management, the Tennessee Department of Transportation, the Lakeway Area Metropolitan Planning Organization, the Great Smokey Mountains National Park Service and the Tennessee Department of Environment and Conservation.

Section 175A requires a state seeking redesignation to attainment to submit a SIP revision to provide for the maintenance of the NAAQS in the Area “for at least 10 years after the redesignation.” EPA has interpreted this as a showing of maintenance “for a period of ten years following redesignation.” Calcagni Memorandum, p. 9. Where the emissions inventory method of showing maintenance is used, the purpose is to show that emissions during the maintenance period will not increase over the attainment year inventory. Calcagni Memorandum, pp. 9–10.

As discussed in detail below, Tennessee’s maintenance plan submission expressly documents that the Area’s overall emissions inventories will remain below the attainment year inventories through 2028. In addition, for the reasons set forth below, EPA believes that the Area will continue to maintain the 1997 Annual PM<sub>2.5</sub> NAAQS through 2028. Thus, if EPA finalizes its proposed approval of the redesignation request and maintenance plan, the approval will be based upon this showing, in accordance with section 175A, and EPA’s analysis described herein, that Tennessee’s maintenance plan provides for maintenance for at least ten years after redesignation.

*c. Maintenance Demonstration*

The maintenance plan for the Knoxville Area includes a maintenance demonstration that:

- (i) Shows compliance with and maintenance of the Annual PM<sub>2.5</sub> standard by providing information to support the demonstration that current and future emissions of SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>, and VOCs remain at or below 2014 emissions levels.
- (ii) Uses 2014 as the attainment year and includes future emission inventory projections for 2028.

(iii) Identifies an “out year” at least 10 years after EPA review and potential approval of the maintenance plan. Per 40 CFR part 93, NO<sub>x</sub> and PM<sub>2.5</sub> MVEBs were established for the last year (2028) of the maintenance plan. Additionally, Tennessee chose, through interagency consultation, to establish NO<sub>x</sub> and PM<sub>2.5</sub> MVEBs for 2014 (see section VI below).

(iv) Provides, as shown in Tables 2 through 6 below, the estimated and projected emissions inventories, in tpy, for the Knoxville Area, for PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>2</sub>, VOC, and ammonia.

**Table 2. Knoxville Area PM<sub>2.5</sub> Emission Inventory (tpy)**

	<b>Point</b>	<b>Area</b>	<b>Onroad</b>	<b>Nonroad</b>	<b>Total</b>
2014	1,129.70	1,772.14	444.78	194.60	3,541.21
2017	1,081.26	1,804.53	384.89	169.64	3,440.31
2020	1,165.20	1,856.91	324.99	152.38	3,499.48
2023	1,184.98	1,913.79	265.10	144.52	3,508.39
2026	1,205.31	1,966.42	205.21	143.46	3,520.40
2028	1,211.30	2,005.01	165.28	149.23	3,530.82

**Table 3. Knoxville Area NO<sub>x</sub> Emission Inventory (tpy)**

	<b>Point</b>	<b>Area</b>	<b>Onroad</b>	<b>Nonroad</b>	<b>Total</b>
2014	6,041.52	1,126.29	15,597.73	2,789.33	25,554.88
2017	5,725.54	985.98	13,232.05	2,567.57	22,511.14
2020	6,134.99	982.48	10,866.37	2,490.86	20,474.69
2023	6,217.20	977.19	8,500.68	2,560.11	18,255.18
2026	6,303.95	976.34	6,135.00	2,791.12	16,206.41
2028	6,336.33	977.04	4,557.88	3,230.56	15,101.81

**Table 4. Knoxville Area SO<sub>2</sub> Emission Inventory (tpy)**

	<b>Point</b>	<b>Area</b>	<b>Onroad</b>	<b>Nonroad</b>	<b>Total</b>
2014	4,146.99	30.10	83.39	47.17	4,307.65
2017	3,125.61	35.25	73.20	58.23	3,292.29
2020	3,420.16	36.67	63.02	77.81	3,597.65
2023	3,454.73	37.40	52.84	107.89	3,652.86
2026	3,499.37	37.93	42.65	153.67	3,733.63
2028	3,514.63	37.98	35.86	222.93	3,811.40

**Table 5. Knoxville Area VOCs Emission Inventory (tpy)**

	<b>Point</b>	<b>Area</b>	<b>Onroad</b>	<b>Nonroad</b>	<b>Total</b>
2014	2,944.28	8,869.86	6,122.57	2,340.70	20,277.41
2017	3,454.23	8,889.45	5,321.37	2,001.12	19,666.17
2020	3,814.52	9,000.92	4,520.18	1,794.24	19,129.86
2023	4,039.05	9,116.64	3,718.99	1,741.57	18,616.23
2026	4,251.65	9,239.75	2,917.79	1,766.53	18,175.73
2028	4,380.02	9,309.98	2,383.66	1,863.80	17,937.46

**Table 6. Knoxville Area Ammonia Emission Inventory (tpy)**

	<b>Point</b>	<b>Area</b>	<b>Onroad</b>	<b>Nonroad</b>	<b>Total</b>
2014	90.58	1,113.99	305.40	2.77	1,512.74
2017	88.83	1,166.32	296.59	2.82	1,554.57
2020	91.19	1,205.32	287.78	2.89	1,587.18
2023	92.69	1,234.43	278.97	2.96	1,609.05
2026	93.37	1,244.01	270.16	3.04	1,610.57
2028	93.56	1,253.67	264.29	3.09	1,614.61

In situations where local emissions are the primary contributor to nonattainment, such as the Knoxville Area, if the future projected emissions in the nonattainment area remain at or below the baseline emissions in the nonattainment area, then the ambient air quality standard should not be exceeded in the future. As reflected above in Tables 2 through 5, future emissions of PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and VOC in the Knoxville Area are expected to be below the “attainment level” emissions in 2014, thus illustrating that the Knoxville Area is expected to continue to

attain the 1997 PM<sub>2.5</sub> NAAQS through 2028 and beyond. Emissions of direct PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and VOCs in the Knoxville Area are expected to decrease from 2014 to 2028 by approximately 1 percent, 41 percent, 12 percent, and 22 percent, respectively. Although ammonia emissions are projected to increase between 2014 and 2028, the emissions increase is relatively small (approximately 102 tpy), total ammonia emissions are already relatively low (approximately 1,513 tpd in 2014), there are no major stationary sources of ammonia in the Area, the Area is well below the NAAQS, and the decrease in emissions of the other precursors more than offset the projected increase. Thus, the projected inventories indicate that future emissions in the Knoxville Area are expected to support continued maintenance of the 1997 Annual PM<sub>2.5</sub> NAAQS through 2028.

As discussed in section VI of this proposed rulemaking, a safety margin is the difference between the attainment level of emissions (from all sources) and the projected level of emissions (from all sources) in the maintenance plan. The attainment level of emissions is the level of emissions during one of the years in which the Area met the NAAQS. Tennessee selected 2014 as the attainment emissions inventory year for the Knoxville Area. Tennessee calculated a safety margin in its submittal for the year 2028 and allocated the entire portion of the 2028 PM<sub>2.5</sub> safety margin in tons per day (tpd) to the 2028 MVEB for the Knoxville Area. Specifically, 10.39 tpy of the safety margin is allocated to the 2028 PM<sub>2.5</sub> MVEB. Also, Tennessee allocated 2,613.27 tpy of the 2028 NO<sub>x</sub> safety margin to the 2028 NO<sub>x</sub> MVEB. The allocation and the resulting available safety margins for the Knoxville Area are discussed further in section VI of this proposed rulemaking.

*d. Monitoring Network*

There are currently seven monitors measuring PM<sub>2.5</sub> in the Knoxville Area. Tennessee, through TDEC, has committed to continue operation of the monitors in the Knoxville Area in compliance with 40 CFR part 58 and have thus addressed the requirement for monitoring. EPA approved Tennessee's 2016 monitoring plan on October 21, 2016.

*e. Verification of Continued Attainment*

Tennessee, through TDEC, has the legal authority to enforce and implement the requirements of the Knoxville Area 1997 Annual PM<sub>2.5</sub> maintenance plan. This includes the authority to adopt, implement, and enforce any subsequent emissions control contingency measures determined to be necessary to correct future PM<sub>2.5</sub> attainment problems.

TDEC will track the progress of the maintenance plan by performing future reviews of triennial emission inventories for the Knoxville Area as required in the Air Emissions Reporting Rule (AERR). Emissions information will be compared to the 2014 attainment year to assure continued compliance with the annual PM<sub>2.5</sub> standard.

*f. Contingency Measures in the Maintenance Plan*

Section 175A of the CAA requires that a maintenance plan include such contingency measures as EPA deems necessary to assure that a state will promptly correct a violation of the NAAQS that occurs after redesignation. The maintenance plan should identify the contingency measures to be adopted, a schedule and procedure for adoption and implementation, and a time limit for action by Tennessee. A state should also identify specific indicators to be used to determine when the contingency measures need to be implemented. The maintenance plan must include a requirement that a state will implement all measures with respect to control of the

pollutant that were contained in the SIP before redesignation of the area to attainment in accordance with section 175A(d).

The contingency plan included in the submittal contains a commitment to implement measures that exist in the current SIP for PM<sub>2.5</sub> and identifies triggers to determine when contingency measures are needed and a process of developing and implementing appropriate control measures. The primary trigger of the contingency plan is a quality assured/quality controlled violating design value of the 1997 Annual PM<sub>2.5</sub> NAAQS at any monitor. Upon activation of the primary trigger, Tennessee, in conjunction with the Knox County Department of Air Quality Management (DAQM), will commence an analysis to determine what additional measures will be necessary to attain or maintain the 1997 Annual PM<sub>2.5</sub> NAAQS. In the event of a monitored violation of the 1997 Annual PM<sub>2.5</sub> NAAQS in the Area, Tennessee commits to adopt and implement one or more of the following control measures within 24 months of the monitored violation in order to bring the Area into compliance:

- Additional RACT for point sources of PM<sub>2.5</sub> emissions not already covered by RACT, best available control technology (BACT), or reasonable and proper emission limitations;
- Additional RACM for area sources of PM<sub>2.5</sub>;
- Additional RACT for major point sources of NO<sub>x</sub> emissions;
- Additional RACT for minor point sources of NO<sub>x</sub> emissions;
- Additional RACM for area sources of NO<sub>x</sub> emissions;
- Additional RACT for major point sources of SO<sub>2</sub> emissions;
- Additional RACT for minor point sources of SO<sub>2</sub> emissions;

- Additional RACM for area sources of SO<sub>2</sub> emissions; and
- Other control measures, not included in the above list, if new control programs are deemed more advantageous for the Area.

A secondary trigger is activated when one of the following conditions occurs that may forewarn of a potential exceedance of the Annual PM<sub>2.5</sub> NAAQS:

- An annual mean PM<sub>2.5</sub> concentration (average of quarterly-average concentrations) of greater than or equal to 16.0 µg/m<sup>3</sup> for the previous calendar year at any federal reference monitor (FRM) in the Area, based on quality-assured and certified monitoring data;
- An annual mean PM<sub>2.5</sub> concentration (average of quarterly-average concentrations) of greater than or equal to 15.5 µg/m<sup>3</sup> for each of the previous two calendar years at any federal reference monitor (FRM) in the Area, based on quality-assured and certified monitoring data;
- Total emissions of PM<sub>2.5</sub>, SO<sub>2</sub>, or NO<sub>x</sub> in the most recent NEI for the Area exceeding 130 percent of the corresponding emissions for 2014 for that pollutant.

If the secondary trigger is activated, Tennessee and Knox County DAQM will investigate the occurrence and evaluate existing control measures to determine whether further emission reduction measures should be implemented.

EPA preliminarily concludes that the maintenance plan adequately addresses the five basic components of a maintenance plan: attainment emission inventory, maintenance demonstration, monitoring network, verification of continued attainment, and a contingency plan. Therefore, EPA proposes to find that the maintenance plan SIP revision submitted by

Tennessee for Knoxville Area meets the requirements of section 175A of the CAA and is approvable.

#### **VI. What is EPA's Analysis of the Proposed NO<sub>x</sub> and PM<sub>2.5</sub> MVEBs for the Knoxville?**

Under section 176(c) of the CAA, new transportation plans, programs, and projects, such as the construction of new highways, must “conform” to (i.e., be consistent with) the part of a state’s air quality plan that addresses pollution from cars and trucks. Conformity to the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS or any interim milestones. If a transportation plan does not conform, most new projects that would expand the capacity of roadways cannot go forward. Regulations at 40 CFR part 93 set forth EPA policy, criteria, and procedures for demonstrating and assuring conformity of such transportation activities to a SIP. The regional emissions analysis is one, but not the only, requirement for implementing transportation conformity. Transportation conformity is a requirement for nonattainment and maintenance areas. Maintenance areas are areas that were previously nonattainment for a particular NAAQS but have since been redesignated to attainment with an approved maintenance plan for that NAAQS.

Under the CAA, states are required to submit, at various times, control strategy SIPs and maintenance plans for nonattainment areas. These control strategy SIPs (including RFP and attainment demonstration) and maintenance plans create MVEBs for criteria pollutants and/or their precursors to address pollution from cars and trucks. Per 40 CFR part 93, a MVEB must be established for the last year of the maintenance plan. A state may adopt MVEBs for other years as well. The MVEB is the portion of the total allowable emissions in the maintenance

demonstration that is allocated to highway and transit vehicle use and emissions. *See* 40 CFR 93.101. The MVEB serves as a ceiling on emissions from an area's planned transportation system. The MVEB concept is further explained in the preamble to the November 24, 1993, Transportation Conformity Rule (58 FR 62188). The preamble also describes how to establish the MVEB in the SIP and how to revise the MVEB.

After interagency consultation with the transportation partners for the Knoxville Area, Tennessee has elected to develop MVEBs for NO<sub>x</sub> and PM<sub>2.5</sub> for the entire Area. MVEBs were not developed for VOCs and ammonia because these pollutants are not significant contributors to mobile source emissions in the Knoxville Area. Tennessee developed these MVEBs, as required, for the last year of its maintenance plan, 2028. Tennessee also established MVEBs for the attainment year of 2014. The MVEBs reflect the total on-road emissions for 2014 and 2028, plus an allocation from the available NO<sub>x</sub> and PM<sub>2.5</sub> safety margin. Under 40 CFR 93.101, the term "safety margin" is the difference between the attainment level (from all sources) and the projected level of emissions (from all sources) in the maintenance plan. The safety margin can be allocated to the transportation sector; however, the total emissions must remain below the attainment level. The NO<sub>x</sub> and PM<sub>2.5</sub> MVEBs and allocation from the safety margin were developed in consultation with the transportation partners and were added to account for uncertainties in population growth, changes in model vehicle miles traveled, and new emission factor models. Further details are provided below to explain how the PM<sub>2.5</sub> MVEBs for 2028 were derived.

The State developed the worst case scenario to estimate the potential emissions increases due to changes in the models and planning assumptions mentioned earlier. For the worst case

scenario, an analysis year of 2045 was selected. In addition, projected VMT was increased by 10 percent, the age of the vehicle fleet was increased by approximately two years, and the vehicle source type population was increased by 10 percent above the projected vehicle source type population for 2045. This analysis yielded emissions of PM<sub>2.5</sub> from on-road sources of about 80 tpy above those projected from on-road sources in 2028. Since the entire PM<sub>2.5</sub> safety margin of 10.39 tpy is allocated to the 2028 MVEB, an additional 69.33 tpy is still needed to cover the emissions increases modeled in the worst case scenario.

Since there is no apparent PM<sub>2.5</sub> safety margin remaining to allocate the additional 69.33 tpy to the 2028 MVEB, Tennessee performed a speciation data assessment to analyze the relationship between PM<sub>2.5</sub> emissions and ambient concentrations and the impact it has on the future air quality in the Knoxville Area with the additional allocation to the 2028 MVEB. With the additional 69.33 tpy allocation, the overall PM<sub>2.5</sub> emissions from the base year 2014 increases from 3,541 tpy to 3,610 tpy in the out year of 2028. This is equal to approximately a 2 percent increase in attainment year PM<sub>2.5</sub> emissions. Tennessee's analysis indicates that a 2 percent direct PM<sub>2.5</sub> increase will cause a 2 percent increase in ambient concentrations of PM<sub>2.5</sub> which equates to 0.19 µg/m<sup>3</sup>.

As mentioned in Section V, the three-year design value for years 2013-2015 is 10.0 µg/m<sup>3</sup>. Therefore, the design value would be 10.19 µg/m<sup>3</sup> with the 2 percent increase. Even with the 2 percent increase in ambient PM<sub>2.5</sub> concentrations, the 10.19 µg/m<sup>3</sup> design value is still below the 1997 Annual PM<sub>2.5</sub> NAAQS of 15 µg/m<sup>3</sup> and the 2012 Annual PM<sub>2.5</sub> NAAQS of 12.0 µg/m<sup>3</sup>.<sup>29</sup> Furthermore, the on-road PM<sub>2.5</sub> emissions as compared to the overall PM<sub>2.5</sub> emissions

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<sup>29</sup> Tennessee describes the speciation analysis in Section 4 of the submittal. See Figure 4.1 for more details.

from all sectors trend downward from 12.6 percent in 2014 to 4.7 percent in 2028. See Table 7, below.

**Table 7 - PM<sub>2.5</sub> On-road Mobile Emissions Comparison to the Total PM<sub>2.5</sub> Emissions From All Sectors for the Knoxville Area (tons per day)**

	<b>2014</b>	<b>2017</b>	<b>2020</b>	<b>2023</b>	<b>2026</b>	<b>2028</b>
<b>PM<sub>2.5</sub> On-road emissions</b>	444.78	384.89	324.99	265.10	205.21	165.28
<b>Total PM<sub>2.5</sub> emissions (all sectors)</b>	3,541.21	3440.31	3499.48	3508.39	3520.40	3,530.82
<b>On-road % of total PM<sub>2.5</sub> emissions</b>	12.6	11.1	9.3	7.6	5.8	4.7

Therefore, based on the Tennessee’s speciation data assessment which concludes that there is a decrease in sulfate and nitrate concentrations even with a projected 2 percent increase in direct PM<sub>2.5</sub> emissions coupled with the downward trend in on-road emissions, the Knoxville Area is expected to maintain the 1997 Annual PM<sub>2.5</sub> standard.

The interagency consultation group approved a 10.39 tpy safety margin for direct PM<sub>2.5</sub> mobile source emission estimates for the year 2028 and 2,613.27 tpy safety margin for NO<sub>x</sub> mobile source emission estimates for the year 2028. The NO<sub>x</sub> and PM<sub>2.5</sub> MVEBs for the Knoxville Area are defined in Table 8, below.

**Table 8. MVEB with Safety Margin for the Knoxville Area (tpy)**

<b>Pollutant</b>	<b>2014</b>	<b>2028</b>
PM <sub>2.5</sub> On-road Emissions	444.78	165.28
Safety Margin allocation	--	79.72*
<b>PM<sub>2.5</sub> MVEB</b>	<b>444.78</b>	<b>245.00</b>
NOx On-road Emissions	15,597.73	4,557.88
Safety Margin allocation	--	2,613.27
<b>NOx MVEB</b>	<b>15,597.73</b>	<b>7,171.14</b>

\*The MVEB for PM<sub>2.5</sub> in 2028 includes the available safety margin of 10.39 tons/year and an additional 69.33 tons/year.

There is no safety margin remaining for PM<sub>2.5</sub>, and the remaining safety margin for NOx is 7,839.80 tpy. Through this rulemaking, EPA is proposing to approve into the Tennessee SIP the MVEBs for NOx and PM<sub>2.5</sub> for 2014 and 2028 for the Knoxville Area because EPA has determined that the Area maintains the 1997 Annual PM<sub>2.5</sub> NAAQS with the emissions at the levels of the budgets. The MVEBs for the Knoxville Area were found adequate and are being used to determine transportation conformity. After thorough review, EPA is proposing to approve the budgets because they are consistent with maintenance of the 1997 Annual PM<sub>2.5</sub> NAAQS through 2028. If the proposed redesignation is finalized, the Area will no longer be subject to transportation or general conformity requirements for the 1997 Annual PM<sub>2.5</sub> NAAQS upon the effective date of the redesignation because the redesignation will revoke the 1997 primary Annual PM<sub>2.5</sub> NAAQS for the Area. However, in the meantime, the applicable budgets for required regional emissions analysis years between the present time and 2028 are the new 2014 MVEBs; and the applicable budgets for years 2028 and beyond will be the new 2028

MVEBs. EPA notes that the Agency has already determined that these budgets are adequate for transportation conformity purposes.

## **VII. What is the Effect of EPA's Proposed Actions?**

EPA's proposed actions establish the basis upon which EPA may take final action on the issues being proposed for approval. Approval of Tennessee's redesignation request would change the legal designation of Anderson, Blount, Knox, and Loudon Counties and a portion of Roane County for the 1997 Annual PM<sub>2.5</sub> NAAQS, found at 40 CFR part 81, from nonattainment to attainment. Approval of Tennessee's associated SIP revision would also incorporate a plan for maintaining the 1997 Annual PM<sub>2.5</sub> NAAQS in the Area through 2028, Tennessee's RACM determination, and source-specific requirements for two sources in the Area into the Tennessee SIP. The maintenance plan includes contingency measures to remedy any future violations of the 1997 Annual PM<sub>2.5</sub> NAAQS and procedures for evaluation of potential violations. The maintenance plan also includes NO<sub>x</sub> and PM<sub>2.5</sub> MVEBs for the Knoxville Area.

## **VIII. Proposed Actions.**

EPA is proposing to: 1) approve Tennessee's RACM determination for the Knoxville Area pursuant to CAA sections 172(c)(1) and 189(a)(1)(C) and incorporate it into the SIP; 2) determine that the Area is attaining the 1997 Annual PM<sub>2.5</sub> NAAQS based on 2013-2015 data; 3) approve Tennessee's plan for maintaining the 1997 Annual PM<sub>2.5</sub> NAAQS (maintenance plan), including the associated MVEBs for the Knoxville Area, and incorporate it into the Tennessee SIP; 4) to incorporate source-specific requirements for two sources in the Area into the SIP; and 5) redesignate the Knoxville Area to attainment for the 1997 Annual PM<sub>2.5</sub> NAAQS.

If finalized, approval of the redesignation request would change the official designation of Anderson, Blount, Knox and Loudon Counties and a portion of Roane County for the 1997 Annual PM<sub>2.5</sub> NAAQS, found at 40 CFR part 81 from nonattainment to attainment, as found at 40 CFR part 81.

#### **IX. Statutory and Executive Order Reviews.**

Under the CAA, redesignation of an area to attainment and the accompanying approval of a maintenance plan under section 107(d)(3)(E) are actions that affect the status of a geographical area and do not impose any additional regulatory requirements on sources beyond those imposed by state law. A redesignation to attainment does not in and of itself create any new requirements, but rather results in the applicability of requirements contained in the CAA for areas that have been redesignated to attainment. Moreover, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. *See* 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, these proposed actions merely approve Commonwealth law as meeting federal requirements and do not impose additional requirements beyond those imposed by state law. For that reason, these proposed actions:

- are not significant regulatory actions subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January, 21, 2011);
- do not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);

- are 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.*);
- do 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);
- do not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- are not economically significant regulatory actions based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- are not significant regulatory actions subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- are 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
- will not have disproportionate human health or environmental effects under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it impose substantial direct costs of tribal governments or preempt tribal law.

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen oxides, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

**40 CFR Part 81**

Environmental protection, Air pollution control.

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

Dated: April 27, 2017.

V. Anne Heard,  
Acting Regional Administrator,  
Region 4.

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