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FACT SHEET

FINAL REGIONAL HAZE REGULATIONS FOR PROTECTION OF VISIBILITY IN NATIONAL PARKS AND WILDERNESS AREAS

TODAY'S ACTION

- The Environmental Protection Agency (EPA) is issuing regulations to improve visibility, or visual air quality, in 156 national parks and wilderness areas across the country. These areas include many of our best known and most treasured natural areas, such as the Grand Canyon, Yosemite, Yellowstone, Mount Rainier, Shenandoah, the Great Smokies, Acadia, and the Everglades. More than 280 million visitors come to enjoy the scenic vistas and unique natural features in these and other park and wilderness areas each year.

- Today's action addresses visibility impairment in the form of **regional haze**. Haze obscures the clarity, color, texture, and form of what we see. Some haze-causing pollutants (mostly fine particles) are directly emitted to the atmosphere by a number of activities (such as electric power generation, various industrial and manufacturing processes, truck and auto emissions, burning related to forestry and agriculture, construction activities, etc.). Others are formed when gases emitted to the air form particles as they are carried downwind. Examples include sulfate, formed from sulfur dioxide, and nitrates, formed from nitrogen oxides.

- Emissions from these activities generally span broad geographic areas and can be transported great distances, sometimes hundreds or thousands of miles. Consequently, haze occurs regionally throughout the nation.

- Today's regulations call for States to establish goals for improving visibility in national parks and wilderness areas and to develop long-term strategies for reducing emissions of air pollutants that cause visibility impairment. EPA strongly encourages the States to work together in developing and implementing their air quality plans.

- The final regulation includes a separate section that allows nine Western States participating in the Grand Canyon Visibility Transport Commission to implement their specific recommendations for improving visibility across the Colorado Plateau within the framework of the national program.

- The steps States take to implement these regulations are expected to have the additional benefit of improving visibility in broad areas across the country beyond these 156 national parks and wilderness areas addressed specifically in today's action.

BACKGROUND

- The Clean Air Act established special goals for visibility in many national parks, wilderness areas, and international parks. Through the 1977 amendments to the Clean Air Act, Congress set a national goal for visibility as "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." The Amendments required EPA to issue regulations to assure "reasonable progress" toward meeting the national goal.

- EPA issued regulations in 1980 to address the visibility problem that is "reasonably attributable" to a single source or small group of sources. At that time, EPA acknowledged that the regulations were only the first phase addressing visibility impairment and deferred regulations dealing with regional haze until improved monitoring and modeling techniques were developed, and EPA could improve its understanding of the pollutants causing the impairment.

    - In 1988, the States, Federal Land Managers (e.g. National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Land Management), and EPA began monitoring of fine particle concentrations and visibility in 30 national parks and wilderness areas across the country. This data is analyzed to understand what portion of fine particles and visibility impairment can be attributed to various pollutants in the air -- sulfates, nitrates, organic and elemental carbon, and crustal material (soil dust).

- In 1990, Congress amended the Clean Air Act, providing additional emphasis on regional haze issues. Among other things, the 1990 Amendments required EPA to work with several Western States to establish a Commission to address visibility in the Grand Canyon National Park. EPA established the Grand Canyon Visibility Transport Commission in 1991.

- Under the 1990 Amendments, Congress required EPA to take regulatory action on regional haze within 18 months of receiving the Commission's recommendations. The Commission delivered its final report to EPA in 1996. It included significant technical analyses and broad-based consensus on strategies to improve visibility in 16 Class I areas on the Colorado Plateau

- EPA proposed the regional haze regulations in July 1997 in conjunction with issuing new national ambient air quality standards for fine particulate matter (known as $PM_{2.5}$ -- those particles less than 2.5 microns in diameter). The same particulate matter that causes serious respiratory health effects also degrade visibility.

- In developing the final regional haze regulations, EPA took into account the findings of the Grand Canyon Visibility Transport Commission, as well as findings from a 1993

report by the National Academy of Sciences (NAS), *Protecting Visibility in National Parks and Wilderness Areas*, which confirmed that "current scientific knowledge is adequate and available control technologies exist to justify regulatory action to improve and protect visibility."

WHAT ARE THE ENVIRONMENTAL AND HEALTH BENEFITS?

- Visibility impairment is one of the most basic indicators of pollution in the air.

- Visibility impairment occurs as a result of the scattering and absorption of light by particles and gases in the atmosphere. Without the effects of pollution, a natural visual range is approximately 140 miles in the West and 90 miles in the East. However, over the years, in many parts of the United States, fine particles have significantly reduced the range that people can see. In the West, the current range is 33-90 miles, and in the East, the current range is only 14-24 miles. The regional haze regulations allow states to develop coordinated strategies and implement programs to make reasonable progress toward the goal of "no manmade impairment" in national parks and wilderness areas by reducing emissions that contribute to haze.

- Good visibility is valued by people throughout the country - in the places they live, work, and enjoy recreational activities. The regional haze program is designed to improve visibility and air quality in our most treasured natural areas so that these areas may be preserved and enjoyed by current and future generations. At the same time, control strategies designed to improve visibility in the national parks and wilderness areas will improve visibility over broad geographic areas, including other recreational sites, our cities and residences.

- The same particles (sulfates, nitrates, organic carbon, smoke, and soil dust) comprising $PM_{2.5}$, which are linked to serious health effects and environmental effects (e.g., ecosystem damage), can also significantly degrade visual air quality. Thus, actions to reduce levels of visibility-impairing pollutants will benefit public health and reduce certain adverse effects to the environment.

WHAT ARE THE KEY ELEMENTS OF THE REGIONAL HAZE REGULATIONS?

States/Areas Subject to the Rule

- The regional haze regulations will improve visibility in 156 specific areas of concern, known as "Class I" areas. The Clean Air Act defines mandatory Class I Federal areas as certain national parks (over 6000 acres), wilderness areas (over 5000 acres), national memorial parks (over 5000 acres), and international parks that were in existence as of August 1977.

- Because of evidence that fine particles are frequently transported hundreds of miles, all 50 states -- including those that do not have Class I areas -- will have to participate in planning, analysis, and in many cases, emission control programs under the regional haze regulations. Even though a given State may not have any Class I areas, pollution that occurs in that State may contribute to impairment in Class I areas elsewhere. The rule encourages States to work together to determine whether or how much emissions from sources in a given State affect visibility in a downwind Class I area.

- The regulations also include specific provisions allowing the Grand Canyon Visibility Transport Commission States (Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, and Wyoming) to implement their specific recommendations (according to different time frames) within the framework of the national regional haze program.

Reasonable Progress Goals

- EPA's final regional haze regulations do not establish "presumptive targets" for showing reasonable progress, as originally proposed in 1997. Instead, States have flexibility in determining reasonable progress goals for Class I areas, taking into consideration the statutory requirements of the Clean Air Act.

- States are required to conduct certain analyses to ensure that they consider the possibility of setting an ambitious reasonable progress goal, one that is aimed at reaching natural background conditions in 60 years. The rule requires States to establish goals for each affected Class I area to 1) improve visibility on the haziest days and 2) ensure no degradation occurs on the clearest days over the period of each implementation plan.

Long-Term Strategy

- The rule requires States to develop long-term strategies including enforceable measures designed to meet reasonable progress goals. The first long-term strategy will cover 10 to 15 years, with reassessment and revision of those goals and strategies in 2018 and every 10 years thereafter. States strategies should address their contribution to visibility problems in Class I areas both within and outside the State.

- In identifying the emission reduction measures to be included in the long-term strategy, States should address all types of manmade emissions contributing to impairment in Class I areas, including those from mobile sources, stationary sources (such as factories), smaller, so-called "area" sources (such as residential wood combustion and gas stations), and prescribed fires.

- EPA recognizes that fire of all kinds (wildfire, prescribed fire, etc.) contributes to regional haze, and there is a complex relationship between what is considered a natural

source of fire versus a human-caused source of fire. For example the increased use of prescribed fire in some areas may lead to particulate emissions levels lower than those that would be expected from a catastrophic wildfire. Given that in many instances the purpose of prescribed fires is to restore the natural fire cycles to forest ecosystems, EPA will work with States and Federal Land Managers to support development of enhanced smoke management plans to minimize the effects of fire emissions on public health and welfare.

- In developing their long term strategy for regional haze, States can take into account emission reductions due to ongoing air pollution control programs (such as implementation of programs to meet the national ambient air quality standards for particulate matter). EPA expects that some States may be able to demonstrate reasonable progress based on these emission reductions alone, particularly for the first period of the long-term strategy.

Best Available Retrofit Technology (BART)

- One of the principal elements of the visibility protection provisions of the Clean Air Act addresses installation of best available retrofit technology -- or BART -- for certain existing sources placed into operation between 1962 and 1977. The regional haze rule requires three basic state plan elements related to BART:

  1) a list of BART-eligible sources (includes sources of air pollutants that are reasonably anticipated to contribute to visibility impairment in a Class I area);

  2) a regional analysis of the cumulative emission reductions and changes in visibility that would result from "best retrofit" control levels on sources subject to BART; and

  3) the BART emission limits for each subject source, or an alternative measure such as an emissions trading program for achieving greater reasonable progress in visibility protection than implementation of source-by-source BART controls.

- In determining BART, the State can take into account several factors, including the existing control technology in place at the source, the costs of compliance, energy and nonair environmental impacts of compliance, remaining useful life of the source, and the degree of visibility improvement that is reasonably anticipated from the use of such technology.

Expanded Monitoring

- EPA is expanding the existing Class I area visibility monitoring network from 30 to 108 sites in 1999. EPA is working closely with State air pollution agencies and Federal Land Managers to efficiently design and deploy the network to provide regionally

representative data for all 156 Class I areas.

Optional Approach for Regional Planning

- Regional haze is caused by many sources located across a broad region often covering several states. The final regional haze regulations incorporate an optional set of requirements for States to submit coordinated strategies for regional haze and $PM_{2.5}$. Some States will be able to take additional time to develop their strategies if they commit to participate in regional planning.

- A given State's commitment to regional planning includes a two-step process. As a first step, a State electing to participate in regional planning must submit a plan demonstrating the State's ongoing participation and commitment to a regional planning process. This plan must address all areas in the State and demonstrate the need for regional planning by showing that emissions from their State are reasonably anticipated to contribute to visibility impairment in another State, or by showing that another State may contribute to visibility impairment in their State. The State plan must also include a detailed description of the regional planning process and it must include a commitment by the State to submit a coordinated control strategy at a later date.

WHEN MUST STATES SUBMIT THEIR PLANS?

- States are required to submit revisions to their visibility protection requirements following the time that EPA designates areas for the national ambient air quality standard for $PM_{2.5}$. For those areas EPA designates as "attainment" and "unclassifiable," States will have 1 year following the designation to submit their implementation plans (generally 2004 to 2006). For those areas EPA designates as "nonattainment," States will have 3 years from the date of designation to submit their plans (about 2006 to 2008).

- For a State that commits to regional planning, its first implementation plan committing to regional planning is due one year after EPA first designates an area within that State as attainment or nonattainment for $PM_{2.5}$. Complete control strategy plans for regional haze would be due to EPA at the same time as the $PM_{2.5}$ state plans are due (3 years after EPA designates an area nonattainment for $PM_{2.5}$, but no later than 2008).

- Subsequent revisions to the State implementation plans are required in 2018, and every 10 years thereafter. With each revision, the State is required to set new progress goals and strategies to meet the goals.

- States must also submit progress reports to EPA every 5 years. These reports will document actual changes in visibility and emission reductions within the State. At the time of each progress report, States will compare their current visibility conditions to baseline conditions (i.e. baseline is the average conditions for 2000 to 2004). The report,

which will be subject to public review and comment, must also include any needed mid-course corrections to emission management strategies.

WHO WILL BE AFFECTED BY EPA'S REGIONAL HAZE RULE?

- State and local air quality agencies will implement the regional haze program through revisions to their state implementation plans. However, because regional haze often results from pollution emitted across broad regions, EPA encourages States to participate in multi-state planning efforts to develop regional strategies for meeting progress goals. While the Clean Air Act specifically identifies certain source types as potential contributors to visibility impairment, ultimately the States will make decisions about specific emission management strategies. In some areas, existing strategies for other air quality programs (such as the program to attain the $PM_{2.5}$ national air quality standards) may provide steady visibility improvements in the near-term.

- Both the regional haze program and Clean Air Act require consultation between the States and the Federal Land Managers responsible for managing Class I areas. Such collaboration will help in developing state implementation plans and monitoring plans and in predicting the visibility impacts of potential new sources.

- The principal manmade sources of pollutants contributing to fine particles in the air include electric power generation, automobiles, trucks, and other mobile sources, industrial manufacturing activities, burning related to forestry and agricultural activities, and dust from roadways and construction activities. Sources in these and other categories may be affected by this rule, depending on the reasonable progress goals and emission management strategies adopted by each State.

WHAT ARE THE ESTIMATED COSTS AND BENEFITS ASSOCIATED WITH IMPLEMENTING THE REGIONAL HAZE REGULATIONS?

- EPA has developed best estimates of the annual costs through the first planning phase of the rule, the year 2018. The costs and the corresponding benefits of implementing the regional haze rule depend on the extent to which control measures, already required under the Clean Air Act, will meet the visibility goals. At the low end, costs would be $1 billion with corresponding benefits of $3.5 billion per year. At the high end, costs would be $4 billion with corresponding benefits of $10.8 billion per year.

- The costs and benefits of the regional haze program are directly linked to the eventual choices that States will make regarding visibility goals in their Class I areas and associated control strategies.

- Some States may be able to demonstrate that visibility improvement associated with other Clean Air Act programs, such as the new automotive emission standards, and programs to

meet the national ambient air quality standards for $PM_{2.5}$, may be sufficient to reach their reasonable progress goals for the first 10 year period (generally 2008 to 2018 for most States). In that situation, the incremental effects of the haze rule are limited to administrative activities (i.e. planning, analyses, etc.) with some potential for associated control costs at some BART source category plants.

- EPA conducted a number of illustrative analyses of costs and benefits for various progress goal levels. For the most stringent progress goal (10% improvement for the worst visibility days over 10 years), EPA estimated control costs would be $4 billion and associated benefits at $10.8 billion. These benefits are due to reductions of particulate matter under the regional haze rule, which will lead to reduced health risks as well as improvements in visibility.

FOR FURTHER INFORMATION

- Interested parties can download the rule from EPA's website on the Internet board under "Recently Actions" at the following address: *http://www.epa.gov/oar/vis/overview.html*. For further information about the rule, contact Mr. Richard Damberg at (919)-541-5592 of EPA's Office of Air Quality Planning and Standards.

- EPA's Office of Air and Radiation's homepage on the Internet contains a wide range of information on air pollution programs and issues, including visibility issues. The Office of Air and Radiation's home page address is: *http://www.epa.gov/oar/.*