

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 52

[EPA-R07-OAR-2023-0582; FRL-11576-01-R7]

### Air Plan Disapproval; Kansas; Regional Haze

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

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to disapprove a revision to Kansas's State Implementation Plan (SIP) submitted on July 28, 2021, to satisfy applicable requirements under the Clean Air Act (CAA) and EPA's Regional Haze Rule (RHR) for the program's second planning period. As required by section 169A of the Clean Air Act, the federal Regional Haze Rule calls for state and federal agencies to work together to improve visibility, including Regional Haze, in 156 national parks and wilderness areas. The rule requires the states, in coordination with the EPA, the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), the U.S. Forest Service (FS), and other interested parties, to develop and implement air quality protection plans in which states revise their long-term strategies (LTS) for making reasonable progress towards the national goal of preventing any future, and remedying any existing, anthropogenic impairment of visibility in these mandatory Class I Federal Areas. Disapproval does not start a mandatory sanctions clock.

**DATES:** Comments must be received on or before February 1, 2024.

**ADDRESSES:** You may send comments, identified by Docket ID No. EPA-R07-OAR-2023-0582 to <https://www.regulations.gov>. Follow the online instructions for submitting comments.

**Instructions:** All submissions received must include the Docket ID No. for this rulemaking. Comments received will be posted without change to <https://www.regulations.gov/>, including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the "Written Comments" heading of the **SUPPLEMENTARY INFORMATION** section of this document.

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### SUPPLEMENTARY INFORMATION:

Throughout this document "we," "us," and "our" refer to the EPA.

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### I. Written Comments

Submit your comments, identified by Docket ID No. EPA-R07-OAR-2023-0582, at <https://www.regulations.gov>. Once submitted, comments cannot be edited or removed from *Regulations.gov*. 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, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>.

### II. What is being addressed in this document?

The EPA is proposing to disapprove Kansas's Regional Haze plan for the second planning period. As required by section 169A of the CAA, the federal RHR 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 NPS, FWS, the FS, 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 (SO<sub>2</sub>), oxides of nitrogen (NO<sub>x</sub>), and, in some cases, volatile organic compounds (VOC) and ammonia (NH<sub>3</sub>)). As discussed in further detail below, the EPA is proposing to find that Kansas has submitted a Regional Haze plan that does not meet the Regional Haze requirements for the second planning period. The State's submission can be found in the docket for this action.

### III. 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.<sup>1</sup> 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

<sup>1</sup> 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.

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,<sup>2</sup> 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., SO<sub>2</sub>, NO<sub>x</sub>, and, in some cases, VOC and NH<sub>3</sub>). Fine particle precursors react in the atmosphere to form fine PM (PM<sub>2.5</sub>), which impairs visibility by scattering and absorbing light. Visibility impairment reduces the perception of clarity and color, as well as visible distance.<sup>3</sup>

<sup>2</sup> 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.

<sup>3</sup> 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 (b<sub>ext</sub>) is a metric used to for expressing visibility and is measured in inverse megameters (Mm<sup>-1</sup>). 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

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);<sup>4</sup> see also 40 CFR 51.308(b), (f) (establishing submission dates for iterative Regional Haze SIP revisions); (64 FR at 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 updated LTS originally due July 31, 2018, and every ten years thereafter. (64 FR at 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 Regional Haze SIPs.<sup>5</sup> 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 LTS for making reasonable progress toward the national visibility goal, of which BART is one component. The core required elements for the first

in calculations than deciviews, since it is not a logarithmic function. See, e.g., 2019 Guidance at 16, 19, <https://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  $10 \ln (b^{ext}) / 10 \text{ Mm}^{-1}$ . 40 CFR 51.301.

<sup>4</sup> 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).

<sup>5</sup> 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).

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’ LTS. 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.<sup>6</sup> 40 CFR 51.308(d)(1)(i)(B), (d)(2). The 1999 RHR also provided that States’ LTS 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

<sup>6</sup> 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 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 at 35731–32. That is, the URP and the 2064 date are not enforceable targets, but are rather 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).

establishing their LTS, 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), (ii). Section 51.308(d) also contains seven additional factors states must consider in formulating their LTS, 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)<sup>7</sup> (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 LTS for making reasonable progress towards the national visibility goal. The reasonable progress requirements as revised in the 2017 rulemaking (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 LTS, 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").<sup>8</sup> 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").<sup>9</sup> 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"),<sup>10</sup> and the June 2020 "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" and associated Technical Addendum ("2020 Data Completeness Memo").<sup>11</sup>

As previously explained in the 2021 Clarifications Memo, the EPA intends the second implementation period of

<sup>8</sup> 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> The EPA Office of Air Quality Planning and Standards, Research Triangle Park (August 20, 2019).

<sup>9</sup> 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>. The EPA Office of Air Quality Planning and Standards, Research Triangle Park (July 8, 2021).

<sup>10</sup> 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> The EPA Office of Air Quality Planning and Standards, Research Triangle Park. (December 20, 2018).

<sup>11</sup> 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. <https://www.epa.gov/visibility/memo-and-technical-addendum-ambient-data-usage-and-completeness-regional-haze-program>. The EPA Office of Air Quality Planning and Standards, Research Triangle Park (June 3, 2020).

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.<sup>12</sup>

### *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, considering the effect of emissions from one jurisdiction on the air quality in another. Five regional planning organizations (RPOs),<sup>13</sup> 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

<sup>12</sup> 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").

<sup>13</sup> 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.

<sup>7</sup> 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.

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 Central Regional Air Planning Association (CenRAP), one of the five RPOs described above, that Kansas was a member of during the first planning period, was a collaborative effort of state governments, tribal governments, and Federal Agencies established to initiate and coordinate activities associated with the management of Regional Haze, visibility, and other air quality issues in parts of the Great Plains, Midwest, Southwest, and South Regions of the United States.

After the first planning period SIPs were submitted, the planning was shifted to the Central State Air Resources Agencies (CenSARA). CenSARA is a collaborative effort of state governments established to initiate and coordinate activities associated with the management of Regional Haze and other air quality issues in parts of the Great Plains, Midwest, Southwest, and South Regions of the United States. Member states include: Arkansas, Iowa, Kansas, Louisiana, Missouri, Nebraska, Oklahoma, and Texas. Unlike CenRAP, CenSARA has solely state members. However, CenSARA does reach out to Tribal and Federal partners. The Federal partners of CenSARA are the EPA, the NPS, the FWS, and FS.

#### IV. Requirements for Regional Haze Plans for the Second Implementation Period

Under the CAA and 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 LTS 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 section 169A(b)(2)(B). To this end, § 51.308(f) lays out the process by which states determine what constitutes their LTS, with the order of the requirements in § 51.308(f)(1) through (f)(3) generally mirroring the order of the steps in the reasonable progress analysis<sup>14</sup> and (f)(4)

through (f)(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 LTS. See 40 CFR 51.308(f), (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 LTS 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"<sup>15</sup> that states must consider in developing their LTS. 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 using the four statutory factors. Those measures are then incorporated into the state's LTS. After a state has developed its LTS, 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 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)–(3).

In addition to satisfying the requirements at 40 CFR 51.308(f) related to reasonable progress, the Regional

Haze SIP revisions for the second implementation period must address the requirements in § 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 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 if 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 at 35720–22, 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, 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."

<sup>14</sup> The 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).

<sup>15</sup> The five "additional factors" for consideration in § 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.

*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 § 51.308(f)(1) related to tracking visibility improvement over time. The requirements of this subsection apply only to states having Class I Areas within their borders; the required calculations must be made for each such Class I Area. EPA's 2018 Visibility Tracking Guidance<sup>16</sup> provides recommendations to assist states in satisfying their obligations under § 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 3103–05.

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 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).<sup>17</sup> 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), (iii). States must also calculate natural visibility conditions for the clearest and most impaired days,<sup>18</sup> 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 a Class I Area's rate of visibility improvement.<sup>19</sup> 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 3107 footnote 116.

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 § 51.308(f)(1)(i) and provides updated

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: “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.”

<sup>19</sup> 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 at 3093.

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 LTS 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 LTS “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 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 LTS 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 SO<sub>2</sub> and NO<sub>x</sub> 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

<sup>16</sup> 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 <https://www3.epa.gov/ttnamt1/files/ambient/visible/tracking.pdf>.

<sup>17</sup> 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.

<sup>18</sup> 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

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 LTS 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.<sup>20</sup> Additionally, as stated in both the 2019 Guidance and 2021 Clarifications memo, a state that brings no sources forward for analysis of control measures must explain how doing so is consistent with the statutory and regulatory requirements for SIPs to contain the measures necessary to make reasonable progress. 2019 Guidance at 10 and 2021 Clarifications Memo at 5–6.

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.<sup>21</sup> This is accomplished by considering the four factors—“the costs of compliance, the time necessary for compliance, and the energy and nonair quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements.” CAA section 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 at 3091. Thus, for each source it has selected for four-factor analysis,<sup>22</sup> 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

<sup>21</sup> The CAA provides that, “[i]n determining reasonable progress there shall be taken into consideration” the four statutory factors. CAA section 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.

<sup>22</sup> “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 at 3088. 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.

“[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.

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 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.<sup>23</sup> The 2019 Guidance

<sup>23</sup> 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,

<sup>20</sup> Similarly, in responding to comments on the 2017 RHR Revisions the 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.



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, § 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 above, § 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 § 51.308(f)(2), measures that are necessary to make reasonable progress towards the national visibility goal must be included in a state’s LTS and in its SIP.<sup>24</sup> 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 section 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 LTS in order to prevent future emission increases and future visibility impairment. EPA’s 2021 Clarifications Memo provides further 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 LTS or its SIP.

As with source selection, the characterization of information on each of the factors is also subject to the documentation requirement in § 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, § 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.<sup>25</sup> That is, a state’s decisions about the emission reduction measures that are necessary to make reasonable progress must be consistent with the statutory 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 LTS for making reasonable progress. Additionally, the RHR at 40 CFR 51.3108(f)(2)(iv) separately provides five “additional factors”<sup>26</sup> that states must consider in developing their LTS: (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 LTS. 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

U.S. Environmental Protection Agency at 186; 2019 Guidance at 36–37.

<sup>24</sup> States may choose to, but are not required to, include measures in their LTS 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 the EPA for inclusion in their SIPs but are not required to do so. See, e.g., 82 FR at 3108–09 (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).

<sup>25</sup> 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).

<sup>26</sup> The five “additional factors” for consideration in § 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.

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, § 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 at 3091. Their primary purpose is to assist the public and the EPA in assessing the reasonableness of states' LTS for making reasonable progress towards the national visibility goal. See 40 CFR 51.308(f)(3)(iii)–(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 LTS for the second implementation period.<sup>27</sup> 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' LTS (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. RPGs 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, § 51.308(f)(3)(i) requires that “[t]he long-term strategy and the RPG 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 LTS that are projected to achieve

<sup>27</sup> RPGs are intended to reflect the projected impacts of the measures all contributing states include in their LTS. 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 LTS on disparate schedules, as well as for adjusting RPGs using a post-modeling approach. 2019 Guidance at 47–48.

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 condition for the period 2000–2004. See 40 CFR 51.308(f)(1)(i), 82 FR at 3097–98.

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 LTS. 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 at 3093, 3099–3100; 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 subsection 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), (f)(6)(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), (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 the EPA review as part of the Agency’s evaluation of a SIP revision.<sup>28</sup> 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.<sup>29</sup>

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 § 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.”<sup>30</sup> 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 requirements of paragraphs 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 LTS and whether such implementation is in fact resulting in the expected visibility

improvement. See 81 FR 26942, 26950 (May 4, 2016), (82 FR 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 LTS, 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, § 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), (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(g)(4), (f)(5). 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 LTS for the first implementation period.

#### *G. Requirements for State and Federal Land Manager Coordination*

CAA 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

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

<sup>29</sup> *Id.*

<sup>30</sup> The 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.

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).

## V. The EPA's Evaluation of Kansas's Regional Haze Submission for the Second Implementation Period

### A. Background on Kansas's First Implementation Period SIP Submission

Kansas submitted its Regional Haze SIP for the first implementation period to the EPA on October 26, 2009. The EPA approved Kansas's first implementation period Regional Haze SIP submission on December 27, 2011 (76 FR 80754, December 27, 2011). 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), Kansas was also responsible for submitting a

five-year progress report as a SIP revision for the first implementation period, which it did on March 10, 2015. The EPA approved the progress report into Kansas's SIP on September 14, 2015 (80 FR 55030, September 14, 2015).

### B. Kansas'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), 51.308(g), and 51.308(i), on July 28, 2021, Kansas submitted a revision to Kansas's SIP to address its Regional Haze obligations for the second implementation period, which runs through 2028. Kansas made its 2021 Regional Haze SIP submission available for public comment on May 27, 2021. Kansas received and responded to public comments and included both the comments and responses to those comments in its submission.

The following sections describe Kansas's SIP submission. This document also contains EPA's evaluation to determine if Kansas's submission meets all of 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 LTS 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 at 35721. In concluding that each of the contiguous 48 states and the District of Columbia meet this threshold,<sup>31</sup> the EPA relied on

<sup>31</sup> The EPA determined that "there is more than sufficient evidence to support our conclusion that emissions from each of the 48 contiguous states and

"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 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. EPA's 2017 revisions to the RHR did not disturb this conclusion. *See* 82 FR at 3094.

Kansas contains no Class I Areas. However, in Kansas's Regional Haze plan, Kansas lists seven Class I Areas: Upper Buffalo Wilderness Area, Arkansas; Hercules-Glades Wilderness Area, Missouri; Mingo Wilderness Area, Missouri; Salt Creek Wilderness Area, New Mexico; Wheeler Peak Wilderness Area, New Mexico; White Mountain Wilderness Area, New Mexico; and Wichita Mountains Wilderness Area, Oklahoma; as "Kansas-related Class I Areas," *32 i.e.*, Class I Areas potentially affected by Kansas emissions. To make this determination, Kansas used the results from the CenSARA 2018 area of influence (AOI) analysis. The AOI analysis is a back-trajectory technique that identifies visibility impairment contributions from individual major point sources. The EPA agrees that the CenSARA AOI information is a

the District of Columbia may reasonably be anticipated to cause or contribute to visibility impairment in a Class I Area." 64 FR at 35721. Hawaii, Alaska, and the U.S. Virgin Islands must also submit Regional Haze SIPs because they contain Class I Areas.

<sup>32</sup> "Related Class I Areas" is not a term used by the EPA, nor is it in CAA, the RHR, or any EPA guidance. Kansas coined the term in their submission.

technically sound method for identifying Areas that are potentially affected by Kansas emissions. The EPA also agrees that the seven Class I Areas identified by Kansas are potentially affected by Kansas's emissions.

In their second planning period submission, Kansas also opted to analyze the visibility impacts from Kansas, and compare those to visibility impacts from other states also impacting the same seven Class I Areas. That analysis showed seventeen states having more visibility impact on the seven Class I Areas compared to Kansas. Kansas additionally states that its emissions have an insignificant visibility impact in the seven Class I Areas it identified. The EPA notes that while Kansas's analysis shows it has less of a visibility impact than other states in the seven Class I Areas it identified, Kansas also showed that its sources do, in fact, impact visibility in these seven Class I Areas. As stated previously, the threshold for visibility impact on Class I Areas is low. Therefore, a small visibility impact on any of the Class I Areas identified by Kansas 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. Regional Haze Rule Provisions That Do Not Apply to States With No Class I Areas*

As noted above, Kansas emissions potentially impact visibility in seven out-of-state Class I Areas. However, Kansas does not contain any Class I Areas. Therefore, a number of RHR provisions are not applicable to the Kansas SIP submission and the EPA will not evaluate the Kansas regional haze SIP submission for compliance with those provisions.

The following RHR provisions do not apply to the Kansas SIP:

- § 51.308(f)(1)—*Calculations of baseline, current, and natural visibility conditions; progress to date; and the uniform rate of progress.* The entirety of the provisions in § 51.308(f)(1), including 51.308(f)(i) to 51.308(f)(vi) only contain regulatory requirements for states with Class I Areas.
- § 51.308(f)(3)—*Reasonable progress goals.* § 51.308(f)(3)(i), 51.308(f)(3)(ii)(A), 51.308(f)(3)(iii), and 51.308(f)(3)(iv) only contain regulatory requirements for states with Class I Areas.

- § 51.308(f)(4)—*Additional monitoring to assess reasonably attributable visibility impairment (RAVI).* This provision could in theory apply to all states. However, there are

no RAVI monitoring requirements for Kansas. Therefore, this provision is not applicable to the Kansas SIP.

- § 51.308(f)(6)—*Monitoring strategy and other implementation plan requirements.* § 51.308(f)(6), 51.308(f)(6)(i), 51.308(f)(6)(ii), and 51.308(f)(6)(iv) only contain regulatory requirements for states with Class I Areas.

- § 51.308(g)—*Requirements for periodic reports describing progress towards the reasonable progress goals.* The RHR at § 51.308(f)(5) requires second planning period SIPs to address certain progress report provisions within § 51.308(g). However, § 51.308(g)(3) only contains regulatory requirements for states with Class I Areas.

#### *E. 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).

These requirements only apply to states with Class I Areas. Because Kansas does not have any Class I Areas, these statutory requirements do not apply to Kansas.

#### *F. Long-Term Strategy for Regional Haze*

##### *a. Four-Factor Analysis*

Each state having a Class I Area within its borders or emissions that may affect visibility in a Class I Area must develop a LTS 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 LTS 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 LTS. 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 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 LTS. In developing its LTS, a state must also consider the five additional factors in § 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 LTS. 40 CFR 51.308(f)(2)(iii).

In its SIP submission, Kansas included information on the emissions impacts of numerous sources in Kansas on various Class I Areas, but did not select any sources, did not conduct any four-factor analysis, and did not analyze possible efficiency improvements for sources' existing measures. However, Kansas's own submission lists one hundred twenty-eight (128) sources in Kansas with non-zero visibility impacts on at least one Class I Area, and when SO<sub>2</sub> and NO<sub>x</sub> emissions were considered together, impacts from individual Kansas sources ranged from 0.01% to 0.84% of the total estimated visibility impact.<sup>33</sup> The highest impacting sources based on the AOI metric used by Kansas<sup>34</sup> are Sunflower Electric-Holcomb, KCP&L-La Cygne, Birla Carbon USA, Kansas City BPU-Nearman.<sup>35</sup>

<sup>33</sup> Based upon the GenSARA AOI work. See the July 28th, 2021 Kansas submission, Appendix 6, included in the docket for this action.

<sup>34</sup> AOI is one of several methods to estimate the visibility impact of sources. Different methods could have different rankings. AOI is an acceptable method.

<sup>35</sup> The EPA is not determining that these four sources would need to be selected. The EPA is highlighting that visibility impacting sources exist to be selected. Kansas could also have a reasonable

In its SIP submission, Kansas provides several reasons why it believes it is reasonable to not select sources for four-factor analyses, none of which are based in statute or the Regional Haze regulations. For example, Kansas believes there is an “emission control inequity” between Kansas and surrounding states. Therefore, Kansas suggests it is unfair to require the state to select sources and conduct four-factor analyses in order to determine if existing limits and/or controls are sufficient, or if additional controls are needed for reasonable progress. Kansas believes that surrounding states should first match Kansas’s emission reductions before Kansas is required to consider further controls. However, there is ample information presented by the state to show that sources in Kansas do impact nearby Class I Areas and the state could have selected the visibility impairing sources in Kansas for further analysis. This fact remains true regardless of whether a neighboring state contributes more. Neither the statute nor the RHR contemplate “emission control inequity” as a justification for a state not to select sources and evaluate existing and potential control measures, considering the four statutory factors.

As stated above, impacts from individual Kansas’s sources ranged from 0.01% to 0.84% of the total estimated impact.<sup>36</sup> Moreover, the 2017 RHR recognized the possibility that smaller in-state sources may need to be selected and evaluated for control measures as a part of the reasonable progress analysis in order to address the state’s visibility impact to Class I Areas. This was further clarified in the 2021 Clarifications memo where the EPA stated 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.”<sup>37</sup> States should not use large out-of-state sources to exclude contributions from relatively smaller but still important in-state sources.<sup>38</sup> States

basis to select a different, smaller, or larger set of sources.

<sup>36</sup> Based upon the GenSARA AOI work. See the July 28th, 2021 Kansas submission, Appendix 6, included in the docket for this action. For Hercules Glades Wilderness Area, Missouri; Arkansas and Missouri each have greater than twenty-five percent impact; Oklahoma, Illinois, Texas, and Kentucky each have between ten and four percent impact; and Iowa, Kansas, Tennessee, Louisiana, and Nebraska each have between three and one percent impact.

<sup>37</sup> Responses to Comments on Protection of Visibility: Amendments to Requirements for States Plans; Proposed Rule (81 FR 26942, May 4, 2016) at 87–88, available at <https://www.regulations.gov/document/EPA-HQ-OAR-2015-0531-0635>.

<sup>38</sup> 2021 Clarifications Memo at 4.

with relatively small sources compared to their neighbors should nonetheless select their largest in-state sources.<sup>39</sup>

Therefore, despite the fact that surrounding states contribute a larger percentage of visibility impairment to a specific Class I Area compared to Kansas, that does not mean that Kansas’s contributions to visibility impairment are insignificant. On the contrary, the fact that Kansas contributes to visibility impacts to Class I Areas, even at the levels that it does, is evidence that sources in Kansas should be evaluated, including consideration of the four factors, to determine whether cost effective controls for those sources exist and to determine measures that are necessary to make reasonable progress.

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 addition to not selecting sources for a four-factor analysis, Kansas also did not evaluate whether the continued implementation of a source’s existing measures is necessary for reasonable progress. Kansas therefore did not provide a reasonable rationale to support its conclusion that for the second planning period, no additional measures are necessary for its LTS, despite outlining seven Class I Areas where its emissions impact visibility.

Kansas also argues that because of the SO<sub>2</sub> reductions it has achieved in the first planning period compared to other states, Kansas’s contribution to impairment in Class I Areas is therefore insignificant. The EPA acknowledges that Kansas made significant reductions in SO<sub>2</sub> emissions in the first planning period and that surrounding states have a larger total of SO<sub>2</sub> emissions, but neither the Regional Haze Rule nor the CAA allow a state to not select sources, nor consider the four factors, in reliance on their previous planning period reductions or due to higher emissions in other states. This was further clarified in the 2021 Clarifications memo where the EPA stated 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.<sup>40</sup>

A source’s visibility impact relative to a state’s total contribution to visibility impairment is relevant to ensuring that

<sup>39</sup> Id.

<sup>40</sup> 2021 Clarifications Memo at 13.

a state is addressing its own contribution regardless of what other states are doing.<sup>41</sup>

Therefore, the EPA does not find it reasonable for Kansas to not select sources and evaluate potential control measures, without consider the four factors in the CAA and EPA’s regulations to determine what cost-effective measures, if any, are necessary to make reasonable progress toward the national goal, and thus need to be a part of the state’s LTS.

Kansas failed to “evaluate and determine the 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 outlined this fact during the public comment period of Kansas’s draft SIP submittal.<sup>42</sup> In Kansas’s response to our comments, it declaratively states it cannot consider the four factors without selecting sources. Providing a long-term strategy for making reasonable progress toward the national goal, including consideration of the four factors, is a statutory requirement for every state, one that does not go away by a state simply deciding, without analyses, that doing so would lead to insignificant results.<sup>43</sup> The EPA discusses a state not selecting sources in both the 2019 Guidance and the 2021 Clarification Memo. As the EPA stated in the 2019 Guidance, a state must explain how the decision to bring forth no sources is consistent with the CAA’s requirements that SIPs make reasonable progress toward the national goal of preventing future and remedying existing anthropogenic visibility impairment, and that reasonable progress must be determined by considering the four statutory factors.<sup>44</sup> EPA then provides

<sup>41</sup> 2021 Clarifications Memo at 15.

<sup>42</sup> See June 28, 2021 letter from Dana Skelley, Director Air and Radiation Division, EPA Region 7 to Douglas Watson Air Monitoring and Planning Section Chief, KDHE. The letter is titled “EPA Comments on KS 2nd Round RH SIP LETTERHEAD.pdf” in the docket for this action.

<sup>43</sup> See CAA sections 169A(b)(2)(B), 169A(g)(1).

<sup>44</sup> Guidance on Regional Haze State Implementation Plans for the Second Implementation Period, at 10. <https://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).

an example of how a state could make such a demonstration.<sup>45</sup>

The EPA further explained in the 2021 Clarification Memo that a state that brings no sources forward for analysis of control measures must explain how doing so is consistent with the statutory and regulatory requirements for SIPs to contain the measures necessary to make reasonable progress. In this case, the state is not merely asserting that its sources need no further controls to make reasonable progress, but that even identifying sources to analyze is a futile exercise because it is obvious that a four-factor analysis would not result in any new controls.<sup>46</sup> Kansas has not adequately supported this assertion. To reach a determination that existing measures are sufficient for Reasonable Progress, the four factors must be considered. Kansas has not provided a reasoned explanation for how not selecting sources and not considering the four factors, is consistent with the statute and the RHR. Further, Kansas has not shown that further reductions of visibility impairing pollutants are not reasonable, and has not explained how its approach, which fails to consider the four factors, is consistent with the CAA and RHR. The State is required to consider the four factors to determine what, if any, measures are necessary for reasonable progress and must be included in the state's long-term strategy and regulatory portion of the SIP submission. For Kansas, given the state has numerous sources emitting visibility-impairing pollutants that may impact Class I Areas, the State's approach is unsupported.

Kansas failed to consider the four statutory factors for any sources, thereby not providing the required analysis to support a conclusion that no additional measures are necessary for reasonable progress in its LTS. Therefore, Kansas does not establish 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.<sup>47</sup> Therefore, the SIP submission does not meet the regional haze requirements, nor requirements of the CAA. Specifically, as described in detail above, the SIP submission does not meet the statutory requirements in CAA section 169A(b)(2)(B) to contain a LTS 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 lack of source selection, evaluation of emissions measures considering the four factors, and related inadequate documentation of the analyses results in not meeting the regulatory requirements in § 51.308(f)(2), 51.308(f)(2)(i), and 51.308(f)(2)(iii). Therefore, the EPA is proposing to disapprove Kansas's Regional Haze SIP submission.

**b. Additional Long-Term Strategy Requirements**

The consultation requirements of § 51.308(f)(2)(ii) provides 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, respectively.

Section 51.308(f)(2)(ii)(C) speaks to what happens if states cannot agree on what measures are necessary to make reasonable progress.

Kansas included documentation of its CenSARA calls that occurred from January 2020 to July 2020. Kansas contacted the states of Colorado and New Mexico in May 2020. Kansas's consultation documentation is free of any state disagreeing with or providing comment on Kansas's approach on its LTS. However, for the reasons outlined throughout this document, the EPA cannot approve Kansas's consultation requirements because the consultation was based on a SIP that did not meet the required statutory elements.

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 12-month exemption period for newly submitted data.

Kansas included emissions information from the most recent year in its submittal.<sup>48</sup> Kansas included emission totals for NH<sub>3</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, VOC, and NO<sub>x</sub>. Kansas grouped the emissions by: Natural Sources, Wild and Prescribed Fires, Residential Wood Combustion, Agricultural Fires, Agricultural NH<sub>3</sub> Emissions, the Oil and Gas Industry, Electric Generating Units (EGUs), Industry other than Oil and Gas and EGUs, Airports, Rail, Marine, Onroad, and Nonroad. Kansas included emissions 2011 through 2017. Kansas used the National Emissions Inventory for 2011, 2014, 2017; the EPA 2016 modeling inventory for 2016; and the Kansas Emission Inventory for 2012, 2013, and 2017.<sup>49</sup>

TABLE 1—KANSAS ANTHROPOGENIC NO<sub>x</sub> EMISSIONS

Section	Pollutant	2014	2015	2016	2017	2018
Oil and Gas .....	NO <sub>x</sub> .....	62,100	57,172	49,832	52,141	46,008
Other Industry .....	NO <sub>x</sub> .....	47,617	45,064	41,759	41,460	38,531
Onroad .....	NO <sub>x</sub> .....	73,361	64,648	54,097	50,897	41,264
Rail .....	NO <sub>x</sub> .....	29,313	26,344	21,770	23,617	19,845
EGU .....	NO <sub>x</sub> .....	26,681	18,030	15,231	13,378	14,455
Nonroad .....	NO <sub>x</sub> .....	32,011	28,948	25,373	23,846	20,528
Airports .....	NO <sub>x</sub> .....	1,740	1,764	1,811	1,764	1,799
Ag Fire .....	NO <sub>x</sub> .....	2,531	1,717	593	709	709
Residential Wood .....	NO <sub>x</sub> .....	368	361	378	297	302

<sup>45</sup>Id.

<sup>46</sup> Clarifications Regarding Regional Haze State Implementation Plans for the Second Implementation Period at 5 and 6. <https://www.epa.gov/system/files/documents/2021-07/clarifications-regarding-regional-haze-state-implementation-plans-for-the-second->

*implementation-period.pdf*. The EPA Office of Air Quality Planning and Standards, Research Triangle Park (July 8, 2021).

<sup>47</sup> See 40 CFR 51.308(f)(2).

<sup>48</sup> See the July 28th, 2021 Kansas submission, Appendix 9, included in the docket for this action.

<sup>49</sup> Kansas did not have emission inventories for 2015 and 2018 and instead estimated emissions using a statistical method, the "least squares" method. Kansas does not explain in its submission why it is missing data from 2015 and 2018.

TABLE 1—KANSAS ANTHROPOGENIC NO<sub>x</sub> EMISSIONS—Continued

Section	Pollutant	2014	2015	2016	2017	2018
Marine .....	NO <sub>x</sub> .....	16	8	0	.....	.....

From July 28th, 2021 Kansas submission, Appendix 9.

TABLE 2—KANSAS ANTHROPOGENIC SO<sub>2</sub> EMISSIONS

Section	Pollutant	2014	2015	2016	2017	2018
Other Industry .....	SO <sub>2</sub> .....	7,352	6,904	6,381	6,157	5,671
EGU .....	SO <sub>2</sub> .....	31,541	13,858	7,137	5,558	5,450
Airports .....	SO <sub>2</sub> .....	176	182	192	186	194
Onroad .....	SO <sub>2</sub> .....	293	290	294	271	271
Ag Fire .....	SO <sub>2</sub> .....	660	433	123	145	145
Residential Wood .....	SO <sub>2</sub> .....	107	102	107	68	68
Oil and Gas .....	SO <sub>2</sub> .....	108	89	63	67	44
Nonroad .....	SO <sub>2</sub> .....	59	50	37	38	27
Rail .....	SO <sub>2</sub> .....	18	16	14	16	14

From July 28th, 2021 Kansas submission, Appendix 9.

As summarized above, the state provided emissions inventory information by sector and 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. However, because the State did not conduct the proper analyses to determine what measures are necessary for reasonable progress, it is not clear how this emissions data was used in the submission to fulfill the regional haze requirements, including documentation of the technical basis for determining the emissions measures that are necessary for reasonable progress. Therefore, as outlined throughout this document, the EPA cannot approve the regulatory requirements under § 51.308(f)(2)(iii) because Kansas’s SIP did not meet the required statutory elements.

*G. Reasonable Progress Goals*

Section 51.308(f)(3) contains the requirements pertaining to RPGs for each Class I Area. As noted previously, most of regulatory requirements in § 51.308(f)(3) do not apply to states without Class I Areas. However, § 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.

At the time Kansas submitted its SIP, this provision did not apply because the states with Class I Areas that are affected by Kansas sources did not submit any RPGs that are above the respective URPs. Because we are

disapproving the Kansas SIP, if Kansas chooses to submit a revised SIP to the EPA, it should re-evaluate whether 40 CFR 51.308(f)(3)(ii)(B) applies to Kansas.

*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 subsection 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. As noted previously, most of regulatory requirements in § 51.308(f)(6) do not apply to states without Class I Areas.

However, § 51.308(f)(6)(iii) and (f)(6)(v) apply to all states that have emissions that contribute to a Class I Area, including Kansas. 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)(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 and estimates of future projected emissions. It also requires a commitment to update the inventory periodically. 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.

Kansas generally included details on the emissions and monitoring data they used to estimate their visibility contribution to out-of-state Class I Areas, to address § 51.308(f)(6)(iii). To address § 51.308(f)(6)(v), Kansas included emissions information from the most recent triennial inventory year available (2017)<sup>50</sup>. Kansas also included future projections for 2023 and 2028 and committed to update the inventory periodically.

However, as mentioned above, because the State did not conduct the proper analyses to determine what measures are necessary for reasonable progress, and did not satisfy the regional haze statutory requirements, the EPA is not approving these regulatory requirements at this time. The EPA is not approving these regulatory requirements because they do not contain measures that strengthen the existing regional haze SIP, or the SIP generally.

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

Section 51.308(f)(5) requires that periodic comprehensive revisions of states’ Regional Haze plans also address

<sup>50</sup> See the July 28th, 2021 Kansas submission, Appendix 9, included in the docket for this action.

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, § 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 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.

As noted previously, § 51.308(g)(3) does not apply to states without Class I Areas. With respect to the rest of the § 51.308(g) requirements, Kansas included a description of the status of the implementation of all measures included in Kansas'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 Kansas's SIP submission did not meet the required statutory or regulatory requirements, the EPA is not approving these regulatory requirements at this time. The EPA is not approving these regulatory

requirements because they do not contain measures that strengthen the regional haze SIP, or the SIP generally.

#### *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 LTS. 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.

Kansas included summaries of its consultation with various FLMs. On January 14, 2021, the NPS deferred consultation to other FLMs. In February and March of 2021, Kansas had a video call and email exchanges with the FS. Kansas included the comments from the FS and its responses. On February 19, 2021, Kansas had a video call with the FWS. Kansas included the comments from FWS and its responses. While Kansas 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 be required to again satisfy the FLM consultation requirements under § 51.308(i)(2). Therefore, the EPA cannot approve Kansas's consultation requirements because Kansas's consultation was based on a SIP that did not meet the

required statutory and regulatory requirements.

#### **VI. What action is the EPA taking?**

The EPA is proposing to disapprove the Kansas SIP submission relating to Regional Haze for the second planning period received on July 28, 2021, 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 Kansas failed to consider the four statutory factors, thereby not including a LTS that includes measures necessary for reasonable progress in its second planning period SIP submission, Kansas'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 above, the SIP submission does not meet the statutory requirements in CAA section 169A(b)(2)(B) to contain a LTS 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 lack of source selection, evaluation of emissions measures considering the four factors, and related inadequate documentation results in the Kansas submission not meeting the regulatory requirements in § 51.308(f)(2), 51.308(f)(2)(i), and 51.308(f)(2)(iii).

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 Kansas. Final rulemaking 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 Act 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. This action proposes to disapprove the state submittal as not meeting Federal requirements and does not impose additional requirements. For that reason, this 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);

- Is not subject to requirements of the National Technology Transfer and

Advancement Act (NTTA) because this rulemaking does not involve technical standards; and

- Executive Order 12898 (Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, Feb. 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.” The Kansas Department of Health and the Environment 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.

- This action does not have tribal implications as specified in Executive Order 13175. This action does not apply on any Indian reservation land, any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, or non-reservation areas of Indian country. 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.

Dated: December 19, 2023.

**Meghan A. McCollister,**

*Regional Administrator, Region 7.*

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