



Minnesota Center for Environmental Advocacy

The legal and scientific voice protecting and defending Minnesota's environment

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Mr. David Thornton
Assistant Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155

VIA ELECTRONIC AND U.S. MAIL

Re: Draft Regional Haze State Implementation Plan Comments

Dear Mr. Thornton:

These comments are submitted on behalf of the Minnesota Center for Environmental Advocacy ("MCEA"). The Friends of the Boundary Waters, the National Parks Conservation Association, and Voyageurs National Park Association join with MCEA in the submission of these comments and incorporate these comments as their own. As indicated, below, each of these organizations has a significant interest in protecting and improving visibility in the Boundary Waters Canoe Area Wilderness ("BWCAW") and Voyageurs National Park ("VNP"). We submit these comments as significant stakeholders in the outcome of the Minnesota Regional Haze State Implementation Plan.

The Minnesota Center for Environmental Advocacy is a Minnesota-based non-profit environmental organization whose mission is to use law, science, and research to preserve and protect Minnesota's natural resources, wildlife, and the health of its people. MCEA has state-wide membership. MCEA's members live, work, and recreate in the BWCAW, VNP and Isle Royale National Park. The Regional Haze State Implementation Plan (Haze SIP) involves environmental impacts in many of the areas of MCEA's work, including air quality, public health, and protection of natural resources.

The Friends of the Boundary Waters Wilderness ("Friends") is the only organization in the country focused squarely on protecting the Boundary Waters Canoe Area Wilderness. The Friends, a non-profit organization, exists

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to protect, preserve, and restore the recreational and ecological treasures of the BWCAW, and to defend the BWCAW against pressures created by excessive logging, invasive species, overuse, development, and industrial pollution. The Friends represent nearly 4,500 individuals, family foundations, and organizations, many of whom live adjacent to or regularly visit the BWCAW. Friends' members, along with 258,000 visitors annually, travel to the BWCAW in part to enjoy and seek the health benefits of its clean air. That enjoyment and those health benefits are curtailed on days where high levels of pollutants cause low-visibility and render the air in and around the BWCAW less safe.

Voyageurs National Park Association ("VNPA") is a private, non-profit organization with the mission of protecting and promoting Minnesota's only National Park, Voyageurs National Park ("VNP"). Voyageurs National Park Association meets its mission through a focus on protecting the park by addressing policy issues, providing direct support to Park projects, and advocating to ensure long-term protection of the Park's resources.

The National Parks Conservation Association ("NPCA") is a national non-profit organization working to protect and enhance America's National Parks for present and future generations. NPCA plays a crucial role in ensuring that these magnificent lands and landmarks are protected. The work of NPCA includes advocating for the national parks and the National Park Service, and educating decision makers and the public about the importance of preserving the parks. NPCA represents more than 330,000 members dedicated to park preservation and ensuring that our parks are protected for present and future generations. The NPCA's regional Midwest office works to protect parks in the Midwest, including Voyageurs and Isle Royale National Parks.

I. INTRODUCTION

The Minnesota Pollution Control Agency ("MPCA") submitted a draft State Implementation Plan ("SIP") to the United States Environmental Protection Agency ("EPA") in compliance with the Regional Haze Rule of 1999 ("Regional Haze Rule"), 40 CFR §§51.300-308. Pursuant to the Regional Haze Rule, Minnesota is required to develop a SIP to reduce haze and meet the goal of natural visibility conditions by 2064 in Class I areas both within the state of Minnesota and in Class I areas outside the state of Minnesota which are affected by air pollutants emitted within Minnesota. Minnesota has two Class I areas: the Boundary Waters Canoe Area Wilderness ("BWCAW") and Voyageurs National Park ("VNP"). Within the state of Minnesota, several sources have been identified as making significant contributions to visibility impairments to Class I areas both inside and outside of Minnesota. Additionally, emissions from a number of states and Canada also contribute to visibility impairment in Minnesota's Class I areas.

Throughout the preparation of the Haze SIP, MPCA solicited the input of numerous stakeholders, including Federal Land Managers, local environmental and non-profit organizations, Tribes, industry, and the general public. We appreciate the efforts made by MPCA in involving the public in such a significant undertaking and responding to comments and questions throughout the process. In addition, we greatly appreciate the

extension of time granted for the submission of comments on the draft Haze SIP. While our comments are still somewhat limited in scope, the additional time granted was immensely helpful in allowing us to more completely review the draft Haze SIP and underlying documents than would have been possible with the original deadline of April 16, 2008.

Further, the assistance of MPCA staff in accessing information, making documents available for review, responding to questions, and being available to discuss concerns or clarify questions regarding the draft Haze SIP has also been helpful and is greatly appreciated.

We offer these comments in an effort to ensure that the Haze SIP not only complies with federal guidelines, but, more importantly, achieves meaningful and significant progress towards reducing visibility impairment in BWCAW, VNP, and Isle Royale National Park and protect these areas from harm as a result of human activity. We encourage MPCA to engage with us further throughout the revision of the draft Haze SIP and prior to the submission of the final Haze SIP. Even as we recognize the significant time and resources that were invested in the development of the Haze SIP, we are concerned that the implementation of the Haze SIP will not lead to meaningful improvement in visibility in BWCAW and VNP.¹ Several key factors severely limit the ability of the Haze SIP to improve visibility conditions in BWCAW and VNP, including:

- Problems in the underlying assumptions and technical analysis on which the Haze SIP is based;
- The failure of the Haze SIP to specify emissions reductions, establish reasonable and enforceable timelines for implementation and compliance with pollution control requirements, or otherwise adequately control emissions within Minnesota, particularly with regard to BART eligible sources;
- The refusal of neighboring states to commit to emissions reductions; and
- The failure of the Haze SIP to address future Canadian air emissions which contribute to the region's haze problem.

The following comments are organized as follows:

- I. Introduction
- II. General Comments
- III. Key Areas Of Concern
- IV. Visibility Measurements
- V. Emissions Inventory
- VI. Modeling
- VII. Other Comments

¹ See Affidavit, General Comments, #2.

As discussed below, to ensure that Minnesota's Haze SIP leads to improvement in visibility conditions in BWCAW and VNP and adequately complies with the legal requirements of the Regional Haze Rule the issues identified must be resolved. These comments also incorporate the attached Affidavit of Dr. Ranajit Sahu, an expert retained to review and analyze the Draft Haze SIP and supporting documents. Please consider Dr. Sahu's affidavit and attached documents part of these comments and the record herein. Accordingly, we request that the concerns discussed below be addressed prior to the finalization of the Haze SIP.

II. GENERAL COMMENTS

1. Access to Documents and Legal Authority Cited in Draft SIP

While we recognize that the preparation of the Haze SIP required extensive time and effort to develop, the Haze SIP in its current form is extremely difficult to follow and understand. The confusing organization of the Haze SIP and technical language used,² combined with the lack of specific or accurate citations to many of the background technical documents and legal authority referenced as the basis for conclusions drawn throughout the Haze SIP, has made meaningful review of the Haze SIP extremely challenging and in some cases impossible. While we appreciate MPCA's efforts to make numerous background technical documents available to the public on the MPCA website and to include a number of these documents in the Appendices to the Haze SIP, the large volume of information provided and the failure to provide complete citation information when specific documents or sources are referenced make accessing this information extremely difficult. Additionally, legal authorities on which the Haze SIP relies are often incompletely or inaccurately cited, making verification of the legal authority for decisions made in the Haze SIP very difficult.³

We request that MPCA perform a comprehensive review of the Haze SIP and ensure that all legal authorities are clearly and accurately cited; that background documents are accurately cited, including page numbers, with specific instructions of where to find background documents not easily available to the public; and that references to documents or information contained in Appendices to the Haze SIP also include page numbers and specific references to assist the reader in accessing this information.⁴

2. Climate Change

The Regional Haze Rule requires states to develop a long-term strategy which includes "[T]he anticipated net effect on visibility due to projected changes in point, area, and

² See Affidavit, General Comments, #4-5.

³ An Example of this concern has been noted in the following comments. However, this examples is not intended to reflect all instances in which additional information or citations should be included.

⁴ Consistent page numbering and citation of page numbers when referencing sources in the Appendices would help immeasurably in finding specific references to information in an Appendix.

mobile source emissions over the period addressed by the long-term strategy.”⁵ Accordingly, the Haze SIP must consider changes in baseline conditions from emissions which are anticipated to occur as a result of climate change during the time period covered by the Haze SIP. While the impact of climate change is anticipated to have a significant impact on conditions which will affect visibility conditions in BWCAW and VNP (e.g. the potential increase in the frequency and intensity of forest fires in northern Minnesota), the Haze SIP fails to acknowledge or analyze the impact climate change will have on visibility conditions in BWCAW and VNP.⁶ It is imperative that MPCA include an analysis of the impact climate change will have on visibility conditions between now and 2064 and put this analysis into the Haze SIP. If MPCA does not believe that climate change will have a significant impact on visibility conditions in BWCAW and VNP, this should be discussed in the Haze SIP.

III. KEY AREAS OF CONCERN

1. BART

Effectively reducing emissions from BART-eligible sources is perhaps the single most significant step that MPCA can take to improve visibility conditions in BWCAW and VNP. The development of the Haze SIP and implementation of the Regional Haze Rule provide MPCA with an opportunity to move beyond the state's historical failure to regulate these sources and create a new system through which the significant pollution caused by BART-eligible sources can be significantly reduced. While the Haze SIP includes some efforts to regulate BART-eligible sources, and the taconite industry specifically, more must be done before the Haze SIP adequately complies with federal requirements or effectively reduces the visibility impact of emissions from these sources.

The Regional Haze Rule provides specific information regarding what must be included in a Haze SIP to reduce emissions from BART-eligible sources. Minnesota's Haze SIP fails to comply with federal requirements and EPA guidance for BART-eligible sources.⁷ A number of specific deficiencies must be highlighted and addressed prior to the finalization of the Haze SIP, including:

- 1) Source-specific emissions limits and compliance schedules for each source subject to BART;⁸
- 2) Deadlines for the installation and operation of BART for each source subject to BART which ensures that BART is installed and operated as expeditiously as practicable, but no later than five years after the approval of the SIP. These deadlines must include information regarding the individual emission unit(s)

⁵ 40 C.F.R. §51.308(d)(3)(v)(G).

⁶ See Affidavit, General Comments, #6-7.

⁷ 40 C.F.R. §51.308(e).

⁸ 40 C.F.R. §51.308(e); Additional Regional Haze Questions, EPA document dated August 24, 2005, (BART #1, 4.)

- subject to BART regulation and the time by which the emission unit(s) must begin to comply with the BART limit;⁹
- 3) The names of source facilities, specific emission units and pollutants being controlled¹⁰ and specific information regarding the controls, control efficiencies, and emissions reductions expected.¹¹

The state clearly fails to meet these legal requirements, and recognizes as much, when it states, “[A]t this time, we cannot predict what emission reductions might result from BART in Minnesota.”¹²

It must be noted that the difficulty in establishing BART emissions limits for BART-eligible sources in Minnesota is the result of a long history of inadequate emissions regulations of sources in Minnesota, most significantly the failure to effectively regulate the taconite industry in Northeast Minnesota for decades. In addition to being unable to establish BART for taconite, the Haze SIP also fails to identify emissions reductions achieved through BART for Electric Generating Units (“EGUs”) in Minnesota. MPCA claims it “did not perform a BART determination for subject-to-BART EGUs to evaluate NOx and SO2 because of the State’s inclusion in the CAIR region.”¹³ However, the potential removal of Minnesota from the CAIR region requires MPCA to establish BART for EGUs and a specific timeline for installation of BART in the event Minnesota is removed from the CAIR region.

The following discussion highlights a number of concerns with BART-eligible sources and BART emission limits which must be addressed prior to the finalization of the Haze SIP.

- a. BART-eligible sources contributing less than 0.5 deciviews of visibility impairment

The Regional Haze Rule requires MPCA to identify all BART-eligible sources in the state. The Guidelines for BART Determinations Under the Regional Haze Rule, (“BART Guidelines”) provide specific guidance to states in identifying sources subject to BART.¹⁴ Once all BART-eligible sources are identified, the BART Guidelines then require MPCA to determine which BART-eligible sources should be required to install BART.¹⁵ The BART Guidelines give Minnesota two options in determining which BART-eligible sources should be required to install BART. Option 1 requires MPCA to make BART determinations for all BART-eligible sources while Option 2 allows MPCA to consider

⁹ 40 CFR §51.308(e)(1)(iv); Additional Regional Haze Questions, EPA document dated August 24, 2005, (BART #4).

¹⁰ 40 CFR §51.308(e)(1)(i-ii).

¹¹ Additional Regional Haze Questions, EPA document dated August 24, 2006, (BART #4.)

¹² Haze SIP, Ch. 10, p. 81.

¹³ Haze SIP, Ch. 9, p. 58

¹⁴ 40 CFR, Part 51, Appendix Y – Section III.

¹⁵ Id.

exempting some sources from BART because they do not cause or contribute to visibility impairment in a Class I area.¹⁶ The Haze SIP indicates that MPCA chose Option 2.¹⁷

If a state chooses “Option 2”, it must then determine which BART-eligible sources cause or contribute to visibility impairment in Class I areas. Before determining which sources cause or contribute to visibility impairment, a threshold for determining which sources cause or contribute to visibility impairment in Class I areas must be established. Once this threshold is established, BART-eligible sources found to cause visibility impairment within the parameters of the threshold are required to install BART, while BART-eligible sources which do not cause visibility impairment within the threshold are exempt from installing BART.

The BART Guidelines specify that a single source that is responsible for a 1.0 deciview change or more should be considered to “cause” visibility impairment, however, a source that causes less than a 1.0 deciview change may still contribute to visibility impairment and thus be subject to BART.¹⁸ The BART Guidelines indicate that when states set a threshold for contribution towards visibility impairment, the state should “consider the number of emissions sources affecting the Class I areas at issue and the magnitude of the individual sources’ impacts” noting that “a larger number of sources causing impacts in a Class I area may warrant a lower contribution threshold. States remain free to use a threshold lower than 0.5 deciviews if they conclude that the location of a large number of BART-eligible sources within the State and in proximity to a Class I area justify this approach.”¹⁹ However, states are specifically directed not to use a threshold higher than 0.5 deciviews when determining which sources contribute to visibility impairment.²⁰ Additionally, EPA requires states to provide a basis for the selection of their threshold.²¹

The Haze SIP indicates that MPCA chose 0.5 deciview as the visibility threshold for determining which BART-eligible sources would be required to install BART. The Haze SIP notes that MPCA chose not to set a threshold lower than 0.5 deciviews even though it had the legal authority to do so.²² MPCA explained its decision not to use a threshold lower than 0.5 deciviews, indicating that even though a number of existing BART-eligible sources were identified “in close proximity to Class I areas, the modeling showed no sources causing impacts at levels just slightly below 0.5 deciview, therefore MPCA

¹⁶ Id.

¹⁷ Haze SIP, Ch.9, p. 57. The Haze SIP indicates that MPCA chose “option b” from the BART Guidelines. Please note that the BART Guidelines refer to “option 1” and “option 2”, not “option a” and “option b”. The inaccurate terminology used in the Haze SIP combined with the lack of specific citation to the Guidelines makes it extremely difficult to determine the legal authority for MPCA’s decision to choose “option b”. The Haze SIP must be corrected to include specific language used in the regulations with precise citations to enable the reader to determine the legal basis on which MPCA made its determination to choose “option b”.

¹⁸ 40 CFR Part 51, Appendix Y – Section III.

¹⁹ Id.

²⁰ Id.

²¹ “Additional Regional Haze Questions”, EPA document, dated August 24, 2006 (BART #3).

²² Haze SIP, Ch. 9 p. 57.

did not consider readjusting the contribution threshold.”²³ Accordingly, after identifying all BART-eligible sources in Minnesota, MPCA determined that a number of these sources would not be required to install BART based on a finding that they contributed less than 0.5 deciviews of visibility impairment in BWCAW and VNP.²⁴

We do not support MPCA’s decision to choose “Option 2” and set an arbitrary visibility threshold of 0.5 deciviews for BART-eligible sources. The significant problems associated with the modeling used to determine the impact of specific sources on visibility impairment, the recent indication that even a 0.1 deciview impact could have a significant affect on visibility in BWCAW and VNP,²⁵ and the presence of a number of existing BART-eligible sources in close proximity to Class I areas indicates that MPCA’s decision to choose “Option 2” and set a threshold of 0.5 deciviews is unsupported and is in error.²⁶ Accordingly, MPCA should revisit its decision to choose “Option 2” and exempt BART-eligible sources found to contribute less than 0.5 deciviews of visibility impairment in BWCAW and VNP in accordance with “Option 2”.

b. Taconite Industry

The Haze SIP indicates that the lack of adequate emissions information regarding taconite facilities has resulted in an inability to identify BART for NOx and SO2 for the majority of the taconite facilities.²⁷ In an effort to better establish emissions baseline data to use as a basis for determining BART for taconite facilities, MPCA is seeking an extension of time to establish BART emissions limits for taconite facilities.

We agree that, while unfortunate, the lack of adequate emissions information from the taconite industry may have made the establishment of BART emissions limits for some taconite facilities infeasible at this time. However, we are concerned that even as the Haze SIP indicates that additional time and information is needed to establish BART emissions limits for taconite facilities, the Haze SIP fails to address why some concrete suggestions made to the state regarding potential BART controls for SO2 and NOx have not been implemented.²⁸ Accordingly, we do not support an extension of time to establish BART emissions limits for NOx and SO2 for taconite facilities unless MPCA provides conclusive analysis that those suggestions which have been made are infeasible, and impractical, or do not effectively limit emissions from the identified taconite facilities for which those emissions strategies apply. If the specified emissions limits do not apply to a specific taconite facility or emissions source, then we support an appropriate extension of time to obtain additional emissions information from taconite

²³ Id. Id.

²⁴ Id.

²⁵ “Changes Made to Regional Haze SIP Since Public Review Draft”, p. 3.

²⁶ Affidavit, Visibility Measurements, #9.

²⁷ Haze SIP, p.62.

²⁸ Letter (and attachments) from James W. Sanders, USDA, to Mr. David Thornton, MPCA, dated March 5, 2008; Letter (and attachments) from James W. Sanders, USDA, to Ms. Mary Jean Fenske, MPCA, dated April 10, 2007.

facilities which can be used to establish BART emissions limits provided that the Haze SIP includes clear and enforceable deadlines for establishing BART emissions limits and requiring the installation of the identified BART on specific taconite facilities.

To clarify, we do not support an extension of time to establish BART emissions limits for SO₂ for the United Taconite facility because concrete and feasible suggestions have been made to the state regarding BART emissions limits for SO₂ emissions for the United Taconite facility.²⁹ If MPCA is unwilling to require United Taconite to install the specified BART emissions limits for SO₂, we request that the Haze SIP specifically discuss this decision and MPCA's justification for this decision. In addition, to the extent that suggestions made by the USDA regarding BART controls for NO_x apply to any specific taconite facility or emissions source, the Haze SIP must address these suggestions specifically and indicate to which specific taconite facilities these emissions controls could apply and why MPCA does not consider these BART emissions limits for NO_x to constitute BART for the taconite facilities to which this technology applies.³⁰

Within the parameters discussed above, we support the extension of time to determine BART for specific pollutants while taconite facilities install "continuous emission control technology" as required by the Regional Haze Rule.³¹ However, in allowing for additional time to obtain the requisite information to establish BART, it is imperative that enforceable deadlines and requirements be established and included in the Haze SIP. Specifically, enforceable deadlines must be included in the Haze SIP for the installation of continuous emission control technology; for the collection and reporting of data obtained through this emission control technology to MPCA; for the establishment of BART emissions limits for each pollutant, emissions source, and specific taconite facility; and for the inclusion of these BART emissions limits in each taconite facility's Title V permit. Additionally, the Haze SIP must include requirements indicating which pollutants are to be monitored through the continuous emission control technology.

In the materials submitted as part of the public hearing and conference call held in April and May 2008, MPCA provided a draft chart which included some additional specificity regarding dates and timelines for BART.³² While this draft table is a good start in providing more specificity and deadlines for the installation of BART for taconite facilities, the table needs to go further and include greater specificity and more explicit deadlines.³³ As discussed during the conference call regarding these materials on May 7, 2008, this table in its current form provides misleading and incomplete information regarding which facilities will be required to meet the indicated deadlines and which pollutants are covered by which deadlines. We request that MPCA add additional information in this table to ensure that specific information and deadlines are included for individual taconite facilities and emissions sources, and specific pollutants.

²⁹ Affidavit, BART, #5.

³⁰ Id.

³¹ 40 C.F.R. 51.308(e)(1)(ii)(A).

³² "Changes Made to Regional Haze SIP Since Public Review Draft", p. 2.

³³ Affidavit, BART, #5.

The Regional Haze Rule requires the Haze SIP to include “[A] requirement that each source subject to BART be required to install and operate BART as expeditiously as practicable, but in no event later than 5 years after approval of the implementation plan revision.”³⁴ Even as MPCA is seeking to delay the determination of BART emissions limits for taconite facilities, the Haze SIP must include deadlines for the installation of BART by taconite facilities early enough to allow MPCA to analyze the emissions reductions achieved through BART and the impact of these reductions on visibility in BWCAW and VNP so that this information can be included as part of the 2012 SIP 5-year assessment.

While MCEA commends the MPCA on its efforts to engage the taconite industry in emissions reductions initiatives, it is imperative that there be transparency in this process with the opportunity for public involvement in agreements which affect the long-term visibility conditions in the BWCAW and VNP. We note specifically that MPCA has entered into a number of Administrative Orders with individual taconite facilities.³⁵ These Administrative Orders reflect agreement between MPCA and the taconite facilities regarding steps that the facilities will take to install continuous emission control technology in an effort to obtain emissions information needed to establish BART emissions limits. The Haze SIP should include information regarding public participation in this process. Further, recognizing the failure of MPCA to adequately regulate the taconite industry for several decades, it is essential that any agreements entered into between MPCA and taconite facilities be reviewed and approved by EPA with the opportunity for an independent review of emissions data obtained from taconite facilities to ensure that these Administrative Orders and the installed continuous emission control technology lead to significant emissions reductions from taconite facilities.

c. Electric Generating Units (EGU’s)

The Regional Haze Rule allows states to meet BART requirements for Electric Generating Units (“EGUs”) through participation in the Clean Air Interstate Rule (“CAIR”).³⁶ While the Regional Haze Rule allows states to find that emissions reductions achieved under CAIR equal BART for EGUs, EPA specifically notes that in order for states to meet the uniform rate of progress and ultimate visibility goals for 2064 required under the Regional Haze Rule, additional emissions reductions for EGUs may be required. Guidelines from EPA state that a “. . . determination that the CAIR makes greater reasonable progress than BART for EGUs is not a determination that the CAIR satisfies all reasonable progress requirements in CAIR affected States.”³⁷ EPA goes further, stating that “a State’s reasonable progress analyses may indicate that additional

³⁴ 40 CFR §51.308(e)(i)(iv).

³⁵ Haze SIP, Appendix 9.6; Administrative Orders provided with materials for public hearings.

³⁶ 40 C.F.R. 51.308 (e)(4).

³⁷ “Additional Regional Haze Questions”, dated August 24, 2006, Miscellaneous, #4.

control beyond CAIR may be necessary to meet the RPGs set for one or more [of] the Class I areas.”³⁸

MPCA must require additional controls beyond CAIR for EGUs because implementing CAIR alone will not allow the state to meet the visibility goal of natural visibility conditions by 2064. First, we believe that MPCA’s reliance on CAIR to regulate emissions from EGUs is misplaced. By MPCA’s own predictions, visibility conditions in BWCAW and VNP are not anticipated to reach natural visibility conditions until well past 2064. Specifically, recent information provided by MPCA shows that VNP will not reach natural visibility conditions until 2177 while BWCAW will not reach natural visibility conditions until 2093.³⁹ Clearly, the emissions reductions anticipated to be achieved under CAIR will not meet the RPGs required to achieve natural visibility conditions by 2064. Accordingly, additional controls for EGUs beyond CAIR are necessary.

Requiring additional controls for EGUs beyond CAIR is not unprecedented. EGUs in other parts of the United States routinely achieve emissions levels for NO_x and SO₂ below the levels proposed by the Haze SIP.⁴⁰ Accordingly, requiring EGUs to install additional emissions controls beyond that required by CAIR is not only within the realm of possibility, but appears to be regularly achieved for a number of coal-fired units in the United States.⁴¹ The Haze SIP should include a justification for limiting EGU emissions reductions to those established by CAIR and provide an explanation of why the emissions reduction strategies for EGUs in the Haze SIP are higher than emissions levels achieved in other similar EGU facilities in the United States.

2. New Sources

Currently, MPCA is required to assess the emissions impact on air quality from new major sources through federally mandated New Source Review and Prevention of Significant Deterioration (“PSD”), for which Minnesota operates a delegated PSD program.⁴² However, if the state is currently not attaining the visibility goal of natural visibility conditions in BWCAW and VNP required through the Regional Haze Rule, any incremental increase in emissions reducing visibility from a new major source is too much. Basically, for haze purposes, MPCA should evaluate potential impacts from new major sources through a non-attainment standard and not an incremental analysis as done through the PSD process. The PSD incremental analysis does not apply when air quality standards and visibility conditions required under the Regional Haze Rule are not being met. The Haze SIP does not explain how its review of major new sources through a PSD analysis meets the requirements of the Regional Haze Rule. This must be addressed in the Haze SIP.

³⁸ “Additional Regional Haze Questions”, dated August 24, 2006, Miscellaneous, #6.

³⁹ “Changes Made to Regional Haze SIP Since Public Review Misc. #6 Draft”, p. 3.

⁴⁰ Affidavit, BART, #4.

⁴¹ Id.

Additionally, as the Haze SIP fails to identify emissions reductions which will be achieved with any specificity, we have serious concerns about approving any new major sources before specific emissions reductions which will be achieved through BART are identified.

The Haze SIP proposes to regulate new major sources in the state differently, depending on where they are located. For those new sources anticipated to be built in the six counties closest to the BWCAW and VNP, MPCA, is proposing one approach, while it proposes a separate approach for those new sources outside of NE Minnesota.

During the development of the Haze SIP, the Federal Land Managers ("FLMs") and MPCA developed a proposed plan ("NE Minnesota Plan") to change the way in which FLMs review new major emissions sources in six key counties in Northeastern Minnesota. The six counties were identified due to their close proximity to BWCAW and VNP.⁴³ The NE Minnesota Plan includes a different approach through which the visibility impacts of new emissions sources in the six counties closest to BWCAW and VNP would be monitored and regulated. Specifically, the NE County Plan proposes that the FLMs and MPCA enter into a Memorandum of Understanding which includes an agreement that the FLMs will forego individual source modeling for new sources in the identified six county area as long as the new sources remain below an established emissions cap. This approach was suggested as a compromise between MPCA and the FLMs in an effort to reduce costs while ensuring that emissions reductions needed to improve visibility in BWCAW and VNP would be achieved.

However, the Haze SIP and NE Minnesota Plan do not explain how removing FLM involvement in individual source modeling for new sources in NE Minnesota will lead to savings when MPCA is still required to meet the federal requirements for New Source Review and the Potential for Significant Deterioration. Additionally, the Haze SIP and NE Minnesota Plan do not explain what is lost (other than the hypothetical expense of individual source modeling) by eliminating FLM involvement in individual source modeling of new sources in NE Minnesota.

The Haze SIP must include further explanation and a more detailed analysis of how the proposed Memorandum of Understanding and elimination of the need to conduct individual source modeling of haze impacts will save money. In addition, the Haze SIP must include a discussion of what is lost through this trade-off. Further, prior to the finalization of a Memorandum of Understanding between the FLMs and MPCA, there must be an opportunity for public comment and participation as this Memorandum of Understanding appears to eliminate federally mandated oversight from the FLMs in the permitting of new major sources in NE Minnesota.

⁴³ Haze SIP, Appendix 10.4.

IV. VISIBILITY MEASUREMENTS

1. Inconsistency in Measurement of Visibility Changes

The Regional Haze Rule requires states to establish reasonable progress goals (RPGs), expressed in deciviews, that “provide for reasonable progress towards achieving natural visibility conditions”.⁴⁴ Visibility impairment in Class I areas is thus determined through a measurement of changes in deciviews on the best days and worst days.⁴⁵

While the Haze SIP measures visibility impairment at BWCAW and VNP through the deciview measurement, it fails to explain how MPCA determines when variances in deciview estimates or measurements are statistically significant or otherwise meaningful with inconsistencies apparent in the Haze SIP itself.⁴⁶ For example, reductions achieved by including the entirety of the North East Minnesota Plan led to improvements in visibility conditions of 0.1 deciviews for the worst 20% days. In this instance, MPCA indicates that an improvement of 0.1 deciviews in visibility is significant.⁴⁷ In other sections of the Haze SIP, larger changes in visibility between 0.2 and 0.8 deciviews are considered insignificant.⁴⁸ It appears that MPCA finds that smaller amounts of changes in deciviews are significant when a smaller threshold supports MPCA’s position yet finds larger amounts of changes in deciviews to be insignificant when it does not support MPCA’s position or desired result.

The different weight given to the measurement of visibility changes in the Haze SIP is confusing and misleading. The Haze SIP should explain why the same deciview change might be considered more or less significant depending on the situation and provide a clear analysis and justification for any visibility changes greater than 0.1 deciviews that are determined not to be significant.

2. IMPROVE Monitors

Visibility measurements at BWCAW and VNP are made through two IMPROVE monitors, one in BWCAW and one in VNP. The IMPROVE monitors are maintained through federal funding. However, fundamental flaws caused by the unreliability of monitoring data from these sites, missing data, and the mechanisms used to make corrections and adjustments to the field data raise serious questions about the reliability of the fundamental assumptions in the Haze SIP based on data from IMPROVE monitors. For example, the Haze SIP fails to adequately address the following issues with the IMPROVE monitors and visibility measurements in BWCAW and VNP:

⁴⁴ 40 CFR § 51.308(d)(1).

⁴⁵ Id.

⁴⁶ Affidavit, General Comments, #8.

⁴⁷ “Changes Made to Regional Haze SIP Since Public Review Draft”, p. 3.

⁴⁸ Affidavit, General Comments, #8.

- a. The ability of only two IMPROVE monitors to reliably and accurately predict the overall visibility conditions and significant impacts to scenic vistas in two extremely large Class I areas, and thus the reliability of the data from these monitors to develop the assumptions that form the basis of the Haze SIP;⁴⁹
- b. Uncertainty regarding how representative the data from the 2000-2004 baseline period in relation to individual years or larger patterns in visibility conditions, especially considering that neither the calculations used to determine natural conditions at each Class I area nor underlying calculations for baseline values were included in the Haze SIP.⁵⁰
- c. Whether the effort to obtain baseline values by making corrections and adjustments to IMPROVE field data meets the EPA's requirements for filling missing data.⁵¹

Additionally, in discussions with MPCA and the Federal Land Managers, some uncertainty was voiced regarding the continued funding for both of these IMPROVE monitors due to the close proximity of BWCAW and VNP and perception that two IMPROVE monitors may be unnecessary. In the Haze SIP, MPCA indicates that the continued functioning of both of the IMPROVE monitors is dependent on federal funding.⁵² We strongly support the continued funding for both IMPROVE monitors in BWCAW and VNP and encourage MPCA to make continued funding of these monitors a high priority, even in the absence of federal funding. It is essential that both monitors are maintained and function reliably to ensure that the most complete information regarding visibility conditions in the BWCAW and VNP is available and maintained to enable accurate assessment of visibility conditions and progress made towards reaching natural visibility conditions.

V. EMISSIONS INVENTORY

1. Reliability of Emissions Inventories and Projections

The emissions inventories used in the Haze SIP and discussions about these inventories are very difficult to understand.⁵³ In particular, the significant differences in emissions recorded for the same year and the same pollutant, between the emissions inventories of the various agencies involved, compounds the confusion.⁵⁴ The extreme variance between these emissions inventories leads the reader to question what possible significance or reliability these inventories could provide in identifying or regulating emissions that impair visibility in BWCAW and VNP. However, the Haze SIP relies on

⁴⁹ Affidavit, Visibility Measurements, #1.

⁵⁰ Affidavit, Visibility Measurements, #2-4.

⁵¹ Affidavit, Visibility Measurements, #6-8.

⁵² Haze SIP, Ch. 6, p.28.

⁵³ Affidavit, Emissions Inventory #1-6

⁵⁴ Please see tables provided in attached Affidavit, Emissions Inventory, #2 for specific examples of these problems.

these emissions inventories to identify emissions sources and develop strategies and control measures to reduce these emissions.

Further, the failure of the Haze SIP to address the inconsistencies and apparent contradictions in the emissions inventories makes it impossible to determine the significance of emissions reductions proposed in the Haze SIP or the potential impact of these reductions on visibility impairment in Class I areas. The huge disparities found between different emissions inventories in the inventories of individual pollutants raises significant questions regarding the credibility of the inventories used and if these inventories have any legitimate use in predicting future emissions.

Specifically, the Haze SIP should provide context for the use of these emissions inventories, including a background discussion and overview of how emissions inventories are developed and used; a general explanation of why different emissions inventories might include significantly different emissions for the same pollutant; a discussion of the overall reliability of emissions inventories in accurately identifying past and projecting future emissions; a clear explanation of why specific inventories were used in the Haze SIP; and an explanation of how MPCA reconciled differences in emissions reflected in different inventories in reaching conclusions.

2. International Emissions

Recognizing that both the BWCAW and VNP border Canada, Canadian air and emissions inevitably have a significant impact on visibility conditions in Minnesota's Class I areas. The Haze SIP does not include proper documentation of Canadian emissions or an explanation of why proper documentation was not available. While currently Canadian air has a largely positive impact on air quality in BWCAW and VNP, the Haze SIP fails to account for projections of future Canadian emissions in an informed manner. Currently, the Haze SIP simply uses Canadian emissions from 2005 as a basis for projected emissions in 2018. However, the Haze SIP does not support this choice with any analysis of potential growth in emissions sources from Canada over the next decade or how any of this growth will be offset by Canadian regulatory programs. For example, increased emissions from the development of Canadian tar sands in Alberta are not addressed. Further, the Haze SIP fails to acknowledge the impact global climate change will have on Canadian emissions. The failure of the Haze SIP to include an adequate analysis of these considerations leaves the conclusions drawn regarding Canadian emissions meaningless.⁵⁵

3. Ammonia Emissions

Minnesota identifies ammonia as a pollutant which contributes to regional haze and visibility impairment in BWCAW and VNP.⁵⁶ While ammonia is a significant

⁵⁵ Affidavit, Emissions Inventory, #7.

⁵⁶ Haze SIP, Ch.7, p.29

contributor to visibility impairment in the BWCAW and VNP, developing accurate emissions inventories of ammonia from specific sources is extremely difficult due to technical limitations in the ability to track or control ammonia from specific sources.

While the Haze SIP recognizes the problems associated with the ammonia inventory, the state assigns responsibility for improving the modeling of ammonia emissions to federal and regional entities, without identifying ways in which the state can assist in improving our understanding of ammonia emissions.⁵⁷ The Haze SIP should explore ways in which the state can assist national and federal entities in understanding ammonia emissions from point and area sources in the state, in identifying ammonia controls for these sources, and in collecting additional ammonia data for the state. The Haze SIP is a long-term plan which should include not only strategies for improving visibility from pollutants which are more fully understood, but should also include strategies for increasing our ability to understand and control pollutants, such as ammonia, which contribute to visibility impairment, but which current control measures and technology lack the capacity to control. If MPCA is not willing or able to conduct this type of assessment of ammonia emissions within the state, the Haze SIP should indicate this and explain why the state will not take these measures.⁵⁸

VI. MODELING

1. Reliability of Models

The Haze SIP indicates that analyses from different models were used to determine the future progress towards improving visibility conditions in BWCAW and VNP contained in the long-term strategy included in the Haze SIP. While it is important to have a system for assessing progress in reaching the goal of natural visibility conditions by 2064, the inconsistencies between models used to determine progress toward visibility goals at BWCAW and VNP raise serious concerns about the reliability of these models as a basis for planning.⁵⁹

The extremely technical language used in the Haze SIP when discussing the air quality models used combined with the failure of the Haze SIP to address the inconsistencies and apparent contradictions in the modeling analyses or explain relevant modeling choices creates significant difficulties for the public to understand the relevance of the projections made through the air quality models.⁶⁰

General background information regarding the use of air quality models similar to that suggested earlier for emissions inventories would provide additional clarity and context for the public to understand how the air quality models are used and the precision, or lack thereof, of predictions made through these air quality models.

⁵⁷ Haze SIP, Ch. 10, p.95.

⁵⁸ Affidavit, Emissions Inventory, #8.

⁵⁹ Affidavit, Modeling, #1-2.

⁶⁰ Affidavit, Modeling, #4.

2. Meteorological Data Used as Basis for Future Predictions

The Haze SIP used a meteorological data set from a single year as a basis for developing future emissions predictions for 2018.⁶¹ Modeling for a long term plan relying on a meteorological data set from a single year is indefensible and renders the long term plan inherently flawed.⁶² The long range plan which is developed for the Haze SIP must correct this issue and include an adequate representation of meteorological data sets from multiple years to ensure greater reliability of future projections.

3. Boundary Conditions

The Haze SIP indicates that "boundary conditions" are responsible for a significant contribution to visibility impairment in BWCAW and VNP.⁶³ It is unclear to what extent visibility impairment attributed to boundary conditions should actually be attributed to specific states. This issue should be addressed in the Haze SIP, as proper allocation of visibility impairment from boundary conditions could lead to a determination that some states which were found not to make significant contributions to visibility impairment in BWCAW and VNP may, in fact, contribute more than 5% to visibility impairment and thus be over the 5% threshold used to determine which states make a significant contribution to visibility impairment in BWCAW and VNP.⁶⁴

VII. Other Comments

1. Collaboration with Other States

The Regional Haze Rule requires states to "consult with those States which may reasonably be anticipated to cause or contribute to visibility impairment in the mandatory Class I Federal area. In any situation in which the State cannot agree with another such State or group of States that a goal amounts to reasonable progress, the State must describe in its submittal the actions taken to resolve the disagreement."⁶⁵

The Haze SIP includes numerous references to MPCA's efforts to work with regional planning organizations and other states to achieve consensus regarding baseline conditions, modeling of visibility impairment, and the impact of other states' emissions on visibility conditions in BWCAW and VNP. While we commend MPCA in its efforts to work with the regional planning organizations and consult with states contributing to visibility impairment in Minnesota, these efforts appear to have resulted in no progress in spite of the multiple meetings and extensive collaboration undertaken over a period in excess of two years.

⁶¹ Affidavit, Modeling, #2.

⁶² Affidavit, Modeling, #3.

⁶³ Haze SIP, Ch.8, pps.47-49.

⁶⁴ See Affidavit, Modeling #6.

⁶⁵ 40 CFR 51.308(d)(1)(iv).

While some neighboring states refuse to acknowledge the impact their emissions have on BWCAW and VNP, other states contributing to visibility impairment in Minnesota's Class I areas are simply refusing to commit to emissions reductions.⁶⁶ Recognizing that a large percentage of visibility impairment originates outside of Minnesota, the failure of MPCA to reach agreement with other states regarding responsibility for visibility impairment in BWCAW and VNP or convince states to reduce their emissions leaves a huge amount of visibility impairment in BWCAW and VNP unaddressed.

EPA indicated that if a contributing state refused to do what was reasonable to meet the RPG for an area, the state with an affected Class I area should notify EPA as early in the process as possible. EPA further notes that even if a State is meeting its uniform rate of progress, states which contribute to visibility impairment in the Class I area of the state are still responsible for developing coordinated emission management strategies.⁶⁷ The Haze SIP does not indicate how or if EPA was involved in resolving problems with other states refusing to accept responsibility for causing visibility impairment or failing to commit to emissions reductions needed to improve visibility in BWCAW or VNP. The Haze SIP should indicate how and when EPA was brought into the process, and any results achieved. Further, the Haze SIP needs to more clearly articulate the problems and issues experienced when working with other states which prevented reaching consensus and explore available options available to resolve problems experienced with other states. Simply indicating that 75% of emissions leading to reduced visibility in the BWCAW and VNP are outside of Minnesota, and thus outside the control of MPCA is not acceptable.⁶⁸ If MPCA believes that federal intervention is required to resolve ambient air quality issues leading to visibility impairment in BWCAW and VNP, then this should be clearly articulated, with an indication of what measures MPCA will take to ensure that the needed federal involvement is obtained.

Further, to the extent that MPCA believes that the Haze SIPs of other states do not make reasonable progress towards the Haze Goals, put an unfair burden on Minnesota emissions sources, or otherwise fail to protect the visibility in Minnesota's Class I areas, the MPCA should include a direct appeal to the EPA in its Haze SIP to reopen the Haze SIPs of surrounding states to address these concerns.

2. States contributing less than 5% towards visibility impairment in BWCAW and VNP.

Even as the Haze SIP recognizes that 75% of emissions responsible for visibility impairment within Minnesota originate outside of Minnesota, it fails to address 22% of emissions affecting BWCAW and 23% of emissions affecting VNP by not considering

⁶⁶ Affidavit, General Comments, #2.

⁶⁷ "Additional Regional Haze Questions", EPA document, dated August 24, 2006 (Cooperation with RPOs, 6).

⁶⁸ Haze SIP, p. 82.

states which contribute less than 5% to visibility impairment in Minnesota's Class I areas.⁶⁹

Even as MPCA has determined that a significant contribution to visibility impairment from another state equals a contribution over five percent, the federal goal of natural visibility conditions by 2064 will never be met if strategies are not developed to address the cumulative amount of visibility impairment caused by states contributing less than 5% of visibility impairment. The Haze SIP should acknowledge this issue and identify strategies or initiatives which will be explored to address this significant source of visibility impairment in BWCAW and VNP. Using a bright line of a 5% threshold to exclude states from responsibility for their contribution to visibility impairment in BWCAW and VNP fails to ensure that the goals of the Regional Haze Rule are met.⁷⁰

The Haze SIP should identify states contributing less than 5% towards the visibility impairment in Minnesota's Class I areas and incorporate reductions in emissions from these states into Minnesota's long-term strategy. Likewise, Minnesota should not shirk its responsibility to reduce its emissions which contribute to visibility impairment in the Seney Class I area just because MPCA has determined that Minnesota's contributions fall just below the 5% threshold. Minnesota expects other states to do their fair share to reduce emissions that contribute to regional haze in Minnesota's Class I areas. Minnesota must accept and share this same responsibility.

3. New Minor Sources

Visibility reduction as a result of haze is a multi-faceted problem that may require the development of strategies and emissions controls beyond the more traditional focus of federal air quality regulations focused on limiting emissions from new major point sources. While reducing the visibility impact from new major point sources on BWCAW and VNP is essential, the Haze SIP should also indicate how new minor sources will impact visibility in Class I areas and discuss how emissions from new minor sources will be regulated.

4. Mobile Sources

The Haze SIP fails to analyze the impact on visibility of mobile sources from users and visitors of BWCAW and VNP. The large number of visitors to BWCAW and VNP and large amounts of recreation in the area generally, combined with the reliance on motorized vehicles, including off-road vehicles, motorboats and snowmobiles, for transportation and recreation lead to significant mobile source emissions in close proximity to and within BWCAW and VNP. The Haze SIP should analyze the visibility

⁶⁹ Affidavit, Other Comments, #1.

⁷⁰ Affidavit, Other Comments, #1.

impact from these mobile sources and discuss mitigation measures such as time, location and total number of controls, which can be taken to minimize the impact from these mobile sources. If MPCA believes that these mobile sources are insignificant, the Haze SIP should explain the analysis behind this conclusion.⁷¹

5. Smoke Management

The role of fire emissions on visibility conditions at BWCAW and VNP should be analyzed more completely in the Haze SIP. Results from a report referenced in the Haze SIP indicate that the total number of acres burned in Minnesota from both wildfire and prescribed fire were usually more than twice that found in the next highest state.⁷² The impact of these emissions on visibility is significant and the Haze SIP should discuss why Minnesota has such a large amount of acres burned compared to other states. While Minnesota has a Smoke Management Plan ("SMP") to manage the impact of smoke on the state, it is not clear how the objectives of the SMP affect regional haze goals. Please include additional information regarding how MPCA proposes to regulate visibility reductions in the BWCAW and VNP which result from prescribed fires.

6. Construction Activities

The Regional Haze Rule requires states to address emissions impacts as a result of construction activities.⁷³ The Haze SIP fails to explicitly address the impact of emissions from construction activities. This information should be included in the Haze SIP.⁷⁴

7. Evaluating Progress against the Glide Path

The Haze SIP should include a comparison of modeled deciview values against actual (converted) measurements at the IMPROVE monitors taken in 2007 as this information should now be available.⁷⁵

Thank you for the opportunity to comment on the draft Regional Haze State Implementation Plan. Please ensure that these comments, including all attachments and cited materials are included in the record for any decision the PCA makes with regard to the Haze SIP.

⁷¹ Affidavit, Other Comments, #3.

⁷² Haze SIP, p. 86

⁷³ 40 C.F.R. §51.308(d)(3)(v)(B).

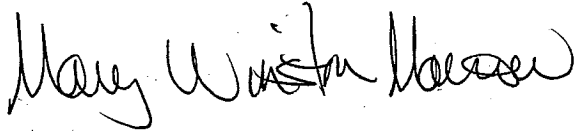
⁷⁴ Affidavit, Other Comments, #5.

⁷⁵ Affidavit, Other Comments, #6.

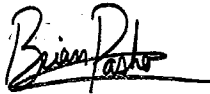
Mr. David Thornton
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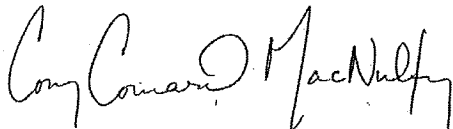
Sincerely,



Mary Winston Marrow
Staff Attorney
Minnesota Center for Environmental Advocacy



Brian S. Pasko, Policy Director
Friends of the Boundary Waters Wilderness



Cory MacNulty
Executive Director
Voyageurs National Park Association

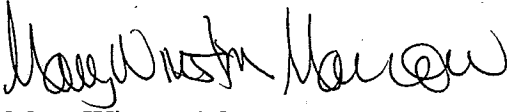


Lynn McClure
National Park Conservation Association

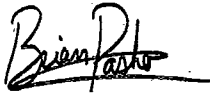
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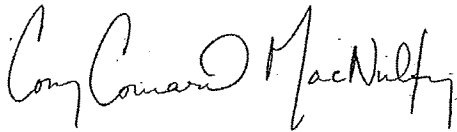
Sincerely,



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Cory MacNulty
Executive Director
Voyageurs National Park Association



Lynn McClure
National Park Conservation Association

cc: Ms. Cheryl Newton, Acting Director, U.S. EPA Region 5 (via. U.S. Mail only)