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OFFICE OF AIR AND RADIATION  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
BEFORE THE  
SUBCOMMITTEE ON  
FORESTS AND PUBLIC LAND MANAGEMENT  
OF THE  
COMMITTEE ON ENERGY AND NATURAL RESOURCES  
UNITED STATES SENATE**

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Mr. Chairman, Members of the Subcommittee, thank you for inviting me to discuss the Environmental Protection Agency's (EPA's) proposed regional haze rule, its relationship to the particulate matter national ambient air quality standards, and to address concerns raised by this Subcommittee.

In July of this year, EPA set new standards for ozone and particulate matter that will be a major step forward in public health and welfare protection. These updated standards have the potential to prevent as many as 15,000 premature deaths each year, and up to hundreds of thousands of cases of significantly decreased lung function in children and cases of aggravated asthma. In the review of the standards, EPA concluded that the most appropriate way to address the visibility impairment associated with particulate matter would be to establish a regional haze program in conjunction with setting secondary PM standards equivalent to the suite of primary standards. EPA proposed new regulations addressing regional haze in July of this year as well.

Mr. Chairman, as you know, virtually all of our national parks and wilderness areas are subject to some degree of regional haze visibility impairment. This fact has been well documented by monitoring conducted by the National Park Service, EPA, the

United States Forest Service, and other agencies since 1978. Haze obscures the clarity, color, texture, and form of what we see, and it is caused by natural and anthropogenic pollutants that are emitted to the atmosphere through a number of activities, such as electric power generation, various industrial and manufacturing processes, car and truck emissions, burning activities, and so on. These emissions often are transported long distances to the Class I areas identified for protection under the Clean Air Act.

We also know that the causes and severity of regional haze vary greatly between the East and the West. Average visual range in most of the Western U.S. is 60 to 90 miles, or about one-half to two-thirds of the visual range that would exist without manmade air pollution. In most of the East, the average visual range is less than 18 miles, or about one-fifth of the visual range that would exist under natural conditions. One of the major challenges associated with this problem is that these conditions are often caused not by one single source or group of sources near each park or wilderness area, but by mixing of emissions from a wide variety of sources over a broad region.

### **Background**

The Clean Air Act established special goals for visibility in 156 national parks, wilderness areas, and international parks. Section 169A, established in the 1977 Amendments, sets a national goal for visibility which is 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.” This section also calls for regulations to assure “reasonable progress” toward meeting the national goal. EPA

issued regulations in 1980 to address visibility impairment that is “reasonably attributable” to a single source or group of sources. These rules were designed to be the first phase in EPA’s overall program to protect visibility. At that time, EPA deferred action addressing regional haze impairment until improved monitoring techniques could provide more source-specific information, models were improved, and knowledge about the pollutants causing impairment were improved.

As part of the 1990 Amendments, Congress added section 169B to focus on regional haze issues. Under this section, EPA was required to establish a visibility transport commission for the region affecting the visibility of the Grand Canyon National Park. EPA established the Grand Canyon Visibility Transport Commission in 1991 to examine regional haze impairment for all mandatory Class I Federal areas on the Colorado Plateau, located near the Four Corners area of New Mexico, Colorado, Utah and Arizona. After several years of technical assessment and policy development, the Commission’s final report was completed in June 1996. The Commission’s recommendations covered a wide range of control strategy approaches, planning and tracking activities, and technical findings which address protection of visibility in the Class I areas in the vicinity of the Grand Canyon National Park.

Under the 1990 Amendments, Congress required EPA to take regulatory action within 18 months of receiving the Commission’s recommendations. EPA proposed the regional haze rules in July of this year, in conjunction with the final national ambient air quality standards for particulate matter. In developing the proposed regulations, EPA took into account the findings of the Grand Canyon Visibility Transport Commission, as

well as findings from a National Academy of Sciences Report, and information developed by the EPA Clean Air Act Advisory Committee.

The National Academy of Sciences formed a Committee on Haze in National Parks and Wilderness Areas in 1990 to address a number of regional haze-related issues, including methods for determining anthropogenic source contributions to haze and methods for considering alternative source control measures. Issued in 1993, the National Academy of Sciences report titled, "Protecting Visibility in National Parks and Wilderness Areas," discussed the science of regional haze. Among other things, the Committee concluded that "current scientific knowledge was adequate and available control technologies exist to justify regulatory action to improve and protect visibility." The Committee also concluded that progress toward the national goal will require regional programs operating over large geographic areas, and that strategies should be adopted that consider many sources simultaneously on a regional basis.

In developing the proposed regional haze rule, EPA also took into consideration recommendations and discussions related to regional haze from our Clean Air Act Federal Advisory Committee and its Subcommittee on Ozone, Particulate Matter, and Regional Haze Implementation Programs. The Subcommittee includes wide representation from States, local and Tribal governments, industry, environmental groups and academia. This Subcommittee has been meeting regularly over the past 2 years to consider a variety of implementation issues associated with the recently revised national ambient air quality standards and the proposed regional haze rule. It has also focused discussions on how best to develop more cost-effective, flexible strategies for implementing these requirements.

## **The New Regional Haze Proposal**

EPA's proposed regional haze rule is designed to put into place a national regulatory program that would address regional haze visibility impairment in the nation's most treasured national parks and wilderness areas. In this rule, EPA is proposing to improve visibility, or visual air quality, in 156 important natural areas across the country. These areas include many of our best known national parks and wilderness areas, such as Grand Canyon, Yosemite, Yellowstone, Crater Lake, Mount Rainier, Bryce Canyon, Rocky Mountains, Petrified Forest, the Sawtooth Wilderness, Shenandoah, the Great Smokey Mountains, Acadia, Mammoth Cave, the Boundary Waters, and the Everglades. More than 60 million visitors experience the spectacular beauty of these areas annually. As a consequence of the improvements envisioned in these areas under the proposed regional haze regulations, and in conjunction with implementation of other Clean Air Act programs, visibility is expected to improve well beyond these areas, across broader regions of the United States.

Because emissions from sources such as power plants, industrial sources and motor vehicles generally span broad geographic areas and can be transported hundreds of miles, creating haze across large regions of the country. Therefore, the proposed regional haze regulations would apply to all States throughout the country. It would include States which do not have Class I parks or wilderness areas because emissions from these States are anticipated to cause or contribute to impairment in downwind Class I areas in other States.

The regional haze proposal establishes "presumptive reasonable progress targets" for improving visibility in each Class I area. These targets would be designed

to improve visibility on the worst days, and to prevent degradation of visibility on the best days. EPA is proposing to express the progress targets in terms of “deciviews,” a measure for describing incremental changes in perceived visibility over a range of conditions, from very clean to highly impaired. For example, over several years, visibility impairment on the worst days ranges from 27 to 34 deciviews in eastern locations and 13 to 25 in western locations. A change of one deciview is considered perceptible by the average person and a deciview of zero represents pristine conditions. Calculation of visibility changes would be based on air quality data for fine particles and key aerosol components such as sulfates, nitrates, and organics which are measured by a Federal Interagency visibility monitoring network.

EPA’s proposed “reasonable progress target” has two elements: (1) for the 20% of the days having the worst visibility, the target is a rate of improvement equal to 1.0 deciview over either a 10-year or 15-year period [we are taking comments on each option]; and (2) for the 20% of the days having the best visibility, the target is no degradation. In a place like the Shenandoah National Park, for example, where ambient fine particle levels for the worst days average 20 micrograms per cubic meter, a reduction of up to 2 micrograms per cubic meter would be needed to achieve a 1 deciview improvement. In the Grand Canyon, where ambient fine particle levels for the worst days average about 5 micrograms per cubic meter, a 1 deciview improvement would be the same as a reduction of up to one-half a microgram.

Under EPA’s proposed rule, States also would have the flexibility of proposing alternate progress targets for approval as well. This provision is an important element of flexibility in EPA’s proposal. An alternate target can be proposed for a Class I area if

the State can demonstrate that achieving the presumptive targets would not be reasonable, for reasons such as the lack of suitable technology or costs of compliance. The proposal suggests that States consult with other contributing States, the Federal land manager, and EPA in developing alternate targets.

Consistent with the Clean Air Act, EPA's proposal would require States to revise their implementation plans for visibility protection within 12 months after EPA issues the final regional haze rule. Initial implementation activities under EPA's proposed regional haze rule would require State plans that provide for later adoption of any specific emission management strategies that may be necessary to meet the progress targets. Thus, the initial State plans would not be required to include emission reduction strategies, but would provide for their future adoption. Initially, States would address a number of planning activities for implementing their regional haze program, and establish a process for periodic State plan revisions beginning in 2003 (or in 2005 for areas not attaining the new fine particle standard). We are also proposing that either every three or five years thereafter (EPA is taking comment on the frequency), States review progress in each Class I area in relation to the relevant progress targets. States would also be expected to include a plan for expanding the current visibility monitoring network so that it is "representative" of all 156 Class I areas. This network expansion would occur in conjunction with the development of the new monitoring network for the national air quality standard for fine particulates. EPA is evaluating ways to efficiently use resources such that existing and new visibility monitoring sites can also provide information about transport of fine particulate pollution as it relates to the newly revised

national air quality standards. The new visibility monitor sites should be deployed within one year of the States submitting their initial plans to EPA.

Also as part of this initial State plan submittal, States would need to address important technical activities to pursue on a regional basis, such as improvements in particulate matter emission inventories and modeling capabilities, as well as plans for assessing sources potentially subject to Best Available Retrofit Technology (or BART). Sources potentially subject to BART are stationary sources from one of 26 groups of industrial sources or “source categories” which began operation between 1962 and 1977, and which have the potential to individually emit 250 tons per year or more of any pollutant that impairs visibility. The 26 source categories include such sources as electric utilities, smelters, petroleum refineries, and pulp and paper mills. Several factors would be taken into consideration in determining BART, including the availability of control technologies, the costs of compliance, the energy and non-air environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result.

State plans would be required to provide for adoption of emission management strategies in 2003 (or later in some cases) to meet the reasonable progress targets. These submittals would include measures to reduce emissions from sources located within the State, including provisions addressing the BART requirement. I would like to make two important points about the emissions reduction strategy. First, it can take into account air quality improvements due to implementation of other programs, such as the acid rain program, mobile source programs, or the national ambient air quality



standards. And second, the emission reduction strategy can include a mix of strategies addressing emissions from stationary, mobile, and smaller, so-called “area” sources. EPA’s proposed rule does not focus on stationary sources only, as some have claimed. The proposed planning framework provides States with flexibility in designing their overall program for improving visibility.

### **Process for Developing the Final Regional Haze Rule**

EPA Administrator Browner signed the proposed haze rule on July 18, 1997. At that time, we made the proposed rule, as well as other related materials, available to the public on the Internet and through other means. It was published in the Federal Register on July 31. EPA held a public hearing that I personally chaired in Denver, Colorado, on September 18. In response to requests by the public, we extended the public comment period by about 6 weeks, to December 5, 1997. We have held other sessions around the country to discuss the regional haze proposal, including a national satellite broadcast for all State and local air pollution agencies during which we discussed the proposal and answered questions from the viewers. I also participated in the first official meeting of the Western Regional Air Partnership, a follow-up organization to the Grand Canyon Visibility Transport Commission that is co-chaired by Governor Shutiva of the Pueblo of Acoma and Governor Leavitt of Utah. This is a voluntary organization, established by several States and Tribes, which EPA will be working with to address western visibility issues. Following the close of the comment period and our careful review of the comments, we intend to finalize a regional haze rule in Spring 1998.

## **Specific Questions Raised by the Senate Energy and Natural Resources Committee**

In your letter inviting me to testify today, the Committee identified two areas of particular interest regarding the proposed regional haze rule. One issue relates to Federal land managers, the potential impacts of the rule on them, and their additional responsibilities associated with implementing the rule. The other issue is the question of whether the proposal creates a framework for accepting the work of the Grand Canyon Visibility Transport Commission.

## **Role of the Federal Land Managers in Implementation of the Regional Haze Rule**

EPA considers the Federal land managers as partners in the protection of air quality in our country's treasured natural areas. We recognize that Federal land managers have a dual role under the proposed regional haze regulations. First, they hold an important consultative position during the planning process to ensure that State and Tribal strategies fully support the mandate to preserve these important natural resources. Second, as agencies who carry out activities on Federal lands which may affect air quality, Federal land managers are responsible for ensuring that any such activities are consistent with the Clean Air Act requirements to protect visibility.

Under the current visibility protection regulations that have been in effect since 1980, the Federal land managers have established an excellent track record in serving this dual role. They have worked cooperatively with our agency and the States in quickly and efficiently reviewing hundreds of new source permits. They have consulted in the development of many State plans on visibility protection. They have also worked cooperatively to implement measures on Federal lands, such as smoke

management plans, to address the visibility impacts of wildland and prescribed fires.

We expect continued success through such cooperation in the future.

Our proposed regional haze rule also encourages States to use a consultative process with Federal land managers during State plan development in order to address technical issues such as determination of current and natural visibility conditions.

Federal land managers have conducted extensive research on air quality for their areas, which we believe will be key to the States' development of effective visibility protection strategies.

Federal land managers have identified the need to improve the health of our forests and to reduce the risks of wildfire. One of the ways to meet these objectives involves increased levels of prescribed burning on wildlands. EPA has long recognized that smoke from such fires can have a significant impact on visibility. In fact, EPA's 1980 visibility regulations require States to consider smoke management techniques for agricultural and forestry management purposes in developing their long-term strategies for visibility protection. The proposed regional haze program maintains this requirement.

We are working in partnership with the States and land management agencies in the Departments of Agriculture, Defense, and the Interior to develop a national policy that allows sound management of wildland ecosystems, including increased use of fire, while also achieving clean air goals. This policy will address the increased use of fire in the context of implementing new air quality standards for ozone and particulate matter, as well as the regional haze program. The work group is developing criteria for Federal land managers and State and Tribal air pollution agencies to use in managing

the impacts of prescribed fires. A variety of techniques can be followed to help reduce effects on visibility and public health such as mechanical removal of biomass for utilization off site, and scheduling burns during favorable weather conditions with winds blowing away from sensitive areas. EPA anticipates issuing the Wildland Fire/Air Quality Policy in 1998.

### **Framework for Addressing the Work of the Grand Canyon Visibility Transport Commission**

Regarding the second issue raised in the Committee's letter, the Grand Canyon Visibility Transport Commission was charged with the responsibility for assessing all currently available information about the adverse effects on visibility from potential or projected growth in emissions from sources within the Colorado Plateau, and for recommending what measures, if any, should be taken under the Clean Air Act to remedy such effects. At a minimum, the Commission's recommendations were to address whether clean air corridors are needed, in which more stringent requirements for new sources or modifications to existing sources would apply, and to provide guidance to EPA on development of visibility regulations to address regional haze. Under the Grand Canyon Visibility Transport Commission, a region of the country for the first time examined the difficult technical and policy issues associated with regional haze air pollution.

EPA has commended the Commission for its ground-breaking work. When it presented its report to EPA in June 1996, the Commission's recommendations identified a set of strategies that nearly all of the participating States agreed are needed to improve visibility throughout the Colorado Plateau. The primary

recommendations were the following: (1) air pollution prevention and reduction of per capita pollution is a high priority; (2) emissions growth should be tracked for its effect on clean air corridors; (3) stationary source emissions should be closely monitored and regional targets should be established for sulfur dioxide emissions in 2000, with triggers for regulatory programs if targets are not met; (4) focus should be given to emissions reductions in and near Class I areas; (5) mobile source emissions should be capped at the lowest level achieved and national measures for further reducing tailpipe emissions should be developed; (6) further assessment of the contribution of road dust to visibility impairment and its potential future impacts should be given high priority; (7) further study is needed on emissions from Mexico; (8) fire emissions are recognized as significantly affecting visibility and programs should be implemented to minimize effects on visibility; and (9) a future regional coordinating entity is needed to follow through on the Commission's recommendations.

We agree that implementing the Commission's strategies and following through on policy and technical assessments are key to improving visibility on the Colorado Plateau. The Commission's recommendations contemplate implementation of the potential strategies through a combination of actions by EPA, other Federal agencies, States and Tribes in the region, as well as voluntary measures by public and private entities. In their recommendations, the Commission stated that Federal measures such as national mobile source emissions control initiatives, as well as State, Tribal and local measures such as setting goals for and tracking emissions from stationary sources, increasing energy conservation and energy efficiency, and enhancing related public education and outreach would be needed to make progress for visibility. EPA

has committed to working with the follow-on body to the Grand Canyon Visibility Transport Commission to help States and Tribes follow through on these recommendations. We specifically designed the regional haze rule to allow for implementation of the Commission's recommendations to address the environmental goal of improving visibility.

The Clean Air Act establishes two central duties for EPA in addressing the Commission's recommendations. First, EPA must issue regulations that, taking into account the Commission's report, assure reasonable progress toward the national visibility protection goal. Second, EPA's regulations must require State plan revisions to implement the federal regulations. EPA's proposal is intended to carry out its duties in this process in a reasonable and responsible manner. To this end, our regional haze proposal embodies flexibility and accountability. First, EPA proposed a presumptive "reasonable progress" target for the specially-protected national parks and wilderness areas. EPA adapted the Commission's environmental focus of "reasonable progress" into its proposed rule by designing targets to improve visibility on the worst days and prevent degradation of visibility on the best days. At the same time, EPA's proposed rule would allow States to submit alternative targets for Class I areas. Through this process, EPA provides States discretion in designing emission reduction strategies to achieve the presumptive or alternative targets. This is an important point that needs reiterating: EPA's proposal is not intended to foreclose States from considering a broad array of control measures and, as noted, allows States to take "credit" for relevant emission reductions adopted under other Clean Air Act programs. Rather, the

proposal is intended to ensure that the measures will be addressed in an accountable manner in the State plan and will realize reasonable visibility progress.

Federal review of alternative progress targets and State visibility protection plans is also intended to promote accountability. This accountability is especially important where States are addressing interstate air quality problems such as regional haze. Coordinated State planning is necessary to realize progress in addressing regional haze. States that fail to fulfill their planning obligations compromise the efforts of other States by creating inequities between States. In short, it would be unfair if one State does its part in protecting the visibility in the national parks and wilderness areas in the Four Corners area while some other States do not. The Commission's strategy relies on cooperation of all States and Tribes in the region.

EPA also has responsibilities beyond those covered by the Commission's report. As indicated earlier, EPA's national ambient air quality standards for fine particles specifically provided for adoption of a national regional haze program instead of setting a more stringent secondary national air quality standard. Our proposal also provides for State planning requirements to address regional haze visibility impairment in the other 140 national parks and wilderness areas not encompassed within the Commission's analysis and recommendations.

EPA proposed to establish a presumptive reasonable progress target for all Class I areas, not only those affected by the Commission's recommendations. EPA proposed a common target consistent with the nationwide visibility protection goal. The proposed target is based on visibility rather than emissions reductions because the

ultimate test of the success of the program is whether we are making progress toward the national visibility goal established by the Clean Air Act.

EPA's proposal would provide flexibility in State planning in light of the broad geographic coverage of EPA's regulations. Under this proposal, EPA declined to adopt or prescribe a "one size fits all" emission strategy solution to the regional haze problems it addressed. We intend to give both the States affected by the Commission's report and elsewhere planning discretion.

### **Conclusion**

In summary, we believe that EPA's new proposed regional haze rule, when finalized, would improve visibility in our Nation's parks and wilderness areas, as the Congress intended in the Clean Air Act. However, I want to be clear that we have not made final decisions on these matters, and that we intend to carefully consider all public comments before we issue the final rule next year. Our goal is to ensure that these new requirements are implemented in a common sense, cost-effective and flexible manner. We intend to continue working closely with State and local governments, other Federal agencies and all other interested parties to accomplish this goal. This will include interactions with the Western Regional Air Partnership, the North American Research Strategy for Tropospheric Ozone (NARSTO), the Southern Appalachian Mountains Initiative, and other agencies, as appropriate.

Mr. Chairman, this concludes my written statement. I will be happy to answer any questions that you might have.