

United States Environmental Protection Agency, Region 5

Mr. Hassan Bouchareb,

Attached here, please find EPA Region 5's comments on the proposed Minnesota Regional Haze State Implementation Plan (SIP) Revision for the 2nd Implementation Period that was posted for public comment on August 22, 2022. Please note that our comments are designed to clarify and to help further ensure that the submittal will address the applicable Regional Haze Rule requirements. For those comments where we emphasize the need for additional justification or clarification, it is important to have a clear understanding of how decisions are reached. If you have any questions, please feel free to contact me, or Alisa Liu at liu.alisa@epa.gov.

Sincerely,

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ATTACHMENT

US EPA Comments regarding the August 22, 2022 Draft for Public Comment of Minnesota's Regional Haze State Implementation Plan

On August 22, 2022, Minnesota Pollution Control Agency (MPCA) shared a link with USEPA Region 5 to draft revisions to Minnesota's Regional Haze State Implementation Plan (SIP) that was posted for a public comment. The public comment period concludes on October 7, 2022. USEPA provides these comments geared toward additional clarification to help further address the Regional Haze Rule requirements.

CHAPTER 1. REGIONAL HAZE PROGRAM OVERVIEW

Section 1.3 U.S. EPA's Regional Haze Federal Implementation Plan (FIP) for taconite facilities

- 1. Page 6:** *“...U.S. EPA and the taconite facilities are currently working to resolve the disagreements through settlement discussions. If a settlement agreement is reached with the Minnesota taconite facilities named in the FIPs (Cleveland-Cliffs Minorca Mine, Hibbing Taconite Company, Northshore Mining Company, United Taconite - Fairlane Plant, U.S. Steel - Keetac, and U.S. Steel - Minntac), U.S. EPA must publish a Federal Register notice announcing the settlement agreement, initiate a public notice and comment period, and respond to any comments received.”*

Comment:

Although the discussion above indicates U.S. EPA must “respond to any comments received,” please note that U.S. EPA does not necessarily respond to comments on a settlement agreement.

Additionally, please annotate the reference to U.S. Steel – Minntac in the parenthetical expression above to indicate a settlement agreement for Minntac was already reached, and a final rule revising the FIP for Minntac was finalized in 2021 although the final two sentences of the full paragraph, not excerpted here, also provide that information.

CHAPTER 2. REQUIRED REGIONAL HAZE SIP ELEMENTS

Section 2.2.3. States impacting Minnesota's Class I areas

2. **Page 34:** *“In Northeast Minnesota, the industry sector grouping is by far the most significant contributor to impairment at 4.7% of the region total at 6.5% at Boundary Waters and 7.3% at Voyageurs. The EGU sector contributes 1.3% of the region total at Voyageurs.”*

Comment:

Please clarify the percentages referenced in the statement above.

For the tables in Section 2.2.3 with columns labeled “Region contribution to visibility (%)” and “Contribution to visibility (%)” please consider adding “impairment” after “visibility” or referring to contribution of light extinction. For the tables with associated 2028 NO_x and SO_2 emissions used in the analysis, please clarify in the table headings if the column labeled “Annual emissions (tons)” is in reference to 2028 emissions.

3. **Page 35-36:** *“Northeast Minnesota contributes about 40% visibility impairment at both Boundary Waters and Voyageurs. With 60% of the visibility impairment from Minnesota attributed to the rest of the state...”* In Table 13 for Northeast Minnesota, the Region total for sector groups is listed as a 6.5% contribution to visibility at Boundary Waters and 7.3% at Voyageurs. For Rest of Minnesota, the Region total for sector groups is listed as a 9.7% contribution to visibility at Boundary Waters and 10.3% at Voyageurs.

Comment:

Please clarify what the various percentages are relative to in the references above as well as similar references throughout.

4. **Page 36:** *“In Minnesota, large reductions in NO_x emissions of around 66,200 tons from vehicles (on-road and off-road) were accounted for between 2016 and 2028.”*

Comment:

It would be helpful to mention to what the large reductions in NO_x emissions from on-road and off-road vehicles are attributed for Minnesota and the other states where this observation was presented.

5. **Page 37, 38:** *“North Dakota overall contributes mostly nitrate to visibility impairment at Boundary Waters (60%) and Voyageurs (53%)...Iowa overall contributes mostly nitrate to visibility impairment at Boundary Waters (60%) and Voyageurs (53%)...”*

Comment:

Please clarify if the percentages above, and in similar references for Nebraska, Wisconsin, Missouri, and Canada, are meant to compare the amount of sulfate to nitrate that comprise a region's total contribution to visibility impairment. For example, please clarify if Iowa's total contribution is made up of 60% nitrate and 40% sulfate, which together contribute 4.3% to the visibility impairment at Boundary Waters and 4.1% visibility impairment at Voyageurs as indicated in Table 17.

Section 2.3 Step 3 - Selection of sources for analysis

6. Page 45: *"...in alignment with other LADCO member states, the MPCA conducted a screening analysis for stationary sources to determine which sources would be selected. Ultimately, the MPCA selected sources that represent roughly the top 85% of emissions from Minnesota sources that may impact visibility based on the screening analysis for Boundary Waters and Voyageurs."*

Page 82: *"MPCA selected sources for analysis that correspond to roughly the top 85% of stationary source emissions from Minnesota sources that may impact visibility based on the Q/d Analysis for both the Boundary Waters and Voyageurs Class I areas. Adding these four facilities resulted in an effective Q/d threshold of 4.6."*

Page 86: *"Minnesota settled on a Q/d threshold value of 4.7 in consultation with FLMs. This value also corresponds to roughly the top 85% of emissions from Minnesota sources that may impact visibility based on the Q/d Analysis for both the Boundary Waters and Voyageurs Class I areas."*

Comment:

Two Q/d values are noted as a threshold: 4.6 and 4.7. Please clarify which threshold was intended.

In explaining that "MPCA selected sources for analysis that correspond to roughly the top 85%...", MPCA did not explicitly state that sources were selected based on Q/d. Selecting the top 85% of emissions from sources located generally throughout the state would not necessarily correlate with visibility impacts on Class I areas in the same way that Q/d would or in the other ways as addressed in the 2019 RH Guidance on page 13, such as trajectory analyses, residence time analyses, or photochemical modeling. As noted in the 2019 Regional Haze Guidance, states are expected to provide "a detailed description of how the state used technical information to select a reasonable set of sources for an analysis of control measures..." 2019 Regional Haze Guidance at 27. As such, it would be helpful to explain in Section 2.3 if a Q/d threshold of roughly 4.6 (p. ii, 82) or 4.7 (p. 86) was a consideration in arriving at the selection of sources, which also represents the top 85% of emissions.

Section 2.3.2 Estimating visibility impacts for source selection

7. **Page 48:** *“MPCA relied on the Q/d results created by the Lake Michigan Air Directors Consortium (LADCO) for industrial point sources using 2016 emissions inventory data with revisions made to account for certain facilities that were idled or operating at reduced capacity in 2016. [Footnote 75].”*

Comment:

Footnote 75 refers to Appendix C: LADCO Documentation; LADCO Regional Haze 2018-2028 Planning Period TSD. To provide background on the Q/d results created by LADCO that MPCA relied upon, please include in Appendix C LADCO’s October 14, 2020, memo regarding “Description of the Sources and Methods Used to Support Q/d Analysis for the 2nd Regional Haze Planning Period.” Although a weblink is provided in Appendix C, please provide the full memo.

8. **Page 52:** *“Table 29 below displays the facility location, emissions data (total emissions of NO_x, SO₂, PM_{2.5}, NH₃, and VOCs), distance, the associated Q/d value, percentile (percent of the total Q/d for the Class I area), and cumulative percentile for the Boundary Waters Class I area.”*

Comment:

It would be helpful to note for Table 29 and 30 if the percentile and cumulative percentile only reflect the listed facilities and not an overall percentile that would account for contributions by other sources, such as mobile, international or biogenic.

2.3.4 Option to consider the five required additional factors when selecting sources

9. **Page 58-59:** *“The MPCA made a specific modification in its modeling analysis to account for the Regional Haze Taconite FIP, discussed previously in Section 2.6.1... The expected emission changes due to the Regional Haze Taconite FIP are discussed in more detail in Section 2.3.5 below alongside other sources not selected for analysis due to already having effective emissions controls in place. These emission reductions are reflected in the 2028 modeling inventory.”*

Page 62: *Table 32. Summary of emission units with existing effective controls*

Page 78-80: *“U.S. EPA only recently finalized the limits for this facility [U.S. Steel – Minntac]...”*

Page 128: *“MPCA considers the taconite emissions projection fairly conservative, post-FIP controls resulting in lower emissions, for a few reasons...”*

Page 134: *“Overall, MPCA believes the RPGs are a conservative estimate of the visibility improvements due to Minnesota’s long-term strategy for the second regional haze*

implementation period. The modeling analysis, and therefore the RPGs, do not account for all the emission reductions expected from Minnesota's long-term strategy suggesting that visibility conditions will improve more than predicted."

Comment:

Please provide some context in Table 32 and statements regarding the emission projections that acknowledges the settlement negotiations involving the taconite FIP, such as was done in Section 1.3, and discuss the relative sensitivity of MPCA's projections to potential changes.

Although discussed on pages 78-80, please further elaborate how the final rule revising the FIP pertaining to U.S. Steel - Minntac was considered or how it would impact MPCA's projections.

Section 2.3.5 Sources that have existing effective emission control technology

10. Page 61-80: MPCA provides five years of emissions data and projected 2028 emissions for each of the facilities listed. MPCA makes similar observations for each facility, noting, for example, "*...the facility has been implementing the controls described earlier resulting in a reasonably consistent emission rate over the most recent five years...MPCA has no reason to believe that emission rates for these emission units will increase in the future given the applicable limits, control equipment, and associated requirements are already enforceable requirements...*"

Comment:

While MPCA provides actual recent emissions and projections as support for not selecting sources for four-factor analyses, MPCA should further address whether the facilities need to hold emissions to a certain level for reasonable progress, and if those limits should be enforceable in the SIP. See Section 4.1 of the 2021 Clarifications Memo.

Section 2.4.2 Emissions information for characterizing emission-related factors

11. Page 94: "*Additional emission unit specific information utilized in the four-factor analyses, including permitted NO_x and SO₂ emission rates, actual NO_x and SO₂ emission rates, and the design heat input capacity of the emission units is provided in Table 49 below.*"

Comment:

Table 49 shows variability between permitted rates and actual rates at sources selected for analysis. In expounding upon the information in Table 49, please indicate if the data in Table 49 combined with data elsewhere in the document demonstrates the facilities have been implementing their existing controls resulting in a reasonably consistent emission rate that is not expected to increase in the future. Based on the information, MPCA will need to explain why it is

reasonable to determine that existing controls at these facilities are not necessary for reasonable progress per Section 4.1 of the 2021 Clarifications Memo. If MPCA is not making this determination, it should consider analyzing existing controls at these facilities for potential upgrades or optimization. See 2021 Clarifications Memo at 9: “Information on a source’s past performance using its existing measures may help to inform the expected future operation of that source. If either a source’s implementation of its existing measures or the emission rate achieved using those measures has not been consistent in the past, it is not reasonable to assume that the source’s emission rate will remain consistent and will not increase in the future.”

Section 2.5.1 Cost of Compliance (statutory factor 1)

12. Page 112: Regarding Southern Minnesota Beet Sugar Cooperative. *“No additional information provided by the facility suggests that the NO_x controls are not cost-effective for the facility in this regional haze implementation period. The MPCA maintains that the NO_x controls are cost-effective and necessary to continue making reasonable progress, but the MPCA has not reached an agreed path forward with the facility to install the NO_x controls.”*

Page 173: Table 82 regarding Southern Minnesota Beet Sugar Cooperative. *MPCA appreciates the detailed review and comments provided on the cost estimates provided by the facility and the revisions made by MPCA. While there are multiple ways to perform a cost estimate, MPCA believes it has adequately estimated the potential cost of controls while accounting for the facility-identified site-specific considerations. As a result, MPCA did not change its determination of the controls needed to continue making reasonable progress but will consider reevaluating this facility and emission units as part of the 2025 progress report or the 2028 comprehensive update.*

Comment:

It would be helpful to mention on page 112 MPCA’s decision on page 173 to consider reevaluating this facility as part of the 2025 progress report or the 2028 comprehensive update.

Section 2.5.8 Minnesota’s Long-Term Strategy

13. Page 119: *“All of the emission reduction strategies that will contribute to meeting the RPGs are documented in this SIP submittal. As discussed previously in Section 2.5.6, Minnesota considered several factors in developing its long-term strategy and has met the requirements of 40 CFR § 51.308(f)(2) as summarized below.”*

Comment:

Page 120 lists the measures deemed necessary for reasonable progress that are a part of MPCA’s long-term strategy. On page 112, regarding the Southern

Minnesota Beet Sugar Cooperative, MPCA notes the following: “No additional information provided by the facility suggests that the NO_x controls are not cost-effective for the facility in this regional haze implementation period. The MPCA maintains that the NO_x controls are cost-effective and necessary to continue making reasonable progress, but the MPCA has not reached an agreed path forward with the facility to install the NO_x controls.”

These control costs vary from ~\$2,900/ton to ~\$3,800/ton. These costs are in line with what has been considered reasonable in the past by the Agency.

While MPCA states on page 112 “that the NO_x controls are cost-effective and necessary to continue to make reasonable progress,” it is unclear whether these controls (and which of these controls) actually have been determined by MPCA to be necessary for reasonable progress in the second planning period. MPCA has seemingly taken the position that cost-effective controls should be required at this facility, though the measure(s) are not included in the state’s long-term strategy on page 120. In this regard, MPCA indicates on page 173 that it “will consider reevaluating this facility and emission units as part of the 2025 progress report or the 2028 comprehensive update.” MPCA should better clarify whether controls at this facility will be required and whether controls at this facility are part of the State’s long-term strategy in the second planning period. See 51.308(f)(2). To the extent that MPCA has determined that particular measures are necessary, all such necessary measures are required to be federally enforceable and included in the SIP.

Section 2.6.2 Reasonable Progress Goals for Boundary Waters and Voyageurs

14. Page 132: *“The 2028 model projection for the clearest days, 4.5 dv for Boundary Waters and 5.3 dv for Voyageurs, ensures “no degradation” from baseline visibility, 6.5 dv for Boundary Waters and 7.2 dv for Voyageurs (see Section 2.7 for more details).”*

Comment:

Should the value of 6.5 dv noted above be 6.6 dv based on Table 64 “Reasonable progress goals (RPG) at Boundary Waters and Voyageurs” or should Table 64 be revised with a value of 6.5 dv?

15. Page 134: Regarding Table 65 Long term strategy measures reflected in the RPGs for Boundary Waters and Voyageurs, MPCA notes, *“Overall, MPCA believes the RPGs are a conservative estimate of the visibility improvements due to Minnesota’s long-term strategy for the second regional haze implementation period. The modeling analysis, and therefore the RPGs, do not account for all the emission reductions expected from Minnesota’s long-term strategy suggesting that visibility conditions will improve more than predicted.”*

Comment:

MPCA included a similar statement in the TSD for the corresponding table, which is Table 24 in Appendix A on page 65:

“Overall, the MPCA believes the RPGs at Boundary Waters and Voyageurs appear to be somewhat conservative estimates of visibility improvements due to the long-term strategy for the second implementation period. Not all emission reduction measures could be reflected in the modeling, and some emissions increase projections reflected in the modeling are unlikely to occur.”

It would be helpful for MPCA to include the same conclusion from Table 65 in the main document for the corresponding Table 24 in the TSD that was stated above: “...suggesting that visibility conditions will improve more than predicted.”

Section 2.9.1. Consultation with states

16. Page 142-145: MPCA indicates that it “met” with representatives from specific states that it had identified as reasonably contributing to visibility impairment at Minnesota Class 1 areas. MPCA states that during the development of this SIP submittal, that it has “contacted” representatives from those states, “shared details” with them, “requested” information from them, and have been provided information in various forms in response.

Comment:

While MPCA provides detailed synopses of its interactions with the “reasonably contributing” states, Section 2.9 does not appear to explain how MPCA determined, and by what criteria, which states are “reasonably contributing.” The submittal to EPA should explain how MPCA determined which states were reasonably contributing states for purposes of consultation.

MPCA also does not provide copies of the correspondence/contacts/requests/responses documenting the consultation. The documentation of the consultation should be provided in the submittal to EPA, e.g., as an Appendix. *See* 40 CFR 51.308(f)(2)(ii)(C) (“All substantive interstate consultations must be documented.”)