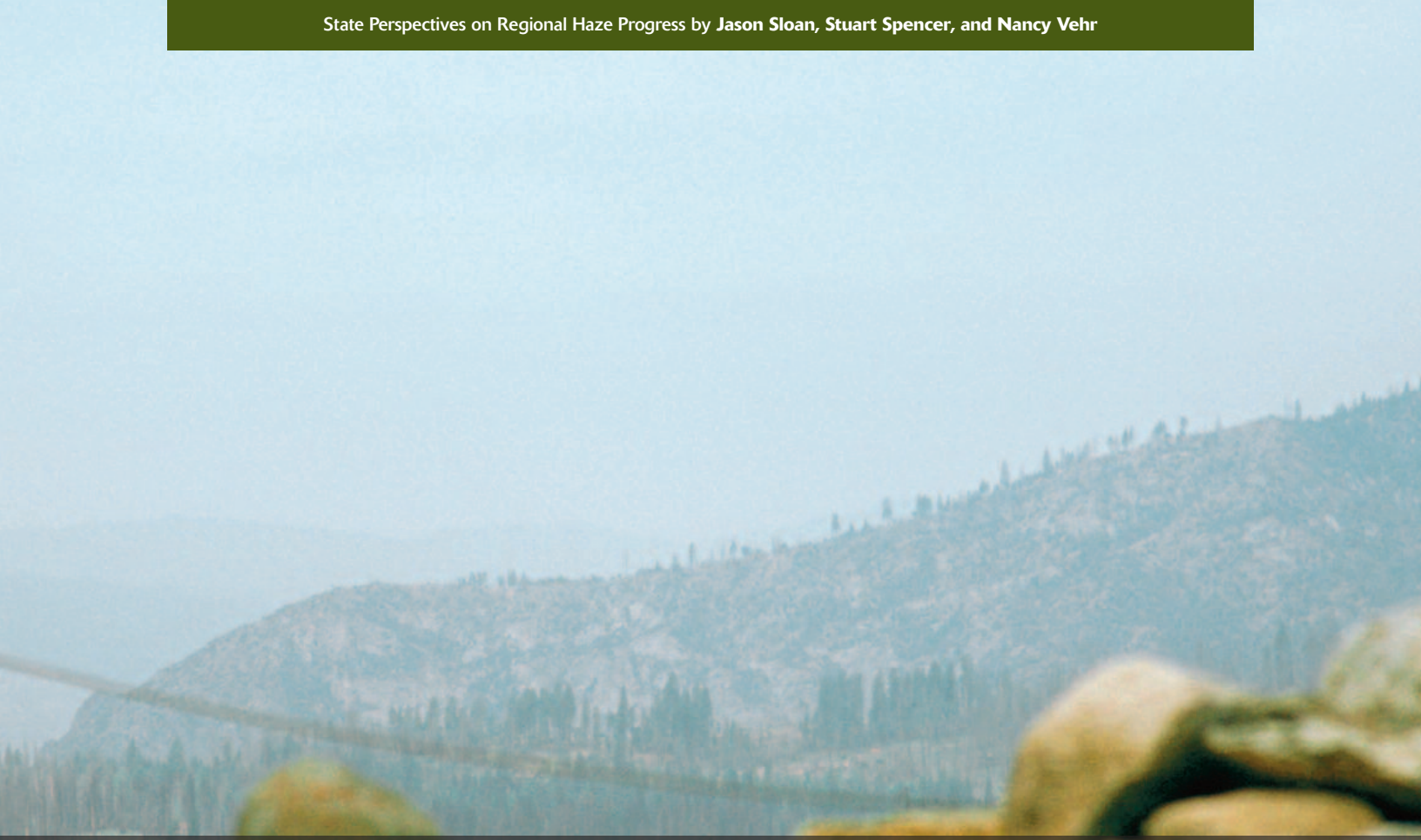


Telegraph Hill Vista, Yosemite National Park, California. Representative visibility condition at 9:00 a.m. on August 8, 1990, after Steamboat Fires episodes. *Source: IMPROVE Photographic Archive, http://vista.cira.colostate.edu/Improve.*

State Perspectives on Planning for

Continued Regional Haze Progress

The Association of Air Pollution Control Agencies urges the U.S. Environmental Protection Agency to work in close coordination with state and local agencies to ensure continued progress under the regional haze program.

Congress amended the U.S. Clean Air Act (CAA) in 1977 to establish as a "national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from manmade air pollution."[1] Congress further clarified the national program of restoring pristine conditions via the passage of the 1990 CAA amendments. Specifically, in CAA Sections 169A and 169B, Congress directed the U.S. Environmental Protection Agency (EPA), in consultation with the Secretary of the Interior, to ascertain a list of impaired national parks and wilderness areas (Class I areas), study and report on methods for achieving the national goal, and promulgate regulations to "assure reasonable progress toward meeting the national goal specified."[2] This work culminated in June 1999, when EPA promulgated the Regional Haze Rule, designed to protect and improve visibility in 156 Class I areas in the United States.

Defined as co-regulators in the CAA, state air quality agencies undertook significant efforts to analyze, plan for, and develop regional haze state implementation plans (SIPs) that would provide a foundation for achieving "natural background conditions … by the year 2064," the goal set forth by EPA in the final Regional Haze Rule.[3] Initial SIPs, due in December 2007 to cover the first planning period through 2018, were to establish reasonable progress goals, a uniform rate of progress over a 60-year period needed to attain natural conditions, long-term emissions reductions strategies, and a determination of stationary facilities (specifically, facilities that entered operation between 1962 and 1977) that would be subject to best available retrofit technology (BART) to control emissions that may impact visibility. Pursuant to the final Regional Haze Rule, planning periods are scheduled to cover 10-year increments through 2064, with the next period ending in 2028.

By the close of the first planning period in 2018, state and local air agencies, in coordination with their respective Regional Planning Organizations (RPOs),[4] had achieved measurable progress in visual ranges in nearly every Class I area (see sidebar, "Visibility Progress"). This progress, measured in "deciview"[5] improvements for both the clearest and haziest days, was realized alongside other complex state and local planning efforts, including National Ambient Air Quality Standards (NAAQS) implementation for the six criteria air pollutants: carbon monoxide (CO), sulfur dioxide (SO_2), ground-level ozone (O_3), fine particulate matter ($PM_{2.5}$), lead (Pb), and nitrogen dioxide (NO_2). In particular, reductions in emissions nationally of $PM_{2.5}$ (down 37% from 2000), SO_2 (down 84% from 2000), NO_x (down 54% from 2000), and volatile organic compounds (VOCs; down 20% from 2000) have directly helped to improve visibility.[6]

On January 10, 2017, EPA published in the *Federal Register* a final rule revising requirements for SIPs for the second planning period, 2018–2028.[7] The rule moved the due date for regional haze SIPs from July 2018 to July 2021 and made several other technical changes to the program, including adjusting the format and due dates of regional haze progress reports; providing information on addressing international transport of pollutants and certain events (e.g., prescribed fires and wildfires) in visibility analysis; modifying visibility tracking metrics; and expanding the federal land manager (FLM) consultation process. The current Administration has indicated that the agency will revisit portions of those revisions, as well as related guidance for regional haze SIPs.

The July 2021 due date for second planning period SIPs is on the horizon. As EPA looks to potentially amend the 2017 requirements and associated planning guidance, ensuring early engagement with state and local agencies (and associated RPOs), timely implementation tools, and process consistency are key factors for continuing progress and minimizing the uncertainty that characterized the first planning period.

Impacts of Uncertainty

Substantial resources are used in the development of SIPs. Based on detailed technical analyses, complex planning efforts, and citizen engagement, SIPs are designed to incorporate unique social and economic factors that are identified by state and local agencies working on the ground. Successful SIP development also relies on an understanding of regulatory requirements and implementation provisions, as well as the need for a reasonable review and approval process from EPA.

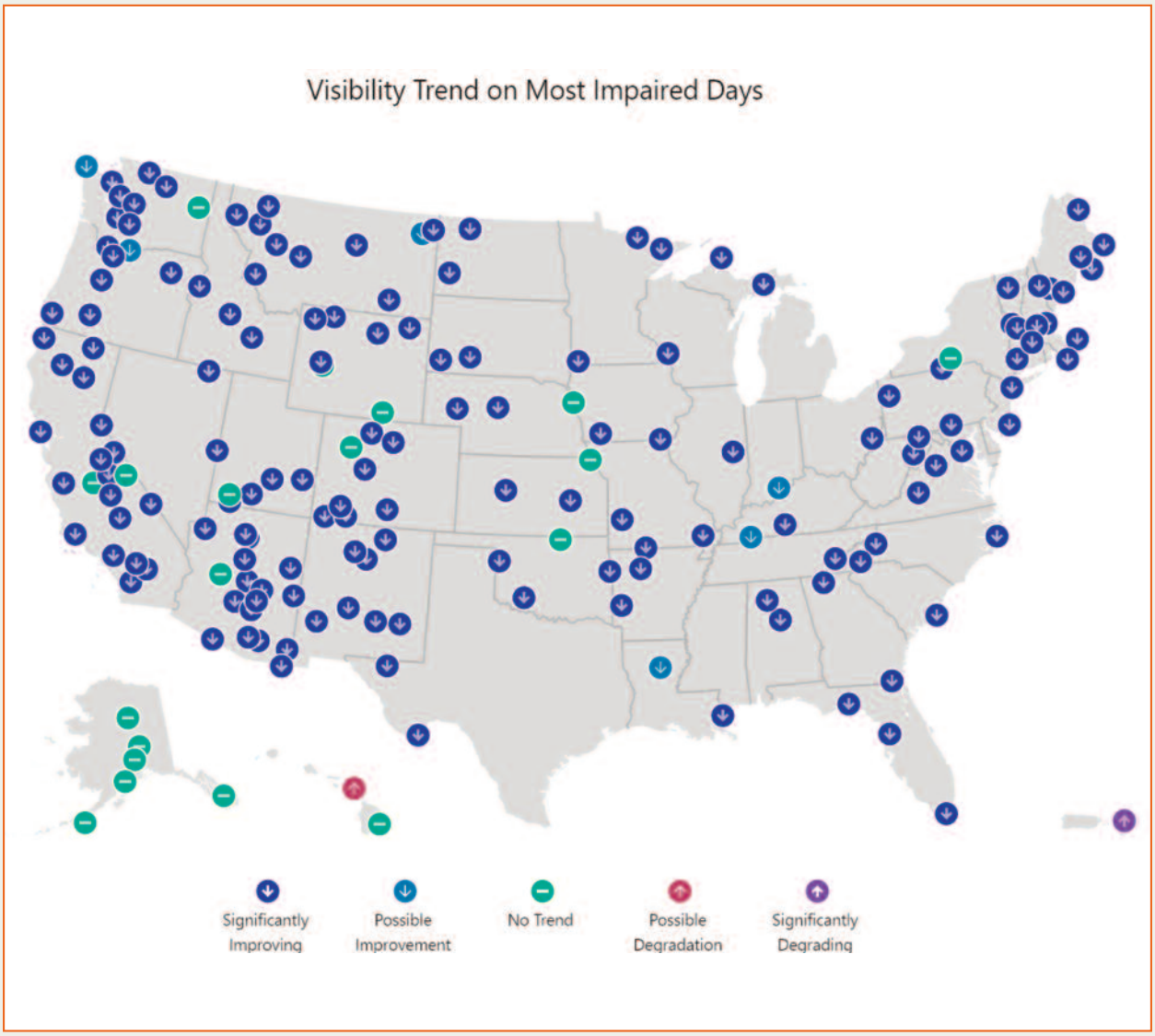
Several court decisions impacted regulatory certainty and state planning processes for the 1999 Regional Haze Rule, including the following related to BART (a key component of SIPs):

- In 2002, a ruling from the U.S. Court of Appeals for the D.C. Circuit vacated BART-related portions of the Regional Haze Rule;
- In June 2005, in response to the 2002 ruling, EPA finalized amendments to the Regional Haze Rule that would allow states to rely on the Clean Air Interstate Rule (CAIR)—released earlier that year—a "better than BART" alternative;[8]
- In 2008, CAIR, which created a cap-and-trade program for 28 states and Washington, D.C. requiring SO_2 and NO_x reductions, was ultimately remanded back to EPA without vacatur; and
- In May 2012, EPA finalized a rulemaking finding that the Cross-State Air Pollution Rule (CSAPR), designed to replace CAIR in 2011, could serve as an alternative to BART.

As part of EPA's May 2012 revisions to the Regional Haze

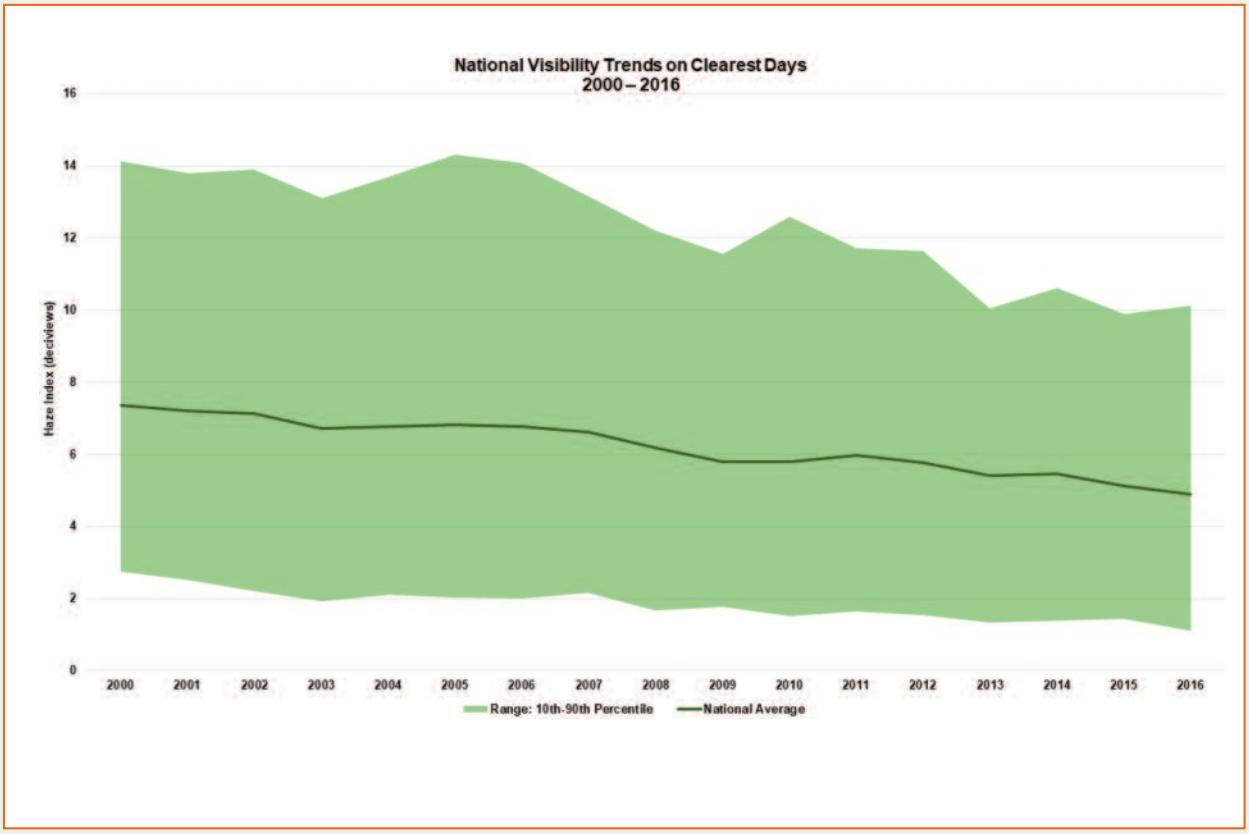
Visibility Progress

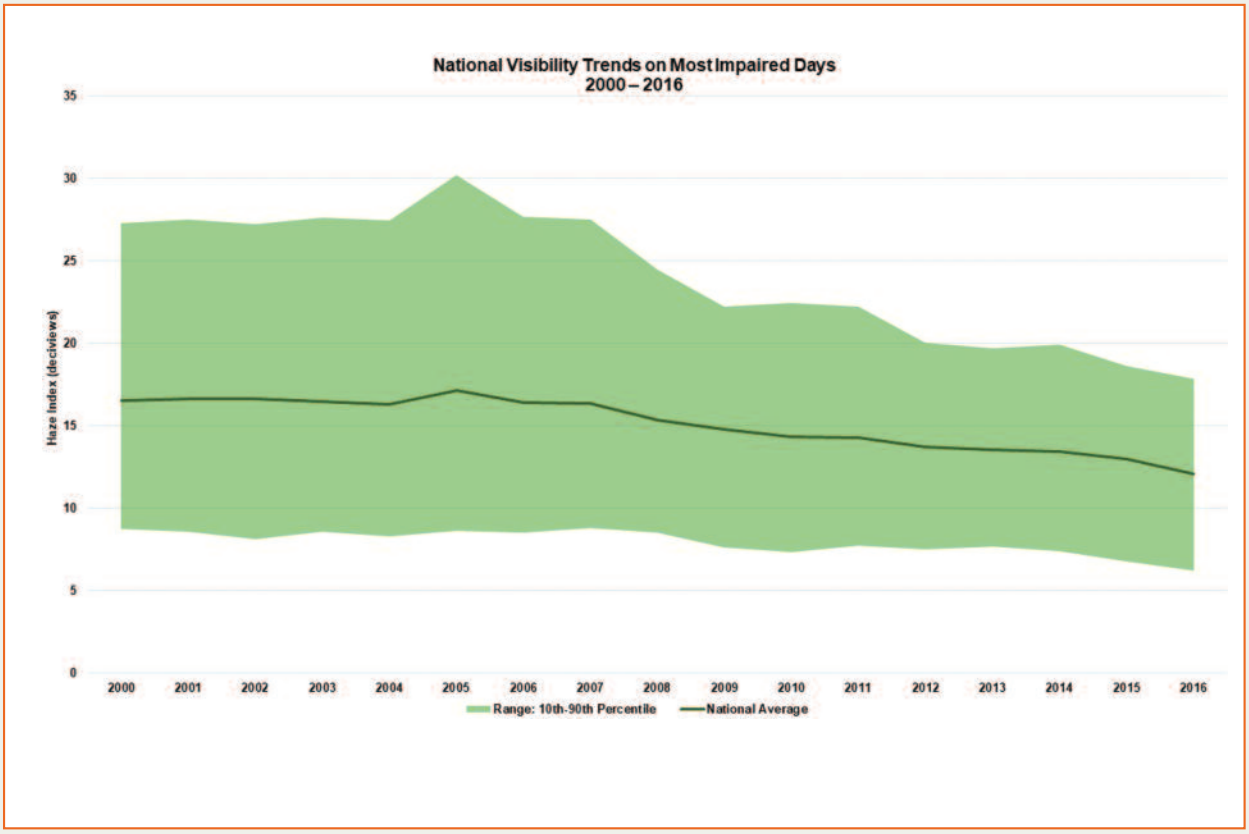
EPA's most recent air trends report, entitled *Our Nation's Air: Status and Trends Through 2018* (published July 17, 2019), includes the visibility trends from 2000 to 2017 for Class I areas on the clearest and most impaired days. Below are EPA's mapped visibility trends for the most impaired days from 2000 to 2017.



Note that EPA's map also includes visibility trends for sites that are not Class I areas and a number of areas mapped that show "Possible Improvement" or "No Trend" do not contain a complete monitoring dataset between 2000 and 2017.

Further, the 2019 edition of AAPCA's *State Air Trends & Successes: The StATS Report* (published April 2019) highlights that, from 2000 to 2016, overall visibility on the 20% clearest days (top graph) has been improved by 34%, while there has been a 27% improvement in visibility during the 20% most impaired days (bottom graph).





Rule finding that CSAPR was "better than BART," the agency also issued federal implementation plans (FIPs) for 12 states that had anticipated using CAIR as a method for meeting visibility goals in their SIPs. FIPs initiate a standard plan that supersedes individual state plans—in this case, EPA imposed CSAPR requirements in place of CAIR provisions accepted by these states. Partial disapprovals by EPA of several other state plan submittals over the course of the first planning period put into place regional haze FIPs for a number more states by 2016, when the agency proposed rule amendments for the second planning period (finalized in January 2017).

FIPs to SIPs

A stated primary goal of EPA under the current Administration has been to convert FIPs into SIPs, an effort aimed at providing states with flexibility and control over planning efforts within their jurisdictions. Working with citizens and regulated entities, state and local air agencies are able to coordinate overlapping regulatory timelines, as well as respond to local issues. Working with EPA headquarters and regional offices, several states have now replaced (or are on track to replace) federal with state plans for regional haze.

In March 2012, EPA partially approved and partially disapproved Arkansas' regional haze SIP. Arkansas was in the process of working with EPA Region 6 to resubmit the disapproved portions of its SIP when the agency issued a FIP in September 2016. While measurable progress had been achieved in the state's two Class I areas—Caney Creek and Upper Buffalo; Arkansas was realizing visibility improvements at a rate greater than its reasonable progress goals—the FIP required the installation of an estimated US$2 billion in additional control equipment. These costly changes to control requirements, if implemented, would have resulted in an imperceptible difference in visibility improvement. The FIP is currently being challenged in the 8th Circuit Court of Appeals, but major parts of it have been stayed and the case is being held in abeyance. During that time, Arkansas has engaged local stakeholders and EPA and submitted the final phase of the state's regional haze replacement SIP in August 2019.[9] The SIP employs a number of different strategies, including participating in CSAPR, installation of low-NO_x burners, and recognizing the remaining useful life of certain affected facilities, and is designed to continue to drive the visibility improvement trends in the state while minimizing utility ratepayer impacts.

Wyoming has seven Class I areas (including portions of Yellowstone National Park), nearly all of which show "significant improvement" in EPA's most recent air trends report.[10] In January 2014, EPA disapproved parts of Wyoming's regional haze SIP, promulgated a partial FIP, and established BART NO_x emission limits for multiple electric generating units. Litigation related to the federal plan continues. However, a settlement agreement reached in 2017 between EPA, the affected regulated entity, and Wyoming, established BART alternative requirements for that entity's electric utility generating units (EGUs). These alternatives were finalized by EPA in May 2019, along with the approval of the portion of Wyoming's SIP addressing SO_2 reporting requirements. In July 2019, Wyoming also opened a public comment period to take input on its reassessment of reasonable progress/long-term strategy measures applicable to another regulated entity.

Replacing FIPs with SIPs requires the utilization of significant state resources. Having state plans in place is a vital component as agencies look toward the development of regional haze SIPs for the second planning period. Rather than designing around an inflexible, federally implemented plan, states with regional haze SIPs will be able to build on concurrent air quality regulations and planning efforts, providing for an efficient process that reduces state burdens.

Planning for Continued Visibility Progress

In September 2018, then-Acting EPA Administrator Andrew Wheeler signed a memorandum providing a "Regional Haze Reform Roadmap" for the program.[11] The memorandum recognizes the "considerable visibility improvements in affected areas throughout the country due to states' efforts during the first planning period" and articulates the following principles for "timely and effective implementation of the regional haze program":

- Implementing the program with states in the lead, as it was designed by Congress to provide greater certainty

A stated primary goal of EPA under the current Administration has been to convert FIPs into SIPs, an effort aimed at providing states with flexibility and control over planning efforts within their jurisdictions.

to states, local governments, and tribes;
- Reducing state planning burdens and supporting states in complying with the CAA for future planning periods, and
- Leveraging emissions reductions achieved through other CAA programs that further improve visibility in protected areas.

As EPA revisits the 2017 amendments to the Regional Haze Rule and provides implementation and other guidance in line with these principles, additional foundational priorities can further assist state and local agencies in developing approvable SIPs for 2021 and future planning periods.

Foremost, engaging state and local agencies early can assist in avoiding some of the issues that characterized the first planning period, particularly in terms of SIP development. EPA engagement with planning agencies should seek to understand jurisdictional priorities and needs, as well as clearly communicate regulatory requirements for SIP approval. Relying on the on-the-ground expertise of state and local agencies will provide a strong framework for continuing to meet reasonable progress goals across Class I areas.

Alongside early engagement, state and local planning agencies rely on implementation tools and guidance from EPA. This includes an understanding of anticipated revisions to the regional haze program, and potential impacts to state planning requirements. Providing tools and implementation procedures in support of SIP development are key components that allow states to avoid the imposition of a federal plan.

Lastly, ensuring process consistency and flexibility is vital to continuing progress under the regional haze program and reducing state resource burdens. With multiple planning periods left through 2064 after the 2028 period, it is important that EPA establish a process that is consistent, fair, and based on lessons learned since 1999. EPA's adherence, for example, to the "Regional Haze Reform Roadmap" will help avoid negative impacts on state planning processes, as will the agency's flexibility in accommodating where states currently are in their SIP development.

Conclusion

As noted by then-Acting EPA Administrator Wheeler in the "Regional Haze Roadmap" memorandum, visibility improvements have been driven by planning processes at the state and local levels for regional haze and other CAA programs. The agency has taken multiple productive steps in support of SIP development, including committing to updated visibility modeling, the release in December 2018 of technical guidance on visibility tracking metrics and estimating international emissions impacts, and most recently, the issuance of final "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period" on August 20, 2019.[12] By committing to working in close coordination with state and local agencies, EPA can ensure continued progress under the regional haze program, and national parks and wilderness areas across the United States will continue to see visibility improvements through 2064. **em**

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AAPCA (https://www.cleanairact.org) is a national, nonprofit, consensus-driven organization focused on assisting state and local air quality agencies and personnel with implementation and technical issues associated with the U.S. Clean Air Act. AAPCA represents nearly 50 state and local air agencies, and senior officials from 22 state environmental agencies currently sit on the AAPCA Board of Directors. AAPCA is housed in Lexington, KY, as an affiliate of The Council of State Governments.

References

1. 42 U.S Code §7491(a)(1). Visibility protection for federal class I areas.
2. 42 U.S Code §7491(a). Visibility protection for federal class I areas.
3. Regional Haze Regulations; Final Rule; Federal Register, 64 (126), 35732 (July 1, 1999).
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5. A "deciview" is a unit of measurement on the "Haze Index," defined as: "a measure of visibility derived from calculated light extinction measurements that is designed so that uniform changes in the haze index correspond to uniform incremental changes in visual perception, across the entire range of conditions from pristine to highly impaired."
6. Air Quality – National Summary; U.S. Environmental Protection Agency. See https://www.epa.gov/air-trends/air-quality-national-summary (updated July 2018). Note: NOX and VOCs are precursors for ground-level ozone.
7. Amendments to the Regional Haze Regulations; Final Rule; Federal Register, 82, 3078-3129 (January 10, 2017).
8. Best Available Retrofit Technology (BART) determinations; Federal Register, 70, 39104- 39172 (July 6, 2005).
9. EPA approved initial revisions to Arkansas' SIP in January 2018, withdrawing portions of the FIP. More information: https://www.epa.gov/newsreleases/epa-approves-revisions-arkansas-regional-haze-plan.
10. Our Nation's Air: Status and Trends Through 2018; Section: "Visibility Improves in Scenic Areas"; U.S. Environmental Protection Agency (July 17, 2019). See https://gispub.epa.gov/air/trendsreport/2019/#home.
11. Regional Haze Reform Roadmap. Memorandum from Andrew R. Wheeler, Acting EPA Administrator, to EPA Assistant Administrators for Air and Radiation and General Counsel and EPA Regions, September 11, 2018. See: https://www.epa.gov/sites/production/files/2018-09/documents/regional_haze_reform_roadmap_memo_09-11-2018.pdf.
12. See EPA regional haze presentations at AAPCA's 2019 Fall Business Meeting: https://cleanairact.org/events/2019FallMeetingPresentations.aspx.