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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R03-OAR-2011-0913; FRL-9492-9]

Approval and Promulgation of Air Quality Implementation Plans; District of Columbia; Regional Haze State Implementation Plan

AGENCY: Environmental Protection Agency (EPA)

ACTION: Proposed rule.

SUMMARY: EPA is proposing to approve a revision to the District of Columbia State Implementation Plan (SIP) submitted by the District of Columbia through the District Department of the Environment (DDOE) on October 27, 2011 that addresses regional haze for the first implementation period. This revision addresses the requirements of the Clean Air Act (CAA) and EPA's rules that require states to prevent any future, and remedy any existing, anthropogenic impairment of visibility in mandatory Class I areas caused by emissions of air pollutants from numerous sources located over a wide geographic area (also referred to as the "regional haze program"). States are required to assure reasonable progress toward the national goal of achieving natural visibility conditions in Class I areas. EPA is proposing to determine that the Regional Haze plan submitted by the District of Columbia satisfies these requirements of the CAA. EPA is also proposing to approve this revision as meeting the infrastructure requirements relating to visibility protection for the 1997 8-Hour Ozone National Ambient Air Quality Standard (NAAQS) and the 1997 and 2006 fine particulate matter ($PM_{2.5}$) NAAQS.

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

ADDRESSES: Submit your comments, identified by Docket ID Number **EPA-R03-OAR-2011-0913** by one of the following methods:

A. www.regulations.gov. Follow the on-line instructions for submitting comments.

B. E-mail: fernandez.cristina@epa.gov

C. Mail: EPA-R03-OAR-2011-0913, Cristina Fernandez, Associate Director, Office of Air Program Planning, Mailcode 3AP30, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103.

D. Hand Delivery: At the previously-listed EPA Region III address. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. **EPA-R03-OAR-2011-0913**. EPA's policy is that all comments received will be included in the public docket without change, and may be made available online at www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through www.regulations.gov or e-mail. The www.regulations.gov website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through www.regulations.gov, your e-mail address will be automatically captured and included as part of

the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the electronic docket are listed in the www.regulations.gov index. Although listed in the index, some information is not publicly available, i.e., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in www.regulations.gov or in hard copy during normal business hours at the Air Protection Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. Copies of the State submittal are available at the District Department of the Environment, 1200 First Street, NE, Washington, DC 20002.

FOR FURTHER INFORMATION CONTACT: Jacqueline Lewis, (215) 814-2037, or by email at lewis.jacqueline@epa.gov.

SUPPLEMENTARY INFORMATION: On October 27, 2011, the DDOE submitted a revision to its SIP to address Regional Haze for the first implementation period. Throughout this document, whenever "we," "us," or "our" is used, we mean EPA.

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

A. The Regional Haze Problem

Regional haze is visibility impairment that is produced by a multitude of sources and activities which are located across a broad geographic area and emit fine particles ($PM_{2.5}$) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust) and their precursors (e.g., sulfur dioxide (SO_2), nitrogen oxides (NO_x), and in some cases, ammonia (NH_3) and volatile organic compounds (VOC)). Fine particle precursors react in the atmosphere to form fine particulate matter, which impairs visibility by scattering and absorbing light. Visibility impairment reduces the clarity, color, and visible distance that one can see. $PM_{2.5}$ can also cause serious health effects and mortality in humans and contributes to environmental effects such as acid deposition and eutrophication.

Data from the existing visibility monitoring network, the Interagency Monitoring of Protected Visual Environments (IMPROVE) monitoring network, show that visibility impairment caused by air pollution occurs virtually all the time at most national park and wilderness areas. The average visual range[1] in many Class I areas (i.e., national parks and memorial parks, wilderness areas, and international parks meeting certain size criteria) in the western United States is 100-150 kilometers or about one-half to two-thirds of the visual range that would exist without anthropogenic air pollution. In most of the eastern Class I areas of the United States, the average visual range is less than 30 kilometers or about one-fifth of the visual range that would exist under estimated natural conditions (64 FR 35714, July 1, 1999).

B. Background Information

In section 169A of the 1977 Amendments to the CAA, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas[2] which impairment results from manmade air pollution." On December 2, 1980, EPA promulgated regulations to address visibility impairment in Class I areas that is "reasonably attributable" to a single source or small group of sources, i.e., "reasonably attributable visibility impairment" (45 FR 80084). These

[1]Visual range is the greatest distance, in kilometers or miles, at which a dark object can be viewed against the sky.
[2]Areas designated as mandatory Class I Federal areas consist of national parks exceeding 6000 acres, wilderness areas and national memorial parks exceeding 5000 acres, and all international parks that were in existence on August 7, 1977. 42 U.S.C. 7472(a). In accordance with section 169A of the CAA, EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility is identified as an important value (44 FR 69122, November 30, 1979). The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. 42 U.S.C. 7472(a). Although states and tribes may designate as Class I additional areas which they consider to have visibility as an important value, the requirements of the visibility program set forth in section 169A of the CAA apply only to ''mandatory Class I Federal areas." Each mandatory Class I Federal area is the responsibility of a ''Federal Land Manager.'' 42 U.S.C. 7602(i). When we use the term "Class I area" in this action, we mean a "mandatory Class I Federal area."

regulations represented the first phase in addressing visibility impairment. EPA deferred action on regional haze that emanates from a variety of sources until monitoring, modeling, and scientific knowledge about the relationships between pollutants and visibility impairment were improved.

Congress added section 169B to the CAA in 1990 to address regional haze issues. EPA promulgated a rule to address regional haze on July 1, 1999 (64 FR 35714), the RHR. The RHR revised the existing visibility regulations to integrate into the regulation provisions addressing regional haze impairment and established a comprehensive visibility protection program for Class I areas. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in EPA's visibility protection regulations at 40 CFR 51.300-309. Some of the main elements of the regional haze requirements are summarized in Section II of this notice. The requirement to submit a regional haze SIP applies to all 50 states, the District of Columbia, and the Virgin Islands. Section 51.308(b) requires states to submit the first implementation plan addressing regional haze visibility impairment no later than December 17, 2007.

C. Roles of Agencies in Addressing Regional Haze

Successful implementation of the regional haze program will require long-term regional coordination among states, tribal governments, and various federal agencies. As noted above, pollution affecting the air quality in Class I areas can be transported over long distances, even hundreds of kilometers. Therefore, to effectively address the problem of visibility impairment in Class I areas, states need to develop strategies in coordination with one another, taking into account the effect of emissions from one jurisdiction on the air quality in another.

Because the pollutants that lead to regional haze can originate from sources located across broad geographic areas, EPA has encouraged the states and tribes across the United States to address visibility impairment from a regional perspective. Five regional planning organizations (RPOs) were developed to address regional haze and related issues. The RPOs first evaluated technical information to better understand how their states and tribes impact Class I areas across the country, and then pursued the development of regional strategies to reduce emissions of particulate matter (PM) and other pollutants leading to regional haze.

The Mid-Atlantic Region Air Management Association (MARAMA), the Northeast States for Coordination Air Use Management (NESCAUM), and the Ozone Transport Commission (OTC) established the Mid-Atlantic/Northeast Visibility Union (MANE-VU) RPO. MANE-VU is a collaborative effort of state governments, tribal governments, and various federal agencies established to initiate and coordinate activities associated with the management of regional haze, visibility, and other air quality issues in the Mid-Atlantic and Northeast corridor of the United States. Member states and tribal governments include: Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Penobscot Indian Nation, Rhode Island, St. Regis Mohawk Tribe, and Vermont.

D. Interstate Transport for Visibility

Sections 110(a)(1) and 110(a)(2)(D)(i)(II) of the CAA require that within three years of promulgation of a NAAQS, a state must ensure that its SIP, among other requirements, "contains adequate provisions prohibiting any source or other types of emission activity within the State

from emitting any air pollutant in amounts which will interfere with measures required to be included in the applicable implementation plan for any other State to protect visibility." Similarly, section 110(a)(2)(J) requires that such SIP "meet the applicable requirements of part C of (Subchapter I) (relating to visibility protection)."

EPA's 2006 Guidance, entitled "Guidance for State Implementation Plan (SIP) Submissions to Meet Current Outstanding Obligations Under section 110(a)(2)(D)(i) for the 8-Hour Ozone and $PM_{2.5}$ National Ambient Air Quality Standards," recognized the possibility that a state could potentially meet the visibility portions of section 110(a)(2)(D)(i)(II) through its submission of a Regional Haze SIP, as required by sections 169A and 169B of the CAA. EPA's 2009 guidance, entitled "Guidance on SIP Elements Required Under Sections 110(a)(1) and (2) for the 2006 24-Hour Fine Particle ($PM_{2.5}$) National Ambient Air Quality Standards (NAAQS)," recommended that a state could meet such visibility requirements through its Regional Haze SIP. EPA's rationale supporting this recommendation was that the development of the regional haze SIPs was intended to occur in a collaborative environment among the states, and that through this process states would coordinate on emissions controls to protect visibility on an interstate basis. The common understanding was that, as a result of this collaborative environment, each state would take action to achieve the emissions reductions relied upon by other states in their reasonable progress demonstrations under the RHR. This interpretation is consistent with the requirement in the RHR that a state participating in a regional planning process must include "all measures needed to achieve its apportionment of emission reduction obligations agreed upon through that process." See, 40 CFR 51.308(d)(3)(ii).

The regional haze program, as reflected in the RHR, recognizes the importance of addressing the long-range transport of pollutants for visibility and encourages states to work together to develop plans to address haze. The regulations explicitly require each state to address its "share" of the emission reductions needed to meet the reasonable progress goals for neighboring Class I areas. States working together through a regional planning process, are required to address an agreed upon share of their contribution to visibility impairment in the Class I areas of their neighbors. See, 40 CFR 51.308(d)(3)(ii). Given these requirements, appropriate regional haze SIPs will contain measures that will achieve these emissions reductions and will meet the applicable visibility related requirements of section 110(a)(2).

As a result of the regional planning efforts in the MANE-VU, all states in the MANE-VU region contributed information to a Technical Support System (TSS) which provides an analysis of the causes of haze, and the levels of contribution from all sources within each state to the visibility degradation of each Class I area. The MANE-VU states consulted in the development of reasonable progress goals, using the products of this technical consultation process to co-develop their reasonable progress goals for the MANE-VU Class I areas. The modeling done by MANE-VU relied on assumptions regarding emissions over the relevant planning period and embedded in these assumptions were anticipated emissions reductions in each of the states in MANE-VU, including reductions from BART and other measures to be adopted as part of the state's long term strategy for addressing regional haze. The reasonable progress goals in the regional haze SIPs that have been prepared by the states in the MANE-VU region are based, in part, on the emissions reductions from nearby states that were agreed on through the MANE-VU process.

The District of Columbia submitted a Regional Haze SIP on October 27, 2011, to address the requirements of the RHR. On December 6, 2007 and January 11, 2008, the District of Columbia submitted its 1997 Ozone NAAQS infrastructure SIP. On August 25, 2008 and September 22, 2008, the District of Columbia submitted its 1997 $PM_{2.5}$ NAAQS infrastructure SIP. On September 21, 2009, the District of Columbia submitted an infrastructure SIP for the 2006 $PM_{2.5}$ NAAQS. EPA will act on these submittals in a separate rulemaking action.

In the October 27, 2011 submittal, the District of Columbia indicated that its Regional Haze SIP would meet the requirements of the CAA, section 110(a)(2)(D)(i)(II), regarding visibility for the 1997 8-Hour Ozone NAAQS and the 1997 and 2006 $PM_{2.5}$ NAAQS. EPA has reviewed the District of Columbia's Regional Haze SIP and, as explained in section IV of this action, proposes to find that the District of Columbia's Regional Haze submittal meets the portions of the requirements of the CAA sections 110(a)(2) relating to visibility protection for the 1997 8-Hour Ozone NAAQS and the 1997 and 2006 $PM_{2.5}$ NAAQS.

II. What are the Requirements for the Regional Haze SIPs?

A. The CAA and the Regional Haze Rule

Regional haze SIPs must assure reasonable progress towards the national goal of achieving natural visibility conditions in Class I areas. Section 169A of the CAA and EPA's implementing regulations require states to establish long-term strategies for making reasonable progress toward meeting this goal. Implementation plans must also give specific attention to certain stationary sources that were in existence on August 7, 1977, but were not in operation before August 7, 1962, and require these sources, where appropriate, to install BART controls for the purpose of

eliminating or reducing visibility impairment. The specific regional haze SIP requirements are discussed in further detail below.

B. Determination of Baseline, Natural, and Current Visibility Conditions

The RHR establishes the deciview as the principal metric or unit for expressing visibility. This visibility metric expresses uniform changes in haziness in terms of common increments across the entire range of visibility conditions, from pristine to extremely hazy conditions. Visibility expressed in deciviews is determined by using air quality measurements to estimate light extinction and then transforming the value of light extinction using a logarithm function. The deciview is a more useful measure for tracking progress in improving visibility than light extinction itself because each deciview change is an equal incremental change in visibility perceived by the human eye. Most people can detect a change in visibility at one deciview.[3] The deciview is used in expressing RPGs (which are interim visibility goals towards meeting the national visibility goal), defining baseline, current, and natural conditions, and tracking changes in visibility. The regional haze SIPs must contain measures that ensure "reasonable progress" toward the national goal of preventing and remedying visibility impairment in Class I areas caused by anthropogenic air pollution by reducing anthropogenic emissions that cause regional haze. The national goal is a return to natural conditions, i.e., anthropogenic sources of air pollution would no longer impair visibility in Class I areas.

To track changes in visibility over time at each of the 156 Class I areas covered by the visibility program (40 CFR 81.401-437), and as part of the process for determining reasonable progress, states must calculate the degree of existing visibility impairment at each Class I area at the time

[3]The preamble to the RHR provides additional details about the deciview (64 FR 35714, 35725, July 1, 1999).

of each regional haze SIP submittal and periodically review progress every five years midway through each 10-year implementation period. To do this, the RHR requires states to determine the degree of impairment (in deciviews) for the average of the 20 percent least impaired ("best") and 20 percent most impaired ("worst") visibility days over a specified time period at each of their Class I areas. In addition, states must also develop an estimate of natural visibility conditions for the purpose of comparing progress toward the national goal. Natural visibility is determined by estimating the natural concentrations of pollutants that cause visibility impairment and then calculating total light extinction based on those estimates. EPA has provided guidance to states regarding how to calculate baseline, natural and current visibility conditions in documents entitled, EPA's *Guidance for Estimating Natural Visibility conditions under the Regional Haze Rule*, September 2003, (EPA-454/B-03-005 located at http://www.epa.gov/ttncaaa1/t1/memoranda/rh_envcurhr_gd.pdf), (hereinafter referred to as "EPA's 2003 Natural Visibility Guidance") and *Guidance for Tracking Progress Under the Regional Haze Rule,* September 2003, (EPA-454/B-03-004 located at http://www.epa.gov/ttncaaa1/t1/memoranda/rh_tpurhr_gd.pdf), (hereinafter referred to as "EPA's 2003 Tracking Progress Guidance").

For the first regional haze SIPs that were due by December 17, 2007, "baseline visibility conditions" were the starting points for assessing "current" visibility impairment. Baseline visibility conditions represent the degree of visibility impairment for the 20 percent least impaired days and 20 percent most impaired days for each calendar year from 2000 to 2004. Using monitoring data for 2000 through 2004, states are required to calculate the average degree of visibility impairment for each Class I area, based on the average of annual values over the

five-year period. The comparison of initial baseline visibility conditions to natural visibility conditions indicates the amount of improvement necessary to attain natural visibility, while the future comparison of baseline conditions to the then current conditions will indicate the amount of progress made. In general, the 2000 - 2004 baseline period is considered the time from which improvement in visibility is measured.

C. Determination of Reasonable Progress Goals (RPGs)

The vehicle for ensuring continuing progress towards achieving the natural visibility goal is the submission of a series of regional haze SIPs from the states that establish two RPGs (i.e., two distinct goals, one for the "best" and one for the "worst" days) for every Class I area for each (approximately) 10-year implementation period. The RHR does not mandate specific milestones or rates of progress, but instead calls for states to establish goals that provide for "reasonable progress" toward achieving natural (i.e., "background") visibility conditions. In setting RPGs, states must provide for an improvement in visibility for the most impaired days over the (approximately) 10-year period of the SIP, and ensure no degradation in visibility for the least impaired days over the same period.

States have significant discretion in establishing RPGs but are required to consider the following factors established in section 169A of the CAA and in EPA's RHR at 40 CFR 51.308(d)(1)(i)(A): (1) the costs of compliance; (2) the time necessary for compliance; (3) the energy and non-air quality environmental impacts of compliance; and (4) the remaining useful life of any potentially affected sources. States must demonstrate in their SIPs how these factors are considered when selecting the RPGs for the best and worst days for each applicable Class I

area. States have considerable flexibility in how they take these factors into consideration, as noted in EPA's *Guidance for Setting Reasonable Progress Goals under the Regional Haze Program,* ("EPA's Reasonable Progress Guidance"), July 1, 2007, memorandum from William L. Wehrum, Acting Assistant Administrator for Air and Radiation, to EPA Regional Administrators, EPA Regions 1-10 (pp. 4-2, 5-1). In setting the RPGs, states must also consider the rate of progress needed to reach natural visibility conditions by 2064 (referred to as the "uniform rate of progress" or the "glidepath") and the emission reduction measures needed to achieve that rate of progress over the 10-year period of the SIP. Uniform progress towards achievement of natural conditions by the year 2064 represents a rate of progress which states are to use for analytical comparison to the amount of progress they expect to achieve. In setting RPGs, each state with one or more Class I areas ("Class I state") must also consult with potentially "contributing states," i.e., other nearby states with emission sources that may be affecting visibility impairment at the Class I state's areas. See, 40 CFR 51.308(d)(1)(iv).

D. Best Available Retrofit Technology (BART)

Section 169A of the CAA directs states to evaluate the use of retrofit controls at certain larger, often uncontrolled, older stationary sources in order to address visibility impacts from these sources. Specifically, section 169A(b)(2)(A) of the CAA requires states to revise their SIPs to contain such measures as may be necessary to make reasonable progress towards the natural visibility goal, including a requirement that certain categories of existing major stationary sources[4] built between 1962 and 1977 procure, install, and operate the "Best Available Retrofit Technology" as determined by the state. Under the RHR, states are directed to conduct BART determinations for such "BART- eligible" sources that may be anticipated to cause or contribute

[4]The set of "major stationary sources" potentially subject to BART is listed in CAA section 169A(g)(7).

to any visibility impairment in a Class I area. Rather than requiring source-specific BART controls, states also have the flexibility to adopt an emissions trading program or other alternative program as long as the alternative provides greater reasonable progress towards improving visibility than BART.

On July 6, 2005, EPA published the *Guidelines for BART Determinations Under the Regional Haze Rule* at Appendix Y to 40 CFR part 51 (hereinafter referred to as the "BART Guidelines") to assist states in determining which of their sources should be subject to the BART requirements and in determining appropriate emission limits for each applicable source. See, 70 FR 39104. In making a BART determination for a fossil fuel-fired electric generating plant with a total generating capacity in excess of 750 megawatts (MW), a state must use the approach set forth in the BART Guidelines. A state is encouraged, but not required, to follow the BART Guidelines in making BART determinations for other types of sources.

States must address all visibility-impairing pollutants emitted by a source in the BART determination process. The most significant visibility impairing pollutants are SO_2, NO_x, and PM. EPA has stated that states should use their best judgment in determining whether VOC or NH_3 compounds impair visibility in Class I areas.

Under the BART Guidelines, states may select an exemption threshold value for their BART modeling, below which a BART eligible source would not be expected to cause or contribute to visibility impairment in any Class I area. The state must document this exemption threshold value in the SIP and must state the basis for its selection of that value. Any source with

emissions that model above the threshold value would be subject to a BART determination review. The BART Guidelines acknowledge varying circumstances affecting different Class I areas. States should consider the number of emission sources affecting the Class I areas at issue and the magnitude of the individual sources' impacts. Any exemption threshold set by the state should not be higher than 0.5 deciview.

In their SIPs, states must identify potential BART sources, described as "BART eligible sources" in the RHR, and document their BART control determination analyses. In making BART determinations, section 169A(g)(2) of the CAA requires that states consider the following factors: (1) the costs of compliance, (2) the energy and non-air quality environmental impacts of compliance, (3) any existing pollution control technology in use at the source, (4) the remaining useful life of the source, and (5) the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. States are free to determine the weight and significance to be assigned to each factor.

A regional haze SIP must include source-specific BART emission limits and compliance schedules for each source subject to BART. Once a state has made its BART determination, the BART controls must be installed and in operation as expeditiously as practicable, but no later than five years after the date of EPA approval of the regional haze SIP. CAA section 169(g)(4)). 40 CFR 51.308(e)(1)(iv). In addition to what is required by the RHR, general SIP requirements mandate that the SIP must also include all regulatory requirements related to monitoring, recordkeeping, and reporting for the BART controls on the source.

As noted above, the RHR allows states to implement an alternative program in lieu of BART so long as the alternative program can be demonstrated to achieve greater reasonable progress toward the national visibility goal than would BART. Under regulations issued in 2005 revising the regional haze program, EPA made just such a demonstration for the Clean Air Interstate Rule (CAIR) (70 FR 39104, July 6, 2005). EPA's regulations provide that states participating in the CAIR cap and trade program under 40 CFR part 96 pursuant to an EPA-approved CAIR SIP or which remain subject to the CAIR Federal Implementation Plan (FIP) in 40 CFR part 97, do not require affected BART eligible electric generating units (EGUs) to install, operate, and maintain BART for emissions of SO_2 and NO_x (40 CFR 51.308(e)(4)). Since CAIR is not applicable to emissions of PM, states were still required to conduct a BART analysis for PM emissions from EGUs subject to BART for that pollutant.

CAIR, as originally promulgated, required 28 states and the District of Columbia to reduce emissions of SO_2 and NO_x that significantly contributed to, or interfered with maintenance of the 1997 NAAQS for fine particulates and/or the 1997 NAAQS for 8-hour ozone in any downwind state. See, 70 FR 25162 (May 12, 2005). CAIR established emissions budgets for SO_2 and NO_x for states found to contribute significantly to nonattainment in downwind states and required these states to submit SIP revisions that implemented these budgets. States had the flexibility to choose which control measures to adopt to achieve the budgets, including participation in EPA-administered cap-and-trade programs addressing SO_2, NO_x-annual, and NO_x-ozone season emissions. In 2006, EPA promulgated FIPs for all states covered by CAIR to ensure the reductions were achieved in a timely manner. On July 11, 2008, the D.C. Circuit issued its decision to vacate and remand both CAIR and the associated CAIR FIPs in their entirety. See,

North Carolina v. *EPA*, 531 F.3d 836 (D.C. Cir. 2008). However, in response to EPA's petition for rehearing, the Court issued an order remanding CAIR to EPA without vacating either CAIR or the CAIR FIPs. The Court thereby left the EPA CAIR rule and CAIR SIPs and FIPs in place in order to "temporarily preserve the environmental values covered by CAIR" until EPA replaces it with a rule consistent with the court's opinion. See, *North Carolina* v. *EPA*, 550 F.3d at 1178. The Court directed EPA to "remedy CAIR's flaws" consistent with its July 11, 2008, opinion but declined to impose a schedule on EPA for completing that action.

In response to the Court's decision, EPA has issued a new rule to address interstate transport of NO_x and SO_2 in the eastern United States. See, 76 FR 48208 (August 8, 2011). EPA explained in that action that EPA is promulgating the Cross-State Air Pollution Rule (CSAPR) as a replacement for (not a successor to) CAIR's SO_2 and NO_x emissions reduction and trading programs. In other words, the CAIR and CAIR FIP requirements only remain in force to address emissions through the 2011 control periods. As part of the CSAPR, EPA finalized regulatory changes to sunset the CAIR and CAIR FIPs for control periods in 2012 and beyond. See, 76 FR 48322. EPA also stated in this final action that it has not conducted a technical analysis to determine whether compliance with the CSAPR would satisfy the requirements of the RHR addressing alternatives to BART. For that reason, EPA did not make a determination or establish a presumption that compliance with the CSAPR satisfies BART-related requirements for EGUs. EPA is now in the process of determining whether compliance with the CSAPR will provide for greater reasonable progress toward improving visibility than source-specific BART controls for EGUs but no such determination has yet been proposed.

E. Long-Term Strategy

Consistent with the requirement in section 169A(b) of the CAA that states include in their regional haze SIP a 10 to 15 year strategy for making reasonable progress, section 51.308(d)(3) of the RHR requires that states include a long-term strategy in their regional haze SIPs. The long-term strategy is the compilation of all control measures a state will use during the implementation period of the specific SIP submittal to meet applicable RPGs. The long-term strategy must include "enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals" for all Class I areas within, or affected by emissions from, the state. See, 40 CFR 51.308(d)(3).

When a state's emissions are reasonably anticipated to cause or contribute to visibility impairment in a Class I area located in another state, the RHR requires the impacted state to coordinate with the contributing states in order to develop coordinated emissions management strategies. See, 40 CFR 51.308(d)(3)(i). In such cases, the contributing state must demonstrate that it has included, in its SIP, all measures necessary to obtain its share of the emission reductions needed to meet the RPGs for the Class I area. The RPOs have provided forums for significant interstate consultation, but additional consultations between states may be required to sufficiently address interstate visibility issues. This is especially true where two states belong to different RPOs.

States should consider all types of anthropogenic sources of visibility impairment in developing their long-term strategy, including stationary, minor, mobile, and area sources. At a minimum, states must describe how each of the following seven factors listed below are taken into account

in developing their long-term strategy: (1) emission reductions due to ongoing air pollution control programs, including measures to address RAVI; (2) measures to mitigate the impacts of construction activities; (3) emissions limitations and schedules for compliance to achieve the RPG; (4) source retirement and replacement schedules; (5) smoke management techniques for agricultural and forestry management purposes including plans as currently exist within the state for these purposes; (6) enforceability of emissions limitations and control measures; and (7) the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the long-term strategy. See, 40 CFR 51.308(d)(3)(v).

F. Coordinating Regional Haze and Reasonably Attributable Visibility Impairment Long-Term Strategy

As part of the RHR, EPA revised 40 CFR 51.306(c) regarding the long-term strategy for RAVI to require that the RAVI plan must provide for a periodic review and SIP revision not less frequently than every three years until the date of submission of the state's first plan addressing regional haze visibility impairment, which was due December 17, 2007, in accordance with 40 CFR 51.308(b) and (c). On or before this date, the state must revise its plan to provide for review and revision of a coordinated long-term strategy for addressing RAVI and regional haze, and the state must submit the first such coordinated long-term strategy with its first regional haze SIP. Future coordinated long-term strategy's, and periodic progress reports evaluating progress towards RPGs, must be submitted consistent with the schedule for SIP submission and periodic progress reports set forth in 40 CFR 51.308(f) and 51.308(g), respectively. The periodic review of a state's long-term strategy must report on both regional haze and RAVI impairment and must be submitted to EPA as a SIP revision.

G. Monitoring Strategy and Other Implementation Plan Requirements

Section 51.308(d)(4) of the RHR includes the requirement for a monitoring strategy for measuring, characterizing, and reporting of regional haze visibility impairment that is representative of all mandatory Class I Federal areas within the state. The strategy must be coordinated with the monitoring strategy required in section 51.305 for RAVI. Compliance with this requirement may be met through "participation" in the IMPROVE network, i.e., review and use of monitoring data from the network. The monitoring strategy is due with the first regional haze SIP and it must be reviewed every five years. The monitoring strategy must also provide for additional monitoring sites if the IMPROVE network is not sufficient to determine whether RPGs will be met.

The SIP must also provide for the following:

- Procedures for using monitoring data and other information in a state with mandatory Class I areas to determine the contribution of emissions from within the state to regional haze visibility impairment at Class I areas both within and outside the state;
- Procedures for using monitoring data and other information in a state with no mandatory Class I areas to determine the contribution of emissions from within the state to regional haze visibility impairment at Class I areas in other states;
- Reporting of all visibility monitoring data to the Administrator at least annually for each Class I area in the state, and where possible, in electronic format;
- Developing a statewide inventory of emissions of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area. The inventory must include emissions for a baseline year, emissions for the most recent

year for which data are available, and estimates of future projected emissions. A state must also make a commitment to update the inventory periodically; and

- Other elements, including reporting, recordkeeping, and other measures necessary to assess and report on visibility.

The RHR requires control strategies to cover an initial implementation period extending to the year 2018, with a comprehensive reassessment and revision of those strategies, as appropriate, every 10 years thereafter. Periodic SIP revisions must meet the core requirements of section 51.308(d) with the exception of BART. The requirement to evaluate sources for BART applies only to the first regional haze SIP. Facilities subject to BART must continue to comply with the BART provisions of section 51.308(e), as noted above. Periodic SIP revisions will assure that the statutory requirement of reasonable progress will continue to be met.

H. Consultation with States and Federal Land Managers (FLMs)

The RHR requires that states consult with FLMs before adopting and submitting their SIPs. See, 40 CFR 51.308(i). States must provide FLMs an opportunity for consultation, in person and at least 60 days prior to holding any public hearing on the SIP. This consultation must include the opportunity for the FLMs to discuss their assessment of impairment of visibility in any Class I area and to offer recommendations on the development of the RPGs and on the development and implementation of strategies to address visibility impairment. Further, a state must include in its SIP a description of how it addressed any comments provided by the FLMs. Finally, a SIP must provide procedures for continuing consultation between the state and FLMs regarding the state's visibility protection program, including development and review of SIP revisions, five-year

progress reports, and the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas.

III. What is EPA's Analysis of the District of Columbia's Regional Haze Submittal?

On October 27, 2011, the DDOE submitted revisions to the District of Columbia SIP to address regional haze as required by EPA's RHR.

A. Affected Class I Areas

The District of Columbia has no Class I areas within its borders. There are, however, five Class I areas within 300 kilometers of the District. These five Class I areas are Shenandoah National Park, Dolly Sods Wilderness, Otter Creek Wilderness, Brigantine Wilderness, and James River Face Wilderness. Shenandoah National Park in Virginia is the closest Class I area to the District of Columbia. The next closest areas are the Brigantine Wilderness Area in New Jersey, the Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and James River Face Wilderness Area in Virginia.

EPA's RHR requires states to address regional haze in each mandatory Class I Federal area located within its state and in each mandatory Class I Federal area located outside the state, which may be affected by emissions from its facilities. The RHR requires states that may reasonably cause or contribute to visibility impairment in one or more Class I areas to develop a long-term strategy that addresses regional haze visibility impairment for each affected Class I area. The MANE-VU states with Class I areas established a contribution threshold for determining whether a state could be considered to affect an area. The criteria for contribution

was established by the MANE-VU states to be greater than 0.1 microgram per cubic meter ($\mu g/m^3$) or two percent of sulfate pollution to a Class I area. MANE-VU concluded that the District did not contribute greater than 0.1 $\mu g/m^3$ or two percent sulfate contribution to any nearby Class I areas, and so the District of Columbia was not identified as influencing the visibility impairment of any Class I area. However, the District of Columbia is responsible for developing a regional haze SIP that describes its long-term emission strategy, its role in the consultation processes, and how the SIP meets the other requirements in EPA's regional haze regulations. As the District of Columbia has no Class I areas within its borders, the District is not required to address the following Regional Haze SIP elements: a) the calculation of baseline and natural visibility conditions, b) the establishment of reasonable progress goals, c) monitoring requirements, and d) RAVI requirements.

B. Long-Term Strategy/Strategies

As described in Section II. E of this action, the long-term strategy is a compilation of all the control measures relied on by the state to achieve the RPG for the Class I areas affected by emissions from the District. The District of Columbia's long-term strategy for the first implementation period addresses the emissions reductions from federal, state, and local controls that take effect in the District from the baseline period starting in 2002 until 2018. The District of Columbia also participated in the MANE-VU regional strategy development process. As a participant, the District of Columbia supported a regional approach towards deciding which control measures to pursue for regional haze. The decision as to appropriate control measures was based on technical analyses documented in the following reports by MANE-VU and included as appendices to the District of Columbia's regional haze SIP revision: a) Contributions

to Regional Haze in the Northeast and Mid-Atlantic United States; b) Assessment of Reasonable Progress for Regional Haze in MANE-VU Class I Areas; c) Five-Factor Analysis of BART-Eligible Sources: Survey of Options for Conducting BART Determinations; and d) Assessment of Control Technology Options for BART-Eligible Sources: Steam Electric Boilers, Industrial Boilers, Cement Plants, and Paper and Pulp Facilities.

The District of Columbia developed its long-term strategy in coordination with MANE-VU. As part of this process, the District and MANE-VU identified the emissions units within the District of Columbia likely to have the largest impacts currently on visibility at any of the nearby Class I areas. The District and MANE-VU, also estimated emissions reductions from sources in the District for 2018 as a result of all controls required under federal and state regulations for the 2002-2018 period (including BART), and compared projected visibility improvement with the uniform rate of progress for the nearby Class I areas.

1. Emissions Inventory for 2018 with Federal and State Control Requirements

The emissions inventory used in the regional haze technical analyses was developed by MARAMA for MANE-VU with assistance from the District of Columbia. The 2018 emissions inventory was developed by projecting 2002 emissions, and assuming emissions growth due to projected increases in economic activity as well as applying reductions expected from federal and state regulations affecting the emissions of VOC and the visibility-impairing pollutants NO_x, PM_{10}, $PM_{2.5}$, and SO_2. The BART guidelines direct states to exercise judgment in deciding whether VOC and NH_3 impair visibility in their Class I area(s). MANE-VU demonstrated that anthropogenic emissions of sulfates are the major contributor to $PM_{2.5}$ mass and visibility

impairment at Class I areas in the Northeast and Mid-Atlantic region. MANE-VU determined that the total ammonia emissions in the MANE-VU region are extremely small. In addition, since VOC emissions are aggressively controlled through the District of Columbia SIP, the pollutants the District of Columbia considered under BART and RPG are NO_x, PM_{10}, $PM_{2.5}$, and SO_2.

MANE-VU developed emissions inventories for four inventory source classifications: 1) stationary point sources, 2) stationary area sources, 3) off-road mobile sources, and 4) on-road mobile sources. The New York Department of Environmental Conservation also developed an inventory of biogenic emissions for the entire MANE-VU region. Stationary point sources are those sources that emit greater than a specified tonnage per year, depending on the pollutant, with data provided at the facility level. Stationary area sources are those sources whose individual emissions are relatively small, but due to the large number of these sources, the collective emissions from the source category could be significant. Off-road mobile sources are equipment that can move but do not use the roadways. On-road mobile source emissions are automobiles, trucks, and motorcycles that use the roadway system. The emissions from these sources are estimated by vehicle type and road type. Biogenic sources are natural sources like trees, crops, grasses, and natural decay of plants. Stationary point sources emission data is tracked at the facility level. For all other source types emissions are summed on the county level.

There are many federal and state control programs being implemented that MANE-VU and the District of Columbia anticipate will reduce emissions between the baseline period and 2018. To

assess emissions reductions from ongoing air pollution control programs, BART, and reasonable progress goals, MANE-VU developed two 2018 emission control scenarios called "on-the-books/on-the-way" (OTB/W) scenario and "beyond on the way" (BOTW) scenario.

The OTB/W scenario included emissions growth and control measures that were either already "on the books" (promulgated as of June 15, 2005) or were considered well "on the way" to being implemented because they were proposed, but not yet final. The emissions inventory provided by the District of Columbia for the OTB/W 2018 projections is based on adopted and enforceable requirements. The ongoing air pollution control programs relied upon by the District of Columbia for the OTB/W projections include the NO_x SIP Call; NO_x and/or VOC reductions from the control rules in the 1-hour and 8-hour ozone SIPs for the District of Columbia; NO_x OTC 2001 Model Rule for Industrial, Commercial, and Institutional (ICI) Boilers; and Industrial Boiler/Process Heater Maximum Achievable Control Technology (MACT). Non-EGU point source control factors were not included in the inventory for the District. Area source control factors that applied for the District of Columbia included the 2001 OTC model rules (consumer products, architectural and industrial maintenance (AIM) coatings, portable fuel containers, and mobile equipment repair and refinishing; and solvent cleaning); and on-board vapor recovery. In addition, Federally-enforceable controls were incorporated in the EGU and mobile source models. These include CAIR; the Federal 2007 heavy duty diesel engine standards for non-road trucks and buses; the Federal Tier 2 tailpipe controls for the on-road vehicles; Federal large spark ignition and recreational vehicle controls; and EPA's non-road diesel rules.

The District of Columbia also relied on emission reductions from various federal MACT rules in the development of the 2018 emission inventory projections. These MACT rules include the combustion turbine and reciprocating internal combustion engines MACT, the industrial boiler and process heaters MACT and the 2, 4, 7, and 10 year MACT standards. On July 30, 2007, the U.S. District Court of Appeals mandated the vacatur and remand of the Industrial Boiler MACT Rule.[5] This MACT was vacated since it was directly affected by the vacatur and remand of the Commercial and Industrial Solid Waste Incinerator (CISWI) Definition Rule. EPA proposed a new Industrial Boiler MACT rule to address the vacatur on June 4, 2010, (75 FR 32006) and issued a final rule on March 21, 2011 (76 FR 15608). The District of Columbia's modeling included emission reductions from the vacated Industrial Boiler MACT rule. The District of Columbia did not redo its modeling analysis when the rule was re-issued. However, the expected reductions in SO_2 and PM are small relative to the District of Columbia's inventory. Therefore, EPA finds the expected reductions of the new rule acceptable since the final rule requires compliance by 2014, it provides the District of Columbia time to assure the required controls are in place prior to the end of the first implementation period in 2018. In addition, the RHR requires that any resulting differences between emissions projections and actual emissions reductions that may occur will be addressed during the five-year review prior to the next 2018 regional haze SIP.

The other emissions control scenario MANE-VU considered was a "beyond on the way" (BOTW) scenario that included potential additional control measures to attain the ozone and fine particulate NAAQS and to meet regional haze goals. Non-EGU point source controls included NO_x measures (asphalt production plants; cement kilns; glass and fiberglass furnaces; low sulfur

[5] NRDC v. EPA, 489F.3d 1250.

heating oil for commercial and institutional units; and ICI boilers using natural gas, #2 or #4 or #6 fuel oil, and coal); one primary PM_{10} and $PM_{2.5}$ measure (commercial heating oil); SO_2 measures (commercial heating oil and ICI boilers using #2 or #4 or #6 fuel oil and coal); and a VOC measure (adhesives and sealants application). Area source control factors included NO_x measures (ICI boilers using natural gas, #2 and #4 and #6 fuel oil, and coal; and residential and commercial home heating oil); primary PM_{10} and $PM_{2.5}$ measures (residential and commercial home heating oil); SO_2 measures (residential and commercial home heating oil and ICI boilers using distillate oil); and VOC measures (adhesives and sealants; emulsified and cutback asphalt paving; consumer products; and portable fuel containers). Additional potential and reasonable measures were analyzed using a four factor analysis. The list of measures was further refined and incorporated into a second BOTW, or "best and final" inventory, and included a "top 167 EGU stacks strategy"; a low sulfur fuel strategy (including second phase, to 15 parts per million (ppm) limit); a BART implementation strategy; and a continued evaluation of additional control measures. For the District of Columbia, the difference between the two BOTW inventories is negligible.

Since the District of Columbia does not contribute more than 0.1 $\mu g/m^3$ to visibility impairment at any Class I area, the District chose not to adopt some measures in the BOTW or "best and final" scenarios and selected as its long-term strategy the OTB/W scenario. EPA is proposing to find that the control measures in the OTB/W scenario are reasonable for the District's long-term strategy because the District's contribution to regional haze is less than the 0.1 $\mu g/m^3$ and two percent sulfate thresholds established by MANE-VU. The District's long-term strategy is not the same as the long-term strategy recommended by MANE-VU, but emission reductions will

provide sufficient emissions reductions for the District to obtain its share of the of the emissions reductions needed to meet the reasonable progress goal for the five Class I areas within 300 kilometers of the District of Columbia. Tables 1 and 2 are summaries of the 2002 baseline and 2018 estimated emissions inventories for the District of Columbia based on the OTB/W scenario. The 2018 estimated emissions include emission growth as well as emission reductions due to ongoing emission control strategies, BART, and reasonable progress goals.

Table 1. 2002 Emission Inventory Summary for the District of Columbia in Tons Per Year

	VOC	NO_x	$PM_{2.5}$	PM_{10}	NH_3	SO_2
Point	69	780	132	161	4	963
Area	6,432	1,644	805	3,269	14	1,337
On-Road Mobile	4,895	8,902	153	222	398	271
Off-Road Mobile	2,073	3,571	299	310	2	375
Biogenic	1,726	30	-	-	-	-
Total	**14,033**	**15,689**	**1,389**	**3,962**	**422**	**2,946**

Table 2. 2018 Emission Summary for the District of Columbia "OTB/W" in Tons Per Year

	VOC	NO_x	$PM_{2.5}$	PM_{10}	NH_3	SO_2
Point	90	630	263	302	17	863
Area	5,255	2,259	917	3,825	17	1,632
On-Road Mobile	1,797	1,717	58	65	438	41
Off-Road Mobile	1,369	1,815	124	135	3	5
Biogenic	1,726	30	-	-	-	-
Total	**10,237**	**6,551**	**1,362**	**4,326**	**474**	**2,541**

2. Modeling to Support the Long-Term Strategy and Determine Visibility Improvement for Uniform Rate of Progress

MANE-VU performed modeling for the regional haze long-term strategy for the 11 Mid-Atlantic and Northeast states and the District of Columbia. The modeling analysis is a complex technical evaluation that began with selection of the modeling system. MANE-VU used the following modeling system:

- Meteorological Model: The Fifth-Generation Pennsylvania State University/National Center for Atmospheric Research (NCAR) Mesoscale Meteorological Model (MM5) version 3.6 is a nonhydrostatic, prognostic meteorological model routinely used for urban- and regional-scale photochemical, $PM_{2.5}$, and regional haze regulatory modeling studies.
- Emissions Model: The Sparse Matrix Operator Kernel Emissions (SMOKE) version 2.1 modeling system is an emissions modeling system that generates hourly gridded speciated emission inputs of mobile, non-road mobile, area, point, fire, and biogenic emission sources for photochemical grid models.
- Air Quality Model: The EPA's Models-3/Community Multiscale Air Quality (CMAQ) version 4.5.1 is a photochemical grid model capable of addressing ozone, PM, visibility and acid deposition at a regional scale.
- Air Quality Model: The Regional Model for Aerosols and Deposition (REMSAD), version 8, is an Eulerian grid model that was primarily used to determine the attribution of sulfate species in the Eastern US via the species-tagging scheme.
- Air Quality Model: The California Puff Model (CALPUFF), version 5 is a non-steady-state Lagrangian puff model used to access the contribution of individual states' emissions to sulfate levels at selected Class I receptor sites.

CMAQ modeling of regional haze in the MANE-VU region for 2002 and 2018 was carried out on a grid of 12x12 kilometer (km) cells that covers the 11 MANE-VU states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont) and the District of Columbia and states adjacent to

them. This grid is nested within a larger national CMAQ modeling grid of 36x36 km grid cells that covers the continental United States, portions of Canada and Mexico, and portions of the Atlantic and Pacific Oceans along the east and west coasts. Selection of a representative period of meteorology is crucial for evaluating baseline air quality conditions and projecting future changes in air quality due to changes in emissions of visibility-impairing pollutants. MANE-VU conducted an in-depth analysis which resulted in the selection of the entire year of 2002 (January 1-December 31) as the best period of meteorology available for conducting the CMAQ modeling. The MANE-VU states modeling was developed consistent with EPA's *Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze*, located at http://www.epa.gov/scram001/guidance/guide/final-03-pm-rh-guidance.pdf, (EPA-454/B-07-002), April 2007, and EPA document, *Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations,* located at http://www.epa.gov/ttnchie1/eidocs/eiguid/index.html, EPA-454/R-05-001, August 2005, updated November 2005 ("EPA's Modeling Guidance").

MANE-VU examined the model performance of the regional modeling for the areas of interest before determining whether the CMAQ model results were suitable for use in the regional haze assessment of the long-term strategy and for use in the modeling assessment. The modeling assessment predicts future levels of emissions and visibility impairment used to support the LTS and to compare predicted, modeled visibility levels with those on the uniform rate of progress. In keeping with the objective of the CMAQ modeling platform, the air quality model performance was evaluated using graphical and statistical assessments based on measured ozone,

fine particles, and acid deposition from various monitoring networks and databases for the 2002 base year. MANE-VU used a diverse set of statistical parameters from the EPA's Modeling Guidance to stress and examine the model and modeling inputs. Once MANE-VU determined the model performance to be acceptable, MANE-VU used the model to assess the 2018 RPGs using the current and future year air quality modeling predictions, and compared the RPGs to the uniform rate of progress.

In accordance with 40 CFR 51.308(d)(3), the District of Columbia provided the appropriate supporting documentation for all required analyses used to determine the District's long-term strategy. The technical analyses and modeling used to develop the glidepath and to support the long-term strategy are consistent with EPA's RHR, and interim and final EPA Modeling Guidance. EPA accepts the MANE-VU technical modeling to support the long-term strategy and determine visibility improvement for the uniform rate of progress because the modeling system was chosen and used according to EPA Modeling Guidance. EPA agrees with the MANE-VU model performance procedures and results, and that the CMAQ is an appropriate tool for the regional haze assessments for the District of Columbia long-term strategy and regional haze SIP.

3. Relative Contributions of Pollutants to Visibility Impairment

An important step toward identifying reasonable progress measures is to identify the key pollutants contributing to visibility impairment at each Class I area. To understand the relative benefit of further reducing emissions from different pollutants, MANE-VU developed emission sensitivity model runs using CMAQ to evaluate visibility and air quality impacts from various

groups of emissions and pollutant scenarios in the Class I areas on the 20 percent worst visibility days. Regarding which pollutants are most significantly impacting visibility in the MANE-VU region, MANE-VU's contribution assessment, demonstrated that sulfate is the major contributor to $PM_{2.5}$ mass and visibility impairment at Class I areas in the Northeast and Mid-Atlantic Region. Sulfate particles commonly account for more than 50 percent of particle-related light extinction at northeastern Class I areas on the clearest days and for as much as or more than 80 percent on the haziest days. In particular, for the Brigantine National Wildlife Refuge Class I area, on the 20 percent worst visibility days in 2000 – 2004, sulfate accounted for 66 percent of the particle extinction. After sulfate, organic carbon (OC) consistently accounts for the next largest fraction of light extinction. Organic carbon accounted for 13 percent of light extinction on the 20 percent worst visibility days for Brigantine, followed by nitrate that accounts for 9 percent of light extinction.

The emissions sensitivity analyses conducted by MANE-VU predict that reductions in SO_2 emissions from EGU and non-EGU industrial point sources will result in the greatest improvements in visibility in the Class I areas in the MANE-VU region, more than any other visibility-impairing pollutant. As a result of the dominant role of sulfate in the formation of regional haze in the Northeast and Mid-Atlantic Region, MANE-VU concluded that an effective emissions management approach would rely heavily on broad-based regional SO_2 control efforts in the eastern United States. As stated above, the District of Columbia relied on technical analyses developed by MANE-VU to demonstrate the District's emissions impact on neighboring Class I areas. The "Contributions to Regional Haze in the Northeast and Mid-Atlantic United States" document used several analytical techniques, such as REMSAD,

emissions divided by distance (Q/D), and CALPUFF, to analyze visibility at MANE-VU and neighboring Class I areas. These findings resulted in the identification of the most significant contributors to visibility impairment in MANE-VU and other neighboring Class I areas. Table 3 shows the overall percent contribution of sulfate from the District of Columbia to the three closest Class I areas. The District of Columbia does not contribute more than two percent of sulfate to any nearby Class I area, which is the threshold established by MANE-VU states with Class I areas for contributing to meet the RPG for 2018. The highest impacts, at the Brigantine Wilderness Area and Shenandoah National Park, are well below this threshold. For this reason, no MANE-VU states asked the District of Columbia for emissions reductions to the RPGs in these Class I areas. The Shenandoah National Park is in Virginia and the Dolly Sods Wilderness Area is in West Virginia. Both, Virginia and West Virginia are members of the Visibility Improvement State and Tribal Association of the Southeast (VISTAS) RPO. VISTAS conducted its own contribution assessment and similarly concluded that no additional emission reductions from the District of Columbia were necessary in this first planning period.

Table 3. Percent Annual Average Sulfate Contribution from the District of Columbia Sources in 2002

Class I Area	REMSAD	Q/D	CALPUFF (NWS)	CALPUFF (MM5)
Shenandoah National Park	0.04%	0.05%	0.07%	0.07%
Dolly Sods Wilderness	0.01%	0.02%	0.02%	NA
Brigantine Wilderness	0.04%	0.05%	0.07%	0.07%

4. Reasonable Progress Goals

Since the District of Columbia does not have a Class I area, it is not required to establish RPGs. Although the District of Columbia was not identified as influencing the visibility impairment of

any Class I area, as a member of MANE-VU, the District of Columbia worked in cooperation with the MANE-VU Class I states as those states established reasonable progress goals for their Class I areas.

5. BART

BART is an element of the District of Columbia's long-term strategy. The BART regional haze requirements consist of three components: (a) identification of all the BART eligible sources; (b) an assessment of whether the BART eligible sources are subject to BART; and (c) the determination of the BART controls.

The first component of a BART evaluation is to identify all the BART eligible sources. The BART eligible sources were identified by utilizing the criteria in the BART Guidelines as follows:

- Determine whether one or more emissions units at the facility fit within one of the 26 categories listed in the BART Guidelines (70 FR 39158-39159);
- Determine whether the emission unit(s) was in existence on August 7, 1977 and begun operation after August 6, 1962;
- Determine whether potential emissions of SO_2, NO_x, and PM_{10} from subject units are 250 tons or more per year.

The BART guidelines recommend addressing SO_2, NO_x, and PM_{10} as visibility-impairment pollutants and leave it up to the discretion of states to evaluate VOC or ammonia emissions. MANE-VU demonstrated that anthropogenic emissions of sulfates are the major contributor to

$PM_{2.5}$ mass and visibility impairment at Class I areas in the Northeast and Mid-Atlantic region. MANE-VU determined that the total ammonia emissions in the MANE-VU region are extremely small. In addition, since VOC emissions are aggressively controlled through the District of Columbia SIP, the pollutants the District of Columbia considered under BART are NO_x, PM_{10}, $PM_{2.5}$, and SO_2.

Based on a review of emissions inventory data, air quality permits, and other data on the air pollution sources, the District of Columbia identified two BART eligible sources located at one facility, the Benning Road Generating Station (BRGS). Potomac Power Resources, LLC (PPR) owns the BRGS. PPR is a wholly owned but unregulated subsidiary of Pepco Energy Services, Inc. (PES), which manages the assets of BRGS on behalf of PPR. The BRGS typically operates only during high demand periods, mostly during hot spells in the summer or perhaps during very cold conditions of the winter months. The two BART-eligible units at BRGS are two oil-fired steam electric generating units (EGUs), Units 15 and 16. Units 15 and 16 were installed in 1968 and 1972, respectively, and both have a potential to emit of more than 250 tons per year of a visibility impairing pollutant.

The second component of the BART evaluation is to determine whether a BART eligible source may reasonably be anticipated to cause or contribute to visibility impairment at any Class I area. Those sources that do are subject to BART. See, 40 CFR 51.308(e)(1)(ii). As discussed in the BART guidelines, a state may choose to consider all BART eligible sources to be subject to BART (70 FR 39161). In June 2004, the MANE-VU Board decided that because of the collective importance of BART sources, BART determinations should be made by the MANE-

VU states for each BART eligible source. Consistent with that decision, the District of Columbia identified the two BART eligible sources at the BRGS as subject to BART.

The final component of a BART evaluation is making BART determinations for all BART subject sources. Initially, the District of Columbia planned to use its participation in CAIR to meet the BART requirements for SO_2 and NO_x for Units 15 and 16 at BRGS. For PM, PES agreed to a permit condition to address emissions. PES agreed that it would either shut down the two EGUs by December 17, 2012 or accept a *de minimis* cap on actual emissions of PM_{10} of 15 tons per year from both Units 15 and 16.

More recently, however, PES committed to accept a permit condition that would require the two BART units at the BRGS to cease operation by December 17, 2012, with no alternative conditions in lieu of shutting down. In response to the PES commitment, the District of Columbia established federally enforceable terms and conditions in a Title V permit for Units 15 and 16 at the BRGS, and as part of its Regional Haze SIP revision included condition III.a.2.D. Compliance with Requirements for Protection of Visibility of the Title V Operation Permit/Chapter 3 Permit, No.026-R1, for BRGS. Condition III.a.2.D is the only condition of the permit that the District of Columbia requested to be considered as part of the SIP revision to address the CAA's requirements for Regional Haze.

The shutdown of Units 15 and 16 will result in more emissions reductions than would have resulted from CAIR and in more emissions reductions than the reductions modeled by MANE-VU in the OTB/W control scenario. Table 4 demonstrates that the closure of the units will result

in 83 tons of SO_2 reductions and 103 tons of NO_x reductions, in addition to those anticipated under the OTB/W scenario in the inventory of emissions for the District of Columbia. There will also be additional PM reductions. These reductions beyond those anticipated earlier will further help states with Class I areas meet the reasonable progress goals for 2018.

Table 4. Estimated EGU Emissions Reductions (Tons/Year)

Pollutant	2002	2018 OTB/W	EGU Reductions Needed Without CAIR	Total EGU Reductions Due to Closure of BRGS	2018 Surplus Reductions
NO_x	300	103	197	300	**103**
SO_2	345	83	262	345	**83**

C. Consultation with States and Federal Land Managers

On May 10, 2006, the MANE-VU State Air Directors adopted the Inter-RPO State/Tribal and FLM Consultation Framework that documented the consultation process within the context of regional haze planning, and was intended to create greater certainty and understanding among RPOs. MANE-VU states held ten consultation meetings and/or conference calls from March 1, 2007 through March 21, 2008. In addition to MANE-VU members attending these meetings and conference calls, participants from VISTAS, Midwest RPO, and the relevant Federal Land Managers were also in attendance. In addition to the conference calls and meeting, the FLMs were given the opportunity to review and comment on each of the technical documents developed by MANE-VU.

On September 8, 2011, the District of Columbia submitted a draft Regional Haze SIP to the relevant FLMs for review and comment pursuant to 40 CFR 51.308(i)(2). The FLMs provided

comments on the draft Regional Haze SIP in accordance with 40 CFR 51.308(i)(3). The comments received from the FLMs were addressed and incorporated in the District of Columbia's SIP revision. On October 11, 2011, District of Columbia made its Regional Haze SIP available for public comment. No comments were received. To address the requirement for continuing consultation procedures with the FLMs under 40 CFR 51.308(i)(4), the District of Columbia commits in their SIP to ongoing consultation with the FLMs on Regional Haze issues throughout the implementation period of the SIP.

D. Periodic SIP Revisions and Five-Year Progress Reports

Consistent with the requirements of 40 CFR 51.308(g), the District of Columbia has committed to submitting a report on reasonable progress (in the form of a SIP revision) to the EPA every five years following the initial submittal of its regional haze SIP.

IV. What Action is EPA Proposing to Take?

EPA is proposing to approve the revision to the District of Columbia SIP submitted by the District of Columbia through the DDOE on October 27, 2011 that addresses regional haze for the first implementation period. EPA is proposing to make a determination that the District of Columbia Regional Haze SIP contains the emission reductions needed to achieve the District of Columbia's share of emission reductions agreed upon through the regional planning process. Furthermore, the District of Columbia's Regional Haze Plan ensures that emissions from the District of Columbia will not interfere with the reasonable progress goals for neighboring states' Class I areas. Accordingly, EPA is proposing to find that this revision meets the applicable visibility related requirements of CAA section 110(a)(2) including but not limited to

110(a)(2)(D)(i)(II) and 110(a)(2)(J), relating to visibility protection for the 1997 8-Hour Ozone NAAQS and the 1997 and 2006 $PM_{2.5}$ NAAQS. EPA is also proposing to conclude that the Regional Haze Plan submitted by the District of Columbia also satisfies the BART requirements of section 169A of the CAA. EPA is soliciting public comments on the issues discussed in this document. These comments will be considered before taking final action.

V. Statutory and Executive Order Reviews

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

- is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.);
- is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.);
- does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);

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

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

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Visibility, Volatile organic compounds.

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

_ November 8, 2011.
Dated:

W. C. Early, Acting
Regional Administrator,
Region III.

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