



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240

OCT 30 2007



Doyle Childers, Director
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

Dear Mr. Childers:

On August 23, 2007, the State of Missouri (State) submitted a draft Regional Haze Rule implementation plan describing its proposed process for improving air quality haze impacts at mandatory Class I areas across the region. Subsequently, on September 19, 2007, the State submitted a revised draft of its implementation plan, together with several appendices that had been incomplete in the original package. The Fish and Wildlife Service (FWS) received and has conducted a substantive review of the plan, prepared in fulfillment of the requirements under 40 CFR 51.308(i)(2).

We appreciate the opportunity to work closely with the State through the initial evaluation, development, and review process. Please note that only the Environmental Protection Agency (EPA) can make a final determination regarding the document's completeness and therefore its ability to receive Federal approval from EPA.

As outlined in a letter to each State dated August 1, 2006, the FWS review focused on eight basic content areas, which reflect priorities of the Federal land management agencies. We have enclosed the specific comments associated with each of these content areas. In general, our review of the State of Missouri's draft plan indicates a need to more completely address the land management agency priorities. However, the FWS Branch of Air Quality staff stands ready to work with you toward resolution of these issues. We ask that further consultations take place with us prior to public release of the draft plan. We have enclosed a copy of the August 1, 2006, letter for your reference as you consider the concerns we are raising. We look forward to your response, as per section 40 CFR 51.308(i)(3). Specific questions regarding the review of and consultation on the draft plan may be directed to Mr. Tim Allen, Fish and Wildlife Service Branch of Air Quality, at (303) 914-3802.

Again, we appreciate the opportunity to work closely with the State of Missouri and compliment you on your hard work and dedication to significant improvement in our Nation's air quality

Doyle Childers, Director

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values and visibility. Cooperative efforts such as these ensure that, together, we will continue to make progress toward the Clean Air Act's goal of natural visibility conditions at all of our most pristine National Parks and Wilderness Areas for future generations.

Sincerely,

A handwritten signature in cursive script, appearing to read "James V. ...".

Acting Assistant Secretary for Fish
and Wildlife and Parks

Enclosures

U.S. Fish and Wildlife Service Comments Regarding Missouri Draft Regional Haze Rule State Implementation Plan

On August 23, 2007, the State of Missouri submitted a draft Regional Haze Rule State implementation plan (SIP), pursuant to the requirements codified in federal rule at 40 CFR 51.308(i)(2), to the U.S. Department of the Interior, U.S. Fish and Wildlife Service (FWS). Subsequently, on September 19, 2007, the State submitted a revised draft of its SIP, together with several appendices that had been incomplete in the original package.

The air program staff of the FWS has conducted a substantive review of the Missouri draft plan, and provide the comments listed below. In these comments, all references to the Draft Missouri Regional Haze SIP ("Draft SIP") refer to the September 19, 2007, submittal. Our concerns that are described below warrant additional consultation prior to public release of the Missouri Regional Haze Plan.

We look forward to your response as per section 40 CFR 51.308(i)(3), and would be willing to work with Missouri Department of Natural Resources (MDNR) staff towards resolving the major issues discussed below. For further information, please contact Tim Allen, FWS Regional Haze lead at (303) 914-3802.

Overall Comment

The Fish & Wildlife Service has a significant concern that the information provided in the State of Missouri's Draft Regional Haze SIP fails to describe or address content elements required by the Regional Haze Rule. In reviewing the Missouri Draft SIP, the FWS has identified two very distinct issues that hamper our ability to find and evaluate important information to be described by the State.

- **The discussions of specific SIP elements are re-visited in several sections, often with contradictory or incorrect information. More robust explanations of specific topic areas are often included in non-related chapters, thus complicating the review of the entire SIP.**
- **The draft SIP also relies on a pattern of referencing as an apparent substitute to presenting the State's reasoning. These references often point to lengthy and extremely technical documents produced by other organizations or consultants. Those technical references are neither intended to, nor do they proclaim a specific opinion. Deriving conclusions from the technical information sources is the responsibility of each State in its Regional Haze SIP, and the reasoning for the conclusions must be explained. Although our office has participated in many of the same Regional Planning Organization functions and has experience with the referenced documents, we find it difficult to understand through these references how MDNR came to its own conclusions.**

Specific examples of these two points are further described below.

As such, the FWS respectfully requests that the State of Missouri reconsider the Draft SIP in its present form before release to the public. We ask that the State review the eight elements identified by the Fish & Wildlife Service letter (August 2006) and expand its discussion in the document regarding how MDNR approached, evaluated, and drew conclusions on these important rule elements.

In addition, it is our opinion that our concerns described below in items 14, 15, and 16 are deficiencies that are not consistent with the requirements of the Regional Haze Regulations and may warrant the SIP unapprovable.

The remaining comments provided here are organized according to the priorities that we presented in our August 1, 2006, letter. Many of the following comments will also provide direction towards building the narrative of the Draft SIP to satisfy the documentation deficiency noted above.

Baseline, Natural Conditions, Uniform Rate

1. Sections 5.2 and 5.3 of the Draft SIP discuss baseline and natural visibility conditions for the Mingo and Hercules Glades Class I areas. The last paragraph on page 23 of the Draft SIP indicates that IMPROVE data for the Mingo monitoring site was supplemented with data as the result of monitor failure. Recently, errors in the parameter calculations were discovered by CIRA, and new estimates for baseline and natural conditions are available on both the IMPROVE and VIEWS websites. Also, please verify that all baseline and natural condition numbers match throughout the documents and state if these estimates were generated using the old or the new IMPROVE equation.
2. Section 5.1 of the Draft SIP describes the old and new IMPROVE equations in a way that is difficult to follow. MDNR should consider providing a summary of the equations and calculations necessary to evaluate baseline conditions and provide a specific description in an appendix. The IMPROVE committee website offers a more appropriate derivation and application description of the equation that can be referenced. Also, please note that within this section the document makes reference to an internet “ftp” website (see page 19 of the Draft SIP). The link that is provided is to a site that is password protected, and thus not publicly available.
3. Please identify whether “Uniform Rate of Reasonable Progress Glide Paths” presented in section 8.4 of the Draft SIP were produced using actual model output or the results of applying a relative reduction factor. If these numbers were the result of a relative reduction, please provide a discussion of how they were generated. In addition, these uniform rate of progress graphs include an additional line labeled “Method 1 Prediction,” but nowhere is the concept of “Method 1” explained.
4. Section 6.4 of the Draft SIP introduces evidence that “high concentrations of ammonia are occurring ... with considerable regularity,” and that the ammonia is likely coming from anthropogenic sources. But, in another portion of the Draft SIP, section 9.2 indicates that ammonia was discarded from further consideration due to the inventory being “very uncertain” regarding anthropogenic contribution. Please discuss whether the observations

cited in section 6.4 apply in Missouri, whether MDNR has investigated dates of 20% worst visibility that occur in winter, and how ammonia emissions were considered in evaluating the reasonable progress goal. We are concerned that MDNR perhaps should re-evaluate ammonia emission effects on visibility at the Mingo Wilderness, considering the high nature of measurements that have potentially occurred.

Emission Inventories

5. Section 7 of the Draft SIP, titled “Emissions Inventory,” discusses the MO emission inventory, yet chapters occurring later in the document include much more specific information on the region-wide emission inventories utilized for the technical analyses supporting this SIP. MDNR should consider combining discussion of inventory to one chapter. This Chapter should identify and describe the differences between the various emissions scenarios that MDNR employed for its Regional Haze SIP analyses and decisions, including Base/Performance, Typical 2002, Base 2018, and Alternate 2018, emissions inventories.
6. The Draft SIP needs to commit to periodically review and update the future emission inventory projections used for Regional Haze decision making. This can be addressed either in the Emission Inventory section, or in another appropriate location within the document (for instance, it could also fit within section 11, which discusses the long-term strategy for reaching reasonable progress goals, or section 12, which discusses comprehensive periodic plan revisions).

Best Available Retrofit Technology (BART)¹

7. The Draft SIP discusses the status of the Doe Run-Glover facility as having “been placed in a care and maintenance” status since the BART component of the regional haze rule was finalized.” In a conference call with MDNR on September 25, 2007, we asked for clarification of what this statement means. We understand the response to be that: the Doe Run-Glover facility has not been operational for approximately four years, although it still holds an active permit that does authorize it to operate; that if the facility is non-operational for a period of five consecutive years (in this case, that threshold will be passed in approximately November 2008), State regulations require the facility to reapply for a new air quality construction and operation permit as if it were a new source; that MDNR fully expects that this facility will not become operational before the five year window has passed; and for these reasons, MDNR is not requiring this facility to undergo a BART analysis, which could require the source to install BART controls. As we discussed on that phone call, we believe that as long as this facility holds a valid air quality permit allowing it to operate, the Draft SIP needs to explicitly address the potential scenario that Doe Run-Glover might resume operation under that permit. This could be phrased as an affirmative statement that

¹ BART-eligible sources are those sources that have the potential to emit 250 tons or more of a visibility-impairing air pollutant, were put in place or under construction between August 7, 1962 and August 7, 1977, and whose operations fall within one or more of 26 specifically listed source categories. Under CAA section 169A(b)(2)(A), BART is required for any BART-eligible source which “emits any air pollutant that may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area.”

the facility would be required to provide a BART analysis and install controls by a date that is no later than the date that would have been required had the facility not been in this “care and maintenance” status.

8. In discussing the disposition of BART-eligible units, section 9.2 of the Draft SIP provides three reasons that “the State of Missouri did not evaluate emissions of Volatile Organic Compounds (VOCs) and ammonia in BART determinations....” These reasons provided are insufficient to draw a conclusion that VOCs and ammonia are not significant. In addition, as noted above, the third statement is contradicted in earlier chapters. Please expand on MDNR’s reasons for excluding VOC and ammonia units from BART.
9. Table 9.3 of the Draft SIP presents the CALPUFF/CALPOST screening results for the BART-eligible units. The section above indicates that the modeling input files used for these analyses are provided in Appendix H. Please also specify within the text of the Draft SIP whether these screening analyses followed the CENRAP² screening modeling protocol, and if not, MDNR’s reasoning for deviating from the agreed-upon approach of its regional planning group.
10. Between Table 9.3 and Table 9.4, the Draft SIP discusses that it also evaluated the “likelihood that the impact from the BART eligible sources would cause the 7th high visibility impact (98th percentile) in any given year to exceed the contribution threshold.” There are two issues related to this approach. First, it is inappropriate to apply the 98th percentile test to modeling results per CENRAP’s screening protocol. It is unclear whether MDNR refined the meteorology processing done in the modeling in order to move from screening to refined modeling, which would then allow for use of the 98th percentile approach. Second, in applying the 98th percentile, we look to the eighth-highest daily visibility impact predicted in a modeling year, skipping over the first seven values. The Draft SIP text indicates that MDNR was looking at the seventh-highest value.
11. Near the end of the BART section, the Draft SIP contains the statement that, “Appendix I contains more detailed results of the screen-modeling analyses for each BART-eligible facility. Upon approval by the State of Missouri, the refined analyses submitted by Noranda Aluminum and the University of Missouri-Columbia, will be provided as an Appendix to this document.” Please provide information regarding these two sources, including any modeling protocols for the refined analyses, modeling results, and BART engineering determinations, as they become available.
12. Within the BART section, there are inconsistent statements about the BART decisions pertaining to electric utility generating units that are also subject to the Clean Air Interstate Rule (CAIR EGU sources). On page 44, the Draft SIP indicates that CAIR EGU sources were, “modeled collectively using all BART-eligible sources for only the PM impacts on the applicable Class I areas.” However, the discussion on page 49 says that, “CAIR EGU sources are not required to install, operate, and maintain BART,” because of the

² Central Regional Air Planning Association CENRAP is an organization of states, tribes, federal agencies and other interested parties that identifies regional haze and visibility issues and develops strategies to address them. CENRAP is one of the five Regional Planning Organizations RPOs across the U.S. and includes the states and tribal areas of Nebraska, Kansas, Oklahoma, Texas, Minnesota, Iowa, Missouri, Arkansas, and Louisiana.

Environmental Protection Agency's (EPA) finding that "as a whole, the Clean Air Interstate Rule (CAIR) cap-and-trade program improves visibility more than implementing BART in States affected by CAIR." This EPA finding only applies for emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x). Please provide additional information about how CAIR EGU sources were evaluated for primary particulate matter and primary sulfate emissions.

13. The bulk of the information in Draft SIP Appendices G and I is in hard-copy renditions of spreadsheets that extend over multiple pages for each row, and require hundreds of pages to present the entire document. We recognize that this type of information is difficult to present in a paper document format. But for the ease of a reader being able to track rows across tables and the meaning of information in the columns, we recommend that MDNR reformat the table printouts to include row numbers at the right and/or left on each printed page (so that a reader can follow the information for a given entry across the multiple horizontal pages needed to show all the columns of the spreadsheet), and also include the column headers on each page of the printout (which currently only appear at the top of the first page above row one). It would also be helpful to have the software add page numbers for these printouts of the spreadsheets to help a reader stay organized as to his/her location within the document.

Area of Influence

14. The Consultation Plan that is included as Appendix F to the Draft SIP contains several Area of Influence (AOI) maps for the affected Class I areas in and near Missouri. However, these studies, concepts, and graphics are not presented in the Draft SIP text. They should be integral to the discussions of attribution of regional haze causing pollution, identification of reasonable progress goals, and development of long term strategies for this Regional Haze Plan.

Section 11.5 of the Draft SIP responds to the Regional Haze Rule requirement for "Missouri to identify all anthropogenic sources of visibility impairment considered by the State in developing its long-term strategy," by referencing back to Tables 7.1 and 7.2 of the Emission Inventory section. However, those two tables present only the 2002 and 2018 emissions inventory summary for just the State of Missouri sources, and then only in aggregate by source category.

In contrast, CENRAP conducted extensive Area of Influence analysis, and produced graphic representations for each of the Class I areas within and near to the CENRAP region. However, the Draft SIP does not provide any of these graphics for the local Class I areas of concern, nor does it discuss any of the work or results from those analyses.

As an example, the data contained within both the Draft CENRAP TSD and MDNR's Consultation Plan (appendices E and F to the Draft SIP, respectively), indicates that the areas of influence that affect the Missouri and Arkansas Class I areas extend across several surrounding States. In fact, the CENRAP "PSAT" source apportionment modeling results for the Mingo Class I area, show that emissions from elevated point sources from Illinois and Indiana are second and third behind Missouri area sources in contribution to the 2018 projected 20% worst visibility days. In addition, both these neighboring States' point source contributions are more significant than Missouri's own elevated point sources (see figure E-

Deleted: contributions

7c in that CENRAP TSD Appendix E). The Draft SIP needs to discuss the attribution of haze-cause pollution and the results of MDNR's consultations with neighboring States regarding achieving Reasonable Progress Goals at the Mingo and Hercules Glades Class I areas.

Reasonable Progress Goals: Long Term Strategy

15. Section 10 of the Draft SIP presents Missouri's Reasonable Progress Goals. During our conference call with MDNR on September 25, 2007, the State clarified that its approach here was to establish its reasonable progress goals to be equal to the 2018 year value of the uniform rate of progress graph. This is inconsistent with the Regional Haze Rule, which says: "The State may not adopt a reasonable progress goal that represents less visibility improvement than is expected to result from implementation of other requirements of the CAA during the applicable planning period." (See 40 CFR 51.308(d)(1)(B)(vi).) It's our understanding that the 2018 visibility projections presented in section 8.4 were based upon, "emission growth" and "on the books" controls, which are State and Federal controls that will be implemented between the 2002 base year and the 2018 future year." (Draft SIP, page 34.) As such, the rule requires that Missouri adopt the results of this visibility projection as its 2018 Reasonable Progress Goal.
16. The Regional Haze Rule also requires that States establish Reasonable Progress Goals for the Best 20% days, based upon projected emission reductions for the future planning year. Neither section 10 nor any other area of the Draft SIP addresses the goals for the Best 20% days.
17. At the beginning of Section 10 of the Draft SIP, MDNR outlines the four statutory factors that each State must consider in setting its Reasonable Progress Goals. These factors are intended to be applied holistically, across all contributing sources of visibility impairing pollutants, to inform the decision being made by the State. However, it appears from the remaining discussion within this section that MDNR is only applying this "four-factor analysis" to the CAIR-affected and BART-affected sources within Missouri. This is a misinterpretation of the EPA guidance quoted on page 53 of the Draft SIP – it says that the four-factor analysis doesn't need to "reassess the reasonable progress factors for sources subject to BART for which you have already completed a BART analysis," (which would include CAIR sources where CAIR is deemed to be equal to BART). That guidance does not say that these are the *only* pollution sources that the four-factor analysis should consider, but rather that for such sources, additional consideration beyond CAIR and BART is not needed as part of the four-factor analysis. In effect, therefore, the Draft SIP essentially does not include the required four-factor analysis for establishing the Reasonable Progress Goals.
18. Section 11 of the Draft SIP presents the Long Term Strategy. Section 11.4 inaccurately refers to the regional haze process as an attainment demonstration. As described above, the Regional Haze Rule does not set absolute levels to be achieved at the ten-year planning intervals, but rather provides a framework for each State to establish those Reasonable Progress Goals based upon the statutory four-factor analysis.

19. In Section 11.6.4, the Draft SIP discusses how it will manage retirement and replacement of stationary sources, and references existing State and Tribal “requirements pertaining to Prevention of Significant Deterioration (PSD) and New Source Review (NSR).” Please elaborate on how the PSD and NSR permitting programs will be utilized by MDNR as part of its Long Term Strategy for meeting Reasonable Progress Goals.

Fire

20. As discussed above, the Draft SIP lacks information regarding the causes of haze at the Mingo Class I area, as well as a full explanation of the projected changes and reasons for those changes leading towards the 2018 planning year.

In the context of wild and prescribed fire, the State should consider and describe how natural and non-natural smoke emissions currently affect the Class I areas and how these effects may change during the planning period given the State’s future burning projections and the implementation of the Smoke Management Plan (SMP).

21. The Draft SIP and the Missouri SMP should identify Mingo as a smoke sensitive area and prescribed burners should be required to apply the appropriate smoke management techniques to minimize smoke impacts.
22. We recommend that MDNR refer to the Missouri SMP in a way that does not require SIP updates each time the SMP is updated. Also, please indicate whether Missouri intends to “certify” its SMP as provided for by the 1998 EPA Interim Air Quality Policy on Wildland and Prescribed Fire.
23. Section 4.0 of the Draft SIP commits that: “Missouri will continue to coordinate and consult with the FLMs during the development of future progress reports and plan revisions, as well as during the implementation of programs having the potential to contribute to visibility impairment in the mandatory Class I areas. The FLMs will be consulted in the following instances...Development and implementation of other programs that may contribute to impairment of visibility in Class I areas.” The Missouri SMP, as cited through section 11.6.5 of the Draft SIP, is one of these “other programs” that would be monitored and updated during the implementation of this Regional Haze SIP, including consultation with the FLM agencies in that process. We note, however, that neither the later section nor the Missouri SMP itself address ongoing development, review, and updating of the plan, nor do they provide for FLM agency involvement.

Regional Consistency

24. Missouri is situated geographically at the boundary between three multi-state Regional Planning Organizations (RPO): CENRAP running along the west of the Mississippi River from Minnesota south to Texas and Louisiana; VISTAS, comprised of the southeastern United States, and MWRPO, from the Ohio River Valley north through the Great Lakes region. As a member State of the CENRAP organization, Missouri has utilized the technical products that were produced by the CENRAP efforts as the information upon which it has built its Regional Haze SIP. The VISTAS and MWRPO technical work also cover the Mingo Wilderness Area, as several of their western member States may have emission

sources that influence visibility at Mingo. The results indicated by each of the three regional planning organizations are different. While it is fully appropriate for Missouri to rely upon the CENRAP work, MDNR might consider highlighting the importance of the ongoing verification and contingency provisions in view of the varying results of the RPOs.

Verification & Contingencies

25. Section 6.3 of the Draft SIP discusses the ongoing and future monitoring strategy for measuring visibility parameters and progress at the Class I areas within Missouri. MDNR specifies that, “the existing IMPROVE and IMPROVE Protocol sites will be maintained contingent upon continued national funding.” Please note that the State has a responsibility to conduct monitoring and assessment as part of an ongoing progress review towards the goals set in this SIP, as well as for informing future SIP revision and planning activities required under the national Regional Haze Rule. Given the uncertain future of any individual monitoring site, the SIP should address the representativeness of both primary and alternative data sites, and also provide a more specific plan for ensuring that monitoring is continued if national funding is not available.
26. We encourage MDNR to not only consider the need for these monitoring data to measure progress, but also how the plan accounts for and reconciles both unexpected and reasonably foreseeable emissions growth, changes to the geographic distribution of emissions, and substantive discrepancies that may be found in emission inventories or other technical bases of the SIP. As an example, the predictions of the “IPM” model and the assumptions for CAIR implementation that were used to project the future 2018 electric utility generation industry sources and emissions may be greatly different from the outcomes that are actually realized in that future year. Such factors, as well as other unanticipated circumstances, may adversely affect Missouri’s ability to achieve the emissions reductions projected by the SIP. Considering these factors through adaptive management or routine review processes may assist in mitigating these circumstances.
27. Section 13 of the Draft SIP discusses the options for action following the five-year review, basically quoting the provisions of 40 CFR 51.308(h). However, the document does not provide any criteria that MDNR will use in evaluating the five-year progress report to decide which of the listed actions would be indicated. Please include discussion of the anticipated criteria that MDNR will use to both evaluate the progress at the five-year review and to select the course of action that will be taken based upon that review.

Coordination & Consultation

28. The Draft SIP references to its Appendix F for documentation of the consultation process that Missouri and Arkansas jointly conducted for the four Class I areas in their two States. Appendix F contains the consultation plan that was presented. Additionally, Appendix K of the Draft SIP contains the minutes from the three consultation meeting conference calls held in April, May, and June, 2007. However, the Draft SIP lacks discussion of Missouri’s decisions based upon the results of those meetings.

29. Section 2.6 of the plan says that “Consultation between the States and the FLMs will continue as the federal regional haze program progresses. The consultation will continue via participation in CENRAP. This effort will include five-year progress reports and development and review of any SIP revisions deemed necessary. It will also provide for consideration of any other programs that are implemented and have the potential to contribute to impairment of visibility in Class I areas.” We are encouraged that Missouri will continue the dialogue and progress towards Regional Haze goals. However, the statement above relies upon the continued existence of the CENRAP organization. Since the future of the Regional Planning Organizations as a whole is uncertain, the SIP should outline how Missouri would accomplish future ongoing consultation activities absent the CENRAP organization.

In addition, the Draft SIP references future consultation activities in many places, but several of those omit the FLM agencies as a partner in that consultation. The Draft SIP should be consistent in addressing this topic. (See also, Draft SIP sections 2.6, 4.0, and all of section 12.)