40 CFR Part 52

[EPA-R02-OAR-2020-0455; FRL-11807-01-R2]

Approval and Promulgation of Air Quality Implementation Plans; New York; Regional Haze State Implementation Plan for the Second Implementation Period

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve the regional haze state implementation plan (SIP) submitted by the State of New York through the Department of Environmental Conservation (NYSDEC or New York) on May 12, 2020, as satisfying applicable requirements under the Clean Air Act (CAA) and the EPA's Regional Haze Rule for the program's second implementation period. New York'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 in mandatory Class I Federal areas, including regional haze. The SIP submission also addresses other applicable requirements for the second implementation period of the regional haze program. 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-R02-OAR-2020-0455 at *https://www.regulations.gov*. Although listed in the index, some information is not publicly available, e.g., Controlled Unclassified Information (CUI) (formally referred to as Confidential Business Information (CBI)) or other information

whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *https://www.regulations.gov*. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be CUI or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CUI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa-dockets*.

FOR FURTHER INFORMATION CONTACT: Robert Rutherford, U.S. Environmental Protection Agency, Air Programs Branch, Region II, 290 Broadway, New York, New York 10007-1866, at (212) 637-3712 or by email at Rutherford.Robert@epa.gov.

SUPPLEMENTARY INFORMATION:

I. What Action is the EPA Proposing?

On May 12, 2020, NYSDEC submitted a revision to its SIP to address regional haze for the second implementation period ("NY RH 2nd Implementation Period SIP submission"). NYSDEC supplemented its SIP submission on February 16, 2022. NYSDEC 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 NY RH 2nd Implementation Period SIP submission meets the applicable statutory and regulatory requirements and thus proposes to approve New York's SIP revision submission.

II. Background and Requirements for Regional Haze Plans

A. Regional Haze Background

In the 1977 CAA Amendments, Congress created a program for protecting visibility in the nation's mandatory Class I Federal areas, which include certain national

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

Regional haze is visibility impairment that is produced by a multitude of anthropogenic sources and activities which are located across a broad geographic area and that emit pollutants that impair visibility. Visibility impairing pollutants include: fine and coarse particulate matter (PM) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust), and their precursors (e.g., sulfur dioxide (SO_2); nitrogen oxides (NOx); and, in some cases, volatile organic compounds (VOC) and ammonia (NH_3)). Fine particle precursors react in the atmosphere to form fine particulate matter ($PM_{2.5}$),

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

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

which impairs visibility by scattering and absorbing light. Visibility impairment reduces the perception of clarity and color, as well as visible distance.[3]

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

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

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

regional haze in a Class I area"; therefore, all states must submit regional haze SIPs.[5] (64 FR 35721, July 1, 1999).

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

States were also required to calculate baseline (using the five year period of 2000-2004) and natural visibility conditions (i.e., visibility conditions without anthropogenic visibility impairment) for each Class I area, and to calculate the linear rate of progress needed to attain natural visibility conditions, assuming a starting point of baseline visibility conditions in 2004 and ending with natural conditions in 2064. This linear

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

interpolation is known as the uniform rate of progress (URP) and is used as a tracking metric to help states assess the amount of progress they are making towards the national visibility goal over time in each Class I area.[6] 40 CFR 51.308(d)(1)(i)(B), (d)(2). The 1999 RHR also provided that States' long-term strategies must include the "enforceable emissions limitations, compliance, schedules, and other measures as necessary to achieve the reasonable progress goals." 40 CFR 51.308(d)(3). In establishing their long-term strategies, states are required to consult with other states that also contribute to visibility impairment in a given Class I area and include all measures necessary to obtain their shares of the emission reductions needed to meet the RPGs. 40 CFR 51.308(d)(3)(i), (ii). Section 51.308(d) also contains seven additional factors states must consider in formulating their long-term strategies, 40 CFR 51.308(d)(3)(v), as well as provisions governing monitoring and other implementation plan requirements. 40 CFR 51.308(d)(4). Finally, the 1999 RHR required states to submit periodic progress reports—SIP revisions due every five years that contain information on states' implementation of their regional haze plans and an assessment of whether anything additional is needed to make reasonable progress, *see* 40 CFR 51.308(g), (h)—and to consult with the Federal Land Manager(s)[7] (FLMs) responsible for each Class I area according to the requirements in CAA 169A(d) and 40 CFR 51.308(i).

On January 10, 2017, the EPA promulgated revisions to the RHR, (82 FR 3078,

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

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

January 10, 2017), that apply for the second and subsequent implementation periods. The 2017 rulemaking made several changes to the requirements for regional haze SIPs to clarify States' obligations and streamline certain regional haze requirements. The revisions to the regional haze program for the second and subsequent implementation periods focused on the requirement that States' SIPs contain long-term strategies for making reasonable progress towards the national visibility goal. The reasonable progress requirements as revised in the 2017 rulemaking (referred to here as the 2017 RHR Revisions) are codified at 40 CFR 51.308(f). Among other changes, the 2017 RHR Revisions adjusted the deadline for States to submit their second implementation period SIPs from July 31, 2018, to July 31, 2021, clarified the order of analysis and the relationship between RPGs and the long-term strategy, and focused on making visibility improvements on the days with the most *anthropogenic* visibility impairment, as opposed to the days with the most visibility impairment overall. The EPA also revised requirements of the visibility protection program related to periodic progress reports and FLM consultation. The specific requirements applicable to second implementation period regional haze SIP submissions are addressed in detail below.

The EPA provided guidance to the states for their second implementation period SIP submissions in the preamble to the 2017 RHR Revisions as well as in subsequent, stand-alone guidance documents. In August 2019, the EPA issued "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period" ("2019 Guidance").[8] On July 8, 2021, the EPA issued a memorandum containing "Clarifications Regarding Regional Haze State Implementation Plans for the Second

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

Implementation Period" ("2021 Clarifications Memo").[9] Additionally, the EPA further clarified the recommended procedures for processing ambient visibility data and optionally adjusting the URP to account for international anthropogenic and prescribed fire impacts in two technical guidance documents: the December 2018 "Technical Guidance on Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program" ("2018 Visibility Tracking Guidance"),[10] and the June 2020 "Recommendation for the Use of Patched and Substituted Data and Clarification of Data Completeness for Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program" and associated Technical Addendum ("2020 Data Completeness Memo").[11]

As previously explained in the 2021 Clarifications Memo, EPA intends the second implementation period of the regional haze program to secure meaningful reductions in visibility impairing pollutants that build on the significant progress states have achieved to date. The Agency also recognizes that analyses regarding reasonable progress are state-specific and that, based on states' and sources' individual circumstances, what constitutes reasonable reductions in visibility impairing pollutants will vary from state-to-state. While there exist many opportunities for states to leverage both ongoing and upcoming emission reductions under other CAA programs, the Agency expects states to undertake rigorous reasonable progress analyses that identify further

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

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

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

opportunities to advance the national visibility goal consistent with the statutory and regulatory requirements. See 2021 Clarifications Memo. This is consistent with Congress's determination that a visibility protection program is needed in addition to the CAA's National Ambient Air Quality Standards and Prevention of Significant Deterioration programs, as further emission reductions may be necessary to adequately protect visibility in Class I areas throughout the country.[12]

B. Roles of Agencies in Addressing Regional Haze

Because the air pollutants and pollution affecting visibility in Class I areas can be transported over long distances, successful implementation of the regional haze program requires long-term, regional coordination among multiple jurisdictions and agencies that have responsibility for Class I areas and the emissions that impact visibility in those areas. In order to address regional haze, states need to develop strategies in coordination with one another, considering the effect of emissions from one jurisdiction on the air quality in another. Five regional planning organizations (RPOs),[13] which include representation from state and Tribal governments, the EPA, and FLMs, were developed in the lead-up to the first implementation period to address regional haze. RPOs evaluate technical information to better understand how emissions from State and Tribal land impact Class I areas across the country, pursue the development of regional strategies to reduce emissions of 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 (MANE-VU), one of the five RPOs described above, is a collaborative effort of state governments, Tribal governments, and

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

[13] 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.

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 MANE-VU 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 analysis[14] and (f)(4) through (6) containing additional, related requirements. Broadly speaking, a state first must identify the Class I areas within the state and determine the Class I areas outside the state in which visibility may be affected by emissions from the state. These are the Class I areas that must be addressed in the state's long-term strategy. *See* 40 CFR 51.308(f), (f)(2). For each Class I area within its borders, a state must then calculate the baseline, current, and natural visibility conditions for that area, as well as

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

the visibility improvement made to date and the URP. *See* 40 CFR 51.308(f)(1). Each state having a Class I area and/or emissions that may affect visibility in a Class I area must then develop a long-term strategy that includes the enforceable emission limitations, compliance schedules, and other measures that are necessary to make reasonable progress in such areas. Reasonable progress is determined by 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). A state evaluates potential emission reduction measures for those selected sources and determines which are necessary to make reasonable progress using the four statutory factors. Those measures are then incorporated into the state's long-term strategy. After a state has developed its long-term strategy, it then establishes RPGs for each Class I area within its borders by modeling the visibility impacts of all reasonable progress controls at the end of the second implementation period, i.e., in 2028, as well as the impacts of other requirements of the CAA. The RPGs include reasonable progress controls not only for sources in the state in which the Class I area is located, but also for sources in other 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) through (3).

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

A state must submit its regional haze SIP and subsequent SIP revisions to the

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

A. Identification of Class I Areas

The SIP revision submission due by July 31, 2021, "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." 40 CFR 51.308(f); *see* also 40 CFR 51.308(f)(2).[15] Thus, the first step in developing a regional haze SIP is for a state to determine which Class I areas, in addition to those within its borders, "may be affected" by emissions from within the state. In the 1999 RHR, the EPA determined that all states contribute to visibility impairment in at least one Class I area, (64 FR 35720-22, July 1, 1999) and explained that the statute and regulations lay out an "extremely low triggering threshold" for determining "whether States should be required to engage in air quality planning and analysis as a prerequisite to determining the need for control of emissions from sources within their State." *Id.* at 35721.

A state must determine which Class I areas must be addressed by its SIP by evaluating the total emissions of visibility impairing pollutants from all sources within the state. While the RHR does not require this evaluation to be conducted in any particular manner, EPA's 2019 Guidance provides recommendations for how such an assessment might be accomplished, including by, where appropriate, using the

[15] The RHR uses the phrase "that may be affected by emissions from the State" to implement CAA 169A(b)(2)'s requirement that a state "the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility" submit a SIP.

determinations previously made for the first implementation period. 2019 Guidance at 8-9. In addition, the determination of which Class I areas may be affected by a state's emissions is subject to the requirement in 40 CFR 51.308(f)(2)(iii) to "document the technical basis, including modeling, monitoring, cost, engineering, and emissions information, on which the State is relying to determine the emission reduction measures that are necessary to make reasonable progress in each mandatory Class I Federal area it affects."

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

As part of assessing whether a SIP submission for the second implementation period is providing for reasonable progress towards the national visibility goal, the RHR contains requirements in 40 CFR 51.308(f)(1) related to tracking visibility improvement over time. The requirements of this subsection apply only to states having Class I areas within their borders; the required calculations must be made for each such Class I area. EPA's 2018 Visibility Tracking Guidance[16] provides recommendations to assist states in satisfying their obligations under 40 CFR 51.308(f)(1); specifically, in developing information on baseline, current, and natural visibility conditions, and in making optional adjustments to the URP to account for the impacts of international anthropogenic emissions and prescribed fires. *See* 82 FR 3103-0 (Jan. 10, 2017).

The RHR requires tracking of visibility conditions on two sets of days: the clearest and the most impaired days. Visibility conditions for both sets of days are expressed as the average deciview index for the relevant five-year period (the period representing baseline or current visibility conditions). The RHR provides that the relevant sets of days for visibility tracking purposes are the 20% clearest (the 20% of monitored

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

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

Using the data for the set of most impaired days only, states must plot a line between visibility conditions in the baseline period and natural visibility conditions for each Class I area to determine the URP—the amount of visibility improvement, measured in deciviews, that would need to be achieved during each implementation period in order to achieve natural visibility conditions by the end of 2064. The URP is used in later steps of the reasonable progress analysis for informational purposes and to provide a non-enforceable benchmark against which to assess a Class I area's rate of visibility improvement.[19] Additionally, in the 2017 RHR Revisions, the EPA provided states the

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[17] This notice also refers to the 20% clearest and 20% most anthropogenically impaired days as the "clearest" and "most impaired" or "most anthropogenically impaired" days, respectively.

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

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

option of proposing to adjust the endpoint of the URP to account for impacts of anthropogenic sources outside the United States and/or impacts of certain types of wildland prescribed fires. These adjustments, which must be approved by the EPA, are intended to avoid any perception that states should compensate for impacts from international anthropogenic sources and to give states the flexibility to determine that limiting the use of wildland-prescribed fire is not necessary for reasonable progress. 82 FR 3107 footnote 116.

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

C. Long-Term Strategy for Regional Haze

The core component of a regional haze SIP submission is a long-term strategy that addresses regional haze in each Class I area within a state's borders and each Class I area that may be affected by emissions from the state. The long-term strategy "must include the enforceable emissions limitations, compliance schedules, and other measures that are necessary to make reasonable progress, as determined pursuant to (f)(2)(i) through (iv)." 40 CFR 51.308(f)(2). The amount of progress that is "reasonable progress" is determined by applying the four statutory factors in CAA section 169A(g)(1) in an evaluation of potential control options for sources of visibility impairing pollutants, which is referred to as a "four-factor" analysis.[20] The outcome of that analysis is the

[20] Per CAA section 169A(g)(1), in determining reasonable progress states must take into consideration "the costs 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." 42 U.S.C. 7491(g)(1).

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

Section 51.308(f)(2)(i) provides the requirements for the four-factor analysis. The first step of this analysis entails selecting the sources to be evaluated for emission reduction measures; to this end, the RHR requires states to consider "major and minor stationary sources or groups of sources, mobile sources, and area sources" of visibility impairing pollutants for potential four-factor control analysis. 40 CFR 51.308(f)(2)(i). A threshold question at this step is which visibility impairing pollutants will be analyzed. As EPA previously explained, consistent with the first implementation period, EPA generally expects that each state will analyze at least SO_2 and NOx in selecting sources and determining control measures. See 2019 Guidance at 12, 2021 Clarifications Memo at 4. A state that chooses not to consider at least these two pollutants should demonstrate why such consideration would be unreasonable. 2021 Clarifications Memo at 4.

While states have the option to analyze *all* sources, the 2019 Guidance explains that "an analysis of control measures is not required for every source in each implementation period," and that "[s]electing a set of sources for analysis of control measures in each implementation period is . . . consistent with the Regional Haze Rule, which sets up an iterative planning process and anticipates that a state may not need to analyze control measures for all its sources in a given SIP revision." 2019 Guidance at 9.

However, given that source selection is the basis of all subsequent control determinations, a reasonable source selection process "should be designed and conducted to ensure that source selection results in a set of pollutants and sources the evaluation of which has the potential to meaningfully reduce their contributions to visibility impairment." 2021 Clarifications Memo at 3.

EPA explained in the 2021 Clarifications Memo that each state has an obligation to submit a long-term strategy that addresses the regional haze visibility impairment that results from emissions from within that state. Thus, source selection should focus on the in-state contribution to visibility impairment and be designed to capture a meaningful portion of the state's total contribution to visibility impairment in Class I areas. A state should not decline to select its largest in-state sources on the basis that there are even larger out-of-state contributors. 2021 Clarifications Memo at 4.[21]

Thus, while states have discretion to choose any source selection methodology that is reasonable, whatever choices they make should be reasonably explained and result in a set of sources which capture a meaningful portion of the state's total contribution to visibility impairment. 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

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

emissions reduction measures for those sources that are necessary to make reasonable progress for the second implementation period.[22] This is accomplished by considering the four factors—"the costs 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 3091, Jan. 10, 2017). Thus, for each source it has selected for four-factor analysis,[23] a state must consider a "meaningful set" of technically feasible control options for reducing emissions of visibility impairing pollutants. *Id.* at 3088. The 2019 Guidance provides that "[a] state must reasonably pick and justify the measures that it will consider, recognizing that there is no statutory or regulatory requirement to consider all technically feasible measures or any particular measures. A range of technically feasible measures available to reduce emissions would be one way to justify a reasonable set." 2019 Guidance at 29.

EPA's 2021 Clarifications Memo provides further guidance on what constitutes a reasonable set of control options for consideration: "A reasonable four-factor analysis

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

[23] "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 3088, Jan. 10, 2017). However, not all approaches to grouping sources for four-factor analysis are necessarily reasonable; the reasonableness of grouping sources in any particular instance will depend on the circumstances and the manner in which grouping is conducted. If it is feasible to establish and enforce different requirements for sources or subgroups of sources, and if relevant factors can be quantified for those sources or subgroups, then states should make a separate reasonable progress determination for each source or subgroup. 2021 Clarifications Memo at 7-8.

will consider the full range of potentially reasonable options for reducing emissions." 2021 Clarifications Memo at 7. In addition to add-on controls and other retrofits (i.e., new emission reduction measures for sources), EPA explained that states should generally analyze efficiency improvements for sources' existing measures as control options in their four-factor analyses, as in many cases such improvements are reasonable given that they typically involve only additional operation and maintenance costs. Additionally, the 2021 Clarifications Memo provides that states that have assumed a higher emission rate than a source has achieved or could potentially achieve using its existing measures should also consider lower emission rates as potential control options. That is, a state should consider a source's recent actual and projected emission rates to determine if it could reasonably attain lower emission rates with its existing measures. If so, the state should analyze the lower emission rate as a control option for reducing emissions. 2021 Clarifications Memo at 7. The EPA's recommendations to analyze potential efficiency improvements and achievable lower emission rates apply to both sources that have been selected for four-factor analysis and those that have forgone a four-factor analysis on the basis of existing "effective controls." See 2021 Clarifications Memo at 5, 10.

After identifying a reasonable set of potential control options for the sources it has selected, a state then collects information on the four factors with regard to each option identified. The EPA has also explained that, in addition to the four statutory factors, states have flexibility under the CAA and RHR to reasonably consider visibility benefits as an optional fifth factor alongside the four statutory factors.[24] The 2019 Guidance provides recommendations for the types of information that can be used to characterize the four factors (with or without visibility), as well as ways in which states might

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

reasonably consider and balance that information to determine which of the potential control options is necessary to make reasonable progress. See 2019 Guidance at 30-36. The 2021 Clarifications Memo contains further guidance on how states can reasonably consider modeled visibility impacts or benefits in the context of a four-factor analysis. 2021 Clarifications Memo at 12-13, 14-15. Specifically, EPA explained that while visibility impacts can reasonably be considered when comparing and choosing between multiple reasonable control options, visibility should not be used to reject controls that are reasonable given the four statutory factors. 2021 Clarifications Memo at 13. Ultimately, while states have discretion to reasonably weigh the factors and to determine what level of control is needed, 40 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 strategy and in its SIP.[25] If the outcome of a four-factor analysis is a new, additional emission reduction measure for a source, that new measure is necessary to make reasonable progress towards remedying existing anthropogenic visibility impairment and must be included in the SIP. If the outcome of a four-factor analysis is that no new measures are reasonable for a source, continued implementation of the source's existing measures is generally necessary to prevent future emission

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

increases and thus to make reasonable progress towards the second part of the national visibility goal: preventing future anthropogenic visibility impairment. *See* CAA 169A(a)(1). That is, when the result of a four-factor analysis is that no new measures are necessary to make reasonable progress, the source's existing measures are generally necessary to make reasonable progress and must be included in the SIP. However, there may be circumstances in which a state can demonstrate that a source's existing measures are *not* necessary to make reasonable progress. Specifically, if a state can demonstrate that a source will continue to implement its existing measures and will not increase its emission rate, it may not be necessary to have those measures in the long-term strategy in order to prevent future emission increases and future visibility impairment. EPA's 2021 Clarifications Memo provides further explanation and guidance on how states may demonstrate that a source's existing measures are not necessary to make reasonable progress. See 2021 Clarifications Memo at 8 -10. If the state can make such a demonstration, it need not include a source's existing measures in the long-term strategy or its SIP.

As with source selection, the characterization of information on each of the factors is also subject to the documentation requirement in 40 CFR 51.308(f)(2)(iii). The reasonable progress analysis, including source selection, information gathering, characterization of the four statutory factors (and potentially visibility), balancing of the four factors, and selection of the emission reduction measures that represent reasonable progress, is a technically complex exercise, but also a flexible one that provides states with bounded discretion to design and implement approaches appropriate to their circumstances. Given this flexibility, 40 CFR 51.308(f)(2)(iii) plays an important function in requiring a state to document the technical basis for its decision making so that the public and the EPA can comprehend and evaluate the information and analysis the state relied upon to determine what emission reduction measures must be in place to

make reasonable progress. The technical documentation must include the modeling, monitoring, cost, engineering, and emissions information on which the state relied to determine the measures necessary to make reasonable progress. This documentation requirement can be met through the provision of and reliance on technical analyses developed through a regional planning process, so long as that process and its output has been approved by all state participants. In addition to the explicit regulatory requirement to document the technical basis of their reasonable progress determinations, states are also subject to the general principle that those determinations must be reasonably moored to the statute.[26] That is, a state's decisions about the emission reduction measures that are necessary to make reasonable progress must be consistent with the statutory goal of remedying existing and preventing future visibility impairment.

The four statutory factors (and potentially visibility) are used to determine what emission reduction measures for selected sources must be included in a state's long-term strategy for making reasonable progress. Additionally, the RHR at 40 CFR 51.3108(f)(2)(iv) separately provides five "additional factors"[27] 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

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

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

by the long-term strategy. The 2019 Guidance provides that a state may satisfy this requirement by considering these additional factors in the process of selecting sources for four-factor analysis, when performing that analysis, or both, and that not every one of the additional factors needs to be considered at the same stage of the process. See 2019 Guidance at 21. EPA provided further guidance on the five additional factors in the 2021 Clarifications Memo, explaining that a state should generally not reject cost-effective and otherwise reasonable controls merely because there have been emission reductions since the first planning period owing to other ongoing air pollution control programs or merely because visibility is otherwise projected to improve at Class I areas. Additionally, states should not rely on these additional factors to summarily assert that the state has already made sufficient progress and, therefore, no sources need to be selected or no new controls are needed regardless of the outcome of four-factor analyses. States can, however, consider these factors in a more tailored manner, e.g., in choosing between multiple control options when all are reasonable based on the four statutory factors.[28] 2021 Clarifications Memo at 13.

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. Consultation allows for each state that impacts visibility in an area to share whatever technical information, analyses, and control determinations may be necessary to develop coordinated emission management strategies. This coordination may be managed through inter- and intra-RPO consultation and the development of regional emissions strategies; additional consultations between states outside of RPO processes may also

[28] In particular, EPA explained in the 2021 Clarifications Memo that states should not rely on the considerations in 40 CFR 51.308(f)(2)(iv)(A) and (E) to summarily assert that the state has already made sufficient progress and therefore does not need to achieve any additional emission reductions. 2021 Clarifications Memo at 13.

occur. If a state, pursuant to consultation, agrees that certain measures (e.g., a certain emission limitation) are necessary to make reasonable progress at a Class I area, it must include those measures in its SIP. 40 CFR 51.308(f)(2)(ii)(A). Additionally, the RHR requires that states that contribute to visibility impairment at the same Class I area consider the emission reduction measures the other contributing states have identified as being necessary to make reasonable progress for their own sources. 40 CFR 51.308(f)(2)(ii)(B). If a state has been asked to consider or adopt certain emission reduction measures, but ultimately determines those measures are not necessary to make reasonable progress, that state must document in its SIP the actions taken to resolve the disagreement. 40 CFR 51.308(f)(2)(ii)(C). The EPA will consider the technical information and explanations presented by the submitting state and the state with which it disagrees when considering whether to approve the state's SIP. See *id*.; 2019 Guidance at 53. Under all circumstances, a state must document in its SIP submission all substantive consultations with other contributing states. 40 CFR 51.308(f)(2)(ii)(C).

D. Reasonable Progress Goals

Reasonable progress goals "measure the progress that is projected to be achieved by the control measures states have determined are necessary to make reasonable progress based on a four-factor analysis." (82 FR 3091, Jan. 10, 2017). Their primary purpose is to assist the public and the EPA in assessing the reasonableness of states' long-term strategies for making reasonable progress towards the national visibility goal. *See* 40 CFR 51.308(f)(3)(iii) through (iv). States in which Class I areas are located must establish two RPGs, both in deciviews – one representing visibility conditions on the clearest days and one representing visibility on the most anthropogenically impaired days – for each area within their borders. 40 CFR 51.308(f)(3)(i). The two RPGs are intended to reflect the projected impacts, on the two sets of days, of the emission reduction measures the state with the Class I area, as well as all other contributing states, have

included in their long-term strategies for the second implementation period.[29] The RPGs also account for the projected impacts of implementing other CAA requirements, including non-SIP based requirements. Because RPGs are the modeled result of the measures in states' long-term strategies (as well as other measures required under the CAA), they cannot be determined before states have conducted their four-factor analyses and determined the control measures that are necessary to make reasonable progress. See 2021 Clarifications Memo at 6.

For the second implementation period, the RPGs are set for 2028. Reasonable progress goals are not enforceable targets, 40 CFR 51.308(f)(3)(iii); rather, they "provide a way for the states to check the projected outcome of the [long-term strategy] against the goals for visibility improvement." 2019 Guidance at 46. While states are not legally obligated to achieve the visibility conditions described in their RPGs, 40 CFR 51.308(f)(3)(i) requires that "[t]he long-term strategy and the reasonable progress goals must provide for an improvement in visibility for the most impaired days since the baseline period and ensure no degradation in visibility for the clearest days since the baseline period." Thus, states are required to have emission reduction measures in their long-term strategies that are projected to achieve visibility conditions on the most impaired days that are better than the baseline period and shows no degradation on the clearest days compared to the clearest days from the baseline period. The baseline period for the purpose of this comparison is the baseline visibility condition – the annual average visibility condition for the period 2000-2004. *See* 40 CFR 51.308(f)(1)(i), (82 FR 3097-98, Jan. 10, 2017).

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

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

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

statutory factors and therefore cannot answer the question of whether the amount of progress being made in any particular implementation period is "reasonable progress." *See* 82 FR 3093, 3099-3100 (Jan. 10, 2017); 2019 Guidance at 22; 2021 Clarifications Memo at 15-16.

E. Monitoring Strategy and Other State Implementation Plan Requirements

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

All states' SIPs must provide for procedures by which monitoring data and other information are used to determine the contribution of emissions from within the state to regional haze visibility impairment in affected Class I areas. 40 CFR 51.308(f)(6)(ii), (iii). Section 51.308(f)(6)(v) further requires that all states' SIPs provide for a statewide

inventory of emissions of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area; the inventory must include emissions for the most recent year for which data are available and estimates of future projected emissions. States must also include commitments to update their inventories periodically. The inventories themselves do not need to be included as elements in the SIP and are not subject to EPA review as part of the Agency's evaluation of a SIP revision.[30] All states' SIPs must also provide for any other elements, including reporting, recordkeeping, and other measures, that are necessary for states to assess and report on visibility. 40 CFR 51.308(f)(6)(vi). Per the 2019 Guidance, a state may note in its regional haze SIP that its compliance with the Air Emissions Reporting Rule (AERR) in 40 CFR part 51 subpart A satisfies the requirement to provide for an emissions inventory for the most recent year for which data are available. To satisfy the requirement to provide estimates of future projected emissions, a state may explain in its SIP how projected emissions were developed for use in establishing RPGs for its own and nearby Class I areas.[31]

Separate from the requirements related to monitoring for regional haze purposes under 40 CFR 51.308(f)(6), the RHR also contains a requirement at 40 CFR 51.308(f)(4) related to any additional monitoring that may be needed to address visibility impairment in Class I areas from a single source or a small group of sources. This is called "reasonably attributable visibility impairment."[32] Under this provision, if the EPA or the FLM of an affected Class I area has advised a state that additional monitoring is needed to assess reasonably attributable visibility impairment, the state must include in its SIP revision for the second implementation period an appropriate strategy for evaluating such impairment.

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[30] *See* "Step 8: Additional requirements for regional haze SIPs" in 2019 Regional Haze Guidance at 55.
[31] *Id.*
[32] EPA's visibility protection regulations define "reasonably attributable visibility impairment" as "visibility impairment that is caused by the emission of air pollutants from one, or a small number of sources." 40 CFR 51.301.

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

Section 51.308(f)(5) requires a state's regional haze SIP revision to address the requirements of paragraphs 40 CFR 51.308(g)(1) through (5) so that the plan revision due in 2021 will serve also as a progress report addressing the period since submission of the progress report for the first implementation period. The regional haze progress report requirement is designed to inform the public and the EPA about a state's implementation of its existing 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 3119 (January 10, 2017). To this end, every state's SIP revision for the second implementation period is required to describe the status of implementation of all measures included in the state's long-term strategy, including BART and reasonable progress emission reduction measures from the first implementation period, and the resulting emissions reductions. 40 CFR 51.308(g)(1) and (2).

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

Similarly, states must provide analyses tracking the change in emissions of pollutants contributing to visibility impairment from all sources and activities within the state over the period since they submitted their first implementation period progress reports. *See* 40 CFR 51.308(g)(4), (f)(5). Changes in emissions should be identified by the type of source or activity. Section 51.308(g)(5) also addresses changes in emissions since the period addressed by the previous progress report and requires states' SIP revisions to include an assessment of any significant changes in anthropogenic emissions within or outside the state. This assessment must include an explanation of whether these changes in emissions were anticipated and whether they have limited or impeded progress in reducing emissions and improving visibility relative to what the state projected based on its long-term strategy for the first implementation period.

G. Requirements for State and Federal Land Manager Coordination

Clean Air Act section 169A(d) requires that before a state holds a public hearing on a proposed regional haze SIP revision, it must consult with the appropriate FLM or FLMs; pursuant to that consultation, the state must include a summary of the FLMs' conclusions and recommendations in the notice to the public. Consistent with this statutory requirement, the RHR also requires that states "provide the [FLM] with an opportunity for consultation, in person and at a point early enough in the State's policy analyses of its long-term strategy emission reduction obligation so that information and recommendations provided by the [FLM] can meaningfully inform the State's decisions on the long-term strategy." 40 CFR 51.308(i)(2). Consultation that occurs 120 days prior to any public hearing or public comment opportunity will be deemed "early enough," but the RHR provides that in any event the opportunity for consultation must be provided at least 60 days before a public hearing or comment opportunity. This consultation must include the opportunity for the FLMs to discuss their assessment of visibility impairment in any Class I area and their recommendations on the development and implementation of

strategies to address such impairment. 40 CFR 51.308(i)(2). In order for the EPA to evaluate whether FLM consultation meeting the requirements of the RHR has occurred, the SIP submission should include documentation of the timing and content of such consultation. The SIP revision submitted to the EPA must also describe how the state addressed any comments provided by the FLMs. 40 CFR 51.308(i)(3). Finally, a SIP revision must provide procedures for continuing consultation between the state and FLMs regarding the state's visibility protection program, including development and review of SIP revisions, five-year progress reports, and the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas. 40 CFR 51.308(i)(4).

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

A. Background on New York's First Implementation Period SIP Submission

NYSDEC submitted its regional haze SIP for the first implementation period to the EPA on March 15, 2010, and supplemented it on August 2, 2010, April 16, 2012, and July 2, 2012. The EPA approved New York's first implementation period regional haze SIP submission on August 28, 2012 (77 FR 51915). EPA's approval included, but was not limited to, seventeen source-specific SIP revisions containing permits for Best Available Retrofit Technology, revisions to Title 6 of the New York Codes, Rules and Regulations (NYCRR), Part 249, "Best Available Retrofit Technology (BART)," and revisions to section 19-0325 of the New York Environmental Conservation Law which regulates the sulfur content of fuel oil. Although New York State addressed most of the issues identified in EPA's proposal, EPA promulgated a Federal Implementation Plan to address two sources for which EPA disapproved New York's BART determinations. The requirements for regional haze SIPs for the first implementation period are contained in 40 CFR 51.308(d) and (e) and 40 CFR 51.308(b). Pursuant to 40 CFR 51.308(g), New

York was also responsible for submitting a five-year progress report as a SIP revision for the first implementation period, which NYSDEC did on June 16, 2015. The EPA approved the progress report into the New York SIP on September 29, 2017 (82 FR 45499, September 29, 2017).

B. New York's Second Implementation Period SIP Submission and the EPA's Evaluation

In accordance with CAA sections 169A and the RHR at 40 CFR 51.308(f), on May 12, 2020,[33] NYSDEC submitted a revision to the New York SIP to address the jurisdiction's regional haze obligations for the second implementation period, which runs through 2028. New York made its 2020 Regional Haze SIP submission available for public comment on August 7, 2019. NYSDEC received and responded to public comments and included the comments and responses to those comments in their submission to the EPA.

The following sections describe New York's SIP submission, including analyses conducted by MANE-VU and New York's determinations based on those analyses, New York'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 New York'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 incorporates this statutory requirement at 40 CFR 51.308(f), which provides that each state's plan "must

[33] NYSDEC supplemented its SIP submission on February 16, 2022.

address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State that may be affected by emissions from within the State," and (f)(2), which requires each state's plan to include a long-term strategy that addresses regional haze in such Class I areas.

The EPA explained in the 1999 RHR preamble that the CAA section 169A(b)(2) requirement that states submit SIPs to address visibility impairment establishes "an 'extremely low triggering threshold' in determining which States should submit SIPs for regional haze." (64 FR 35721, July 1, 1999). In concluding that each of the contiguous 48 states and the District of Columbia meet this threshold,[34] the EPA relied on "a large body of evidence demonstrating that long-range transport of fine PM contributes to regional haze," *id.*, including modeling studies that "preliminarily demonstrated that each State not having a Class I area had emissions contributing to impairment in at least one downwind Class I area." *Id.* at 35722. In addition to the technical evidence supporting a conclusion that each state contributes to *existing* visibility impairment, the EPA also explained that the second half of the national visibility goal—preventing *future* visibility impairment—requires having a framework in place to address future growth in visibility-impairing emissions and makes it inappropriate to "establish criteria for excluding States or geographic areas from consideration as potential contributors to regional haze visibility impairment." *Id.* at 35721. Thus, the EPA concluded that the agency's "statutory authority and the scientific evidence are sufficient to require all States to develop regional haze SIPs to ensure the prevention of any future impairment of visibility, and to conduct further analyses to determine whether additional control measures are needed to ensure reasonable progress in remedying existing impairment in

[34] EPA determined that "there is more than sufficient evidence to support our conclusion that emissions from each of the 48 contiguous states and the District of Columba may reasonably be anticipated to cause or contribute to visibility impairment in a Class I area." (64 FR 35721, July 1, 1999). Hawaii, Alaska, and the U.S. Virgin Islands must also submit regional haze SIPs because they contain Class I areas.

downwind Class I areas." *Id.* at 35722. EPA's 2017 revisions to the RHR did not disturb this conclusion. *See* 82 FR 3094 (July 10, 2017).

New York has no Class I areas within its borders. For the second implementation period, MANE-VU performed technical analyses[35] to help inform source and state-level contributions to visibility impairment and the need for interstate consultation. MANE-VU used the results of these analyses to determine which states' emissions "have a high likelihood of affecting visibility in MANE-VU's Class I areas."[36] Similar to metrics used in the first implementation period,[37] MANE-VU used a greater than 2 percent of sulfate plus nitrate emissions contribution criteria to determine whether emissions from individual jurisdictions within the region affected visibility in any Class I areas. The MANE-VU analyses for the second implementation period used a combination of data analysis techniques, including emissions data dispersion modeling. Although many of the analyses focused only on SO2 emissions and resultant particulate sulfate contributions to visibility impairment, some also incorporated NOx emissions to estimate particulate nitrate contributions.

One MANE-VU analysis used for contribution assessment was CALPUFF air dispersion modeling.[38] The CALPUFF model was used to estimate sulfate and nitrate formation and transport in MANE-VU and nearby regions from large electric generating unit (EGU) point sources and other large industrial and institutional sources in the eastern and central United States. Information from the initial round of CALPUFF modeling was collected on the 444 electric generating units (EGUs) that were determined to warrant further scrutiny based on their emissions of SO2 and NOx. The list of EGUs was based

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[35] The contribution assessment methodologies for MANE-VU Class I areas are summarized in appendix C of the NY RH 2nd Implementation Period SIP submission, "Selection of States for MANE-VU Regional Haze Consultation (2018)."
[36] Id.
[37] *See* docket EPA-R02-OAR-2012-0296 for MANE-VU supporting materials.
[38] *See* page 6 of Appendix K of the NY RH 2nd Implementation Period SIP submission.

on enhanced "Q/d" analysis[39] that considered recent SO2 emissions in the eastern United States and an analysis that adjusted previous 2002 MANE-VU CALPUFF modeling by applying a ratio of the 2011 to 2002 SO2 emissions. This list of sources was then enhanced by including the top five SO2 and NOx 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 the 2011 Q/d analysis, contributed the most to visibility impacts 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 five 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 MANE-VU Class I areas.[40]

New York had three EGUs and four industrial sources that were included in the MANE-VU CALPUFF modeling.[41] Somerset Operating Company, Oswego Harbor Power, and Cayuga Operating Company are the three EGU facilities identified by the modeling. Lafarge Building Materials Inc., Finch Paper LLC, International Paper Ticonderoga Mill, and Kodak Park Division are the four industrial/institutional (ICI) facilities identified by the modeling.

In its submittal, New York states that it has adopted revisions to 6 NYCRR Part 251, Carbon Dioxide Performance Standards for Major Electric Generating Facilities "to require all power plants in New York to meet new emissions limits for carbon dioxide

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[39] "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.
[40] *See* Tables 34 and 35 of appendix K of the NY RH 2nd Implementation Period SIP submission.
[41] *See* appendix K, "MANE-VU Source Contribution Modeling Report – CALPUFF Modeling of Large Electrical Generating Units and Industrial Sources (MANE-VU, April 2017)" of the NY RH 2nd Implementation Period SIP submission.

(CO_2)." As a result of these revisions, New York's submittal indicates that Somerset Operating Company ceased operations after submitting their deactivation plan to New York Independent System Operator (NYISO). In its February 16, 2022, supplement to its submittal, New York stated that Somerset Operating Company retired its primary units on March 31, 2020 and that it was being demolished.[42] New York's submittal addresses Oswego Harbor Power as follows. Oswego Harbor Power Emission Unit U00006 consists of one steam generator, Unit 6, that provides steam to a turbine capable of producing 850 MW net of electricity. This unit can produce up to 245 MW by firing natural gas. Natural gas or distillate oil may be used to ignite the boiler during startup. The oil must have a sulfur content no greater than 0.5% by weight to be used in this unit. Unit 6 is subject to 40 CFR part 60, subpart D. Particulate emissions are controlled by an electrostatic precipitator (S006C). NOx emissions are controlled by over-fire air and flue gas recirculation. SO2 emissions in 2017 were 100.9 tons, compared to 373.4 tons in 2011. NOx emissions from Oswego Harbor Power were 59.7 tons, a decrease from 101.6 tons in 2011. New York's submittal indicates that Cayuga Generating Station is no longer operating, but still retains its State Administrative Procedure Act (SAPA)[43] extended permit.

International Paper Ticonderoga Mill submitted an updated RACT analysis in September 2016 which set an emission limit of 0.23 lb NOx/MMBtu on the power boiler that burns natural gas. RED-Rochester is located in the old Kodak Park and has converted coal-fired boiler #44 to natural gas with #2 fuel oil backup. Boiler #44 is rated at 694 MMBtu/hr on natural gas and 670 MMBtu/hr on No. 2 oil. The final conversion scenario decommissioned three boilers:[44] the previously shut down 640 MBTU/hr coal fired

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[42] *See* docket document "FLM List Facility Controls"
[43] N.Y. Comp. Codes R. & Regs. tit. 82.
[44] RED-Rochester LLC Air Title V Permit. Available at https://www.dec.ny.gov/dardata/boss/afs/permits/826990012600001_r1.pdf.

Boiler 41, the 670 MBTU/hr coal fired Boiler 42 in March 2018, and the 640 MBTU/hr coal-fired Boiler 43 in March 2018. Four operating 98 MBTU/hr #6 fuel oil fired package boilers have been retained as limited use boilers. New York also asserts that the new natural gas boilers will significantly reduce both NOx and SO2 emissions compared to historical and NPS estimated emissions from the coal boilers. Finally, Lafarge Building Materials, Inc. and Finch Paper, LLC were selected for further analysis as part of the long-term strategy and will be discussed in a later section of this proposed rulemaking.

The second MANE-VU contribution analysis used a meteorologically weighted Q/d calculation to assess states' contributions to visibility impairment at MANE-VU Class I areas.[45] This analysis focused predominantly on SO2 emissions and used the quantity of cumulative SO2 emissions from a source for the variable of "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. MANE-VU 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. MANE-VU's analysis estimated New York's maximum sulfate contribution was 4.66% at any Class I area based on the maximum daily impact. The largest impacts from New York's sulfate contributions were to Lye Brook Wilderness, Vermont. Although MANE-VU did not originally estimate nitrate impacts, the MANE-VU Q/d analysis was extended to account for nitrate contributions from NOx emissions and to approximate the nitrate impacts from area and mobile sources. MANE-VU 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

[45] The methodology used by MANE-VU for the meteorological weighted Q/d analysis can be found in Appendix O of the NY RH 2nd Implementation Period SIP submission, "MANE-VU Updated Q/d*C Contribution Assessment."

states did not have CALPUFF nitrate to sulfate ratio results, however, because there were no point sources modeled with CALPUFF.

In order to develop a final set of contribution estimates, MANE-VU weighted the results from both the Q/d and CALPUFF analyses. The MANE-VU mass-weighted sulfate and nitrate contribution results were reported for the MANE-VU Class I areas (the Q/d summary report included results for several non-MANE-VU areas as well). If a state's contribution to sulfate and nitrate concentrations at a particular Class I area was 2 percent or greater, MANE-VU regarded the state as contributing to visibility impairment in the area. According to MANE-VU's analyses, sources in New York have been found to contribute to visibility impairment in downwind mandatory Class I areas. These mandatory Class I areas are: Lye Brook Wilderness Area, Vermont; Brigantine Wildlife Refuge, New Jersey; Presidential Range-Dry River Wilderness Area and Great Gulf Wilderness Area, New Hampshire; Roosevelt-Campobello International Park, Acadia National Park and Moosehorn Wildlife Refuge, Maine; Dolly Sods Wilderness Area and Otter Creek Wilderness Area, West Virginia; and Shenandoah National Park, Virginia. The largest New York mass-weighted sulfate and nitrate contribution to any Class I area was 10.0% to Lye Brook Wilderness.[46] Thus, New York concludes in its regional haze submission, that it does contribute to visibility impairment in Class I Federal areas, and that its contributions "while important, are not the most significant, with the contributions of several states [Midwest RPO and VISTAS] outside the MANE-VU region being significantly larger than New York's."[47]

As explained above, 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

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[46] *See* Pennsylvania's contribution of 20.0% in Table 10-1, "Percent Mass-Weighted Sulfate and Nitrate Due to Emissions from Listed States," of the NY RH 2nd Implementation Period SIP submittal.
[47] *See* Section 10.2.2 of the NY RH 2nd Implementation Period SIP submittal and Appendix C: "Selection of States for MANE-VU Regional Haze Consultation (2018)"

Class I area," (64 FR 35721, July 1, 1999), and this determination was not changed in the 2017 RHR. Critically, the statute and regulation both 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. Consistent with these requirements, the 2019 Guidance makes it clear that "all types of anthropogenic sources are to be included in the determination" of whether a state's emissions are reasonably anticipated to result in any visibility impairment. 2019 Guidance at 8.

The EPA notes that the screening analyses on which MANE-VU relied are useful for certain purposes. MANE-VU used information from its technical analysis to rank the largest contributing states to sulfate and nitrate impairment in five Class I areas within MANE-VU states and three additional, nearby Class I areas.[48] The rankings were used to determine upwind states that were deemed important to include in state-to-state consultation (based on an identified impact screening threshold). Additionally, large individual source impacts were used to address specific components of MANE-VU's control analysis "Asks"[49] of states and sources within and upwind of MANE-VU.[50] The EPA finds the nature of the analyses generally appropriate to support decisions on states with which to consult. However, we have cautioned that source selection methodologies that target the largest regional contributors to visibility impairment across multiple states may not be reasonable for a particular state if it results in few or no sources being selected. 2021 Clarifications Memo at 3.

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[48] The Class I areas analyzed were Acadia National Park in Maine, Brigantine Wilderness in New Jersey, Great Gulf Wilderness in New Hampshire, Lye Brook Wilderness in Vermont, Moosehorn Wilderness in Maine, Shenandoah National Park in Virginia, James River Face Wilderness in Virginia, and Dolly Sods/Otter Creek Wildernesses in West Virginia.

[49] As explained more fully in Section IV.E.a, MANE-VU refers to each of the components of its overall strategy as an "Ask "of its member states.

[50] The MANE-VU consultation report (Appendix E of the NY RH 2nd Implementation Period SIP submission) explains that "[t]he objective of this technical work was to identify states and sources from which MANE-VU 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."

Further, the EPA reviewed the adequacy of MANE-VU's analysis and determinations regarding New York's contribution to visibility impairment at out-of-state Class I areas. The MANE–VU technical work focuses on the magnitude of visibility impacts from certain New York emissions on nearby Class I areas. However, the 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 sources of SO2 and NOx are not scientifically rigorous tools capable of evaluating contribution to visibility impairment from *all* emissions in a state. Although New York noted that the contributions from several states outside the MANE-VU region are significantly larger than its own, we again clarify that each state is obligated under the CAA and Regional Haze Rule to address regional haze visibility impairment resulting from emissions from within the state, irrespective of whether another state's contribution is greater. See 2021 Clarifications Memo at 3. Additionally, we note that the 2 percent or greater sulfate-plus-nitrate threshold used to determine whether New York 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, emissions from New York contribute to visibility impairment in Class I areas in Maine, New Jersey, New Hampshire, Vermont, Virginia, and West Virginia.[51] The EPA generally agrees with this conclusion. 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 as a general matter.

[51] *See* Section 1.4, "Mandatory Class I Federal Areas Affected by New York State" of the NY RH 2nd Implementation Period SIP submission.

Regardless, we note that New York did determine that sources and emissions within the State contribute to visibility impairment at out-of-state Class I areas. Furthermore, New York took part in the emission control strategy consultation process as a member of MANE-VU. As part of that process, MANE-VU developed a set of emissions reduction measures identified as being necessary to make reasonable progress in the five MANE-VU Class I areas. MANE-VU refers to each component of its overall strategy as an "Ask" of participating states. This strategy consists of six "Asks" for states within MANE-VU, and five Asks for states outside the region that were found to impact visibility at Class I areas within MANE-VU.[52] New York'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 MANE-VU has laid out for its states. New York worked with MANE–VU 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. Although we have concerns regarding some aspects of MANE–VU's technical analyses supporting states' contribution determinations as a general matter, we propose to find that New York has nevertheless satisfied the applicable requirements for making reasonable progress towards natural visibility conditions in Class I areas that may be affected be emissions from the state. Specifically, as discussed in further detail below, the EPA is proposing to find that New York 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.

D. Calculations of Baseline, Current, and Natural Visibility Conditions; Progress to

[52] *See* appendix H of the NY RH 2nd Implementation Period SIP submission, "Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) Concerning a Course of Action within MANE-VU toward Assuring Reasonable Progress for the Second Regional Haze Implementation Period (2018-2028), (August 2017)."

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 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).

Because New York does not have any Class I areas within its borders, it is not required to calculate baseline, current, and natural visibility conditions, or to calculate a URP.[53] Thus, the EPA finds that the requirements under this section have been satisfied by New York.

E. Long-Term Strategy for Regional Haze

Each state having a Class I area within its borders or emissions that may affect visibility in a Class I area must develop a long-term strategy for making reasonable progress towards the national visibility goal. CAA 169A(b)(2)(B). As explained in the Background section of this notice, reasonable progress is achieved when all states contributing to visibility impairment in a Class I area are implementing the measures determined—through application of the four statutory factors to sources of visibility impairing pollutants—to be necessary to make reasonable progress. 40 CFR 51.308(f)(2)(i). Each state's long-term strategy must include the enforceable emission

[53] While New York noted that it was not required to comply with 40 CFR 51.308(f)(1), elsewhere in its SIP submission (*See* section 5) it included visibility metrics of nearby Class I areas, which were taken from, "Mid-Atlantic/Northeast U.S. Visibility Data 2004-2016 (2nd RH SIP Metrics) (MANE-VU, August 2018)."

limitations, compliance schedules, and other measures that are necessary to make reasonable progress. 40 CFR 51.308(f)(2). All new (*i.e.,* additional) measures that are the outcome of four-factor analyses are necessary to make reasonable progress and must be in the long-term strategy. If the outcome of a four-factor analysis is that no new measures are reasonable for a source, that source's existing measures are necessary to make reasonable progress, and must therefore be included in the SIP, unless the state can demonstrate that the source will continue to implement those measures and will not increase its emission rate. Existing measures that are necessary to make reasonable progress must also be in the long-term strategy. In developing its long-term strategies, states must also consider the five additional factors in 40 CFR 51.308(f)(2)(iv). As part of its reasonable progress determination, the state must describe the criteria used to determine which sources or group of sources were evaluated (i.e., subjected to four-factor analysis) for the second implementation period and how the four factors were taken into consideration in selecting the emission reduction measures for inclusion in the long-term strategy. 40 CFR 51.308(f)(2)(iii).

The following subsections summarize how New York's SIP submission addressed the requirements of 40 CFR 51.308(f)(2)(i). As explained above, New York relied on MANE-VU's technical analyses and framework (i.e. the Asks), in addition to their review of sources identified by FLMs, to form the basis of its long-term strategy to address reasonable progress. Thus, section IV.E.a., "New York's Response to the Six MANE-VU Asks," describes MANE-VU's development of the six Asks and how New York addressed each. Section IV.E.b., "The EPA's Evaluation of New York's Response to the Six MANE-VU Asks and Compliance with 40 CFR 51.308(f)(2)(i)," then discusses EPA's evaluation of New York's SIP revision with regard to the same.

a. New York's Response to the Six MANE-VU Asks

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)(3)(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.

New York is a member of the MANE-VU RPO and participated in the RPO's regional approach to developing a strategy for making reasonable progress towards the national visibility goal in the MANE-VU Class I areas. MANE-VU'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. As described above, MANE-VU 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 MANE-VU, on behalf of the MANE-VU states and Tribal nations, signed a statement that identifies six emission reduction measures that comprise the Asks for the second implementation period.[54] The Asks were "designed to identify reasonable emission reduction strategies that must be addressed by the states and Tribal nations of

[54] *See* appendix H of the NY RH 2nd Implementation Period SIP submission, "Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) States Concerning a Course of Action Within MANE-VU Toward Assuring Reasonable Progress for the Second Regional Haze Implementation Period (2018-2028)" at 1, August 25, 2017.

MANE-VU through their regional haze SIP updates."[55] 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."[56]

MANE-VU'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 New York's regional haze SIP submission. One of the initial steps of MANE-VU'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, MANE-VU 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, MANE-VU 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)[57] at MANE-VU and nearby Class I areas. MANE-VU found that while SO2 emissions were decreasing and visibility was improving, sulfates still made up the most significant contribution to visibility impairment at MANE-VU and nearby Class I areas. According to the analysis, NOx 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 New York are included in their submission to the EPA and are as follows:

- 2016 Updates to the Assessment of Reasonable Progress for Regional Haze in MANE–VU Class I Areas (Appendix M);
- 2016 MANE–VU Source Contribution Modeling Report—CALPUFF Modeling of Large Electrical Generating Units and Industrial Sources April 4, 2017

[55] Id.
[56] Id.
[57] The period of 2012-2016 was the most recent period for which data was available at the time of analysis.

(Appendix K);

- Regional Haze Metrics Trends and HYSPLIT Trajectory Analyses. May 2017. (Appendix L);
- Selection of States for MANE-VU Regional Haze Consultation (2018) (MANE-VU Technical Support Committee. September 2017. (Appendix C); and

Furthermore, technical analyses New York's submission also references, but New York did not include within its submission, include the following documents:

- Technical Support Document for the 2011 Ozone Transport Commission/Mid-Atlantic Northeastern Visibility Union Modeling Platform (Ozone Transport Commission, September 2018);
- Impact of Wintertime SCR/SNCR Optimization on Visibility Impairing Nitrate Precursor Emissions (prepared by the MANE-VU Technical Support Committee, November 20, 2017); and
- Technical Memorandum: Four Factor Data Collection (prepared by MANE-VU Technical Support Committee March 30, 2017).

To support development of the Asks, MANE-VU gathered information on each of the four factors for six source sectors it determined, based on an examination of annual emission inventories, "had emissions that were reasonabl[y] anticipated to contribute to visibility degradation in MANE-VU:" electric generating units (EGUs), industrial/commercial/institutional boilers (ICI boilers), cement kilns, heating oil, residential wood combustion, and outdoor wood combustion.[58] MANE-VU also collected data on individual sources within the EGU, ICI boiler, and cement kiln sectors.[59]

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[58] MANE-VU Four Factor Data Collection Memo at 1, March 30, 2017, *available at* `https://otcair.org/MANEVU/Upload/Publication/Reports/Four-Factor%20Data%20Collection%20Memo%20-%20170314.pdf`. The six sectors were identified in the first implementation period pursuant to MANE-VU's contribution assessment; MANE-VU subsequently updated its information on these sectors for the second implementation period.

[59] *See* appendix M of the NY RH 2nd Implementation Period SIP submission, "2016 Updates to the Assessment of Reasonable Progress for Regional Haze in MANE-VU Class I Areas, Jan. 31, 2016."

Information for the six sectors included explanations of technically feasible control options for SO2 or NOx, 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. [60] Source-specific data included SO2 emissions[61] and existing controls[62] for certain existing EGUs, ICI boilers, and cement kilns. MANE-VU 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. 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.

MANE-VU 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 NOx and/or SO2 controls.[63] In its submission, New York explained that the control limits required by its Reasonably Available Control Technology (RACT) rule, SIP-approved 6 NYCRR subpart 227-2, "Reasonably Available Control Technology (RACT) for Major Facilities of Oxides of Nitrogen (NOx)," include year-round emission limits of NOx for EGUs with a nameplate capacity

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[60] Id.

[61] Table 1 of MANE-VU's "Four Factor Data Collection Memo" March 30, 2017 contains 2011 SO_2 data from specific sources.

[62] The "Status of the Top 167 Electric Generating Units (EGUs) that Contributed to Visibility Impairment at MANE-VU Class I Areas during the 2008 Regional Haze Planning Period," July 25, 2016, reviews the existing and soon to be installed, at the time of the report, emission controls at individual EGU sources that were a part of the MANE-VU Ask from the first implementation period. Available at: https://otcair.org/MANEVU/Upload/Publication/Reports/Status%20of%20the%20Top%20167%20Stacks%20from%20the%202008%20MANE-VU%20Ask.pdf.

[63] *See* appendix H of the NY RH 2nd Implementation Period SIP submission.

larger than or equal to 25 MW.[64] Regarding control of SO2 emissions, under 6 NYCRR subpart 225, "Fuel Consumption and Use," which was last approved by the EPA on August 23, 2018 (*See* 83 FR 42589), any stationary combustion installation that fires solid or liquid fuels is required to meet the sulfur-in-fuel standards of the subpart.[65] Additionally, New York explained that the SIP-approved 6 NYCRR Part 245, "CSAPR SO2 Group 1 Trading Program" (*See* 84 FR 38878), will distribute Federal SO2 CSAPR allowances to EGUs for the purpose of reducing PM2.5 in New York State and downwind states by limiting emissions of SO2 year-round from fossil fuel-fired EGUs. Thus, based on the information regarding SIP-approved 6 NYCRR Parts 225, 227, and 245, New York explains that its operating permits for EGUs, including those which are for EGUs with a nameplate capacity larger than or equal to 25 MW, require that controls be run year-round for both NOx and SO2 by setting emission limits in permits that reflect the emission levels when the controls are in operation to ensure the most effective use of control technologies. New York therefore concluded that it is meeting Ask 1.

MANE-VU Ask 2 consists of a request that states "perform a four-factor analysis for reasonable installation or upgrade to emissions controls" for specified sources. MANE-VU developed its Ask 2 list of sources for analysis by performing modeling and identifying facilities with the potential for 3.0 inverse megameters (Mm^{-1}) or greater impacts on visibility at any Class I area in the MANE-VU region. Finch Paper and Lafarge Building Materials are the two sources in New York State that were identified by Ask 2.

In section 10.6.3, "Significant Visibility Impact Emission Sources," of New York's submittal, an analysis addressing each of the four-factors is provided for Finch

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[64] *See* NYCRR Part 227-2, "Reasonably Available Control Technology (RACT) for Major Facilities of Oxides of Nitrogen (NOx)," which applies to all EGUs and sets emission limits that can only be achieved with year-round operation of controls.

[65] New York submitted additional revisions to 6 NYCRR 225-1. The EPA proposed approval. 87 FR 64428 (October 25, 2022).

Paper and Lafarge Building Materials. New York's analysis for Finch Paper determined that the phased-in switch from No. 6 fuel oil to natural gas in their boilers (completed by the end of 2015) and the boiler and combustion tune-ups, consistent with 40 CFR part 63 subpart DDDDD Boiler MACT Rule (especially for boilers 4 and 5), were adequate upgrades to control emissions. Additionally, New York's analysis for Lafarge Building Materials determined that major renovations which included the replacement of the facility's two wet process kilns with a dry process kiln and the installation of a wet scrubber and Selective Non-Catalytic Reduction (SNCR) to the kiln system to be adequate upgrades to control emissions. Both facilities have undergone major updates since the 2011 emissions data was collected, which included the implementation of emission control strategies, resulting in no additional time necessary to comply. Additionally, both facilities have SIP-approved controls installed that limit their potential contribution to visibility impairment.

In addition to the analyses conducted for Finch Paper and Lafarge Building Materials, New York provided information regarding controls and emissions at the facilities within New York that were identified by the FLMs during consultation. The following discussion is related to information New York provided pertaining to FLM concerns.

The Anchor Glass Container Corporation facility in Elmira is subject to a 2018 Consent Decree with EPA that contains a compliance schedule for controls to be implemented on the facility's two furnaces (Elmira 1 and Elmira 2). New York indicated that both furnaces will be rebuilt and will burn oxyfuel or install a selective catalytic reduction (SCR) unit to minimize NOx emissions. These controls were implemented for Elmira 1 in 2021. Additionally, a scrubber system and an electrostatic precipitator (ESP) were installed on Elmira 1 in 2021. Elmira 2 underwent batch optimization in 2021 and will burn oxyfuel or install a selective catalytic reduction (SCR) by December 31, 2029.

Moreover, New York indicated that Morton Salt Division converted its boilers from firing coal to natural gas. That said, a new natural gas 148 MMBtu/hr steam boiler and eight small direct fired building heaters replaced an existing 138 MMBtu/hr coal boiler and an existing 92.5 MMBtu/hr natural gas boiler. According to the State, the new natural gas 148 MMBtu/hr steam boiler is subject to the relevant presumptive RACT emission limit of 0.06 pounds NOx per million Btu burning only natural gas. Notably, this conversion reduced emissions below the major source threshold and, as a result, the facility's Title V permit was replaced by an Air State Facility permit.[66]

The Bowline Point Generating Station switched to natural gas but will be allowed to burn oil as a backup. Additionally, Lehigh Northeast Cement operates with a dry process, which has fewer emissions than wet processes, and a selective noncatalytic reduction (SNCR) began operation July 2012. Notably, Northport Power Station burned much less #6 high sulfur fuel oil in 2016 and 2017 and, as a result of 6 NYCRR 225-1, "Sulfur-in-fuel limitations," the sulfur content of #6 fuel oil used at the facility has decreased providing for an additional reduction of SO2 emissions over the past years.

Furthermore, New York claims that water injection, dry low NOx burners, and SCR are used to control NOx emissions, along with the use of an oxidation catalyst to control CO and VOC emissions at the Con Edison-East River Generating Station facility. At Ravenswood Generating Station, dry low NOx burners and SCR are used to control NOx emissions from unit U-CC001. In addition, emissions of VOC and CO are controlled using an oxidation catalyst and New York only allows distillate oil to be burned for 720 hours per year. The Globe Metallurgical, Inc., plant shutdown indefinitely due to market conditions in December 2018. Also, the Roseton Generating Station exclusively burns natural gas during the ozone season and burns natural gas and No. 6

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[66] *See* Air State Facility permit at: https://extapps.dec.ny.gov/data/dar/afs/permits/956320000700045_r0.pdf.

fuel oil during the remainder of the year. PM emission from Units 1 & 2 are controlled with a mechanical dust collector and NOx emissions are controlled with "Burners Out Of Service" (BOOS) controls, oil steam atomization, and windbox flue gas recirculation at the Roseton facility.

Moreover, Cargill Salt Co.'s Watkins Glen Plant shutdown four boilers (two coal-fired and two natural gas-fired) in 2013, totaling 228 MMBtu/hr heat input capacity. The four boilers that were shutdown were replaced by one 181 MMBtu/hr natural gas-fired boiler, equipped with a low-NOx burner. The replacement boiler is subject to a 0.1 lbs NOx/MMBtu heat input limit that is monitored using a Continuous Emissions Monitoring System (CEMS), and as a result of these changes, the plant is no longer considered a major facility subject to a Title V permit. Norlite Corporation has had its permit emission limits reduced from 61 lb/hr of NOx and 30 lb/hr of SO2 in 2011, to 22.4 lb/hr of NOx and 28 lb/hr of SO2. As a result, NOx and SO2 emissions at Norlite decreased from 80.7 tons in 2011 to 78.8 tons in 2017 and 124.9 tons in 2011 to 60.4 tons in 2017 respectively. New York therefore concluded that it satisfies Ask 2.

Ask 3 is for each MANE–VU state to pursue an ultra low-sulfur fuel oil standard if it has not already done so in the first implementation period.[67] The Ask includes percent by weight standards for #2 distillate oil (0.0015% sulfur by weight or 15 ppm), #4 residual oil (0.25–0.5% sulfur by weight), and #6 residual oil (0.3–0.5% sulfur by weight). New York explains that it has already implemented a low-sulfur fuel standard and does not need to take further action by 2028. In 2018, the EPA approved into the New York SIP New York's regulation to reduce the sulfur content of fuel oil, 6 NYCRR 225-1. 83 FR 42589 (Aug. 23, 2018). The final rule limited firing of all residual oil to a range of 0.3 to 0.5% sulfur by weight depending on the area and a 15 ppm limit (0.0015%

[67] MANE-VU's analysis, which New York relied on, is found in "Appendix M-2016 Updates to the Assessment of Reasonable Progress for Regional Haze in MANE-VU Class I Areas."

sulfur by weight) on #2 oil starting July 1, 2014. The ultra low-sulfur fuel oil regulations in New York are a part of its long-term strategy. New York therefore concluded that it is meeting Ask 3.

MANE-VU Ask 4 requests states to update permits to "lock in" lower emissions rates for NOx, SO2, and PM at emissions sources larger than 250 million British Thermal Units (MMBtu) per hour heat input that have switched to lower emitting fuels. According to New York's SIP submission, New York updates permits for large point emission sources every five years for Title V facilities, every ten years for Air State Facilities, and whenever both Title V and Air State facilities make a major update. New York explains that it will also require the use of lower emitting fuel in the permits when these permits are updated. Additionally, New York's submittal indicates that it has adopted 6 NYCRR part 251, "CO2 Performance Standards for Major Electric Generating Facilities," which requires all power plants in New York to meet new emissions limits for carbon dioxide (CO_2) and will end the use of coal in New York State power plants. Although this state regulation has not been submitted to the EPA for incorporation into New York's SIP, it is expected that emissions of visibility impairing pollutants will decrease once power plants cease the burning of coal. In addition, New York has stringent SIP-approved limits for coal operated units in its 6 NYCRR subpart 227-2, "RACT for Major Facilities of NOx provisions." This rule limits presumptive NO_X emission limits to the range of 0.08 to 0.20 pounds per million BTU (lb/MMBtu), depending upon the type of fuel and boiler configuration, for sources with emissions larger than 250 million British Thermal Units (MMBtu) per hour heat input. New York therefore concluded it is meeting Ask 4.

Ask 5 requests that states "control NOx emissions for peaking combustion turbines[68] that have the potential to operate on high electric demand days" by either (1)

[68] Peaking combustion turbine is defined for the purpose of this Ask as a turbine capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2007, is used to generate electricity all or

meeting NOx emissions standards specified in the Ask for turbines that run on natural gas and for 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.[69] The Ask requests states to strive for NOx emission standards of no greater than 25 ppm for natural gas and 42 ppm for fuel oil, or at a minimum, NOx emission standards of no greater than 42 ppm for natural gas and 96 ppm for fuel oil. New York's submission states that it adopted 6 NYCRR subpart Part 227-3[70] on December 11, 2019, to, among other things, limit emissions from simple cycle combustion turbines (peaking units) that operate on high electric demand days.[71] The rule limits NOx emission rates to 25 ppm at 15% O_2 for natural gas and 42 ppm at 15% O_2 for fuel oil. This rule helps to achieve ground-level ozone reductions and, as a result, is expected to improve visibility in mandatory Class I Federal areas in response to the Ask.[72] In 2021, the EPA approved into the New York SIP, New York's regulation (6 NYCRR 227-3) to limit emissions from simple cycle combustion turbines (peaking units) that operate on high electric demand days. 86 FR 43956 (Aug. 11, 2021). New York therefore concluded it is meeting Ask 5.

The last Ask for states within MANE-VU, 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. New York explains in its SIP submission that it "is a leader in adopting energy efficiency and renewable energy programs and is always investigating

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part of which is delivered to electric power distribution grid for commercial sale and that operated less than or equal to an average of 1,752 hours (or 20%) per year during 2014 to 2016.

[69] *See* appendix H of the NY RH 2nd Implementation Period SIP submission.

[70] New York submitted 6 NYCRR Subpart 227-3, "Ozone Season Oxides of Nitrogen (NOx) Emission Limits for Simple Cycle and Regenerative Combustion Turbines" to the EPA on May 18, 2020.

[71] High electric demand days are days when higher than usual electrical demands bring additional generation units online, many of which are infrequently operated and may have significantly higher emissions rates of the generation fleet.

[72] *See* section 10.6.6 of the NY RH 2nd Implementation Period SIP submission.

additional programs that will decrease use of fossil fuels in energy generation."[73] Section 10.3.7 of its SIP submission specifically cites the New York State Energy Research and Development Authority (NYSERDA) which provides funding and technical assistance in many programs that result in reductions of emissions of PM and its precursors as well as New York's Department of Public Service that also has current energy programs. New York therefore concluded it is meeting Ask 6.

b. The EPA's Evaluation of New York's Response to the Six MANE-VU Asks and Compliance with 40 CFR 51.308(f)(2)(i)

The EPA is proposing to find that New York 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 New York has satisfied the four-factor analysis requirement through its analysis and actions to address the MANE–VU Asks.

As explained above, New York relied on MANE-VU's technical analysis and framework (i.e., the Asks), in addition to their review of sources identified by FLMs, to select sources and form the basis of its long-term strategy. MANE-VU conducted an inventory analysis to identify the source sectors that produced the greatest amount of SO2 and NOx emissions in 2011 and inventory data were also projected to 2018. Based on this analysis, MANE-VU 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. Additionally, major-emitting sources of NOx include on-road vehicles, non-road vehicles, and EGUs.[74] The RPO's documentation explains that "[EGUs] emitting SO2 and NOx and industrial point sources emitting SO2 were found to be sectors with high emissions that warranted

[73] *See* section 10.6.7 of the NY RH 2nd Implementation Period SIP submission.
[74] *See* appendix G of NY RH 2nd Implementation Period SIP submission, "Contribution Assessment Preliminary Inventory Analysis" (Oct. 10, 2016).

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."[75] The EPA proposes to find that New York reasonably evaluated the two pollutants, SO_2 and NO_X, that currently drive visibility impairment within the MANE–VU region and that it adequately explained and supported its decision to focus on these two pollutants through its reliance on the MANE–VU technical analyses cited in its submission.

Section 51.308(f)(2)(i) requires states to evaluate and determine the emission reduction measures that are necessary to make reasonable progress by applying the four statutory factors to sources in a control analysis. As explained previously, the MANE-VU Asks are a mix of measures for sectors and groups of sources identified as reasonable for states to address in their regional haze plans. While MANE-VU formulated the Asks to be "reasonable emission reduction strategies" to control emissions of visibility impairing pollutants,[76] the EPA believes that Asks 2 and 3, in particular, engage 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 MANE-VU's four-factor analysis conducted to support the emission reduction measures in Ask 3 (ultra-low sulfur fuel oil Ask), in conjunction with New York's supplemental analysis and explanation of how it has complied with Ask 2 (perform four-factor analyses for sources with potential for ≥ 3 Mm^{-1} impacts) 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 New York's SIP. *See* 40 CFR 51.308(f)(2)(i).

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[75] *See* docket document "Statement of MANE-VU Concerning a Course of Action by Federal Agencies for the 2nd pp."

[76] *See*
Appendix H of NY RH 2nd Implementation Period SIP submission, "Statement of MANEVU Concerning a Course of Action Within MANEVU Toward Assuring Reasonable Progress for the Second Implementation."

As for Ask 1, New York concluded that it satisfied the ask because its SIP-approved regulations include year-round emission limits for EGUs with a nameplate capacity larger than or equal to 25 MW and because it already requires that controls be run year-round for both NOx and SO2 by setting emission limits in permits that reflect the emission levels when the controls are run. New York also explains in its response to public comments that it has very stringent sulfur in fuel regulations and that there are no coal units remaining in New York. New York's SIP approved (78 FR 41846, July 12, 2013) Reasonably Available Control Technology (RACT) for Major Facilities of Oxides of Nitrogen (NOx), limits emissions from boilers, combustion turbines, stationary internal combustion engines, and other combustion installations through the requirement of year-round controls. The New York RACT rule includes maximum NOx emission limits of 0.2 pounds NOx per million Btu for coal fuel types, 0.2 pounds NOx per million Btu for gas/oil fuel types and 0.08 pounds NOx per million Btu for gas only fuel types. Furthermore, New York's SIP-approved sulfur limits (6 NYCRR 225-1) include year-round limits. 83 FR 42589 (Aug. 23, 2018).[77] The final rule limited firing of all residual oil to a range of 0.3 to 0.5% sulfur by weight depending on the area and a 15 ppm limit (0.0015% sulfur by weight) on #2 oil. New York's SIP-approved SO2 and NOx RACT requirements in 6 NYCRR subpart 225-1 and 227-2 limit SO2 and NOx emissions from EGUs with a nameplate capacity larger than or equal to 25 MW consistent with the year-round operation of control technologies. Thus, the EPA proposes to find that New York reasonably concluded that it has satisfied Ask 1.

Ask 2 addresses the sources MANE-VU determined to have the potential for larger than, or equal to, 3 Mm^{-1} visibility impact at any MANE-VU Class I area; the Ask requests MANE-VU states to conduct four-factor analyses for the specified sources

[77] New York revised 6 NYCRR 225 and submitted such revisions to the EPA for approval into the SIP on August 28, 2020 and March 3, 2021. The EPA proposed approval on October 25, 2022. *See* 87 FR 66428.

within their borders. This Ask explicitly engages with the statutory and regulatory requirement to determine reasonable progress based on the four factors; MANE-VU 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 and what would be reasonable for each source."[78]

As discussed above, EPA does not necessarily agree that the 3.0 Mm^{-1} visibility impact is a reasonable threshold for source selection. 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. See 2021 Clarifications Memo at 4. As explained in the 2021 Clarifications Memo, while states have discretion to choose any source selection threshold that is reasonable, "[a] state that relies on a visibility (or proxy for visibility impact) threshold to select sources for four-factor analysis should set the threshold at a level that captures a meaningful portion of the state's total contribution to visibility impairment to Class I areas." 2021 Memo at 3. In this case, the 3.0 Mm^{-1} threshold identified two sources in New York (and only 22 across the entire MANE-VU region), indicating that it may be unreasonably high. However, as explained in more detail below, we propose to find that New York's additional information and explanation indicates that the State in fact examined a reasonable set of sources and reasonably concluded that four-factor analyses for additional sources are not necessary because the outcome would be that no further emission reductions would be reasonable.

MANE-VU identified two large EGUs or other industrial sources of visibility impairing pollutants within New York, Finch Paper and Lafarge Building Materials. As detailed in New York's submission, the EPA notes that both facilities have undergone

[78] *See* Appendix E of NY RH 2nd Implementation Period SIP submission, "MANE-VU Regional Haze Consultation Report."

updates since the 2011 emissions data was collected and have installed SIP-approved controls that limit their potential maximum light extinction impact below 3.0 (Mm^{-1}) and well below their previous levels.

In section 10.6.3 of New York's submittal, New York addresses each of the four-factors for the controls that were implemented at Finch Paper after the 2011 emissions data was collected. New York also submitted a Source-Specific State Implementation Plan Revision (SSSR) for Finch Paper to the EPA on May 18, 2022.[79] The EPA proposed to approve the SSSR on January 19, 2024. *See* 89 FR 3620. Appendix A[80] of the SSSR contains Finch's technical evaluation of the currently permitted Reasonably Available Control Technology (RACT) for NOx as well as NOx RACT analysis dated 2019.

Finch's 2019 RACT analysis determined that six technologies were technically feasible for the power boilers. Those technologies include decommissioning/idling sources, fuel switch excusive to natural gas, third generation Low NOx burners, Selective Catalytic Reduction (SCR), and purchasing electricity in lieu of generating it onsite. Finch then performed a cost analysis for third generation low NOx burners, SCR, and purchasing electricity since it had already implemented the other identified control technologies. Finch's cost analysis of low NOx burner resulted in a cost of $6,998 per ton NOx removed and was considered economically infeasible. Finch's analysis of SCR resulted in a cost of $15,358 per ton NOx removed and was considered economically infeasible. Finch's cost analysis of purchasing electricity instead of generating electricity onsite with No.4 boiler and No.5 boiler being capped, resulted in a cost of $5,774 per ton NOx removed and was not considered a reasonable available control technology.

Appendix A of New York's SSSR submission[81] also includes Finch's reevaluation of the 2019 NOx RACT analysis requirements ("2021 RACT analysis"), as

[79] *See* docket document "Finch Source Specific State Implementation Plan Revision."
[80] *See* docket document "COMPLETE SSSR.2022MAY18.Finch.2EPA20220524.pdf"
[81] Id.

part of the facility's Title V Operating Permit renewal application. In the 2021 RACT analysis, Finch compared the actual emission rates to established emission limits for each source type. For the Power Boilers, the calculated 30-day averages are within approximately 2-9% of the established limits for the power boilers. The emission testing results for the No.9 Wood Waste Boiler showed that the emissions are within approximately 10% of the established RACT limit. The Recovery Boilers emission limit was also evaluated, and Finch found that the actual emissions were within 4-19% of the established limits. Based on the 2021 RACT analysis, Finch determined that they are demonstrating ongoing compliance with the emission limits within a reasonable margin and proposed to retain the current NOx emission limits as RACT.

As noted in the May 18, 2022 SSSR, Finch controls NOx emissions from the site through the following means:

- Eliminated use of Boiler No. 1; Completed in 2015.
- A time-phased elimination of No. 6 fuel oil on all boilers since NOx emissions are higher from the combustion of fuel oil than natural gas; Completed on December 31, 2015.
- Performance of boiler and combustion tune-ups consistent with 40 CFR part 63 subpart DDDDD, the Boiler MACT Rule; Completed the first tune-up in January 2016.
- A "seasonal" NOx RACT emission limit for Boilers No. 2 through No. 5 as follows:
    - From April 15 to October 15, a NOx emission limit of 0.225 lbs NOx/MMBtu measured on a daily basis and reported as a 30-day average[82];
    - From October 16 to April 14, an operating limit .275 pounds per

[82] *See* docket document "Finch Air Title V Permit."

> million BTU on a 30-day average. The limit will not apply when the recovery boiler is not burning liquor or No. 9 is considered down. On those days the limit will be 0.378 pounds per million BTU on a 24-hour block average.[83]

According to the 2011 NEI data, Finch emitted 1,828.7 tons of NOx and 309.6 tons of SO2. Since then, Finch has implemented emission controls, as detailed in section 10.6.3 of New York's submittal, and consequently reduced its emissions. New York also provided a supplement which lists the controls at Finch Paper for SO2, PM, and NOx for the primary units at the facility.[84] In addition to the NOx controls listed above, the facility controls SO2 with a wet scrubber, the use of low-sulfur fuel, and packed bed tower, gas scrubber.[85] As a result, in 2020, Finch emitted 1,324.3 tons of NOx and 138.9 tons of SO2.[86]

In the first planning period, NYSDEC determined that the existing long wet kilns at Lafarge Building Materials Inc., were BART eligible. In January 2010, Lafarge entered a Consent Decree with the EPA[87] which contained a compliance schedule for the plant to either modernize the existing plant, retrofit the existing kilns with controls, or retire the kilns. Furthermore, Lafarge Building Materials underwent major renovations since the emission data was collected for the analysis, replacing its two wet process kilns with a dry process kiln. A wet scrubber was installed to control SO2, as well as mercury, and a SNCR was installed to control NOx from the kiln system.[88] With the controls started on May 16, 2017 for SO2, mercury, and NOx, Lafarge now meets the NSPS limits in 40

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[83] Id.
[84] *See* docket document "FLM List Facility Controls."
[85] *See* docket document "Finch Air Title V permit."
[86] *See* docket document "FLM List Recent Emissions."
[87] On January 21, 2010, EPA announced that the U.S. filed Clean Air Act settlements to reduce air emissions from container glass and Portland cement plants throughout the country. (Case 3:10-cv-000440JPG-CJP) This settlement includes Portland cement plants owned by Lafarge Company, including one located at Ravena, NY that has two wet kilns that New York has identified as BART-eligible.
[88] *See* docket document "FLM List Facility Controls."

CFR part 60 subpart F. In section 10.6.3 of New York's submittal, New York addresses each of the four-factors for the controls that had been implemented at Lafarge after the 2011 emissions data was collected.

According to the 2011 NEI data, Lafarge Building Materials emitted 4,926.5 tons of NOx and 9,570 tons of SO2. Since then, Lafarge has implemented SIP-approved emission controls, as detailed in section 10.6.3 of New York's submittal, and consequently reduced its emissions. New York also provided a supplement which lists the controls at Lafarge for SO2, PM, and NOx for the primary units at the facility.[89] As a result, in 2020, Lafarge emitted 558.6 tons of NOx and 58.7 tons of SO2.[90]

The EPA therefore proposes to find that New York reasonably determined it has satisfied Ask 2. As explained above, we do not necessarily agree that a 3.0 Mm^{-1} threshold for selecting sources for four-factor analysis results in a set of sources the evaluation of which has the potential to meaningfully reduce the State's contribution to visibility impairment. MANE-VU's threshold identified only two sources in New York for four-factor analysis. However, in this particular case we propose to find that New York's additional information and explanation indicates that the State in fact examined a reasonable set of sources and reasonably concluded that four-factor analyses for these sources are not necessary because the outcome would be that no further emission reductions would be reasonable. EPA is basing this proposed finding on the State's examination of the two sources, the current emissions from and controls that apply to the facilities, controls in place at sources flagged by the FLMs, as well as New York's existing SIP-approved rules that control NOx emissions.

Ask 3, which addresses the sulfur content of heating oil used in MANE–VU states, is based on a four-factor analysis that MANE-VU conducted regarding the heating

[89] *See* docket document "FLM List Facility Controls."
[90] *See* docket document "FLM List Recent Emissions."

oil sulfur reduction regulations contained in that Ask; specifically, for the control strategy of 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 on-road and non-road-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 had needed to comply with the EPA's on-road and non-road 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."[91] 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

[91] *Id.* at 8-7.

residential furnaces and boilers.[92]

The EPA proposes to find that New York reasonably relied on MANE-VU's four-factor analysis for a low-sulfur fuel oil regulation, which engaged with each of the factors and explained how the information supported a conclusion that a 15 ppm-sulfur fuel oil standard for fuel oils is reasonable. New York's SIP-approved ultra-low sulfur fuel oil rule[93] is 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 proposes to find that New York reasonably determined that it has satisfied Ask 3.

New York concluded that no additional updates were needed to meet Ask 4, which requests MANE-VU states to pursue updating permits, enforceable agreements, and/or rules to lock-in lower emission rates for sources larger than 250 MMBtu per hour that have switched to lower emitting fuels. As previously explained, New York updates permits for large point sources every five years for Title V facilities, every ten years for Air State Facilities, and when Title V and Air State facilities make a major update. Under section 10.6.5. of its submission, New York indicated it would require the use of lower emitting fuel in such permits as they are updated. New York has also adopted NYCRR Part 251 which requires all power plants in New York to meet new emission limits for carbon dioxide.[94] This regulation, in addition to the SIP enforced NOx limits in 6 NYCRR subpart 227-2, Reasonably Available Control Technology (RACT) for Major Facilities of Oxides of Nitrogen (NOx), satisfy Ask 4. Thus, the EPA proposes to find that New York reasonably determined it has satisfied Ask 4.

Ask 5 addresses NOx emissions from peaking combustion turbines that have the potential to operate on high electric demand days. New York explains that it adopted

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[92] *Id.* at 8-8.
[93] 6 NYCRR subpart 225-1: Fuel Composition and Use- Sulfur Limitations was approved into New York's SIP by the EPA on August 23, 2018. (83 FR 42589)
[94] *See* section 10.6.5 of the NY RH 2nd Implementation Period SIP submission.

NYCRR subpart 227-3, "Ozone Season Oxides of Nitrogen (NOx) Emission Limits for Simple Cycle and Regenerative Combustion Turbines," on December 11, 2019 that limits emissions from peaking combustion turbines[95] that operate on high electric demand days[96] and meets the emission rates contained in Ask 5. New York submitted Part 227-3 to the EPA on May 18, 2020 and it was approved on August 11, 2021. (86 FR 43956) The EPA therefore proposes to find that New York reasonably concluded that its existing regulations comply with Ask 5.

Finally, the EPA is proposing to find that New York has satisfied Ask 6's request to consider and report in its SIP measures or programs related to energy efficiency, cogeneration, and other clean distributed generation technologies. New York reports it is a leader in adopting energy efficiency and renewable energy programs and is always investigating additional programs that will decrease use of fossil fuels in energy generation. In the additional measures section of its submittal, section 10.3.7, New York explains that in July 2019, it passed the Climate Leadership and Community Protection Act (CLCPA). The CLCPA requires New York to achieve a carbon free electric system by 2040 and reduce greenhouse gas emissions 85% below 1990 levels by 2050, to expedite the transition to a clean energy economy. This law will drive investment in clean energy solutions such as wind, solar, energy efficiency and energy storage. The CLCPA targets investments to benefit disadvantaged communities, create tens of thousands of new jobs, improve public health and quality of life, and provide all New Yorkers with more robust clean energy choices. Additionally, with a focus on environmental justice, state agencies will invest at least 35% of clean energy program resources to benefit

[95] Peaking combustion turbine is defined for the purpose of this Ask as 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 electric power distribution grid for commercial sale and that operated less than or equal to an average of 1,752 hours (or 20%) per year during 2014 to 2016.

[96] High electric demand days are days when higher than usual electrical demands bring additional generation units online, many of which are infrequently operated and may have significantly higher emissions rates of the generation fleet.

disadvantaged communities but will aim for a 40% investment. In addition, NYSDEC will, through the future adoption of regulations, drive an 85% reduction in greenhouse gas emissions by 2050, with an interim benchmark of 40% reduction in emissions by 2030 (both relative to 1990 levels). The Climate Action Council will develop a plan to offset remaining emissions through carbon capture or other technologies to create a carbon-neutral economy. Finally, a just transition working group will work to ensure that individuals working in conventional energy industries are provided with training and opportunities in the growing clean energy economy.

In sum, the EPA is proposing to find that, based on New York's participation in the MANE-VU planning process, how it has addressed each of the Asks, its initial submission and supplemental information regarding sources and emissions, and the EPA's assessment of New York's emissions and point sources, New York has complied with the requirements of 40 CFR 51.308(f)(2)(i). Specifically, MANE-VU Asks 2 and 3 engage with the requirement that states evaluate and determine that emission reduction measures that are necessary to make reasonable progress by considering the four statutory factors. MANE-VU selected two sources for New York to perform source-specific four-factor analyses pursuant to Ask 2. EPA is proposing to find that the state's approach is reasonable because the sources with the greatest modeled impacts on visibility have reduced their emissions or are subject to stringent control measures. New York's SIP-approved control measures, emissions inventory and supplemental information demonstrate that the sources of SO2 and NOx within the State that would be expected to contribute to visibility impartment have small emissions of NOx and SO2, are well controlled, or both. New York's SIP-approved sulfur limitations and use regulation limit the sulfur content of distillate oil, residual oil, and coal fired in stationary sources. New York's SIP-approved NO_X RACT regulations include stringent limits on boilers serving EGUs, stationary combustion turbines, ICI boilers and high electric demand day units. In

addition, New York reviewed the source list provided by the FLMs and evaluated the controls and emissions at each of the facilities. Therefore, it is reasonable to assume that selecting additional point sources for four-factor analysis would not have resulted in additional emission reduction measures being determined to be necessary to make reasonable progress for the second implementation period.

Moreover, MANE-VU conducted a four-factor analysis to support Ask 3, which requests that states pursue ultra-low sulfur fuel oil standards to address SO2 emissions. New York has done so and included its regulations in its SIP, thus satisfying 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. To the extent that MANE-VU and New York regard the measures in Asks 1 and 4 through 6 as being part of the region's strategy for making reasonable progress, we propose to find it reasonable for New York to address these Asks by pointing to existing measures that satisfy each.

c. Additional Long-Term Strategy Requirements

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

New York participated in and provided documentation of the MANE-VU intra-

and inter-RPO consultation processes and addressed the MANE-VU Asks by providing information on the measures it has in place that satisfy each Ask.[97] MANE-VU also documented disagreements that occurred during consultation. MANE-VU noted in their Consultation Report that upwind states expressed concern regarding the analyses the RPO utilized for the selection of states for the consultation. MANE-VU 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. MANE-VU agreed that the choice of base year is critical to the outcome of the study. MANE-VU acknowledged that there were newer versions of the emission inventories and the need to use the best available inventory for each analysis. However, MANE-VU disagreed that the choice of these inventories was not appropriate for the analysis. Upwind states also suggested that MANE-VU states adopt the 2021 timeline for regional haze SIP submissions for the second planning period. MANE-VU agreed with the reasons the comments provided, such as collaboration with data and planning efforts. However, MANE-VU disagreed that the 2018 timeline would prohibit collaboration. Additionally, upwind states noted that they would not be able to address the MANE-VU Asks until they finalize their SIPs. MANE-VU believed the assumption of the implementation of the Asks from upwind states in its 2028 control case modeling was reasonable.

In sum, New York participated in the MANE-VU intra- and inter-RPO consultation and satisfied the MANE-VU Asks, satisfying 40 CFR 51.308(f)(2)(ii)(A) and (B). New York satisfied 40 CFR 51.308(f)(2)(ii)(C) by participating in MANE-VU's consultation process, which documented the disagreements between the upwind states and MANE-VU and explained MANE-VU's reasoning on each of the disputed issues. Thus, the EPA proposes that New York has satisfied the requirements of 40 CFR

[97] *See* appendix E "MANE-VU Regional Haze Consultation Report."

51.308(f)(2)(ii).[98]

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, New York chose to rely on MANE-VU's technical information, modeling, and analysis to support development of its long-term strategy. The MANE-VU technical analyses on which New York 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. We propose to find that New York's participation in and reliance on the documentation developed by MANE-VU in support of its process and technical analyses to identify visibility-impairing pollutants and sources and to form the basis of its long-term strategy (the Asks) satisfies the requirements 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. New York's submission includes emissions inventory data from 2014.[99] New York later provided a supplement including 2017 emission inventory data,[100] which was the most recent year of data that New York had submitted to the EPA to meet the triennial reporting requirement within 12 months prior to New

[98] New York referenced the "MANE-VU Regional Haze Consultation Plan (5/5/2017)" and provided documentation of the MANE-VU consultation process in appendix E, "MANE-VU Regional Haze Consultation Report (7/27/2018)" of its Regional Haze SIP submission.
[99] *See* section 10.2.3 of the NY RH 2nd Implementation Period SIP submission.
[100] *See* docket document "NY Regional Haze Inventory Supplement."

York's submittal in March 2020. New York's supplement updated the tables and graphs in the submission with the addition of the 2017 data. The EPA proposes to find that New York has satisfied the emission inventory requirement in 40 CFR 51.308(f)(2)(iii).

The EPA also proposes to find that New York 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), New York noted that ongoing Federal emission control programs that contribute to emission reductions through 2028, including Cross-State Air Pollution Rule (CSAPR), Boiler Maximum Achievable Control Technology (MACT) Rules, Reciprocating Internal Combustion Engine (RICE) MACT Standards, Consent Decrees, and portable fuel container rules, would impact emissions of visibility impairing pollutants from point and nonpoint sources in the second implementation period. For non-road sources, New York identified Clean Air Nonroad Diesel Final Rule-Tier 4, Control of Emissions from Nonroad Large Spark-Ignition Engines and Recreational Engines (Marine and Land-Based), and Small Engine Spark Ignition ("Bond") Rule. New York identified Heavy Duty Diesel (207) Engine Standard, Tier 3 Motor Vehicle Standards, and Light Duty Vehicle GHG Rule for Model-Year 2017-2025 as on-road source controls. On-going measures from various source categories that New York considered in developing its long-term strategy were discussed in section 10.3.6 of their submission. Some of the SIP-approved state measures that New York describes are:

- Part 212: General Process Emission Sources
- Part 215: Open Burning
- Part 217: Motor Vehicle Emissions
- Part 219: Incinerators
- Part 220: Portland Cement Plants and Glass Plants
- Part 222: Distributed Generation Sources.
- Part 225: Fuel Composition and Use

- Part 227: Stationary Combustion Installations
- Part 231: New Source Review for New and Modified Facilities
- Part 243: CSAPR NOx Ozone Season Group 2 Trading Program
- Part 244: CSAPR NOx Annual Trading Program
- Part 245: CSAPR SO2 Group 1 Trading Program
- Part 249: Best Available Retrofit Technology

NYSDEC provided a supplement that organizes these SIP-approved state measures by the first and second regional haze implementation periods. NYSDEC clarified that "regulations adopted during the first implementation period are considered existing measures and are still necessary for 'reasonable further progress' while regulations adapted during the second implementation period are considered part of New York's long-term strategy."[101]

New York's consideration of measures to mitigate the impacts of construction activities as required by 40 CFR 51.308(f)(2)(iv)(B) includes discussion of a report that found that, from a regional haze perspective, crustal material from anthropogenic sources does not play a major role in visibility impairment at MANE-VU Class I areas.[102] While construction activities can be responsible for direct PM emissions in the region, the dust settles out of the air relatively close to the sources and does not significantly impact visibility at distant Class I areas. New York cited section 107-11: Air Quality Protection of NYSDOT's Standard Specifications which requires contractors to apply protective measures to prevent dust from being released from construction sites. A summary of the PM emission inventory in New York can be found in section IV.H. of this rulemaking.[103]

Source retirements and replacement schedules are addressed pursuant to 40 CFR

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[101] *See* docket document "NY State Measures Supplement."
[102] *See* section 10.7.1 of the NY RH 2nd Implementation Period SIP submission
[103] Section 7.1.2 of the NY RH 2nd Implementation Period SIP submission addresses the PM10 inventory for NY.

51.308(f)(2)(iv)(C) in section 10.3.8 of New York's submission. Source retirements and replacements were considered in developing the 2028 emission projections, with on the books/on the way retirements and replacement included in the 2028 projections. That said, New York's submittal indicated that shutdowns of large EGUs or industrial sources within the state were scheduled to occur. The units Indian Point 2 and Indian Point 3, located at Entergy Nuclear Power Marketing, had deactivation dates of April 30, 2020 and April 30, 2021, respectively. Greenpoint GT 1 unit, located at Hawkeye Energy Greenport LLC had a deactivation date of June 6, 2018. Finally, the units Selkirk 1 and Selkirk 2, located at Selkirk Cogen Partners, LP had a deactivation date of May 17, 2018.[104] New York confirmed that the deactivations of Indian Point 2 and Indian Point 3 occurred as scheduled on April 30, 2020 and April 30, 2021, respectively,[105] and advised that the deactivation requests for the Greenpoint GT1, Selkirk 1, and Selkirk 2 units were withdrawn and the units continue to operate.[106]

In considering smoke management as required in 40 CFR 51.308(f)(2)(iv)(D), New York stated that prescribed fires have not been shown to significantly contribute to visibility impairment in mandatory Class I areas.[107] New York cited 6 NYCRR Part 194, Forest Practices, its regulation for prescribed burns that considers the possible impacts in mandatory Class I Federal areas. New York reported that there was a total of 12 prescribed

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[104] Refer to Section 10.3.8 of NY's submittal (as included above).

[105] Confirmation for the retirement of Indian Point 2 on April 30, 2020 can be found in the Notes for Table III-2 on page 99 of the New York System Independent System Operators 2021 Load and Capacity Report (Gold Book).
See https://www.nyiso.com/documents/20142/2226333/2021-Gold-Book-Final-Public.pdf/b08606d7-db88-c04b-b260-ab35c300ed64. Confirmation for the retirement of Indian Point 3 on April 30, 2021 can be found in the Notes for Table III-2 on page 99 of the New York System Independent System Operators 2022 Load and Capacity Report (Gold Book).
See https://www.nyiso.com/documents/20142/2226333/2022-Gold-Book-Final-Public.pdf/cd2fb218-fd1e-8428-7f19-df3e0cf4df3e.

[106] Confirmation for the withdrawal of the deactivation requests and continued operation for the Selkirk and Hawkeye units can be found on page 88 and page 95 (respectively) of the New York System Independent System Operators 2023 Load and Capacity Report (Gold Book). *See* https://www.nyiso.com/documents/20142/2226333/2023-Gold-Book-Public.pdf/c079fc6b-514f-b28d-60e2-256546600214.

[107] *See* section 10.7.2 of the NY RH 2nd Implementation Period SIP submission.

fires in 2016 and a total of 11 prescribed fires in 2015 that were conducted by NYSDEC on public land.[108] A strengthened ban on open burning, 6 NYCRR Part 215, has also helped reduce forest fires. Additionally, New York has a program in which owners/managers must get prior authorization and a permit before implementing fire plans that require an approved burn plan be in place.

New York considered the anticipated net effect of projected changes in emissions as required by 40 CFR 51.308(f)(2)(iv)(E) by discussing, in section 10.8 of its submission, the photochemical modeling for the 2018-2028 period it conducted in collaboration with MANE-VU. The two modeling cases that were run were a 2028 base case, which considered only the on-the books controls, and a 2028 control case that considered implementation of the MANE-VU Ask. In response to this modeling, New York stated that the emission reductions will allow the visibility in mandatory class one areas to meet the RPGs through 2028, which is on pace for the 2064 natural visibility benchmark. Figures 9-2 through 9-8 of New York's submission illustrate the predicted visibility improvements by 2028 resulting from the implementation of the Mane-VU regional long-term strategy by New York and others.

Because New York has considered each of the five additional factors and either discussed the measures it has in place to address a factor or explained how a factor informed MANE-VU's technical analysis for second implementation period planning for reasonable progress, the EPA proposes to find that New York 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. Section 51.308(f)(3)(i) requires a state in which a Class I area is located to establish RPGs—one each for the most impaired and clearest days--reflecting the visibility

[108] Id.

conditions that will be achieved at the end of the implementation period as a result of the emission limitations, compliance schedules and other measures required under paragraph (f)(2) to be in states' long-term strategies, as well as implementation of other CAA requirements. The long-term strategies as reflected by the RPGs must provide for an improvement in visibility on the most impaired days relative to the baseline period and ensure no degradation on the clearest days relative to the baseline period. Section 51.308(f)(3)(ii) applies in circumstances in which a Class I area's RPG for the most impaired days represents a slower rate of visibility improvement than the uniform rate of progress calculated under 40 CFR 51.308(f)(1)(vi). Under 40 CFR 51.308(f)(3)(ii)(A), if the state in which a mandatory Class I area is located establishes an RPG for the most impaired days that provides for a slower rate of visibility improvement than the URP, the state must demonstrate that there are no additional emission reduction measures for anthropogenic sources or groups of sources in the state that would be reasonable to include in its long-term strategy. Section 51.308(f)(3)(ii)(A) does not apply to New York, as it does not have a Class I area, so New York is not required to establish RPGs. Section 51.308(f)(3)(ii)(B), however, 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 areas is above the URP, the upwind state must provide the same demonstration. New York's SIP revision included the modeled MANE-VU 2028 visibility projections at nearby Class I areas.[109] While these projections may not represent the final RPGs for these Class I areas, all of the 2028 projections for the most impaired days at these areas (Acadia, Brigantine, Great Gulf, Lye Brook, Moosehorn, Dolly Sods and Shenandoah) are well below the respective 2028 glidepaths. In addition, we note that New York's largest contribution is to Lye Brook Wilderness, in Vermont.

[109] Section 9.11 of the NY RH 2nd Implementation Period SIP submission.

The EPA proposes to determine that New York has satisfied the applicable requirements of 40 CFR 51.308(f)(3) relating to reasonable progress goals.

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. A main requirement of this subsection is for states with Class I areas to submit monitoring strategies for measuring, characterizing, and reporting on visibility impairment. New York does not have a Class I area and therefore its SIP is not required to provide for a monitoring strategy and associated requirements. It is also not subject to the requirements of 40 CFR 51.308(f)(6)(i), (ii), and (iv), which apply only to states with Class I areas and pertain to the establishment of monitoring sites and reporting and use of monitoring data. However, pursuant to 40 CFR 51.308(f)(6)(iii), New York's SIP is required to provide for procedures by which monitoring data and other information are used in determining the contribution to emissions to visibility impairment in other states. MANE-VU and New York accept the contribution assessment analysis, published by MANE-VU on its website.[110] The analysis included Eulerian (grid-based) source models, Lagrangian (air parcel-based) source dispersion models, as well as a variety of data analysis techniques that include source apportionment models, back trajectory calculations, and the use of monitoring and inventory data. New York State agrees that MANE-VU is providing appropriate technical information by using the IMPROVE program data.[111] New York provides a description and location for the IMPROVE monitors in the mandatory Class I Federal areas to which

[110] *See* appendix C of the NY RH 2nd Implementation Period SIP submission, "Selection of States for MANE-VU Regional Consultation (2018)."
[111] Section 6.2 of the NY RH 2nd Implementation Period SIP submission.

New York contributes to regional haze.[112]

Therefore, the EPA is proposing to find that New York's SIP provides for the necessary elements to satisfy the applicable requirements in 40 CFR 51.308(f)(6)(iii) for states without Class I areas.

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. New York provides for emissions inventories and estimates for future projected emissions by participating in the MANE-VU RPO and complying with EPA's Air Emissions Reporting Rule (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 is used to develop the National Emissions Inventory (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 7.1 of New York's second implementation period regional haze SIP submission includes tables of NEI data. The source categories of the emissions inventories included are: (1) Point sources, (2) nonpoint sources, (3) non-road mobile sources, and (4) on-road mobile sources. The point source category is further divided into Air Markets Program Data (AMPD) point sources and non-AMPD point sources.[113] New York included NEI emissions inventories for 2002 (one of the regional haze program baseline years), 2008, and 2014 for the following pollutants SO2, NOx, PM10, PM 2.5, VOCs, CO and NH_3; data from New York's 2011 base year emission inventory was also

[112] Section 6.3 of the NY RH 2nd Implementation Period SIP submission.
[113] AMPD sources are facilities that participate in EPA's emission trading programs. The majority of AMPD sources are electric generating units (EGUs).

included for the above referenced pollutants. New York also provided a summary of SO2 and NOx emissions for AMPD sources for the years of 2016 and 2017.[114] New York's SIP revision was submitted in March 2020; therefore, the year of the most recent NEI at the time of submission to the EPA was 2017. Since only 2014 NEI data was included, NYSDEC provided a supplement that updated the emission inventory table and graphs with the 2017 NEI data.[115]

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. New York relied on the MANE-VU projected emissions to 2028, which is the end of the second implementation period.[116] MANE-VU 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 MANE-VU Asks.[117]

The EPA proposes to find that New York has met the requirements of 51.308(f)(6)(v) by its continued participation in MANE-VU and on-going compliance with the AERR, and that no further elements are necessary at this time for New York 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 RPG for each Class I area within the state and each Class I area outside the

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[114] Table 7-2 and 7-14 of the NY RH 2nd Implementation Period SIP submission.
[115] *See* docket document "NY Regional Haze Inventory Supplement."
[116] *See* section 7.2 of the NY RH 2nd Implementation Period SIP submission.
[117] *See* appendix D "Technical Support Document for the 2011 Northeastern U.S. Gamma Emission Inventory (January 2018)" and "Ozone Transport Commission/Mid-Atlantic Northeastern Visibility Union 2011 Based Modeling Platform Support Document – October 2018 Update (October 2018)" in the SIP submission.

state that may be affected by emissions from within that state. Section 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 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.

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

New York did have sources identified on the list of 167 EGUs within its borders and provided a list of the sources subject to BART controls and provided a summary of the control requirements for the subject emission units at each facility.[118] Emission limits or alternate compliance methods (i.e. shutdowns and capping provisions) for these facilities were approved as SIP revisions by EPA (77 FR 51915, August 28, 2012), except for the Roseton and Danskammer Generating Stations. EPA issued FIP limits for the BART-eligible sources at these facilities, which were later adopted into the respective Title V permits and resubmitted as SIP revisions. Danskammer's BART measures were approved as SIP revisions, effective January 3, 2018 (82 FR 57126, December 4, 2017), and Roseton's BART measures received approval effective March 18, 2018 (83 FR 6970, February 16, 2018).

Lastly, in response to a MANE-VU Ask, in 2015 New York promulgated a rule to reduce the sulfur content in commercial heating oil and to prohibit the use of heavy heating oils that contain high levels of sulfur. The EPA approved this rule into the SIP. (83 FR 42589, August 28, 2018). In section 7.1.4 of New York's submission, New York explains that the SO2 decreases are attributed to the low sulfur fuel strategy and to the 90% or greater reductions in SO2 emissions from the 167 EGU stacks (both inside and outside of MANE-VU), as requested in the MANE-VU "Ask" for the states within MANE-VU for the first regional haze planning period. Since some components of the MANE-VU low sulfur fuel strategy have milestones of 2016 and 2018, and as MANE-VU states continue to adopt rules to implement the strategy, additional SO_2 emissions reductions have likely been obtained since 2017 and are expected to continue into the future.

The EPA proposes to find that New York has met the requirements of 51.308(g)(1) and (2) because its SIP submission describes the measures included in the

[118] Table 8-1 of the NY RH 2nd Implementation Period SIP submission.

long-term strategy from the first implementation period, as well as the status of their implementation and the emission reductions achieved through such implementation.

Section 51.308(g)(3) requires states with Class I areas to report on the visibility conditions and changes at those areas. New York does not have any Class I areas and is not required to address this provision.

Pursuant to 40 CFR 51.308(g)(4), New York provided a summary of emissions of SO2, NOx, PM_{10}, $PM_{2.5}$, VOCs, and NH_3 from all sources and activities, including from point, nonpoint, non-road mobile, and on-road mobile sources, for the time period from 2002 to 2017. New York explained that 2014 was the most recent year for which it had submitted emission estimates to fulfill the requirements of part 51 subpart A (the AERR), however since their submission was not until 2020, New York later provided a supplement that included the 2017 data.[119]

The emissions information submitted by New York indicates that SO2 emissions decreased over the 2002 through 2017 period. SO2 emissions from AMPD sources in New York have declined from 2002 to 2017. Also, SO2 emissions from non-AMPD point sources and nonpoint, non-road, and on-road sources all declined from 2002 to 2017, although not all categories have shown a consistent decrease.[120] SO2 decreases can be attributed to the low sulfur fuel strategy and the 90% or greater reduction in SO2 emissions at the EGU stacks identified in the MANE-VU "Ask" for states within MANE-VU for the first regional haze planning period. Other SO2 emission decreases are due to source shutdowns and fuel switching.[121]

Total NOx emissions have also declined from 2002 to 2017, although not all categories have shown a consistent decrease. NOx emissions from AMPD, non-road, and

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[119] *See* docket document "NY Regional Haze Inventory Supplement."
[120] *See* section 7.1.4 of the NY RH 2nd Implementation Period SIP submission and "NY Regional Haze Inventory Supplement."
[121] *See* page 7-25 of the NY RH 2nd Implementation Period SIP submission.

on-road sources in New York have declined from 2002 to 2017. New York explains that nonpoint emissions of NOx have been variable from 2002 to 2014 due to year variation, as well as changes to the tools used to estimate nonpoint emissions. New York asserts that reductions in NOx emissions from AMPD sources are due to EGU retirements and Federal regional allowance trading programs, while reductions in non-road and on-road NOx are due to a range of Federal requirements for different types of engines and fuels.[122]

Emissions of PM_{10} decreased overall from 2002 to 2017. New York explains that changes in PM_{10} emissions from 2002 to 2008 and 2011 to 2014 are likely due to changes to the methods used for estimating residential wood combustion emissions.[123]

Similarly, NH_3 emissions in New York were lower overall in 2017 relative to 2002, although emissions from nonpoint sources do show an increase from 2014 to 2017.[124] New York notes that it believes there was no significant change in nonpoint ammonia emissions from 2014-2017; the State attributes the disparity to changes in EPA modeling and methodology.[125]

Total $PM_{2.5}$ emissions in New York have remained constant from 2002-2014, with 2008 being an outlier. Similar to PM_{10}, New York explains that some of increases or declines in $PM_{2.5}$ could be due to changes in estimation methodologies for categories such as yard waste burning, paved and unpaved road dust, and residential wood combustion.[126] There was a reduction in total $PM_{2.5}$ emission from 2014 to 2017.[127]

In New York, the total VOC emissions have generally declined over the 2002 to 2014 period; emissions from nonpoint sources have increased during this time causing an increase in the total VOC emissions in 2017. NYSDEC believes there was no significant

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[122] *See* section 7.1.1 of the NY RH 2nd Implementation Period SIP submission.
[123] *See* section 7.1.2 of the NY RH 2nd Implementation Period SIP submission.
[124] *See* docket document "NY Regional Haze Inventory Supplement."
[125] Id.
[126] *See* section 7.1.3 of the NY RH 2nd Implementation Period SIP submission.
[127] *See* docket document "NY Regional Haze Inventory Supplement."

change in emissions from 2014-2017, but rather attributes the disparity to changes in EPA modeling and methodology.[128] New York states that decreases in VOC emissions can be attributed to Federal and state rules for evaporated sources of VOC emissions.[129]

The EPA is proposing to find that New York has satisfied the requirements of 40 CFR 51.308(g)(4) by providing emissions information for SO2, NOx, PM_{10}, $PM_{2.5}$, VOCs, CO and NH_3 broken down by type of source.

New York uses the emissions trend data in the SIP submission[130] and the supplemental information[131] to support the assessment that anthropogenic haze-causing pollutant emissions in New York have decreased during the reporting period and that changes in emissions have not limited or impeded progress in reducing pollutant emissions and improving visibility. In conclusion, the EPA is proposing to find that New York has met the requirements of 40 CFR 51.308(g)(5).

I. Requirements for State and Federal Land Manager Coordination

Section 51.308(i)(2)'s FLM consultation provision requires a state to provide FLMs with an opportunity for consultation that is early enough in the state's policy analyses of its emission reduction obligation so that information and recommendations provided by the FLMs can meaningfully inform the state's decisions on its long-term strategy. If the consultation has taken place at least 120 days before a public hearing or public comment period, the opportunity for consultation will be deemed early enough. Regardless, the opportunity for consultation must be provided at least sixty days before a public hearing or public comment period at the state level. Section 51.308(i)(2) also provides two substantive topics on which FLMs must be provided an opportunity to discuss with states: assessment of visibility impairment in any class I area and

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[128] Id.
[129] *See* section 7.1.5 of the NY RH 2nd Implementation Period SIP submission.
[130] *See* section 7 "Emission Inventory" of the NY RH 2nd Implementation Period SIP submission.
[131] *See* docket document ""NY Regional Haze Inventory Supplement."

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 MANE-VU 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. New York participated in these consultation meetings and calls.[132]

As part of this early engagement with the FLMs, in April 2018 the NPS sent letters to the MANE-VU states requesting that they consider specific individual sources in their long-term strategies. NPS used an analysis of emissions divided by distance (Q/d) to estimate the impact of MANE-VU facilities. To select the facilities, NPS first summed 2014 NEI NOx, PM_{10}, SO2, and SO_4 and divided by the distance to a specified NPS mandatory Class I Federal area across all MANE-VU states relative to Acadia, Mammoth Cave and Shenandoah National Parks, then ranked the Q/d values relative to each Class I area, created a running total, and lastly identified those facilities contributing to 80% of the total impact at each NPS Class I area. NPS applied a similar process to facilities in Maine relative to 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 39

[132] *See* appendix E of the NY RH 2nd Implementation Period SIP submission, "MANE-VU Regional Haze Consultation Summary (MANE-VU, July 2018)."

facilities in New York in this letter.[133] In a letter dated October 22, 2018, NPS identified 26 facilities for which more control information was desired. To address the NPS's request for more information, section 10.4 of New York's submission details the emission controls and updates to the 26 facilities that have occurred since the 2014 NEI. Table 10-4 in New York's submission contains the 26 facilities that were identified by the NPS. The U.S. Forest Service requested that New York consider specific individual sources in its long-term strategy (LTS) and identified three facilities that New York should consider. To address the Forest Service's request, more information was provided in section 10.5 of New York's submission on the emission controls and updates the facilities have undergone since 2011. New York provided a supplement that contains emission data for the facilities identified by the FLMs.[134] This supplement provides emission data from 2018-2020 for the facilities mentioned in section 10.4 and 10.5 of New York's submission. In addition, New York provided a summary table of the controls at each of the facilities identified by the FLMs for SO2, PM, and NOx.[135]

On February 22, 2019, New York submitted a draft Regional Haze SIP to the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the National Park Service for a 60-day review and comment period pursuant to 40 CFR 51.308(i)(2).[136] New York received comments from the Forest Service on April 22, 2019, and from the National Park Service on May 11, 2019. The U.S. Fish and Wildlife Service indicated that they did not have any comments on April 17, 2019. New York responded to the FLM comments and included the responses in appendix A of its submission, in accordance with 40 CFR 51.308(i)(3). On August 7, 2019, New York published a Public Notice in the NYSDEC Environmental Notice Bulletin (ENB) announcing that it planned to submit to EPA a

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[133] *See* appendix E of the NY RH 2nd Implementation Period SIP submission, "MANE-VU Regional Haze Consultation Summary (MANE-VU, July 2018)."
[134] *See* docket document "FLM List Recent Emissions."
[135] *See* docket document "FLM List Facility Controls."
[136] *See* appendix A of the NY RH 2nd Implementation Period SIP submission, "Summary and Response to Federal Land Manager Comments."

Regional Haze SIP revision and providing a 30-day period for the public to comment or to request a hearing. On September 4, 2019, New York published a notice in the ENB extending the period for the public to comment or request a hearing to October 7, 2019. New York received and responded to public comments and included both in their submission.

For the reasons stated above, the EPA proposes to find that New York has met its requirements under 40 CFR 51.308(i) to consult with the FLMs on its regional haze SIP for the second implementation period. New York committed in its SIP to ongoing consultation with the FLMs on regional haze issues throughout the implementation period, consistent with the requirement of 40 CFR 51.308(i)(4).[137]

V. Environmental Justice Considerations

New York provided information related to its environmental justice (EJ) considerations as part of its SIP submission. This information consisted of details on New York's Climate Leadership and Community Protection Act (CLCPA), which expedites the transition to a clean energy economy by requiring New York to achieve a carbon free electricity system by 2040 and reduce greenhouse gas emissions 85% below 1990 levels by 2050. New York explains that the CLCPA targets investments to benefit disadvantaged communities, creates tens of thousands of new jobs, and improves public health and quality of life via more robust clean energy choices. The CLCPA also focuses on environmental justice by requiring state agencies to invest at least 35% of clean energy program resources to benefit disadvantaged communities. Through the adoption of these regulations, New York intends to reduce greenhouse gas emissions 85% by 2050, with an interim benchmark of 40% reduction in emissions by 2030 (both relative to 1990 levels). Additionally, through the CLCPA, New York intends to form a transition working group to ensure that individuals working in conventional energy industries are

[137] *See* section 4 of the NY RH 2nd Implementation Period SIP submission.

provided with training and opportunities in the growing clean energy economy.

New York received several comments regarding its consideration of EJ within its Regional Haze plan for the second implementation period. In particular, New York was asked by several commentors to analyze the EJ impacts to ensure the RH plan would reduce greenhouse gas emissions where possible, to align with the CLCPA and minimize harms to disproportionately impacted communities. One commentor stated EJ impacts are the type of non-air quality impacts the New York should consider when it sets RPGs for Class 1 areas and determines reasonable progress measures for specific sources. Another commentor critiqued New York for its lack of evaluation as to whether its reasonable progress measures will affect disproportionately impacted communities and suggested that incorporating EJ impacts into the RPG analysis would maximize the environmental benefits of the regional haze program.

New York responded to these comments affirming that while the Regional Haze Rule does not require states to address EJ or greenhouse gas emissions reductions or impacts, and that New York is analyzing the impact of state measures through other regulatory efforts and initiatives it has adopted which will result in emission reductions in EJ areas. New York also asserted that EJ would be further addressed through programs such as the CLCPA, which has a large EJ component, and welcomed the commentor to comment on such processes as they proceed.

That said, the EPA believes that this action is not likely to result in any new disproportionate and adverse effects on communities with EJ concerns. It is expected that the air quality improvements associated with New York's regional haze plan will provide air quality benefits across the state, and will not result in any new potentially disproportionate and adverse effects within communities with EJ concerns. However, since EJ concerns are more accurately captured when evaluating relatively smaller areas or on a community level basis, the EPA believes that it is not practicable to assess, via a

comprehensive EJ analysis, whether this proposed action would result in any new disproportionate and adverse effects on communities with EJ concerns. Furthermore, the CAA and applicable implementing regulations neither prohibit nor require such an evaluation. In addition, there is no information in the record indicating that this action is inconsistent with the stated goal of EO 12898 and/or that this action is expected to have disproportionately high or adverse human health or environmental effects on a particular group of people.

In conclusion, the EPA expects that this proposed action will generally be neutral or contribute to reduced environmental and health impacts on all populations in New York, including people of color and low-income populations. At a minimum, this action is not expected to worsen any air quality and it is expected this action will ensure the State is meeting requirements to attain and/or maintain air quality standards. The EPA therefore concludes that this proposed rule will not have or lead to disproportionately high or adverse human health or environmental effects on communities with EJ concerns. New York provided details on its CLCPA as part of its SIP submittal to demonstrate the State's consideration of EJ even though the CAA and applicable implementing regulations neither prohibit nor require an evaluation. The EPA's evaluation of New York's EJ considerations is described above. The analysis was done for the purpose of providing additional context and information about this rulemaking to the public, and not as a basis of the action. The EPA is taking action under the CAA on bases independent of the State's evaluation of EJ.

VI. The EPA's Proposed Action

The EPA is proposing to approve New York's May 12, 2020, supplemented on February 16, 2022, SIP submission as satisfying the regional haze requirements for the second implementation period contained in 40 CFR 51.308(f).

VII. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the CAA and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, 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 14094 (88 FR 21879, April 11, 2023);
- 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 subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it approves a state program;
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001); and
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act.

In addition, the SIP is not proposing 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 it 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).

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, February 16, 1994) directs Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their actions on minority populations and low-income populations to the greatest extent practicable and permitted by law. EPA defines environmental justice (EJ) as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." EPA further defines the term fair treatment to mean that "no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies."

The NYSDEC did not evaluate EJ considerations by means of an extensive and comprehensive EJ analysis as part of its SIP submittal; the CAA and applicable implementing regulations neither prohibit nor require such an evaluation. Nevertheless, NYSDEC did reference existing EJ programs within its SIP submittal, as described above in section V, "Environmental Justice Considerations." The EPA did not perform an EJ analysis and did not consider EJ in this action. Consideration of EJ is not required as part of this action, and there is no information in the record inconsistent with the stated goal of E.O. 12898 of achieving environmental justice for people of color, low-income

populations, and Indigenous peoples.

List of Subjects in 40 CFR Part 52

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

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

Lisa Garcia,
Regional Administrator,
Region 2.

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