

**Response to Comments**  
**Regarding State Implementation Plan Revisions**  
**concerning**  
**Visibility Protection**

On December 3, 2020, the Commissioner of the Department of Energy and Environmental Protection (DEEP) published notice of intent to revise the State Implementation Plan (SIP) for air quality to address the visibility protection requirements of section 169A of the federal Clean Air Act (CAA). Pursuant to such notice, the SIP was open for comments and a public hearing was proposed for January 29, 2021, provided such hearing was requested. No such request was received, and the hearing was cancelled on January 12, 2021. The public comment period remained open through January 29, 2021. This report addresses the comments received on the visibility protection plan during the comment period and final recommendations for the plan revision.

Written comments were received from the following persons/organizations:

1. John Rogan, Manager  
Air Quality Branch

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2. Gay Vietzke, Regional Director  
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3. Thomas McGrath, Environmental Reviewer  
Environmental Review, Inc.  
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4. Conservation Organizations  
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All comments submitted are available on the DEEP website together with the proposed and revised SIP at <https://portal.ct.gov/DEEP/Air/Planning/SIP/Regional-Haze-SIP-Page>. The comments are summarized below with DEEP's responses.

## Comments by EPA

**Comment:** Note that the national goal of the visibility protection program is to prevent any future and remedy any existing anthropogenic visibility impairment in mandatory Class I federal areas. In the preamble to the 1999 Regional Haze Rule, the EPA calculated that if the rate of visibility improvement observed over the roughly ten-year period from the mid-1990's to 2005 continued into the future, the national goal would be achieved in sixty years, i.e., in 2064. Thus, the uniform rate of progress and other analytical requirements use 2064 as an endpoint for analysis. 64 FR 35714, 35731-32 (July 1, 1999). However, neither the Clean Air Act nor the Regional Haze Rule provides that the goal of the program is to achieve natural visibility conditions by 2064, that the iterative planning process under the program terminates in 2064, or that the regional haze program entails submission of exactly six regional haze SIPs and SIP revisions. Therefore, please remove references to 2064 as an end date of the program and SIP submissions, except as 2064 relates to calculating the uniform rate of progress (glidepath).

**Response:** DEEP has revised the text to indicate that 2064 is a benchmark target date of the rule for achieving the goal of natural visibility conditions in Class I areas and has removed any implication that the program should terminate.

**Comment:** It would be helpful if Connecticut could clarify how the Asks were developed and adopted, both individually and collectively. What information was considered in deciding what went into each Ask? Were the four factors considered and weighed in the development of particular Asks? If so, how?

**Response:** The Asks originate with the first planning period and have been revisited and updated for the second planning period. Four factor analyses were conducted in the original analyses and updated for the second planning period. Development of the Asks were documented through the consultation process as referred to in section 5 of the SIP.

DEEP notes that the four factors: cost of compliance; time necessary for compliance; energy and non-air quality environmental impacts of compliance; and remaining useful life of any existing source subject to such requirement are typical considerations given when deciding whether or not to regulate a source. DEEP routinely considers such factors when developing regulations and when determining the appropriate emission rates and control technology in the permitting of new and modified sources.

The factors become less relevant when the preferred control is agreed upon. Whereas Connecticut has already implemented the Asks, DEEP sees no purpose to revisit the four-

factors. The rules that satisfy the Asks have been shown by their implementation and by the resulting insignificant contribution of Connecticut to impaired visibility to be reasonable.

**Comment:** What does it mean for each MANE-VU state to “address” the Asks? Is it Connecticut’s understanding that MANE-VU states have agreed to comply with each of the Asks? Alternatively, does it mean that each state has to consider each of the Asks?

**Response:** To “address” is to answer to or consider and each state may address the Ask differently. A state does not have to consider the Asks, for example, if it is not reasonably anticipated to contribute to visibility impairment in the mandatory Class I Federal area to which the Ask applies. DEEP expects that, in accordance with the regional haze rule, each state that is reasonably expected to contribute to visibility impairment in a Class I area in the MANE-VU region will comply with each of the Asks or find equivalent reductions.

**Comment:** Note that Connecticut is correct that it does not have to submit a monitoring strategy; however, it must comply with 40 CFR 51.308(f)(6)(iii), (v), and (vi), and the SIP submission must explain how Connecticut meets these requirements.

**Response:** DEEP includes the relevant regulatory citations from 40 CFR 51.308(f)(6) in italic font for reference.

*(iii) For a State with no mandatory Class I Federal areas, procedures by which monitoring data and other information are used in determining the contribution of emissions from within the State to regional haze visibility impairment at mandatory Class I Federal areas in other States.*

DEEP relied on screening and refined modeling to determine that it did not reasonably contribute to visibility impairment at mandatory Class I Federal areas in other states as demonstrated in section 4 of the SIP.

*(v) A statewide inventory of emissions of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any mandatory Class I Federal area. The inventory must include emissions for the most recent year for which data are available, and estimates of future projected emissions. The State must also include a commitment to update the inventory periodically.*

Connecticut prepares periodic emission inventories every three years and documents its inventory of emissions in section 3 of the SIP. In response to an earlier EPA comment on the draft SIP for consultation with EPA and the federal land managers, DEEP updated the SIP to include emissions from the 2017 national emission inventory. Future projected inventories were included in section 6 of the SIP.

The introductory paragraph to section 3 acknowledged and cited the requirements for states to track inventories. DEEP did not explicitly commit to continuing to update its inventory. DEEP has added the following sentence to the conclusion of section 3:

“Connecticut is committed to periodically updating its emission inventories and reporting on trends and projections in future SIP submittals required under the regional haze rule.”

*(vi) Other elements, including reporting, recordkeeping, and other measures, necessary to assess and report on visibility.*

DEEP believes section 2 of the SIP fully assesses and reports on visibility in the MANE-VU region class I areas.

**Comment:** EPA has concerns regarding the SIP submission’s support for the conclusion that Connecticut is not reasonably anticipated to contribute to visibility impairment in any Class I area.

o As EPA explained in the 1999 Regional Haze Rule, Clean Air Act section 169A(b)(2) establishes “an ‘extremely low triggering threshold.’” 64 FR at 35721. The Act and Rule provide that the contribution assessment must consider all emissions from a state, as opposed to just emissions of a particular pollutant or pollutants or from a subset of sources. Additionally, EPA’s 1999 determination that each of the contiguous 48 states meets the contribution threshold relied on “a large body of evidence demonstrat[ing] that long-range transport of fine PM contributes to regional haze,” *id.*, including modeling studies that “preliminarily demonstrated that each State not having a Class I area had emissions contributing to impairment in at least one downwind Class I area.” *Id.* at 35722.

**Response:** Connecticut relied on screening procedures to assess its impact on Class I areas. These procedures reflect substantial and on-going emissions reductions that occurred after the initial promulgation of the federal regional haze rule in 1999. The screening procedures were discussed and agreed upon during the consultation involving the MANE-VU states, EPA and federal land managers. Furthermore, detailed multipollutant modeling conducted by MANE-VU provided results consistent with the conclusion that Connecticut is not reasonably anticipated to contribute to visibility impairment in any Class I area.

**Comment:** Ask 1 – Additional information on how Connecticut regulates SO<sub>2</sub> emissions from EGUs > 25 MW would be useful, as it is not currently clear why Connecticut has concluded that it is not necessary to address SO<sub>2</sub> emissions under this Ask.

o Are the requirements for sources listed in Table 5-1 based in underlying state or federal rules? It is unclear whether the substantive requirements referred to in Ask 1 (i.e., year round operation of controls) are contained in RCSA section 22a-174-7 or just the record keeping and reporting aspects.

Ask 1 – Connecticut should provide additional information as to how it regulates NO<sub>x</sub> emissions from EGUs > 25 MW. Specifically, Connecticut should discuss the requirements of the newly adopted RCSA section 22a-174-22e and RCSA section 22a-174-22f.

**Response:** Connecticut addressed Ask 1 in section 5.2 of the SIP revision. The Ask is specific to optimizing existing control equipment on these units. As stated in the SIP revision none of the units have control equipment for treatment of sulfur oxide emissions. Connecticut generally addresses sulfur emissions on the front end with fuel sulfur restrictions (see Ask 3 for discussion of Connecticut’s fuel sulfur limits). Therefore, there is no control equipment to optimize.

With respect to NO<sub>x</sub> controls, table 5-1 indicates the units with NO<sub>x</sub> controls and emphasizes the new source review (NSR) permits that require the listed sources to optimize use of their control equipment. Control equipment requirements implemented through the NSR permitting program originate as State requirements and, due to Connecticut’s longstanding emphasis on NO<sub>x</sub> controls to attain National Ambient Air Quality Standards for ozone, are generally more stringent than would be applied to similar sources in other areas of the country. Furthermore, the NSR permits are both State and federally enforceable and as noted in section 5.2 of the SIP these units are all subject to Title V permits. Enforcement through the Title V permitting program allows for any gap filling in recordkeeping and reporting authority which is additionally available through RCSA section 22a-174-7. Section 22a-174-7 was referenced because it is a minimum regulatory requirement applicable to all sources with control equipment. EPA is correct that RCSA sections 22a-174-22e and -22f will also apply to these units; RCSA section 22a-174-22e includes 24-hour, ozone season, and non-ozone season NO<sub>x</sub> emission limits. As such, DEEP sufficiently addressed the Ask with the information presented.

**Comment:** Ask 2 – Although MANE-VU did not list any individual Connecticut sources for four-factor analysis, it would support the state’s decision to not conduct any such analyses if the SIP submission addressed the several relatively large sources of visibility impairing pollutants that MANE-VU and the National Park Service noted. While it may or may not ultimately be necessary for Connecticut to conduct four-factor analyses for these sources, additional explanation could help bolster the state’s decision. This explanation could include, inter alia, existing and upcoming controls and shutdowns and whether or not those controls/shutdowns are currently enforceable (and through what mechanisms) and/or “effective”. This information may already be included elsewhere; however, it would bolster the SIP submission vis-à-vis satisfying the requirements of 40 CFR 51.308(f)(2)(i) to also address these sources in the context of the four factors and why a four-factor analysis is not necessary here.

**Response:** DEEP followed a sound and reasonable procedure to determine selection of sources for four-factor analyses. As stated in EPA’s comment no sources in Connecticut met the criteria for the analyses.

Sources which the National Park Service recommended for four-factor analyses were subject to a recent rulemaking, the MWC rule in RCSA section 22a-174-38. Any rulemaking which DEEP undertakes must necessarily consider the costs of compliance,

time necessary to implement the control measure and the benefits and disbenefits of control. These are essentially the considerations of the four-factor analyses.

As mentioned in section A.3. of Appendix A of DEEP's draft Regional Haze SIP, DEEP committed in its 2008 ozone NAAQS RACT SIP to follow the OTC MWC workgroup recommendations regarding NOx emissions reductions at MWCs. The stakeholder process for the OTC MWC workgroup has started and will include discussions with and control feasibility analyses at CT's MWCs. DEEP prefers to leverage limited resources on the OTC MWC workgroup effort.

Bridgeport Harbor Station Unit 3 (BH3) was also suggested for four-factor analyses by NPS. Consistent with public statements made by the owner, PSEG, the facility was shut down on June 1, 2021. As such, a four-factor analysis for BH3 is no longer germane to DEEP's regional haze planning efforts.

**Comment:** Ask 4 – Are the requirements to lock in lower emitting fuels effectuated/contained only in Title V permits, or are they based in an underlying state or federal rule? If so, what rule(s)? Additional clarification in the SIP narrative about the nature of the enforceable mechanism(s) and explanation of how they achieve the Ask would be helpful.

**Response:** Connecticut can only include conditions in Title V permits that have underlying applicable requirements. The applicable requirements for lower emitting fuels are contained in fuel sulfur regulations RCSA sections 22a-174-19a and -19b, NSR permits and trading orders that restrict oil firing in favor of natural gas. Title V permits are used for gap filling of monitoring or recordkeeping requirements that provide federal and practical enforceability.

**Comment:** Connecticut should discuss Municipal Waste Combustors (MWCs) as one of the larger NOx emission sources. In addition, Connecticut should discuss the recent adoption of RSCA section 22a-174-38 which controls MWC emissions.

**Response:** DEEP discusses MWC emissions and the recent revisions to RCSA section 22a-174-38 in section 5.4 of the SIP revision.

**Comment:** How does Connecticut address the requirement of 40 CFR 51.308(f)(2)(iii) that the emissions information used must include information on emissions in a year at least as recent as the most recent NEI (i.e., 2017)?

**Response:** DEEP responded to this comment when EPA made it during consultation with the federal land managers. See EPA comment 6 in Appendix A of the SIP revision.

**Comment:** The summary and conclusions section mention RCSA 22a-174-19a and b, but it is not clear how those two rules factor into Connecticut’s long-term strategy. Are they relevant to any of the Asks for the second implementation period?

**Response:** RCSA section 22a-174-19a regulates sulfur dioxide emissions from power plants and other large stationary sources of air pollution. RCSA section 22a-174-19b regulates fuel sulfur content. As noted on page 50 in section 5.2 of the SIP, the low sulfur fuel regulations satisfy element 3 of the Ask (Ask 3).

**Comment:** How does Connecticut satisfy 40 CFR 51.308(g)(1), (2), and (5)? The section on emission inventories and emission trends provides the state’s emissions information but it is not clear how the regulatory requirements of those provisions are fulfilled. The section on monitoring and visibility assessment states that it is relevant to 51.308(g), but again it is not clear how the particular requirements of that subsection have been met.

**Response:** 40CFR51.308(g) is applicable to the State only for Class I areas that may be affected by emissions from within the State.

DEEP did provide a description of its implementation of controls in response to the Ask and in section 8 of the SIP revision where it addresses additional control measures for the long term strategy. Section 3 of the SIP goes into detail regarding the emission trends both within and outside the State and addresses the control measures which lead to these trends.

**Comment:** There are rule requirements at 51.308(f)(1) and 51.308(g)(3) to include data representing “current visibility conditions” based on the most recent 5-year period for which data are available. There are several tables in the draft SIP that include current visibility data for the 2013-2017 period. However, the final 2018 IMPROVE data have been available since April 2020, and the 2019 IMPROVE data will soon be available. Therefore, calculations that represent current conditions (to comply with rule requirements) should be updated to include 2014-2018 data or 2015-2019 data, as appropriate.

**Response:** DEEP used the most recent data available at the time the SIP was drafted. As EPA pointed out in earlier comments, this is an ongoing process, and DEEP commits to addressing new data and changed conditions in future SIP revisions.

**Comment:** The natural conditions, baseline conditions and current conditions (through 2018) were updated in the final IMPROVE dataset that was posted in April 2020. A technical memo (addendum) from EPA includes those values and can be found here: <https://www.epa.gov/visibility/memo-and-technicaladdendum-ambient-data-usage-and-completeness-regional-haze-program>. Some of the natural conditions and baseline values may differ slightly compared to table 2-1. In all discussions and maps of IMPROVE sites, please clarify that IMPROVE protocol sites do not represent Class I areas, and the site in CT is not at a

Class I area. If using the map in Figure 2-1, specifically point out that the RH rule covers the sites represented by the orange dots, and the blue dots are extra sites that are not covered under the rule. Alternatively, a Class I area map could be used instead.

**Response:** Figure 1-1 on page 4 of the SIP shows the Mandatory Class I areas, which does not include any areas in Connecticut. DEEP believes that the first two sentences of Section 2.1, located just prior to Figure 2-1 are sufficient to distinguish the purpose of IMPROVE and IMPROVE protocol monitors. DEEP added an additional sentence to satisfy EPA's concern as shown below in bold.

The IMPROVE network is used to assess representative visibility at the Class I areas. Additional sites, using the same instrumentation and protocols, monitor regional haze outside of Class I areas and are referred to as protocol sites. **IMPROVE protocol sites do not represent Class I areas.**

**Comment:** The visibility trends charts in Figure 2-3 are labeled as "fractions", however all of the numbers are absolute deciviews and are not normalized (they are therefore not fractions).

**Response:** DEEP employs the term "fraction" less in the mathematical sense than in the qualitative sense and as such believes the term does not confuse readers in this context, nor does its use in Figure 2-4.

**Comment:** Please explain why MANE-VU used 2011 as the baseline year for modeling (as compared to using a more recent year). Presumably the choice was due to timing issues, but please include an explanation.

**Response:** The 2011 baseline year coincided with the base year for modeling used for the 2008 ozone standard and was fully vetted and readily available for projections. The OTC/MANE-VU 2011 Based Modeling Platform Support Document referenced in footnote 33 of DEEP's Regional Haze SIP includes a discussion on Base Year Selection.

**Comment:** Section 6.4 notes that majority of emissions from fires in MANE-VU were from residential wood combustion, and documents that a large percentage of primary CT PM emissions from are from residential wood combustion. But the document does not discuss why control of residential wood combustion sources does or does not need to be considered as part of the long-term strategy.

**Response:** DEEP noted that emissions from this category were a significant part of the particulate emissions inventory while also noting that emission factors were variable and in need of refinement. Connecticut has placed restrictions on siting of these localized sources in statutes and regulates smoke and odor in RCSA sections 22a-174-18 and -23

respectively. DEEP encourages the burning of aged hardwoods through its website to educate owners on how to minimize wood smoke emissions.

DEEP also sponsored an Outdoor Wood Burning Furnace (OWF) removal/replacement program “Good Deals for Good Neighbors” which used financial incentives to encourage the removal or replacement of older OWF with newer units meeting EPA’s most stringent proposed standards for wood fired hydronic heaters. The program ran in 2014 and 2017 and resulted in the removal, without replacement, of 21 OWF. The program was successful in removing older nuisance OWF in the state with the second round showing significantly diminished participation indicating that the program had run its course.

EPA regulates emissions from residential wood heaters through its *Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces*. DEEP expects this rule to reduce particulate emissions from these localized sources without the need for particular attention in its long-term strategy.

## Comments by NPS

**Comment:** The National Park Service (NPS) appreciates the opportunity to review and provide input on the Connecticut Regional Haze State Implementation Plan (SIP) Revision Second Implementation Period (2018-2028). In general, the NPS believes the state has done a good job outlining and incorporating the technical analyses produced by the Mid-Atlantic New England Visibility Union (MANE-VU). However, we continue to recommend additional analyses to evaluate emission reduction opportunities to address haze causing pollutants affecting visibility in NPS Class I areas.

**Response:** DEEP appreciates NPS’ support and ongoing participation in the regional haze planning process.

**Comment:** Under the Clean Air Act (§§169A and B) and Federal Regional Haze Rule (40 CFR §51.308), states are required to develop SIPs and engage substantively with agencies that manage national parks and wilderness areas designated as Class I areas. Connecticut does not have a Class I area; however, emissions from sources within the state do affect NPS-managed Class I areas in the region, e.g., Acadia National Park in Maine and Shenandoah National Park in Virginia.

The NPS Air Resources Division (ARD) sent a letter to Connecticut Department of Energy and Environmental Protection (CDEEP) in October of 2018 recommending sources for formal four-factor analyses as provided by the Federal Regional Haze Rule. These sources included four municipal waste combustors (MWCs) and one electric generating unit (EGU). In early 2020, the CDEEP initiated the 60-day Federal Land Manager (FLM) consultation process, during which

we noted that the four-factor analyses identified in 2018 were not included in the draft SIP for FLM review.

During a March 2020 consultation meeting, NPS and CDEEP specifically discussed MANE-VU's three inverse megameter ( $\text{Mm}^{-1}$ ) screening threshold, used to identify sources for four-factor analysis, and the NPS perspective that this threshold is too high. This threshold – equivalent to approximately one change in visibility – does not adequately consider cumulative visibility impacts or those that may occur at Class I areas below that threshold. By applying MANE-VU's three  $\text{Mm}^{-1}$  threshold, CDEEP determined no four-factor analyses on state sources were warranted. We do not agree with this determination.

**Response:** DEEP appreciates NPS' ongoing concerns summarized above and expressed through the consultation process. DEEP's approach is consistent with the regional haze rule and EPA guidance and remains as outlined in the SIP released for public hearing and as further explained in Appendix A.

**Comment:** After review of the updated emission inventory data in the current draft SIP (Table 5.3) and the relevant regulatory limits for sources, we again recommend the following sources for a four-factor analysis: Wheelabrator Bridgeport, LP, CRRA/Mid-Connecticut, Covanta Southeastern CT, and Wheelabrator Lisbon LP. Similar MWCs in Maryland and Virginia are already achieving significantly lower (25% lower) nitrogen oxide emissions or will be by the end of 2021. It may be possible for sources in Connecticut to achieve a similarly low rate using improved combustion technology.

The viability of this potential improvement can be best explored through a formal four-factor analysis of each of these sources. Further, we remind CDEEP that the U.S. Environmental Protection Agency's Office of Air Quality Planning and Standards has stated, on several occasions, that it expects states to complete some four-factor analyses, otherwise a SIP may be deemed incomplete.

**Response:** In addition to the response noted above, DEEP is working with other Ozone Transport Region states to pursue more stringent regulation of municipal waste combustors. The Ozone Transport Commission adopted a Resolution on June 15, 2021 that commits to engage in a public process to develop recommendations for more stringent  $\text{NO}_x$  emissions reductions for MWCs and to draft a Memorandum of Understanding for expedited consideration of such recommendations.

**Comment:** Finally, the NPS notes that control requirements for the EGU Middletown Unit 3 boiler as outlined in the current draft SIP includes only seasonal ozone-specific limits. We recommend that CDEEP require year-round emission limits for Middletown Unit 3. In doing so, CDEEP would be meeting an important element of MANE-VU's strategy for EGUs to ensure "...the most effective use of control technologies on a year-round basis to consistently minimize emissions of haze precursors."

**Response:** As stated in table 5-1 of the SIP, Middletown Unit 3 is subject to both ozone season and non-ozone season NO<sub>x</sub> emission limits. Therefore, limits are applicable year-round and are consistent with Reasonably Available Control Technology (RACT) requirements pursuant to RCSA Section 22a-174-22e.

## Comments by Environmental Review, Inc.

### **Comment:** 1. Page 11. Section 2.3. Visibility Trends.

The document “Mid-Atlantic/Northeast U.S. Visibility Data 2004-2017 Report and Plots” is the SIP’s source for the decision to only consider sulfate, nitrate and their precursors as major contributors to haze. However, this work also shows that organic carbon mass remains as much a contributor (15-24%) as nitrate but was not discussed in the SIP. NO<sub>x</sub>/nitrate can be correlated with formation of secondary organic particulate matter, however, the transport of gases which form secondary organic particles and/or the transport of secondary particles should not be ignored. Connecticut’s potential contribution pollutants that can contribute to organic particle formation (O<sub>3</sub>, VOC, etc.) should be evaluated.

**Response:** As noted in the document cited in the comment, *Mid-Atlantic/Northeast U.S. Visibility Data 2004-2017 Report and Plots*, levels of organic carbon mass have approached natural background levels at most MANE-VU Class-I areas.

### **Comment:** 2. Page 40. Section 3.6. Ammonia (NH<sub>3</sub>).

Figure 3-16 shows the emission reduction of NH<sub>3</sub> from sources in Connecticut occurred from 2002-2008 and there has been no significant change from 2008-2017. NH<sub>3</sub> is a precursor to particle formation and the SIP does not mention plans to reduce NH<sub>3</sub> emissions. An analysis which evaluates the transport of NH<sub>3</sub> from CT to class I areas is necessary to determine that CT is “not reasonably anticipated to contribute to visibility impairment in and Class I area.”, develop a meaningful long-term strategy, and monitoring plan for regional haze.

**Response:** Ammonia is a precursor to particle formation reacting with sulfur oxides and nitrogen oxides to form ammonium sulfate and ammonium nitrate. DEEP therefore accounted for ammonium particulate formation in its assessments of sulfur oxides and nitrogen oxides. The proposed SIP noted that decreases in ammonia emissions were resulting from federal standards applicable to onroad and nonroad vehicles. Other qualitative ammonia reductions are expected from implementation of Public Act 21-16, which will encourage biodigestion of animal wastes and the development of comprehensive nutrient management plans. While it is expected that PA 21-16 will result in greater efficiencies and decreased emissions from farms in Connecticut, such reductions are not readily quantified for inclusion in the SIP. Lastly, DEEP noted in the draft SIP that EPA recently revised its methods used to calculate potential emissions from agricultural livestock waste and agricultural fertilization. Though the amount of farm

acreage in Connecticut has been stable over the interim 2008-2017, due to the revised emissions calculation methodology these two categories varied from 1500 (2014) to 2900 (2017) tons.

**Comment 3.** Page 50. Section 5.2 Element 3. Ultra-low Sulfur Fuel Oil Standards.

“RCSA 22a-174-19b further limits sulfur content of fuel oil sold in Connecticut for use in stationary sources to 15 ppm for distillate and 3000 ppm (0.3%S) for aviation and residual fuels.” Low sulfur fuel is currently used by most facilities thus the impact of requiring lower sulfur content may be minimal. The effect of this regulation should be shown and quantified to demonstrate the claim that “Connecticut’s low sulfur fuel program already meets element 3 of the Ask.” and there are effective measures in place to reduce future visibility impairment.

**Response:** The Ask was to adopt an ultra-low sulfur fuel regulation. DEEP adopted regulations meeting the specifications of the Ask and incorporated them into our SIP to assure the measures remain in place and continue to reduce future visibility impairment.

**Comment 4.** Page 71. Section 8. Additional Elements of Connecticut’s Long-Term Strategy. Section 8 details elements of Connecticut’s Long-Term Strategy such as ongoing air pollution programs, construction activities, source retirement and replacement, and smoke management practices. However, Section 8 does not describe or mention tracking and reporting on additional reductions in emissions from such plans. It would be to Connecticut’s advantage to track the progress and report on emission reductions, which are not mandated by the State Implementation Plan, but may contribute to Connecticut meeting or exceeding 2028 visibility emission goals.

**Response:** Emissions tracking and reporting is a core function of Connecticut’s air quality management program. While not specifically called out in Section 8 of the proposed SIP, Connecticut tracks and reports on statewide emissions through a SIP-approved program implementing requirements for periodic emission inventories and the National Emission Inventory system.

**Comment 5.** Page 7. Section 2. Monitoring and Visibility Assessment

Connecticut does have an extensive network for monitoring NO<sub>x</sub>, SO<sub>2</sub> and Ozone, whose trends should be readily available. The IMPROVE monitoring program (and specifically Connecticut’s site at Mohawk Mountain) mentioned in the SIP, does monitor visibility related particulate bound pollutants, including mass, elements, sulfates and nitrates and carbon, at a location which is minimally impacted by local urban emissions. Ambient air quality data, from the statewide network in addition to that from the Mohawk Mountain site, should have considered including some of the trends from those data to support their past reductions and projections into the future.

**Response:** Connecticut operates and maintains a comprehensive ambient air quality monitoring network, the primary purpose of which is to gauge compliance with federal health-based national ambient air quality standards. In accordance with federal

requirements and related guidance, DEEP publishes annual monitoring plans and air quality data trends from its monitoring network, including the Mohawk Mountain site in Cornwall, on its website. As noted in one of EPA's comments above, only IMPROVE monitor sites are representative of visibility conditions at Class I areas – the subject of this SIP. The Mohawk Mountain site is a protocol site.

**Comment 6.** Page 71. Section 8. Additional Elements of Connecticut's Long-Term Strategy  
The plan might mention some variables which would affect Connecticut and the MANEVU's visibility goals for 2028, such as more recent and regular western wildfires and possible emission changes driven by changes in economic conditions. For instance, an uptick in PM concentrations/emissions between 2008 and 2011 were partially the result of the more extensive use of wood fuel, when the oil prices were volatile during that time period.

**Response:** DEEP will revisit this SIP every five to ten years as required and make adjustments accordingly.

## Comments by Conservation Organizations

*Note: While DEEP included complete statements of other commenters, DEEP here excludes background statements and other statements made outside the scope of this SIP from the conservation organizations' submittal in an attempt to provide clarity. The complete letter from the conservation organizations is available on DEEP's Regional Haze website.*

**Comment:** Connecticut must conduct independent analyses to inform its reasonable progress determination. Moreover, with regard to Connecticut's obligations regarding the Class I areas outside the State, the rule requires that it

...must submit a long-term strategy that addresses regional haze visibility impairment ... for each mandatory Class I Federal area located outside the State that may be affected by emissions from the State [40 CFR 51.308(f)(2)].

As discussed in Section II of our comments, the State's proposed long-term strategy SIP revision for this planning period is inconsistent with this rule. The State's proposal includes such a high threshold for which source's emissions it will evaluate for emission reduction measures that the high threshold eliminates *all its sources* from evaluation.

**Response:** DEEP's analyses are described and referenced in the SIP submittal. There is no requirement that analyses be conducted independently. DEEP only excluded sources based on emission thresholds after analyses of their potential to affect visibility.

**Comment:** Because EPA’s 2019 Regional Haze Guidance is deeply flawed, Connecticut should not wholly rely on it. Instead, the State must closely adhere to the regulation itself and work to achieve the Clean Air Act goal of Class I visibility restored to natural conditions.

**Response:** DEEP recognizes that there are occasions when EPA guidance is flawed or delivered in an untimely manner. DEEP adjusts accordingly, making every effort to adhere to the Clean Air Act and the rules promulgated under it. DEEP is working to achieve visibility goals in a timely manner and has adhered to the Act and rules relevant to this SIP.

**Comment:** There are numerous deficiencies in the State’s approach. First, it relies on MANE-VU requests for defining sources to target for a four-factor analysis to those sources, but does not disclose what screening threshold was used, and rather refers the public to the MANE-VU documents. The MANE-VU assessment used a screening threshold that only included those sources that have the potential for  $3.0 \text{ Mm}^{-1}$  or greater visibility impacts at any MANE-VU mandatory Class I area.

**Response:** DEEP values the experience of the MANE-VU participants and particularly relies on the assistance from those MANE-VU members whose States host Class I areas. DEEP consulted with MANE-VU members in the development of this SIP and believes that the common approach strengthens the regional haze program. The collaboration of the states resulted in common documents, which DEEP incorporated into the SIP. DEEP provided further explanation regarding the screening threshold in Appendix A of the SIP in response to EPA comments (see A.1.2 under the heading “Contribution Analysis”). The  $3.0 \text{ Mm}^{-1}$  threshold was used only for element 2 of the Ask.

**Comment:** Second, Connecticut does not explain how the  $3.0 \text{ Mm}^{-1}$  or greater visibility impact threshold was selected.

**Response:** Selection of the  $3.0 \text{ Mm}^{-1}$  was documented in the July 27, 2018 “MANE-VU Regional Haze Consultation Report” referenced in section 5 of the SIP. As documented, MANE-VU considered various thresholds for the Ask based on a ranking of facilities and their impacts to the Class 1 areas and decided on  $3.0 \text{ Mm}^{-1}$  as a reasonable cutoff. This resulted in between 7 to 26 facilities being selected for analysis depending on the Class I area.

**Comment:** Third, use of the same extinction threshold for selecting sources for consideration of pollution controls for each of the Class I areas evaluated in Connecticut’s proposed regional haze SIP revision has not been justified.

**Response:** See above.

**Comment:** Fourth, this extinction threshold for defining sources to evaluate for additional controls to achieve reasonable progress towards the national visibility goal is unreasonably high and at odds with the Clean Air Act mandate to make progress towards the national goal. Indeed, a much lower threshold for defining whether a BART-eligible source should be subject to a BART analysis was used in the first round of regional haze implementation plans. Specifically, if a BART-eligible source had a 0.5 deciview impact on a Class I area, reflecting an impact of approximately a 5% change in extinction, the unit was subject to a BART analysis. There is no justification to use a much higher threshold, which equates to a 9% to 27% change in manmade extinction at the Class I areas impacted by the MANE-VU states, for defining sources to control in this regional haze plan for the second implementation period. Connecticut has not provided any justification for use of a  $3.0 \text{ Mm}^{-1}$  threshold to determine sources to evaluate for controls, and we do not think any valid justification can be provided for such a high extinction threshold for defining sources to evaluate for controls to make reasonable progress. We urge Connecticut to replace this generic threshold with Class I specific figures that will provide the contours through which the state may identify sources to assess for a four-factor analysis.

**Response:** Section 5.5 of the SIP shows the continuing emission reductions from BART sources. DEEP notes that extinction and deciviews are not linearly correlated and Appendix A of the SIP indicates that  $3 \text{ Mm}^{-1}$  approximates 0.5 deciview at current most impaired visibility conditions in the nearby Class I areas.

**[NOTE: There was no comment described as Fifth.]**

**Comment:** Sixth, not only must Connecticut implement and document a reasoned basis for any extinction level used for selecting sources for a four-factor analysis of controls, it also must make clear how each source's visibility impacts are to be determined. For example, were the sources' potential emissions modeled, given that the MANE-VU recommended control is to evaluate sources with the "potential for"  $3.0 \text{ Mm}^{-1}$  or greater visibility impacts at any MANE-VU Class I area? What visibility-impairing pollutants were modeled for each source? Were all units modeled for all sources, or just certain emission units? Were sources modeled for impacts on the 20% worst days or on an annual average basis, or some other timeframe? The technical approach that the state employed to determine source-specific visibility extinction needs to be identified and subject to public review and comment, pursuant to 40 C.F.R. 51.308(f)(2). Any proposed extinction threshold for defining sources to target for controls is only as good as the underlying technical analysis to define if a source exceeds the extinction threshold.

**Response:** Modeling inventories are addressed in section 6 of the SIP and include Connecticut's statewide inventories for emissions of VOC, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, NH<sub>3</sub> and SO<sub>2</sub>. Modeling results are discussed in section 7. The extinction threshold applied only to the second element of the Ask and was selected based on ranked contribution of sources.

**Comment:** Seventh, the reasonable progress determination should necessarily have a lower threshold than BART, because BART was intended to create emission limitations for the low hanging fruit and we know that to achieve clear skies we will need to dig deeper for emission reductions each round to make progress.

**Response:** The MANE-VU Asks, developed through a regional consultation process, reflect the priority strategies for states to meet Reasonable Progress Goals for the second Regional Haze planning period. Continued progress towards achieving visibility goals comes from these strategies as well as the continued implementation and improvement of existing rules, as evident for BART sources particularly as documented in section 5.5 of the SIP.

**Comment:** Eighth, and importantly, the Act requires that the required long-term strategy adopted in the Connecticut's SIP make reasonable progress toward the national goal of remedying *any* existing impairment [42 U.S.C. 7591(a)(1), (b)(2), (b)(2)(B)] . Emissions from the sources in Connecticut impair visibility in Class I areas. Therefore, the State cannot set a threshold that so high as to exclude EVERY state source from a four factor RP analysis. The State's proposed SIP is clearly inconsistent with the Act's requirement as it sets a threshold that prohibits it from remedying existing impairment.

Connecticut must address these requirements and justify any and all extinction thresholds that it relies on for each Class I area impacted by its sources. We request that Connecticut provide such explanations with a new period for public review and comment.

**Response:** DEEP documented in section 4 how screening assessments were conducted through a ranking to determine which states might reasonably contribute to visibility impairment in Class I areas. The screening results showed that Connecticut consistently fell below the two percent contribution threshold and was not reasonably anticipated to contribute to visibility impairment in any of the Class 1 areas.

Nevertheless, Connecticut continues to implement programs developed with consideration of the four factors, including elements of the Asks, which reduce emissions related to visibility impairment.

As these explanations were addressed through the consultation with EPA and FLMs and are documented in the SIP, and DEEP has fulfilled its obligations for public notice and comment.

**Comment:** The State's Proposed SIP Does Not Contain the Required Four-Factor Analyses. Connecticut did not provide an evaluation of emissions from its sources and their impacts to the Class I area to calculate a Q/d value, thus, we turn to the NPS evaluation submitted to Connecticut earlier in the process for our comments. Based on the Q/d values, it's clear that

Connecticut needs to conduct a Four-Factor Analysis for four municipal waste combustion sources to inform its reasonable progress determination, specifically:

- Wheelabrator Bridgeport LP,
- CRRA/Mid-Connecticut,
- Covanta Southeastern CT, and
- Wheelabrator Lisbon LP.

**Response:** See the DEEP's response to NPS above regarding four-factor analyses for the four municipal waste combustors.

**Comment: [Regarding Asks Elements 1 and 4]** The State's proposed reliance on Title V permits in the SIP context is inconsistent with the Act, EPA's regulations and guidance. EPA's Guidance explains that the requirements in 40 C.F.R. § 51.308(d)(3)(v)(F):

[R]equires SIPs to include enforceable emission limitations and/or other measures to address regional haze, deadlines for their implementation, and provisions to make the measures practicably enforceable including averaging times, monitoring requirements, and record keeping and reporting requirements.

**Response:** The proposed SIP does not mandate that any of the requirements satisfying the Ask depended on the existence of the Title V permits. DEEP stated that Title V permits enhance federal enforceability of requirements that also meet visibility program goals. As stated in section 5.2 regarding the units listed in Table 5-1, the requirement to maintain and operate control equipment is made enforceable through RCSA section 22a-174-7 and new source review permits. RCSA section 22a-174-7 and rules governing issue of new source review permits are already incorporated into the SIP (see 40CFR52 Subpart H).

**Comment:** Finally, the State's analysis of the proposed SIP is internally inconsistent, which further demonstrates the arbitrariness of its proposal. The State's response to the Ask regarding energy efficiency summarizes its efforts but does not propose including any of its energy efficiency efforts in the SIP. Its explanation for excluding the energy efficiency efforts is that none of them are "conducive to satisfying the *permanent and enforceable criteria* necessary for inclusion in a state implementation plan." Thus, it appears the State appreciates what is needed to make the emission limitations permanent and enforceable for purposes of the RH SIP, and yet, as discussed above in this Section of our comments, has refused to make the emission limitations enforceable.

**Response:** DEEP's approach to the Regional Haze requirements under section 169A of the CAA is consistent and proper. DEEP met its obligation with respect to The Ask's requirement to "consider and report" measures to decrease energy demand and increase CHP and other clean energy sources. Long term transformative efforts directed at de-

carbonizing Connecticut's electric grid and meeting the state's long term greenhouse gas reduction goals will further reduce reliance on fossil fuels and associated emissions. As clean energy sources proliferate, there could well be a reduced funding or need for energy efficiency programs so federal enforceability of these programs is unwarranted at this time. Furthermore, energy efficiency incentives do not typically result in emission limits. For example, DEEP's incentive for CHP plants is provided by the opportunity to avoid uncertainties associated with the preconstruction permitting process. Though enforceable emission limits are included in the CHP rule, applicable to individual units which operate under the rule, the aggregate emission reductions provided by the opportunity to use the rule are not an enforceable limit. Similarly, widespread use of high efficiency light bulbs will reduce emissions, but do not result in an emission limit.

**Comment:** Connecticut Should Analyze the Environmental Justice Impacts in its Four Factor Analysis, and Should Ensure this SIP Considers Impacts to Environmental Justice Communities.

**Response:** Connecticut and its environmental justice communities bear unreasonable health and economic disbenefits from upwind sources of air pollution as well as from localized impacts of mobile source related air pollution. DEEP views the implementation of all pollution mitigation efforts and grant programs through an EJ lens and expects that ongoing emission reductions implemented to reduce regional haze will have a beneficial effect on the entire State, including its environmental justice communities.

**Comment:** Due to the deficiencies in Connecticut's proposal, the state must revise and reissue a valid haze SIP for public notice and comment.

**Response:** As stated above, the proposed SIP and DEEP's approach to the Regional Haze requirements under section 169A of the CAA is proper and consistent with all applicable requirements and DEEP has fully met its obligation to assess Connecticut's impact on Class I areas in nearby states.

## Conclusion

Based upon the comments submitted by interested parties and addressed in this report, I recommend that the SIP revision, revised as recommended in this report, be submitted to EPA for approval.

\_\_\_\_\_/s/\_\_\_\_\_  
Kiernan J. Wholean

November 16, 2021  
Date