

Arizona Regional Haze Stakeholders' Workgroup SIP Recommendations

SUMMARY:

The Arizona Department of Environmental Quality must submit a State Implementation Plan for regional haze visibility impairment in the National Parks and Wilderness Areas. Arizona stakeholders reviewed the SIP development options, and came to a consensus recommendation that ADEQ should develop the plan under Section 309 of the regional haze rule, which is based on the work of the Grand Canyon Visibility Transport Commission, utilizing a stakeholder based process to address all 12 Arizona National Parks and Wilderness Areas by December 31, 2003. As a result of this recommendation, stakeholders will be initiating and supporting legislation to grant the Department the authority necessary to submit a Section 309 implementation plan. The following describes the background, process, options, findings, and the consensus recommendations of the Arizona Regional Haze Stakeholders' Workgroup.

BACKGROUND:

Good visibility is an important element of the quality of life enjoyed by citizens of Arizona. The national parks and wilderness areas in Arizona and surrounding states require clean, clear air for visitors to appreciate their values. Protecting and enhancing visibility in these areas fulfills a legal mandate, promotes their economic value, and protects their inspirational value.

Fine particles and some gases interfere with light as it passes through the air causing visibility impairment. These particles and gases arise from both man-made sources of air pollution, and from natural sources such as wild fires. Visibility impairment from man-made sources manifests itself in two forms: reasonably attributable visibility impairment, and regional haze visibility impairment. Reasonably attributable visibility impairment is associated with "plume blight" or layered haze caused by pollution from a particular industrial source or small group of sources, like emissions from a stack. Regional haze visibility impairment is the more uniform haze caused by pollution from a large number and variety of sources over wide areas, including urban areas, roads and traffic, industrial sources, and fires. Regulations address both types of visibility impairment. Regional haze is the focus of this document.

The Clean Air Act (CAA) Amendments of 1977 added requirements to protect visibility in 156 national parks and wilderness areas, designated as mandatory Federal class I areas (or “Class I areas”) (see CAA Section 169A). Most Class I areas are located in the western United States, with 12 in Arizona (see Figure 1). Congress established a national goal to remedy any existing and prevent any future man-made visibility impairment in these Class I areas. Additionally, requirements and criteria used by states and tribes to develop implementation plans for reasonable progress toward the national goal were established, including provisions to address visibility impairment from larger industrial sources built between 1962 and 1977 through the application of Best Available Retrofit Technology (BART). In response to the 1977 CAA Amendments, EPA in the early 1980’s established regulations for reasonably attributable visibility impairment.

The CAA Amendments of 1990 established a program to address regional haze visibility impairment through multi-state visibility transport commissions (CAA Section 169B), and specifically required the establishment of such a commission for the Grand Canyon National Park. In 1991, EPA established the Grand Canyon Visibility Transport Commission (GCVTC), made up of governors, tribal leaders, and federal land managers, to examine the regional haze issue for 16 Class I areas on the Colorado Plateau, including four in northern Arizona (Grand Canyon National Park, Petrified Forest National Park, Sycamore Canyon Wilderness, and Mt. Baldy Wilderness). The transport region included nine states in the west. The GCVTC study, which took over four years to complete, used stakeholder processes for development of technical and policy studies and its final report and recommendations. Arizona’s Governor chaired the GCVTC, and numerous Arizona regulators and stakeholders served on its committees. In 1996, the GCVTC issued recommendations to EPA addressing regional haze visibility impairment for the 16 GCVTC Class I areas.

The GCVTC called for establishment of a successor organization to continue the work of preparing plans, strategies, and studies to assist the states and tribes in implementing GCVTC recommendations. The Western Regional Air Partnership (WRAP), established in 1997, performs this function and provides the states and tribes with consensus driven stakeholder based technical and policy work products for State Implementation Plan (SIP) and Tribal Implementation Plan (TIP) development. Arizona regulators and stakeholders are actively engaged in, and provide leadership to, the WRAP.

In 1999, EPA issued regulations requiring states to develop and submit SIPs to address regional haze visibility impairment. Tribes that have air quality programs under the Tribal Authority Rule may also elect to submit TIPs for regional haze. The regulations establish a base long term national program for all states and participating tribes to develop implementation plans designed to achieve or make reasonable progress toward achieving natural conditions by 2064 (40 CFR 51.308 or “308” or “308 SIP”). The regulations also establish an alternative program for the first SIP/TIP due in 2003 and expiring in 2018, applicable only to GCVTC transport region states and tribes, that rely on GCVTC assessments and recommendations (40 CFR 51.309 or “309” or “309 SIP”). Beginning in 2018, all regional haze SIPs and TIPs must be updated every 10 years and be submitted under the 308 program.

Arizona can develop its initial regional haze SIP under 308 or 309. Both 308 and 309 provide for two alternative approaches. Thus, Arizona has four possible options for SIP development. Requirements that differ between the options are primarily the SIP due dates, long-term strategy content, and reasonable progress demonstrations. Arizona must choose a course of action to take in developing the SIP for regional haze.

PROCESS:

In the summer of 2001, the Arizona Department of Environmental Quality (ADEQ) established a broad based stakeholder process to provide input to the Director regarding which course of action the state should take. ADEQ retained the services of a regional haze rule expert and a process facilitator to assist the stakeholders in understanding the options and arriving at a consensus recommendation. Many stakeholders participated in the GCVTC or WRAP and were familiar with the issue. On the other hand, many had never heard of regional haze. ADEQ sponsored seven stakeholder meetings and a technical/policy workshop to assist the stakeholders in developing an understanding of the options and how they might be affected.

The process was open to all potentially interested or affected stakeholders. Meeting notices were distributed to more than 200 stakeholders and regulators. ADEQ established a web site to ensure that all meeting notices, agendas, meeting materials and minutes, were available to all invited stakeholders and other interested parties. Any stakeholder or interested party could provide input into the process by attending a meeting, sending an email or fax, leaving a voice message, or direct phone consultation. Many organizations actively participated in this stakeholder process by attending one or more meetings or the workshop (see Attachment 1).

OPTIONS:

Stakeholders considered four options for developing regional haze SIP. The types of SIP and timing options reviewed were:

- A. 308 SIP in 2005, without committing to a regional partnership;
- B. 308 SIP in 2007, committing to a regional partnership (WRAP);
- C. 309 SIP by December 31, 2003, addressing only the GCVTC Class I areas, and addressing the other Class I areas in 2008; and,
- D. 309 SIP by December 31, 2003, addressing both GCVTC and the other Class I areas.

A comparison of the requirements of these options was developed and used to facilitate dialog and understanding of the differences (see Table 1). Stakeholders also received a comparison of the content requirement of the long-term strategy for many of the stakeholder source categories (see Table 2). The key differences between the options include:

1. Timing of SIP Submittal

- a. A 308 SIP addressing the 12 Arizona Class I areas will be required in 2005. If Arizona declares itself in a regional planning organization; it may defer submittal of the SIP until 2007 but must include the regional partnership's regional strategies in the long-term strategy for the SIP.
- b. A 309 SIP must be submitted by December 31, 2003, addressing the four Arizona GCVTC Class I areas. The SIP can address reasonable progress for the eight other Class I areas at that time or must be supplemented no later than 2008.

2. Demonstration of Reasonable Progress

- a. A 308 SIP requires a formal demonstration that the long-term strategy represents reasonable progress for all 12 Arizona Class I areas.
- b. A 309 SIP does not require a demonstration for the four Arizona GCVTC Class I areas since the EPA Administrator found that SIPs/TIPs conforming to the 309 requirements would make reasonable progress based on the work of the GCVTC. The GCVTC long-term strategy is then supplemented as necessary for the eight other Class I areas to demonstrate reasonable progress similar to a 308 SIP.

3. Long-term Strategy Content

- a. A 308 SIP requires the examination of control options and costs for all man-made sources of visibility impairment in development of the long-term strategy. If the rate of progress of visibility improvement is less than that necessary to achieve natural conditions by 2064, the state must demonstrate that excluded control options were "not reasonable."
- b. A 309 SIP must contain GCVTC recommended programs for stationary sources, mobile sources, prescribed burning, pollution prevention, clean air corridors, dust from roads, and other recommended measures. Under 309, the long-term strategy development process suggests examining the effects of the GCVTC long-term strategy on the eight other Class I areas and augmenting it as needed to demonstrate reasonable progress.

FINDINGS:

After reviewing the four regulatory options for developing the Arizona State Implementation Plan for Regional Haze, the Regional Haze Stakeholders reached the following findings:

Need for A Stakeholder Process for SIP Development

Because the content of the future SIP under any regulatory option is presently unknown, its potential impacts on stakeholders are also unknown. Therefore, it is essential that a stakeholder process be used to develop the SIP.

The WRAP is investing heavily in development of technical and policy work products useful for SIP development using a consensus driven stakeholder process and peer review. ADEQ should use these work products when possible to reduce resource requirements and expedite completion of the SIP. Continued active participation by both ADEQ and Arizona stakeholders in the WRAP technical and policy work product development will increase the probability that the work products will be aligned with the needs of the Arizona SIP development process.

Significant Time and Effort Will Be Needed To Develop the SIP

The options that provide for a later SIP submittal will reduce the workload and resource needs in the near term, but will increase the overall work needed to complete the SIP. A 308 SIP (options A and B) provides for additional time, but requires a more extensive process to demonstrate reasonable progress than an initial 309 SIP under option C. However, under option C the supplemental SIP demonstrating reasonable progress for the eight other Class I areas due in 2008 would require establishing a second completely new SIP development process after the 2003 SIP is submitted.

Therefore, in terms of overall effort and time, establishing a single stakeholder process to address both the required 309 SIP due December 31, 2003, for the GCVTC Class I areas and the supplemental reasonable progress demonstration for the eight other Class I areas would require the least overall resources. The SIP development process could be structured to assure completion of the initial 309 SIP for the GCVTC Class I areas by December 31, 2003, and completion of the supplemental SIP for the eight other Class I areas by the same date or as soon as the necessary information for the reasonable progress demonstration is available.

Because any SIP development option will require significant ADEQ and stakeholder resources, a well managed work plan for the SIP development process is essential to coordinate ADEQ's efforts with WRAP's schedule. This coordination will help ensure that SIP submittal deadlines are met.

Reasonable Progress Demonstration Requirements

The requirements established for the 309 options (C and D) for the 16 GCVTC Class I areas were based on work of the GCVTC. In establishing 309, the USEPA Administrator made a determination that the measures called for in 309 will make reasonable progress for those Class I areas, and thus, they do not require a formal demonstration of reasonable progress as in 308. In addition, when addressing other Class I areas under 309, the long-term strategy for the 16 GCVTC Class I areas is used as a starting point for long-term strategy development for the eight other Class I areas.

On-road Tier II Mobile Source Standards for 308 or 309

The mobile source program under 309 was based on the GCVTC projections that mobile source emissions would decline through 2005 and then begin to increase. The GCVTC recommended that EPA establish more stringent emission standards. EPA subsequently established more stringent engine and fuel standards, referred to as Tier II. With the adoption of the Tier II standards, on-road mobile source emissions are now expected to steadily decline through 2018. This decline will likely represent reasonable progress for this source category, regardless of the SIP option selected.

Stationary Source Sulfur Dioxide 309 Emission Reduction Program Flexibility

There is apparent flexibility for stationary sources under either of the 309 options compared to the 308 options due to the reliance on the voluntary emission reduction milestones coupled with a backstop market trading program. The stationary sources affected by the SO₂ milestone/backstop market trading program will face less regulatory uncertainty if the other Class I areas are addressed in the initial 2003 SIP (Option D). The viability of the backstop market trading program for stationary sources of sulfur dioxide is dependent on sufficient states and tribes committing to the 309 program (an issue under review by the WRAP). Thus, until other GCVTC states make a decision about whether to develop plans under 308 or 309, there will be uncertainty about the viability of the backstop market trading program.

Increased Flexibility Under 309 Requires Increased Monitoring

Some components under 309 rely on emission reductions expected to occur without additional control measures coupled with backstop contingency measures to assure the emission reductions occur. As a result, monitoring and tracking requirements for emissions under the 309 options (C and D) are more prescriptive and detailed for key source sectors (stationary sources, mobile sources, and prescribed and wild fire) than under the 308 options. However, since the exact requirements that might be contained in a 308 SIP are unknown, it is impossible to say with certainty if 309 would have a larger administrative burden on the regulated community and regulatory agencies than 308.

Control Measures Used in Non-Attainment Areas are Considered in Long-Term Strategy

Substantial efforts are being made in Maricopa, Pima, and other counties to bring air quality into compliance with national health standards. The long-term strategy under any option must consider the improvements in visibility that will result from these programs. If supplemental programs are needed in attainment areas where emissions from sources in and near a Class I area might be an issue, the long-term strategy may be augmented utilizing proven cost-effective measures to mitigate the impact of those emissions.

Equity Issues Related to Emissions Data And Emissions from Mexico

ADEQ must use a consistent and equitable method for estimating emissions from the wide variety of sources that must be examined, projecting the impact of those emissions on visibility, and assessing control options during the reasonable progress determination and demonstration processes.

The visibility impacts resulting from emissions from Mexico may increase in importance as emissions in Arizona decline. An equitable method of recognizing this issue in the reasonable progress development process is important.

Given that a few Class I areas may experience disproportionate impacts from urban emissions or cross-border emissions, the SIP for other Class I areas will need to closely examine the relevant emission inventories and impacts from near-field sources.

Legislation is Needed To Proceed With A 309 SIP

If ADEQ is to adopt a SIP meeting the requirements of section 309 by the December 31, 2003, deadline, the Arizona Legislature will need to amend state law during the 2002 Regular Session to ensure ADEQ has adequate statutory authority to:

1. Implement a market trading program for stationary sources of sulfur dioxide, if GCVTC and WRAP projections for reductions in sulfur dioxide emissions are not realized;
2. Establish mobile source emissions budgets covering attainment areas if necessary to comply with the regional haze rule; and,
3. Establish annual goals for emissions from fires to comply with the regional haze rule.

RECOMMENDATIONS:

Based on the review and deliberation of the ADEQ Regional Haze Stakeholders involved in this process and the findings described above, the stakeholders recommend the following course of action:

Action and Timing

The Arizona regional haze SIP should be developed under 40 CFR 51.309. ADEQ should develop and submit a complete SIP addressing all Class I areas before December 31, 2003. If time or resources prevent addressing all of the Class I areas by that time, submittal of the SIP for the four GCVTC Class I areas by this date is essential.

Process

ADEQ should utilize a stakeholder process when developing the SIP to ensure that the uncertainties and concerns in the stakeholder community are addressed. A continuous stakeholder process addressing all Class I areas should be planned and supported to assure a SIP demonstrating reasonable progress at all Class I areas is completed as expeditiously as possible.

Planning and Management

ADEQ should generate a master plan for SIP development considering WRAP work products, capabilities and schedules, while recognizing the resource limitations of the stakeholders and ADEQ.

Commitment

The ADEQ Director should seek gubernatorial support for stakeholder-initiated legislation consistent with the Findings and Recommendations of this Report to enable ADEQ to submit a SIP under 40 CFR 51.309.