

# **APPENDIX D**

**FEDERAL LAND MANAGERS AND U.S. EPA REGION 5  
COMMENTS AND  
IDEM RESPONSES TO COMMENTS**

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## **IDEM Responses to U.S. Department of Interior National Parks Service Comments**

### **Comment 1:**

Section 1.0, Overview: Please summarize that ammonium sulfate and ammonium nitrate are the major contributors to visibility impairment at Class I areas as explanation for focusing the discussion on emissions reductions for SO<sub>2</sub> and NO<sub>x</sub>.

### **IDEM Response:**

A summary paragraph that explains that ammonium sulfate and ammonium nitrate are major contributors to visibility impairment at Class 1 areas and the reason the discussion on emission reductions is focused on SO<sub>2</sub> and NO<sub>x</sub> was added in the new Executive Summary section. In addition, the results of an evaluation of the chemical composition of the light extinction for 20% best visibility days and 20% worst visibility days for the northern Class 1 areas was incorporated in Section 2.1.1, Regional Haze Controls, the third paragraph under the Long Term Strategy subsection. The percentage contributions to light extinction from the highest contributing pollutants are discussed. This information was taken from the Indiana Regional Haze SIP, Appendix 9a.

### **Comment 2:**

Section 2.2.2, Long Term Strategy: Please provide more explanation of emissions calculation methods used to develop Graph 2-3 and Tables 1 and 2 in Appendix B. The Midwest Regional Planning Organization calculated the 2005 inventory and EPA calculated the 2008 and 2011 National Emissions Inventories. How were emissions in the intervening years calculated?

### **IDEM Response:**

More explanation was provided in Section 2.2.2 Long Term Strategy Emission Reductions as to how emissions for the intervening years were calculated. See the last paragraph under this section.

### **Comments 3 and 4:**

Section 2.3, Emissions Progress: IDEM reports that NO<sub>x</sub> emissions from mobile sources increased in 2010. IDEM should clarify that mobile emissions calculation methods changed from the Mobile 6 model that was used in the 2005 inventory to the MOVES model that was used in the 2008 and 2011 inventories. Similarly, the NONROAD model was updated after the 2005 inventory. These methods changes complicate interpretation of emissions trends, particularly for NO<sub>x</sub> and particulate matter. In Graph 2.4 and accompanying text please clarify that SO<sub>2</sub> and NO<sub>x</sub> emissions trends include all major source categories.

Please add tables of 2005, 2011 and 2018 projected emissions separately accounting for the major source categories and the major pollutants that contribute to visibility impairment: SO<sub>2</sub>, NO<sub>x</sub>, volatile organic compounds, ammonia, particulate matter greater than 10 microns and particulate matter greater than 2.5 microns. By comparing current emissions to 2018 projected emissions, IDEM can demonstrate progress toward emissions reductions that were used in regional air quality models to project 2018 visibility improvement goals for Class I areas.

**IDEM Response:**

Table 2.5 in Section 2.3.1, Sulfur Dioxide incorporates 2005 and 2011 actual emissions, and 2018 projected emissions separately accounting for the major source categories and SO<sub>2</sub> and NO<sub>x</sub> pollutants. Current emissions are compared to 2018 projected emissions in the last paragraph of this section for SO<sub>2</sub>. Emission information for VOCs, NH<sub>4</sub>, PM<sub>10</sub> and P<sub>2.5</sub> were added in Appendix B; however these pollutants were not included in the emission progress discussion because the methods for estimating emission information from the major source categories for these pollutants are complex and have changed since 2005 causing inconsistent values.

A note was added to Table 2.4 and Graph 2.4 and the accompanying text in the first paragraph was revised in this section to clarify that SO<sub>2</sub> and NO<sub>x</sub> emissions and emissions trends include all major source categories. The last paragraph in Section 2.3.2, Nitrogen Oxides compares current emissions to 2018 projected emissions for NO<sub>x</sub>. Included in this paragraph is a discussion of the change in mobile emission calculations from the Mobile 6 model that was used in the 2005 inventory to the MOVES model that was used in the 2008 and 2011 inventories and update to the NONROAD model after the 2005 inventory.

**Comment 5:**

Section 2.5, Assessment of Current Strategy: This section describes IDEM's consultations with states that have Class I areas that are impacted by emissions from Indiana. Please add a summary table of visibility trends at these Class I areas to support IDEM's conclusion that IDEM's existing state implementation plan is sufficient for Class I areas to meet the visibility improvement goals set by these states. At a minimum IDEM can cite progress reports by Kentucky, Minnesota, North Carolina, and Virginia, to demonstrate that Class I national parks in these states are already meeting 2018 visibility goals.

**IDEM Response:**

Section 2.5, Assessment of Current Strategy was revised for the Class 1 areas listed to include a discussion of the progress made by the state towards meeting 2018 visibility goals according to the states' RH SIP 5-year progress reports submitted to the U.S. EPA.

## **IDEM Responses to U.S. Forest Service Comments**

### **Comment 1:**

We recommend including the 2018 emissions projections (outlined in the original SIP) in Section 2.3, Emissions Progress to enhance the clarity of the 5-year progress report. Comparing current emissions levels with the 2018 projections will demonstrate progress toward the emissions reductions used to project visibility improvement goals for Class I areas. Since the rate of emissions reductions from 2010-2014 was reduced over the rate of reductions that occurred from 2005-2010, it is important to highlight the amount of required reductions remaining over the next five-year period.

### **IDEM Response:**

A new table, Table 2.5, was added to Section 2.3, Emissions Progress. The table includes the NEI emission estimates for 2005 and 2011 and the emission reduction projections for 2018. A summary of the progress made as of 2011 compared to the 2018 projections was added to Sections 2.3.1, Sulfur Dioxide and 2.3.2, Nitrogen Oxides as recommended.

### **Comment 2:**

We also recommend including emissions information for the following pollutants (in addition to the information provided for SO<sub>2</sub> and NO<sub>x</sub>): volatile organic compounds, ammonia, PM<sub>10</sub>, and PM<sub>2.5</sub>.

### **IDEM Response:**

Emission information for VOCs, NH<sub>4</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> were added in Appendix B, however these pollutants were not included in the emission progress discussion because the methods for estimating emission information from the major source categories for these pollutants are complex and have changed over the past 10 ten years causing inconsistent values.

## **IDEM Responses to U.S. EPA Region 5 Comments**

### **Comment 1:**

I think the document could be improved if you move up, even before the intro, like an exec summary or perhaps a “determination of adequacy” section (like you have on pg 33) that lays out the big picture right away that you guys are on track in your RH progress. I had to wade through it to find it. I also thought you had some extra fluff in there in terms of rehashing what is in the RHR within your document.

### **IDEM Response:**

A negative declaration to the U.S. EPA Administrator specifying that further revision of the existing implementation plan is not needed at this time was provide in a new Executive Summary section that was added to the document.

### **Comment 2:**

I also thought you had some extra fluff in there in terms of rehashing what is in the RHR within your document. For example, in Section 2.6 on pg 32 you lay out the various options states can follow with respect to showing their progress. I am not sure all that is needed, just perhaps a reference to the pertinent sections of the RHR.

### **IDEM Response:**

IDEM appreciates and understands Region 5’s comment, however IDEM choses to leave the complete language from the referenced sections of these regulations in the document for clarity and consistency.



## United States Department of the Interior

### NATIONAL PARK SERVICE

Air Resources Division

P.O. Box 25287

Denver, CO 80225-0287

TRANSMITTED VIA ELECTRONIC MAIL - NO HARDCOPY TO FOLLOW

N3615 (2350)

January 29, 2016

Jean Boling

Indiana Department of Environmental Management

Office of Air Quality, Air Programs Branch

100 North Senate Avenue, MC 61-53 IGCN 1003

Indianapolis, IN 46204-2251

Dear Ms. Boling:

Thank you for the opportunity to review and comment on Indiana's draft Regional Haze Five Year Progress Report. As you requested, we conducted an expedited review. Note that 40 CFR 51.308(i) requires states to consult with Federal Land Managers 60 days prior to public hearing.

Indiana Department of Environmental Management (IDEM) has addressed most of the requirements for the regional haze periodic progress report as outlined in 40 CFR 51.308(g) and (h). No Class I areas are located in Indiana. IDEM identifies Class I areas that were determined through the regional planning organizations to be impacted by emissions from Indiana. The progress report summarizes implementation of federal emission control programs and Best Available Retrofit Technology for sources in Indiana as part of Indiana's 2011 Regional Haze State Implementation Plan. IDEM reports reductions in sulfur dioxide (SO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>) emissions. Below are suggestions to better characterize the emissions reductions in Indiana and the relevance to visibility improvements at Class I areas.

Section 1.0. Overview: Please summarize that ammonium sulfate and ammonium nitrate are the major contributors to visibility impairment at Class I areas<sup>1</sup> as explanation for focusing the discussion on emissions reductions for SO<sub>2</sub> and NO<sub>x</sub>.

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<sup>1</sup>Hand, J.L., Copeland, S.A., Day, D.E., Dillner, A.M., Indresand, H., Malm, W.C., McDade, C.E., Moore, T., Pitchford, M.L., Schichtel, B.A., Watson, J.G. 2011. Spatial and Seasonal Patterns and Temporal Variability of Haze and its Constituents in the United States: Report V.

Section 2.2.2 Long Term Strategy: Please provide more explanation of emissions calculation methods used to develop Graph 2-3 and Tables 1 and 2 in Appendix B. The Midwest Regional Planning Organization calculated the 2005 inventory and EPA calculated the 2008 and 2011 National Emissions Inventories. How were emissions in the intervening years calculated?

Section 2.3 Emissions Progress: IDEM reports that NO<sub>x</sub> emissions from mobile sources increased in 2010. IDEM should clarify that mobile emissions calculation methods changed from the Mobile 6 model that was used in the 2005 inventory to the MOVES model that was used in the 2008 and 2011 inventories. Similarly, the NONROAD model was updated after the 2005 inventory. These methods changes complicate interpretation of emissions trends, particularly for NO<sub>x</sub> and particulate matter. In Graph 2.4 and accompanying text please clarify that SO<sub>2</sub> and NO<sub>x</sub> emissions trends include all major source categories.

Please add tables of 2005, 2011, and 2018 projected emissions separately accounting for the major source categories and the major pollutants that contribute to visibility impairment: SO<sub>2</sub>, NO<sub>x</sub>, volatile organic compounds, ammonia, particulate matter greater than 10 microns and particulate matter greater than 2.5 microns. By comparing current emissions to 2018 projected emissions, IDEM can demonstrate progress toward emissions reductions that were used in regional air quality models to project 2018 visibility improvement goals for Class I areas.

Section 2.5 Assessment of Current Strategy: This section describes IDEM's consultations with states that have Class I areas that are impacted by emissions from Indiana. Please add a summary table of visibility trends at these Class I areas to support IDEM's conclusion that IDEM's existing state implementation plan is sufficient for Class I areas to meet the visibility improvement goals set by these states. At a minimum IDEM can cite progress reports by Kentucky,<sup>2</sup> Minnesota<sup>3</sup>, North Carolina,<sup>4</sup> and Virginia,<sup>5</sup> to demonstrate that Class I national parks in these states are already meeting 2018 visibility goals.

We appreciate the opportunity to work with Indiana to improve visibility in Class I national parks and wilderness areas. If you have questions, please contact me at [patricia\\_f\\_brewer@nps.gov](mailto:patricia_f_brewer@nps.gov) or 303-969-2153.

Sincerely,



Pat Brewer

Cc: John Summerhays, EPA Region 5

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<sup>2</sup> Kentucky State Implementation Plan (SIP) Revision: Regional Haze 5-Year Periodic Report 2008-2013 For Kentucky's Class I Federal Area. 2014. [http://air.ky.gov/SiteCollectionDocuments/Kentucky\\_Regional\\_Haze\\_5-Year\\_Periodic\\_Report\\_SIP%20Revision\\_Sept\\_2014.pdf](http://air.ky.gov/SiteCollectionDocuments/Kentucky_Regional_Haze_5-Year_Periodic_Report_SIP%20Revision_Sept_2014.pdf)

<sup>3</sup> Five-Year Regional Haze Progress Report State Implementation Plan. December 2014. Minnesota Pollution Control Agency. <https://www.pca.state.mn.us/air/minnesota-regional-haze-plan>

<sup>4</sup> Regional Haze 5-Year Periodic Review State Implementation Plan for North Carolina Class I Areas. 2013. [http://daq.state.nc.us/planning/haze/regional\\_haze\\_sip.shtml](http://daq.state.nc.us/planning/haze/regional_haze_sip.shtml)

<sup>5</sup> Air Quality State Implementation Plans; Approval and Promulgation: Virginia; Regional Haze Five-Year Progress Report. 2014. 79 FR 25019. EPA-R03-OAR-2014-0006-0006 <http://www.regulations.gov>.

## Boling, Jean

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**From:** O'Dea, Claire B -FS <cbodea@fs.fed.us>  
**Sent:** Friday, January 29, 2016 10:25 AM  
**To:** Boling, Jean  
**Cc:** DERF, MARK; patricia\_f\_brewer@nps.gov  
**Subject:** RE: Draft Indiana Regional Haze Five-Year Progress Report State Implementation Plan

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Hi Jean,

The US Forest Service has completed our review of the Indiana Regional Haze 5-Year Progress Report. The Forest Service appreciates the opportunity to review the document and the chance to once again work cooperatively with the Indiana Department of Environmental Management. The expedited timeline made it impossible for us to submit a formal letter, but we were informed that comments via email would suffice. We can draft these comments into a formal letter for later submission if desired.

We concur with the findings that the 2011 Indiana State Implementation Plan is sufficient for meeting the goals outlined in the Regional Haze Rule. The first five year period following the base year resulted in significant reductions in sulfate and nitrogen oxide emissions. During the first five year period of this SIP, sulfate emissions have been reduced by an additional 28% and nitrogen oxide emissions have been reduced by an additional 13%. Therefore, we agree with your conclusion that no additional controls are necessary for the first planning period for emission sources in Indiana in order to achieve reasonable progress in visibility for federally mandated Class I areas managed by the USDA Forest Service.

We do, however, recommend including the 2018 emissions projections (outlined in the original SIP) in Section 2.3 to enhance the clarity of the 5-Year Progress Report. Comparing current emissions levels with the 2018 projections will demonstrate progress toward the emissions reductions used to project visibility improvement goals for Class I areas. Since the rate of emissions reductions from 2010-2014 was reduced over the rate of reductions that occurred from 2005-2010, it is important to highlight the amount of required reductions remaining over the next five-year period. We also recommend including emissions information for the following pollutants (in addition to the information provided for SO<sub>2</sub> and NO<sub>x</sub>): volatile organic compounds, ammonia, PM<sub>10</sub>, and PM<sub>2.5</sub>.

The Forest Service understands the timeline under which Indiana is working to meet EPA targets, which is why we conducted this expedited review. In the future, we ask that Indiana incorporate the Federal Land Manager review into the drafting and submission timeline, in order to provide us with the full 60 day review period required by 40 CFR 51.308(i).

We look forward to our continued close cooperation toward the national goal of no "man-made" visibility impairment to the Class I areas in our region by 2064.

Best,



Claire O'Dea, PhD  
Air Quality Specialist  
Forest Service  
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Caring for the land and serving people

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**From:** Boling, Jean [<mailto:JBoling@idem.IN.gov>]  
**Sent:** Thursday, January 14, 2016 3:29 PM  
**To:** O'Dea, Claire B -FS; [patricia\\_f\\_brewer@nps.gov](mailto:patricia_f_brewer@nps.gov)  
**Cc:** DERF, MARK  
**Subject:** Draft Indiana Regional Haze Five-Year Progress Report State Implementation Plan

Federal Land Managers,

The state of Indiana submits its Draft Indiana Regional Haze Five-Year Progress Report State Implementation Plan for your review in accordance with Sections 51.308(i)(2) and (3) of the Regional Haze Rule which requires the State to provide Federal Land Managers with an opportunity for consultation on state implementation plan revisions for regional haze. The state of Indiana's 5-year progress report clearly demonstrates that significant SO<sub>2</sub> and NO<sub>x</sub> emission reductions were realized over the 5-year evaluation period (2007-2012) as a result of federal and state control measures implemented over the past 10 years and in preparation for those to be implemented by 2018, the end of the first regional haze planning period. The state of Indiana has confirmed through this evaluation that its existing Regional Haze SIP is adequate to meet the requirements of the Regional Haze Rule and to support reasonable progress goals at all Class I areas impacted by emissions from Indiana. If you have any questions or need any additional information regarding the state of Indiana's Regional Haze 5-year progress report, please don't hesitate to contact me or Mark Derf at (317) 233-5682 or [mderf@idem.IN.gov](mailto:mderf@idem.IN.gov).

Thank you, in advance, for your assistance and cooperation and I look forward to hearing from you.

*Jean Boling*

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## Boling, Jean

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**From:** Alvarez, Gilberto <alvarez.gilberto@epa.gov>  
**Sent:** Thursday, February 11, 2016 2:45 PM  
**To:** Boling, Jean  
**Cc:** Ko, Joseph  
**Subject:** Quick review of RH 5 Yr Progress Report

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Hi Jean. I took a look at your draft submittal. I do not have any "show stopper" comments. I think the document could be improved if you move up, even before the intro, like an exec summary or perhaps a "determination of adequacy" section (like you have on pg 33) that lays out the big picture right away that you guys are on track in your RH progress. I had to wade through it to find it. I also thought you had some extra fluff in there in terms of rehashing what is in the RHR within your document. For example, in Section 2.6 on pg 32 you lay out the various options states can follow with respect to showing their progress. I am not sure all that is needed, just perhaps a reference to the pertinent sections of the RHR. But that is pretty much a minor quibble. Go ahead and do your 30 day public comment action and if we do find anything worth nothing during that time period, we will let you know via that process. I hope this quick response helps.

We look forward to working with you as move forward to an actual formal submittal. Again, Joe Ko will be working with you on the review, but I will be guiding and working with him.

Gilberto Alvarez  
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Air Programs Branch - Air and Radiation Division  
US EPA R5; AR 18 J; 77 W Jackson  
Chicago IL 60604  
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