



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R01-OAR-2025-0915 and EPA-R01-OAR-2020-0562; FRL-13065-01-R1]

Air Plan Approval; Rhode Island; Regional Haze State Implementation Plan for the Second Implementation Period; Prong 4 (Visibility) for the 2015 8-Hour Ozone National Ambient Air Quality Standard

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve the regional haze state implementation plan (SIP) revision submitted by Rhode Island on March 7, 2025, as satisfying applicable requirements under the Clean Air Act (CAA) and EPA's Regional Haze Rule (RHR) for the program's second implementation period. Rhode Island's SIP submission addresses the requirement that states must periodically revise their long-term strategies for making reasonable progress towards the national goal of preventing any future, and remedying any existing, anthropogenic impairment of visibility, including regional haze, in mandatory Class I Federal areas. The SIP submission also addresses other applicable requirements for the second implementation period of the regional haze program. EPA is also proposing to approve the remaining element of Rhode Island's September 23, 2020, infrastructure SIP submittal for the 2015 ozone National Ambient Air Quality Standards (NAAQS). The proposed approval of Rhode Island's second implementation period regional haze plan addresses infrastructure SIP requirements related to visibility protection. The EPA is taking this action pursuant to sections 110 and 169A of the Clean Air Act.

DATES: Written comments must be received on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R01-OAR-2025-0915 at <https://www.regulations.gov>. For comments submitted at Regulations.gov, follow the online

instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. For either manner of submission, the EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the “**FOR FURTHER INFORMATION CONTACT**” section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>.

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I. What Action is the EPA Proposing?

On March 7, 2025, the Rhode Island Department of Environmental Management (RIDEM) submitted a revision to its SIP to address regional haze for the second implementation period. RIDEM made this SIP submission to satisfy the requirements of the CAA's regional haze program pursuant to CAA sections 169A and 169B and 40 CFR 51.308. The EPA is proposing to find that the Rhode Island regional haze SIP submission for the second implementation period meets the applicable statutory and regulatory requirements and thus proposes to approve Rhode Island's submission into its SIP.

On September 23, 2020, RIDEM submitted a SIP revision addressing, among other CAA requirements, the CAA section 110(a)(2)(D)(i)(II) visibility protection requirements for the 2015 ozone NAAQS. EPA is proposing to find that, with the approval of the state's regional haze plan, the SIP will contain adequate provisions to satisfy the requirements of CAA section 110(a)(2)(D)(i)(II) relating to visibility protection.

II. Background and Requirements for Regional Haze Plans

A detailed history and background of the regional haze program is provided in multiple prior EPA proposal actions.¹ For additional background on the 2017 RHR revisions, please refer to Section III. Overview of Visibility Protection Statutory Authority, Regulation, and Implementation of “Protection of Visibility: Amendments to Requirements for State Plans” of the 2017 RHR.² The following is an abbreviated history and background of the regional haze program and 2017 Regional Haze Rule as it applies to the current action.

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.³ CAA 169A. The CAA establishes as a national goal the “prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.” CAA 169A(a)(1).

Regional haze is visibility impairment that is produced by a multitude of anthropogenic sources and activities that are located across a broad geographic area and that emit pollutants that impair visibility. Visibility impairing pollutants include fine and coarse particulate matter (PM) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust) and their precursors (e.g., sulfur dioxide (SO₂), nitrogen oxides (NO_x), and, in some cases, volatile organic compounds (VOC) and ammonia (NH₃)). Fine particle precursors react in the atmosphere to form fine particulate matter (PM_{2.5}), which impairs visibility by scattering and absorbing light. Visibility

¹ For example, see 90 FR 13516 (March 24, 2025).

² See 82 FR 3078 (January 10, 2017).

³ 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.

impairment reduces the perception of clarity and color, as well as visible distance.⁴

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 169A(b)(2); see also 40 CFR 51.308(b), (f) (establishing submission dates for iterative regional haze SIP revisions); 64 FR at 35768, July 1, 1999.

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 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).

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),⁵ which include representation from state and tribal governments, the EPA, and federal land managers (FLMs), were developed in the lead-up to the

⁴ 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^{ext}) is a metric used to for expressing visibility and is measured in inverse megameters (Mm^{-1}). The formula for the deciview is $10 \ln(b^{ext}/10 Mm^{-1})$. 40 CFR 51.301.

⁵ RPOs are sometimes also referred to as “multi-jurisdictional organizations,” or MJOs. For the purposes of this notice, the terms RPO and MJO are synonymous.

first implementation period to address regional haze. RPOs evaluate technical information to better understand how emissions from State and Tribal land impact Class I areas across the country, pursue the development of regional strategies to reduce emissions of particulate matter and other pollutants leading to regional haze, and help states meet the consultation requirements of the RHR.

The Mid-Atlantic/Northeast Visibility Union (MANEVU), one of the five RPOs described above, is a collaborative effort of state governments, tribal governments, and various Federal agencies established to initiate and coordinate activities associated with the management of regional haze, visibility, and other air quality issues in the Mid-Atlantic and Northeast corridor of the United States. Member states and tribal governments (listed alphabetically) include Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Penobscot Indian Nation, Rhode Island, St. Regis Mohawk Tribe, and Vermont. The Federal partner members of MANEVU are EPA, U.S. National Parks Service (NPS), U.S. Fish and Wildlife Service (FWS), and U.S. Forest Service (USFS).

III. 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 long-term strategy for making reasonable progress toward meeting the national goal of remedying any existing and preventing any future anthropogenic visibility impairment in Class I areas. CAA 169A(b)(2)(B). To this end, 40 CFR 51.308(f) lays out the process by which states determine what constitutes their long-term strategies, with the order of the requirements in 40 CFR 51.308(f)(1) through (f)(3) generally mirroring the order of

the steps in the reasonable progress analysis⁶ 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 long-term strategy. See 40 CFR 51.308(f), (f)(2). For each Class I area within its borders, a state must then calculate the baseline (five-year average period of 2000-2004), current, and natural visibility conditions (*i.e.*, visibility conditions without anthropogenic visibility impairment) for that area, as well as the visibility improvement made to date and the "uniform rate of progress" (URP). The URP is 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 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. See 40 CFR 51.308(f)(1). Each state having a Class I area and/or emissions that may affect visibility in a Class I area must then develop a long-term strategy that includes the enforceable emission limitations, compliance schedules, and other measures that are necessary to make reasonable progress in such areas. A reasonable progress determination is based on applying the four factors in CAA section 169A(g)(1) to sources of visibility-impairing pollutants that the state has selected to assess for controls for the second implementation period. See 40 CFR 51.308(f)(2). Additionally, as further explained below, the RHR at 40 CFR 51.308(f)(2)(iv) separately provides five "additional factors"⁷ that states must consider in developing their long-term strategies. A state evaluates potential emission reduction measures for those selected sources and determines which are necessary to make reasonable progress. Those measures are then incorporated into the state's long-term strategy. After a state has developed its long-term

⁶ 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).

⁷ The five "additional factors" for consideration in section 51.308(f)(2)(iv) are distinct from the four factors listed in CAA section 169A(g)(1) and 40 CFR 51.308(f)(2)(i) that states must consider and apply to sources in determining reasonable progress.

strategy, it then establishes Reasonable Progress Goals (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). There are additional requirements in the rule, including FLM consultation, that apply to all visibility protection SIPs and SIP revisions. *See e.g.*, 40 CFR 51.308(i).

A. Long-Term Strategy for Regional Haze

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.⁸ This is accomplished by considering the four factors—"the costs

⁸ The CAA provides that, "[i]n determining reasonable progress there shall be taken into consideration" the four statutory factors. CAA 169A(g)(1). However, in addition to four-factor analyses for selected sources, groups of sources, or source categories, a state may also consider additional emission reduction measures for inclusion in its

of compliance, the time necessary for compliance, and the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements.” CAA 169A(g)(1). The EPA has explained that the four-factor analysis is an assessment of potential emission reduction measures (i.e., control options) for sources; “use of the terms ‘compliance’ and ‘subject to such requirements’ in section 169A(g)(1) strongly indicates that Congress intended the relevant determination to be the requirements with which sources would have to comply in order to satisfy the CAA’s reasonable progress mandate.” 82 FR at 3091. Thus, for each source it has selected for four-factor analysis,⁹ a state must consider a “meaningful set” of technically feasible control options for reducing emissions of visibility impairing pollutants. *Id.* at 3088.

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.¹⁰ Ultimately, while states have discretion to reasonably weigh the factors and to determine what level of control is needed, 40 CFR 51.308(f)(2)(i) provides that a state “must include in its implementation plan a description of . . . how the four factors were taken into consideration in selecting the measure for inclusion in its long-term strategy.”

As explained above, 40 CFR 51.308(f)(2)(i) requires states to determine the emission reduction measures for sources that are necessary to make reasonable progress by considering the four factors. Pursuant to 40 CFR 51.308(f)(2), measures that are necessary to make reasonable progress towards the national visibility goal must be included in a state’s long-term

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.

⁹ “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.

¹⁰ See, e.g., Responses to Comments on Protection of Visibility: Amendments to Requirements for State Plans; Proposed Rule (81 FR 26942, May 4, 2016), Docket Number EPA-HQ-OAR-2015-0531, U.S. Environmental Protection Agency at 186.

strategy and in its SIP.¹¹ If the outcome of a four-factor analysis is that an emissions reduction measure is necessary to make reasonable progress towards remedying existing or preventing future anthropogenic visibility impairment, that measure must be included in the SIP.

The characterization of information on each of the factors is also subject to the documentation requirement in 40 CFR 51.308(f)(2)(iii). The reasonable progress analysis is a technically complex exercise, and also a flexible one that provides states with bounded discretion to design and implement approaches appropriate to their circumstances. Given this flexibility, 40 CFR 51.308(f)(2)(iii) plays an important function in requiring a state to document the technical basis for its decision making so that the public and the EPA can comprehend and evaluate the information and analysis the state relied upon to determine what emission reduction measures must be in place to make reasonable progress. The technical documentation must include the modeling, monitoring, cost, engineering, and emissions information on which the state relied to determine the measures necessary to make reasonable progress.

Additionally, the RHR at 40 CFR 51.3108(f)(2)(iv) separately provides five “additional factors”¹² that states must consider in developing their long-term strategies: (1) Emission reductions due to ongoing air pollution control programs, including measures to address reasonably attributable visibility impairment; (2) measures to reduce the impacts of construction activities; (3) source retirement and replacement schedules; (4) basic smoke management practices for prescribed fire used for agricultural and wildland vegetation management purposes and smoke management programs; and (5) the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the long-term

¹¹ States may choose to, but are not required to, include measures in their long-term strategies beyond just the emission reduction measures that are necessary for reasonable progress. For example, states with smoke management programs may choose to submit their smoke management plans to EPA for inclusion in their SIPs but are not required to do so. See, e.g., 82 FR 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).

¹² The five “additional factors” for consideration in 40 CFR 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.

strategy.

Because the air pollution that causes regional haze crosses state boundaries, 40 CFR 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. 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). 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).

B. 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.

For the second implementation period, the RPGs are set for 2028. Reasonable progress goals are not enforceable targets. 40 CFR 51.308(f)(3)(iii). While states are not legally obligated to achieve the visibility conditions described in their RPGs, 40 CFR 51.308(f)(3)(i) requires that “[t]he long-term strategy and the reasonable progress goals must provide for an improvement in visibility for the most impaired days since the baseline period and ensure no degradation in

visibility for the clearest days since the baseline period.”

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

C. 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. 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).

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, as well as a statewide inventory documenting such emissions. 40 CFR 51.308(f)(6)(ii), (iii), (v). 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).

D. 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 long-term strategy and whether such implementation is in fact resulting in the expected visibility improvement. See 81 FR 26942, 26950 (May 4, 2016), (82 FR at 3119, January 10, 2017). To this end, every state's SIP revision for the second implementation period is required to assess changes in visibility conditions and describe the status of implementation of all measures included in the state's long-term strategy, including of Best Available Retrofit Technology (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).

E. Requirements for State and Federal Land Manager Coordination

Clean Air Act section 169A(d) requires that before a state holds a public hearing on a

proposed regional haze SIP revision, it must consult with the appropriate FLM or FLMs; pursuant to that consultation, the state must include a summary of the FLMs' conclusions and recommendations in the notice to the public. Consistent with this statutory requirement, the RHR also requires that states "provide the [FLM] with an opportunity for consultation, in person and at a point early enough in the State's policy analyses of its long-term strategy emission reduction obligation so that information and recommendations provided by the [FLM] can meaningfully inform the State's decisions on the long-term strategy." 40 CFR 51.308(i)(2). For the EPA to evaluate whether FLM consultation meeting the requirements of the RHR has occurred, the SIP submission should include documentation of the timing and content of such consultation. The SIP revision submitted to the EPA must also describe how the state addressed any comments provided by the FLMs. 40 CFR 51.308(i)(3). Finally, a SIP revision must provide procedures for continuing consultation between the state and FLMs regarding the state's visibility protection program, including development and review of SIP revisions, five-year progress reports, and the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas. 40 CFR 51.308(i)(4).

IV. The EPA's Evaluation of Rhode Island's Regional Haze Submission for the Second Implementation Period

A. Background on Rhode Island's First Implementation Period SIP Submission

RIDEM submitted its regional haze SIP for the first implementation period to the EPA on August 7, 2009. The EPA approved Rhode Island's first implementation period regional haze SIP submission on May 22, 2012 (77 FR 30214). EPA's approval included, but was not limited to, the portions of the plan that address the reasonable progress requirements, as well as Rhode Island's maintenance of nitrogen oxide emissions controls. The requirements for regional haze

SIPs for the first implementation period are contained in 40 CFR 51.308(d) and (e). 40 CFR 51.308(b). Pursuant to 40 CFR 51.308(g), Rhode Island was also responsible for submitting a five-year progress report as a SIP revision for the first implementation period, which it did on January 7, 2015. The EPA approved the progress report into the Rhode Island SIP on July 20, 2016 (81 FR 47036).

B. Rhode Island's Second Implementation Period SIP Submission and the EPA's Evaluation

In accordance with CAA section 169A and the RHR at 40 CFR 51.308(f), on March 7, 2025, Rhode Island submitted a revision to the Rhode Island SIP to address its regional haze obligations for the second implementation period, which runs through 2028. Rhode Island made a draft Regional Haze SIP submission available for public comment on January 24, 2025. Rhode Island did not receive any public comments during the public comment period, which concluded on February 28, 2025.

The following sections describe Rhode Island's SIP submission, including analyses conducted by MANEVU and Rhode Island's determinations based on those analyses, Rhode Island's assessment of progress made since the first implementation period in reducing emissions of visibility impairing pollutants, and the visibility improvement progress at nearby Class I areas. This notice also contains EPA's evaluation of Rhode Island's submission against the requirements of the CAA and RHR for the second implementation period of the regional haze program.

C. Identification of Class I Areas

Section 169A(b)(2) of the CAA requires each state in which any Class I area is located or "the emissions from which may reasonably be anticipated to cause or contribute to any

impairment of visibility” in a Class I area to have a plan for making reasonable progress toward the national visibility goal. The RHR implements this statutory requirement at 40 CFR 51.308(f), which provides that each state’s plan “must address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State that may be affected by emissions from within the State,” and (f)(2), which requires each state’s plan to include a long-term strategy that addresses regional haze in such Class I areas. Rhode Island has no mandatory Class I Federal area within its borders.

For the second implementation period, MANEVU performed technical analyses¹³ to help assess source and state-level contributions to visibility impairment and the need for interstate consultation. MANEVU used the results of these analyses to determine which states’ emissions “have a high likelihood of affecting visibility in MANEVU’s Class I areas.”¹⁴ Similar to metrics used in the first implementation period,¹⁵ MANEVU used a greater than 2 percent of sulfate plus nitrate emissions contribution criterion to determine whether emissions from individual jurisdictions within the region affected visibility in any Class I areas. The MANEVU analyses for the second implementation period used a combination of data analysis techniques, including emissions data, distance from Class I areas, wind trajectories, and CALPUFF dispersion modeling. Although many of the analyses focused only on SO₂ emissions and resultant particulate sulfate contributions to visibility impairment, some also incorporated NO_x emissions to estimate particulate nitrate contributions.

One MANEVU analysis used for contribution assessment was CALPUFF air dispersion modeling. The CALPUFF model was used to estimate sulfate and nitrate formation and transport in MANEVU and nearby regions originating from large electric generating unit (EGU) point sources and other large industrial and institutional sources in the eastern and central United

¹³ The contribution assessment methodologies for MANEVU Class I areas are summarized in appendix 16 “Selection of States for MANEVU Regional Haze Consultation (2018).”

¹⁴ *Id.*

¹⁵ See docket EPA-R01-2025-0915 for MANEVU supporting materials.

States. Information from an initial round of CALPUFF modeling was collated for the 444 EGUs that were determined to warrant further scrutiny based on their emissions of SO₂ and NO_x. The list of EGUs was based on an enhanced “Q/d” analysis¹⁶ that considered recent SO₂ emissions in the eastern United States and an analysis that adjusted previous 2002 MANEVU CALPUFF modeling by applying a ratio of 2011 to 2002 SO₂ emissions. This list of sources was then enhanced by including the top five SO₂ and NO_x emission sources for 2011 for each state included in the modeling domain. A total of 311 EGU stacks (as opposed to individual units) were included in the CALPUFF modeling analysis. Initial information was also collected on the 50 industrial and institutional sources that, according to 2011 Q/d analysis, contributed the most to visibility impact in each Class I area. The ultimate CALPUFF modeling run included a total of 311 EGU stacks and 82 industrial facilities. The summary report for the CALPUFF modeling included the top 10 most impacting EGUs and the top 5 most impacting industrial/institutional sources for each Class I area and compiled those results into a ranked list of the most impacting EGUs and industrial sources at MANEVU Class I areas.¹⁷ Overall, MANEVU found that emission sources located close to Class I areas typically show higher visibility impacts than similarly sized facilities further away. However, visibility degradation appears to be dominated by the more distant emission sources due to their larger emissions. CALPUFF modeling did not include any individual EGU or industrial/institutional point sources in Rhode Island because the state’s SO₂ and NO_x emissions were much lower than the other regional sources considered in the CALPUFF modeling analysis.¹⁸

The second MANEVU contribution analysis used a meteorologically weighted Q/d calculation to assess states’ contributions to visibility impairment at MANEVU Class I areas.¹⁹

¹⁶ “Q/d” is emissions (Q) in tons per year, typically of one or a combination of visibility-impairing pollutants, divided by distance to a class I area (d) in kilometers. The resulting ratio is commonly used as a metric to assess a source’s potential visibility impacts on a particular class I area.

¹⁷ See appendix 8 “2016 MANEVU Source Contribution Modeling Report - CALPUFF Modeling of Large Electrical Generating Units and Industrial Sources” and appendix 9 “MANEVU Updated Q/d*C Contribution Assessment.”

¹⁸ RI Regional Haze SIP submittal at 72.

¹⁹ See appendix 9 “MANEVU Updated Q/d*C Contribution Assessment.”

This analysis focused predominantly on SO₂ emissions and used cumulative SO₂ emissions from a source and a state for the variable “Q,” and the distance of the source or state to the IMPROVE monitor receptor at a Class I area as “d.” The result is then multiplied by a constant (C_i), which is determined based on the prevailing wind patterns. MANEVU selected a meteorologically weighted Q/d analysis as an inexpensive initial screening tool that could easily be repeated to determine which states, sectors, or sources have a larger relative impact and warrant further analysis. Although MANEVU did not originally estimate nitrate impacts, the MANEVU Q/d analysis was subsequently extended to account for nitrate contributions from NO_x emissions and to approximate the nitrate impacts from area and mobile sources. MANEVU therefore developed a ratio of nitrate-to-sulfate impacts based on the previously described CALPUFF modeling and applied those to the sulfate Q/d results in order to derive nitrate contribution estimates. Several states, such as Rhode Island, did not have CALPUFF nitrate-to-sulfate ratio results because there was no point sources modeled with CALPUFF in the state.

In order to develop a final set of contribution estimates, MANEVU weighted the results from both the Q/d and CALPUFF analyses. The MANEVU mass-weighted sulfate and nitrate contribution results were reported for the MANEVU Class I areas. (The Q/d summary report included results for several non-MANEVU areas as well). If a state’s contribution to sulfate and nitrate concentrations at a particular Class I area was 2 percent or greater, MANEVU regarded that state as contributing to visibility impairment in that area. According to MANEVU’s analyses, Rhode Island’s highest percent mass-weighted sulfate and nitrate contribution was estimated to be 0.5% at Acadia National Park in Maine, with contributions ranging from 0.1% to 0.3% at the other Class I areas in the MANEVU region.²⁰

The EPA concluded in the 1999 RHR that “all [s]tates contain sources whose emissions are reasonably anticipated to contribute to regional haze in a Class I area,” 64 FR at 35721, and this determination was not changed in the 2017 RHR. Critically, the statute and regulation both

²⁰ RI Regional Haze SIP Submittal at p. 74.

require that the cause-or-contribute assessment consider all emissions of visibility-impairing pollutants from a state, as opposed to emissions of a particular pollutant or emissions from a certain set of sources. The screening analyses on which MANEVU relied are useful for certain purposes. MANEVU used information from its technical analysis to rank the largest contributing states to sulfate and nitrate impairment in the seven MANEVU Class I areas and three additional, nearby Class I areas.²¹ The rankings were used to determine upwind states that MANEVU deemed important to include in state-to-state consultation based on an identified visibility impact screening threshold. Additionally, large individual source impacts were used to target MANEVU control analysis “Asks”²² of states and sources both within and upwind of MANEVU.²³ The EPA finds the nature of the analyses generally appropriate to support decisions on states with which to consult.

With regard to the analysis and determinations regarding Rhode Island’s contribution to visibility impairment at out-of-state Class I areas, the MANEVU technical work focuses on the magnitude of visibility impacts from certain Rhode Island emissions on nearby Class I areas. The MANEVU contribution screening results estimate Rhode Island’s highest percent mass-weighted sulfate and nitrate contribution to be 0.5% at Acadia National Park, with the Brigantine Wilderness Area being the next closest Class I area impacted by Rhode Island emissions at 0.3%.²⁴ However, the MANEVU analyses did not account for all emissions and all components of visibility impairment (e.g., primary PM emissions, and impairment from fine PM, elemental carbon, and organic carbon). In addition, Q/d analyses with a relatively simplistic accounting for wind trajectories and CALPUFF applied to a very limited set of EGUs and major industrial

²¹ The Class I areas analyzed were Acadia National Park in Maine, Brigantine Wilderness in New Jersey, Great Gulf Wilderness and Presidential Range - Dry River Wilderness in New Hampshire, Lye Brook Wilderness in Vermont, Moosehorn Wilderness in Maine, Roosevelt Campobello International Park in New Brunswick, Shenandoah National Park in Virginia, James River Face Wilderness in Virginia, and Dolly Sods/Otter Creek Wildernesses in West Virginia.

²² As explained more fully in Section IV.E.a, MANEVU refers to each of the components of its overall strategy as an “Ask” of its member states.

²³ The MANEVU consultation report explains that “[t]he objective of this technical work was to identify states and sources from which MANEVU will pursue further analysis. This screening was intended to identify which states to invite to consultation, not a definitive list of which states are contributing.”

²⁴ See Table 5-1 of the RI Regional Haze SIP submittal.

sources of SO₂ and NO_x are not scientifically rigorous tools capable of evaluating contribution to visibility impairment from all emissions in a state. The EPA acknowledges that the contribution to visibility impairment from Rhode Island's emissions at nearby out-of-state Class I areas is smaller than that from numerous other MANEVU states.²⁵ While some MANEVU states noted that the contributions from several states outside the MANEVU region are significantly larger than its own, we again clarify that each state is obligated under the CAA and RHR to address regional haze visibility impairment resulting from emissions from within the state, irrespective of whether another state's contribution is greater. Additionally, we note that the 2 percent or greater sulfate-plus-nitrate threshold used to determine whether Rhode Island emissions contribute to visibility impairment at a particular Class I area may be higher than what EPA believes is an "extremely low triggering threshold" intended by the statute and regulations. In sum, based on the information provided, it is clear that emissions from Rhode Island have relatively small contributions to Class I areas. However, due to the low triggering threshold implied by the Rule and the lack of rigorous modeling analyses, we do not necessarily agree with the level of the State's 2% contribution threshold.

In any event, pursuant to the regulatory requirements, Rhode Island took part in the emission control strategy consultation process as a member of MANEVU. As part of that process, MANEVU developed a set of emissions reduction measures identified as being necessary to make reasonable progress in the seven MANEVU Class I areas. This strategy consists of six Asks for states within MANEVU and five Asks for states outside the region that were found to impact visibility at Class I areas within MANEVU.²⁶ Rhode Island's submission discusses each of the Asks and explains why or why not each is applicable and how it has complied with the relevant components of the emissions control strategy the MANEVU states

²⁵ Because MANEVU did not include all Rhode Island's emissions or contributions to visibility impairment in its analysis, we cannot definitively state that Rhode Island's contribution to visibility impairment is not the most significant. However, that is very likely the case.

²⁶ See Section 6.2 of the RI Regional Haze SIP.

laid out. Rhode Island worked with MANEVU to determine potential reasonable measures that could be implemented by 2028, considering the cost of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts, and the remaining useful life of any potentially affected sources.²⁷ As discussed in further detail below, the EPA is proposing to find that Rhode Island has submitted a regional haze plan that meets the requirements of 40 CFR 51.308(f)(2) related to the development of a long-term strategy. Thus, we propose to find that Rhode Island has satisfied the applicable requirements for making reasonable progress towards natural visibility conditions in Class I areas that may be affected by emissions from the state.

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

Section 51.308(f)(1) requires states to determine the following for “each mandatory Class I Federal area located within the State”: baseline visibility conditions for the most impaired and clearest days, natural visibility conditions for the most impaired and clearest days, progress to date for the most impaired and clearest days, the differences between current visibility conditions and natural visibility conditions, and the URP. This section also provides the option for states to propose adjustments to the URP line for a Class I area to account for visibility impacts from anthropogenic sources outside the United States and/or the impacts from wildland prescribed fires that were conducted for certain, specified objectives. 40 CFR 51.308(f)(1)(vi)(B).

Rhode Island has no Class I areas. MANEVU Class I areas, as well as other nearby Class I areas that MANEVU examined, are listed below. MANEVU used certain areas (as noted below) to represent nearby Class I areas where monitors do not exist.²⁸ The MANEVU Class I Areas are Lye Brook Wilderness Area (Vermont), Great Gulf Wilderness Area (New Hampshire)

²⁷ See 42 USC 7491(g)(1); 40 CFR 40 CFR 51.308(f)(2)(i).

²⁸ See appendix 22 “Mid-Atlantic/Northeast U.S. Visibility Data, 2004-2019 (2nd RH SIP Metrics) January 21, 2021, revision” at p. 2-2.

(used to represent Presidential Range - Dry River Wilderness Area), Presidential Range - Dry River Wilderness Area (New Hampshire), Acadia National Park (Maine), Moosehorn Wilderness Area (Maine) (used to represent Roosevelt Campobello International Park), Roosevelt Campobello International Park (New Brunswick, Canada), and Brigantine Wilderness Area (New Jersey). Nearby Class I Areas consist of Dolly Sods Wilderness Area (West Virginia) (used to represent Otter Creek Wilderness Area), Otter Creek Wilderness Area (West Virginia), Shenandoah National Park (Virginia), and James River Face Wilderness Area (Virginia).

E. Long-Term Strategy for Regional Haze

a. Rhode Island's Response to the Six MANEVU Asks

Each state having a Class I area within its borders or emissions that may affect visibility in a Class I area must develop a long-term strategy for making reasonable progress towards the national visibility goal. CAA § 169A(b)(2)(B). After considering the four statutory factors, all measures that are determined to be necessary to make reasonable progress must be in the long-term strategy. In developing its long-term strategy, a state must also consider the five additional factors in 40 CFR 51.308(f)(2)(iv). As part of its reasonable progress determinations, the state must describe the criteria used to determine which sources or group of sources were evaluated (i.e., subjected to four-factor analysis) for the second implementation period and how the four factors were taken into consideration in selecting the emission reduction measures for inclusion in the long-term strategy. 40 CFR 51.308(f)(2)(i).

The following section summarizes how Rhode Island's SIP submission addressed the requirements of 40 CFR 51.308(f)(2)(i); specifically, it describes MANEVU's development of the six Asks and how Rhode Island addressed each. The regulations Rhode Island identifies as a result of its responses to the six Asks comprise Rhode Island's long-term strategy for the second planning period to address regional haze visibility impairment for each mandatory Class I

Federal area that may be affected by emissions from Rhode Island. In Section IV.E.b. of the NPRM, EPA evaluates Rhode Island's compliance with the requirements of 40 CFR 51.308(f)(2)(i).

States may rely on technical information developed by the RPOs of which they are members to select sources for four-factor analysis and to conduct that analysis, as well as to satisfy the documentation requirements under 40 CFR 51.308(f). Where an RPO has performed source selection and/or four-factor analyses (or considered the five additional factors in 40 CFR 51.308(f)(2)(iv)) for its member states, those states may rely on the RPO's analyses for the purpose of satisfying the requirements of 40 CFR 51.308(f)(2)(i) so long as the states have a reasonable basis to do so and all state participants in the RPO process have approved the technical analyses. 40 CFR 51.308(f)(2)(iii). States may also satisfy the requirement of 40 CFR 51.308(f)(2)(ii) to engage in interstate consultation with other states that have emissions that are reasonably anticipated to contribute to visibility impairment in a given Class I area under the auspices of intra- and inter-RPO engagement.

Rhode Island is a member of the MANEVU RPO and participated in the RPO's regional approach to developing a strategy for making reasonable progress towards the national visibility goal in the MANEVU Class I areas. MANEVU's strategy includes a combination of: (1) measures for certain source sectors and groups of sectors that the RPO determined were reasonable for states to pursue, and (2) a request for member states to conduct four-factor analyses for individual sources that it identified as contributing to visibility impairment. MANEVU refers to each of the components of its overall strategy as an "Ask" of its member states. On August 25, 2017, the Executive Director of MANEVU, on behalf of the MANEVU states and tribal nations, signed a statement that identifies six emission reduction measures that comprise the Asks for the second implementation period.²⁹ The Asks were "designed to identify reasonable emission reduction strategies that must be addressed by the states and tribal nations of

²⁹ See appendix 20 "MANEVU Regional Haze Consultation Report and Consultation Documentation."

MANEVU through their regional haze SIP updates.”³⁰ The statement explains that “[i]f any State cannot agree with or complete a Class I State’s Asks, the State must describe the actions taken to resolve the disagreement in the Regional Haze SIP.”³¹

MANEVU’s recommendations as to the appropriate control measures were based on technical analyses documented in the RPO’s reports and included as appendices to, or referenced in, Rhode Island’s regional haze SIP submission. One of the initial steps of MANEVU’s technical analysis was to determine which visibility-impairing pollutants should be the focus of its efforts for the second implementation period. In the first implementation period, MANEVU determined that sulfates were the most significant visibility impairing pollutant at the region’s Class I areas. To determine the impact of certain pollutants on visibility at Class I areas for the purpose of second implementation period planning, MANEVU conducted an analysis comparing the pollutant contribution on the clearest and most impaired days in the baseline period (2000-2004) to the most recent period (2012-2016)³² at MANEVU and nearby Class I areas. MANEVU found that while SO₂ emissions were decreasing and visibility was improving, sulfates still made up the most significant contribution to visibility impairment at MANEVU and nearby Class I areas. According to the analysis, NO_x emissions have begun to play a more significant role in visibility impacts in recent years as SO₂ emissions have decreased. The technical analyses used by Rhode Island are included in its submission and are as follows:³³

- 2016 Updates to the Assessment of Reasonable Progress for Regional Haze in MANEVU Class I Areas (Appendix 6);
- Impact of Wintertime SCR/SNCR Optimization on Visibility Impairing Nitrate Precursor Emissions. November 2017 (Appendix 17);
- High Electric Demand Days and Visibility Impairment in MANEVU. December

³⁰ *Id.*

³¹ *Id.*

³² The period of 2012-2016 was the most recent period for which data were available at the time of analysis. RI also included 2015-2019 data.

³³ These documents can be found in the docket for this rulemaking.

2017 (Appendix 18);

- Benefits of Combined Heat and Power Systems for Reducing Pollutant Emissions in MANEVU States. March 2016 (Appendix 7);
- 2016 MANEVU Source Contribution Modeling Report – CALPUFF Modeling of Large Electrical Generating Units and Industrial Sources. April 4, 2017 (Appendix 8);
- Contribution Assessment Preliminary Inventory Analysis. October 10, 2016 (Appendix 11);
- Four-Factor Data Collection Memo. March 2017 (Appendix 14);
- Status of the Top 167 Stacks from the 2008 MANEVU Ask. July 2016 (Appendix 10);
- Mid-Atlantic/Northeast U.S. Visibility Data, 2004-2019 (2nd RH SIP Metrics) (Appendix 22);
- Selection of States for MANEVU Regional Haze Consultation 2018 (Appendix 16);
- Ozone Transport Commission/MANEVU 2011 Based Modeling Platform Support Document October (2018 Update) (Appendix 21).

MANEVU gathered information on each of the four statutory factors for six source sectors it determined, based on an examination of annual emission inventories, “had emissions [of SO₂ and/or NO_x] that were reasonably] anticipated to contribute to visibility degradation in MANEVU:” electric generating units (EGUs), industrial/commercial/institutional boilers (ICI boilers), cement kilns, heating oil, residential wood combustion, and outdoor wood combustion.³⁴ MANEVU also collected data on individual sources within the EGU, ICI boiler, and cement kiln sectors.³⁵ Information for the six sectors included explanations of technically

³⁴ See appendix 14, MANEVU “Four-Factor Data Collection” Memo.

³⁵ See appendix 6 “2016 Updates to the Assessment of Reasonable Progress for Regional Haze in MANEVU Class I Areas.”

feasible control options for SO₂ or NO_x, illustrative cost-effectiveness estimates for a range of model units and control options, sector-wide cost considerations, potential time frames for compliance with control options, potential energy and non-air-quality environmental impacts of certain control options, and how the remaining useful lives of sources might be considered in a control analysis.³⁶ Source-specific data included SO₂ emissions³⁷ and existing controls³⁸ for certain existing EGUs, ICI boilers, and cement kilns. MANEVU considered this information on the four factors as well as the analyses developed by the RPO's Technical Support Committee when it determined specific emission reduction measures that were found to be reasonable for certain sources within two of the sectors it had examined—EGUs and ICI boilers.³⁹ The Asks were based on this analysis and looked to either optimize the use of existing controls, have states conduct further analysis on EGU or ICI boilers with considerable visibility impacts, implement low sulfur fuel standards, or lock-in lower emission rates.

MANEVU Ask 1 is “ensuring the most effective use of control technologies on a year-round basis” at EGUs with a nameplate capacity larger than or equal to 25 megawatts (MW) with already installed NO_x and/or SO₂ controls in order to consistently minimize emissions of haze precursors or obtain equivalent alternative emission reductions. MANEVU observed that EGUs often only run NO_x emissions controls to comply with ozone season trading programs and consequently, NO_x sources may be uncontrolled during the winter and non-peak summer days. MANEVU found that: (1) running existing installed controls [selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR)] is one of the most cost-effective ways to control NO_x emissions from EGUs; and (2) that running existing controls year-round could substantially reduce the NO_x emissions in many of the states upwind of Class I areas in MANEVU that lead to

³⁶ *Id.*

³⁷ See appendix 14, MANEVU “Four-Factor Data Collection” Memo.

³⁸ See appendix 10 “Status of the Top 167 EGUs that Contributed to Visibility Impairment at MANEVU Class I Areas During the 2008 Regional Haze Implementation Period.”

³⁹ See appendix 14, MANEVU “Four-Factor Data Collection” Memo; appendix 6 “2016 Updates to the Assessment of Reasonable Progress for Regional Haze in MANEVU Class I Areas.”

visibility impairment during the winter from nitrates.⁴⁰ MANEVU included this as an emission management strategy because large EGUs had already been identified as dominant contributors to visibility impairment and the low cost of running already installed controls made it reasonable.

Rhode Island identified 5 EGU units that meet the criteria of 25 MW or larger with installed controls.⁴¹ All of the identified units are natural gas-fired and use SCR to control nitrogen oxide emissions. Rhode Island explained that all of the identified units are Title V sources that were subject to prevention of significant deterioration (PSD) permitting requirements. The permits require these facilities to operate their controls year-round except during start up. The requirements and enforceability are reviewed at least once every five years, the sources are inspected every two years, and the permits are federally enforceable. Since these controls are already in effect and are required to operate year-round, Rhode Island concluded that it has therefore met the requirements of Ask 1. Rhode Island also noted that a sixth natural gas-fired EGU—Pawtucket Power—permanently shut down in 2021 and that its title V permit was revoked.⁴² As of 2025, the facility is completely decommissioned and demolished.⁴³

MANEVU Ask 2 consists of a request that states “Emission sources modeled by MANEVU that have the potential for 3.0 Mm⁻¹ or greater visibility impacts at any MANEVU Class I area, as identified by MANEVU contribution analyses . . . perform a four-factor analysis for reasonable installation or upgrade to emission controls.” Based on an examination of visibility impact modeling results, MANEVU concluded that a 3.0 Mm⁻¹ cutoff captured an appropriately-sized group of sources contributing the largest percentage of visibility impairing pollutants to Class I areas in the MANEVU states.⁴⁴ For units identified for the Ask 2 analysis, MANEVU requested that states determine reasonable controls through the consideration of the

⁴⁰ See appendix 17 "Impact of Wintertime SCR/SNCR Optimization on Visibility Impairing Nitrate Precursor Emissions."

⁴¹ See Table 6-1 of the RI Regional Haze submittal.

⁴² Documents related to the permanent cease of operations of Pawtucket Power can be found in the docket of this rulemaking.

⁴³ See photos related to the demolition of Pawtucket Power at this link and click “See more dates”:
<https://maps.app.goo.gl/Z4iV2i83bABW45G29>.

⁴⁴ Units with smaller contributions of visibility-impairing pollutants were captured by other Asks.

four factors on a state-by-state and unit-by-unit basis. MANEVU's analysis for Ask 2 did not identify any units in Rhode Island with a potential impact of at least 3.0 Mm^{-1} .⁴⁵ In its submittal, Rhode Island presents further information about the State's largest NO_x and SO_2 sources and the controls each employs. Based on 2017 emissions data, only four sources in the State had SO_2 emissions greater than 10 tpy, with the smallest source at about 15 tpy and the largest just under 69 tpy. Only eight sources had NO_x emissions greater than 50 tpy, with the lowest at about 52 tpy and the largest at 244 tpy.⁴⁶ Based on the lack of sources at or above the 3.0 Mm^{-1} threshold, further illustrated by the generally small size of its largest sources, Rhode Island concluded that it satisfied Ask 2.

MANEVU Ask 3 is: "Each MANEVU State that has not yet fully adopted an ultra-low sulfur fuel oil standard as requested by MANEVU in 2007 - pursue this standard as expeditiously as possible and before 2028, depending on supply availability, where the standards are as follows: a. distillate oil to 0.0015% sulfur by weight (15 ppm); b. #4 residual oil within a range of 0.25 to 0.5% sulfur by weight; and c. #6 residual oil within a range of 0.3 to 0.5% sulfur by weight." Effective June 24, 2014, RIDEM Office of Air Resources (OAR) finalized amendments to 250-RICR-120-05-8: *Sulfur Content of Fuels*. The first phase of limitations lowered the allowable concentration of sulfur in distillate oil and biodiesel to 0.05% (500 ppm) by weight, effective July 1, 2014. In 2018, the beginning of the second implementation period, the second phase of limitations further lowered the limit to 0.0015% (15 ppm) by weight. In addition, the second phase also lowered the sulfur limit for residual oil and alternative fuel to 0.5% (5000 ppm) by weight. EPA approved 250-RICR-120-05-8: *Sulfur Content of Fuels* into Rhode Island's SIP on August 13, 2018 [83 FR 39888]. Since Rhode Island has fully implemented an ultra-low sulfur fuel oil standard, the State therefore concluded that it met Ask 3.

MANEVU Ask 4 requests states to update permits to "lock in" lower emissions rates for

⁴⁵ See appendix 15 "MANEVU Concerning a Course of Action with MANEVU toward Assuring Reasonable Progress for the 2nd Regional Haze Implementation Period (2018- 2028)."

⁴⁶ RI Regional Haze SIP submittal at p. 80-95.

NO_x, SO₂, and PM at emissions sources larger than 250 million British Thermal Units (MMBtu) per hour heat input that have switched operations to lower emitting fuels. The threshold of 250 MMBTU/hour was based on prior BART analysis. There aren't any coal burning units or non-EGU units having a heat input capacity larger than 250 MMBtu/hr in Rhode Island. While there are three EGUs in Rhode Island above this threshold that continue to burn both natural gas and oil, their oil use is generally limited to periods when natural gas is not available. Rhode Island explains that these sources are subject to Title V permitting requirements under 250-RICR-120-05-29, which specify allowable operating scenarios, and fuels fired. Rhode Island further explains that these sources are reviewed every five years, and if a change in fuel type may increase emissions, or is otherwise not allowed by the permit, it triggers requirements for a new or modified preconstruction permit. Rhode Island concluded that it therefore meets the requirements of Ask 4.

Ask 5 requests that MANEVU states “control NO_x emissions for peaking combustion turbines that have the potential to operate on high electric demand days” by either: (1) Meeting NO_x emissions standards specified in the Ask for turbines that run on natural gas and fuel oil, (2) performing a four-factor analysis for reasonable installation of or upgrade to emission controls, or (3) obtaining equivalent emission reductions on high electric demand days.⁴⁷ The Ask requests states to strive for NO_x emission standards of no greater than 25 ppm for natural gas and 42 ppm for fuel oil, or at a minimum, NO_x emissions standards of no greater than 42 ppm for natural gas and 96 ppm at for fuel oil. MANEVU defined a “peaking combustion turbine” for this Ask to be “a turbine capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2007, is used to generate electricity all or part of which is delivered to the electric power distribution grid for commercial sale and that operated less than or equal to an average of 1752 hours (or 20%) per year during 2014 to 2016.” After reviewing permit files, air pollution inventory files, RI Office of Energy Resources (OER) data, and Energy Information

⁴⁷ See appendix 20 “MANEVU Regional Haze Consultation Report and Consultation Documentation.”

Administration (EIA) data, RIDEM OAR did not identify any turbines in the State that met the criteria of the Ask.⁴⁸ Therefore, Rhode Island concluded that it satisfies the requirements of Ask 5.

The last Ask for states within MANEVU (Ask 6) requests states to report in their regional haze SIPs about programs that decrease energy demand and increase the use of combined heat and power (CHP) and other distributed generation technologies such as fuel cells, wind and solar. Rhode Island reports that its OER continuously develops, administers, and monitors a variety of programs focused on energy efficiency, renewable energy, alternative fuels and energy assurance. Based on 2021 data, Rhode Island's energy efficiency programming achieved savings of 1.8% of electricity consumption and 0.74% of natural gas consumption, and in 2022, Rhode Island was ranked 7th most energy-efficient state in the country.⁴⁹ Rhode Island utilizes the "Lead by Example" initiative, which coordinates state-level efforts to reduce energy consumption and greenhouse gas (GHG) emissions. For example, the Public School Energy Equity Program has led to the energy improvement of 28 schools in Rhode Island, with a lifetime estimated energy savings of 43,238,884 kWh. Under Rhode Island General Law Chapter 46-12.24.2, The Efficient Buildings Fund has provided approximately 70 million dollars for energy efficiency and renewable energy projects as of 2022. Rhode Island has also implemented programs which contribute to reductions in transportation related emissions. For example, Electrify RI increases the availability and accessibility of electric vehicle charging stations. Additionally, the DRIVE EV program offers rebate incentives for the purchase of electric vehicles and was recently expanded to include electric bicycles via the Erika Niedowski Memorial Electric Bicycle Rebate Program. Rhode Island is also part of the Regional Greenhouse Gas Initiative (RGGI). MANEVU found that the RGGI cooperative results in substantial reductions in emissions of SO₂ and NO_x from the member states.

⁴⁸ RI Regional Haze SIP submittal at p. 97

⁴⁹ See *Id.*; RI OER 2022 Annual Report at p. 7, which can be found in the docket of this rulemaking.

Continued growth is expected in both distributed generation and combined heat and power plants in Rhode Island. Currently, there are seven distributed generators in Rhode Island and several emergency generators which have submitted permit applications to convert to distributed generators. The units are subject to federal emissions standards as required by permit and capped at 500 hours per year. There are also four combined heat and power plants generating approximately 40 MW of electricity. Due to the initiatives described above,⁵⁰ Rhode Island concluded that it satisfies Ask 6.

In summary, Rhode Island identified the following SIP-approved programs as necessary for reasonable progress and therefore included in the State's long term strategy: 250-RICR-120-05-8, fuel sulfur content limitations; 250-RICR-120-05-27, control of nitrogen oxides emissions from fuel-burning equipment at major stationary sources of nitrogen oxides; the 2021 retirement of Pawtucket Power and the revocation of its title V Permit.⁵¹

b. The EPA's Evaluation of Rhode Island's Response to the Six MANEVU Asks and Compliance with 40 CFR 51.308(f)(2)(i)

The EPA is proposing to find that Rhode Island has satisfied the requirements of 40 CFR 51.308(f)(2)(i) related to evaluating sources and determining the emission reduction measures that are necessary to make reasonable progress by considering the four statutory factors. We are proposing to find that Rhode Island has satisfied the requirement to consider the four statutory factors through its analysis and actions to address Ask 3. Additionally, in line with recent proposals from the EPA,⁵² where visibility conditions for a Class I area impacted by a state are below the URP and the state has considered the four statutory factors, the state will have presumptively demonstrated reasonable progress for the second planning period for that

⁵⁰ More information on the energy programs described can be found in the RI Regional Haze SIP Submittal p. 97-101.

⁵¹ Documents related to the permanent cease of operations of Pawtucket Power can be found in the docket of this rulemaking.

⁵² See proposed rulemakings published April 18, 2025 (90 FR 16478) and May 14, 2025 (90 FR 20425).

area. While Rhode Island's regional haze plan is not relying on this policy, the current visibility conditions of the Class I areas in or adjacent to the MANEVU region are below their respective URP glidepaths, providing further support for approval.

As explained above, Rhode Island relied on MANEVU's technical analyses and framework (i.e., the Asks) to select sources and develop its long-term strategy. MANEVU conducted an inventory analysis to identify the source sectors that produced the greatest amount of SO₂ and NO_x emissions in 2011; inventory data were also projected to 2018. Based on this analysis, MANEVU identified the top-emitting sectors for each of the two pollutants, which for SO₂ include coal-fired EGUs, industrial boilers, oil-fired EGUs, and oil-fired area sources including residential, commercial, and industrial sources. The largest sources of NO_x include onroad vehicles, nonroad vehicles, and EGUs.⁵³ The RPO's documentation explains that "[EGUs] emitting SO₂ and NO_x and industrial point sources emitting SO₂ were found to be sectors with high emissions that warranted further scrutiny. Mobile sources were not considered in this analysis because any ask concerning mobile sources would be made to EPA and not during the intra-RPO and inter-RPO consultation process among the states and tribes."⁵⁴ EPA proposes to find that Rhode Island reasonably evaluated the two pollutants—SO₂ and NO_x—that currently drive visibility impairment within the MANEVU region and that it adequately explained and supported its decision to focus on these two pollutants through its reliance on the MANEVU technical analyses cited in its submission.

Section 51.308(f)(2)(i) requires states to evaluate sources or groups of sources and determine the emission reduction measures that are necessary to make reasonable progress by considering the four statutory factors. As explained previously, the MANEVU Asks are a mix of measures for sectors and groups of sources identified as reasonable for states to address in their

⁵³ See "Contributions to Regional Haze in the Northeast and Mid-Atlantic United States: Mid-Atlantic/Northeast Visibility Union (MANEVU) Contribution Assessment. NESCAUM. August 2006." A copy of this document can be found in the docket of this rulemaking.

⁵⁴ See appendix 20 "MANEVU Regional Haze Consultation Report and Consultation Documentation."

regional haze plans. Several of the Asks include analyses of emissions control strategies, and Rhode Island identified numerous existing controls that are in the SIP and are included in the long-term strategy. For example, Rhode Island's response to Ask 2 examines the state's largest emitters and their current emissions limitations and control equipment. While MANEVU formulated the Asks to be "reasonable emission reduction strategies" to control emissions of visibility impairing pollutants,⁵⁵ Rhode Island's response to Ask 3 (adoption of ultra-low sulfur fuel oil) engages with the requirement that states determine the emission reduction measures that are necessary to make reasonable progress through consideration of the four factors. As laid out in further detail below, the EPA is proposing to find that MANEVU's analyses conducted to support emission reduction measures, including Ask 3, satisfy the requirement of 40 CFR 51.308(f)(2)(i). The emission reduction measures that are necessary to make reasonable progress must be included in the long-term strategy, i.e., in Rhode Island's SIP. 40 CFR 51.308(f)(2).

Rhode Island asserted that it satisfies Ask 1 because the state permits for the five EGUs covered by this Ask include year-round emission limits and require that controls (SCR in each case) be run at all times the units are in operation and emitting air pollutants. As each of these units are at Title V sources, the requirements are federally enforceable, and Rhode Island renews the permits every five years. EPA thus agrees that Rhode Island satisfied Ask 1.

Ask 2 addresses the sources MANEVU determined have the potential for larger than, or equal to, 3.0 Mm⁻¹ visibility impact at any MANEVU Class I area; the Ask requests MANEVU states to conduct four-factor analyses for the specified sources within their borders. This Ask explicitly engages with the statutory and regulatory requirement to determine the emissions reduction measures necessary to make reasonable progress based on the four factors; MANEVU considered it "reasonable to have the greatest contributors to visibility impairment conduct a four-factor analysis that would determine whether emission control measures should be pursued

⁵⁵ *Id.*

and what would be reasonable for each source.”⁵⁶

The RHR recognizes that, due to the nature of regional haze visibility impairment, numerous and sometimes relatively small sources may need to be selected and evaluated for control measures in order to make reasonable progress.⁵⁷ In this case, applying the 3.0 Mm⁻¹ threshold did not identify any sources in Rhode Island (and only 22 across the entire MANEVU region). We note, however, that the 3.0 Mm⁻¹ threshold used in this Ask is only one part of the MANEVU source identification process and that being below this threshold did not necessarily exclude a source from additional review in connection with another Ask.

As part of the requirement to evaluate and determine the emissions reduction measures that are necessary to make reasonable progress, Rhode Island reviewed existing controls for the state’s top emitting sources. Using 2017 emissions data, Rhode Island evaluated its EGU and non-EGU SO₂ sources with emissions greater than 10 tpy and NO_x sources with emissions greater than 50 tpy.⁵⁸ Rhode Island Hospital, the state’s top SO₂ source (~69 tpy) and also the state’s seventh highest NO_x-emitting source (~57 tpy), operates five boilers which are equipped with various control measures.⁵⁹ The next top three SO₂ sources collectively accounted for less than 100 tons in 2017.⁶⁰ Rhode Island’s top NO_x emitter, Manchester Street Station, emitted 243.66 tons of NO_x in 2017.⁶¹ The facility operates three combustion turbines, which are equipped with SCR. Rhode Island’s next highest NO_x emitter, Ocean State Power, accounted for 156.55 tons in 2017.⁶² Ocean State Power operates four combustion turbines, which are also equipped with SCR.⁶³ Rhode Island’s next top six NO_x emitters collectively accounted for 376 tons in 2017.⁶⁴ Each facility identified in Rhode Island’s review is a title V source with an active

⁵⁶ *Id.*

⁵⁷ See Responses to Comments on Protection of Visibility: Amendments to Requirements for State Plans; Proposed Rule (81 FR 26942, May 4, 2016), Docket Number EPA-HQ-OAR-2015-0531, U.S. Environmental Protection Agency at 87-88.

⁵⁸ RI Regional Haze SIP submission at p. 80-95.

⁵⁹ *Id.* at 80 (Table 6-2).

⁶⁰ *Id.* Value calculated from the addition of the tpy values of the remaining three facilities.

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.* at 82.

⁶⁴ *Id.* at 80 (Table 6-3). Value calculated from the addition of the tpy values of the remaining six facilities.

operating permit that must be updated and renewed every five years with public involvement.⁶⁵ Each unit is subject to all applicable Federal and State regulations as identified in each source's enforceable permit. EPA is basing the proposed finding on the state's examination of its largest operating sources at the time of SIP submission, and on the emissions from and controls that apply to those sources, as well as on Rhode Island's existing SIP-approved NO_x and SO₂ rules that effectively control emissions from the largest contributing stationary-source sectors.

Ask 3, which addresses the sulfur content of heating oil used in MANEVU states, is based on a four-factor analysis for the heating oil sulfur reduction regulations contained in that Ask;⁶⁶ specifically, reducing the sulfur content of distillate oil to 15 ppm. The analysis started with an assessment of the costs of retrofitting refineries to produce 15 ppm heating oil in sufficient quantities to support implementation of the standard, as well as the impacts of requiring a reduction in sulfur content on consumer prices. The analysis noted that, as a result of previous EPA rulemakings to reduce the sulfur content of onroad and nonroad-fuels to 15 ppm, technologies are currently available to achieve sulfur reductions and many refiners are already meeting this standard, meaning that the capital investments for further reductions in the sulfur content of heating oil are expected to be relatively low compared to costs incurred in the past. The analysis also examined, by way of example, the impacts of New York's existing 15 ppm sulfur requirements on heating oil prices and concluded that the cost associated with reducing sulfur was relatively small in terms of the absolute price of heating oil compared to the magnitude of volatility in crude oil prices. It also noted that the slight price premium is compensated by cost savings due to the benefits of lower-sulfur fuels in terms of equipment life and maintenance and fuel stability. Consideration of the time necessary for compliance with a 15-ppm sulfur standard was accomplished through a discussion of the amount of time refiners

⁶⁵ The most recent Title V permit for each source can be found at: <https://dem.ri.gov/environmental-protection-bureau/air-resources/air-permits/operating-permits>.

⁶⁶ See appendix 6, "2016 Updates to the Assessment of Reasonable Progress for Regional Haze in MANEVU Class I Areas."

had needed to comply with the EPA's onroad and nonroad fuel 15 ppm requirement, and the implications existing refinery capacity and distribution infrastructure may have for compliance times with a 15-ppm heating oil standard. The analysis concluded that with phased-in timing for states that have not yet adopted a 15 ppm heating oil standard there "appears to be sufficient time to allow refiners to add any additional heating oil capacity that may be required."⁶⁷ The analysis further noted the beneficial energy and non-air quality environmental impacts of a 15 ppm sulfur heating oil requirement and that reducing sulfur content may also have a salutary impact on the remaining useful life of residential furnaces and boilers.⁶⁸

The EPA agrees that Rhode Island reasonably relied on MANEVU's four-factor analysis for a low-sulfur fuel oil regulation, which engaged with each of the statutory factors and explained how the information supported a conclusion that a 15 ppm-sulfur fuel oil standard for fuel oils is reasonable. As noted above, RIDEM OAR finalized amendments to 250-RICR-120-05-8: *Sulfur Content of Fuels*, effective June 24, 2014. The first phase of limitations lowered the allowable concentration of sulfur in distillate oil and biodiesel to 0.05% (500 ppm) by weight, effective July 1, 2014. Beginning July 1, 2018, the limit was further lowered to 0.0015% (15 ppm) by weight. In addition, the second phase also lowered the sulfur limit for residual oil and alternative fuel to 0.5% (5000 ppm) by weight. EPA approved 250-RICR-120-05-8: *Sulfur Content of Fuels* into Rhode Island's SIP on August 13, 2018. 83 FR 39888. Since Rhode Island has fully implemented an ultra-low sulfur fuel oil standard consistent with Ask 3's sulfur content standards for the three types of fuel oils (distillate oil, #4 residual oil, #6 residual oil), EPA therefore agrees that Rhode Island satisfied Ask 3.

Rhode Island concluded that it satisfies the requirements of Ask 4, which requests that MANEVU states pursue updating permits, enforceable agreements, and/or rules to lock-in lower emission rates for SO₂, NO_x and PM at EGUs and other sources larger than 250 MMBtu per hour

⁶⁷ *Id.* at 8-7.

⁶⁸ *Id.* at 8-8.

that have switched operations to lower emitting fuels. Rhode Island does not have any large, coal-burning EGUs or non-EGUs meeting the threshold of this Ask. While Rhode Island identified three EGUs that have a heat input capacity greater than the 250 MMBtu/hr threshold and that can burn both natural gas and oil, as noted above, their oil use is generally limited by permit to periods when natural gas is not available. In New England, this is generally limited to cold weather periods when natural gas is diverted from EGUs for use in residential heating.⁶⁹ Rhode Island also explained that these three EGUs are already subject to title V permitting requirements under 250-RICR-120-05-29, “Operating Permits,” which are renewed every five years and specify allowable operating scenarios, which includes type of fuels fired. Any change in fuel type that is not allowed by permit would trigger requirements for a preconstruction permit. EPA acknowledges Rhode Island’s conclusion that it meets the requirements of Ask 4.

Ask 5 addresses NO_x emissions from peaking combustion turbines that have the potential to operate on high electric demand days. RIDEM reviewed permit files, air pollution inventory files, RI OER data, and U.S. EIA data, and did not identify any turbines that meet the criteria of this Ask. That is, Rhode Island does not have any units rated at 15MW or higher that were operational prior to 2007 that sold electricity to the grid and operated less than an average of 1752 hours per year during 2014-2016. EPA agrees that Rhode Island reasonably demonstrated that it meets Ask 5.

Finally, regarding Ask 6, Rhode Island pointed to various policy efforts to increase energy efficiency and reduce reliance on fossil fuels for energy. Rhode Island is nationally recognized as a leader in energy efficiency. As discussed in Section IV.E.a., Rhode Island’s OER spearheads a multitude of major programs focused on energy efficiency, renewable energy, alternative fuels and energy assurance. EPA agrees that Rhode Island has satisfied the request of Ask 6 to consider and report in its SIP measures or programs related to energy efficiency,

⁶⁹ See, e.g., *ISO New England 2024/2025 Winter Outlook*, ISO New England (Nov. 7, 2024). A copy of this document can be found in the docket of this rulemaking.

cogeneration, and other clean distributed generation technologies.

In sum, Rhode Island identified several mechanisms for controlling pollutants that impair visibility – including its regulation limiting sulfur content in fuels (which is in Rhode Island’s SIP), as well as the continued implementation of NO_x RACT for point sources. EPA proposes to find that Rhode Island has reasonably concluded that these measures are necessary to make reasonable progress for the second planning period.

In addition to these SIP-approved measures, Rhode Island also identified other federally enforceable and permanent controls, including its mobile source control measures, as key emission reduction strategies. Onroad mobile emissions reductions are due in part to Rhode Island’s adoption of more stringent motor vehicle emission standard regulations.⁷⁰ These SIP-approved standards ensure that vehicles sold in the state meet increasingly stringent emissions requirements through time. Other efforts to reduce air pollution from onroad mobile sources include adoption of inspection and maintenance of vehicle emissions control systems.

EPA is therefore proposing to find the state’s approach meets the statutory and regulatory requirements for several reasons. Specifically, EPA is proposing to find—based on Rhode Island’s participation in the MANEVU planning process, how it has addressed the Asks, and the EPA’s assessment of Rhode Island’s emissions and point sources—that Rhode Island has complied with the requirements of section 51.308(f)(2)(i). Rhode Island’s application of MANEVU Ask 3 engages with the requirement that states evaluate and determine the emission reduction measures necessary to make reasonable progress by considering the four statutory factors.

In determining the emissions reduction measures necessary to make reasonable progress, Rhode Island reasonably evaluated and explained its decision to focus on SO₂ and NO_x to address visibility impairment within the MANEVU region. Rhode Island adequately supported that decision through reasonable reliance on the MANEVU technical analyses cited in its

⁷⁰ See <https://rules.sos.ri.gov/Regulations/Part/250-120-05-37>.

submission. EPA notes that MANEVU concluded that sulfates from SO₂ emissions were still the primary driver of visibility impairment in the second implementation period and that MANEVU conducted a four-factor analysis to support Ask 3, which requests that states pursue ultra-low sulfur fuel oil standards to address SO₂ emissions. Rhode Island's SIP-approved sulfur in fuel rule, 250-RICR-120-05-8: *Sulfur Content of Fuels*, sets stringent limits for sulfur content and SO₂ emissions for fuels. Rhode Island's rule controls SO₂ emissions from area and point sources by limiting the sulfur content of distillate oil and biodiesel to 0.0015% and the sulfur content of residual oils and alternative fuels to 0.5%. EPA previously approved these requirements into Rhode Island's SIP, and they went into effect in July 2018. Rhode Island's submittal also includes evaluations of the state's largest SO₂ and NO_x sources which demonstrate that these facilities have relatively small emissions of NO_x and SO₂ and are already subject to stringent emission control measures. For instance, while the state contains no ozone nonattainment areas, Rhode Island is nonetheless required to apply NO_x RACT to certain sources, owing to its location within the Ozone Transport Region. EPA approved Rhode Island's latest NO_x RACT rule in 2020,⁷¹ which has been employed on Rhode Island's highest NO_x emitting point source, Manchester Street Station, among others. As discussed previously, continued implementation of federal mobile source programs will provide further reductions in NO_x emissions from Rhode Island. Moreover, the FLMs responsible for the Class I areas most impacted by Rhode Island emissions sources (Acadia National Park, Lye Brook, Brigantine Wilderness, etc.)⁷² did not identify any sources in Rhode Island for four-factor analysis or request any revisions or other analyses.⁷³ In particular, the US Forest Service stated that it had "conducted a substantive review" of Rhode Island's plan, was "satisfied" with it, and "offer[ed] no suggestions for change."⁷⁴ Similarly, the National Park Service commended Rhode Island on its draft submission

⁷¹ See 85 FR 54924.

⁷² RI Regional Haze SIP submission at p. 74 (Table 5-1).

⁷³ See appendix 23 "USDA Comment Letter RI Regional Haze SIP" and appendix 24 "National Park Service Comment on Proposed RI Regional Haze SIP."

⁷⁴ See appendix 23 "USDA Comment Letter RI Regional Haze SIP."

and stated it had no further conclusions or recommendations.⁷⁵ In short, Rhode Island's SO₂ and NO_x emissions are already low, are controlled by EPA-approved limits in the SIP (as a result of Regional Haze and other CAA requirements), and have overall small contributions to visibility impairment in Class I areas. The projected 2028 visibility conditions for Class I areas influenced by emissions from Rhode Island sources are all below the URP, and EPA proposes to find that Rhode Island's SIP submittal satisfies the requirements that states determine the emission reduction measures that are necessary to make reasonable progress by considering the four factors and that their long-term strategies include the enforceable emission limitations, compliance schedules, and other measures necessary to make reasonable progress.

c. Additional Long-Term Strategy Requirements

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

Rhode Island participated in and provided documentation of the MANEVU intra- and inter-RPO consultation processes, which included consulting with both MANEVU and non-MANEVU states about emissions from Rhode Island reasonably anticipated to contribute to visibility impairment in Class I areas within the MANEVU area and in adjacent areas. The consultations addressed developing coordinated emission management strategies containing the emission reductions necessary to make reasonable progress at the Class I areas impacted by

⁷⁵ See appendix 24 "National Park Service Comment on Proposed RI Regional Haze SIP."

emissions from States within MANEVU. Rhode Island addressed impacts to the MANEVU Class I areas by providing information on the enforceable measures it has in place that satisfy each Ask.⁷⁶ Rhode Island included in its Regional Haze SIP submittal all measures agreed to during state-to-state consultations and emission reduction measures identified by other states. While Rhode Island did not receive any requests from non-MANEVU states during its public comment period to consider additional measures to address visibility impairment in Class I areas outside MANEVU, MANEVU documented issues some non-MANEVU states raised about MANEVU's analyses during consultation. For instance, MANEVU noted in its Consultation Report that upwind states expressed concern regarding the analyses the RPO utilized for the selection of states for the consultation. MANEVU agreed that these tools, as all models, have their limitations, but nonetheless deemed them appropriate. Additionally, there were several comments regarding the choice of the 2011 modeling base year. MANEVU agreed that the choice of base year is critical to the outcome of the study. MANEVU acknowledged that there were newer versions of the emission inventories and the need to use the best available inventory for each analysis. MANEVU, however, concluded that the selected inventories were appropriate for the analysis.⁷⁷ Additionally, upwind states noted that they would not be able to address the MANEVU Asks until they finalize their SIPs. MANEVU believed the assumption of the implementation of the Asks from upwind states in its 2028 control case modeling was reasonable, and Rhode Island included both the 2028 base case and control case modeling results in its SIP, representing visibility conditions at the Class 1 areas in the MANU-VU States assuming upwind states do not and do implement the Asks, respectively.

In sum, Rhode Island participated in the MANEVU intra- and inter-RPO consultation and included in its SIP submittal the measures identified and agreed to during those consultations, thereby satisfying 40 CFR 51.308(f)(2)(ii)(A) and (B). Rhode Island satisfied 40 CFR

⁷⁶ See appendix 20 "MANEVU Regional Haze Consultation Report and Consultation Documentation."

⁷⁷ *Id.* at p. 47.

51.308(f)(2)(ii)(C) by participating in MANEVU's consultation process, which documented the disagreements between the upwind states and MANEVU and explained MANEVU's reasoning on each of the disputed issues. Based on the entirety of MANEVU's intra- and inter-RPO consultation, including the MANEVU responses to other states' concerns and various technical analyses in the SIP submission, we propose to determine that Rhode Island has satisfied the consultation requirements of section 51.308(f)(2)(ii).

The documentation requirement of 40 CFR 51.308(f)(2)(iii) provides that states may meet their obligations to document the technical bases on which they are relying to determine the emission reductions measures that are necessary to make reasonable progress through an RPO, as long as the process has been "approved by all State participants." As explained above, Rhode Island chose to rely on MANEVU's technical information, modeling, and analysis to support development of its long-term strategy. The MANEVU technical analyses on which Rhode Island relied are listed in the state's SIP submission and include source contribution assessments, information on each of the four factors and visibility modeling information for certain EGUs, and evaluations of emission reduction strategies for specific source categories. Rhode Island also provided information to further demonstrate the technical bases and emission information it relied on to determine the emission reductions measures that are necessary to make reasonable progress. Based on the documentation provided by the state, we propose to find Rhode Island satisfies this requirement of 40 CFR 51.308(f)(2)(iii).

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. Rhode Island drafted the plan using the 2017 NEI emission data for NO_x, SO₂, PM, VOCs and NH₃. Additionally, Rhode Island included Air Markets Program Data (AMPD) emissions for NO_x and SO₂ until 2019. The 2020 NEI indicates relatively minor increases in NO_x emissions

from certain EGUs. Rhode Island, as indicated throughout this notice, evaluated these facilities and in-place NO_x control measures. For example, while Ocean State Power experienced a small increase in NO_x emissions totaling around 10 tpy, this facility is already equipped with SCR. Despite minor increases from certain sources, NO_x EGU emissions in Rhode Island experienced a minor decline overall in 2020. A portion of this reduction came from Rhode Island's largest NO_x emitter, Manchester Street Station, with NO_x emissions falling nearly 40 tpy from 2017 to 2020.⁷⁸ **The 2020 NEI also shows a minor net increase in EGU emissions of SO₂. Rhode Island, however, as previously discussed in the evaluation of Ask 3, continues to employ the use of low sulfur fuel oil, which the state adopted based off consideration of the four factors.** It is likely, given the State's overall relatively small emissions and the level of control through existing programs, that consideration of the 2020 NEI would not have affected Rhode Island's source selection and analysis. Based on Rhode Island's consideration and analysis of the emission data in its SIP submittal, the EPA proposes to find that Rhode Island has satisfied the emissions information requirement in 40 CFR 51.308(f)(2)(iii).

We also propose to find that Rhode Island reasonably considered the five additional factors in 40 CFR 51.308(f)(2)(iv) in developing its long-term strategy. Pursuant to 40 CFR 51.308(f)(2)(iv)(A), Rhode Island noted that existing and ongoing state and federal emission control programs that contribute to emission reductions through 2028 would impact

⁷⁸ See 2020 NEI Report https://awsedap.epa.gov/public/extensions/nei_report_2020/dashboard.html#point-db.

emissions of visibility impairing pollutants from point and nonpoint sources in the second implementation period. RIDEM OAR considered these reductions as part of the MANE-VU process that generated emission inventories and projections that reflect ongoing programs and were incorporated into the modeling for the RPGs (see appendix 5 of the state's submittal for controls included in the inventories and Section 2 of the state's submittal for the RPGs). These also were considered in the emissions rates used in the CALPUFF and Q/d screening models. Additionally, Rhode Island notes the state's commitment to reduce mobile source emissions through numerous programs and regulations that will have a positive visibility impact both in and out of Rhode Island.

Rhode Island's consideration of measures to mitigate the impacts of construction activities as required by 40 CFR 51.308(f)(2)(iv)(B) includes, in section 6.5 of its SIP submission, discussion of Rhode Island regulation 250-RICR-120-05-5, "Fugitive Dust," which regulates dust from construction and demolition activities. The regulation provides that "No person shall cause or permit any materials, including but not limited to sand, gravel, soil, aggregate and any other organic or inorganic solid matter capable of releasing dust, to be handled, transported, mined, quarried, stored or otherwise utilized in any way so as to cause airborne particulate matter to travel beyond the property line of the emission source without taking adequate precautions to prevent particulate matter from becoming airborne." Rhode Island also considered this regulation's role in mitigating impacts from construction activities when it developed its long-term strategy for the first planning period. Rhode Island further notes that MANEVU analysis for the second implementation period found that crustal material does not play a major role in visibility impairment at Class I areas.⁷⁹ RIDEM OAR concluded that its regulations are sufficient to mitigate the impacts of construction activities.

Pursuant to 40 CFR 51.308(f)(2)(iv)(C), source retirements and replacement schedules are addressed in section 6.6 of Rhode Island's submittal. Rhode Island considered source

⁷⁹ See appendix 13, "Regional Haze Metrics Trends and HYSPLIT Trajectory Analyses," at p. 51 (May 2017).

retirements and replacements in developing the 2028 emission inventories described in Section 4 of the submittal, as described in the Gamma Inventory technical support documentation in appendix 19, and in RIDEM OAR's implementation of the 2017 MANE-VU Statement. The sources that were subsequently retired after the 2011 base year and therefore not included in the 2028 inventory are listed in Table 6-7 of the Rhode Island submittal.

In considering smoke management as required in 40 CFR 51.308(f)(2)(iv)(D), Rhode Island explained that Smoke Management Programs (SMP) are only required when smoke impacts from fires managed for resource benefits contribute significantly to regional haze.⁸⁰ The 2017 NEI indicates that prescribed forest and agricultural fires emissions in Rhode Island are very minor; the inventory estimates that those emissions from those source categories totaled 34 tons of PM₁₀, 29 tons of PM_{2.5} and 4 tons of SO₂ in 2017, which constitutes only a small portion of the total Rhode Island PM_{2.5}, PM₁₀, and SO₂ inventories (0.84%, 0.47%, 0.51%, respectively). Therefore, RIDEM OAR concludes that no substantial change has occurred that would alter the conclusions of the previous SIP regarding the sources of visibility impairment, and therefore no change is needed to make reasonable progress. EPA agrees that Rhode Island adequately considered smoke management practices as part of its submittal as required by 40 CFR 51.308(f)(2)(iv)(D).

Rhode Island considered the anticipated net effect of projected changes in point, area, and mobile source emissions over the period addressed by the LTS (i.e., 2018 - 2028) as required by 40 CFR 51.308(f)(2)(iv)(E). Rhode Island considered the MANEVU-developed inventory projections and modeling for visibility impact for 2028 that incorporated the "Asks" for MANEVU states as well as the Asks developed for upwind states and EPA/FLMs. These projections and modeling incorporated the RIDEM OAR LTS from the first implementation period with no additional regulatory action for the second implementation period. The results of that modeling are shown as RPGs in Section 2 of the submittal and are also detailed in the

⁸⁰ See section 6.7 of RI Regional Haze Submittal

presentation of RPGs in the MANE-VU visibility report.⁸¹ The 2028 inventory projections demonstrate a substantial reduction in emissions and the modeling demonstrates a substantial improvement in visibility impairment through 2028.⁸²

Because Rhode Island has reasonably considered each of the five additional factors, the EPA proposes to find that Rhode Island has satisfied the requirements of 40 CFR 51.308(f)(2)(iv).

F. Reasonable Progress Goals

Section 51.308(f)(3) contains the requirements pertaining to RPGs for each Class I area. Because Rhode Island does not host a Class I area, it is not subject to either 40 CFR 51.308(f)(3)(i) or 51.308(f)(3)(ii)(A). Section 51.308(f)(3)(ii)(B) requires that, if a state contains sources that are reasonably anticipated to contribute to visibility impairment in a Class I area in *another* state and the RPG for the most impaired days in that Class I area is above the URP glidepath, the upwind state must demonstrate that there are no additional emission reduction measures that may reasonably be anticipated to contribute to visibility impairment in the Class I area that would be reasonable to include in the long-term strategy.

None of the Class I areas in or adjacent to the MANEVU region have RPGs above their respective URP glidepath. Table 2-1 of Rhode Island's SIP submittal summarizes baseline, current, and reasonable progress goal haze index levels for class I areas in or adjacent to the MANEVU region. The table displays baseline (i.e., visibility conditions during 2000-2004), natural, and current (2015-2019) visibility conditions for the most impaired and clearest days at each area. Additionally, Table 2-1 of the submittal shows the 2028 modeled visibility values with projected controls for the most impaired days and how those values compare to the URP

⁸¹ See appendix 22 "Mid-Atlantic/Northeast U.S. Visibility Data, 2004-2017 (2nd RH SIP Metrics)." MANE-VU (prepared by Maine Department of Environmental Protection). January 21, 2021, revision.

⁸² See section 4.9 of the RI Regional Haze SIP submittal.

glidepaths for 2028. The 2028 RPGs for each Class I area are well below their respective URP glidepath. Therefore, 40 CFR 51.308(f)(3)(ii)(B) is not applicable to Rhode Island.

G. 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. Since Rhode Island does not contain any Class I areas, it is not required to submit the monitoring strategy referenced in 51.308(f)(6), nor are the requirements in 51.308(f)(6)(i), (ii), and (iv) applicable.

40 CFR 51.308(f)(6)(iii), however, applies to states with no Class I areas (such as Rhode Island) and requires them to include in their Regional Haze SIPs procedures by which monitoring data and other information are used in determining the contribution of emissions from within the state to visibility impairment at Class I areas in other states. Visibility data analysis procedures are described in the MANEVU visibility data report. Other procedures and data used for determining Rhode Island's contribution to visibility impairment are described in section 4 of the Rhode Island SIP and the MANEVU documents referenced.⁸³

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. Rhode Island provides for emissions inventories and estimates for future projected emissions by participating in the MANEVU RPO and complying with EPA's Air Emissions Reporting Rule

⁸³ See appendix 22 "Mid-Atlantic/Northeast U.S. Visibility Data, 2004-2017 (2nd RH SIP Metrics)." MANE-VU (prepared by Maine Department of Environmental Protection). January 21, 2021, revision.

(AERR). In 40 CFR part 51, subpart A, the AERR requires states to submit updated emissions inventories for criteria pollutants to EPA's Emissions Inventory System (EIS) every three years. The emission inventory data are used to develop the NEI, which provides for, among other things, a triennial state-wide inventory of pollutants that are reasonably anticipated to cause or contribute to visibility impairment.

Section 4 of Rhode Island's submission includes tables of NEI data. The source categories of the emissions inventories included are: (1) Point sources, (2) nonpoint sources, (3) nonroad mobile sources, and (4) onroad mobile sources. The point source category is further divided into AMPD point sources and non-AMPD point sources. Rhode Island included NEI emissions inventories for the following years: 2002 (one of the regional haze program baseline years), 2008, 2011, 2014, and 2017; and for the following pollutants: SO₂, NO_x, PM₁₀, PM_{2.5}, VOCs, and NH₃. Rhode Island also provided a summary of SO₂ and NO_x emissions for AMPD sources for the years 2002, 2008, 2011, 2014, and 2016-2019. Consideration of the 2020 NEI data shows small variability in emissions. However, the more recent emission data would likely not have affected Rhode Island's source selection or analysis of the already well-controlled facilities.

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.⁸⁴ Rhode Island relied on the MANEVU 2028 emissions projections for MANEVU states. MANEVU completed two 2028 projected emissions modeling cases—a 2028 base case that considers only on-the-books controls and a 2028 control case that considers implementation of the MANEVU Asks.⁸⁵ The EPA proposes to find that Rhode Island has met the requirements of 40 CFR 51.308(f)(6) as described above, including through its continued participation in the MANEVU RPO and its on-

⁸⁴ The CAA Amendments and the Air Emissions Reporting Rule (40 CFR Part 51 Subpart A), requires that Rhode Island's Office of Air Resources conduct annual inventories of air emissions from point sources and periodic inventories every three years of emissions from nonpoint (area) sources, nonroad mobile sources, and on-road mobile sources. This data is electronically submitted to EPA and is part of the triannual NEI. For further information, visit <https://dem.ri.gov/environmental-protection-bureau/air-resources/emissions-inventory>.

⁸⁵ See appendix 21 "OTC/MANEVU 2011 Based Modeling Platform Support."

going compliance with the AERR, and that no further elements are necessary at this time for Rhode Island to assess and report on visibility pursuant to 40 CFR 51.308(f)(6)(vi).

H. 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 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 any Class I area within the state and each Class I area outside the state that may be affected by emissions from within that state. Sections 51.308(g)(1) and (2) apply to all states and require a description of the status of implementation of all measures included in a state's first implementation period regional haze plan and a summary of the emission reductions achieved through implementation of those measures. Section 51.308(g)(3) applies only to states with Class I areas within their borders and requires such states to assess current visibility conditions, changes in visibility relative to baseline (2000-2004) visibility conditions, and changes in visibility conditions relative to the period addressed in the first implementation period progress report. Section 51.308(g)(4) applies to all states and requires an analysis tracking changes in emissions of pollutants contributing to visibility impairment from all sources and sectors since the period addressed by the first implementation period progress report. This provision further specifies the year or years through which the analysis must extend depending on the type of source and the platform through which its emission information is reported. Finally, 40 CFR 51.308(g)(5), which also applies to all states, requires an assessment of any significant changes in anthropogenic emissions within or outside the state that have occurred since the period addressed by the first implementation period progress report, including whether such changes were anticipated and whether they have limited or impeded expected progress towards reducing emissions and improving visibility.

Rhode Island's submission describes the status of measures of the long-term strategy from the first implementation period.⁸⁶ As a member of MANEVU, Rhode Island considered the MANEVU Asks and adopted corresponding measures into its long-term strategy for the first implementation period. The MANEVU Asks were: (1) Timely implementation of Best Available Retrofit Technology (BART) requirements; (2) EGU controls including Controls at 167 Key Sources that most affect MANEVU Class I areas; (3) Low sulfur fuel oil strategy; and (4) Continued evaluation of other control measures.

During the first planning period for regional haze, programs that were put in place focused on reducing SO₂ emissions. Effective June 24, 2014, RIDEM OAR finalized amendments to 250-RICR-120-05-8: Sulfur Content of Fuels to lower the sulfur content of fuel oil. This rule was fully implemented by July 1, 2018, and Rhode Island continues to enforce the requirements of this regulation. The other MANEVU states implemented similar rules, and the reductions achieved from these and other measures reduced sulfates formed from SO₂ emissions and led to vast improvements in visibility at the MANEVU Federal Class I Areas. Lastly, Rhode Island committed to continued evaluation of other possible control measures that would reduce haze-causing emissions in consultation with other MANE-VU states. Thus, Rhode Island met all the identified reasonable measures requested during the first implementation period. The submittal also includes periodic emission data that demonstrate a decrease in VOCs, NO_x, PM and SO₂ emissions throughout the state.

The EPA proposes to find that Rhode Island has met the requirements of 40 CFR 51.308(g)(1) and (2) because its SIP submission describes the measures included in the long-term strategy from the first implementation period, as well as the status of their implementation and the emission reductions achieved through such implementation.

Pursuant to 40 CFR 51.308(g)(4), Rhode Island provides a summary of emissions of NO_x, SO₂, PM₁₀, PM_{2.5}, VOCs, and NH₃ from all sources and activities, including from point,

⁸⁶ See Section 3 of the RI Regional Haze SIP submittal.

nonpoint, nonroad mobile, and onroad mobile sources, for the time period from 2002 to 2017, based on emission inventory information submitted pursuant to the AERR in 40 CFR part 51, subpart A. With respect to sources that report directly to EPA, Rhode Island also included AMPD state summary data for SO₂ and NO_x emissions for 2016 through 2019. The reductions achieved by Rhode Island emission control measures are seen in the emissions inventory.

Based on Rhode Island's SIP submittal, the State experienced a 50% NO_x emissions reduction from 2002 to 2017. These reductions are largely from the nonroad and onroad mobile sectors which account for 15,545 tons of NO_x reduction. As a result of Federal rules to reduce emissions from nonroad vehicles and equipment, new engine standards for nonroad vehicles and equipment have driven these reductions in the nonroad sector. Examples of regulatory programs that have reduced, and/or will continue to reduce, emissions from nonroad vehicles and equipment include *Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel*,⁸⁷ *Control of Emissions from Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters Per Cylinder*,⁸⁸ and *Control of Emissions from Nonroad Spark-Ignition Engines and Equipment*.⁸⁹ Onroad mobile emission reductions are due in part to Rhode Island's adoption of more stringent motor vehicle emission standard regulations.⁹⁰ These SIP-approved standards ensure that vehicles sold in the state meet increasingly stringent emissions requirements through time, driving emissions reductions in the onroad sector. Furthermore, NO_x emissions are expected to continue to decrease as fleet turnover occurs and the older more polluting vehicles and equipment are replaced by newer, cleaner ones.

Table 4-1 of Rhode Island's SIP submittal shows nonpoint emissions doubling from 2008 to 2011. Starting in 2008, marine vessels and underway rail emissions were included in the NEI nonpoint data category instead of the nonroad data category. However, in more recent years

⁸⁷ See 69 FR 38958.

⁸⁸ See 73 FR 37096.

⁸⁹ See 73 FR 59034.

⁹⁰ See <https://rules.sos.ri.gov/Regulations/Part/250-120-05-37>.

these nonroad sources are displaying decreases due to the above-mentioned Federal rules for new engine standards for nonroad vehicles and equipment. Most other nonpoint area source NO_x emissions, approximately 75 percent, are from residential and commercial natural gas fuel combustion for heating purposes. Additional area source NO_x emissions are from distillate fuel combustion, residential wood burning, prescribed burning and forest fires. Increases in emissions from 2011 to 2014 are due to increases in natural gas consumption and EPA methodology changes for fuel combustion emissions from boilers and engines, and for wildfires and prescribed burning.

Emissions of SO₂ have shown a significant decline of 90% in Rhode Island over the period 2002 to 2017. The reduction in point source emissions is primarily due to the revision to 250-RICR-120-05-8, Sulfur Content of Fuels which, as described previously in this notice, phased in an approach for requiring reduced sulfur content in fuel. The emission decreases in the nonroad sector from 2002 to 2008 are partly due to EPA moving the marine vessels and railroad emissions from the nonroad sector to the nonpoint sector. Subsequently, decreases in nonpoint sector emissions are mostly due to Federal rules that reduced sulfur content in nonroad mobile diesel fuel and to increased use of low sulfur distillate oil for heating. Since some components of the MANEVU low sulfur fuel strategy were not implemented until 2018, and as MANEVU states continue to adopt rules to implement the strategy, additional SO₂ emissions reductions are expected to continue.

Table 4-18 of Rhode Island's submittal shows VOC emissions from all NEI data categories for the period 2002 to 2017 in Rhode Island. VOC emissions decreased by 57%, 23,483 tons, across all NEI data categories since 2002 to 2017. Much of the decrease in VOC emissions is due to Federal and State rules for evaporative sources such as the following: portable fuel containers; architectural, industrial, and maintenance coatings; consumer products; and solvent degreasing. Evaporative VOC emissions from these types of sources are expected to continue to decline as more states adopt rules based on the Ozone Transport Commission (OTC)

Model Rules.⁹¹ Evaporative VOC emissions from onroad mobile sources have decreased due to state motor vehicle inspection and maintenance programs and the increasing prevalence of on-board refueling vapor recovery (ORVR) equipped vehicles in the fleet. VOC emissions from nonroad and onroad mobile sources are expected to continue to decrease as older, more polluting vehicles are replaced by newer, cleaner ones. Other decreases are due to state VOC RACT rules.

In Rhode Island's submittal, table 4-7 shows a summary of PM₁₀ emissions from all NEI data categories for the period from 2002 to 2017. In Rhode Island, PM₁₀ emissions steadily decreased in the point, nonpoint, and nonroad categories for this period. There was an overall reduction in PM₁₀ emissions of 21%. Most of this reduction came from the nonpoint category due to fuel switching from oil to natural gas. The variation in emissions in the nonpoint category is due to changes in calculation methodologies for residential wood burning and fugitive dust categories, which have varied significantly. The apparent increase in the onroad emissions is due to changes in emission inventory calculation methodologies, which resulted in higher particulate matter estimates.

Table 4-10 of Rhode Island's submittal shows a summary of PM_{2.5} emissions from all NEI data categories for the period from 2002 to 2017. Overall, PM_{2.5} emissions increased by 41%. However, much of this increase is due to Rhode Island not submitting PM_{2.5} data for point and nonpoint sources in 2002. Rhode Island submitted total particulate matter data in 2002 which was augmented by EPA for PM_{2.5}. Additionally, the data in Table 4-10 do not accurately reflect the reduction in PM_{2.5} emissions anticipated based on the large number of point sources that would be in the nonpoint category for fuel combustion switching from oil to natural gas. The variations in the onroad and nonpoint category are due to changes in emission inventory calculation methodologies, which resulted in higher particulate matter estimates in some years. PM_{2.5} emissions steadily decreased in the nonroad category for this period. This reduction can

⁹¹ See <https://otcair.org/materials/model-rules-and-guidelines>.

likely be attributed to new Federal engine standards for nonroad vehicles and equipment.⁹²

Table 4-21 of Rhode Island's submission shows ammonia (NH₃) emissions from all NEI data categories for the period 2002 to 2017. Though ammonia decreases were achieved in the onroad sector due to Federal new engine standards for vehicles and equipment, increases and decreases from 2002 to 2017 in the other categories are due to reporting, grouping and methodology changes. There was a reduction in the point source category and little change in the nonroad category.

The EPA is proposing to find that Rhode Island has satisfied the requirements of 40 CFR51.308(g)(4) by providing emissions information for NO_x, SO₂, PM₁₀, PM_{2.5}, VOC, and NH₃ broken down by type of source.

The emissions trend data in the SIP submission support Rhode Island's assessment that no significant increase of haze-causing pollutant emissions has occurred in the state during the reporting period and that changes in emissions have not limited or impeded progress in reducing pollutant emissions and improving visibility. The EPA is proposing to find that Rhode Island has met the requirements of 40 CFR51.308(g)(5).

I. Requirements for State and Federal Land Manager Coordination

Section 169A(d) of the Clean Air Act 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. In addition, 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

⁹² See <https://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles> for info on EPA's nonroad engine programs.

inform the state's decisions on its long-term strategy. If the consultation has taken place at least 120 days before a public hearing or public comment period, the opportunity for consultation will be deemed early enough, but 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 requires that the consultation 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 visibility impairment. Section 51.308(i)(3) requires states, in developing their implementation plans, to include a description of how they addressed FLMs' comments.

The states in the MANEVU RPO conducted FLM consultation early in the planning process concurrent with the state-to-state consultation that formed the basis of the RPO's decision making process. As part of the consultation, the FLMs were given the opportunity to review and comment on the technical documents developed by MANE-VU. The FLMs were invited to attend the intra- and inter-RPO consultations calls among states and at least one FLM representative was documented to have attended seven intra-RPO meetings and all inter-RPO meetings. Rhode Island participated in these consultation meetings and calls.⁹³

As part of this early engagement with the FLMs, on April 12, 2018, the NPS sent letters to the MANEVU states requesting that they consider specific individual sources in their long-term strategies.⁹⁴ NPS used an analysis of emissions divided by distance (Q/d) to estimate the impact of MANEVU facilities. To select the facilities, NPS first summed 2014 NEI NO_x, PM₁₀, SO₂, and SO₄ emissions and divided by the distance to a specified NPS mandatory Class I Federal area. NPS summed the Q/d values across all MANEVU states relative to Acadia, Mammoth Cave, and Shenandoah National Parks, ranked the Q/d values relative to each Class I area, created a running total, and identified those facilities contributing to 80% of the total

⁹³ See appendix 20 "MANEVU Regional Haze Consultation Report and Consultation Documentation."

⁹⁴ *Id.*

impact at each NPS Class I area. NPS applied a similar process to facilities in Maine but relative to just Acadia National Park. NPS merged the resulting lists of facilities and sorted them by their states. NPS suggested that a state consider those facilities comprising 80% of the Q/d total, not to exceed the 25 top ranked facilities. The NPS identified one facility in Rhode Island in this letter; Dominion Energy Manchester Street, INC.⁹⁵ As explained in the discussion for Ask 1, Manchester Street facility operates three 119.05 MW combustion turbines capable of burning #2 fuel oil and natural gas and is equipped with an SCR system. The operating permit of this facility limits NO_x emissions to 47.5 and 78.78 lb/hr for natural gas and #2 fuel oil, respectively, and limits SO₂ emissions to 73.13 and 63.8 lb/hr for natural gas and #2 fuel oil, respectively.⁹⁶ The units are required to comply with all applicable Federal and State regulations as identified in the enforceable permit.

On July 30, 2024, RIDEM OAR sent its pre-proposal draft SIP revision to representatives of the NPS, the U.S. Forest Service (USFS), and the U.S. Fish and Wildlife Service for a 60-day review and comment period pursuant to 40 CFR 51.308(i)(2) before making it available for public comment. Rhode Island received responses from the NPS and the USFS. The NPS stated that it “appreciate[d RIDEM’s] work for clean air and clear views across the region and d[id] not intend to provide further conclusions and recommendations on the Rhode Island Regional Haze SIP revision.” The NPS further stated that “emissions from Rhode Island facilities have not been identified as impairing visibility at any National Park Service managed Class I areas.”⁹⁷ The USFS also responded by noting its satisfaction with the draft proposal and acknowledging the opportunity to work closely with Rhode Island through the initial evaluation, development, and subsequent review of this plan.⁹⁸

Rhode Island held a public comment period for this Regional Haze SIP revision. On

⁹⁵ *Id.*

⁹⁶ A copy of the operating permit for this facility can be found in the docket of this rulemaking.

⁹⁷ See appendix 24 “National Park Service Comment on Proposed RI Regional Haze SIP.”

⁹⁸ See appendix 23 “USDA Comment Letter RI Regional Haze SIP.”

January 24, 2025, RIDEM issued a notice of public hearing and comment and the availability of the draft Regional Haze SIP revision for 2018-2028 on RIDEM's webpage. The notice announced the opportunity to submit written comments or requests for public hearing until February 28, 2025. No comments or requests for a public hearing were received.

For the reasons stated above, the EPA proposes to find that Rhode Island has satisfied the requirements under CAA section 169A(d) and 40 CFR 51.308(i) to consult with the FLMs on its regional haze SIP for the second implementation period.

J. Other Required Commitments

Rhode Island's March 7, 2025, SIP submission includes a commitment to revise and submit a regional haze SIP in 2028, and every ten years thereafter. The state's commitment includes submitting periodic progress reports in accordance with 40 CFR 51.308(f) and a commitment to evaluate progress towards the reasonable progress goal for 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 in accordance with 40 CFR 51.308(g).

V. EPA's Evaluation of Rhode Island's Infrastructure SIP for the 2015 Ozone Standard.

A. Background and Purpose

On October 1, 2015, EPA promulgated a revision to the ozone NAAQS (2015 ozone NAAQS), lowering the level of both the primary and secondary standards to 0.070 parts per million (ppm). Section 110(a)(1) of the CAA requires states to submit, within 3 years after promulgation of a new or revised standard, SIPs meeting the applicable requirements of section 110(a)(2). On September 23, 2020, RIDEM submitted a revision to its SIP addressing the infrastructure requirements of CAA sections 110(a)(1) and 110(a)(2) for the 2015 ozone

NAAQS.

Effective November 15, 2021, EPA approved Rhode Island’s submittal as adequately addressing the following CAA elements or portions thereof: 110(a)(2)(A); (B); (C); (D) except (D)(i)(I) and (D)(i)(II)—visibility protection; (E); (F); (G); (J); (K); (L); (M) and disapproved for element (H)- future SIP revisions. This action did not include three interstate transport provisions under section 110(a)(2)(D)(i), namely the “good neighbor” provisions at section 110(a)(2)(D)(i)(I) (also known as the State's Transport SIP or “prongs 1 and 2”) and the provision relating to visibility protection at 110(a)(2)(D)(i)(II) (also known as “prong 4”).

Shortly after, effective January 10, 2022, EPA approved Rhode Island’s submittal as adequately addressing the “good neighbor” provisions at section 110(a)(2)(D)(i)(I). With the proposed approval of Rhode Island’s Regional Haze plan for the second implementation period, today’s action is proposing approval of the remaining element of Rhode Island’s September 2020 ISIP for addressing requirements under section 110(a)(2)(D)(i)(II)—visibility protection, also known as “prong 4”.

B. Section 110(a)(2)(D)(i)(II) – Visibility Protection

CAA Section 110(a)(2)(D)(i)(II), prong 4, requires SIPs to contain adequate provisions to prohibit emissions in amounts that will interfere with measures required to be included in the applicable implementation plan for any other state under part C of the Act to protect visibility. EPA issued guidance on infrastructure SIPs in a September 13, 2013, memorandum titled “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act sections 110(a)(1) and 110(a)(2)” (“2013 Guidance”). The 2013 Guidance states that these prong 4 requirements can be satisfied by approved SIP provisions that the EPA has found to adequately address any contribution of that state's sources that impact the visibility program requirements in other states.⁹⁹

The 2013 Guidance lays out how a state’s infrastructure SIP may satisfy prong 4. In the

⁹⁹ 2013 Guidance at 32-33. A copy of this guidance can be found in the docket of this rulemaking.

second planning period, confirmation that the state has a fully approved regional haze SIP that fully meets the requirements of 40 CFR 51.308 will satisfy the requirements of prong 4.¹⁰⁰ A fully approved regional haze SIP¹⁰¹ will ensure that emissions from sources under an air agency's jurisdiction are not interfering with measures required to be included in other air agencies' plans to protect visibility.

In the second planning period, EPA's Regional Haze regulations under 40 CFR 51.308(f) require that a State consider the emission reduction measures identified by other States as being necessary to make reasonable progress towards meeting the national visibility goal in Class I Federal areas. Specifically, the regulations also require a State to include in its Regional Haze SIP all measures agreed to during that process or measures that will provide equivalent visibility improvement. 40 CFR 51.308(f)(2)(ii). Thus, in meeting the requirements of 40 CFR 51.308(f), an approved regional haze SIP meeting the requirements of 40 CFR 51.308(f)(2)(ii) will ensure that emissions from sources under an air agency's jurisdiction are not interfering with measures required to be included in other air agencies' plans to protect visibility and will, therefore, satisfy Prong 4.

As discussed above, Rhode Island is a member of the MANEVU RPO and participated in the RPO's regional approach to identifying emission reduction measures necessary to make reasonable progress towards the national visibility goal in the MANEVU Class I areas. That process also included consultations with States in other RPOs, and Rhode Island did not receive any requests from non-MANEVU States to consider additional measures to address visibility impairment in Class I areas outside the MANEVU States. In today's action, EPA has proposed to approve Rhode Island's submittal as meeting the requirements of 40 CFR 51.308(f) for the

¹⁰⁰ The EPA acknowledges that in the 2013 Guidance, we indicated that the EPA may find it appropriate to supplement the guidance regarding the relationship between regional haze SIPs and prong 4 after second implementation period SIPs become due, which occurred on July 31, 2021. After a review of the 2013 Guidance and the second implementation period regional haze requirements, the EPA maintains the interpretation that a fully approved regional haze SIP satisfies prong 4 requirements in the second implementation period.

¹⁰¹ Since second implementation period SIPs became due, a "fully approved regional haze SIP" would necessarily include fully approved first and second implementation period regional haze SIPs.

second planning period. See Section IV.E.c. Accordingly, EPA also proposes that Rhode Island meets the visibility protection requirements of CAA § 110(a)(2)(D)(i)(II) for the 2015 ozone NAAQS.

VI. Proposed Action

The EPA is proposing to approve the “Rhode Island Regional Haze State Implementation Plan Revision for the Second Implementation Period (2018-2028)”, final submittal dated March 2025 and submitted to EPA on March 7, 2025, as satisfying the regional haze requirements for the second implementation period contained in 40 CFR 51.308(f), (g), and (i). Additionally, EPA is proposing approval of the remaining element of Rhode Island’s September 23, 2020, ISIP for addressing requirements under section 110(a)(2)(D)(i)(II)—visibility protection, also known as “prong 4”.

VI. Statutory and Executive Order Reviews

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

- Is not a “significant regulatory action” subject to review by the Office of Management and Budget under Executive 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 (Public Law 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001); and
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA.

In addition, this proposed rulemaking action, pertaining to Rhode Island regional haze SIP submission for the second planning period, is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Nitrogen dioxide, Ozone, Particulate matter, Sulfur oxides.

Dated: October 29, 2025.

Mark Sanborn,
Regional Administrator,
Region 1.

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