



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R03-OAR-2024-0625; FRL-10253-01-R3]

Air Plan Disapproval; West Virginia; Regional Haze State Implementation Plan for the Second Implementation Period

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to disapprove a revision to West Virginia's State Implementation Plan (SIP) submitted by the West Virginia Department of Environmental Protection (WV DEP) on August 12, 2022. The SIP was submitted to satisfy applicable requirements under the Clean Air Act (CAA) and EPA's Regional Haze Rule (RHR) for the program's second planning period. If finalized, disapproval does not start a mandatory sanctions clock. The EPA is taking this action pursuant to sections 110 and 169A of the Clean Air Act.

DATES: Written 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-R03-OAR-2024-0625 at www.regulations.gov. For comments submitted at *Regulations.gov*, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. For either manner of submission, the 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. The 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, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit www.epa.gov/dockets/commenting-epa-dockets.

FOR FURTHER INFORMATION CONTACT: Adam Yarina, U.S. Environmental Protection Agency, Region 3, 1600 John F. Kennedy Boulevard, Philadelphia, Pennsylvania 19103-2852, at (215) 814-2108, or by email at yarina.Adam@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document “we,” “us,” and “our” refer to the EPA.

I. What action is the EPA proposing?

The EPA is proposing to disapprove West Virginia’s Regional Haze plan for the second planning period. As required by sections 169A and 169B of the CAA, the Federal RHR at 40 CFR 51.308 calls for State and Federal agencies to work together to improve visibility in 156 national parks and wilderness areas. The rule requires the States, in coordination with the EPA, the U.S. National Parks Service (NPS), U.S. Fish and Wildlife Service (FWS), the U.S. Forest Service (USFS), and other interested parties, to develop and implement air quality protection plans to reduce the pollution that causes visibility impairment in mandatory Class I Federal areas. Visibility impairing pollutants include fine and coarse particulate matter (PM) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust) and their precursors (e.g., sulfur dioxide (SO₂), oxides of nitrogen (NO_x), and, in some cases, volatile organic compounds (VOC) and ammonia (NH₃)). As discussed in further detail below, the EPA is proposing to find that West Virginia has submitted a Regional Haze plan that does not meet the statutory and regulatory Regional Haze requirements for the second planning period. The State's 2022 submission can be found in the docket for this action.

II. Background and Requirements for Regional Haze Plans

A. Regional Haze Background

In the 1977 CAA Amendments, Congress created a program for protecting visibility in the nation's mandatory Class I Federal areas, which include certain national parks and wilderness areas.¹ CAA section 169A. 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 which impairment results from manmade air pollution.” CAA section 169A(a)(1). The CAA further directs the EPA to promulgate regulations to assure reasonable progress toward meeting this national goal. CAA section 169A(a)(4). On December 2, 1980, the EPA promulgated regulations to address visibility impairment in mandatory Class I Federal Areas (hereinafter referred to as “Class I Areas”) that is “reasonably attributable” to a single source or small group of sources. (45 FR 80084, December 2, 1980). These regulations, codified at 40 CFR 51.300 through 51.307, represented the first phase of the EPA's efforts to address visibility impairment. In 1990, Congress added section 169B to the CAA to further address visibility impairment, specifically, impairment from Regional Haze. CAA 169B. The EPA promulgated the RHR, codified at 40 CFR 51.308,² on July 1, 1999. (64 FR 35714, July 1, 1999). These Regional Haze regulations are a central component of the EPA's comprehensive visibility protection program for Class I Areas.

Regional Haze is visibility impairment that is produced by a multitude of anthropogenic sources and activities which are located across a broad geographic area and that emit pollutants that impair visibility. Visibility impairing pollutants include fine and coarse PM (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust) and their precursors (e.g., SO₂, NO_x, and, in some cases, VOC and NH₃). Fine particle precursors react in the atmosphere to form fine

¹ Areas statutorily designated as mandatory Class I Federal Areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. CAA 162(a). There are 156 mandatory Class I Areas. The list of areas to which the requirements of the visibility protection program apply is in 40 CFR part 81, subpart D.

² In addition to the generally applicable Regional Haze provisions at 40 CFR 51.308, the EPA also promulgated regulations specific to addressing Regional Haze visibility impairment in Class I Areas on the Colorado Plateau at 40 CFR 51.309. The latter regulations are applicable only for specific jurisdictions' Regional Haze plans submitted no later than December 17, 2007, and thus are not relevant here.

PM (PM_{2.5}), which impairs visibility by scattering and absorbing light. Visibility impairment reduces the perception of clarity and color, as well as visible distance.³

To address Regional Haze visibility impairment, the 1999 RHR established an iterative planning process that requires both States in which Class I Areas are located and States “the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility” in a Class I Area to periodically submit SIP revisions to address such impairment. CAA section 169A(b)(2);⁴ see also 40 CFR 51.308(b), (f) (establishing submission dates for iterative Regional Haze SIP revisions); (64 FR 35768, July 1, 1999). Under the CAA, each SIP submission must contain “a long-term (ten to fifteen years) strategy for making reasonable progress toward meeting the national goal,” CAA section 169A(b)(2)(B); the initial round of SIP submissions also had to address the statutory requirement that certain older, larger sources of visibility impairing pollutants install and operate the best available retrofit technology (BART). CAA section 169A(b)(2)(A); 40 CFR 51.308(d), (e). States' first Regional Haze SIPs were due by December 17, 2007, 40 CFR 51.308(b), with subsequent SIP submissions containing an updated long-term strategy (LTS) originally due July 31, 2018, and every ten years thereafter. (64 FR 35768, July 1, 1999). The EPA established in the 1999 RHR that all States either have Class I Areas within their borders or “contain sources whose emissions are reasonably anticipated to contribute to Regional Haze in a Class I Area”; therefore, all States must submit

³ There are several ways to measure the amount of visibility impairment, i.e., haze. One such measurement is the deciview, which is the principal metric used by the RHR. Under many circumstances, a change in one deciview will be perceived by the human eye to be the same on both clear and hazy days. The deciview is unitless. It is proportional to the logarithm of the atmospheric extinction of light, which is the perceived dimming of light due to its being scattered and absorbed as it passes through the atmosphere. Atmospheric light extinction (bext.) is a metric used for expressing visibility and is measured in inverse megameters (Mm⁻¹). The EPA's Guidance on Regional Haze State Implementation Plans for the Second Implementation Period (“2019 Guidance”) offers the flexibility for the use of light extinction in certain cases. Light extinction can be simpler to use in calculations than deciviews, since it is not a logarithmic function. See, e.g., 2019 Guidance at 16, 19, www.epa.gov/visibility/guidance-regional-haze-state-implementation-plans-second-implementation-period, The EPA Office of Air Quality Planning and Standards, Research Triangle Park (August 20, 2019). The formula for the deciview is $10 \ln(\text{bext.}/10 \text{ Mm}^{-1})$. 40 CFR 51.301.

⁴ The RHR expresses the statutory requirement for states to submit plans addressing out-of-state Class I Areas by providing that states must address visibility impairment “in each mandatory Class I Federal Area located outside the State that may be affected by emissions from within the State.” 40 CFR 51.308(d), (f).

Regional Haze SIPs.⁵ *Id.* at 35721.

Much of the focus in the first implementation period of the Regional Haze program, which ran from 2007 through 2018, was on satisfying States' BART obligations. First implementation period SIPs were additionally required to contain a long-term strategy for making reasonable progress toward the national visibility goal, of which BART is one component. The core required elements for the first implementation period SIPs (other than BART) are laid out in 40 CFR 51.308(d). Those provisions required that States containing Class I Areas establish reasonable progress goals (RPGs) that are measured in deciviews and reflect the anticipated visibility conditions at the end of the implementation period including from implementation of States' long-term strategy. The first planning period RPGs were required to provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period. In establishing the RPGs for any Class I Area in a State, the State was required to consider four statutory factors: the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources. CAA section 169A(g)(1); 40 CFR 51.308(d)(1).

States were also required to calculate baseline (using the five-year period of 2000-2004) and natural visibility conditions (i.e., visibility conditions without anthropogenic visibility impairment) for each Class I Area, and to calculate the linear rate of progress needed to attain natural visibility conditions, assuming a starting point of baseline visibility conditions in 2004 and ending with natural conditions in 2064. This linear interpolation is known as the uniform rate of progress (URP) and is used as a tracking metric to help States assess the amount of progress they are making towards the national visibility goal over time in each Class I Area.⁶ 40 CFR

⁵ In addition to each of the fifty states, the EPA also concluded that the Virgin Islands and District of Columbia must also submit Regional Haze SIPs because they either contain a Class I Area or contain sources whose emissions are reasonably anticipated to contribute Regional Haze in a Class I Area. See 40 CFR 51.300(b), (d)(3).

⁶ The EPA established the URP framework in the 1999 RHR to provide “an equitable analytical approach” to assessing the rate of visibility improvement at Class I Areas across the country. The start point for the URP analysis

51.308(d)(1)(i)(B), (d)(2). The 1999 RHR also provided that States' long-term strategy must include the “enforceable emissions limitations, compliance, schedules, and other measures as necessary to achieve the reasonable progress goals.” 40 CFR 51.308(d)(3). In establishing their long-term strategy, States are required to consult with other States that also contribute to visibility impairment in a given Class I Area and include all measures necessary to obtain their shares of the emission reductions needed to meet the RPGs. 40 CFR 51.308(d)(3)(i) and (ii). Section 51.308(d) also contains seven additional factors States must consider in formulating their long-term strategy, 40 CFR 51.308(d)(3)(v), as well as provisions governing monitoring and other implementation plan requirements. 40 CFR 51.308(d)(4). Finally, the 1999 RHR required States to submit periodic progress reports—SIP revisions due every five years that contain information on States' implementation of their Regional Haze plans and an assessment of whether anything additional is needed to make reasonable progress, see 40 CFR 51.308(g), (h)—and to consult with the Federal Land Manager(s)⁷ (FLMs) responsible for each Class I Area according to the requirements in CAA section 169A(d) and 40 CFR 51.308(i).

On January 10, 2017, the EPA promulgated revisions to the RHR, (82 FR 3078, January 10, 2017), that apply for the second and subsequent implementation periods. The 2017 rulemaking made several changes to the requirements for Regional Haze SIPs to clarify States' obligations and streamline certain Regional Haze requirements. The revisions to the Regional Haze program for the second and subsequent implementation periods focused on the requirement that States' SIPs contain long-term strategies for making reasonable progress towards the national visibility goal. The reasonable progress requirements as revised in the 2017 rulemaking

is 2004 and the endpoint was calculated based on the amount of visibility improvement that was anticipated to result from implementation of existing CAA programs over the period from the mid-1990s to approximately 2005. Assuming this rate of progress would continue into the future, the EPA determined that natural visibility conditions would be reached in 60 years, or 2064 (60 years from the baseline starting point of 2004). However, the EPA did not establish 2064 as the year by which the national goal must be reached. 64 FR 35731-32, July 1, 1999. That is, the URP and the 2064 date are not enforceable targets, but rather are tools that “allow for analytical comparisons between the rate of progress that would be achieved by the state's chosen set of control measures and the URP.” (82 FR 3078, 3084, January 10, 2017).

⁷ The EPA's regulations define “Federal Land Manager” as “the Secretary of the department with authority over the Federal Class I Area (or the Secretary's designee) or, with respect to Roosevelt-Campobello International Park, the Chairman of the Roosevelt-Campobello International Park Commission.” 40 CFR 51.301.

(referred to here as the 2017 RHR Revisions) are codified at 40 CFR 51.308(f). Among other changes, the 2017 RHR Revisions adjusted the deadline for States to submit their second implementation period SIPs from July 31, 2018, to July 31, 2021, clarified the order of analysis and the relationship between RPGs and the long-term strategy, and focused on making visibility improvements on the days with the most anthropogenic visibility impairment, as opposed to the days with the most visibility impairment overall. The EPA also revised requirements of the visibility protection program related to periodic progress reports and FLM consultation. The specific requirements applicable to second implementation period Regional Haze SIP submissions are addressed in detail below.

The EPA provided guidance to the States for their second implementation period SIP submissions in the preamble to the 2017 RHR Revisions as well as in subsequent, stand-alone guidance documents. In August 2019, the EPA issued “Guidance on Regional Haze State Implementation Plans for the Second Implementation Period” (“2019 Guidance”).⁸ On July 8, 2021, the EPA issued a memorandum containing “Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period” (“2021 Clarifications Memo”).⁹ Additionally, the EPA further clarified the recommended procedures for processing ambient visibility data and optionally adjusting the URP to account for international anthropogenic and prescribed fire impacts in two technical guidance documents: the December 2018 “Technical Guidance on Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program” (“2018 Visibility Tracking Guidance”),¹⁰ and the June 2020 “Recommendation for the Use of Patched and Substituted Data and Clarification of Data Completeness for Tracking

⁸ Guidance on Regional Haze State Implementation Plans for the Second Implementation Period, <https://www.epa.gov/visibility/guidance-regional-haze-state-implementation-plans-second-implementation-period>, EPA Office of Air Quality Planning and Standards, Research Triangle Park (August 20, 2019).

⁹ Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period, <https://www.epa.gov/system/files/documents/2021-07/clarifications-regarding-regional-haze-state-implementation-plans-for-the-second-implementation-period.pdf>, EPA Office of Air Quality Planning and Standards, Research Triangle Park (July 8, 2021).

¹⁰ Technical Guidance on Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program. <https://www.epa.gov/visibility/technical-guidance-tracking-visibility-progress-second-implementation-period-regional>, EPA Office of Air Quality Planning and Standards, Research Triangle Park. (December 20, 2018).

Visibility Progress for the Second Implementation Period of the Regional Haze Program” and associated Technical Addendum (“2020 Data Completeness Memo”).¹¹

As previously explained in the 2021 Clarifications Memo, the EPA intends the second implementation period of the Regional Haze program to secure meaningful reductions in visibility impairing pollutants that build on the significant progress States have achieved to date. The Agency also recognizes that analyses regarding reasonable progress are state-specific and that, based on States' and sources' individual circumstances, what constitutes reasonable reductions in visibility impairing pollutants will vary from state-to-state. While there exist many opportunities for States to leverage both ongoing and upcoming emission reductions under other CAA programs, the Agency expects States to undertake rigorous reasonable progress analyses that identify further opportunities to advance the national visibility goal consistent with the statutory and regulatory requirements. See generally 2021 Clarifications Memo. This is consistent with Congress's determination that a visibility protection program is needed in addition to the CAA's national ambient air quality standards (NAAQS) and prevention of significant deterioration (PSD) programs, as further emission reductions may be necessary to adequately protect visibility in Class I Areas throughout the country.¹²

B. Roles of Agencies in Addressing Regional Haze

Because the air pollutants and pollution affecting visibility in Class I Areas can be transported over long distances, successful implementation of the Regional Haze program requires long-term, regional coordination among multiple jurisdictions and agencies that have responsibility for Class I Areas and the emissions that impact visibility in those Areas. In order to address Regional Haze, States need to develop strategies in coordination with one another,

¹¹ Recommendation for the Use of Patched and Substituted Data and Clarification of Data Completeness for Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program, www.epa.gov/visibility/memo-and-technical-addendum-ambient-data-usage-and-completeness-regional-haze-program. EPA Office of Air Quality Planning and Standards, Research Triangle Park (June 3, 2020).

¹² See, e.g., H.R. Rep No. 95-294 at 205 (“In determining how to best remedy the growing visibility problem in these areas of great scenic importance, the committee realizes that as a matter of equity, the national ambient air quality standards cannot be revised to adequately protect visibility in all areas of the country.”), (“the mandatory Class I increments of [the PSD program] do not adequately protect visibility in Class I Areas”).

considering the effect of emissions from one jurisdiction on the air quality in another. Five regional planning organizations (RPOs),¹³ which include representation from State and tribal governments, the EPA, and FLMs, were developed in the lead-up to the first implementation period to address Regional Haze. RPOs evaluate technical information to better understand how emissions from State and tribal land impact Class I Areas across the country, pursue the development of regional strategies to reduce emissions of PM and other pollutants leading to Regional Haze, and help States meet the consultation requirements of the RHR.

The Visibility Improvement State and Tribal Association of the Southeast (VISTAS), one of the five RPOs described above, 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 Southeastern region of the United States. Member States and tribes include Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia, the Eastern Band of Cherokee Indians, and Knox County, Tennessee (representing the 17 Southeastern local air agencies). The Federal partner members of VISTAS are the EPA, NPS, FWS, and USFS.

III. Requirements for Regional Haze Plans for the Second Implementation Period

Under the CAA and THE EPA's regulations, all 50 States, the District of Columbia, and the U.S. Virgin Islands are required to submit regional haze SIPs satisfying the applicable requirements for the second implementation period of the regional haze program by July 31, 2021. Each State's SIP must contain a long-term strategy for making reasonable progress toward meeting the national goal of remedying any existing and preventing any future anthropogenic visibility impairment in Class I areas. CAA 169A(b)(2)(B). To this end, 40 CFR 51.308(f) lays out the process by which States determine what constitutes their long-term strategy, with the

¹³ RPOs are sometimes also referred to as “multi-jurisdictional organizations,” or MJOs. For the purposes of this document, the terms RPO and MJO are synonymous.

order of the requirements in 40 CFR 51.308(f)(1) through (3) generally mirroring the order of the steps in the reasonable progress analysis¹⁴ and 40 CFR 51.308(f)(4) through (6) containing additional, related requirements. Broadly speaking, a State first must identify the Class I areas within the State and determine the Class I areas outside the State in which visibility may be affected by emissions from the State. These are the Class I areas that must be addressed in the State's long-term strategy. See 40 CFR 51.308(f) and (f)(2). For each Class I area within its borders, a State must then calculate the baseline, current, and natural visibility conditions for that area, as well as the visibility improvement made to date and the URP. See 40 CFR 51.308(f)(1). Each State having a Class I area and/or emissions that may affect visibility in a Class I area must then develop a long-term strategy that includes the enforceable emission limitations, compliance schedules, and other measures that are necessary to make reasonable progress in such areas. A reasonable progress determination is based on applying the four factors in CAA section 169A(g)(1) to sources of visibility-impairing pollutants that the State has selected to assess for controls for the second implementation period. Additionally, as further explained below, the RHR at 40 CFR 51.3108(f)(2)(iv) separately provides five “additional factors”¹⁵ that States must consider in developing their long-term strategy. See 40 CFR 51.308(f)(2). A State evaluates potential emission reduction measures for those selected sources and determines which are necessary to make reasonable progress. Those measures are then incorporated into the State's long-term strategy. After a State has developed its long-term strategy, it then establishes RPGs for each Class I area within its borders by modeling the visibility impacts of all reasonable progress controls at the end of the second implementation period, i.e., in 2028, as well as the impacts of other requirements of the CAA. The RPGs include reasonable progress controls not only for sources in the State in which the Class I area is located, but also for sources in other

¹⁴ EPA explained in the 2017 RHR Revisions that we were adopting new regulatory language in 40 CFR 51.308(f) that, unlike the structure in 51.308(d), “tracked the actual planning sequence.” (82 FR 3091, January 10, 2017).

¹⁵ The five “additional factors” for consideration in section 51.308(f)(2)(iv) are distinct from the four factors listed in CAA section 169A(g)(1) and 40 CFR 51.308(f)(2)(i) that states must consider and apply to sources in determining reasonable progress.

States that contribute to visibility impairment in that area. The RPGs are then compared to the baseline visibility conditions and the URP to ensure that progress is being made towards the statutory goal of preventing any future and remedying any existing anthropogenic visibility impairment in Class I areas. 40 CFR 51.308(f)(2) and (3).

In addition to satisfying the requirements at 40 CFR 51.308(f) related to reasonable progress, the regional haze SIP submissions revisions due by July 31, 2021, for the second implementation period must address the requirements in 40 CFR 51.308(g)(1) through (5) pertaining to periodic reports describing progress towards the RPGs, 40 CFR 51.308(f)(5), as well as requirements for FLM consultation that apply to all visibility protection SIPs and SIP revisions. 40 CFR 51.308(i).

A State must submit its regional haze SIP and subsequent SIP revisions to the EPA according to the requirements applicable to all SIP revisions under the CAA and the EPA's regulations. See CAA 169(b)(2); CAA 110(a). Upon EPA approval, a SIP is enforceable by the Agency and the public under the CAA. If the EPA finds that a State fails to make a required SIP revision, or if the EPA finds that a State's SIP is incomplete or disapproves the SIP, the Agency must promulgate a Federal implementation plan (FIP) that satisfies the applicable requirements. CAA 110(c)(1).

A. Identification of Class I Areas

The first step in developing a regional haze SIP is for a State to determine which Class I areas, in addition to those within its borders, “may be affected” by emissions from within the State. In the 1999 RHR, the EPA determined that all States contribute to visibility impairment in at least one Class I area, 64 FR 35720-22, July 1, 1999, and explained that the statute and regulations lay out an “extremely low triggering threshold” for determining “whether States should be required to engage in air quality planning and analysis as a prerequisite to determining the need for control of emissions from sources within their State.” *Id.* at 35721.

A State must determine which Class I areas must be addressed by its SIP by evaluating

the total emissions of visibility impairing pollutants from all sources within the State. While the RHR does not require this evaluation to be conducted in any particular manner, the EPA's 2019 Guidance provides recommendations for how such an assessment might be accomplished, including by, where appropriate, using the determinations previously made for the first implementation period. 2019 Guidance at 8-9. In addition, the determination of which Class I areas may be affected by a State's emissions is subject to the requirement in 40 CFR 51.308(f)(2)(iii) to “document the technical basis, including modeling, monitoring, cost, engineering, and emissions information, on which the State is relying to determine the emission reduction measures that are necessary to make reasonable progress in each mandatory Class I Federal area it affects.”

B. Calculations of Baseline, Current, and Natural Visibility Conditions; Progress to Date; and the Uniform Rate of Progress

As part of assessing whether a SIP submission for the second implementation period is providing for reasonable progress towards the national visibility goal, the RHR contains requirements in 40 CFR 51.308(f)(1) related to tracking visibility improvement over time. The requirements of this section apply only to States having Class I areas within their borders; the required calculations must be made for each such Class I area. The EPA's 2018 Visibility Tracking Guidance¹⁶ provides recommendations to assist States in satisfying their obligations under 40 CFR 51.308(f)(1); specifically, in developing information on baseline, current, and natural visibility conditions, and in making optional adjustments to the URP to account for the impacts of international anthropogenic emissions and prescribed fires. *See* 82 FR 3078 at 3103-05, January 10, 2017.

The RHR requires tracking of visibility conditions on two sets of days: the clearest and the most impaired days. Visibility conditions for both sets of days are expressed as the average

¹⁶ The 2018 Visibility Tracking Guidance references and relies on parts of the 2003 Tracking Guidance: “Guidance for Tracking Progress Under the Regional Haze Rule,” which can be found at www3.epa.gov/ttnamti1/files/ambient/visible/tracking.pdf.

deciview index for the relevant five-year period (the period representing baseline or current visibility conditions). The RHR provides that the relevant sets of days for visibility tracking purposes are the 20% clearest (the 20% of monitored days in a calendar year with the lowest values of the deciview index) and 20% most impaired days (the 20% of monitored days in a calendar year with the highest amounts of anthropogenic visibility impairment).¹⁷ 40 CFR 51.301. A State must calculate visibility conditions for both the 20% clearest and 20% most impaired days for the baseline period of 2000-2004 and the most recent five-year period for which visibility monitoring data are available (representing current visibility conditions). 40 CFR 51.308(f)(1)(i) and (iii). States must also calculate natural visibility conditions for the clearest and most impaired days,¹⁸ by estimating the conditions that would exist on those two sets of days absent anthropogenic visibility impairment. 40 CFR 51.308(f)(1)(ii). Using all these data, States must then calculate, for each Class I area, the amount of progress made since the baseline period (2000-2004) and how much improvement is left to achieve in order to reach natural visibility conditions.

Using the data for the set of most impaired days only, States must plot a line between visibility conditions in the baseline period and natural visibility conditions for each Class I area to determine the URP—the amount of visibility improvement, measured in deciviews, that would need to be achieved during each implementation period in order to achieve natural visibility conditions by the end of 2064. The URP is used in later steps of the reasonable progress analysis for informational purposes and to provide a non-enforceable benchmark against which to assess

¹⁷ This document also refers to the 20% clearest and 20% most anthropogenically impaired days as the “clearest” and “most impaired” or “most anthropogenically impaired” days, respectively.

¹⁸ The RHR at 40 CFR 51.308(f)(1)(ii) contains an error related to the requirement for calculating two sets of natural conditions values. The rule says “most impaired days or the clearest days” where it should say “most impaired days and clearest days.” This is an error that was intended to be corrected in the 2017 RHR Revisions but did not get corrected in the final rule language. This is supported by the preamble text at 82 FR 3098, January 10, 2017: “In the final version of 40 CFR 51.308(f)(1)(ii), an occurrence of “or” has been corrected to “and” to indicate that natural visibility conditions for both the most impaired days and the clearest days must be based on available monitoring information.”

a Class I area's rate of visibility improvement.¹⁹ Additionally, in the 2017 RHR Revisions, the EPA provided States the option of proposing to adjust the endpoint of the URP to account for impacts of anthropogenic sources outside the United States and/or impacts of certain types of wildland prescribed fires. These adjustments, which must be approved by the EPA, are intended to avoid any perception that States should compensate for impacts from international anthropogenic sources and to give States the flexibility to determine that limiting the use of wildland-prescribed fire is not necessary for reasonable progress. 82 FR 3078 at 3107 footnote 116, January 10, 2017.

The EPA's 2018 Visibility Tracking Guidance can be used to help satisfy the 40 CFR 51.308(f)(1) requirements, including in developing information on baseline, current, and natural visibility conditions, and in making optional adjustments to the URP. In addition, the 2020 Data Completeness Memo provides recommendations on the data completeness language referenced in 40 CFR 51.308(f)(1)(i) and provides updated natural conditions estimates for each Class I area.

C. Long-Term Strategy for Regional Haze

The core component of a regional haze SIP submission is a long-term strategy that addresses regional haze in each Class I area within a State's borders and each Class I area that may be affected by emissions from the State. The long-term strategy “must include the enforceable emissions limitations, compliance schedules, and other measures that are necessary to make reasonable progress, as determined pursuant to (f)(2)(i) through (iv).” 40 CFR 51.308(f)(2). The amount of progress that is “reasonable progress” is based on applying the four statutory factors in CAA section 169A(g)(1) in an evaluation of potential control options for sources of visibility impairing pollutants, which is referred to as a “four-factor” analysis. The outcome of that analysis is the emission reduction measures that a particular source or group of

¹⁹ Being on or below the URP is not a “safe harbor”; i.e., achieving the URP does not mean that a Class I area is making “reasonable progress” and does not relieve a state from using the four statutory factors to determine what level of control is needed to achieve such progress. See, e.g., 82 FR 3078 at 3093, January 10, 2017.

sources needs to implement in order to make reasonable progress towards the national visibility goal. See 40 CFR 51.308(f)(2)(i). Emission reduction measures that are necessary to make reasonable progress may be either new, additional control measures for a source, or they may be the existing emission reduction measures that a source is already implementing. See 2019 Guidance at 43; 2021 Clarifications Memo at 8-10. Such measures must be represented by “enforceable emissions limitations, compliance schedules, and other measures” (i.e., any additional compliance tools) in a State's long-term strategy in its SIP. 40 CFR 51.308(f)(2).

Section 51.308(f)(2)(i) provides the requirements for the four-factor analysis. The first step of this analysis entails selecting the sources to be evaluated for emission reduction measures; to this end, the RHR requires States to consider “major and minor stationary sources or groups of sources, mobile sources, and area sources” of visibility impairing pollutants for potential four-factor control analysis. 40 CFR 51.308(f)(2)(i). A threshold question at this step is which visibility impairing pollutants will be analyzed. As the EPA previously explained, consistent with the first implementation period, the EPA generally expects that each State will analyze at least SO₂ and NO_x in selecting sources and determining control measures. See 2019 Guidance at 12, 2021 Clarifications Memo at 4. A State that chooses not to consider at least these two pollutants should demonstrate why such consideration would be unreasonable. 2021 Clarifications Memo at 4.

While States have the option to analyze *all* sources, the 2019 Guidance explains that “an analysis of control measures is not required for every source in each implementation period,” and that “[s]electing a set of sources for analysis of control measures in each implementation period is . . . consistent with the Regional Haze Rule, which sets up an iterative planning process and anticipates that a State may not need to analyze control measures for all its sources in a given SIP revision.” 2019 Guidance at 9. However, given that source selection is the basis of all subsequent control determinations, a reasonable source selection process “should be designed and conducted to ensure that source selection results in a set of pollutants and sources the evaluation of which

has the potential to meaningfully reduce their contributions to visibility impairment.” 2021 Clarifications Memo at 3.

The EPA explained in the 2021 Clarifications Memo that each State has an obligation to submit a long-term strategy that addresses the regional haze visibility impairment that results from emissions from within that State. Thus, source selection should focus on the in-state contribution to visibility impairment and be designed to capture a meaningful portion of the State's total contribution to visibility impairment in Class I areas. A State should not decline to select its largest in-state sources on the basis that there are even larger out-of-state contributors. 2021 Clarifications Memo at 4.²⁰

Thus, while States have discretion to choose any source selection methodology that is reasonable, whatever choices they make should be reasonably explained. To this end, 40 CFR 51.308(f)(2)(i) requires that a State's SIP submission include “a description of the criteria it used to determine which sources or groups of sources it evaluated.” The technical basis for source selection, which may include methods for quantifying potential visibility impacts such as emissions divided by distance metrics, trajectory analyses, residence time analyses, and/or photochemical modeling, must also be appropriately documented, as required by 40 CFR 51.308 (f)(2)(iii).

Once a State has selected the set of sources, the next step is to determine the emissions reduction measures for those sources that are necessary to make reasonable progress for the second implementation period.²¹ This is accomplished by considering the four factors—“the costs of compliance, the time necessary for compliance, and the energy and non-air quality

²⁰ Similarly, in responding to comments on the 2017 RHR Revisions EPA explained that “[a] state should not fail to address its many relatively low-impact sources merely because it only has such sources and another state has even more low-impact sources and/or some high impact sources.” Responses to Comments on Protection of Visibility: Amendments to Requirements for State Plans; Proposed Rule (81 FR 26942, May 4, 2016) at 87-88.

²¹ The CAA provides that, “[i]n determining reasonable progress there shall be taken into consideration” the four statutory factors. CAA 169A(g)(1). However, in addition to four-factor analyses for selected sources, groups of sources, or source categories, a state may also consider additional emission reduction measures for inclusion in its long-term strategy, e.g., from other newly adopted, on-the-books, or on-the-way rules and measures for sources not selected for four-factor analysis for the second planning period.

environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements.” CAA 169A(g)(1). The EPA has explained that the four-factor analysis is an assessment of potential emission reduction measures (i.e., control options) for sources; “use of the terms ‘compliance’ and ‘subject to such requirements’ in section 169A(g)(1) strongly indicates that Congress intended the relevant determination to be the requirements with which sources would have to comply in order to satisfy the CAA's reasonable progress mandate.” 82 FR 3078 at 3091, January 10, 2017. Thus, for each source it has selected for four-factor analysis,²² a State must consider a “meaningful set” of technically feasible control options for reducing emissions of visibility impairing pollutants. *Id.* at 3088. The 2019 Guidance provides that “[a] state must reasonably pick and justify the measures that it will consider, recognizing that there is no statutory or regulatory requirement to consider all technically feasible measures or any particular measures. A range of technically feasible measures available to reduce emissions would be one way to justify a reasonable set.” 2019 Guidance at 29.

The EPA's 2021 Clarifications Memo provides further guidance on what constitutes a reasonable set of control options for consideration: “A reasonable four-factor analysis will consider the full range of potentially reasonable options for reducing emissions.” 2021 Clarifications Memo at 7. In addition to add-on controls and other retrofits (i.e., new emission reduction measures for sources), The EPA explained that States should generally analyze efficiency improvements for sources' existing measures as control options in their four-factor analyses, as in many cases such improvements are reasonable given that they typically involve only additional operation and maintenance costs. Additionally, the 2021 Clarifications Memo

²² “Each source” or “particular source” is used here as shorthand. While a source-specific analysis is one way of applying the four factors, neither the statute nor the RHR requires states to evaluate individual sources. Rather, states have “the flexibility to conduct four-factor analyses for specific sources, groups of sources or even entire source categories, depending on state policy preferences and the specific circumstances of each state.” 82 FR 3078 at 3088, January 10, 2017. However, not all approaches to grouping sources for four-factor analysis are necessarily reasonable; the reasonableness of grouping sources in any particular instance will depend on the circumstances and the manner in which grouping is conducted. If it is feasible to establish and enforce different requirements for sources or subgroups of sources, and if relevant factors can be quantified for those sources or subgroups, then states should make a separate reasonable progress determination for each source or subgroup. 2021 Clarifications Memo at 7-8.

provides that States that have assumed a higher emission rate than a source has achieved or could potentially achieve using its existing measures should also consider lower emission rates as potential control options. That is, a State should consider a source's recent actual and projected emission rates to determine if it could reasonably attain lower emission rates with its existing measures. If so, the State should analyze the lower emission rate as a control option for reducing emissions. 2021 Clarifications Memo at 7. The EPA's recommendations to analyze potential efficiency improvements and achievable lower emission rates apply to both sources that have been selected for four-factor analysis and those that have forgone a four-factor analysis on the basis of existing "effective controls." See 2021 Clarifications Memo at 5, 10.

After identifying a reasonable set of potential control options for the sources it has selected, a State then collects information on the four factors with regard to each option identified. The EPA has also explained that, in addition to the four statutory factors, States have flexibility under the CAA and RHR to reasonably consider visibility benefits as an additional factor alongside the four statutory factors.²³ The 2019 Guidance provides recommendations for the types of information that can be used to characterize the four factors (with or without visibility), as well as ways in which States might reasonably consider and balance that information to determine which of the potential control options is necessary to make reasonable progress. See 2019 Guidance at 30-36. The 2021 Clarifications Memo contains further guidance on how States can reasonably consider modeled visibility impacts or benefits in the context of a four-factor analysis. 2021 Clarifications Memo at 12-13, 14-15. Specifically, the EPA explained that while visibility can reasonably be used when comparing and choosing between multiple reasonable control options, it should not be used to summarily reject controls that are reasonable given the four statutory factors. 2021 Clarifications Memo at 13. Ultimately, while States have discretion to reasonably weigh the factors and to determine what level of control is needed, 40

²³ See, e.g., Responses to Comments on Protection of Visibility: Amendments to Requirements for State Plans; Proposed Rule (81 FR 26942, May 4, 2016), Docket Number EPA-HQ-OAR-2015-0531, U.S. Environmental Protection Agency at 186; 2019 Guidance at 36-37.

CFR 51.308(f)(2)(i) provides that a State “must include in its implementation plan a description of . . . how the four factors were taken into consideration in selecting the measure for inclusion in its long-term strategy.”

As explained previously, 40 CFR 51.308(f)(2)(i) requires States to determine the emission reduction measures for sources that are necessary to make reasonable progress by considering the four factors. Pursuant to 40 CFR 51.308(f)(2), measures that are necessary to make reasonable progress towards the national visibility goal must be included in a State's long-term strategy and in its SIP.²⁴ If the outcome of a four-factor analysis is a new, additional emission reduction measure for a source, that new measure is necessary to make reasonable progress towards remedying existing anthropogenic visibility impairment and must be included in the SIP. If the outcome of a four-factor analysis is that no new measures are reasonable for a source, continued implementation of the source's existing measures is generally necessary to prevent future emission increases and thus to make reasonable progress towards the second part of the national visibility goal: preventing future anthropogenic visibility impairment. See CAA 169A(a)(1). That is, when the result of a four-factor analysis is that no new measures are necessary to make reasonable progress, the source's existing measures are generally necessary to make reasonable progress and must be included in the SIP. However, there may be circumstances in which a State can demonstrate that a source's existing measures are *not* necessary to make reasonable progress. Specifically, if a State can demonstrate that a source will continue to implement its existing measures and will not increase its emission rate, it may not be necessary to have those measures in the long-term strategy in order to prevent future emission increases and future visibility impairment. The EPA's 2021 Clarifications Memo provides further

²⁴ States may choose to, but are not required to, include measures in their long-term strategies beyond just the emission reduction measures that are necessary for reasonable progress. See 2021 Clarifications Memo at 16. For example, states with smoke management programs may choose to submit their smoke management plans to EPA for inclusion in their SIPs but are not required to do so. See, e.g., 82 FR 3078 at 3108-09, January 10, 2017 (requirement to consider smoke management practices and smoke management programs under 40 CFR 51.308(f)(2)(iv) does not require states to adopt such practices or programs into their SIPs, although they may elect to do so).

explanation and guidance on how States may demonstrate that a source's existing measures are not necessary to make reasonable progress. See 2021 Clarifications Memo at 8-10. If the State can make such a demonstration, it need not include a source's existing measures in the long-term strategy or its SIP.

As with source selection, the characterization of information on each of the factors is also subject to the documentation requirement in 40 CFR 51.308(f)(2)(iii). The reasonable progress analysis, including source selection, information gathering, characterization of the four statutory factors (and potentially visibility), balancing of the four factors, and selection of the emission reduction measures that represent reasonable progress, is a technically complex exercise, but also a flexible one that provides States with bounded discretion to design and implement approaches appropriate to their circumstances. Given this flexibility, 40 CFR 51.308(f)(2)(iii) plays an important function in requiring a State to document the technical basis for its decision making so that the public and the EPA can comprehend and evaluate the information and analysis the State relied upon to determine what emission reduction measures must be in place to make reasonable progress. The technical documentation must include the modeling, monitoring, cost, engineering, and emissions information on which the State relied to determine the measures necessary to make reasonable progress. This documentation requirement can be met through the provision of and reliance on technical analyses developed through a regional planning process, so long as that process and its output has been approved by all State participants. In addition to the explicit regulatory requirement to document the technical basis of their reasonable progress determinations, States are also subject to the general principle that those determinations must be reasonably moored to the statute.²⁵ That is, a State's decisions about the emission reduction measures that are necessary to make reasonable progress must be consistent with the statutory

²⁵ See *Arizona ex rel. Darwin v. U.S. EPA*, 815 F.3d 519, 531 (9th Cir. 2016); *Nebraska v. U.S. EPA*, 812 F.3d 662, 668 (8th Cir. 2016); *North Dakota v. EPA*, 730 F.3d 750, 761 (8th Cir. 2013); *Oklahoma v. EPA*, 723 F.3d 1201, 1206, 1208-10 (10th Cir. 2013); cf. also *Nat'l Parks Conservation Ass'n v. EPA*, 803 F.3d 151, 165 (3d Cir. 2015); *Alaska Dep't of Env'tl. Conservation v. EPA*, 540 U.S. 461, 485, 490 (2004).

goal of remedying existing and preventing future visibility impairment.

The four statutory factors (and potentially visibility) are used to determine what emission reduction measures for selected sources must be included in a State's long-term strategy for making reasonable progress. Additionally, the RHR at 40 CFR 51.308(f)(2)(iv) separately provides five “additional factors”²⁶ that States must consider in developing their long-term strategies: (1) emission reductions due to ongoing air pollution control programs, including measures to address reasonably attributable visibility impairment; (2) measures to reduce the impacts of construction activities; (3) source retirement and replacement schedules; (4) basic smoke management practices for prescribed fire used for agricultural and wildland vegetation management purposes and smoke management programs; and (5) 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. The 2019 Guidance provides that a State may satisfy this requirement by considering these additional factors in the process of selecting sources for four-factor analysis, when performing that analysis, or both, and that not every one of the additional factors needs to be considered at the same stage of the process. See 2019 Guidance at 21. The EPA provided further guidance on the five additional factors in the 2021 Clarifications Memo, explaining that a State should generally not reject cost-effective and otherwise reasonable controls merely because there have been emission reductions since the first planning period owing to other ongoing air pollution control programs or merely because visibility is otherwise projected to improve at Class I areas. Additionally, States generally should not rely on these additional factors to summarily assert that the State has already made sufficient progress and, therefore, no sources need to be selected or no new controls are needed regardless of the outcome of four-factor analyses. 2021 Clarifications Memo at 13.

Because the air pollution that causes regional haze crosses State boundaries, 40 CFR

²⁶ The five “additional factors” for consideration in section 51.308(f)(2)(iv) are distinct from the four factors listed in CAA section 169A(g)(1) and 40 CFR 51.308(f)(2)(i) that states must consider and apply to sources in determining reasonable progress.

51.308(f)(2)(ii) requires a State to consult with other States that also have emissions that are reasonably anticipated to contribute to visibility impairment in a given Class I area. Consultation allows for each State that impacts visibility in an area to share whatever technical information, analyses, and control determinations may be necessary to develop coordinated emission management strategies. This coordination may be managed through inter- and intra-RPO consultation and the development of regional emissions strategies; additional consultations between States outside of RPO processes may also occur. If a State, pursuant to consultation, agrees that certain measures (e.g., a certain emission limitation) are necessary to make reasonable progress at a Class I area, it must include those measures in its SIP. 40 CFR 51.308(f)(2)(ii)(A). Additionally, the RHR requires that States that contribute to visibility impairment at the same Class I area consider the emission reduction measures the other contributing States have identified as being necessary to make reasonable progress for their own sources. 40 CFR 51.308(f)(2)(ii)(B). If a State has been asked to consider or adopt certain emission reduction measures, but ultimately determines those measures are not necessary to make reasonable progress, that State must document in its SIP the actions taken to resolve the disagreement. 40 CFR 51.308(f)(2)(ii)(C). The EPA will consider the technical information and explanations presented by the submitting State and the State with which it disagrees when considering whether to approve the State's SIP. See *id.*; 2019 Guidance at 53. Under all circumstances, a State must document in its SIP submission all substantive consultations with other contributing States. 40 CFR 51.308(f)(2)(ii)(C).

D. Reasonable Progress Goals

Reasonable progress goals “measure the progress that is projected to be achieved by the control measures States have determined are necessary to make reasonable progress based on a four-factor analysis.” 82 FR 3078 at 3091, January 10, 2017. Their primary purpose is to assist the public and the EPA in assessing the reasonableness of States' long-term strategies for making reasonable progress towards the national visibility goal. See 40 CFR 51.308(f)(3)(iii) and (iv).

States in which Class I areas are located must establish two RPGs, both in deciviews—one representing visibility conditions on the clearest days and one representing visibility on the most anthropogenically impaired days—for each area within their borders. 40 CFR 51.308(f)(3)(i). The two RPGs are intended to reflect the projected impacts, on the two sets of days, of the emission reduction measures the State with the Class I area, as well as all other contributing States, have included in their long-term strategies for the second implementation period.²⁷ The RPGs also account for the projected impacts of implementing other CAA requirements, including non-SIP based requirements. Because RPGs are the modeled result of the measures in States' long-term strategies (as well as other measures required under the CAA), they cannot be determined before States have conducted their four-factor analyses and determined the control measures that are necessary to make reasonable progress. See 2021 Clarifications Memo at 6.

For the second implementation period, the RPGs are set for 2028. Reasonable progress goals are not enforceable targets, 40 CFR 51.308(f)(3)(iii); rather, they “provide a way for the States to check the projected outcome of the [long-term strategy] against the goals for visibility improvement.” 2019 Guidance at 46. While States are not legally obligated to achieve the visibility conditions described in their RPGs, 40 CFR 51.308(f)(3)(i) requires that “[t]he long-term strategy and the reasonable progress goals must provide for an improvement in visibility for the most impaired days since the baseline period and ensure no degradation in visibility for the clearest days since the baseline period.” Thus, States are required to have emission reduction measures in their long-term strategies that are projected to achieve visibility conditions on the most impaired days that are better than the baseline period and shows no degradation on the clearest days compared to the clearest days from the baseline period. The baseline period for the purpose of this comparison is the baseline visibility condition—the annual average visibility

²⁷ RPGs are intended to reflect the projected impacts of the measures all contributing states include in their long-term strategies. However, due to the timing of analyses and of control determinations by other states, other on-going emissions changes, a particular state's RPGs may not reflect all control measures and emissions reductions that are expected to occur by the end of the implementation period. The 2019 Guidance provides recommendations for addressing the timing of RPG calculations when states are developing their long-term strategies on disparate schedules, as well as for adjusting RPGs using a post-modeling approach. 2019 Guidance at 47-48.

condition for the period 2000-2004. See 40 CFR 51.308(f)(1)(i), 82 FR 3078 at 3097-98, January 10, 2017.

So that RPGs may also serve as a metric for assessing the amount of progress a State is making towards the national visibility goal, the RHR requires States with Class I areas to compare the 2028 RPG for the most impaired days to the corresponding point on the URP line (representing visibility conditions in 2028 if visibility were to improve at a linear rate from conditions in the baseline period of 2000-2004 to natural visibility conditions in 2064). If the most impaired days RPG in 2028 is above the URP (i.e., if visibility conditions are improving more slowly than the rate described by the URP), each State that contributes to visibility impairment in the Class I area must demonstrate, based on the four-factor analysis required under 40 CFR 51.308(f)(2)(i), that no additional emission reduction measures would be reasonable to include in its long-term strategy. 40 CFR 51.308(f)(3)(ii). To this end, 40 CFR 51.308(f)(3)(ii) requires that each State contributing to visibility impairment in a Class I area that is projected to improve more slowly than the URP provide “a robust demonstration, including documenting the criteria used to determine which sources or groups [of] sources were evaluated and how the four factors required by paragraph (f)(2)(i) were taken into consideration in selecting the measures for inclusion in its long-term strategy.” The 2019 Guidance provides suggestions about how such a “robust demonstration” might be conducted. See 2019 Guidance at 50-51.

The 2017 RHR, 2019 Guidance, and 2021 Clarifications Memo also explain that projecting an RPG that is on or below the URP based on only on-the-books and/or on-the-way control measures (i.e., control measures already required or anticipated before the four-factor analysis is conducted) is not a “safe harbor” from the CAA's and RHR's requirement that all States must conduct a four-factor analysis to determine what emission reduction measures constitute reasonable progress. The URP is a planning metric used to gauge the amount of progress made thus far and the amount left before reaching natural visibility conditions.

However, the URP is not based on consideration of the four statutory factors and therefore cannot answer the question of whether the amount of progress being made in any particular implementation period is “reasonable progress.” See 82 FR 3078 at 3093, 3099-3100, January 10, 2017; 2019 Guidance at 22; 2021 Clarifications Memo at 15-16.

E. Monitoring Strategy and Other State Implementation Plan Requirements

Section 51.308(f)(6) requires States to have certain strategies and elements in place for assessing and reporting on visibility. Individual requirements under this section apply either to States with Class I areas within their borders, States with no Class I areas but that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area, or both. A State with Class I areas within its borders must submit with its SIP revision a monitoring strategy for measuring, characterizing, and reporting regional haze visibility impairment that is representative of all Class I areas within the State. SIP revisions for such States must also provide for the establishment of any additional monitoring sites or equipment needed to assess visibility conditions in Class I areas, as well as reporting of all visibility monitoring data to the EPA at least annually. Compliance with the monitoring strategy requirement may be met through a State's participation in the Interagency Monitoring of Protected Visual Environments (IMPROVE) monitoring network, which is used to measure visibility impairment caused by air pollution at the 156 Class I areas covered by the visibility program. 40 CFR 51.308(f)(6), (f)(6)(i) and (iv). The IMPROVE monitoring data is used to determine the 20% most anthropogenically impaired and 20% clearest sets of days every year at each Class I area and tracks visibility impairment over time.

All States' SIPs must provide for procedures by which monitoring data and other information are used to determine the contribution of emissions from within the State to regional haze visibility impairment in affected Class I areas. 40 CFR 51.308(f)(6)(ii) and (iii). Section 51.308(f)(6)(v) further requires that all States' SIPs provide for 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 the most recent year for which data are available and estimates of future projected emissions. States must also include commitments to update their inventories periodically. The inventories themselves do not need to be included as elements in the SIP and are not subject to EPA review as part of the Agency's evaluation of a SIP revision.²⁸ All States' SIPs must also provide for any other elements, including reporting, recordkeeping, and other measures, that are necessary for States to assess and report on visibility. 40 CFR 51.308(f)(6)(vi). Per the 2019 Guidance, a State may note in its regional haze SIP that its compliance with the Air Emissions Reporting Rule (AERR) in 40 CFR part 51, subpart A satisfies the requirement to provide for an emissions inventory for the most recent year for which data are available. To satisfy the requirement to provide estimates of future projected emissions, a State may explain in its SIP how projected emissions were developed for use in establishing RPGs for its own and nearby Class I areas.²⁹

Separate from the requirements related to monitoring for regional haze purposes under 40 CFR 51.308(f)(6), the RHR also contains a requirement at 40 CFR 51.308(f)(4) related to any additional monitoring that may be needed to address visibility impairment in Class I areas from a single source or a small group of sources. This is called “reasonably attributable visibility impairment.”³⁰ Under this provision, if the EPA or the FLM of an affected Class I area has advised a State that additional monitoring is needed to assess reasonably attributable visibility impairment, the State must include in its SIP revision for the second implementation period an appropriate strategy for evaluating such impairment.

F. Requirements for Periodic Reports Describing Progress Towards the Reasonable Progress Goals

Section 51.308(f)(5) requires a State's regional haze SIP revision to address the

²⁸ See “Step 8: Additional requirements for regional haze SIPs” in 2019 Regional Haze Guidance at 55.

²⁹ *Id.*

³⁰ EPA's visibility protection regulations define “reasonably attributable visibility impairment” as “visibility impairment that is caused by the emission of air pollutants from one, or a small number of sources.” 40 CFR 51.301.

requirements of 40 CFR 51.308(g)(1) through (5) so that the plan revision due in 2021 will serve also as a progress report addressing the period since submission of the progress report for the first implementation period. The regional haze progress report requirement is designed to inform the public and the EPA about a State's implementation of its existing long-term strategy and whether such implementation is in fact resulting in the expected visibility improvement. See 81 FR 26942, 26950 (May 4, 2016), (82 FR 3078 at 3119, January 10, 2017). To this end, every State's SIP revision for the second implementation period is required to describe the status of implementation of all measures included in the State's long-term strategy, including BART and reasonable progress emission reduction measures from the first implementation period, and the resulting emissions reductions. 40 CFR 51.308(g)(1) and (2).

A core component of the progress report requirements is an assessment of changes in visibility conditions on the clearest and most impaired days. For second implementation period progress reports, 40 CFR 51.308(g)(3) requires States with Class I areas within their borders to first determine current visibility conditions for each area on the most impaired and clearest days, 40 CFR 51.308(g)(3)(i)(B), and then to calculate the difference between those current conditions and baseline (2000-2004) visibility conditions in order to assess progress made to date. See 40 CFR 51.308(g)(3)(ii)(B). States must also assess the changes in visibility impairment for the most impaired and clearest days since they submitted their first implementation period progress reports. See 40 CFR 51.308(g)(3)(iii)(B) and (f)(5). Since different States submitted their first implementation period progress reports at different times, the starting point for this assessment will vary state by state.

Similarly, States must provide analyses tracking the change in emissions of pollutants contributing to visibility impairment from all sources and activities within the State over the period since they submitted their first implementation period progress reports. See 40 CFR 51.308(f)(5) and (g)(4). Changes in emissions should be identified by the type of source or activity. Section 51.308(g)(5) also addresses changes in emissions since the period addressed by

the previous progress report and requires States' SIP revisions to include an assessment of any significant changes in anthropogenic emissions within or outside the State. This assessment must include an explanation of whether these changes in emissions were anticipated and whether they have limited or impeded progress in reducing emissions and improving visibility relative to what the State projected based on its long-term strategy for the first implementation period.

G. Requirements for State and Federal Land Manager Coordination

Clean Air Act section 169A(d) requires that before a State holds a public hearing on a proposed regional haze SIP revision, it must consult with the appropriate FLM or FLMs; pursuant to that consultation, the State must include a summary of the FLMs' conclusions and recommendations in the notice to the public. Consistent with this statutory requirement, the RHR also requires that States “provide the [FLM] with an opportunity for consultation, in person and at a point early enough in the State's policy analyses of its long-term strategy emission reduction obligation so that information and recommendations provided by the [FLM] can meaningfully inform the State's decisions on the long-term strategy.” 40 CFR 51.308(i)(2). Consultation that occurs 120 days prior to any public hearing or public comment opportunity will be deemed “early enough,” but the RHR provides that in any event the opportunity for consultation must be provided at least 60 days before a public hearing or comment opportunity. This consultation must include the opportunity for the FLMs to discuss their assessment of visibility impairment in any Class I area and their recommendations on the development and implementation of strategies to address such impairment. 40 CFR 51.308(i)(2). In order for the EPA to evaluate whether FLM consultation meeting the requirements of the RHR has occurred, the SIP submission should include documentation of the timing and content of such consultation. The SIP revision submitted to the EPA must also describe how the State addressed any comments provided by the FLMs. 40 CFR 51.308(i)(3). Finally, a SIP revision 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. 40 CFR 51.308(i)(4).

IV. EPA's Evaluation of West Virginia's Regional Haze Submission for the Second Implementation Period

A. Background on West Virginia's First Implementation Period SIP Submission

West Virginia submitted its Regional Haze SIP for the first implementation period to the EPA on June 18, 2008. The EPA issued a limited approval and limited disapproval of West Virginia's first implementation period Regional Haze SIP submission on March 23, 2012 (77 FR 16937) because, while West Virginia's SIP revision, as a whole, strengthened the West Virginia SIP, deficiencies in the State's June 2008 regional haze SIP submittal arising from the remand by the U.S. Court of Appeals for the District of Columbia (D.C. Circuit) to the EPA of the Clean Air Interstate Rule (CAIR) necessitated a limited disapproval of these aspects of the State's SIP submittal. The EPA subsequently converted this limited approval/limited disapproval of West Virginia's regional haze SIP to a full approval on September 24, 2018, (83 FR 48249) after West Virginia submitted a revision to its Regional Haze SIP to change its reliance from CAIR to the Cross-State Air Pollution Rule (CSAPR) for the purpose of meeting BART for regional haze and addressing reasonable progress requirements. The requirements for Regional Haze SIPs for the first implementation period are contained in 40 CFR 51.308(d) and (e). Pursuant to 40 CFR 51.308(g), West Virginia was also responsible for submitting a five-year progress report as a SIP revision for the first implementation period, which it did on April 30, 2013. The EPA approved the progress report into West Virginia's SIP on June 5, 2015 (80 FR 32019).

B. West Virginia's Second Implementation Period SIP Submission and the EPA's Evaluation

In accordance with CAA sections 169A and the RHR at 40 CFR 51.308(f), (g), and (i), on August 12, 2022, WV DEP submitted a revision to West Virginia's SIP to address its Regional Haze obligations for the second implementation period, which runs through 2028. West Virginia made its 2022 Regional Haze SIP submission available for public comment on

November 5, 2021. West Virginia received and responded to public comments and included both the comments and responses to those comments in its submission.

The following sections describe West Virginia's SIP submission. This document also contains the EPA's evaluation of West Virginia's submission against the applicable requirements of the CAA and RHR for the second implementation period of the Regional Haze program.

C. Identification of Class I Areas

Section 169A(b)(2) of the CAA requires each State in which any Class I Area is located or "the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility" in a Class I Area to have a plan for making reasonable progress toward the national visibility goal. The RHR implements this statutory requirement at 40 CFR 51.308(f), which provides that each State's plan "must address Regional Haze in each mandatory Class I Federal Area located within the State and in each mandatory Class I Federal Area located outside the State that may be affected by emissions from within the State," and (f)(2), which requires each State's plan to include a long-term strategy that addresses Regional Haze in such Class I Areas.

The EPA explained in the 1999 RHR preamble that the CAA section 169A(b)(2) requirement that States submit SIPs to address visibility impairment establishes "an 'extremely low triggering threshold' in determining which States should submit SIPs for regional haze." 64 FR 35721, July 1, 1999. In concluding that each of the contiguous 48 States and the District of Columbia meet this threshold,³¹ the EPA relied on "a large body of evidence demonstrat[ing] that long-range transport of fine PM contributes to regional haze," *id.*, including modeling studies that "preliminarily demonstrated that each State not having a Class I Area had emissions contributing to impairment in at least one downwind Class I Area." *Id.* at 35722. In addition to

³¹ The EPA determined that "there is more than sufficient evidence to support our conclusion that emissions from each of the 48 contiguous states and the District of Columbia may reasonably be anticipated to cause or contribute to visibility impairment in a Class I Area." 64 FR 35721, July 1, 1999. Hawaii, Alaska, and the U.S. Virgin Islands must also submit Regional Haze SIPs because they contain Class I Areas.

the technical evidence supporting a conclusion that each State contributes to existing visibility impairment, the EPA also explained that the second half of the national visibility goal—preventing *future* visibility impairment—requires having a framework in place to address future growth in visibility-impairing emissions and makes it inappropriate to “establish criteria for excluding States or geographic areas from consideration as potential contributors to regional haze visibility impairment.” *Id.* at 35721. Thus, the EPA concluded that the agency's “statutory authority and the scientific evidence are sufficient to require all States to develop regional haze SIPs to ensure the prevention of any future impairment of visibility, and to conduct further analyses to determine whether additional control measures are needed to ensure reasonable progress in remedying existing impairment in downwind Class I Areas.” *Id.* at 35722. The EPA's 2017 revisions to the RHR did not disturb this conclusion. See 82 FR 3094.

To address 40 CFR 51.308(f), WV DEP identified Class I areas within West Virginia and out-of-state Class I areas downwind of West Virginia that were affected by West Virginia statewide emissions of visibility impairing pollutants. West Virginia has two mandatory Class I areas within its borders: Dolly Sods Wilderness Area (Dolly Sods) and Otter Creek Wilderness Area (Otter Creek). Out-of-state Class I Areas affected by West Virginia included Acadia National Park (Maine), James River Face Wilderness Area (Virginia), Lye Brook Wilderness Area (Vermont), Moosehorn Wilderness Area (Maine), Roosevelt Campobello International Park (Maine/New Brunswick), Shenandoah National Park (Virginia), and Swanquarter Wilderness Area (North Carolina).

West Virginia, like other VISTAS States, implemented a two-step process to select sources contributing to visibility impairment in Class I areas within and outside the State. West Virginia presented the results of Particulate Matter Source Apportionment Technology (PSAT)³²

³² PSAT is Particulate Matter Source Apportionment Technology, which is an option in the photochemical visibility impact modeling performed by VISTAS that is a methodology to track the fate of both primary and secondary PM. PSAT allows emissions to be tracked (“tagged”) for individual facilities as well as various combinations of sectors and geographic areas (e.g., by state). The PSAT results provide the modeled contribution of each of the tagged sources or groups of sources to the total visibility impacts.

modeling that VISTAS conducted to estimate the projected impact of statewide SO₂ and NO_x emissions across all emissions sectors in 2028 on total light extinction for the 20 percent most impaired days in all Class I areas in the VISTAS modeling domain.³³ PSAT results were used to calculate the percent contribution of each tagged facility to the total sulfate and nitrate point source (EGU + non-EGU) contribution at each Class I area; more details of the PSAT analysis can be found in Appendix E-7b of WV DEP's SIP submittal. West Virginia also relied on facility-level SO₂ and NO_x Area of Influence (AOI) analyses³⁴ for each Class I area to assess relative visibility impacts from each facility.³⁵

WV DEP concluded that sources and emissions within the State contribute to visibility impairment at seven out-of-state Class I Areas and took part in the emission control strategy consultation process as a member of VISTAS. WV DEP also included analyses of visibility impairing pollutant emissions and visibility impacts from other RPOs and States, and their impact on Class I Areas within VISTAS.³⁶ From these analyses, WV DEP concluded that “sulfate will generally be a much larger contributor to visibility impairment in 2028 at VISTAS mandatory Federal Class I areas than nitrates” and, that “emissions from other planning organizations...generally have higher contributions to 2028 visibility impairment at mandatory Federal Class I areas in VISTAS than the emissions from the home State.”³⁷ As stated previously, the threshold for visibility impact on Class I Areas is low. Therefore, a supposedly

³³ West Virginia did not include primary PM (directly emitted) data in this analysis because the PSAT analyses performed by VISTAS tagged statewide emissions of SO₂ and NO_x and did not tag primary total PM emissions in the analysis after concluding that emissions of the PM precursors SO₂ and NO_x, particularly from point sources, are projected to have the largest impact on visibility impairment in 2028 and that SO₂ and NO_x are the most significant visibility impairing pollutants from controllable anthropogenic sources.

³⁴ States often use an AOI analysis to help identify the areas and sources most likely contributing to poor visibility in Class I areas. The AOI analysis involves running a backward trajectory model to determine the origin of the air parcels affecting visibility, which is then combined with emissions data to determine the sources or source sectors most likely contributing to pollutant emissions. For more information on AOI analyses, see Appendix D of WV DEP's Regional Haze SIP Submittal for the 2nd Planning Period.

³⁵ See Section 7.5, “Area of Influence Analyses for West Virginia Class I Areas” of WV DEP's Regional Haze SIP Submittal for the 2nd Planning Period.

³⁶ See Section 7.2.3, “Projected VISTAS 2028 Emissions Inventory”, Section 7.2.5, “2028 Visibility Projection Results”, and Section 7.4, “Relative Contributions to Visibility Impairment: Pollutants, Source Categories, and Geographic Areas” of WV DEP's Regional Haze SIP Submittal for the 2nd Planning Period.

³⁷ See Section 7.4, “Relative Contributions to Visibility Impairment: Pollutants, Source Categories, and Geographic Areas” of WV DEP's Regional Haze SIP Submittal for the 2nd Planning Period.

small visibility impact on any of the Class I Areas identified by WV DEP as being impacted by its emissions is sufficient to trigger the regional haze requirements to evaluate sources for control measures considering the four factors.

D. Calculations of Baseline, Current, and Natural Visibility Conditions; Progress to Date; and the Uniform Rate of Progress

Section 51.308(f)(1) requires states to determine the following for “each mandatory Class I Federal Area located within the State”: baseline visibility conditions for the most impaired and clearest days, natural visibility conditions for the most impaired and clearest days, progress to date for the most impaired and clearest days, the differences between current visibility conditions and natural visibility conditions, and the URP. This section also provides the option for States to propose adjustments to the URP line for a Class I Area to account for visibility impacts from anthropogenic sources outside the United States and/or the impacts from wildland prescribed fires that were conducted for certain, specified objectives. 40 CFR 51.308(f)(1)(vi)(B). WV DEP included this information in sections 2, 3, and 7 of its Regional Haze SIP submittal for the second planning period.

In its submittal, WV DEP determines and presents the baseline, natural, and current visibility conditions as well as the differences between these for the 20 percent most anthropogenically impaired days and the 20 percent clearest days for the State’s two Class I Areas, as required by the RHR. Specifically, WV DEP included the baseline visibility conditions (2000-2004) in table 2-3, current visibility conditions (2014-2018) in table 2-5, and natural visibility conditions in table 2-2 for the 20 percent clearest and 20 percent most impaired days in each VISTAS Class I area in deciviews, including those in West Virginia. WV DEP also included the actual progress made in deciviews toward natural visibility conditions to date since the baseline period (current minus baseline), and the additional progress needed to reach natural visibility conditions from current conditions (natural minus current) in table 2-6 (for the 20 percent most impaired days) and table 2-7 (for the 20 percent clearest days) for VISTAS Class I

areas, including those in West Virginia.

Additionally, Figure 3-1 of WV DEP's submittal provides the URP glide path for the 20 percent most impaired days for Dolly Sods. The URP shown in Figure 3-1 for Dolly Sods is considered representative of Otter Creek.³⁸ The URPs were developed by the State using EPA guidance³⁹ and used data collected from the IMPROVE monitoring sites.

However, as set forth later in this NPRM, because the EPA is proposing to disapprove West Virginia's Regional Haze plan for the second planning period due to deficiencies in the overall submittal, the EPA takes no position on whether the analysis described in section D meets the requirements of the Clean Air Act.

E. Long-Term Strategy for Regional Haze

Each State having a Class I Area within its borders or emissions that may affect visibility in a Class I Area must develop a long-term strategy for making reasonable progress towards the national visibility goal. CAA section 169A(b)(2)(B). As explained in the Background section of this document, reasonable progress is achieved when all States contributing to visibility impairment in a Class I Area are implementing the measures determined—through application of the four statutory factors to sources of visibility impairing pollutants—to be necessary to make reasonable progress. 40 CFR 51.308(f)(2)(i). Each State's long-term strategy must include the enforceable emission limitations, compliance schedules, and other measures that are necessary to make reasonable progress. 40 CFR 51.308(f)(2). All new (i.e., additional) measures that are the outcome of four-factor analyses are necessary to make reasonable progress and must be in the long-term strategy. If the outcome of a four-factor analysis and other measures necessary to make reasonable progress is that no new measures are reasonable for a source, that source's existing measures are necessary to make reasonable progress, unless the State can demonstrate

³⁸ Otter Creek has no IMPROVE monitor. Visibility at Otter Creek is assumed to be the same as the nearest Class I area monitor located at Dolly Sods.

³⁹ www.epa.gov/sites/default/files/2018-12/documents/technical_guidance_tracking_visibility_progress.pdf and https://www.epa.gov/sites/default/files/2020-06/documents/memo_data_for_regional_haze_technical_addendum.pdf.

that the source will continue to implement those measures and will not increase its emission rate. Existing measures that are necessary to make reasonable progress must also be in the long-term strategy. In developing its long-term strategy, a State must also consider the five additional factors in 40 CFR 51.308(f)(2)(iv). As part of its reasonable progress determinations, the State must describe the criteria used to determine which sources or group of sources were evaluated (i.e., subjected to four-factor analysis) for the second implementation period and how the four factors were taken into consideration in selecting the emission reduction measures for inclusion in the long-term strategy. 40 CFR 51.308(f)(2)(iii).

1. Source Selection

To determine the necessary emission reductions measures, a State must first select the sources to evaluate. As stated in the Background section of this document, source selection should focus on the in-state contribution to visibility impairment and be designed to capture a meaningful portion of the State's total contribution to visibility impairment in Class I areas. WV DEP included information on the emissions impacts from numerous sources within the State on various Class I Areas. Section 7.6.1, Table 7-17 of the WV DEP submittal lists the facilities selected for PSAT tagging in Virginia and West Virginia based on an AOI visibility contribution of 0.2% or more which include thirteen facilities located in West Virginia.⁴⁰ West Virginia then decided not to select eight of those facilities for analysis of reasonable progress measures or controls.⁴¹ The State considered a percent contribution of greater than or equal to 1.00% (individual facility contribution divided by the total sulfate and nitrate contributions from EGU + non-EGU point sources) to determine whether to select a facility for a reasonable progress analysis. West Virginia excluded seven of the eight unselected facilities in part based on a PSAT

⁴⁰ Allegheny Energy Supply Co, LLC – Harrison; American Bituminous Power – Grant Town Plant; Appalachian Power Company – John E. Amos Plant; Dominion Resources, Inc. – Mount Storm Power Station; Equitrans – Copley Run CS 70; Files Creek; Gladys; Kingsford Manufacturing Company; Longview Power; Mitchell Plant; Monongahela Power Co. – Fort Martin Power; Monongahela Power Co. – Pleasants Power Station; Morgantown Energy Associates.

⁴¹ See section 7.6.4, “Selection of Sources for Reasonable Progress Evaluation” of WV DEP’s Regional Haze SIP submittal for the 2nd Planning Period (“section 7.6.4” or “section 7.6.4 of the SIP submittal”).

modeling result of <1.00% as well as various factors through a qualitative weight-of-the-evidence approach.⁴² The remaining of the unselected facilities, Grant Town Plant⁴³, had a PSAT modeling result of $\geq 1.00\%$ which WV DEP claimed could be scaled down to <1.00% contribution to Dolly Sods based on recent emissions data.⁴⁴ WV DEP also included discussion as to why no reasonable progress analysis is warranted for Mountaineer Plant, a ninth facility that was not tagged for PSAT modeling.⁴⁵

After excluding eight of the thirteen facilities selected for PSAT tagging – along with Mountaineer Plant, which had not been selected for PSAT – West Virginia then selected the remaining five facilities: Harrison Power Station; Fort Martin Power Station; Pleasants Power Station; Mitchell Plant; and the John E. Amos Plant, to perform a four-factor analysis.⁴⁶ WV DEP also included in its reasonable progress discussion at section 7.8 of the SIP submittal a sixth facility – Grant Town Plant – which was initially included among the eight facilities for which WV DEP explained that no reasonable progress analysis was warranted.⁴⁷ Although the State then selected Grant Town Plant for a reasonable progress evaluation, it did not contact the facility to request such analysis giving as the reason, “the facility is already subject to a federally enforceable Title V permit (R30-04900026-2020) that limits SO₂ emissions to less than the quantity projected to exceed the 1.00% visibility threshold of the VISTAS PSAT modeling.”⁴⁸ Below in this document, when discussing reasonable progress and the facilities included in section 7.8 of the SIP submittal, the EPA refers to the group selected for reasonable progress

⁴² *Id.*

⁴³ West Virginia refers to this facility as “Grant Town Plant” as well as “Grant Town Power Plant” in the SIP submittal.

⁴⁴ *Id.* at 182 of 257.

⁴⁵ *Id.* at 187 of 257. West Virginia’s SIP submittal provided scant explanation for Mountaineer’s inclusion in this group of facilities. West Virginia might have included Mountaineer because the EPA’s January 5, 2022 comments submitted during the public comment period asked for “further explanation of why the 4th largest SO₂ source in the state was not selected for a 4-factor analysis....” Appendix H-4 “West Virginia Department of Environmental Protection Division of Air Quality Responses to EPA Region 3 Comments on the West Virginia Draft Regional Haze State Implementation Plan August 2022,” section. 6.e.

⁴⁶ See section 7.8, “Reasonable Progress for Individual Sources to be Included in the Long-Term Strategy”, of WV DEP’s Regional Haze SIP submittal for the 2nd Planning Period (“section 7.8” or “section 7.8 of the SIP submittal”).

⁴⁷ *Id.* and section 7.6.4 of the SIP submittal.

⁴⁸ Section 7.8 of the SIP submittal at 197 of 257.

analysis as “five facilities plus Grant Town Plant” or “six facilities” for ease of reference, even though it is somewhat unclear whether WV DEP’s discussion of Grant Town Plant in section 7.8 of the SIP submittal is meant to be a reasonable progress analysis.⁴⁹

Section 7.6.2, Table 7-19 of the SIP submittal contains PSAT results for the Dolly Sods Area, which includes fifteen facilities where sulfate contributions are $\geq 1.00\%$ and addresses nearly 36.5% of the entire sulfate plus nitrate point source visibility impact in 2028; six of these fifteen facilities are located in West Virginia.⁵⁰ Table 7-20 contains PSAT results for the Otter Creek Wilderness Area, which includes fourteen facilities where sulfate contributions are $\geq 1.00\%$ and addresses more than 34.7% of the entire sulfate plus nitrate point source visibility impact in 2028; five of these fourteen facilities are located in West Virginia.⁵¹ The West Virginia facilities listed in tables 7-19 and 7-20 are the same as the five facilities plus Grant Town Plant in section 7.8 of the SIP submittal.

Tables 7-21 through 7-27 contain the PSAT results for the five West Virginia facilities⁵² that WV DEP selected for evaluation of emissions control measures based on sulfate contributions of $\geq 1.00\%$ to the following out-of-state Class I Areas: Acadia National Park (Maine), James River Face Wilderness Area (Virginia), Lye Brook Wilderness Area (Vermont), Moosehorn Wilderness Area (Maine), Roosevelt Campobello International Park (Maine/New Brunswick), Shenandoah National Park (Virginia), and Swanquarter Wilderness Area (North Carolina), respectively.

Further, WV DEP States that (1) the Allegheny Energy Supply Co LLC – Harrison

⁴⁹ West Virginia does not clearly explain why it included Grant Town Plant in the section 7.8 reasonable progress discussion after it already claimed that Grant Town Plant should be excluded from four-factor analysis and reasonable progress analysis in the section 7.6.4 source selection discussion whittling down the larger group of thirteen facilities tagged for PSAT modeling.

⁵⁰ Allegheny Energy Supply Co, LLC – Harrison; Monongahela Power Co – Pleasants Power Station; Kentucky Power Company – Mitchell Plant; Appalachian Power Company – John E. Amos Plant; Monongahela Power Co – Fort Martin Power; and American Bituminous Power – Grant Town Plant.

⁵¹ Allegheny Energy Supply Co, LLC – Harrison; Monongahela Power Co – Pleasants Power Station; Kentucky Power Company – Mitchell Plant; Appalachian Power Company – John E. Amos Plant; and Monongahela Power Co – Fort Martin Power.

⁵² Allegheny Energy Supply Co, LLC – Harrison; Monongahela Power Co – Pleasants Power Station; Kentucky Power Company – Mitchell Plant; Appalachian Power Company – John E. Amos Plant; and Monongahela Power Co – Fort Martin Power.

facility⁵³ affects eight Class I areas; (2) Monongahela Power Co. – Pleasants Power Station impacts six Class I areas; (3) Mitchell Plant impacts four Class I areas; (4) Monongahela Power Co. – Fort Martin Power impacts three Class I areas; (5) Appalachian Power Company – John E. Amos Plant impacts three Class I areas; and (6) American Bituminous Power – Grant Town Plant impacts one Class I area. The full list of tagged facilities and their contributions to each Class I area can be found in Appendix E-7b of the SIP submittal. Thus, WV DEP ultimately identifies six West Virginia facilities as contributing to visibility impairment in at least one Class I Area, and five of these facilities as contributing to visibility impairment in multiple Class I Areas.^{54, 55}

While the RHR does not explicitly list factors that a State must or may not consider when selecting the sources for which it will determine what control measures are necessary to make reasonable progress, a State opting to select a set of its sources to analyze must reasonably choose factors and apply them in a reasonable way given the statutory requirement to make reasonable progress towards natural visibility.⁵⁶ The 2019 Guidance provides examples of criteria a State may consider to select sources for analysis of emission control measures⁵⁷ none of which align with the types of information that West Virginia provided as justification. Given that WV DEP already performed quantitative PSAT and AOI modeling for these sources, confirming their contribution to visibility impairment at multiple in-state and out-of-state Class I

⁵³ WV DEP sometimes refers to this facility as Monongahela Power Company – Harrison Power Station, with a Facility ID of 54033-6271711. This is the same Facility ID used for Allegheny Energy Supply Co LLC – Harrison.

⁵⁴ See Section 7.6.2, “PSAT Contributions at West Virginia Class I Areas” and Section 7.6.3, “AoI versus PSAT Contributions” of WV DEP’s Regional Haze SIP submittal for the 2nd Planning Period.

⁵⁵ In its submittal, and as described in IV.E.2. of this document, West Virginia eventually ruled out additional and existing emission reduction measures as being necessary for reasonable progress for five of these sources, without conducting a full analysis of the four statutory factors of CAA 169A(g)(1) and 40 CFR 51.308(f)(2). However, for the sixth facility, Pleasants Power, which conducted a documented four-factor analysis, West Virginia did not reasonably justify its reliance on the four factors to rule out additional and existing emissions reductions measures that could be necessary for reasonable progress. See sections 7.6.4 and 7.8 of the SIP submittal.

⁵⁶ 2019 Guidance at 10.

⁵⁷ *Id.* (“Factors could include but are not limited to baseline source emissions, baseline source visibility impacts (or a surrogate metric for the impacts), the in-place emission control measures and by implication the emission reductions that are possible to achieve at the source through additional measures, the four statutory factors (to the extent they have been characterized at this point in SIP development), potential visibility benefits (also to the extent they have been characterized at this point in SIP development), and the five additional required factors listed in 40 CFR 51.308(f)(2)(iv).”)

areas, it is not clear based on the record presented why it is appropriate for WV DEP to rely on a qualitative weight-of-evidence reasoning, such as general claims about topography and stack height, to exclude these impacting sources from analysis under the four factors, which is what WV DEP did for eight of the thirteen facilities tagged for PSAT analysis.

2. Four-Factor Analysis and Reasonable Progress Analysis

For five of the six facilities discussed in section 7.8 of the SIP submittal, WV DEP requested that each of the facilities perform four-factor analyses to evaluate measures necessary for reasonable progress.⁵⁸ Four of these five facilities declined to provide four-factor analyses and instead claimed that such analyses were unnecessary for various reasons.⁵⁹ It is unclear whether WV DEP relied on the justifications provided by these four facilities, though WV DEP never performed its own full four-factor analysis for any of those four facilities. Only one of the five facilities—Pleasants Power Station—provided to WV DEP an engineering consultant’s report titled “Regional Haze Four-Factor SO₂ Analysis.”⁶⁰ WV DEP included the facilities’ explanations in the SIP submittal at section 7.8, and related appendices. The sixth facility discussed in section 7.8 is Grant Town Plant⁶¹ even though WV DEP did not request from the facility a reasonable progress or four-factor analysis for Grant Town Plant because WV DEP did not believe such an analysis was warranted.⁶² WV DEP then included tables of its own cost estimates⁶³ for scrubber replacement at six facilities—the five facilities plus Grant Town Plant—which this document discusses at section IV.E.2.c. of this document. However, as we discuss in section IV.E.2.c. of this document, these cost estimates were deficient and insufficiently documented.

a. Harrison Power Station, Grant Town Power Plant, Fort Martin Power Station, Mitchell

⁵⁸ Section 7.8 of the SIP submittal at 196 of 257.

⁵⁹ *Id.* at 197-99, 201-02 of 257.

⁶⁰ Appendix G-2 to the WV DEP’s Regional Haze SIP Submittal for the 2nd Planning Period at G-2d “Response Letter from Energy Harbor (Pleasants Station).”

⁶¹ Section 7.8 of the SIP submittal at 197-98 of 257.

⁶² See Section 7.6.4 of the SIP submittal at 182 of 257.

⁶³ Section 7.8, Table 7-37 “Estimated FGD replacement costs per facility, based on a 20-year remaining life expectancy,” and Table 7-38, “Estimated FGD replacement costs per unit”, SIP submittal at 203-05 of 257.

Power Plant, and John E. Amos Power Plant

In Section 7.8, WV DEP lists a variety of reasons for four of the selected facilities (Harrison Power Station, Fort Martin Power Station, Mitchell Power Plant, and John E. Amos Power Plant) provided for not performing a four-factor analysis. In the SIP submittal, WV DEP does not explicitly state that it is adopting the four facilities' reasons as its own, but WV DEP reiterates the facilities' reasons in detail and does not disavow their explanations. To the extent that WV DEP relied on this information in developing its long-term strategy, it did not analyze or evaluate the information provided by the facilities and did not adequately explain how such information was or was not being used to support WV DEP's decision not to require a full four-factor analysis of these facilities. Although it is unclear whether WV DEP is relying on the four facilities' rationales, the EPA addresses them in this NPRM. WV DEP also provided its own reasons why Grant Town Plant, which it did not request to perform a four-factor analysis but included in the reasonable progress discussion, should not be required to impose any additional measures.

For Harrison Power Station, WV DEP stated in its SIP submittal⁶⁴ that, when asked for a reasonable progress analysis, facility owner/operator Monongahela Power Company (MonPower) "stated neither a formal SO₂ controls four-factor analysis nor an SO₂ permit limit were necessary or appropriate for Harrison for regional haze purposes for multiple reasons." These reasons included claims by MonPower that "visibility impacts from the facility are presently well below the URP glide paths, proving already implemented past measures have been and continue to be successful"; that "Harrison FGD systems demonstrated a 97.1% average removal efficiency for 2017 through 2019, which exceeds the 95% control deemed as BART by EPA"; and that "Harrison averaged 0.16 pounds per mmBtu SO₂ emissions from 2015 through 2020 [which] is in compliance with the 0.2 pounds per mmBtu SO₂ emission limit of the MATS rule for coal-fired EGUs, which the company claims is adequate to meet the exemption outlined

⁶⁴ Section 7.8 of the SIP submittal at 197 of 257.

in the EPA's August 20, 2019 Guidance on Regional Haze State Implementation Plans for the Second Implementation Period...."⁶⁵ MonPower further claims that "Harrison is subject to and meets the limits of the CSAPR FIP, and EPA and the courts have previously determined CSAPR is better than BART."

For Grant Town Plant, WV DEP stated in its SIP submittal⁶⁶ that because "the facility is already subject to a federally enforceable Title V permit (R30-04900026-2020) that limits SO₂ emissions to less than the quantity projected to exceed the 1.00% visibility threshold of the VISTAS PSAT modeling, it was determined that a reasonable progress analysis or a four-factor analysis request for Grant Town Plant was not warranted" and that "Grant Town maintains adequate SO₂ emissions credits from CAMD for its SO₂ emissions, and the facility is subject to the CSAPR SO₂ budget." WV DEP also claimed that the remaining lifespan of Grant Town Power Plant is thirteen years, or until 2035⁶⁷, when the power purchase agreement for the facility expires, and that WV DEP does not anticipate that this power purchase agreement will be extended. WV DEP therefore concludes "additional SO₂ controls would not be economically feasible for such a small and unique facility with a looming anticipated retirement date."⁶⁸ Because of the reasons previously stated, WV DEP decided to not request a four-factor analysis from Grant Town Power Plant.⁶⁹

For Fort Martin Power Station, WV DEP included in its SIP submittal⁷⁰ the same claims that MonPower relied on for screening out Harrison Power Station from additional analysis, except that MonPower stated that "Fort Martin averaged 0.11 pounds per mmBtu SO₂ emissions from 2015 through 2020." WV DEP also claimed that the remaining lifespan of Fort Martin Power Station is expected to be four years, or 2026, when WV DEP expects "the proposed Good

⁶⁵ mmBtu, also sometimes written as MMBTU or MMBtu, refers to one million British thermal units of heat input.

⁶⁶ Section 7.8 of the SIP submittal at 197-98 of 257.

⁶⁷ West Virginia states that the remaining lifespan of Grant Town Plant lasts until 2035 at page 206 of the SIP submittal and 2036 at page 198 of the SIP submittal.

⁶⁸ Table 7-38 of the SIP submittal at 205 of 257.

⁶⁹ Section 7.8 of the SIP submittal at 197.

⁷⁰ *Id.* at 198-99 of 257.

Neighbor CSAPR FIP would require the facility to install SCR for NO_x control” and that WV DEP does not expect the facility’s owner/operator to do so.⁷¹

For Mitchell Power Plant, WV DEP stated in its SIP submittal⁷² that, when asked for a reasonable progress analysis, facility owner/operator Kentucky Power Company (KPCo), a subsidiary of American Electric Power (AEP), responded that “Mitchell emissions were well ahead of the uniform rate of progress goals to natural background visibility”; that “continuing emissions reductions and retirements of coal-fired EGUs within the eastern United States, including within the AEP system, would provide for continuing progress within the planning period without the need for additional SO₂ emissions reductions from Mitchell”; that “Mitchell already employs the most effective type of SO₂ controls available, which are designed to achieve a minimum of 98% emissions reduction”; that “first CAIR and then CSAPR were previously determined by EPA to be better than BART, and Mitchell is in compliance with the CSAPR emissions trading program”; that “Mitchell has always achieved the 0.2 pounds SO₂ per million Btu limit implemented by the MATS rule as a surrogate compliance emission limit, often by less than half this amount on an annual basis”; and that “EPA’s own guidance States sources which were selected for analysis in the first planning period, and which installed BART controls could be excluded from analysis for the second planning period.” Based on these claims, KPCo concluded that no further evaluation of Mitchell nor additional SO₂ controls are necessary.

For John E. Amos Power Plant, WV DEP stated in its SIP submittal⁷³ that, when asked for a reasonable progress analysis, facility owner/operator Appalachian Power Company (APCo), stated that “Amos emissions were well ahead of the uniform rate of progress goals to natural background visibility”; that continuing emissions reductions and retirements of coal-fired EGUs within the eastern United States, including within the AEP system, would provide for

⁷¹ Table 7-38, SIP submittal at 205 of 257, and “Cost Estimates for Scrubber Replacement at Facilities Selected for Four Factor Analyses” at 206 of 257.

⁷² Section 7.8 of the SIP submittal at 201 of 257.

⁷³ Section 7.8 of the SIP submittal at 201-02 of 257.

continuing progress within the planning period without the need for additional SO₂ emissions reductions from Amos”; that “Amos already employs the most effective type of SO₂ controls available, which are designed to achieve a minimum of 98% emissions reduction”; that “first CAIR and then CSAPR were previously determined by EPA to be better than BART, and Amos complies with the CSAPR emissions trading program”; that “Amos has always achieved the 0.2 pounds SO₂ per million Btu limit implemented by the MATS rule as a surrogate compliance emission limit, often by well less than half this amount on an annual basis”; and that “EPA’s own guidance States sources which were selected for analysis in the first planning period, and which installed BART controls could be excluded from analysis for the second planning period.” Based on these claims, APCo concluded that no further evaluation of Amos nor additional SO₂ controls are necessary.

WV DEP’s rejection of reasonable progress measures for Harrison Power Station, Grant Town Plant, Fort Martin Power Station, Mitchell Power Plant, and John E. Amos Power Plant is not based on consideration of the mandatory four factors and instead appears to be based, at least in part, on the facility owners’ contention that these facilities are effectively controlled via existing measures,⁷⁴ as described in the August 2019 Guidance.⁷⁵ However, if the outcome of a four-factor analysis is that no new measures are reasonable for a source, the EPA has interpreted the statute and the RHR to require that the source’s existing measures are needed to prevent future visibility impairment (i.e., to prevent future emission increases) and thus necessary to make reasonable progress.⁷⁶ If existing controls are determined to be necessary to make reasonable progress the existing controls must be incorporated into the SIP and made federally

⁷⁴ Section 7.8 of the SIP submittal at 196-202 of 257. It is unclear if West Virginia is adopting the rationales of these facilities to justify not requiring these facilities to conduct the four-factor analysis West Virginia requested, or whether West Virginia’s justification for not requiring a four-factor analysis is based solely on what it describes as West Virginia’s own “cost analyses for replacing the BART SO₂ controls at the six selected facilities with limestone forced oxidation (LFSO) scrubbers, assuming a 98% average reduction for the hypothetical new scrubbers.” SIP Submittal at 202 of 257. EPA has addressed in this NPRM the issues raised by the facilities to the extent they may have been relied upon by West Virginia.

⁷⁵ See August 2019 Guidance at 22-25.

⁷⁶ Section 4 of the 2021 Clarifications Memo, pages 8-9. See also CAA 169A(b)(2); 40 CFR 51.308(f)(2).

enforceable and permanent within the long-term strategy.⁷⁷ Furthermore, if a State does not find its existing measures necessary for reasonable progress, a State must submit a demonstration within its submittal supporting its rationale.⁷⁸ However, WV DEP did not provide any demonstration assessing the necessity of existing measures for reasonable progress; did not provide documentation for any specific existing measures such as permits, emissions limitations, or consent decrees; did not identify any existing controls to be included in the long-term strategy for the second planning period; and in the event the State found its existing controls unnecessary for reasonable progress, did not provide a demonstration supporting such a statement.⁷⁹ WV DEP also cites anticipated source retirements, i.e., shutdowns (for example, Fort Martin by 2026) as reasons for not requiring new measures on screened-in sources as a result of reasonable progress analyses.⁸⁰ WV DEP also states that its estimated expected visibility improvements in its two Class I areas will be achieved via proposed or past shutdowns.⁸¹ However, while WV DEP provides information regarding anticipated and prior shutdowns within its submittal, it also states that it “considers all shuttered facilities which emit air pollution as necessary for reasonable

⁷⁷ Section 4 of the 2021 Clarifications Memo. See also CAA 169A(b)(2); 40 CFR 51.308(f)(2). Additionally, consistent with our proposed partial disapproval of Arizona’s Haze Plan (see 89 FR 47398, May 31, 2024), if a state determines no new measures are necessary for reasonable progress, the must then determine whether a source’s existing measures are necessary for reasonable progress. EPA finalized partial disapproval of Arizona’s Haze Plan on December 18, 2024 (see 89 FR 102744).

⁷⁸ Consistent with our proposed partial disapproval for Wyoming’s Haze Plan (see 89 FR 63030, August 1, 2024), to the extent a state finds its existing measures are not necessary for reasonable progress, a state must provide a demonstration supporting their claim. EPA finalized partial disapproval of Wyoming’s Haze Plan on December 2, 2024 (see 89 FR 95121). See also 2019 Guidance at 22-25.

⁷⁹ EPA is not stating that all existing measures are required to be in the SIP. As we acknowledged in the 2021 Clarifications Memo, “there may be circumstances in which a source’s existing measures are not necessary to make reasonable progress.” However, EPA would expect that if a state believed that existing measure are not necessary for reasonable progress for the second planning period the state would “demonstrate that a source will continue to implement its existing measures and will not increase its emission rate, it may not be necessary to require those measures under the regional haze program in order to prevent future emission increases.” 2021 Clarifications Memo at 9. WVDEP provided no demonstration or explanation of its decision not to evaluate existing controls for these sources.

⁸⁰ “Cost Estimates for Scrubber Replacement at Facilities Selected for Four Factor Analyses” at 206 of 257 of the SIP submittal. Note also that as part of source selection West Virginia gives as a reason for not choosing Morgantown Energy Associates facility for reasonable progress analysis its filing of a permit application for two boiler retirements scheduled for 2020, SIP submittal at 184 of 257.

⁸¹ West Virginia states that Pleasants Power should be placed on the deactivation list by June 1, 2023, SIP submittal 206 of 257 and uses this as the lifespan of the facility in estimating costs of replacement controls as discussed below. West Virginia also lists a number of past shutdowns for various West Virginia facilities in section 7.2.2, “State Control Programs Included in the 2028 Projection Year.”

progress towards the goal of minimizing anthropogenic visibility impairment at Class I areas.”⁸²

Nevertheless, WV DEP did not include the necessary documentation (e.g., for sources that have recently retired, documentation that demonstrates applicable sources are unable to resume operation and/or the State has revoked the active air permits) to ensure such shutdowns are made federally enforceable and permanent within the SIP.⁸³ In fact, WV DEP stated that “modifying the SIP to reflect every permit modification or facility shutdown which contributes to reasonable progress is itself not reasonable.”⁸⁴ However, the RHR at 40 CFR 51.308(f)(2) and (3) requires that measures necessary for reasonable progress must be enforceable, documented and included in the SIP. WV DEP has not done so with respect to either existing or anticipated source shutdowns.

Furthermore, WV DEP did not explain or adequately justify the absence of existing measures for certain facilities identified in the reasonable progress discussion within its SIP submission. WV DEP presents information from four of the facilities in support of those facilities’ claims that four-factor analyses and SO₂ permit limits are unnecessary (Harrison Power Station, Fort Martin Power Station, Mitchell Power Plant, John E. Amos Power Plant) because they emit at or below the Mercury and Air Toxics Standards (MATS) SO₂ limits. To support its decision, WV DEP cites page 23 of the 2019 Guidance.⁸⁵ However, while States may rely on the use of applicable SO₂ limits (such as the 0.2 lb/MMBtu MATS limit) as being necessary for reasonable progress for the second planning period, States must have adopted

⁸² Appendix H-4, “West Virginia Department of Environmental Protection Division of Air Quality Responses to EPA Region 3 Comments on the West Virginia Draft Regional Haze State Implementation Plan August 2022,” section 2, WV DEP’s Regional Haze SIP Submittal for the 2nd Planning Period.

⁸³ While fuel conversions are not mentioned with respect to the six sources, West Virginia describes fuel conversions for other facilities at section 7.2.2, “State Control Programs Included in the 2028 Projection Year.” In the body of the main SIP submittal at section 7.2.2, West Virginia neither indicates whether it is relying on these fuel conversions as measures necessary for reasonable progress in the second planning period nor does it include the necessary documentation to ensure that the emission reductions resulting from the fuel conversions are permanently and federally enforceable. However, in Appendix H-4, section 4, in responding to EPA comments, West Virginia discusses non-EGU industrial boilers being replaced with natural gas units and states that it “considers boiler replacements at these smaller non-EGU Sources to be reasonable progress” and that “[f]ederally enforceable permits demonstrating these changes have been added to the SIP supporting documentation.” EPA is unable to locate these permits in the supporting documentation appended to the SIP submittal.

⁸⁴ Appendix H-4, section 2.

⁸⁵ SIP submittal at 197 and 198 of 257.

either permit conditions or State regulations containing the SO₂ limit(s) for the source(s) in question. Furthermore, the State must incorporate the applicable permit conditions or State regulations into the State's SIP submittal to make the conditions permanent and federally enforceable.⁸⁶ Without documentation confirming what SO₂ limits are necessary for reasonable progress, and documentation that the four sources are required to meet a federally enforceable and permanent permit condition equal to the applicable MATS SO₂ limits, West Virginia has not fulfilled its obligation under the CAA and RHR under 40 CFR 51.308(f)(2) to develop a long-term strategy containing enforceable measures that are necessary to make reasonable progress in the second planning period.

WV DEP presents justifications from the facilities regarding compliance with BART control efficiencies (Harrison Power Station, Fort Martin Power Station) and CSAPR emissions trading (Grant Town Power Plant, Mitchell Power Plant, John E. Amos Power Plant) as reasons not to conduct four-factor analyses to evaluate additional measures that may be necessary for reasonable progress in the second planning period. Although it may be reasonable for a State not to select a particular source with BART-eligible units that installed and began operating controls to meet BART emission limits for the first implementation period on a pollutant-specific basis for further analysis⁸⁷, the Regional Haze Rule at 40 CFR 51.308(e)(5) anticipates the re-assessment of BART-eligible sources under second planning period SIP emissions control analyses. A State might, however, have a different, reasonable basis for not selecting such sources for control measure analysis.⁸⁸ To the extent that this basis applies to the sources WV DEP selected for further analysis, West Virginia must document this basis within its SIP submittal as required by 40 CFR 51.308(f)(2)(i) and (iii). In this case, West Virginia failed to do

⁸⁶ The MATS SO₂ limit is a limit that facilities may use to demonstrate that they meet the HCl limit for MATS, but facilities also have the option of directly complying with the MATS HCl limit, and therefore are not necessarily required to meet the MATS SO₂ limit unless the limit is included as a specific permit condition.

⁸⁷ 2019 Guidance at 25.

⁸⁸ Guidance on Regional Haze State Implementation Plans for the Second Implementation Period. www.epa.gov/visibility/guidance-regional-haze-state-implementation-plans-second-implementation-period. The EPA Office of Air Quality Planning and Standards, Research Triangle Park (August 20, 2019).

so. Additionally, West Virginia's BART determination for EGUs for the regional haze first planning period relied on CSAPR as an alternative to source-specific BART determinations.⁸⁹ CSAPR is a trading program that does not impose specific emissions limitations on particular facilities. And in fact, WV DEP did not identify any enforceable and permanent SO₂ limits that apply to the selected power plants subject to CSAPR. Therefore, in accordance with 40 CFR 51.308(e)(5), it is not reasonable for West Virginia to exclude the selected BART-eligible sources from consideration under the four statutory factors, simply because they are in compliance for BART.

Finally, WV DEP also notes, as the facilities noted, that several consent decrees related to currently installed SO₂ scrubbers for two of the facilities identified for further evaluation in its SIP (Mitchell Power Plant, John E. Amos Power Plant). But WV DEP does not state whether the consent decrees impose any specific emission limits, and does not ask for the measures required under the consent decrees submitted to be made federally enforceable and permanent within the SIP if there are such specific emission limits.

In conclusion, while WV DEP reiterates the facilities' information—that there are or may be anticipated or recent source retirements, the applicable MATS SO₂ emissions limits, BART requirements, and consent decrees within its SIP submittal for five of the sources selected for consideration under the four statutory factors—WV DEP provides no documentation or evidence within its submittal that it has incorporated the aforementioned existing effective controls as federally enforceable and permanent measures to be included in its long-term strategy for the second planning period. Additionally, WV DEP provides no evidence of, or documentation of, an actual long-term strategy that contains enforceable emissions limitations that West Virginia has determined are necessary to make reasonable progress as required by CAA 169A and the RHR, 40 CFR 51.308(f)(2).

⁸⁹ 83 FR 48249 (September 24, 2018). See also see September 16, 2015 "West Virginia State Implementation Plan Revision for Regional Haze and Clean Air Act §110(a)(2)(D)(i)(II) for Visibility Protection," www.regulations.gov/document/EPA-R03-OAR-2018-0217-0002.

For four of the six facilities (Harrison Power Station, Fort Martin Power Station, John E Amos Power Plant, Mitchell Power Plant) that were selected to determine measures necessary for reasonable progress, WV DEP also cites information from the owners of the power plants with reference to its progress toward achieving the URP glidepath for Dolly Sods and Otter Creek. The facility owners cite being below the URP as an additional reason for not providing four-factor analyses or imposing any reasonable progress measures or controls. While it is not clear if West Virginia is relying on any of the information provided by the facilities, including the URP, the EPA reinforces the fact that reliance on being at or below the URP is not a basis to forgo requiring further analysis of emissions measures for these sources, in the 2017 RHR preamble, the EPA clearly stated that being on or below the URP is not a “safe harbor”; i.e., achieving the URP does not mean that a Class I Area is making “reasonable progress” and does not relieve a State from using the four statutory factors to determine the emissions measures needed to achieve such progress.⁹⁰ Simply being below the URP should therefore not be used as a factor when determining what additional controls, if any, are necessary for reasonable progress. The URP is a planning metric used to gauge the amount of progress made thus far and the amount left to make. Because the URP is not based on the four statutory factors, it cannot be used to determine whether the amount of progress made in any particular implementation period is reasonable.⁹¹

WV DEP also indicates that SO₂ reductions achieved in the first planning period for certain sources or facilities – including Harrison Power Station, Fort Martin Power Station, Mitchell Power Plant, and John E. Amos Power Plant – was raised by those facilities as a justification to excuse them from having to undergo further evaluation and a four-factor analysis.⁹² The EPA acknowledges that West Virginia made significant reductions in SO₂ emissions in the first planning period and that surrounding States and RPOs contribute to SO₂

⁹⁰ See the 2017 RHR, 82 FR 3093 and 3099, January 10, 2017.

⁹¹ See 2019 Guidance at 50 and 2021 Clarifications Memo at 15.

⁹² See, for example, pages 201-202 of WV DEP’s Regional Haze SIP Submittal for the 2nd Planning Period.

emissions in West Virginia Class I Areas. But, to the extent that West Virginia is relying on this rationale, neither the Regional Haze Rule nor the CAA allows a State to avoid properly considering the four factors, in reliance on their previous planning period reductions and/or due to emissions in other States, as required by CAA 169A(g)(1) and the RHR, 40 CFR 51.308(f)(2). Additionally, the EPA has advised States that a source's visibility impact relative to a State's total contribution to visibility impairment is relevant to ensuring that a State is addressing its own contribution regardless of what other States are doing.⁹³

b. Pleasants Power Station

As previously discussed, WV DEP evaluated six facilities as part of the reasonable progress analysis to determine if any potential emissions reduction measures were necessary for reasonable progress in the second planning period. Of these six facilities, only Pleasants Power Station (owned and operated by Energy Harbor) submitted an analysis utilizing the four statutory factors prescribed under CAA 169A(g)(1) and 40 CFR 51.308(f)(2)(i).⁹⁴ The Pleasants Power Station reasonable progress analysis considered three pre-combustion and five post-combustion SO₂ emissions controls.⁹⁵ The pre-combustion control options considered were: utilization of lower sulfur coals; fuel blending with limestone; and coal cleaning. The post-combustion controls considered were: wet limestone scrubbers, also known as limestone forced oxidation scrubbers (LSFO)⁹⁶; spray dry absorbers (SDA); dry sorbent injection (DSI); circulating dry scrubbers with fabric filters (DS/FF); and hydrated ash reinjection (HAR).⁹⁷ Based on the documentation provided within the submittal, it appears WV DEP relied, at least in part, on the January 2021 “Regional Haze Four-Factor Analysis”⁹⁸ provided by Energy Harbor to eliminate

⁹³ 2021 Clarifications Memo at 15.

⁹⁴ The four statutory factors are the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected anthropogenic source of visibility impairment. *See* CAA 169A(g)(1) and 40 CFR 51.308(f)(2)(i).

⁹⁵ Section 7.8 of the SIP submittal at 199 of 257.

⁹⁶ LSFO is the correct abbreviation, though West Virginia also uses the incorrect abbreviation LFSO multiple times in the SIP submittal as quoted by EPA.

⁹⁷ Section 7.8 of the SIP submittal at 199 of 257.

⁹⁸ Appendix G-2 at G-2d “Response Letter from Energy Harbor (Pleasants Station),” WV DEP’s Regional Haze SIP Submittal for the 2nd Planning Period.

all potential control options, aside from LSFO, from further consideration under the four statutory factors under the basis of technological feasibility. However, the justifications provided by Energy Harbor as to why it determined these control options to be infeasible are more appropriately considered within the context of an economic analysis. For example, Energy Harbor stated that use of lower sulfur coal is technologically infeasible. To justify this statement, Energy Harbor explained that use of lower sulfur coal would require facility modifications. While those modifications would come with some associated cost (which is not quantified or documented within the West Virginia submittal), those modifications are not described in sufficient detail for the EPA to be able to evaluate whether these options are, in fact, technologically infeasible. WV DEP did not provide any additional explanation or analysis beyond that provided by Energy Harbor.

Similarly, several post-combustion controls—spray dryer absorber, dry sorbent injection, circulating dry scrubber, and hydrated ash reinjection—were also stated to be technologically infeasible, but the justifications are, again, primarily economic in nature.⁹⁹ Table 1-1 of the January 2021 “Regional Haze Four-Factor Analysis” lists loss of revenue from sale of recovered gypsum and the need to add a particulate removal system and dry by-product disposal issues as the primary reasons to reject these controls on the basis of technological infeasibility. First, as with the pre-combustion controls, WV DEP (and the facility) have not provided sufficient detail for the EPA to be able to adequately evaluate whether these potential control options were appropriately eliminated from further analysis under the four statutory factors based on technological infeasibility. Second, while there may be legitimate technological issues with the addition of a particulate removal system (e.g., plant layout/space constraints), the loss of revenue from gypsum recovery and additional waste removal costs are economic in nature and more appropriately considered under the cost of compliance factor. However, neither Energy Harbor,

⁹⁹ See Appendix G-2 at G-2d section 4.2 “Step 2: Eliminate Technically Infeasible SO₂ Control Technologies” of the “Regional Haze Four Factor Analysis.”

nor WV DEP, provided sufficient evidence as to how these factors would impact the cost of compliance for implementing these control technologies. While the facility did provide some cost data within its submittal to the State, neither the source nor the State provided cost calculations in the form of dollar per ton of emissions reduced. Therefore, because there is no detailed cost analysis documented within the SIP submittal using an established metric such as dollar per ton, the EPA therefore is unable to evaluate whether these controls might be available at reasonable cost.¹⁰⁰ West Virginia failed to substantiate its determination that energy and non-air quality impacts resulting from the installation of SO₂ control measures and the remaining useful life of the units did not justify the cost of installing SO₂ controls. West Virginia also failed to reasonably quantify and consider the “cost of compliance” and develop a record with respect to those costs as a basis for eliminating potential control options, in addition to incorrectly classifying the rationale as being based on technological infeasibility. These deficiencies result in an inadequate consideration by West Virginia of the four factors to eliminate possible controls for reasonable progress.

With respect to LSFO, which was the single control option that was deemed to be technologically feasible and was evaluated for cost of compliance, WV DEP stated that Energy Harbor estimated the “cost-effectiveness of the LSFO (sic) system is \$11,292.95 per ton, or \$9,931.94 per ton for one scrubber,” and “the installation time for an LSFO (sic) system at Pleasants to be approximately 5 years with 2-3 years of plant non-operation, which is insurmountable lost revenue.”¹⁰¹ However, neither Energy Harbor nor WV DEP has provided documentation within the record to support these calculations and the assertion that a two-year outage would be necessary for the modifications.

In addition to the deficient four-factor analysis, West Virginia’s submission does not

¹⁰⁰ The cost data provided in the WV DEP Regional Haze SIP Submittal is presented in table 4.1.2 of the January 2021 “Regional Haze Four-Factor Analysis,” in various units of \$/KW, \$/kw-yr, and \$/MWh. It is unclear how these values relate to EPA’s recommended metric of cost/ton of emissions reduction. It is also unclear how/if West Virginia relied on these costs, since these controls were deemed to be technically infeasible, rather than being too costly. See 2019 Guidance at 31.

¹⁰¹ Section 7.8 of the SIP Submittal at 200 of 257.

meet the requirements of CAA 169A or 40 CFR 51.308(f) because it did not analyze or include federally enforceable existing effective measures for Pleasants Power Station as necessary measures to meet reasonable progress for the second planning period. As we noted in our discussion with respect to West Virginia’s failure to consider existing measures for the facilities for which it ultimately did not require a four-factor analysis, West Virginia’s rejection of new controls for Pleasants Power Station should have resulted in consideration of whether existing measures at Pleasants Power Station are necessary for reasonable progress.¹⁰² The RHR is designed to achieve the statutory goal of “remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution,” CAA 169A(a), through a “long-term strategy [that] must include the enforceable emissions limitations, compliance schedules, and other measures that are necessary to make reasonable progress, as determined pursuant to [40 CFR 51.308](f)(2)(i) through (iv).” 40 CFR 51.308(f)(2). While existing visibility impairment is remedied by reducing emissions from existing sources, the EPA has explained that “[f]uture visibility impairment is prevented by mitigating impacts from new sources and ensuring that existing sources do not increase their emissions in a manner inconsistent with reasonable progress.” Therefore, “[w]hen the outcome of a four-factor analysis is that no new measures are reasonable for a source, the source’s existing measures are generally needed to prevent future visibility impairment (i.e., to prevent future emission increases) and thus necessary to make reasonable progress. Measures that are necessary to make reasonable progress must be included in the SIP.”¹⁰³ West Virginia eliminated additional control measures with a deficient and inadequately justified or documented four-factor analysis and then did not analyze whether existing measures at Pleasants Power Station were necessary for reasonable progress, leaving the EPA unable to determine if the existing control measures should have been included in the long-term strategy as required by 40 CFR 51.308(f)(2) and outlined in our 2019

¹⁰² See 2019 Guidance at 22-25

¹⁰³ Section 4 of the 2021 Clarifications Memo, pages 8-9. See also CAA 169A(b)(2); 40 CFR 51.308(f)(2).

Guidance at 20-22.

West Virginia also stated in its SIP submittal that “Energy Harbor noted the mandatory Federal Class I areas where the VISTAS PSAT modeling predicted greater than 1.00% threshold visibility impacts from the facility are presently well below the URP glide paths, demonstrating already implemented past emissions reductions measures have been and continue to be successful.” Like the discussion in section IV.E.2.a. of this document regarding the other five facilities, simply being below the URP should not be used to determine what additional controls, if any, are necessary for reasonable progress, as the URP is only meant to gauge the amount of progress made thus far and the amount left to make. Because the URP is not based on the four statutory factors, it cannot be used to determine whether the amount of progress made in any particular implementation period is reasonable.¹⁰⁴ While it is unclear as to what extent Energy Harbor relied upon this assumption when conducting its analyses, the EPA reiterates that the URP cannot be used to eliminate additional control measures from consideration under a reasonable progress analysis/four statutory factors.

WV DEP stated that the remaining useful life of Pleasants Power Station is one year, based on the claim that Energy Harbor placed both units on the PJM deactivation list for deactivation by June 1, 2023.¹⁰⁵ However, as of November 2024, there is no evidence as to if this facility remains in operation or has permanently shut down, and WV did not include any documentation with its SIP submittal to substantiate this anticipated shutdown that would make it permanent and federally enforceable within the SIP submittal.¹⁰⁶ As explained previously in the discussion on the other facilities selected for reasonable progress, certain retirements/shutdowns could be considered as part of West Virginia's long-term strategy for

¹⁰⁴ See 2019 Guidance at 50 and 2021 Clarifications Memo at 15.

¹⁰⁵ Section 7.8 of the SIP Submittal at 204, 206 of 257

¹⁰⁶ 2019 Guidance at 34 (“In the situation of an enforceable requirement for the source to cease operation before the end of the useful life of the controls under consideration, a state may use the enforceable shutdown date as the end of the remaining useful life. To the extent such a requirement is being relied upon for a reasonable progress determination, the measure would need to be included in the SIP and/or be federally enforceable. See 40 CFR 51.308(f)(2).”).

making progress towards the national goal, provided that they are made permanent and federally enforceable and are included in the SIP. However, West Virginia has not requested that the shutdown, nor provided the necessary documentation of the shutdown, for it to be included as a permanent and federally enforceable measure necessary for reasonable progress its long term strategy in the SIP. Therefore, the EPA concludes there is nothing within WV DEP's submittal to substantiate the use of the one year remaining useful life provided for Pleasants Power Station.

c. West Virginia's Cost Estimates and Four-Factor Analyses for Replacing Existing SO₂

Controls with New LSFO Scrubbers

As previously discussed, WV DEP provided its own independent cost estimates analyzing the replacement of existing BART SO₂ controls with new LSFO scrubbers for all six facilities in section 7.8 of the SIP submittal. WV DEP stated within its submittal that LSFO "is considered the best technology with the highest SO₂ removal efficiency of all coal and acid gas control technologies."¹⁰⁷ In table 7-37,¹⁰⁸ WV DEP estimated the facility-wide cost per potential ton of emission reduction based on a twenty-year remaining life expectancy.

As set forth in table 7-38, WV DEP then estimated the cost per potential ton of emission reduction for each unit based on the anticipated remaining useful life of each unit. WV DEP states that these per-unit cost estimates are "significantly more representative" because the estimates in table 7-37 "are quite generous in assuming the expected life of the selected facilities to be 20 years."¹⁰⁹ WV DEP stated that the remaining useful life of Fort Martin Power Station is anticipated to be four years, or until 2026, when WV DEP expects "the proposed Good Neighbor CSAPR FIP would require the facility to install SCR for NO_x control" and that WV DEP does not expect the facility's owner/operator to do so.¹¹⁰ WV DEP also stated that the remaining

¹⁰⁷ "Cost Estimates for Scrubber Replacement at Facilities Selected for Four Factor Analyses" SIP submittal at 202 of 257.

¹⁰⁸ SIP submittal at 203 of 257.

¹⁰⁹ *Id.*

¹¹⁰ Table 7-38, SIP submittal at 205 of 257, and "Cost Estimates for Scrubber Replacement at Facilities Selected for Four Factor Analyses" at 206 of 257.

useful life of Grant Town Plant is thirteen years, or 2035¹¹¹, when the power purchase agreement for the facility expires, and that WV DEP does not anticipate that this power purchase agreement will be extended beyond 2035. WV DEP also stated that the remaining lifespans of Harrison Power Station, the John E. Amos Plant, and the Mitchell Plant each are not anticipated to exceed fifteen years, or 2037, based on the age of the facility in 2037 (sixty-five years old) compared to the fifty-year average lifespan of coal-fired power plants in the United States according to the Energy Information Administration (EIA).¹¹² Finally, as discussed previously, WV DEP stated that the remaining lifespan of Pleasants Power Station is one year, as the owner/operator placed the facility on the PJM list for deactivation by June 1, 2023, though WV DEP's response to the EPA's comments also notes that this shutdown is "not currently enforceable".¹¹³ Furthermore, WV DEP has not provided any evidence that the described retirement dates for any of the six facilities it performed cost effectiveness analyses for are federally enforceable and permanent within its SIP submittal.

In addition to "remaining useful life" being one of the four statutory factors, the EPA has previously established within its 2019 Guidance that a short remaining useful life is also directly correlated with the cost of compliance factor, as the annualized calculated cost of compliance generally increases with a shorter remaining useful life based on the decreasing amortization period.¹¹⁴ In other words, a short remaining useful life increases the remaining cost of compliance for implementing new or additional emissions control technologies. As previously discussed, WV DEP has not provided sufficient evidence within its SIP submittal that any of the six retirement dates are federally enforceable to warrant the use of a shorter remaining useful life within its cost estimates. Therefore, the EPA is unable to conclude whether the provided dates

¹¹¹ West Virginia states that the remaining lifespan of Grant Town Plant lasts until 2035 at page 206 of the SIP submittal and 2036 at page 198 of the SIP submittal.

¹¹² SIP submittal at 206 of 257.

¹¹³ Appendix H-4, "West Virginia Department of Environmental Protection Division of Air Quality Responses to EPA Region 3 Comments on the West Virginia Draft Regional Haze State Implementation Plan August 2022," section 3. See also SIP submittal at 206 of 257.

¹¹⁴ 2019 Guidance at 20.

represent a reasonable assumption upon which to base a cost analysis¹¹⁵.

Additionally, the cost estimates that WV DEP performed for the six facilities discussed in IV.E.2.a. and IV.E.2.b., of this document, are insufficiently justified within its SIP submittal. For example, WV DEP includes categories of costs (such as new LSFO costs and annual operation and maintenance costs as facility-wide and unit-specific costs) in tables 7-37 and 7-38. WV DEP explains that these costs were based on a 9,500 Btu/kWH¹¹⁶ heat rate and an assumed 20-year lifetime. However, WV DEP does not provide any evidence supporting how it established those costs, nor does WV DEP explain the origin of such information including its underlying calculations or documentation. For example, as noted above, WV DEP did not provide unit level evidence of enforceable and permanent retirements for units that have an assumed shortened lifetime in table-7-38. But WV DEP also did not adequately explain why they used a 20-year lifetime for the calculations in table 7-37 instead of a 30-year lifetime, as recommended in the EPA's Control Cost Manual. Comparing the existing age of operating plants to the average age of all plants in the country is not an appropriate justification for assuming a shortened lifetime (using 20 years instead of 30 years). The EPA agrees that it would likely be impractical and prohibitively expensive to remove the existing control equipment and replace it with entirely new controls in pursuit of relatively minor improvements in emission reduction efficiency. However, this is not the appropriate basis upon which to exclude potential additional measures (e.g., optimization of existing controls with a corresponding emissions limit) from consideration in a reasonable progress analysis, and would be inconsistent with consideration of a "meaningful set" of control options.¹¹⁷ In addition, as West Virginia is requiring no additional

¹¹⁵ The EPA Control Cost Manual generally recommends an assumed 30-year lifetime for scrubbers and used a 30-year lifetime in all of the Control Cost Manual example calculations. See Section 5 - Chapter 1: Wet and Dry Scrubbers for Acid Gas Control, pp 1-8 and 1-36 to 1-37, available at www.epa.gov/sites/default/files/2021-05/documents/wet_and_dry_scrubbers_section_5_chapter_1_control_cost_manual_7th_edition.pdf. See also 2019 Guidance at 33-34 ("In the situation where an enforceable shutdown date does not exist, the remaining useful life of a control under consideration should be full period of useful life of that control as recommended by EPA's Control Cost Manual.").

¹¹⁶ Kilowatthour (kWh) is a measure of electricity defined as a unit of work or energy, measured as 1 kilowatt (1,000 watts) of power expended for 1 hour.

¹¹⁷ 82 FR 3088.

emissions reductions measures for selected sources in the second planning period, the SIP submittal also does not explain or adequately support the absence of analysis or documentation of existing measures within the SIP (e.g., existing permit limits) for the facilities identified in the reasonable progress discussion and whether those measures are necessary for reasonable progress. West Virginia's deficient and insufficiently documented cost estimates ultimately result in the State's failure to develop a long-term strategy containing enforceable measures that are necessary to make reasonable progress in the second planning period under CAA 169A and RHR 40 CFR 51.308(f)(2).¹¹⁸

d. Summary/Conclusion

Regarding selection of sources for reasonable progress and four-factor analyses, West Virginia's submittal cites the EPA's 2019 Guidance in saying that "that the selection of emission sources for analysis is the responsibility of the state."¹¹⁹ However, as part of this analysis, States are required to adequately justify their rationale and methodology for selecting sources and evaluating emissions controls. And in fact, West Virginia quotes the regional haze rule requirement at 40 CFR 51.308(f)(2)(i) that "The State must include in its implementation plan a description of the criteria it used to determine which sources or groups of sources it evaluated and how the four factors were taken into consideration in selecting the measures for inclusion in its long-term strategy."¹²⁰ Based on the information contained in the SIP submittal and the EPA's review of the information, West Virginia has not satisfied this requirement.

Therefore, West Virginia's inadequate analysis of the four statutory factors was unreasonable. It was not reasonable for West Virginia to reject determining what measures, if any, are necessary to make reasonable progress toward the national goal, and thus need to be a part of the State's long-term strategy. West Virginia failed to "evaluate and determine the

¹¹⁸ West Virginia's independent analysis did not consider two of the four statutory factors of CAA section 169A(g)(1)—the energy and non air quality environmental impacts of compliance and time necessary for compliance.

¹¹⁹ See section 7.6.4 of the SIP submittal at 180 of 257.

¹²⁰ *Id.*

emission reduction measures that are necessary to make reasonable progress by considering the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected anthropogenic source of visibility impairment,” as required by 40 CFR 51.308(f)(2)(i) and CAA section 169A(g)(1). The EPA expressed these issues and concerns during the public comment period of West Virginia’s draft SIP submittal.¹²¹ West Virginia’s submittal has not adequately addressed these deficiencies.

Further, the national goal set by Congress outlines both the remedying of any existing visibility impairment, and also preventing any future visibility impairment. CAA section 169A(a). In the absence of any new measures, West Virginia also did not evaluate whether the continued implementation of the existing measures at any of the selected sources is necessary for reasonable progress. Specifically, West Virginia did not clearly explain that it intends to submit any of the measures for the six facilities discussed in section 7.8 of the SIP as existing measures necessary for reasonable progress, did not submit documentation for any particular existing measures, and does not request to include such measures in the SIP as part of its long-term strategy. West Virginia therefore did not provide a reasonable rationale to support a conclusion that for the second planning period, no new or existing measures are necessary for its long-term strategy, despite identifying numerous sources that impact visibility at nine Class I Areas.

Providing a long-term strategy for making reasonable progress toward the national goal, including consideration of the four factors, is a statutory and regulatory requirement for every State. Although WV DEP selected six sources for reasonable progress analysis and conducted its own cost estimates for those six sources, and one facility conducted a four-factor analysis upon which WV DEP relied, West Virginia failed to conduct sufficiently robust and adequately supported analyses of the four statutory factors for any of the six sources. West Virginia neither

¹²¹ See January 5, 2022, letter from Cristina Fernandez, Director Air and Radiation Division, EPA Region 3 to Laura Crowder, Division of Air Quality, WV DEP, in the rulemaking docket for this action.

assessed other potential new measures, nor did it conduct any analysis of existing measures or put forth such measures for inclusion in the SIP. Therefore West Virginia has not established that its second planning period SIP submission contains the emission limits, schedules of compliance, and other measures as may be necessary to make reasonable progress toward meeting the national visibility goal consistent with the CAA and the RHR.¹²²

In conclusion, the SIP submission meets neither the regional haze requirements, nor requirements of the CAA. Specifically, as described in detail above, the SIP submission fails to satisfy the statutory requirements in CAA section 169A(b)(2)(B) to contain a long-term strategy for making reasonable progress; the CAA section 169A(g)(1) requirement to consider the four factors in determining reasonable progress; and the CAA section 169A(b)(2) requirement for the SIP to contain the emissions limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal. In addition, lack of robust evaluation of emissions measures considering the four factors, and related inadequate supporting documentation of the analyses and conclusions, results in West Virginia not meeting the regulatory requirements in 40 CFR 51.308(f)(2) and (f)(2)(i) and (iii). Therefore, the EPA is proposing to disapprove West Virginia's Regional Haze SIP submission.

F. Additional Long-Term Strategy Requirements

The consultation requirements of 40 CFR 51.308(f)(2)(ii) provide that States must consult with other States that are reasonably anticipated to contribute to visibility impairment in a Class I Area to develop coordinated emission management strategies containing the emission reductions measures that are necessary to make reasonable progress. Section 51.308(f)(2)(ii)(A) and (B) require States to consider the emission reduction measures identified by other States as necessary for reasonable progress and to include agreed upon measures in their SIPs. Section 51.308(f)(2)(ii)(C) speaks to what happens if States cannot agree on what measures are necessary to make reasonable progress.

¹²² See also CAA 169A(b)(2).

WV DEP included documentation of its calls, webinars, presentations, and other consultation with VISTAS and non-VISTAS States from December 2017 to October 2020. West Virginia's consultation documentation confirms that no States disagreed with or provided comment on West Virginia's approach to its long-term strategy.

Section 51.308(f)(2)(iii) also requires that the emissions information considered to determine the measures that are necessary to make reasonable progress include information on emissions for the most recent year for which the State has submitted triennial emissions data to the EPA (or a more recent year), with a twelve-month exemption period for newly submitted data.

WV DEP included emissions information from the most recent year in its submittal; 2017, 2018, and 2019 emissions information that had been previously reported to the EPA and compared these emissions to the 2028 emissions used in its modeling.¹²³ Table 7-35 shows all West Virginia facilities with greater than 100 tpy SO₂ emissions in 2017 and table 7-36 shows all West Virginia facilities with greater than 100 tpy NO_x emissions in 2017.

As summarized in section IV of this document, the State provided emissions inventory information for individual sources for multiple years, including the most recent year for which the State submitted emissions data to the EPA in compliance with the triennial reporting requirements of the AERR.

Regardless, as explained in the preceding sections, due to flaws and omissions in its source evaluations, four-factor analyses and the resulting control determinations, the EPA finds that West Virginia failed to submit to the EPA a long-term strategy that includes “the enforceable emissions limitations, compliance schedules, and other measures that are necessary to make reasonable progress” as required by 40 CFR 51.308(f)(2).¹²⁴ Consequently, we find that

¹²³ See Section 7.6.5, “Evaluation of Recent Emission Inventory Information” of WV DEP’s Regional Haze SIP Submittal for the 2nd Planning Period.

¹²⁴ See also CAA 169A(b)(2)(B) (requiring regional haze SIPs to “contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal, . . . including . . . a long-term . . . strategy for making reasonable progress[.]”).

West Virginia's SIP does not satisfy the long-term strategy requirements of 40 CFR 51.308(f)(2). Therefore, the EPA proposes to disapprove all elements of West Virginia's SIP submission as it relates to 40 CFR 51.308(f)(2)'s long-term strategy requirements.

G. Reasonable Progress Goals

Section 51.308(f)(3) contains the requirements pertaining to RPGs for each Class I Area. Section 51.308(f)(3)(i) requires a State in which a Class I area is located to establish RPGs—one each for the clearest days and the most impaired days—reflecting the visibility conditions that will be achieved at the end of the planning period as a result of the emission limitations, compliance schedules, and other measures required under paragraph (f)(2) to be in a State's long-term strategy, as well as the implementation of other CAA requirements. The long-term strategy, as reflected by the RPGs, must provide for an improvement in visibility on the most impaired days relative to the baseline period and ensure no degradation on the clearest days relative to the baseline period. Section 51.308(f)(3)(ii) applies in circumstances in which a Class I area's RPG for the most impaired days represents a slower rate of visibility improvement than the uniform rate of progress calculated under 40 CFR 51.308(f)(1)(vi). Under 40 CFR 51.308(f)(3)(ii)(A), if the State in which a mandatory Class I area is located establishes an RPG for the most impaired days that provides for a slower rate of visibility improvement than the URP, the State must demonstrate that there are no additional emission reduction measures for anthropogenic sources or groups of sources in the State that would be reasonable to include in its long-term strategy. Section 51.308(f)(3)(ii)(B) requires that if a State contains sources that are reasonably anticipated to contribute to visibility impairment in a Class I area in another State, and the RPG for the most impaired days in that Class I area is above the URP, the upwind State must provide the same demonstration.

West Virginia established 2028 RPGs for both of its Class I areas in deciduous for the 20 percent clearest days and the 20 percent most impaired in tables 8-1 and 8-2 of its submittal, respectively, and both Class I areas are projected to remain below the URP based on VISTAS

modeling. However, as outlined throughout this document, because West Virginia's SIP submission did not meet the required statutory or regulatory requirements, the EPA is proposing to disapprove the SIP in its entirety, and is not proposing to approve these regulatory requirements. Additionally, per 40 CFR 51.308(f)(3)(iv), the EPA must evaluate the demonstrations the State developed pursuant to 40 CFR 51.308(f)(2) to determine whether the State's reasonable progress goals for visibility improvement provide for reasonable progress towards natural visibility conditions. As previously explained in section IV.E. of this document we are proposing to disapprove West Virginia's long-term strategy for failing to meet the requirements of 40 CFR 51.308(f)(2). Therefore, we also propose to disapprove West Virginia's reasonable progress goals under 40 CFR 51.308(f)(3) because compliance with that requirement is dependent on compliance with 40 CFR 51.308(f)(2).¹²⁵

H. Monitoring Strategy and Other Implementation Plan Requirements

Section 51.308(f)(6) specifies that each comprehensive revision of a State's Regional Haze SIP must contain or provide for certain elements, including monitoring strategies, emissions inventories, and any reporting, recordkeeping and other measures needed to assess and report on visibility. A main requirement of this section is for States with Class I Areas to submit monitoring strategies for measuring, characterizing, and reporting on visibility impairment.

Section 51.308(f)(6)(ii) requires SIPs to provide for procedures by which monitoring data and other information are used in determining the contribution of emissions from within the State to Regional Haze visibility impairment at mandatory Class I Federal Areas both within and outside the State. Section 51.308(f)(6)(iii) requires SIPs to provide procedures by which monitoring data and other information are used in determining the contribution of emissions from within the State to Regional Haze visibility impairment at mandatory Class I Federal Areas in other States.

Section 51.308(f)(6)(iv) requires the SIP to provide for the reporting of all visibility monitoring data to the Administrator at least annually for each Class I area in the State. Section

¹²⁵ See CAA 169A(b)(2), 40 CFR 51.308(f)(2).

51.308(f)(6)(v) requires SIPs to provide for a statewide inventory of emissions of pollutants that are reasonably anticipated to cause or contribute to visibility impairment, including emissions for the most recent year for which data are available. Section 51.308(f)(6)(v) also requires States to include estimates of future projected emissions and include a commitment to update the inventory periodically.

With respect to 40 CFR 51.308(f)(6)(i), WV DEP stated that the existing IMPROVE monitors for the State's Class I areas are sufficient for the purposes of this SIP revision. With respect to 40 CFR 51.308(f)(6)(ii), WV DEP stated that it will use data from these IMPROVE monitors for future haze plans and progress reports. 40 CFR 51.308(f)(6)(iii) does not apply to West Virginia, as this provision only applies to States with no Class I areas. With respect to 40 CFR 51.308(f)(6)(iv), the NPS manages and oversees the IMPROVE monitoring network and reviews, verifies, and validates IMPROVE data before its submission to the EPA's Air Quality System (AQS). With respect to 40 CFR 51.308(f)(6)(v), WV DEP provided a baseline emissions inventories, current emissions data, and 2028 future emissions projections for visibility-impairing pollutants for source categories and specific point sources, and committed to update the inventory periodically.¹²⁶ With respect to 40 CFR 51.308(f)(6)(vi), West Virginia affirmed that there are no elements, including reporting, recordkeeping, or other measures, necessary to address and report on visibility for West Virginia's Class I areas or Class I areas outside the State that are affected by sources in West Virginia.

However, as outlined throughout this document, because West Virginia's SIP submission did not meet the required statutory or regulatory requirements, the EPA is proposing to disapprove the SIP in its entirety and is not proposing to approve these regulatory requirements.

I. Requirements for Periodic Reports Describing Progress Towards the Reasonable Progress Goals

¹²⁶ See Section 4, "Types of Emissions Impacting Visibility Impairment in West Virginia Class I Areas", Section 7.2.4, "EPA Inventories", and Section 13, "Progress Report" of WV DEP's Regional Haze SIP Submittal for the 2nd Planning Period.

Section 51.308(f)(5) requires that periodic comprehensive revisions of States' Regional Haze plans also address the progress report requirements of 40 CFR 51.308(g)(1) through (5). The purpose of these requirements is to evaluate progress towards the applicable RPGs for each Class I Area within the State and each Class I Area outside the State that may be affected by emissions from within that State. Sections 51.308(g)(1) and (2) apply to all States and require a description of the status of implementation of all measures included in a State's first implementation period Regional Haze plan and a summary of the emission reductions achieved through implementation of those measures. Section 51.308(g)(3) applies only to States with Class I Areas within their borders and requires such States to assess current visibility conditions, changes in visibility relative to baseline (2000-2004) visibility conditions, and changes in visibility conditions relative to the period addressed in the first implementation period progress report.

Section 51.308(g)(4) applies to all States and requires an analysis tracking changes in emissions of pollutants contributing to visibility impairment from all sources and sectors since the period addressed by the first implementation period progress report. This provision further specifies the year or years through which the analysis must extend depending on the type of source and the platform through which its emission information is reported. Finally, 40 CFR 51.308(g)(5), which also applies to all States, requires an assessment of any significant changes in anthropogenic emissions within or outside the State that have occurred since the period addressed by the first implementation period progress report, including whether such changes were anticipated and whether they have limited or impeded expected progress towards reducing emissions and improving visibility.

With respect to the 40 CFR 51.308(g)(1) through (5) requirements, WV DEP included a description of the status of the implementation of all measures included in West Virginia's first implementation period Regional Haze Plan, a summary of the emissions reductions achieved from these measures, an analysis tracking changes in emissions, and an assessment of significant

changes in emissions. However, as outlined throughout this document, because West Virginia's SIP submission did not meet the required statutory or regulatory requirements, the EPA is proposing to disapprove the SIP in its entirety and is not proposing to approve these regulatory requirements.

J. Requirements for State and Federal Land Manager Coordination

Section 169A(d) of the CAA requires States to consult with FLMs before holding the public hearing on a proposed Regional Haze SIP, and to include "a summary of the FLMs' conclusions and recommendations in the notice to the public."

Section 51.308(i)(2)'s FLM consultation provision requires a State to provide FLMs with an opportunity for consultation that is early enough in the State's policy analyses of its emission reduction obligation so that information and recommendations provided by the FLMs can meaningfully inform the State's decisions on its long-term strategy. If the consultation has taken place at least 120 days before a public hearing or public comment period, the opportunity for consultation will be deemed early enough. Regardless, the opportunity for consultation must be provided at least sixty days before a public hearing or public comment period at the State level. Section 51.308(i)(2) also provides two substantive topics on which FLMs must be provided an opportunity to discuss with States: assessment of visibility impairment in any Class I Area and recommendations on the development and implementation of strategies to address visibility impairment. Section 51.308(i)(3) requires States, in developing their implementation plans, to include a description of how they addressed FLMs' comments.

WV DEP included records of its consultation with various FLMs. The NPS submitted comments to WV DEP on October 19, 2021, the USFS submitted comments on October 26, 2021, and the FWS did not submit comments. WV DEP included the FLM comments and its responses in its submittal.¹²⁷

¹²⁷ Appendix H-2 "Federal Land Manager Comments" in WV DEP's Regional Haze SIP Submittal for the 2nd Planning Period.

While WV DEP did take administrative steps to conduct consultation, if the EPA finalizes the disapproval of the SIP, in the process of correcting the deficiencies outlined above with respect to the RHR and statutory requirements, the State (or the EPA in the case of an eventual FIP) will again be required to satisfy the FLM consultation requirements under 40 CFR 51.308(i)(2).¹²⁸ However, as discussed throughout this document, because WV DEP's SIP submission did not meet the required statutory or regulatory requirements, the EPA is proposing to disapprove the SIP in its entirety, and is not proposing to approve these regulatory requirements.

V. Environmental Justice

WV DEP included Appendix I, "Environmental Justice," to its SIP submittal. Appendix I consists entirely of a 2021 Informal Resolution between WV DEP and the EPA resolving a claim under Title VI of the Civil Rights Act of 1964 related to alleged discrimination against African American descendants of persons buried in the Boyd Carter Memorial Cemetery. Appendix I does not contain any analysis or evaluation of impacts of this SIP on communities with environmental justice concerns. Neither the CAA nor the applicable implementing regulations either prohibit or require such an evaluation. The EPA did not conduct an environmental justice (EJ) screening analysis for this SIP submittal.

VI. Proposed Action

The EPA is proposing to disapprove the WV DEP SIP submission relating to Regional Haze for the second planning period received on August 12, 2022, because the State's SIP submission fails to meet both the regulatory requirements of the Regional Haze Rule and the statutory requirements of the Clean Air Act. Specifically, because WV DEP failed to conduct the proper analyses to determine what measures are necessary for reasonable progress and did not adequately consider the four statutory factors, thereby not including a sufficiently robust and

¹²⁸ In addition, if the EPA finalizes our proposed disapproval of WV DEP's SIP submittal, the State (or the EPA in the potential case of a FIP) will be required to again complete the FLM consultation requirements under 40 CFR 51.308(i).

adequately justified long-term strategy that includes measures necessary for reasonable progress in its second planning period SIP submission. West Virginia's SIP submission does not contain the emission limits, schedules of compliance, and other measures as may be necessary to make reasonable progress toward meeting the national visibility goal. Therefore, the SIP submission does not meet the regional haze requirements, nor requirements of the CAA. Specifically, as described in detail in this NPRM, the SIP submission does not meet the statutory requirements in CAA section 169A(b)(2)(B) to contain a long-term strategy for making reasonable progress; the CAA section 169A(g)(1) requirement to consider the four factors in determining reasonable progress; and the CAA section 169A(b)(2) requirement for the SIP to contain the emissions limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal. In addition, the insufficiently robust and inadequately justified source selection, evaluation of emissions measures considering the four factors, related inadequate supporting documentation, and the failure to discuss or adequately evaluate existing measures in the absence of any new measures results in the WV DEP SIP submission not meeting the regulatory requirements in 40 CFR 51.308(f)(2).

The EPA is not proposing a FIP at this time. If the EPA finalizes the disapproval, that will start a two-year clock for the EPA to propose and finalize a FIP. We are processing this as a proposed action because we are soliciting comments on this proposed action. Disapproval does not start a mandatory sanctions clock for West Virginia. Final rule will occur after consideration of any comments.

VII. 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, the EPA's role is to approve State choices, provided that they meet the criteria of the CAA. Accordingly, this action proposes to disapprove State law as not meeting Federal requirements and does not impose additional requirements. For

that reason, this proposed action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- 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 (Pub. L. 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); and
- 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 Clean Air Act;
- Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, February 16, 1994) directs Federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on minority populations and low-income populations to the greatest extent practicable and permitted by law. The EPA defines environmental justice (EJ) as “the fair treatment and meaningful involvement of all

people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” The EPA further defines the term fair treatment to mean that “no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies.” West Virginia did not evaluate EJ considerations as part of its SIP submittal; the CAA and applicable implementing regulations neither prohibit nor require such an evaluation. The EPA did not perform an EJ analysis and did not consider EJ in this action. Due to the nature of the action being taken here, this action is expected to have a neutral impact on the air quality of the affected area. Consideration of EJ is not required as part of this action, and there is no information in the record inconsistent with the stated goal of E.O. 12898 of achieving environmental justice for people of color, low-income populations, and Indigenous peoples.

- In addition, this action 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 the EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

List of Subjects in 40 CFR Part 52

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

Adam Ortiz,
Regional Administrator,
Region III.

