



Draft Guidance on Progress Tracking Metrics,
Long-term Strategies, Reasonable Progress Goals and Other
Requirements for Regional Haze
State Implementation Plans for the
Second Implementation Period

Public Informational Webinar Presentation

Corrected August 1, 2016 (slide 23)

You can get more information at <http://www.epa.gov/visibility>.

Goals for this Webinar

- Introduce and walk through the draft guidance document at a high level.
- Give more detail on several aspects.
- Answer clarifying questions (via the questions/comments box in the webinar window on your computer).
- We welcome all your comments on the draft guidance document by August 22. Please use www.regulations.gov (Docket EPA-HQ-OAR-2016-0289) to submit your comments.

Outline for this Webinar

- Purpose of the draft guidance document.
- Background on the visibility protection program, as context for commenting on the draft guidance document.
- Section-by-section summary of the draft guidance document, with more detail on two particular topics:
 - Ambient data analysis (i.e., progress tracking metrics) aspects. (Section 5)
 - How a state should decide what measures are needed for reasonable progress and must therefore be in the long-term strategy (LTS) portion of the SIP revision. (Section 8)
- How to comment.
- Q&A.

Regional Haze and Visibility Impairment

- The Regional Haze program is based on Clean Air Act (CAA) sections 169A and 169B, which set a national goal of restoring natural visibility conditions in 156 mandatory Federal Class I areas.
- *Regional haze* means visibility impairment that is caused by the emission of air pollutants from numerous sources located over a wide geographic area.
- *Visibility impairment* means any humanly perceptible difference between actual visibility conditions and natural visibility conditions.



Purpose of the Draft Guidance Document

- When final, this guidance document is intended to:
 - Provide explanation of key conceptual and policy issues that apply to regional haze state implementation plans (SIPs) for the second implementation period, proposed to be due in 2021.
 - Provide EPA recommendations on how states should address these issues.
 - Fully explain the (draft) EPA recommendation on how to estimate anthropogenic impairment on individual days, and how to estimate natural visibility conditions for the purpose of the 2064 end point of the glide path.
 - Communicate several key EPA interpretations from the first planning period.
 - Clarify which other previous EPA guidance is superseded and which continues to apply.
 - Be an information resource for state staff who were not involved in the 1st cycle of SIPs.

The Context for the Draft Guidance

History of EPA Rules and Guidance

- EPA has issued three major rulemakings on visibility protection, codified in 40 CFR 51.300-309.
 1. 1980 rule on Reasonably Attributable Visibility Impairment (RAVI).
 2. 1999 Regional Haze Rule.
 3. 2005 Best Available Retrofit Technology (BART), BART Guidelines, and CAIR Better-than-BART Rule (updated in 2012 to replace CAIR with CSAPR).
- The CAA and the EPA rules list four factors that a state must consider when determining what additional emission control measures are needed for reasonable progress:
 1. Costs of compliance.
 2. Time necessary for compliance.
 3. Energy and non-air quality environmental impacts of compliance.
 4. Remaining useful life of any potentially affected sources.
- EPA has previously issued four guidance documents on regional haze.
 1. 2003 Natural conditions guidance.
 2. 2003 Progress tracking guidance.
 3. 2006 Additional Questions and Answers, revised.
 4. 2007 guidance on setting reasonable progress goals. (When final, the new guidance document will completely replace this 2007 guidance.)
- EPA has approved many SIPs based on the 2005 “NC-II” Committee report on natural conditions instead of on the 2003 EPA guidance.

Context for the draft guidance document, cont.

May 4, 2016, proposal to amend 40 CFR 51.300-309

- Revise the next SIP deadline, from July 1, 2018, to July 1, 2021.
- Revise/add definitions of key terms.
- Two alternative proposals regarding which days are used to track the “worst visibility days.”
 1. Require all states to switch from the 20 percent haziest days (used in the first implementation period) to the 20 percent most anthropogenically impaired days. This approach de-emphasizes impacts from large fires and dust storms.
 2. Allow each state to pick which of the approaches to use.
- Clarify that the uniform rate of progress (URP) line connects 2000-2004 to 2064 (rather than connecting the most recent 5-year period to 2064).
- Administrator option to approve adjustment of the URP line for international and prescribed fire impacts.
- Clarify that each state must first decide what measures are needed for reasonable progress at affected Class I areas. Then, the state with the Class I area must set the reasonable progress goals (RPGs) to be equal to the predicted future visibility outcome of those measures.

Context for the draft guidance document, cont.

May 4 proposal, continued

- Other clarifications and changes related to the long-term strategy (LTS) and RPGs:
 - Clarify that the requirement for “an improvement” on the 20 percent most impaired days is relative to 2000-2004.
 - Clarify that the requirement for “no degradation” on the 20 percent clearest days is relative to 2000-2004.
 - Revise phrasing of the requirement for documentation of the state analysis.
 - Require the state to show that there are no other measures needed for reasonable progress, if the long-term strategy results in the RPG for the worst days being above the URP line.
- Changes to the requirement for the state to consult with the FLM.
- Changes to progress report requirements and schedule.
- Changes to the RAVI provisions.
- **The draft guidance document assumes these proposed rule revisions will be made final. However, if public comments lead to any changes for the final rule, the final guidance document will be consistent with the final rule.**

Organization of the Draft Guidance Document

- Sections 1-3: History of the CAA, regulatory and guidance provisions on regional haze, steps in SIP development and roadmap for the document.
- Section 4: Overarching Issues.
- Sections 5-11: A separate section for each of seven steps a state will take to develop its SIP revision. Next slide provides an overview.
- Appendices (one-half of the document)
 - A – Finer detail on the seven steps in SIP development.
 - B & C – EPA actions on SIPs and Circuit Court decisions in the 1st implementation period.
 - D, E, & F – Relevance of specific aspects of three previous EPA guidance documents and the BART Guidelines.
 - G – Relevant excerpts from 40 CFR 51.308 (in this draft version of the guidance document, these excerpts are as proposed in the NPRM).

The Scope of Sections 5 - 11

Section 5	Ambient data analysis – Quantify baseline, current and natural conditions of visibility and the uniform rate of progress that would achieve natural conditions in 2064.
Section 6	Screening of sources – Identify the pollutants and emission sources for which full reasonable progress analysis will be completed and explain why it is appropriate to limit the full analysis to only these sources.
Section 7	Source and emission control measure analysis – Identify potential additional emission control measures for sources selected in the screening step and develop data on the four statutory factors, visibility impacts and other factors that must be considered and visibility benefits if they will be considered.
Section 8	Decisions on the content of the LTS – Consider applicable factors and decide on new emission controls for incorporation into the long-term strategy.
Section 9	Regional scale modeling – Model the LTS along with other practicably enforceable measures that will reduce visibility impairment, to set the RPGs for 2028.
Section 10	Progress, degradation and glidepath checks <ul style="list-style-type: none">• Demonstrate that there will be progress on the 20 percent most impaired days.• Demonstrate that there is no degradation on the 20 percent clearest days.• Compare the 2028 RPG for the 20 percent most impaired days to the 2028 point on the URP line (the glidepath) and if required provide additional justification for the reasonableness of the RPG. Revise the LTS if additional measures are identified as necessary for reasonable progress.
Section 11	Other requirements for SIPs – Provide additional information necessary to ensure that other requirements of the Regional Haze Rule are met.

Section 4 – Overarching Issues

Overview

- 4.1. Screening sources prior to the four-factor analysis and deferring some sources to later implementation period
- 4.2. Considering visibility impacts and benefits when screening sources and conducting the four-factor analysis
- 4.3. Focusing on the 20 percent most impaired days
- 4.4. Determining the measures “necessary to make reasonable progress”
- 4.5. The Relationship between the LTS and the RPGs
- 4.6. Comparing the RPGs to the URP
- 4.7. Documentation
- 4.8. Consultation

Section 4 – Overarching Issues, cont.

Recommendation on Consideration of Visibility

- A state may, but is not required to, consider visibility impacts and benefits when screening sources and conducting the four-factor analysis of emission reduction measures.
 - Baseline visibility impacts and prospective visibility benefits are not a “fifth factor” that states must consider when determining reasonable progress.
 - States may consider visibility in addition to the four statutory factors when making their reasonable progress determinations, as long as they do so in a reasonable fashion.
- EPA recommendation:
 - States should consider visibility impacts when screening sources and source categories.
 - States should not consider visibility benefits after the screening step.

Section 4 – Overarching Issues, cont.

Alternate Approaches for Consideration of Visibility

- First alternative approach – Like the recommended approach, but without a screening step.
- Second alternative approach – After screening, a state would consider visibility benefits along with the four statutory factors

Section 5. Ambient Data Analysis

Overview

- The draft document assumes a state is using the 20 percent most anthropogenically impaired days as the “worst days.”
 - The key issue is then how to separate PM light extinction on a given day between natural and anthropogenic causes.
- The draft document presents draft recommendations for analyzing IMPROVE data in a new way to make this separation.
- It is a purely mechanical process to apply the approach to a particular Class I area.
- The draft document (with the TSD) shows the outcomes for the recommended approach for every Class I area, through 2014.

Section 5. Ambient Data Analysis, cont.

Separating Natural and Anthropogenic Causes of PM Species

- For each Class I area, find the year between 2000-2014 that was least affected by fire, specifically by finding the lowest annual 95th percentile 24-hour light extinction due to carbon PM (and dust PM). (Same for dust.)
- The light extinction above this level on any day is assumed to be due to extreme/erratic wildfire and is considered natural. (Same for dust.)
- A portion of the remaining 24-hour light extinction is taken to be due to “routine” natural causes.
 - The recommended assumption for the level of “routine” natural PM light extinction varies by season, and is picked so that the annual average is equal to the NC-II annual average natural conditions.
- The rest of the 24-hour light extinction is taken to be due to anthropogenic causes.

Section 5. Ambient Data Analysis, cont.

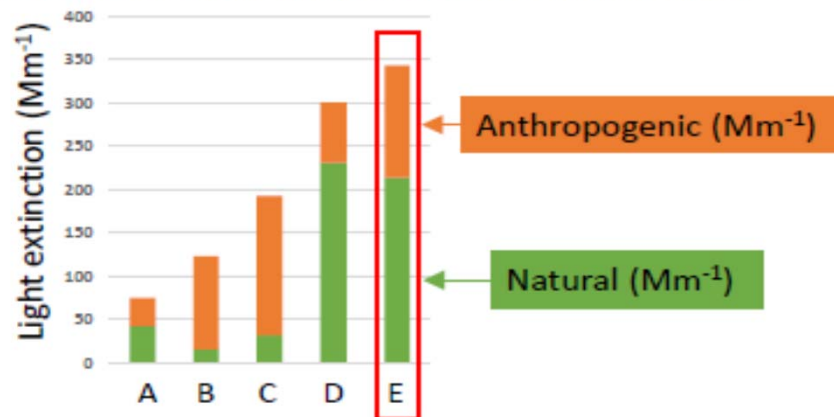
Separating Natural and Anthropogenic, continued

- Some aspects of interest:
 - No replacement of data with default values or data from other days or other Class I areas.
 - Each Class I area has unique carbon PM and dust thresholds for identifying extreme events. (See Figures 4 and 5 in the TSD and “CarbonMinBext95” and “DustMinBext95” in the data spreadsheet.)
 - No grouping of Class I areas into regions such that one area’s data would influence the outcome for another area.
- Suggestions for refinements, or alternatives, are welcome.
- Whatever the final EPA recommendations:
 - EPA and/or the IMPROVE program will do the calculations on a routine basis, as the IMPROVE program does now.
 - States can take another approach to splitting between natural and anthropogenic light extinction, with justification.

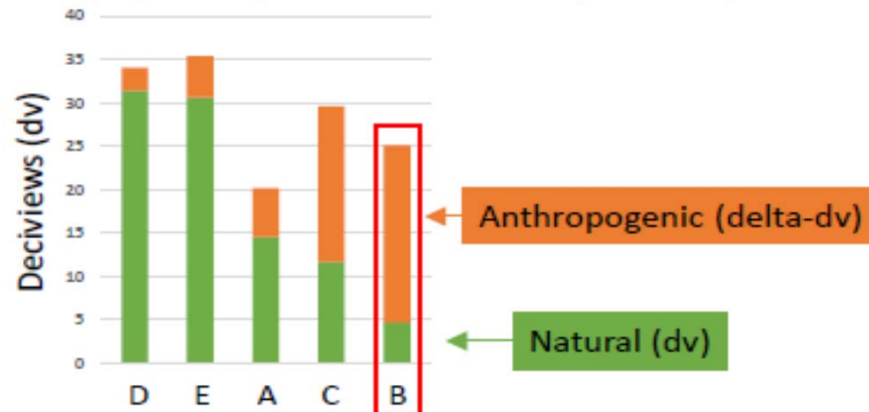
Section 5. Ambient Data Analysis, cont.

Haziest Days vs. Most Impaired Days

First Implementation Period Approach: select days with **highest light extinction** as most impaired days

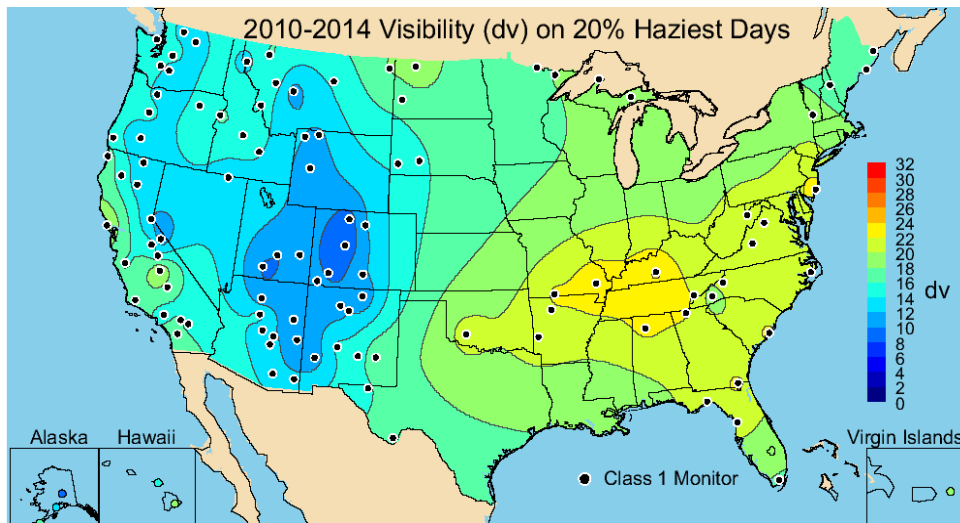


New, Recommended Approach: select days with **most anthropogenic impairment** as most impaired days



Section 5. Ambient Data Analysis, cont.

Results – Visibility in 2010-2014

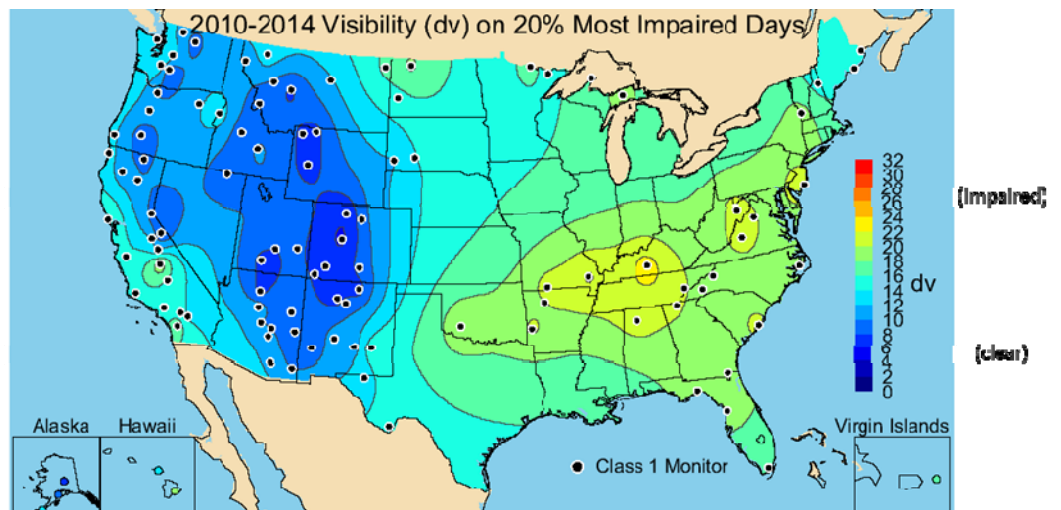


Old Approach

- 20% haziest days

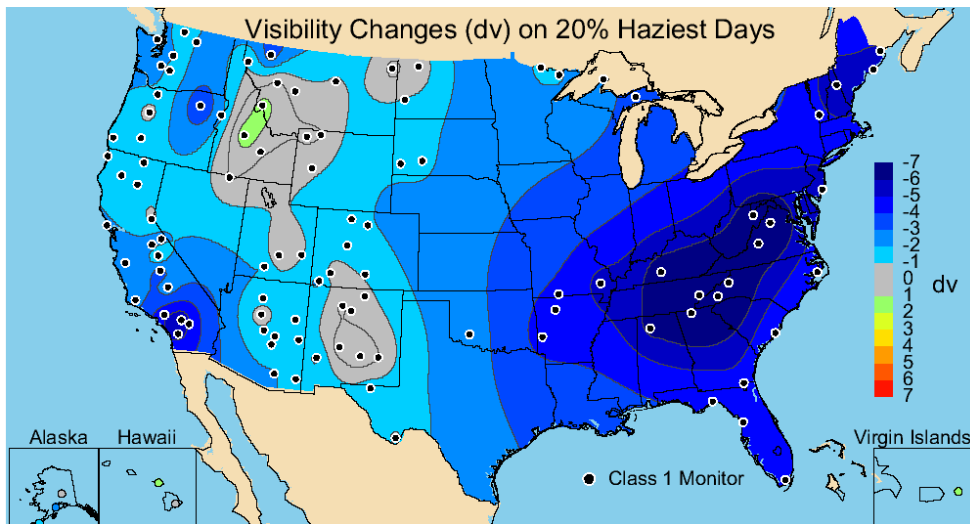
New Recommended Approach

- 20% most impaired days



Section 5. Ambient Data Analysis, cont.

Results – Progress over 10 Years

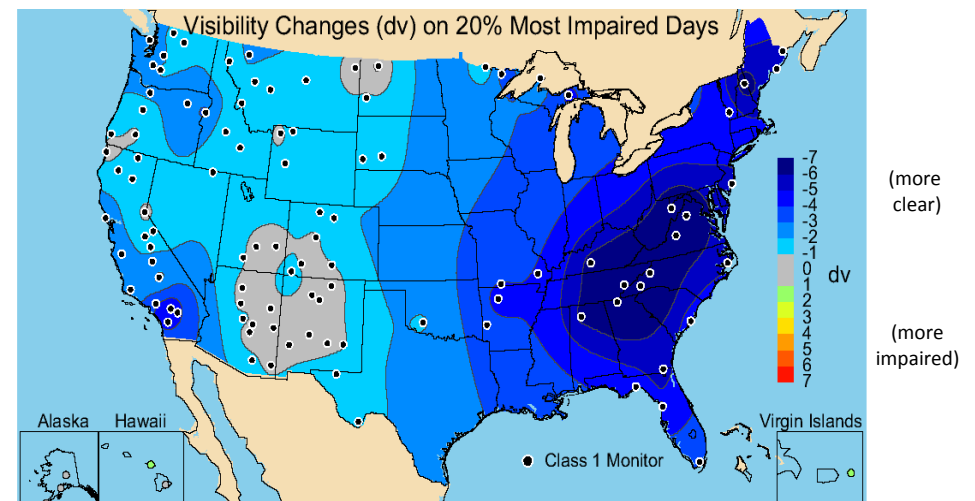


Old Approach

- 20% haziest days

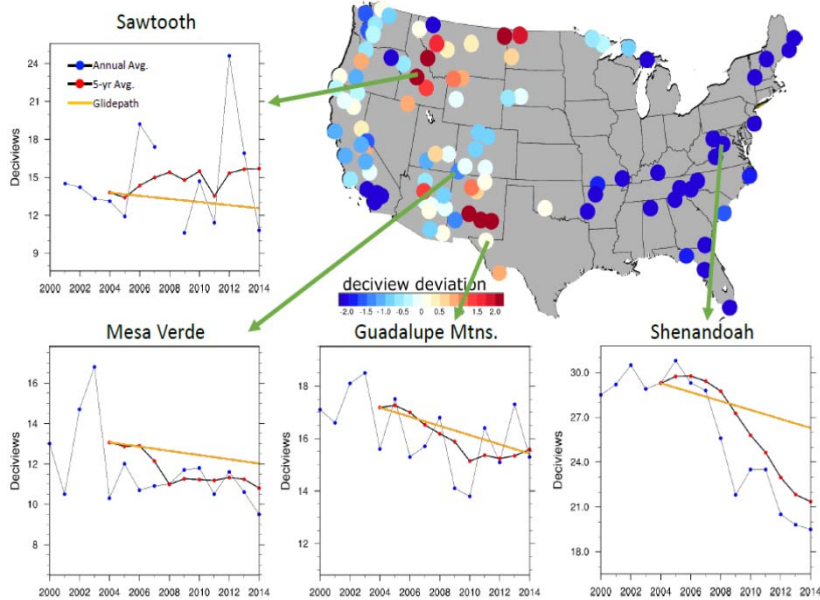
New Recommended Approach

- 20% most impaired days

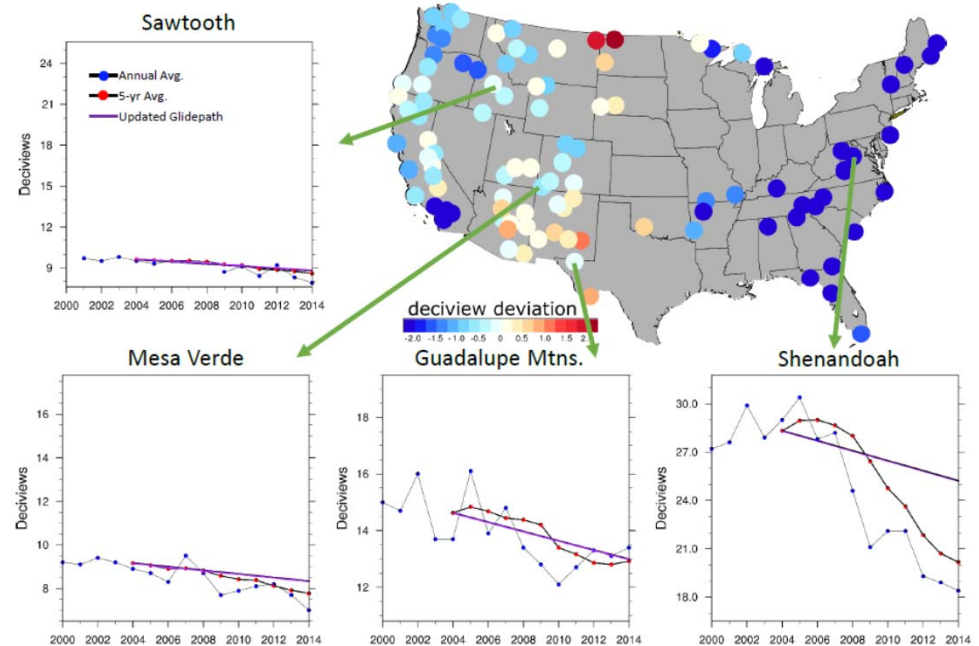


Section 5. Ambient Data Analysis, cont.

Results – 2014 Glidepath Comparisons



- Old Approach**
- 20% haziest days
 - NC-II in 2064



- New Recommended Approach**
- 20% most impaired days
 - New approach for 2064

Section 6 - Screening of sources

Basic Concepts

- A state may screen sources and defer some sources to later implementation periods.
 - To “screen a source in” or to “bring a source forward” means to select it for four-factor analysis of possible emission control measures, based on its baseline visibility impacts.
- Because screening is based on visibility impacts at Class I areas, the state must first establish which Class I areas are affected by sources in the state.
- A particular PM species and its precursors can be eliminated based on the extinction budget(s) for these area(s).

Section 6 - Screening of sources, cont.

Which Visibility Impacts Should Matter?

- When screening sources, a state should focus on impacts on the 20 percent most impaired days.
 - EPA recommends that a state bring forward a source based on the source's highest visibility impact on any day within this group of days.
 - EPA also recommends that screening consider the average visibility impact across this group of days.
 - Also, if a state considers visibility benefits of possible controls, the state should similarly focus on the benefits on this group of days.
- However, states should consider visibility impacts and benefits on days outside this group of days if they are significant and would affect the state's decision making.
- EPA is recommending that a state take a 2028 perspective when it screens sources.

Section 6 – Screening of sources, cont.

Other Recommendations

1. Quantify visibility impacts from sources and groups of sources
 - Methods for estimating/approximating visibility impacts.
 - Source aggregation issues.
2. Choose and apply screening criteria
 - Screening based on other factors.
- EPA recommends that screening go “deep enough” to bring forward a large ~~majority~~ **fraction** (e.g., 80 percent) of the impacts from in-state stationary sources.
- Special points about screening for particular source types
 - Many small sources that could present implementation challenges.
 - Sources not within state authority.
 - Wildland fire (one-stop discussion of fire-related aspects).
 - Other natural sources.

Section 7 - Source and emission control measure characterization

- What measures should be considered for a given source?
- Establishing the facts about the four factors for those measures.
- Recommendations regarding using factual information from earlier work.
- Applicability of prior EPA guidance about how to establish the facts (appendices D, E, & F).
- States should consider information presented in FLM or public comments.

Section 8 – Decisions on the content of the LTS

Overview

- Sections 8.1 and 8.2 have relevant recommendations for the two very different approaches to consideration of visibility benefits.
- Under either approach, “States must use reasoned decision making and give due consideration to well-developed factual information and public comments.”
- Sections 8.3 – 8.9 are relevant to both approaches.

Section 8.1 – Recommendations for states following EPA’s recommendation to not consider visibility benefits

- After the screening step, a state should not reject a measure if the cost of compliance is within the range of reasonableness.
- EPA recommends that a state adopt the most effective control measure within the range of reasonableness, based on consideration of only the four statutory factors.
 - The state should not use the information regarding a source’s visibility impacts developed at the screening stage in evaluating the four factors.
 - Cost of compliance will often be the most critical factor.
- Cost/ton comparisons to past regulatory decisions for the same type of source, by EPA or a state, are a guide to whether the cost of compliance is within the range of reasonableness.
- Also addressed:
 - Recommendations on source aggregation issues when deciding on what measures are needed for reasonable progress.
 - Consideration of the viability of continued source operation.

Section 8.2 – Recommendations for states choosing to consider visibility benefits

- “[S]tates may determine *in the second implementation period* that the costs of compliance associated with a given control measure outweigh the visibility benefits of that measure and not include the measure in the LTS without contradicting the national goal.”
 - Do not reject a measure merely because its visibility benefit is not perceptible.
 - When considering visibility benefits along with the four statutory factors, consider the whole distribution of daily visibility benefits.
 - EPA does not recommend use of a cost/deciview metric.
 - Benefits at multiple Class I areas should be considered, but do not compare cumulative benefits to a perception threshold.
 - For the step that involves weighing the four factors and visibility benefits, these states should consider only past decisions in the visibility protection program that involved weighing the four factors and visibility benefits.
- States choosing this approach are not required to adopt a measure that is unreasonable assuming visibility benefits are not considered. See Section 8.1.
- “[This approach] presents considerable technical challenges.”
- Also addressed:
 - Recommendations on source aggregation issues when deciding on what measures are needed for reasonable progress.
 - Consideration of the viability of continued source operation.

Sections 8.3 – 8.9

Recommendations common for all states

- Consideration of the three statutory factors other than cost of compliance.
- Special considerations for small, minor, area, and mobile sources.
- Setting emission limits for the measures that are determined to be needed for reasonable progress.
 - Averaging periods.
 - Startup/shutdown considerations.
 - Many parts of the BART Guidelines address this topic, and apply as EPA recommendations going forward.
 - If the technology/measure currently being implemented is determined to be what is needed for reasonable progress, the SIP must have emission limits that effectively require that level of control. The current emission limits may not be adequate.
- Recommendations on setting compliance deadlines.

Section 9 - Regional scale modeling of the long-term strategy to set the RPGs for 2028

- The long-term strategy determines the RPGs, not vice versa.
- EPA's SIP modeling guidance applies, but the current version will be updated to reflect the final rule revisions and final guidance document.
- Once set using regional scale photochemical modeling, the RPGs can be adjusted in simpler ways to capture later changes in the long-term strategy.

Section 10 - Progress, degradation, and glidepath checks

- The Regional Haze Rule requires states to make some progress on the 20 percent most impaired days; there may be no predicted degradation on the 20 percent clearest days.
 - The NPRM proposed that 2000-2004 be the benchmark for both requirements.
- Being “on or below the glidepath” is not a requirement and also is not a safe harbor.
- When the RPG for the 20 percent most impaired days for a Class I area is above the glidepath:
 - NPRM: Each state with sources contributing to the Class I area must show that there are no other measures needed for reasonable progress.
 - Section 10.3 (pages 119-121) of the draft guidance document contains recommendations about how a state may make this showing.

Section 11 – Additional Requirements

- Recommendations regarding “The state must consider [factor X],” when not already addressed.
- SIPs must include certain progress reporting elements.
 - The intention is that between the mid-cycle progress reports and the SIPs, there will be no gaps in the history of progress.
 - No requirement for a declaration by the state of whether the SIP is adequate, as there is for a mid-cycle progress report.
- Monitoring strategy elements.
 - EPA is not expecting SIPs for the second implementation period to have new monitoring provisions.

Appendices

- A. Key Steps and Tasks in Developing a Regional Haze SIP
- B. EPA Actions on Regional Haze SIPs and Progress Reports for the First Implementation Period
- C. Court Decisions on Regional Haze SIPs and Federal Implementation Plans for the First Implementation Period
- D. Identification of Provisions of the BART Guidelines that Are Applicable as EPA Recommendations for Reasonable Progress Analysis and Determinations in the Second Implementation Period
- E. Identification of Provisions of the Previous Guidance Documents on Natural Conditions and Progress Tracking that Are Applicable as EPA Recommendations for Reasonable Progress Analysis and Determinations in the Second Implementation Period
- F. Identification of Answers in the September 27, 2006, Q&A Document that Are Applicable as EPA Recommendations for Reasonable Progress Analyses and Determinations in the Second Implementation Period
- G. Relevant Provisions of the Regional Haze Rule (40 CFR Part 51) as Revised in 2016

How to Comment

Comments, identified by Docket ID No. EPA-HQ-OAR-2016-0289, will be accepted until August 22, 2016.

- Please submit comments directly to the docket using www.regulations.gov
- Other submission methods are described at <http://www2.epa.gov/dockets/commenting-epa-dockets>
- Please do not only email comments to EPA staff.
- We do appreciate getting a copy of your submitted comments by email, particularly if you have submitted near the deadline.

For More Information

- This draft guidance document and other background information are also available electronically at <http://www.regulations.gov>, or on EPA's Visibility and Regional Haze web site at <http://www.epa.gov/visibility>.
- For general questions, contact Phil Lorang, telephone (919) 541-5463, lorang.phil@epa.gov.
- For questions about Section 5, contact Melinda Beaver, telephone (919) 541-1062, beaver.melinda@epa.gov.

Questions